The Genus Jadera STÅL, **1862**

(Heteroptera, Rhopalidae)

By

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(with 63 figures in the text)

Summary

The genus *Jadera,* which occurs solely in North America, was revised as part of a compiled general catalogue of the Rhopalidae. So far 15 species are known, of which seven are described anew.

This revision of the genus *Jadera* took place as part of a compiled general catalogue of the Rhopalidae. Even though there was a revision in 1943 by BAYARD, this current revision was necessary for various reasons. In 1943, during World War II, it was not possible to compare all types. Additionally, several new species were found during the inspection of BAYARD's material. BAYARD's work was commissioned as part of a M.A. Thesis; it remains unpublished. Consequently, this thesis never was printed, and is therefore not well known. Since the ICZN code (ch.III "Norms of Publishing", §7-9) does not explicitly consider prohibited this form of publication, I consider BAYARD's work a valid publication, especially since it contains the new description of new a species.

With respect to this revision, all types could be compared with the exception of the type *haematoloma* HERRICH- SCHÄFER, which could not be found. Apart from this exception, there was enough material for comparison and most types could be compared and examined in sufficient detail. The material referenced herein originated from the collection at the Zoological Museum Berlin, as well as from other European and American Institutions.

I would like to thank all those who lent me types and material, thereby making possible a revision and re-examination: Prof. Dr. P.D. ASHLOCK (Lawrence), Dr. P.H. VAN DOESBURG (Leiden), Prof. L. DE SANTIS (La Plata), Dr. W. R. DOLLING (London), Dr. R. GOLDBACH (Tucumán), Dr. I. LANSBURY (Oxford), Dr. N. MØLLER ANDERSEN (Copenhagen), Dr.P.I. PERSSON (Stockholm), Dr. G. PETERSEN (Eberswalde), Prof. J.C. SCHAFFNER (Texas), Dr. R. T. SCHUH (New York) and Dr. J.L. STEHLIK (BRNO).

In order to examine the genitalia, the insects were soaked in BARBER's solution for 5-10 minutes. After they were washed with distilled water, the genital segments were cut off and boiled for a short time in 10% KOH. They were then transferred into glycerin for examination. All material was stored in small glycerin-filled vials.

Jadera STÅL, **1862**

K.Vet. AK. Handl., N.F.**3**, Nr.6,59; BAYARD, 1943, M.S. Thesis Iowa St. Coll.,I, Fig.; CHOPRA,1967, Trans.Ent.Soc. Lond.**119,** 387, Fig.

The genus *Jadera* was described by STÅL in 1862 for the two already known species *Serinetha coturnix* BURMEISTER, 1835, and *S. discolor* STÅL, 1860. *Jadera* (*coturnix=) sanguinolenta* FABRICUS, 1775 was considered the type species for the genus, since *coturnix* had already been considered a synonym of *sanguinolenta* by STÅL, strangely in the genus *Serinetha*. In my opinion *coturnix* is synonymous with *aeola* DALLAS and not *sanguinolenta*, therefore *aeola* instead becomes the type species for the genus. It has later been described as *coturnix,* but the name *aeola* has been used consistently, and is therefore valid. The second species *discolor*, which STÅL considered part of the genus *Jadera* is conspecific with *obscura* WESTWOOD.

According to SCHAEFER (1965), *Jadera,* as well as the very closely related genus *Leptocoris,* belong to the Rhopalid subfamily *Serinethinae*. The main diagnostic feature of the two genera is the respective length of the bucculae; these are short in *Leptocoris* and reach the middle of the head, whereas the bucculae of the members of *Jadera* are longer and run to the end of the head.

The description of the genus *Jadera* by STÅL is very short, and not very specific. Members of *Jadera* are middle- sized to large insects, of mostly brown, red or sometimes even black color; they are 8-18mm long, and 2-5mm wide. Most species typically have a very short, closely oppressed setae, and also longer, dark, bristly setae, which partially grow out of the often distinct warts on the dorsum. The species *obscura* and *antica* lack these structures on their hemelytra.

The head of *Jadera* is triangular and the antennal protuberances are slightly pronounced. The medium-sized eyes extend laterally beyond the margin of the head and the very pronounced ocelli are on small protuberances. The area of the head is slightly convex, and the setaceous protuberances of the warts are ordered in relatively vertical lines. The clypeus projects slightly past the tip of the head. The bucculae are very slender, reaching the end of the head and they generally are not very species-specific. With the exception of the first, the antennal segments are very elongate.

The pronotum is trapezoidal in shape and its anterior margin is partially granulated in texture. Posterior to the anterior margin is a horizontal suture. The sides become more convex as they extend posterolaterally from this suture, and they are covered in short, black hair. A raised line bisects the pronotum between the suture and the posterior pronotal margin. The scutellum is long and triangular and its sides and tip are slightly convex. The legs are mostly brown or black, with often distinct, fine dotting; the hind legs are very long. The hemelytra are very sclerotized and the veins and the wing surface are covered in setae, which sometimes grow on warts. The costal margins are slightly convex in the center, which gives the wings an oval shape. The variably veined membrane generally reaches well over the abdomen. However, in some species brachypterous forms occur, which typically have a very short membrane.

The abdomen consists of the visible tergites 1-7 resp., sternites 2-7 as well as five distinctly pronounced paratergites. Tergites 1 and 2 are closely connected to each other and they have a partial circular band that leads inward from the lateral margins (*haematoloma* does not possess this character). This is found in both male and female specimens. The anterior margin of the fifth tergite is straight, however the posterior margin is distinctly produced in the center. The final abdominal segments have a variable, modified morphology.

In males, the ninth segment has become the pygophore. Its ventral posterior margin bears long hairs on the tips. The middle setaceous tip is also the end of the diaphragm. It is located, with one exception, more within the genitalia than without. At its base, separated from it by a deep depression, runs a rim, which bears small, fine setae. The 10th segment is attached to the 9th by a membrane, its top is distinctly sclerotized, and developed and covered in spines to a degree depending on the species.

The females' 7th sternite is slightly convex in the middle and occasionally slightly grooved in the middle. The 8th and 9th tergite carry the valviferi and the valvulae. The 10th segment is very long.

Fifteen species of the genus *Jadera* are currently known, and they all occur in America. Their area of distribution reaches from North America (Canada) to the West Indies and Central America to South America. Two of the species occur in North and Central America, the rest in both Central and South America (3 species) or only in South America (8 species). The center of origin of the genus thus should be searched for in South America, perhaps in Central America.

Characterization of the species

1a. aeola aeola DALLAS,1852 (Fig.1-5)

Serinetha aeola DALLAS,1852: List. Hem. **2,** 463; *Jadera aeola* STÅL, 1870, K.Sv.Vet. Ak.Handl.**9,** Nr.1, 227; BAYARD, 1943, M.S. Thesis Iowa St. Coll.,19 Taf. IV,3; *aeola aeola* GÖLLNER- SCHEIDING (**nov. stat.**)

Pyrrhotes bicolor (WESTWOOD), 1842: Cat. Hem. Hope, II, 6,26 (syn.nov.)

Therapha cinera AMYOT/SERVILLE, 1843: Hist. nat. Ins. Hem. 244 (syn. nov).

Lygaeus conspersus WALKER, 1872: Cat. Het., **5**, 47.

Leptocoris coturnix BURMEISTER, 1835; Handb. Ent. **2,** 205 (syn.nov.)

Jadera aeola was described by DALLAS in 1852, according to material from Mexico. The type could be examined. Contrary to DALLAS' information though, it is a female, not a male. The species is one of the most difficult to describe of the genus *Jadera*. Due to its wide variation with respect to size and color, which is caused both by its resemblance to *sanguinolenta* and its wide distribution and occurrence on several islands, many false determinations, and superfluous synonymizations have occurred. The name *aeola* however, has always been in use, even though it is younger than most of its synonyms, and therefore it is valid. *Pyrrhotes bicolor* has been considered synonymous with *sanguinolenta* by DISTANT 1901, I however consider it conspecific with *aeola,* due to its red color. The name *Pyrrhotes bicolor* also corresponds to *Therapha cinerea*, a variety that can be found more often in Central America and the West Indies which could not be examined but had been declared synonymous with *coturnix* by STÅL in 1862. However, after a comparison of the types, I consider it to be a South American sub species of *aeola, and cinerea* thus would also be= *aeola*; *coturnix* has also been considered synonymous with *sanguinolenta.* The type *conspersus* could be compared; this species was already considered synonymous with *aeola* in 1901.

