

CONSPECTUS OF PENTATOMINI GENERA OF THE WESTERN
HEMISPHERE—PART 2 (HEMIPTERA: PENTATOMIDAE)

L. H. Rolston and F. J. D. McDonald

Abstract.—A key is provided to separate the genera of Pentatomini of the Western Hemisphere that have a median tubercle or spine at the base of the abdominal venter which is unapposed apically by the posterior margin of the metasternum. New genera in this group are *Aleixus* McDonald, *Grazia* Rolston, *Kermana* Rolston and *Roferta* Rolston. One new species is described: *Aleixus virgatus* McDonald. New combinations are *Grazia tincta* (Distant, 1890), *Kermana bucera* (Stål, 1860), *K. imbuta* (Walker, 1867), *K. fucosa* (Berg, 1892) and *Roferta marginalis* (Herrich-Schäffer, 1836). A diagnosis is given for *Zorcadium* Bergroth, and *Z. truncatum* (Fallou, 1888) is redescribed.

In a preceding paper the tribe Pentatomini in the Western Hemisphere was divided into 3 sections. A key was provided for the genera of section 3, viz. those genera with a median tubercle at the base of the abdominal venter and with the metasternum produced ventrad in apposition to the apex of that tubercle (Rolston et al. 1980).

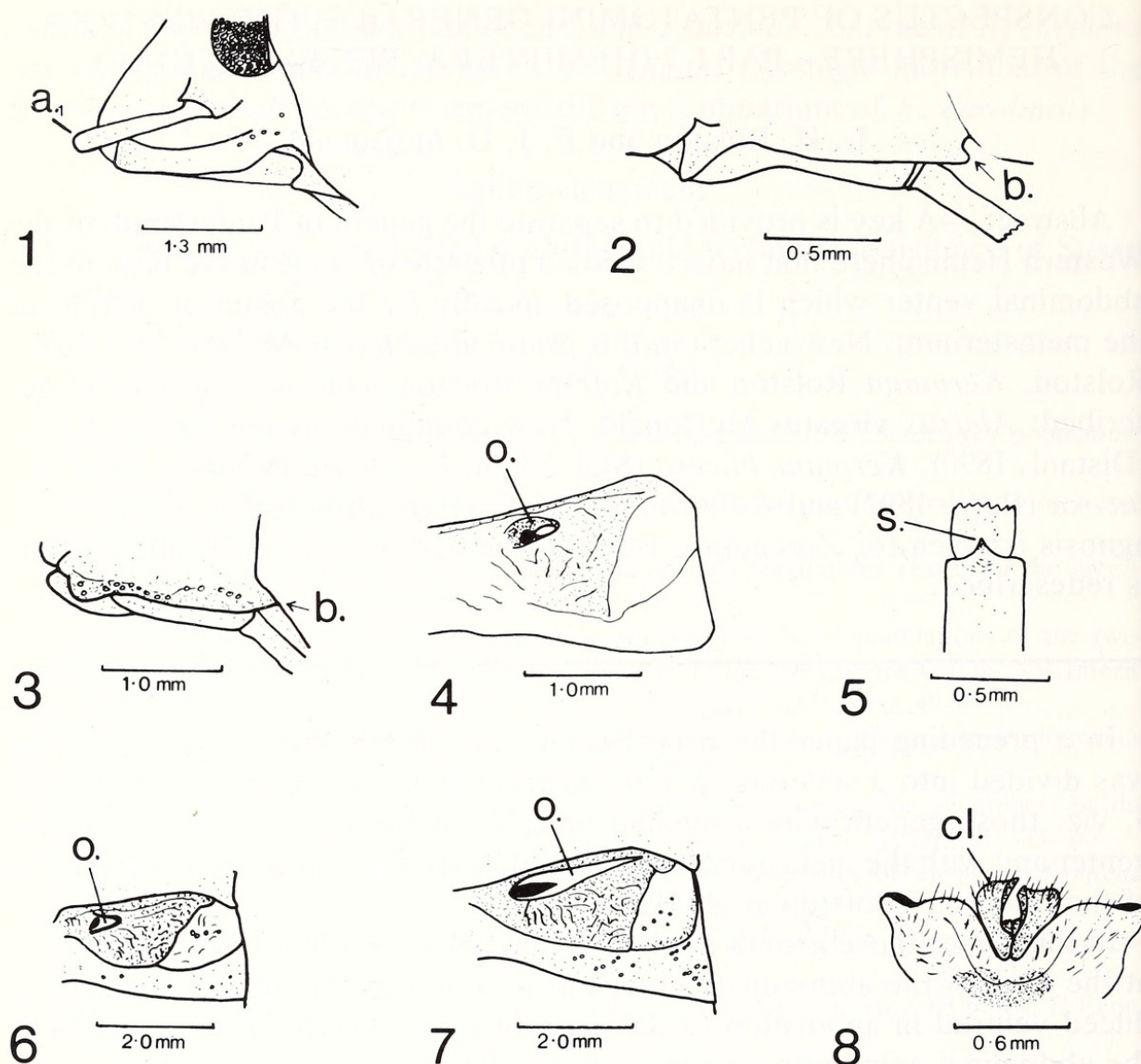
In this paper those genera are keyed that have a median tubercle or spine at the base of the abdominal venter but do not have the metasternum produced ventrad in apposition to the apex of that tubercle or spine. In fact, the abdominal spine often projects under the metasternum and may reach as far as the base of the head.

New genera added to this group are *Aleixus* McDonald, *Grazia* Rolston, *Kermana* Rolston and *Roferta* Rolston. *Aleixus* is monotypic, based on *A. virgatus* McDonald, n. sp. *Grazia* is also monotypic, based on *Piezodorus tinctus* Distant, 1890. *Kermana* contains 3 species, all previously named and in new combinations of *K. bucera* (Stål, 1860), *K. fucosa* (Berg, 1892) and *K. imbuta* (Walker, 1867), of which the last is type species. *Roferta* is monotypic, based on *Pentatoma marginale* Herrich-Schäffer, 1836.

The rare *Zorcadium truncatum* (Fallou, 1888) is redescribed and a diagnosis given for the monotypic genus. Since Fallou's type is missing a voucher specimen is designated.

Key to Genera of Pentatomini, Section 2

1. Stout pair of preapical spines present on inferior surface of posterior femora *Modicia* Stål



Figs. 1-8. 1. *Ramosiana insignis*. Head, lateral view. 2. *Brepholoxa heidmanni*. Left buccula, lateral view. 3. *Nezara viridula*. Left buccula, lateral view. 4. *Brepholoxa heidmanni*. Left metathoracic stink gland orifice. 5. *Odmalea basalis*. Right fore femur, superior surface. 6. *Nezara viridula*. Left metathoracic stink gland orifice. 7. *Acrosternum hilare*. Left metathoracic stink gland orifice. 8. *Pellaea sticta*. Pygophore, caudal view, legend: antennal segment 1 (a.), buccula (b.), paramere (cl.), osteolar sulcus (o.), spine (s.).