Types: *aeola* DALL. Mexico (Holotype♀, Mus. London)

bicolor WESTW.:Inst. Amer.? (Holotype ♀ without location and without information from WESTWOOD, HOPE Dept. Oxford, Nr. 392)

cinerea AM./SERV.:Brazil (no information=

conspersus WALK.: Rio de Janeiro, Dec. 1856, H. CLARK (Lectotype ♀; Mus. London).---Paralectotype: as Lectotype

coturnix BURM.: Rio, v. OLF. (Lectotype ♂; Mus. Berlin, Nr. 1644)

Description: The species is highly variable with respect to size and color; the typical specimens are brown with relatively numerous dark spots and a small red section on the lateral margins of the pronotum. The brown varies in shade from light (mainly Central America) to dark (mostly South America, but also Jamaica); sometimes the spots are scarcer or the red coloration of the head and the pronotum is more pronounced (Central America, West Indies). *Jadera aeola* in my opinion is a species that is in the process of separating into sub species. This is based on my examination of darker and smaller insects in South America, as well as the specimens from Jamaica that deviate from the typical appearance of the species.

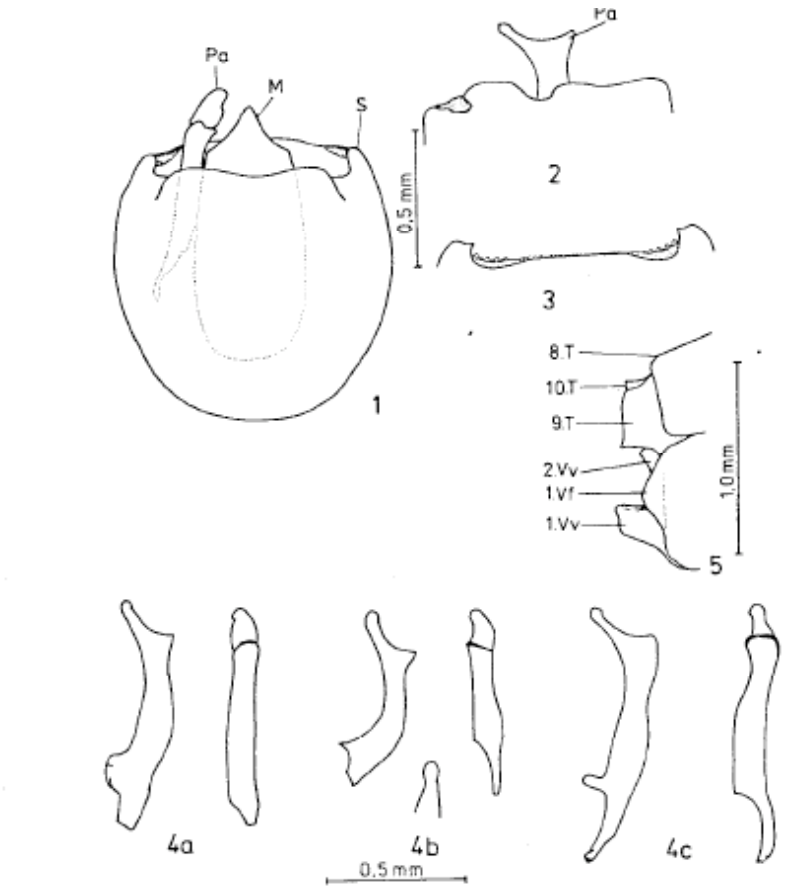

Fig. 1 - 5: *Jadera aeola aeola* (DALLAS) — 1. Pygophore, ventral view; 2. Pygophore, posterior margin, lateral view; 3.Pygophore posterior margin, dorsal view; 4. Paramere, lateral: (a) Panama, (b) Argentina, (c) Jamaica; 5. Genital segments, female, lateral view (M= central point, Pa= Paramere, S= tip at the side, T= tergite, 1. Vf=1st Valvifer, 1st resp. 2nd Vv = 1. resp.2nd valvula

The head is variably red, broad, and short and in contrast to the relatively flat *sanguinolenta*. It is more convex in the female specimen than in the male. The tender, dark spots are ordered in vertical lines, especially at the center of the head. The brown segments of the antennae are elongated, the 2nd and third segments are about the same length, and the terminal antennal segment is very long. The anterior margin of the pronotum is relatively long; the lateral margins are generally distinctly rounded posteriorly and like the center line, red from the horizontal suture on. The spots on the hemelytra are distinctly irregular, especially on the sides and bigger on the veins, the sides of the front wing are slightly convex, and the membrane is brown, partially with bigger brown spots. The rostrum reaches the third sternite, and is somewhat shorter than other congeners.

Size: Males 8.1-10.00mm, width 2.2-3.0mm

Females 10.5-12.6mm, width 3.1-3.8mm

Genital segments: a) Males: Ventral posterior margin of the pygophore has small, rounded lateral points, and tapers centrally into a slightly longer point. The ventral rim before the central point is slightly more grooved in the center, and the lateral posterior margin has a distinct depression above the paramere. The dorsal posterior margin runs almost straight, but is dorsally sclerotized around the 10th segment; this section is pear shaped and bears dorsally visible thorn-shaped projections. The parameres generally have a relatively pronounced tip, are elongated and thickened distally, and bear dorsally visible lateral swelling.

Interestingly, there is a population in Jamaica, nearby islands, and British Honduras, which is distinguished by its darker coloration, and a different shape of the parameres. The lateral swelling is not very pronounced. My original assumption that it could be a sub species was proven wrong, and "normal" *aeola* also occur at the locations; more or less distinct intermediate insects could be found. A field investigation could possibly lead to the clarification of this matter. I also considered a species between *aeola* and the species *hinnulea,* which mostly occurs in Mexico and Texas, but *hinnulea* can be distinguished from *aeola* relatively easily.

b) Females: In lateral view, 1st valvula is broadly protruding, whereas only a small tip is visible from the 2nd Valvula.

Distribution: *Jadera aeola* is the most widely distributed species of the genus. It can be found from Mexico to Argentina.

1b. aeola rufoculis KIRBY, **1890 (Fig. 6-8)**

Lygaeus rufoculis KIRBYm 1890: J. Linn. Soc. Zool.,**20,** 546; *Pyrrhotes rufoculis* BLÖTE, 1934, Zool. Meded.,**17,** 169.

Jadera sanguinolenta, BAYARD, 1934,M.S Thesis Iowa State Coll., 15.

Jadera aeola rufoculis, GÖLLNER- SCHEIDING (**nov. comb.**)

In 1890, Kirby described a new species, which he considered as belonging to the Lygaeidae, under the name *Lygaeus rufoculis*, from the island Fernando Noronha/Brazil (32°25' western longitude, 3° 50' southern latitude). The insects were found in large numbers under the bushes of a Jaquinia sp. BLÖTE also recorded Curaçao as a location, but examination of the insects found there determined that they belonged to a different species. The sub species therefore seems to be endemic on the above named island. Its status has been changing: it has sometimes been considered a separate species, and sometimes considered as synonymous with *sanguinolenta.* The insects can be easily distinguished from *aeola* in terms of its habitat, and examination of the genitalia suggests that it is a distinct species.

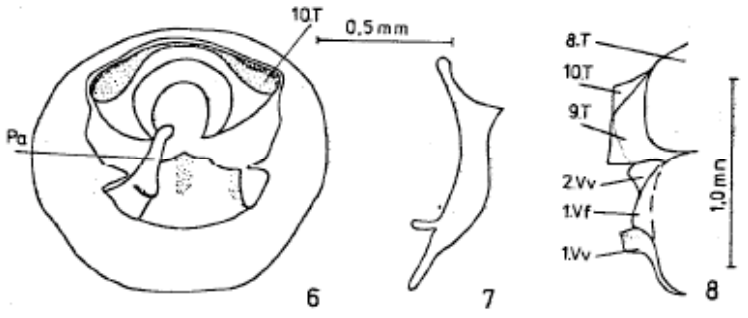

Fig. 6-8 *Jadera aeola rufoculis* (KIRBY) — 6. Pygophore, posterior view; 7. Paramere, lateral view; 8.Genital segments, female, lateral views

Types: Fernando Noronha/Brazil (Lectotype ♂; Mus. London, Nr. 88/10). – Paralectotype: 5♂♂, 4 ♀♀ as Lectotype; 2 ♂♂, 1♀ Fern. Nor. (Mus. Berlin, Leiden, and London).

Description: *aeola rufoculis,* contrary to *aeola aeola*, is typically distinctly red, rarely reddish-brown. Additionally, the spots on the upper side of the body are smaller than in the type. Bigger spots are only scattered on the veins of the hemelytra.

The head, the antennae and the legs, as well as the sides of the hemelytra are brown. On the red ventral surface of the body, the thorax is covered in very fine, brown spots each with one bristle. The abdominal sternites bear indistinct red spots, and are covered in a short, fine pubescent and larger dark bristles. Whereas the brown hemelytral membrane of the male is only slightly shortened, as opposed to the other species of *Jadera*, the females all were brachypterous, and only possessed a short membrane. These insects have a slightly enlarged head, and the pronotum and abdomen are wider than in the macropterous specimens.