- Femora not so armed 2
- 2. Median spine at base of abdominal venter projecting cephalad to procoxae *Disderia* Bergroth
- Median spine at base of abdominal venter not projecting as far cephalad as procoxae, sometimes reduced to tubercle 3
- 3. Distal end of first antennal segment clearly exceeding apex of head (Fig. 1) 4
- Distal end of first antennal segment not surpassing apex of head 5
- 4. Distal end of first rostral segment clearly surpassing bucculae; scutellar width at base about $\frac{2}{3}$ length *Ramosiana* Kormilev

- First rostral segment lying entirely between bucculae; scutellar width and length subequal *Vulsirea* Spinola
- 5. Bucculae lobed posteriorly from lateral view (Fig. 2) 6
- Bucculae evanescent posteriorly (Fig. 3) 12
- 6. Ostiolar canal extending less than halfway from inner margin of ostiole to lateral margin of metapleuron (Fig. 4); antennal segment 2 usually longer than or as long as each succeeding segment *Brepholoxa* Van Duzee
- Ostiolar canal extending more than halfway from inner margin of ostiole to lateral margin of metapleuron; antennal segment 2 shorter than each succeeding segment (except *Aleixus*) 7
- 7. Superior surface of femora prolonged distally as small spine (Fig. 5) 8
- Femora not so armed 11
- 8. Jugal carinae contiguous before tylus 10
- Jugal carinae usually separated apically, if contiguous then coria decidedly bicolored, stramineous and castaneous 9
- 9. Humeri bearing large dorsal tubercle (Fig. 10); second antennal segment longer than each succeeding segment *Aleixus* McDonald, n. gen.
- Humeri not tuberculate; second antennal segment shorter than each succeeding segment *Odmalea* Bergroth
- 10. Humeri cornute (Fig. 32); costal angle of coria extending caudad well beyond apex of scutellum *Zorcadium* Bergroth
- Humeri angulate or spinose; costal angle of coria extending caudad little if any farther than apex of scutellum *Thoreyella* Spinola
- 11. Median spine at base of abdominal venter projecting cephalad to or beyond anterior limit of mesocoxae; scutellum at least 1 tenth longer than basal width *Rio* Stål
- Abdominal spine shorter; scutellar width and length subequal *Dendrocoris* Bergroth
- 12. Ostiolar sulcus short, length about twice diameter of orifice (Fig. 6) 18
- Ostiolar sulcus reaching about halfway or more from inner margin of ostiole to lateral margin of metapleuron (Fig. 7) 13
- 13. Mesosternal carina compressed anteriorly, forming thin blade between procoxae *Piezodorus* Fieber
- Mesosternal carina nearly uniform in size and shape, sometimes obsolete on xyphus between mesocoxae 14
- 14. Superior surface of femora prolonged distally into small angulate tooth; parameres trilobed, posterior lobe curving mesoventrad and exposed in mesial depression in posterior margin of pygophore (Fig. 8). *Pellaea* Stål

- Femora unarmed; parameres simple or bilobed (Figs. 16, 22, 29), almost entirely concealed in genital cup 15
- 15. Lateral walls of genital cup bearing large tubercles near rim of cup (Figs. 21, 25, 28); scutellum strongly convex at least basally 17
- Tubercles on lateral walls of genital cup small or absent; scutellum weakly convex 16
- 16. Tibiae asculcate or weakly sulcate distally *Grazia* Rolston, new genus
- Tibiae clearly sulcate *Acrosternum* Fieber
- 17. Parameres with tubercle on cephalic margin between base and apex (Fig. 29); spermathecal bulb with 2 unequal diverticula (Fig. 31); median process at base of abdominal venter tuberculate *Roferta* Rolston, new genus
- Parameres with ventrolateral process (Fig. 22); spermathecal bulb bent into U (Fig. 24); abdominal spine projecting cephalad beyond metacoxae *Kermana* Rolston, new genus
- 18. Abdominal spine surpassing anterior limit of metacoxae; each spiracle on yellowish callus *Acrosternum abnorme* (Berg)
- Abdominal tubercle reaching only to posterior limit of metacoxae; spiracles unaccompanied by callus *Nezara viridula* (L.)

Aleixus McDonald, new genus

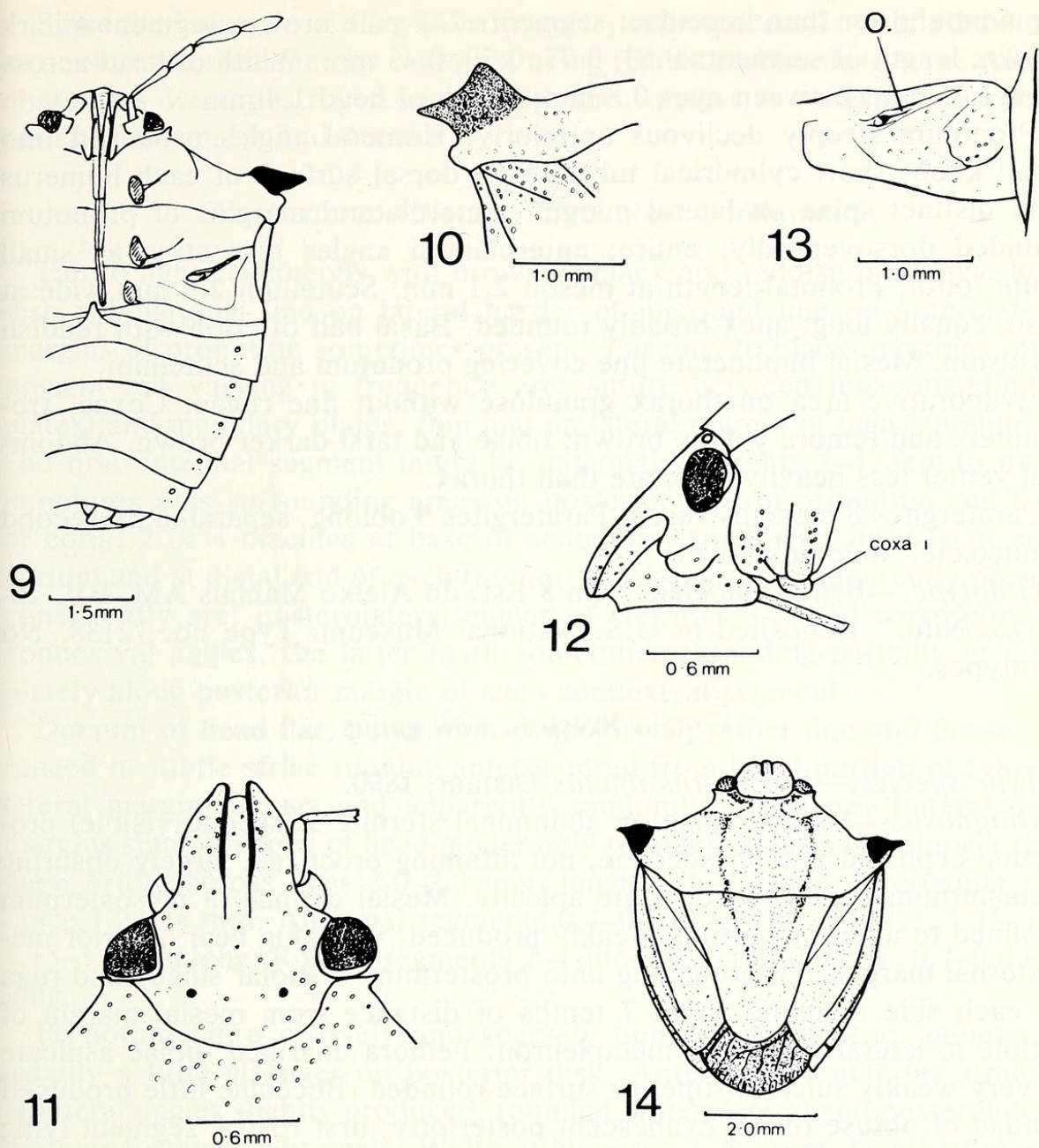
Type species.—*Aleixus virgatus* McDonald, n. sp.