Size: Males: Length 9.2 -10.00 mm, Width 3.1-3.3mm

Females: Length 10.3-11.1m, Width 3.7- 3.9mm

Distribution: The sub-species so far is only known to be on the island of Fernando Noronha/Brazil (Type series)

2. antica WALKER,**1872 (Fig. 9-11)**

Lygaeus anticus WALKER part., 1872: Cat. Het., **5**,46 ; *Jadera antica* DISTANT, 1901, Ann. Mag. Nat.Hist., (7) **7**, 429, BAYARD, 1943, M.S. Thesis Iowa State Coll., 15, Fig.

The species was described according to material from the West Indies. The re-examination of that type series showed that it was a mixture of several different species, which had already been noted by DISTANT. Only two females from the island of St. Domingo correspond to the description of *Jadera antica*, whereas the other specimen turned out to be *sanguinolenta* (1 male from St. Thomas, 2 females Nr. 65/26, without information on location), and *aeola* (1 male and 2 female Nr.66/2 without information on location and 2 females from St. Thomas).

Types: St. Domingo, (Lectotype ♀; Mus. London, 55.1). – Paralectotype: As Lectotype.

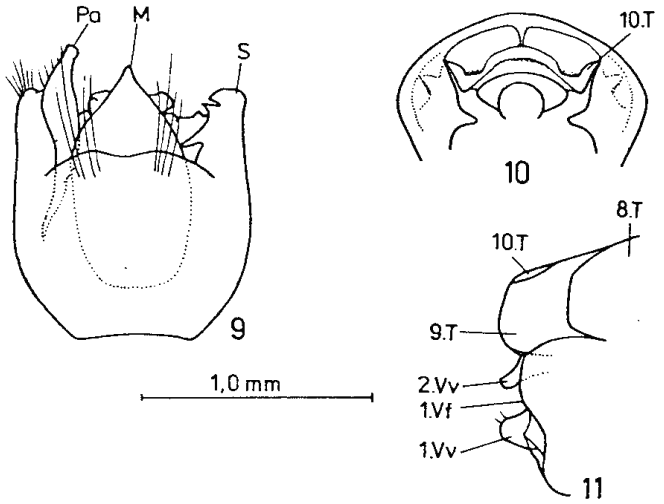

Fig. 9-11 *Jadera antica* (WALK.), --9 Pygophore, ventral, 10 Pygophore, posterior view; 11. Genital segment, ♀, lateral view.

Description: Red to reddish-brown, slender, average sized insects without spotting; the body is slightly shiny (especially the wing veins). If the specimen is darker, the sides of the head, the anterior margin of the pronotum and the scutellum are red, generally without bristly setae.

The head is slightly convex, and relatively short with a broad tip. The area around the head is partially dark in the center and is covered by rows of warts, each bearing two bristles. The lower side of the head is red, except for the darker tip of the bucculae. The antennae are light to darker brown, and they are covered in short hair. The anterior margin of the pronotum is relatively straight and covered in warts. The red side of the pronotum extends without any enlargement angular to the back (the width in the back is 1 ½ the frontal width). The side of the front wing is barely convex and is dark in the red specimen. The area of the wing is closely covered in hair, and the veins bear single bristly setae. The corium appears to be wrinkled and the dark membrane distinctly extends beyond the abdomen. The dorsal side and the lower side of the body are both red. The lower side of the thorax is partially brown, especially on the sides. The rostrum reaches the rear coxae.

Size: Males: Length: 7.4- 9.1mm, width 2.3-2.7mm

Females: 8.5mm-10.3mm, width 2.9-3.3mm

Genital Segments: a) Males: Ventral posterior margin of the pygophore has relatively long and rounded lateral tips; these have a small spout inside, and a slightly longer tip in the middle. The dorsal side of the 10th segment is distinctly sclerotised, yet lacks thorns. The parameres are convex on both sides, with a small rounded end piece, which reaches over the middle tip.

b) Females: 7th tergite and sternite are of the same length, 7th sternite is slightly grooved in the middle, pointing to the front. In lateral view, the 1st valvula appears to be broadly rounded, and the 2nd valvula is pointing downwards.

Distribution: The available specimens originated from Florida and the West Indies. Otherwise, the species seems to be limited to Central America.

3. choprai n. sp. (Fig. 12-17)

Jadera choprai n.sp.

Jadera sanguinolenta BAYARD, 1943, M.S.Thesis Iowa St. Coll., 14, Slate III.2.

This species is abundant in South America. Specimens in most collections were identified as *sanguinolenta*, but a comparison of the types showed that it is does not belong to that species. BAYARD also considers it *sanguinolenta,* but included the West Indies in its distribution (among other locales), whereas the material in question is only found in South America. The figure of BAYARD's provided as a representation of his *sanguinolenta* specimens clearly corresponds to the new species *choprai.* How this mistake could have happened is a mystery to me, especially since FABRICUS is explicitly mentioned a lack of spotting in his description. I would like to name the new species after Dr. N. CHOPRA, curator at the Department of Entomology at the Haryana Agriculture Department, University of Hissar (India), the editor of an overview of the Rhopalidae.

Types: Samuturate/Bolivia, 27.12.1930, Dr. EISENTRAUT (Holotype ♂; Mus. Berlin, Nr. 1090/31). Paratype:1♀ as holotype; 1♂, 1♀ Dept. Santa Cruz Prov. Cordillera, Las Juncas/Bolivia,II, 1947, PEREDO (Mus. Tucuman); 2♂♂, 2 ♀♀ Dept. Santa Cruz, Prov. Cordillera, Cabazas/Bolivia, I 1947, coll. PEREDO (Mus. Tucuman and Berlin).

Description: Medium sized, somewhat larger insects of ochre-orange coloration with strong, irregular spots, and dark bristly hair; brachypterous.

The head is orange and sometimes also brown. The white hair is distinctly ordered in horizontal rows, sitting on dark colored warts. These warts mostly are on the tip of the head. The head is relatively broad, and slightly convex. The antennae are blackish-brown, and elongated; the 2nd member is as long as the 3rd. Horizontal sutures, as well as the sides, and the center line is orange posterior to the horizontal suture on. The sides of the pronotum are less spotted than the center. The scutellum is orange, barely spotted, and bristled; the side is covered with dark, bristly hair. The hemelytra are yellowish-orange, sometimes brown-orange, and have small and large dark spots. The sides and the veins are coarsely dotted, with smaller dotting seen mostly on the wing area. The radial- medial and cubital-vein, as well as the vein on the posterior margin of the corium are typically± thoroughly orange. The cells, the veins and the area of the corium are partially covered with dark, bristles; the oval shaped side is covered in bright hair. The membrane is brown, and extends far over the abdomen. The legs are brown, the lower side ochre, and posterior margins of the sternites are each a different shade of orange, and have dark, bristle-bearing spots. The rostrum is dark brown, and reaches the 3rd or 4th abdominal segment. With brachypterous forms, the head usually is wider and more convex, the pronotum is wider and squarer, and the membrane is reduced to a small segment.

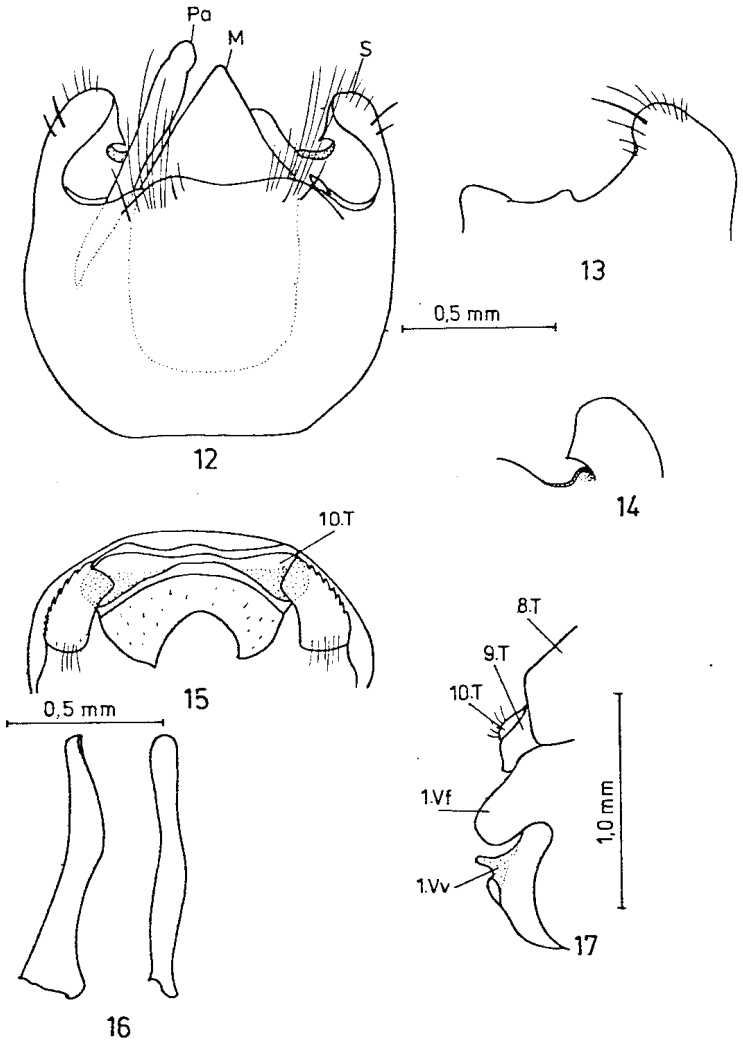

Fig 12-17 *Jadera choprai* n.sp. — 12. Pygophore, ventral view; 13. Pygophore, lateral posterior margin; 14. Pygophore, dorsal posterior margin; 15. Pygophore, posterior view; 16. Paramere, lateral and posterior views; 17. Genital segments, female, lateral view