Diagnosis.—Abdominal sternite 3 (second visible) with small median spine reaching metacoxae or nearly so (Fig. 9). Dorsal surface of each humerus bearing large tubercle (Fig. 10). Jugae narrowly rounded and separated apically, surpassing tylus (Fig. 11). First antennal segment not reaching apex of head; second segment longer than any other segment. First rostral segment lying entirely between bucculae, these projecting as lobes posteriorly onto prosternum (Fig. 12). Thoracic sterna nearly flat, not produced. Ostiolar sulcus extending about 6 tenths of distance from mesial margin of ostiole to lateral margin of metapleuron (Fig. 13). Superior surface of femora produced distally as small tooth, femora otherwise unarmed; tibiae sulcate; tarsi 3-segmented.

First gonocoxae lying mainly under sternite 7, visible only as small triangular sclerites.

Aleixus virgatus McDonald, n. sp.

Dorsal surface fulvid overlaid with dark brown punctation; tubercles on each humerus black. Dark brown stripe on each side of meson beginning at apex of pronotum, skirting cicatrice mesially, continuing onto scutellum, the 2 stripes converging about 3 quarters way down scutellum (Fig. 14); narrower brown stripes on each hemelytron, one along frenum, another



Figs. 9–14. *Aleixus virgatus*. 9. Ventral view. 10. Left humeral angle, dorsal view. 11. Head, dorsal view. 12. Buccula, lateral view. 13. Left metathoracic stink gland orifice. 14. Dorsal view, legend: osteolar sulcus (o.).

along radial vein. Membrane smoky brown. Venter amber overlaid with dark brown punctation. Length from apex of head to apex of abdomen 5.8 mm; width across humeri 4.5 mm.

Margins of jugae except mesial margin basally outlined in black (Fig. 11). Eyes rusty brown. Antennifers prominent. Antennal segments 1–3 reddish brown, slender; segment 4 reddish brown and slender basally, becoming paler and swollen apically; segment 5 amber, swollen; length of segments 0.31, 0.62, 0.43, 0.56, 0.50 mm. Rostrum reaching metacoxae (Fig. 9); basal

segment shorter than bucculae; segments 2–3 pale brown, segment 4 dark brown; length of segments 0.53, 0.77, 0.50, 0.43 mm. Width of head across eyes 1.45 mm, between eyes 0.8 mm; length of head 1.4 mm.

Pronotum steeply declivous anteriorly. Humeral angles produced into small knob; short cylindrical tubercle on dorsal surface of each humerus with distinct spine on lateral margin. Anterolateral margins of pronotum rounded dorsoventrally, entire; anterolateral angles projecting as small acute tooth. Pronotal length at meson 2.1 mm. Scutellum 2.9 mm wide at base, equally long; apex broadly rounded. Basal half of coria with reddish suffusion. Mesial impunctate line covering pronotum and scutellum.

Evaporative area on thorax granulose without fine rugae. Coxae, trochanters and femora yellow brown; tibiae and tarsi darker brown. Abdominal venter less heavily punctate than thorax.

Paratergites 8 medially fused. Paratergites 9 oblong, separated by second gonocoxae. Male unknown.

Holotype.—Female labeled “Km 8 Est. do Aleixo Manaus AM. BV. 26-VI-76. Nilu.” Deposited in U.S. National Museum. Type no. 72138. No paratypes.

Grazia Rolston, new genus

Type species.—*Piezodorus tinctus* Distant, 1890.

Diagnosis.—Median spine on abdominal sternite 3 (second visible) projecting cephalad past mesocoxae, not attaining procoxae, largely obscuring metasternum, compressed, acute apically. Mesial carinae of mesosternum confined to anterior portion, weakly produced, widening near anterior mesosternal margin, not projecting onto prosternum. Ostiolar sulcus and ruga on each side reaching about 7 tenths of distance from mesial margin of ostiole to lateral margin of metapleuron. Femora unarmed; tibiae asulcate or very weakly sulcate, superior surface rounded. Bucculae little produced caudad of obtuse tooth, evanescent posteriorly; first rostral segment lying entirely between bucculae. First segment of antennae not reaching apex of head. Scutellum weakly convex basally.

Posterior surface of pygophore convex without median projection; genital cup of normal size, lateral walls without tubercle. Thecal appendages absent.

Comments.—This genus superficially resembles *Piezodorus* but differs in having a weak mesosternal carina, in lacking a median projection on the posterior pygophoral surface and in having the opening of the genital cup of normal size. The shape of the parameres and asulcate or very weakly sulcate tibiae distinguish *Grazia* from *Acrosternum*.

We are pleased to dedicate this genus to Dr. Jocélia Grazia of the Universidade Estadual de Campinas in recognition of her contributions to the taxonomy of neotropical pentatomids.

Since the holotype of *Piezodorus tinctus*, type species, is of limited value as a reference specimen by reason of being female and because some critical characters were destroyed in pinning, this species is redescribed from a series of 8 females and 4 males.

Grazia tincta (Distant, 1890) New Combination

Tan to light castaneous with brown to black and reddish markings. Reddish submarginal line on lateral border of juga and line on anterolateral margins of pronotum sometimes present. Fuscous to black markings often present but varying in frequency are: suture between juga (mandibular plates) and maxillary plates, thin line on lateral margin of juga, antennifers and first antennal segment laterally, antennal segments 2–4, few to many punctures plus surrounding areas on posterior disk of pronotum and base of coria, 2 or 4 macules at base of scutellum, small spot on disk of each corium and at distal end of each frenum. Black markings apparently present consistently are: posterolateral angles of sternites 3–7 and corresponding connexival angles, the latter mark sometimes extending partially or completely along posterior margin of each connexival segment.

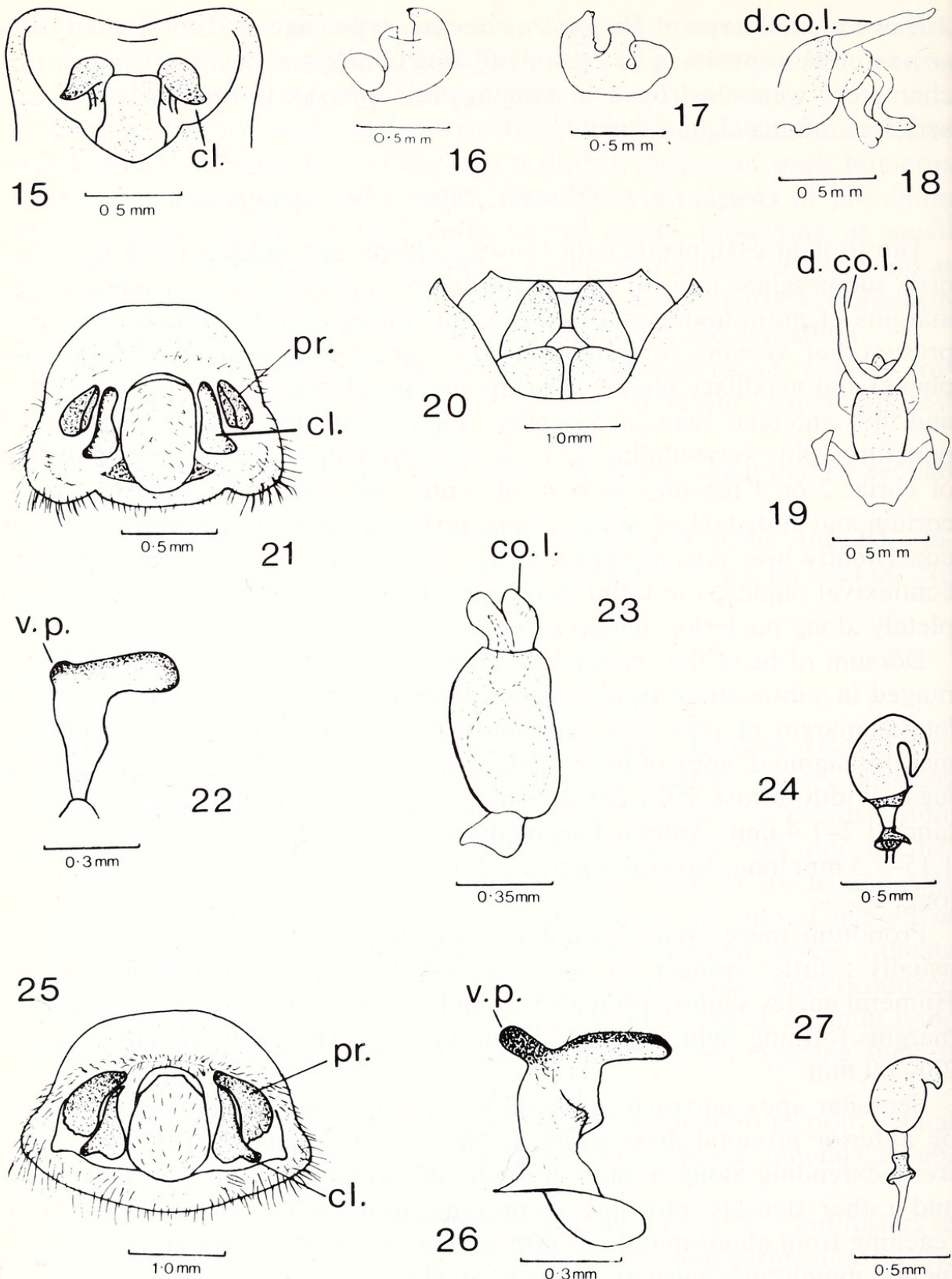
Dorsum of head flat; punctation concolorous, rather fine and dense, arranged in subtle striae running anterolaterad from basal portion of tylus to lateral margin of juga and apparently randomly elsewhere. Lateral jugal margins sigmoid; apex of head moderately rounded; tylus a little longer than juga. Width across eyes 2.0–2.3 mm, length 1.6–2.0 mm; interocular distance 1.2–1.4 mm. Antennal segments 0.4–0.5, 0.45–0.5, 1.0–1.3, 1.15–1.5, 1.15–1.5 mm long. Rostral segments 2–4 about 0.9–1.1, 0.8–1.1, 0.7–0.8 mm long.

Pronotum more coarsely and sparsely punctate than head, punctation usually a little stronger on posterior disk. Anterolateral margins straight. Humeral angles slightly produced, rounded, anterolateral and posterolateral margins forming right angle. Width at humeri 5.1–6.2 mm, length at meson 2.0–3.0 mm.

Scutellar apex narrowly rounded to subacute; punctation similar to that on anterior pronotal disk; width at base 3.2–3.8 mm, length 3.6–4.5 mm; frena extending along basal 5–6 tenths of lateral margins. Coria shallowly and rather densely punctate, semitransparent, with posterolateral angle reaching from about middle of fifth to anterior part of sixth abdominal segments; membranes vitreous, their boundary with coria sinuous. Connexiva broadly exposed; posterolateral angle of each segment acutely produced.

Evaporative area matte, poorly defined. Abdominal venter tectiform, obtuse median ridge forming continuous profile with basal spine.