Size: Males: Length 8.6-9.7mm, width 2.2-2.6mm (brachypterous about 7.1:2.2mm)

Females: Length: 9.1-12.3mm, width 2.5-3.6mm (brachypterous 8.0:2.5mm)

Genital Segments: a) Males: Ventral posterior margin of the pygophore has a long triangular middle tip and distinctly shorter, rounded, and broadly reverted lateral tips. These lateral tips are dorsal inside, and have a small spout pointing downwards. They have a few strong setate, which the similar species *decipiens* lacks. The lateral tips are strongly rounded in rear and lateral view. The dorsal side of the 10th segment is pear shaped and covered in little thorns. The parameres are slender and rounded at the end and when looked at from the bottom to top they don't have lateral bulges or a broadly rounded end.

b) Females: 7th tergite and sternite about the same length, tergite is slightly convex to the front. In lateral view, the 1st valvifer has a rounded lateral elongation, the 1st valvula has a spout like, rounded tip and2nd valvula not visible.

Distribution: The species is occurs in South America, and the material at hand originated from Paraguay, Bolivia, Brazil, Uruguay and Argentina.

4. decipiens n. sp. (Fig. 18-20)

Among the South American material of the museum in New York I found some insects that I considered to be *choprai* at first. They can be distinguished from *choprai* by their delicate orange color, and the male pygophore; both species are very similar.

Types: Bahia/Brazil, Encruzilhada, 960m, Nov. 1972, M.ALVANRENGA (Holotype ♂; Mus. New York).—Paratypes: 2♀♀ + 6♀♀ as holotype, 1♂♀ Mus. Berlin, location same as holotype.

Description: Small, oval, light brown, or orangish-brown insects, with a delicate dark spotting, and less orange coloration, which makes it easier to them distinguish from *choprai.* The hemelytra are distinctly oval-shaped, and have a lightly spotted membrane that is slightly pointy at the end.

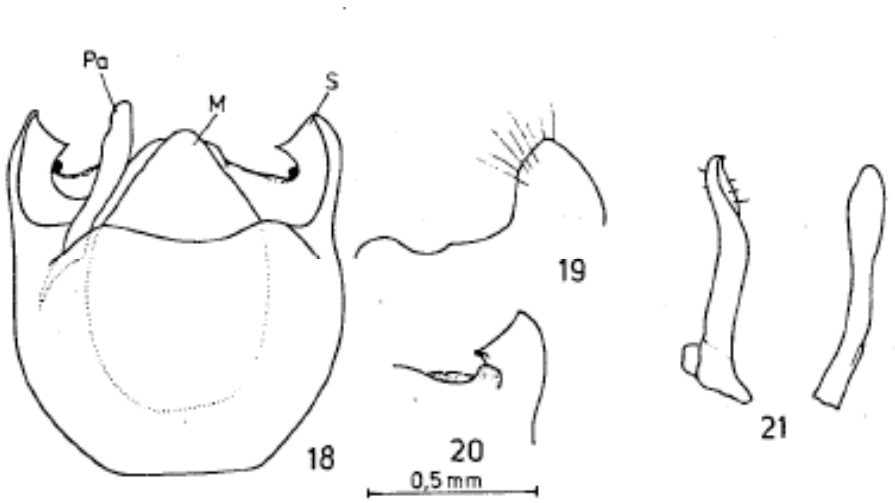

Fig. 18-21: *Jadera decipiens* n.sp. — 18. Pygophore, ventral view; 19. Pygophore, lateral posterior margin; 20. Pygophore, dorsal posterior margin; 21. Paramere, lateral posterior views

The head is reddish-orange, short, and relatively broad; the color was almost black with the dark specimen. It is more strongly convex than *choprai* and relatively well covered with dark spots bearing dark bristles. The antennae are more or less dark brown and elongated. The pronotum is light brown with a relatively long and in the center elongated anterior margin, the horizontal suture is red; the center line and the sides are generally red from the horizontal suture on. The area is uniformly covered with relatively fine and dark bristles, it is relatively long, and the sides widen evenly towards the rear. The scutellum is yellow and has an orange tip, partially the center line is more or less broadly orange, with single dark, bristle-covered spots. The hemelytra are light or dark reddish-brown, and except for the sides, the veins have orange spots or are fully orange in color. This is contrary to *choprai*: on those specimens the orange color is limited to the veins. The veins and the area are evenly fine, but the sides are coarsely covered in dark, bristle-bearing spots. The short, closely oppressed setae is slightly thicker than in *choprai*. The tip of the corium is sometimes brown, and the hemelytra are oval-shaped, which makes the membrane taper towards the wing apex. The membrane overlaps the tip of the abdomen; there are however also brachypterous specimens. The legs are brown and spotted. The ventral surface of the body is light brown with bigger red spots. The rostrum reaches the 3rd or 4th sternite.

Size: Males: Length: 7.7-8.5mm, width 2.2-2.5mm (brachypterous:7.4:2.4mm)

Females: Length: 7.7-9.3mm, width 2.4-2.8mm (brachypterous: 8.1:2.8mm)

Genital Segments: a) Males: Ventral posterior margin of the pygophore with a wider and shorter tip in the center than *choprai*, lateral tips are the same length at the tip and in the center, and they dorsally have a spout showing to the center. The lateral reverting us more slender than *choprai* and the closely oppressed setae are not thick or robust, also the lateral tip is seen from the side or from the back shorter and more pointy at the end than *choprai*; the parameres are slender and slightly leap over the tips, when looked from the bottom upwards lateral bulges can be seen, which makes the ends look more pointy than *choprai.*

Distribution: the species is only known from Brazil: Encruzilhada/Bahia, Natal/ Rio Grande Norte, Marenhao/Ilha de Balsas, Pedra Azul/Minas Geraes; from Argentina: Santa Fe Chaco and also among the material from the West Indies I found 1 ♂♀ from Antigua/Brit. West Indies and 3♂♂ and 3♀♀ from Curaçao.

5. goldbachi n. sp. (Fig. 22-25)

Among the South American material of the museum in Berlin and the museum in Tucuman I found some insects which also resembled *choprai*, but the examination of the pygophores and the parameres showed that they were not identical with this species; the orange color is also not as prevalent as in *choprai*. I would like to name the new species after the director of the entomological department of the Museum in Tucuman, Dr. R. Goldbach, for his generous and friendly help.

Types: Prov. Salta/ North Argentina, 110 m, J.STEINBACH (Holotype ♂; Mus. Berlin). – Paratypes: Abra Grande Oran, Salta, 10.1.-1.3. 1967, leg. R. GOLDBACH (♀; Mus. Tucuman); ruiz de los Llanos, Salta II 1947, R. Goldbach (♀; Mus. Berlin); Catamarca, El Alto, 11. I. 1960, WILLNICK&TOMSIC (1♂,3♀♀; Mus. Tucuman).

Description: Smaller, brown insects with irregular color and a broad head, the scutellum is orange, the corium however is without orange coloration.

The head is very wide and slightly convex, red with dark spots and bristly dark hair. The anterior margin of the pronotum is covered with 3 lines of bristles. The horizontal suture is and the sides are from the horizontal suture on red. Sometimes the line in the center, and the area of the pronotum are spotted black, the sides of the pronotum are convex and the pronotum is ½ times longer in the back than in the front. The scutellum is orange- red with dark spots, and its sides are covered in dark bristles. The front wing is light brown, with more coarse and finer brown spots, and the corium is without the red coloration; the sides are running oval, however more straight than in *choprai*, the membrane is light brown, and partially with dark spots. Brachypterous insects also occur; their membrane is as long as their abdomen. The legs are almost completely black, with single dark spots. The back and the lower side are yellow orange, and closely covered with dark spots. The length of the rostrum varies, it leaps over the rear coxae, sometimes is longer than that.

Size: Males: Length: 7.5-8,8mm, width 2.2- 2.7mm

Females: Length:7.5-9.6mm, width: 2.2mm-3.0mm (brachypterous 6.7:2.5mm)

Genital segments: a) Males: The ventral posterior margin of the pygophore has a longer elongated, slender tip in the middle, lateral tips are slightly pronounced, and shorter than the tip in the middle, the dorsal part of the 10th segment is laterally triangular and has a line of bristles on the upper side; the parameres are elongated, leap over the central tip and have a small spout at the end.

b) Females: From a lateral view, the 1st valvula is broad and has a rectangular corner in its center.

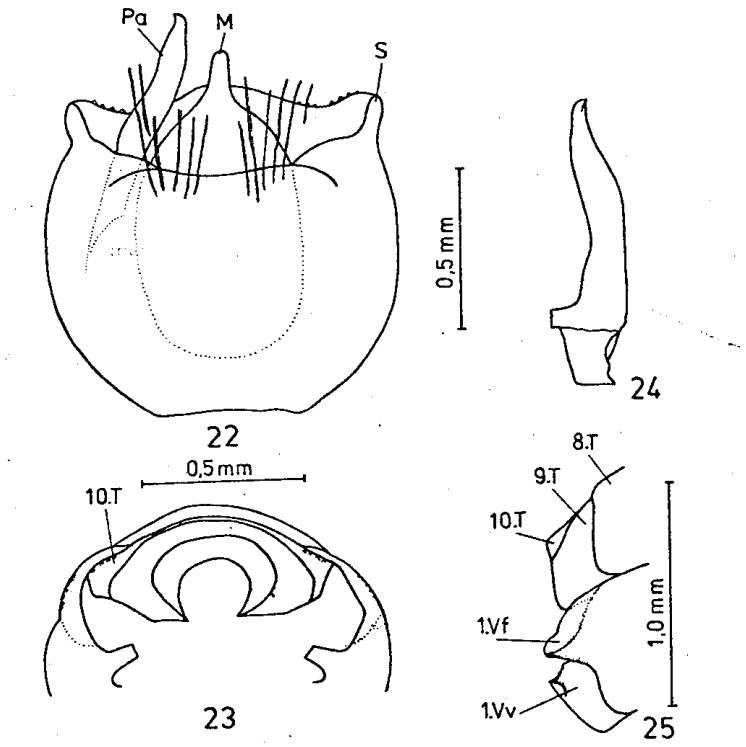

Fig. 22-25 *Jadera goldbachi* n.sp. — 22. Pygophore, ventral view; 23. Pygophore, posterior view; 24. Paramere, lateral view; 25. Genital segments, female, lateral view

Distribution: The species is distributed in Argentina and also occurs in Bolivia (Berjemo) as well as in Ecuador.

6. haematoloma HERRICH- SCHÄFER, **1847, (Fig. 26-28)**

Leptocoris haematoloma HERRICH- SCHÄFER, 1847: wanz Ins., VIII, 103, Slate 284.873; *Serinetha haematoloma* DALLAS, 1852, List Hem., II, 463; *Jadera haematoloma* STÅL, 1870K.Sv.Vet. Ak. Handl., **9**, *Lygaeus marginalis* WALKER, 1872: Cat. Brit. Het., **5**, 45.

The species was described by HERRICH- SCHÄFER based on insects from Mexico. It occurs rather frequently in Central America. The species *Lygaeus marginalis,* which was described by WALKER in 1872, was considered synonym to *haematoloma* by BANKS in 1910.

Types: *haematoloma* H.-S.: Mexico (no evidence)

Marginalis WALK. :Oaxaca/Mexico (Lectotype ♀; Mus. London, 58 135).—

Paralectotype: as Lectotype

Description: Middle-sized to somewhat larger, mostly brownish-black insects without spots, with a bright red, more rarely orange side of the pronotum, and a relatively lightly pubescent pronotum.

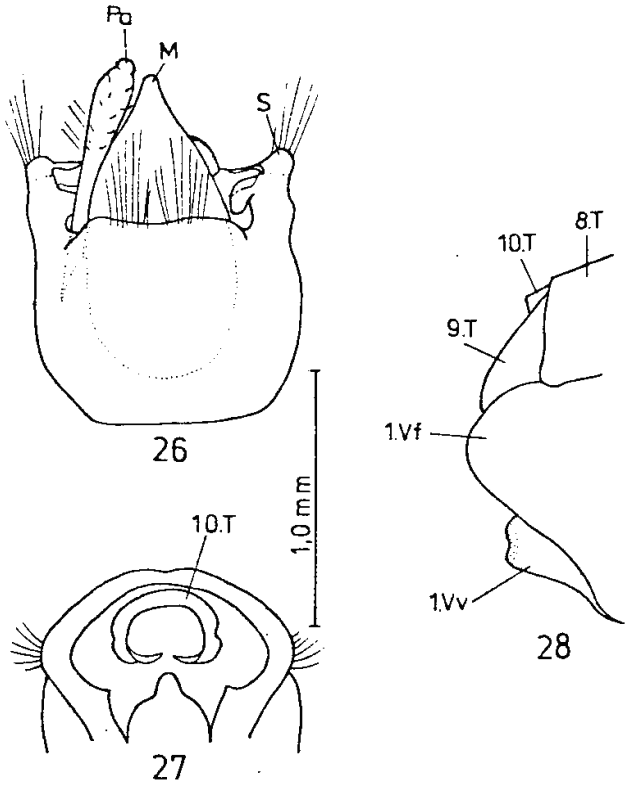

Fig. 26-28: *Jadera haematoloma* (H.-S.) —26. Pygophore, ventral view; 27. Pygophore, posterior view; 28. Genital segments, female, lateral view.

The head is relatively wide, wider than *pyrrholoma*, with which it possibly could be confused. It is dark with the exception of the red color of the sides of the head next to the eyes. Around the eyes is also red on the lower side of the head, as well as the bucculae (these are dark in *pyrrholoma*). The antennae are long and the 2nd segment is distinctly longer than the 3rd. It is relatively long and elongated in the center, covered in broad warts (in *pyrrholoma* it is straighter, and covered in fine warts). The side is red, rarely orange, and from the horizontal suture on relatively broad, it makes up 1/3-1/4 of the area, but to the distinct line in the center. The pronotum is shorter, and less widened in the back than *pyrrholoma,* the rear edges are slightly rounded and bear short, closely oppressed setae; on the lateral margins these hairs are more bristly, the area is wrinkly with an indistinct growth of warts. The sides of the hemelytra trend ovally, but are smaller than in *pyrrholoma,* the membrane is dark and relatively short, there are also brachypterous forms. The hair on the legs is less thick as well, and shorter than *pyrrholoma.* The dorsal side and the lower side are generally dark, with the exception of the ventral sides, of the thorax and the sternites, the posterior margin of the sixth as well as the end of the 7th sternite and also tergite. The anterior margins of the sternites are partially red as well, and the lower side is more red, if the specimen is lighter colored.

Size: Males: Length: 9.6-11.1mm, width 3.1-3.3mm (brachypterous 7.3mm)

Females: Length: 10.0-13.3mm, width: 3.7-4mm

Genital Segments: a) Males: The ventral posterior margin of the pygophore has a long, triangular tip in the center, and shorter, less distinct lateral tips, 10th segment is round and without bristles; parameres are thicker in the upper part, the end is smaller and rounded, the area is covered with thick hair, which only slightly reaches over the tip in the middle.

b) Females: 7th sternite is slightly grooved at the front, laterally slightly elongated, 1st valvifer is elongated to the back, 1st valvula rounded with a little depression in the center.

Distribution: The examined material originated from the central and southern parts of the USA (Missouri, Kansas, Louisiana, Oklahoma, Florida, California and Texas), Mexico, Central America, and from the West Indies to Columbia and Venezuela. The literature also quotes Colorada [sic], and Arizona (UHLER 1872), also Missouri (FROESCHNER 1942). Suggestions about a South American range, for example Argentina (PENNINGTON 1922), are due to confusion with *pyrrholoma,* which is only distributed in South America.

7. harrisi n. sp. (Fig.29-32)

Among the South American material of *aeola,* I found some insects that showed a relatively light brown coloration. The sides of the hemelytra were relatively light, and the veins were lightly covered with greater spots. The spotting of the corium area however was relatively light. The examination of the male genital segments proved, that the insects are a new species. I want to name this species after the researcher of the Rhopalidae in America, Professor Dr. H.M. Harris.

Types: Serra do Araripe, Ceara, State Crato/ Brazil, 850m, V1969, M. ALVARENGA, Holotype ♂; Mus. New York. ---Paratypes: 4♂♂, 5♀♀ as Holotype; 1♂♀ Mus. Berlin, location as holotype.

Description: Medium sized, ochre to light brown colored insects, compared to the similar species *aeola*, the spotting of the corium area is finer. The costal margins of the hemelytra are light and covered with relatively coarse, dark spots, contrary to the similar species *similaris,* which has a dense, irregular spotting.