Posterior margin of pygophore moderately concave from both dorsal and caudoventral view. Head of parameres cupped, apical projection curving



Figs. 15-27. 15-20. *Grazia tinctoria*. 15. Pygophore, dorsal view. 16. Left paramere, outer view. 17. Left paramere, inner view. 18. Aedeagus, lateral view. 19. Aedeagus. 20. Female genitalia. 21-24. *Kermana imbuta*. 21. Pygophore, dorsal view. 22. Right paramere, outer view. 23. Aedeagus, lateral view. 24. Spermatheca. 25. *Kermana* sp. Pygophore, dorsal view. 26-27. *Kermana fucosa*. 26. Right paramere, outer view. 27. Spermatheca, legend: paramere (cl.), conjunctival lobe (co. l.), dorsal conjunctival lobe (d.co.l.), process of genital cup (pr.), ventral process of paramere (v.p.).

dorsolaterad and cephalad, obscuring small dorsolateral projection on rim of cup (Figs. 15, 16, 17). Conjunctiva with 3 pairs of lobes, each member of dorsal pair long, digitiform (Figs. 18, 19). Endophalic duct sigmoid from lateral view.

Genital plates as in Figure 20.

Distribution.—The 12 specimens seen came from the Dominican Republic, Panama, Venezuela, Ecuador, Brazil (Goias) and Paraguay.

Kermana Rolston, new genus

Type species.—*Rhaphigaster imbutus* Walker, 1867.

Diagnosis.—Median spine on abdominal sternite 3 projecting cephalad to mesocoxae. Basal half of scutellum strongly convex. First antennal segment not attaining apex of head. Bucculae evanescent at base of head; first rostral segment lying entirely between bucculae. Ostiolar ruga on each side extending about 6–8 tenths distance from mesial margin of ostiole to lateral margin of metapleuron. Mesosternum mildly tumescent on each side of meson; median carina weak, evanescent posteriorly. Metasternum not produced. Femora unarmed.

Genital cup bearing large process near rim on each lateral wall (Figs. 21, 25). Proctiger lacking tubercles. Ventrolateral process present on parameres, varying in size from knob to digit (Figs. 22, 26). Theca ovoid, lightly sclerotized. Conjunctiva entirely membraneous, bilobed on each side, each lobe broadly rounded at apex (Fig. 23).

Spermathecal bulb wide at base, distally bent through 180 degrees (Figs. 24, 27).

Comment.—The most recent generic (or subgeneric) placement of the 3 species assigned to *Kermana* has been *Banasa* or *Acrosternum*. *Kermana* differs most notably from *Banasa* in having the abdominal spine projecting beneath the metasternum. In *Banasa* the metasternum slopes ventrad in an anterior to posterior direction and its posterior margin apposes the apex of the abdominal tubercle. *Kermana* differs especially from *Acrosternum* in possessing a large process on each lateral wall of the genital cup and in the much greater convexity of the scutellum.

The synonymy of the 3 species and a key for their separation follow.

Kermana bucera (Stål, 1860). New Combination

- 1860 *Rhaphigaster bucera* Stål, Sv. Vet. Akad. Handl. 2(7):23.
- 1872 *Banasa bucera*: Stål, Sv. Vet. Akad. Handl. 10(4):43.
- 1909 *Nezara (Banasa) bucera*: Kirkaldy, Cat. Hem. 1:122.

Kermana fucosa (Berg, 1892). New Combination

- 1892 *Nezara fucosa* Berg, Ann. Soc. Cient. Arg. 33:9.

1909 *Nezara (Acrosternum) fucosa*: Kirkaldy, Cat. Hem. 1:118.

1948 *Acrosternum fucosa*: Pirán, Acta Zool. Lill. 5:9.

Kermana imbuta (Walker, 1867). New Combination

1867 *Rhaphigaster imbuta* Walker, Cat. Het. 2:358.

1880 *Banasa imbuta*: Distant, Biol. Cent. Amer. Rhyn. 1:80, Pl. 7, fig. 10.

1909 *Nezara (Atomosira) imbuta*: Kirkaldy, Cat. Hem. 1:122.

1910 *Banasa imbuta*: Banks, Cat. Nearctic Hem.-Het.:83.

1916 *Banasa imbuta*: Van Duzee, Check List Hem. Amer.:8.

1917 *Banasa imbuta*: Van Duzee, Cat. Hem. N. Amer.:62.

Key to Species of *Kermana*

1. Humeral angles strongly produced laterad, narrowly rounded apically . . . (Brazil) *bucera* (Stål)
- Humeri scarcely produced 2
2. Punctuation and color of scutellum almost uniform; excised parameres somewhat Y-shaped with long ventrolateral process (Fig. 26) . . . (Argentina, Brazil, Uruguay) *fucosa* (Berg)
- Punctuation of scutellum weakest and most sparse in light colored areas at base and apex; excised parameres L-shaped with small ventrolateral process (Fig. 22) . . . (Texas to Costa Rica) *imbuta* (Walker)

Roferta Rolston, new genus

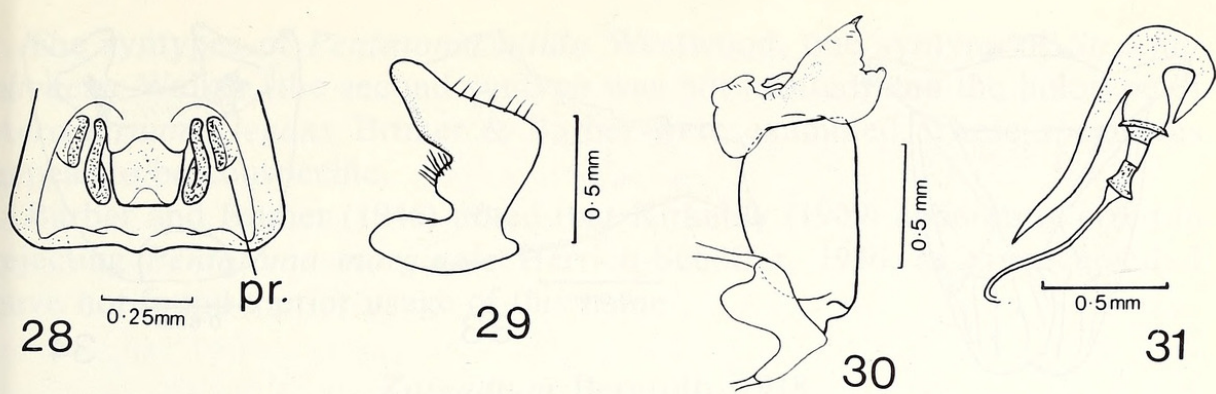
Type species.—*Pentatoma marginale* Herrich-Schäffer, 1836.

Diagnosis.—Median tubercle on abdominal sternite 3 short, obtuse, scarcely reaching metacoxae. Scutellum strongly convex. First antennal segment not attaining apex of head. Bucculae arcuate anteriorly, weakly produced caudad of arch, evanescent at base of head; first rostral segment lying entirely between bucculae. Ostiolar ruga on each side extending about 3 fourths of distance from mesial margin of ostiole to lateral margin of metapleuron. Mesosternum mildly tumescent on each side of meson; median carina moderately developed, extending full length of mesosternum. Metasternum similarly but less strongly carinate posteriorly. Femora unarmed.