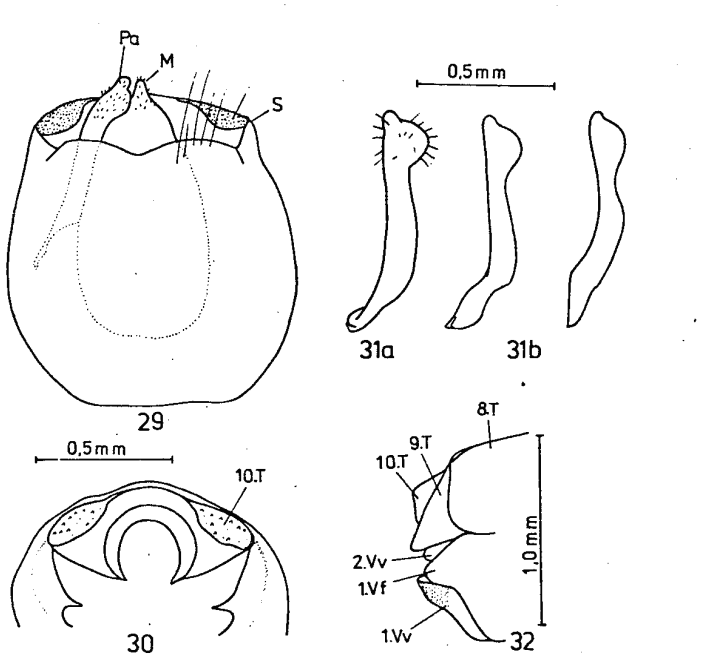

Fig 29- 32: *Jadera harrisi*, n.sp. – 29. Pygophore, ventral view 30. Pygophore, posterior view; 31. Paramere, lateral view, a) Brazil R.Gr. Norte, b) Brazil Ceara; 32. Genital segments, female, lateral view

The head is reddish-orange, it is of medium width, and slightly convex (slightly stronger than *aeola* (♀♀)), the area is relatively evenly spotted brown. The antennae are ochre and elongated. The dorsal surface of the pronotum is ochre, and the relatively large lateral margins of the pronotum are red posterior to the horizontal suture. The hemelytra are brown, the costal margins are more lightly colored than the adjoining area, and loosely covered in coarse spots. The costal margins are almost straight, the membrane is light brown, and partially covered in dark spots. The scutellum is orangish-brown, generally oranger than in *aeola.* The legs are relatively long and ochre. Both the dorsal and the ventral surface of the abdomen bear relatively large red spots, and the ventral surface bears bristly, light-colored setae.

Size: Males: Length: 9.00-10.00mm, width 2.5-2.8 mm.

Females: Length: 9.6-11.4mm, width: 2.8-3.4mm.

Genital Segments: a) Males: The ventral posterior margin of the pygophore has a slightly elongated, triangular tip in the center. The parameres do not extend past the central tip of the pygophore, they are convex, laterally rounded, and bear short, closely oppressed setae (the degree of convexity varies with respect to width). In ventral view the pygophore resembles that of *aeola*.

b) Females: Tergite and sternite 7 are of equal length, and in the center of the 7th sternite there is a rather inconspicuous depression, which points anteriorly. In lateral view, the 1st valvifer projects farther to the posterior than in *aeola*, and the tip of the 1st valvula is slightly pointier than in aeola, but otherwise very similar to *aeola.*

Distribution: The species is known from Bolivia (Prov. Sara) and Brazil (Ceara/ State Crato, Natal/R.G. Norte and Independencia).

8. hinnulea

Jadera hinnulea BAYARD, 1934: M.S. Thesis, Iowa State Coll., 23, Taf. IV.4

Jadera hinnulea was described by BAYARD in 1943, according to material from Texas, Mexico and Panama. The species is very similar to *aeola* and is undoubtedly closely related to *aeola*. My original assumption, that the specimens of *aeola* from Jamaica could be an intermediate form of *aeola* and *hinnulea*, had to be abandoned due to consistent morphological differences from the hinnulea material. Some of the paratypes could also be examined (Field Mus.).

Types: Mexico, Summer 1940, STERNITZKY, (Holotype ♂; originally Col. HARRIS, which is now in the Museum in Washington, but could not be found there).—

Paratypes: Weslaco/ Texas, July 1930, and Potreillis/ Panama, May 1935(Coll. HARRIS); Izamal, Yucatan,G.F. GAUMER (1♂); Brownsville/Texas, 22.IX. 1924, Field Mus. Exp., WEED &PRAY (2 ♂♂,1 ♀), Field Mus.).

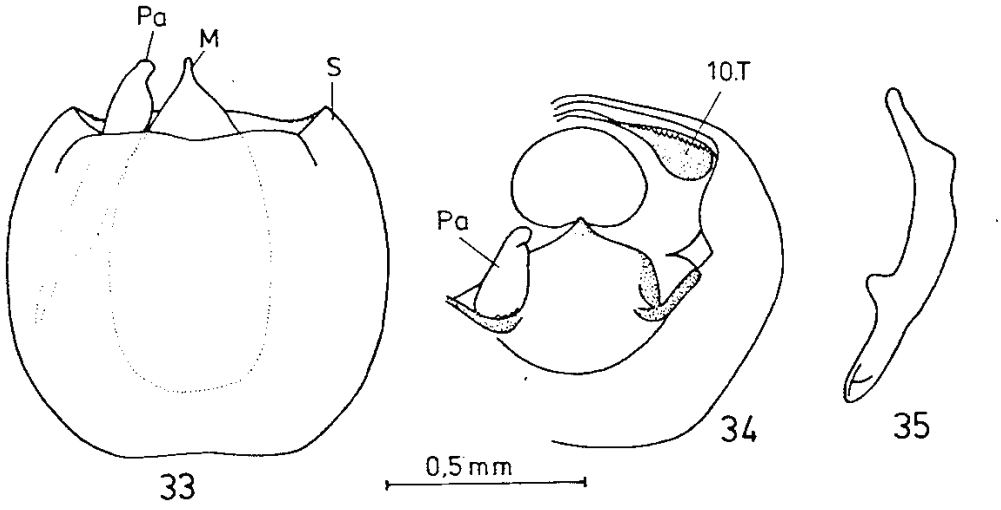

Fig. 33-35. *Jadera hinnulea.* BAY.— 33.Pygophore, ventral view; 34 Pygophore, posterior view; 35 Paramere, lateral view

Description: Medium sized, mostly brown, rarely brighter insects, covered in relatively fine spots and relatively short, white, and closely oppressed setae on the hemelytra. The sides of the hemelytra are small, whitish yellow, and unspotted.

The head is partially red, mostly with red sides though, relatively short and nonconvex, the distance between the ocelli is distinctly bigger than with *aeola*, according to BAYARD three times than the distance ocellus-eye (with aeola the distance is about 2 times). The antennae are dark brown; the second member is slightly longer than the third, and all in all shorter and also slightly stronger than *aeola*. The pronotum is brown with a red side, which runs ± straight angular towards the outside; the posterior margin is 2/3 as broad as the outer side. The hemelytra are brown, with rather regular fine dark spots, and they are covered in short, closely oppressed setae that are thicker than that seen on *aeola,* the sides are unspotted, white yellow, and only slightly convex, the membrane is brown. The legs are dark brown, and indistinctly darker colored. The lower side of the thorax is ± brown with red to brown dark spots, these are covered in bristly hair, the abdomen is orange- red, also more red with red and also spots, which are covered in bristly hair.

Size: Males: Length: 8.2-9.6mm, width 2.4-3.2mm

Females: 8.5-11.8mm, width 2.5-3.6mm

Genital segments: a) Males: Ventral posterior margin of the pygophore has a triangular tip in the center, which is slightly more elongated in *hinnulea* than in *aeola* (variable). The lateral tips are flat; the parameres reach over the tips in different ways, slender, the end is smaller than *aeola* and without a lateral tip. The segment of the pygophore is viewed from above more quadratic, more square with *aeola.*

b) Females: The 7th tergite and the sternite are of the same length; both are more or less distinctly straight at the end. The genital segments cannot be distinguished from *aeola.*

Distribution: The material at hand originated from Texas, Mexico (mostly higher elevation areas) and Panama, also from Brit. Honduras, and Guatemala. BAYARD also worked with insects from these locations.

9. obscura, WESTWOOD, **1842 (Fig.36-38)**

Pyrrhotes obscura WESTWOOD, 1942, Cat. Hem. Hope, II, 6,26; *Jadera obscura,* STÅL, 1870, K.Sv. Vet. Ak.,Handl., **9**,Nr.1,226

Jadera abdominalis WALKER, 1871: Cat.Het. **4,**145.

Serinetha discolor, STÅl, 1860,:K.Vet. AK. Handl., N.F. **2**, Nr.7,32.

Jadera lateralis, STÅL, 1862, Stettt. Ent. Ztg., **23,** 307

The species was described by WESTWOOD according to a female from Rio de Janeiro. It is easily distinguished from other species of *Jadera* due to its relatively slender shape. All types could be compared. *Jadera discolor* and *lateralis* were also described from South America, and they were considered synonymous with *obscura* in 1941 by TORRE- BUENO; *abdominalis* was described by WALKER in 1871 locality data, and it has been proven to be identical to *obscura.*

Types: *obscura*, WESTW. : Rio (holotype ♀, Oxford Hopf Department, Nr. 394, Type without original information.

abdominalis WALK. :Patr. Ign (holotype ♂; Mus. London).

discolor STÅL: Brasil, F. SAHLB. (Holotype ♂; Mus. Stockholm).—Paratype: Rio Jan. STÅL (♀; Mus. Stockholm)

lateralis STÅL: Mexico (Holotype ♂; Mus. Stockholm). The description contains a ♀.

Description: Bigger, slender, mostly dark brown and slightly shiny insects, with broad red and orange head. The hemelytra, lateral and posterior margins of the pronotum are light in color and the costal margins of the hemelytra are light brown.

The head is dark with more or less broad red-colored lateral margins and the juga are also red. The antennae are black, and the second, third, and fourth antennal segments are longer than the first, the fourth even more so. The pronotum is darkly colored, the lateral margins and raised anterior section of the pronotum are yellow and from the horizontal suture on, the center line is very pronounced and lighter in color. The pronotum is relatively long and the anterior margin is subequal in width to the posterior margin. The posterolateral margins are slightly rounded, and the area is only lightly covered with bristly setae. The hemelytra are dark and without warts, but with more closely appressed short setae. The costal margins of the hemelytra are narrow and light brown, almost straight and slightly curved outwardly; posterior portion of the corium is curved outwardly to a greater degree. The membrane is dark and extends past the abdomen. The legs are dark brown and covered in fine dark spots, especially the hind femora. The dorsal surface of the abdomen is reddish-yellow; the ventral surface is ochre and bears red spots, from which project bristly whitish-yellow setae. The posterior margins of the thoracic pleura are whitish-yellow. The rostrum is very long.

Size: Males: Length: 9.4-11.3mm, width: 2.5-2.9mm

Females: Length: 11.1-14.0mm, width 2.8-3.7mm

Genital segments: a) Males: The ventral posterior margin of the pygophore has a long tip in the middle, which is very slender at the end, and has short rounded lateral tips. The parameres have a small, head shaped end and a lateral bulge; they are covered in setae on the sides, and are relatively thickly covered in bristles, which

reach over the tip in the middle. The 1st part of the 10th segment is dorsally more sclerotized and lightly bristled.

b) Females: The middle third of sternite 7 is longer than tergite 7, and slightly grooved in the middle. The 9th tergite is relatively long, 1st valvifer is rounded underneath, and the 1st valvula is very angular and reaches over the more rounded 2nd valvula.

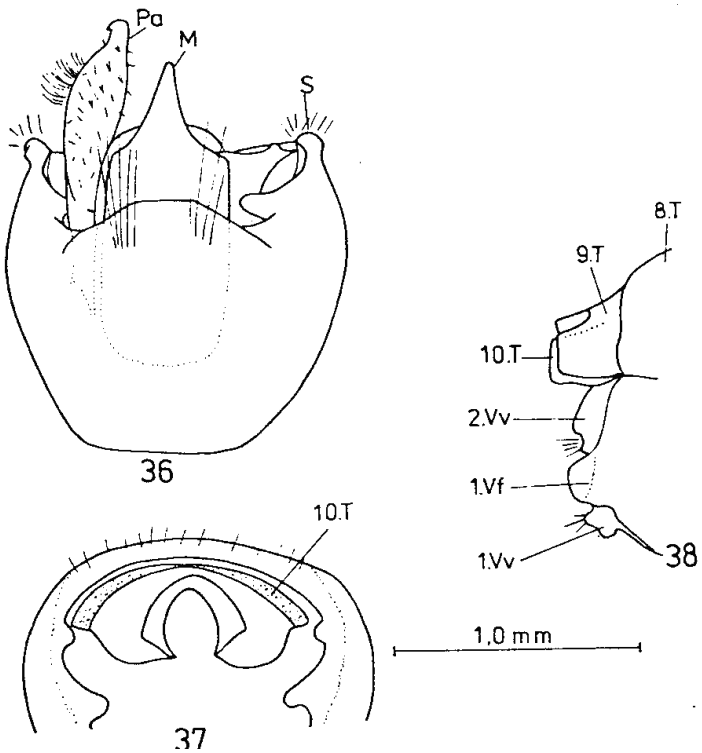

Fig. 36-38: *Jadera obscura* (WESTW.)—36. Pygophore, ventral view; 37. Pygophore, posterior view ; 38. Genital Segment, female, lateral view

Distribution: The material on hand originated from the area between Mexico and Argentina/Peru and therefore the species must be relatively widely distributed.

10. parapectoralis n.sp. (Fig. 39-41)

Among the material from South America I found insects that were very similar to *pectoralis* with respect to color, but they differed with respect to the male genital segments. Whereas *pectoralis* was almost completely unrepresented in the assembled material, much more material of *parapectoralis* could be found. Examination of more insects might demonstrate that *pectoralis* and *parapectoralis* are actually a single species.

Types: Bahia/ Brazil, Gom. (holotype ♂; Mus. Berlin, Nr. 3929). –Paratype: Nova Teutonia, Santa Caterina/Brasil, 27̊11'N,52̊23'W,5.May 1966, FRITZ PLAUMANN(3♂♂+8♀♀; Texas A&M Univ. Dept. Ent.; 1 ♂ +2 ♀♀; Mus. Berlin)

Description: Medium sized, black, oval insects with a reddish-brown head. The lateral margins of the pronotum are red and the dorsal surface of the pronotum bears distinct warts and dull, short, closely oppressed setae.

The head is red to reddish-brown, with black warts on the vertex. The lateral margins are more intensely red and are devoid of warts; it is also relatively flat and short and slightly more slender than in *pectoralis.* The antennae are dark and of medium length, and the second antennal segment is slightly longer than the 3rd. The pronotum has a relatively long anterior margin; posterior to the horizontal suture the lateral margins are red, and smaller than in *pectoralis.* The posterior margin of the pronotum of *parapectoralis* is wider than that of *pectoralis*; also, the lateral margins angle away more strongly than in *pectoralis,* and they are covered in more closely oppressed small warts, which are closer to each other than in *pectoralis*. The raised central suture is visible posterior to the horizontal furrow. The scutellum is dark-colored with a reddish central suture and tip. The oval-shaped hemelytra are black with separated black warts, which are more strongly developed than in *pectoralis*; they bear short, thick, closely oppressed setae. The membrane is dark and reaches over the abdomen. The legs are black, and relatively thickly covered in black setae. The dorsal surface of the abdomen is red and the ventral side is brownish-black. The posterior margin of each sternite is red and thick and bears dark spots from which grow white setae; the spots are more closely arrayed than in *pectoralis.*

Size: Males: Length: 9.4- 10.00mm, width 2.7- 2.8mm

Females: Length: 10.5mm- 11.5mm, width: 3.1- 3.4mm

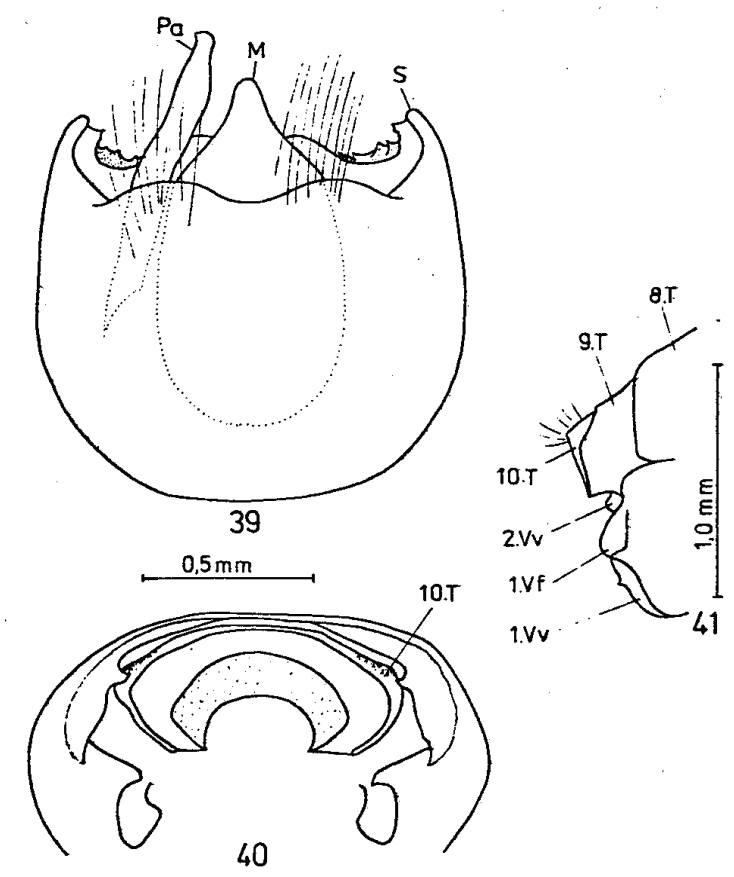

Fig. 39-41 *Jadera parapectoralis* n.sp.—39. Pygophore, ventral view; 40. Pygophore, posterior view; 41. Genital segment, female, lateral view.