Genital cup bearing large process on each lateral wall near rim (Fig. 28). Proctiger somewhat tuberculate subapically on each side. Parameres with tubercle on cephalic margin. Median penial plates and penisfilum short (Fig. 30).

Spermathecal bulb with 2 arms (Fig. 31).

Comment.—This genus is similar to *Kermana* but differs especially in the form of the parameres and spermathecal bulb. The type species, and only known member of the genus, is readily recognized by the dorsal color:

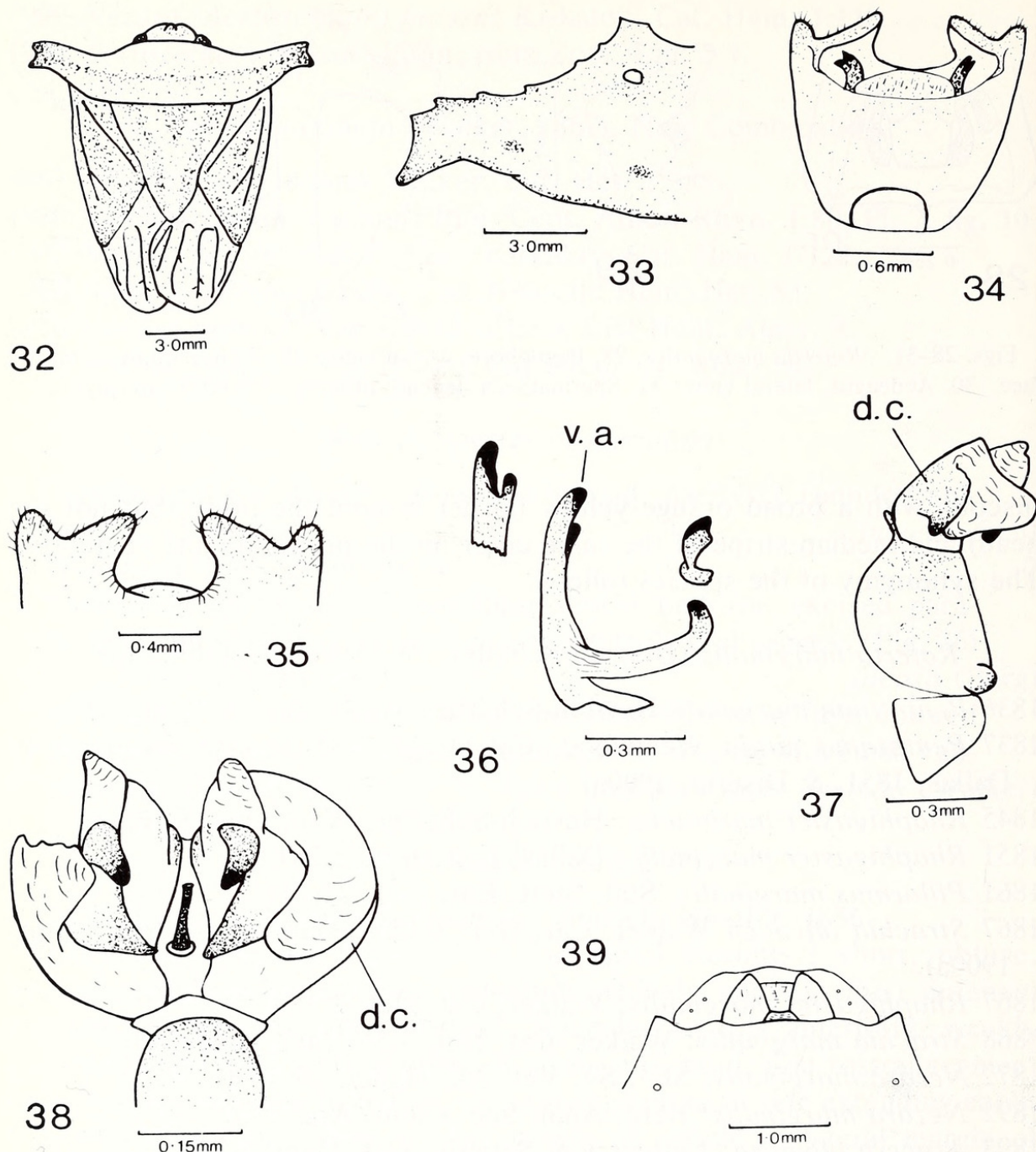


Figs. 28–31. *Rofertia marginalis*. 28. Pygophore, dorsal view. 29. Right paramere, mesial face. 30. Aedeagus, lateral view. 31. Spermatheca, legend: process of genital cup (pr.).

fuscous with a broad orange-yellow border around the body (but not the head) and median stripe of the same color on the pronotum and scutellum. The synonymy of the species follow.

Roferta marginalis (Herrich-Schäffer, 1836) New Combination

1836 *Pentatoma marginale* Herrich-Schäffer, Wanz. Ins. 3:59, fig. 320.
1837 *Pentatoma nitida* Westwood, Cat. Hope 1:33–34 (synonymized by Dallas, 1851, & Distant, 1900a).
1845 *Rhaphigaster marginalis*: Herrich-Schäffer, Wanz. Ins. 8:16.
1851 *Rhaphigaster marginalis*: Dallas, List Hem. 1:281.
1861 *Ptilarmus marginalis*: Stål, Stett. Ent. Zeit. 22:141.
1867 *Strachia olivacea* Walker, Cat. Het. 2:322 (synonymized by Distant, 1900a).
1867 *Rhaphigaster marginalis*: Walker, Cat. Het. 2:359.
1868 *Strachia marginalis*: Walker, Cat. Het. 3:561 (not 2:343–344).
1872 *Nezara marginalis*: Stål, Sv. Vet. Ak. Handl. 10(4):40.
1892 *Nezara marginalis*: Berg, Anal. Soc. Cient. Arg. 33:6.
1893 *Arocera olivacea*: Lethierry & Severin, Cat. Hem. 1:159.
1893 *Nezara marginalis*: Lethierry & Severin, Cat. Hem. 1:166.
1900a *Nezara marginalis*: Distant, Ann. Mag. Nat. Hist. (7)5:392.
1900b *Nezara marginalis*: Distant, Proc. Zool. Soc. London: 823.
1909 *Nezara* (*Nezara*) *nitida*: Kirkaldy, Cat. Hem. 1:116.
1910 *Nezara marginale*: Valdés, Anal. Acad. Cien. Méd., Fis. y Nat. Habana, Cuba. 46:429 (laps. cal.).
1932 *Nezara nitida*: Barber & Bruner, J. Dept. Agr. Puerto Rico 16(3):262–263.
1935 *Acrosternum nitida*: Fennah, Trop. Agr. Trinidad 12:193.
1946 *Acrosternum marginale*: Barber & Bruner, Brooklyn Entomol. Soc. 40(2):52–53.



Figs. 32–39. *Zorcadium truncatum*. 32. Dorsal view. 33. Humeral angle of pronotum, dorsal view. 34. Pygophore, dorsal view. 35. Pygophore, ventral border. 36. Right paramere, lateral view; apices, dorsal view. 37. Aedeagus, lateral view. 38. Aedeagus, ventral view. 39. Female genitalia, legend: dorsal conjunctival appendage (d.c.), ventral arm of paramere (v.a.).

1948 *Acrosternum nitida*: Callan, Proc. R. Entomol. Soc. London (B) 17 (9/10):117.

1949 *Acrosternum elegans* Bruner & Barber, Mem. Soc. Cubana Hist. Nat. 19:160–161. NEW SYNONYMY.

1967 *Acrosternum elegans*: Alayo, Mus. Felipe Poey Trab. Divul. 43:27, 28, Pl. 5, fig. 3.

1976 *Acrosternum nitidum*: Rolston, J. N.Y. Entomol. Soc. 84(1):3.

The syntypes of *Pentatoma nitida* Westwood, one syntype of *Strachia olivacea* Walker (the second syntype was not located) and the holotype of *Acrosternum elegans* Bruner & Barber were examined. These specimens appear to be conspecific.

Barber and Bruner (1946) noted that Kirkaldy (1909) apparently erred in rejecting *Pentatoma marginale* Herrich-Schäffer, 1936, as preoccupied. I have not found a prior usage of this name.

Zorcadium Bergroth, 1918

Zorcadium Bergroth, 1918, Ann. Mus. Natl. Hung. 16:307–308.

Type species.—*Euschistus truncatus* Fallou, 1888, by monotypy.

Diagnosis.—Median abdominal spine on sternite 3 stout, reaching mesocoxae. Humeral angles greatly produced, cornute, much elevated (Fig. 33). Prosternum essentially flat; mesosternum slightly tumescent on each side of meson, without carina; metasternum flat, not produced. Bucculae prolonged as lobe at base of head, surpassing distal end of first rostral segment; apex of rostrum reaching mesocoxae. Femora armed only by distal extension of superior surface into small acute spine. Ostiolar canal long, curved. Jugal contiguous before tylus. First segment of antennae not reaching apex of head, subequal in length to segment 2, half or less length of each of last 3 segments. Costal angle of coria extending well past apex of scutellum.

Zorcadium truncatum (Fallou, 1888)

Euschistus truncatus Fallou, 1888, Naturaliste p. 36.

Zorcadium truncatum: Bergroth, 1918, Ann. Mus. Natl. Hung. 16:308 (re-description)

Yellowish brown base color; irregularly punctate with dark castaneous to black, rather thickly so on dorsum (Fig. 32).

Head a little wider than long, 2.2 mm across eyes; 2.0 mm long. Lateral margins of juga curving sinuously to narrowly rounded apex. Punctuation somewhat clustered on each side of tylus toward base, in part arranged in irregular longitudinal lines on each side of vertex. Distance between eyes 1.4 mm, across ocelli 1.2 mm. Antenniferous tubercles largely exposed from above; length of antennal segments 0.5, 0.5, 1.1, 1.1, 1.3 mm.

Pronotum 8.3 mm wide across humeri, 2.5 mm long at meson. Anterolateral angles produced into small tooth; anterolateral margin obtuse with scattered black denticles. Humeral angles distally curving posteriorly with posterolateral angle farther produced as subacute spine (Fig. 33). Anterior pronotal disk strongly deflexed, calloused and impunctate mesially, behind cicatrices subcalloused and somewhat sparsely castaneously punctate excepting 4 clusters of punctures arranged equidistantly in a nearly transverse

line; each cicatrice with large pale callus near middle; punctation in and surrounding cicatrices mostly fuscous to black; punctation dense along front portion of posterior disk.

Scutellum 3.8 mm wide at base, 3.4 mm long, with a pale subcalloused basal spot near each angle; punctation sparse along midline; distal end of each frenum marked by fuscous spot; lateral margins convex along frena, beyond frena parabolic with narrowly rounded apex. Punctation of coria finer than on scutellum, lacking in lacuna near distal end of radial vein. Membrane of hemelytra fuscous; veins few, darker, simple with occasional spur. Connexivum narrowly exposed, finely punctate, a few punctures at sutures black, others brown.

Evaporative areas sparsely and finely black punctate. Venter of head, thorax and abdomen on sternites 2–4 between spiracular line and middle of disk rather coarsely punctate; abdomen more finely punctate laterad of spiracular line, nearly impunctate and with broad dark streak down middle of abdominal disk. Spiracles concolorous with surrounding part of sternites.

Ventral margin of pygophore with deep median U-shaped emargination (Fig. 35), border developed into two distinct flattened lobes on each side of emargination (Fig. 34); dorsal margin broadly arched. Proctiger box shaped, flat dorsally, free margins narrow and vertical. Claspers C-shaped, compressed; ventral arm longest, bifid, forming 2 short heavily pigmented blunt fingers; dorsal arm short, concealed under dorsal margin of pygophore, apically blunt and heavily pigmented (Fig. 36).

Theca oval, produced apically into narrow rim bearing pair of rounded lobes dorsally. Dorsal conjunctival appendages forming large lightly sclerotized shield surrounding ventral conjunctival appendages and endophalic duct; shield produced laterally into flap on each side (Fig. 37); ventral conjunctival appendages when not expanded enclosed by dorsal appendages, bifid, forming 2 heavily pigmented horns, the ventral horn larger (Fig. 38). Endophalic duct short, almost straight, projecting centrally at base of conjunctiva. Median penial lobes absent.

Basal plates of female concealed; tenth sternite subquadrate (Fig. 39).

Voucher specimen.—Female labeled (a) "Forested eastern foothills of the Andes, 2000 ft." (b) "Peru: Tingo Maria 1 km E. of town. At edge of woodland, 5. viii. 1971." In the British Museum (Natural History).

Comment.—The holotype of *Euschistus truncatus* was in the Museum National d'Histoire Naturelle, Paris, but has been misplaced or lost according to Prof. J. Carayon (personal communication). In addition to the voucher specimen, a male is in the private collection of Dr. H. Dodge Engleman.

Acknowledgments

We are grateful to Mssrs. W. R. Dolling of the British Museum (Natural History), H. Dodge Engleman, R. C. Froeschner of the U.S. National Mu-

seum, Luis de Santis of the Universidad Nacional de La Plata, Facultad de Ciencias y Museo, Randall T. Schuh and P. Wygodzinsky, both of the American Museum of Natural History for loans of specimens essential for this work.

We wish to acknowledge especially the labor of Prof. J. Carayon in searching fruitlessly for a Bergroth type and the critical reviews of parts of the manuscript by Dr. Jocélia Grazia and Mssrs. H. Dodge Engleman and Donald B. Thomas.

Dr. P. Alayo's help was indispensable in solving the mystery of Valdés' listing of *Nezara marginale*.

Literature Cited

- Alayo D., P. 1967. Catálogo de la fauna de Cuba. XVIII. Los hemípteros de Cuba. II. Familia Pentatomidae. Mus. "Felipe Poey" Acad. Cien. Cuba Trabajos Divulgación 43:1-47.
- Banks, N. 1910. Catalogue of the nearctic Hemiptera-Heteroptera. Amer. Entomol. Soc., Philadelphia. 103 pp + viii.
- Barber, H. G. and S. C. Bruner. 1932. The Cydnidae and Pentatomidae of Cuba. J. Dept. Agr. Puerto Rico 16(3):231-280 + 3 pls.
- and S. C. Bruner. 1946. Records and descriptions of miscellaneous Cuban Hemiptera. Bull. Brooklyn Entomol. Soc. 41(2):52-61.
- Berg, C. 1892. Nova Hemiptera faunarum Argentina et Uruguayenses. Ann. Soc. Cient. Arg. 33:7-11.
- Bergroth, E. 1918. Hendecas generum Hemipterorum novorum vel subnovorum. Ann. Mus. Natl. Hung. 16:298-314.
- Bruner, S. C. and H. G. Barber. 1949. List of the Pentatomidae of Cuba, with the description of a new species. Mem. Soc. Cubana Hist. Nat. 19(2):155-165.
- Callan, E. McC. 1948. The Pentatomidae, Cydnidae and Scutelleridae of Trinidad, B. W. I. Proc. R. Entomol. Soc. London (B) 17:115-124.
- Dallas, W. S. 1951. List of the specimens of hemipterous insects in the collection of the British Museum. London. 592 pp.
- Distant, W. L. 1880-1893. Insecta. Rhynchota, Hemiptera-Heteroptera. In Godman, F. D. and O. Salvin. Biologia Centrali-Americana. Vol. 1. London.
- . 1900. LII-Rhynchotal notes IV. Heteroptera: Pentatominae (part). Ann. Mag. Nat. Hist. (7)5:386-397, 420-435.
- . 1900. Revision of the Rhynchota belonging to the family Pentatomidae in the Hope collection at Oxford. Proc. Zool. Soc. London (1900):807-824 + 2 pls.
- Fallou, J. 1888. Hémiptères nouveaux recueilles a Minas Geraes. Le Naturaliste (2)1:36. (not seen)
- Fennah, R. G. 1935. A preliminary list of the Pentatomidae of Trinidad, B. W. I. Trop. Agr. (Trinidad) 12(7):192-194.
- Herrich-Schäffer, G. A. W. Wanz. Ins. 3:17-114 (1836) and 8:1-48 (1845).
- Kirkaldy, G. 1909. Catalogue of the Hemiptera (Heteroptera). Vol. 1. Cimicidae. Berlin.
- Lethierry, L. and G. Severin. 1893. Catalogue général des Hémiptères. Vol. 1. Brussels and Berlin.
- Pirán, A. A. 1948. Contribución al conocimiento de la despersion geográfica de los hemípteros neotropicales. Acta Zool. Lilloana 5:5-17.
- Rolston, L. H. 1976. An evaluation of the generic assignment of some American Pentatomini (Hemiptera: Pentatomidae). J. N.Y. Entomol. Soc. 84(1):2-8.
- Rolston, L. H., F. J. D. McDonald and Donald B. Thomas, Jr. 1980. A conspectus of Penta-

- tomine genera of the Western Hemisphere—Part 1 (Hemiptera: Pentatomidae). J. N.Y. Entomol. Soc. 88:120–132.
- Stål, C. 1860. Bidrag till Rio Janeiro-traktens, Hemipter-fauna. K. Svenska Vet.-Akad. Handl. 2(7):1–84.
- . 1861. Miscellanea hemopterologica. Ent. Zeit. Stettin. 22:129–153.
- . 1867. Bidrag till Hemiptererans systematik. Conspectus generum Pentatomidum Americae. Ofv. K. Svenska Vet.-Akad. Forh. 24(7):522–534.
- . 1872. Enumeratio Hemipterorum 2. Enumeratio Cimicinarum Americae. K. Svenska Vet.-Akad. Handl. 10(4):3–65.
- Valdés R., P. 1910. Clasificación Gundlach de los hemípteros cubanos. Ann. Acad. Cien. Méd., Fis. y Nat. Habana, Cuba. 46:425–446.
- Van Duzee, E. P. 1916. Check list of the Hemiptera (except Aphididae, Aleurodidae and Coccidae) of America, north of Mexico. N.Y. Entomol. Soc. xi + 111 pp.
- . 1917. Catalogue of the Hemiptera of America north of Mexico. Univ. Calif. Publ., Techn. Bull. 2. xiv + 902 pp.
- Walker, F. 1867–1873. Catalogue of the specimens of Hemiptera Heteroptera in the collection of the British Museum. 2:241–417 (1867) and 3:418–599 (1868).
- Westwood, J. O. in F. W. Hope. 1837. A catalogue of Hemiptera in the collection of the Rev. F. W. Hope, M. A. with short Latin diagnoses of the new species. Part 1. London 46 pp.

(LHR) Department of Entomology, Louisiana State University, Louisiana Agricultural Experiment Station, Baton Rouge, Louisiana 70803 and (FJDM) Department of Plant Pathology and Agricultural Entomology, University of Sydney, Sydney, N.S.W. Australia 2006.

Received for publication October 1, 1980.



Rolston, L H and Mcdonald, F J D. 1980. "Conspectus of Pentatomini Genera of the Western Hemisphere: Part 2 (Hemiptera: Pentatomidae)." *Journal of the New York Entomological Society* 88, 257–272.

View This Item Online: <https://www.biodiversitylibrary.org/item/206070>

Permalink: <https://www.biodiversitylibrary.org/partpdf/180110>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In Copyright. Digitized with the permission of the rights holder

Rights Holder: New York Entomological Society

License: <http://creativecommons.org/licenses/by-nc/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.