Genital segments: a) Males: The ventral apex of the pygophore is wider, and shorter in the middle; the ends of the lateral margins are also slightly shorter. These are slightly more developed than *pectoralis* and they also project dorsally, a quality visible from above. The parameres are slender, reach past the ventral apex of the pygophore, and their ends do not curve toward the lateral margins as in *pectoralis*; they are much more straight in profile and bear a small depression. The first part of the 10th segment is dorsally similar to *pectoralis*; it is long and bears small denticles.

b) Females: The 7th sternite is rounded, slightly convex in the center, and covered mediolaterally in short strong setae. The 1st valvifer is rounded and pronounced and its sclerotized edge is quite angular (more angular than *pectoralis*). 1st valvula is slender conspicuously convex, and in posterior view, more pointed than in *pectoralis.*

Distribution: The examined material originated from Argentina and Brazil.

11. pectoralis STÅL,1862 (Fig. 42-44)

Jadera pectoralis STÅL, 1862: Stett. Ent. Ztg.,**23,** 307, BAYARD, 1943, M.S. Thesis Iowa St.Coll., 28, Taf. V.6.

The species was described by STÅL in 1862 according to material from Brazil. It is easily confused with *parapectoralis* and can be distinguished by examining the male genital segments. *Jadera pectoralis* is rarely found in collections.

Types: Brazil (holotype, ♂; Mus. Stockholm, without label or further information)

Description: Medium sized, blackish-brown, rather oval insects with a yellowish-orange head and broader, yellowish- orange lateral margins of the pronotum, dark spots finer than in *parapectoralis* (mostly on the corium).

The head is broad and flat, broader than in *parapectoralis,* yellowish- orange, and the area of the head is covered in dark warts and setae, which stand out. The antennae are dark, and the antennal segments are longer than those of *parapectoralis*; the 3rd antennal segment is distinctly shorter than the 2nd. The pronotum is brown, and the rounded, orange-red, relatively long lateral margins do not angle away very strongly from the anterior margin. The anterior margin of the pronotum relatively wide, and slightly thicker in the middle

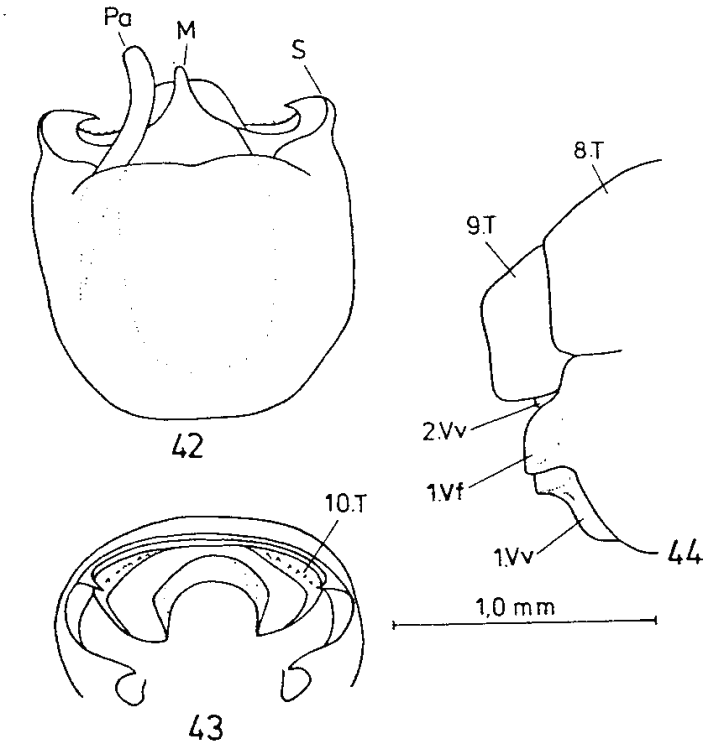

Fig.42-44 *Jadera pectoralis* STÅL — 42. Pygophore, ventral view; 43; Pygophore, posterior view; 44. Genital segments, female, lateral view

. The scutellum is elongate,triangular, dark, and has a lighter colored tip. The hemelytra are dark except for a small, light-colored section (in *parapectoralis* they are black and have no light side). They are very lightly covered in warts, which bear short, closely appressed, whitish setae, and are oval in shape, however they are less strongly developed than *parapectoralis* and and are widest at the end of the clavus. The abdomen strongly projects beyond the costal margin of the wings. The wing membrane is dark. The legs are dark. The dorsal side is reddish-orange. The lower side is brown, and the posterior margin of the each sternite is red, and covered with dark, setaceous spots. The spots are smaller and more loosely distributed than in *parapectoralis*. The rostrum reaches the hind coxae when folded beneath the body.

Size: Males: Length: 10.0-11.1mm, width 3.0-3.1mm

Females: Length: 12.4mm, width 3.3 mm (1 specimen)

Genital segments: a) Males: The ventral posterior margin of the pygophore tapers centrally into a long, thin point, and projects dorsolaterally into flat points. The ventral posterior margin of the capsule has a flat depression in the center, which is much deeper in *parapectoralis.* The parameres are relatively slender, they angle towards the lateral margins on the pygophore and reach over the central point. The first part of the 10th segment is dorsally similar to the one of *parapectoralis.*

b) Females: The genital segments are very similar to the ones of *parapectoralis*. The 1st valvifer and sclerotized edge are more rounded, and the 1st valvula is slightly more angular and, when viewed from behind, appears slightly wider than that of *parapectoralis.*

Distribution: The species is very rare and, except for the type, I could only obtain three specimens from the collection of the Museum in Berlin. They originated from Brazil (Para and Bahia); according to BAYARD, *pectoralis* occurs in Bolivia and Uruguay as well.

12. pyrrholoma STÅL

Jadera pyrrholoma STÅL, 1870:K.Sv. Vet. Ak. Handl., **9**, Nr.1, 226; BAYARD. 1943, M.S. Thesis Iowa St. Coll., 25, Taf., V.5.

This species was described by STÅl in 1870 according to material from Bogota (Columbia) and Nova Granada (Brazil). I only had the insects from Bogota present. *Jadera pyrrholoma* is very rarely found in collections, and could possibly be confused with *haemaloma*, it is however bigger and wider than this species.

Types: Bogota, LINDIG (Holotype ♂; Mus. Stockholm). –Paratypes: 1 ♂=2 ♀♀ as holotype.

Description: Bigger, brownish-black insects with a relatively dark red side of the pronotum and an area of the pronotum covered in closely appressed setae; it is the biggest species in the genus *Jadera.*

The head is dark reddish-brown and relatively slender with a longer tylus. The anterior margin of the head is red or yellow around the eyes, and has longer bristly brown setae. The antennae are dark and elongate. The pronotum is trapezoidal in shape and relatively long, and is slightly rounded posterolaterally. The anterior margin of the pronotum is evenly long and covered with finer warts. The surface of the pronotum is also covered in many fine warts and has thick, bristly setae (thicker than *haematoloma*). The lateral margins are relatively dark red posterior to the horizontal suture; the central suture is very distinct. The hemelytra are dark, and covered lightly with very fine warts. The warts bear short, bristly closely appressed setae that are slightly thicker and longer than in *haematoloma*. The costal margin is broadened in the center, the subcostal area is very broad from the tip of the scutellum on (it is smaller in *haematoloma*), and the membrane is dark. The legs are brownish-black, long, and slender. The dorsal surface of the abdomen is red, with the exception of the first few tergites. The ventral side of the head and the thorax are brownish-black; the lateral margins of the prothorax and the abdomen are red.

Size: Males: Length: 14.0- 15.0mm, width 4.0mm

Females: Length: 17.0-18.3mm, width 4.7mm-5.1mm

Genital Segments: a) Males: The pygophore is relatively elongate. The ventral posterior margin tapers centrally into a very long point, and very short sides. The parameres are slender and distally curve towards the center of the pygophore; they are also rounded distally and they are of the same length as the central tip of the pygophore. The dorsal anterior margin of the 10th segment has relatively broad triangular sclerotied sides, which have distally bear denticles.

b) Females: The 7th sternite has a small m-shaped tip at the end, which makes it easy to distinguish them from the females of *haematoloma*. The 1st valvifer has a pronounced angular projection and the 1st valvula is wide and triangular.

Distribution: Except for the types and a specimen of the museum in London from Columbia, I had one specimen from Tena/ Ecuador (Mus. Brno) at hand. STÅL also states Brazil as location; BAYARD states Bolivia.

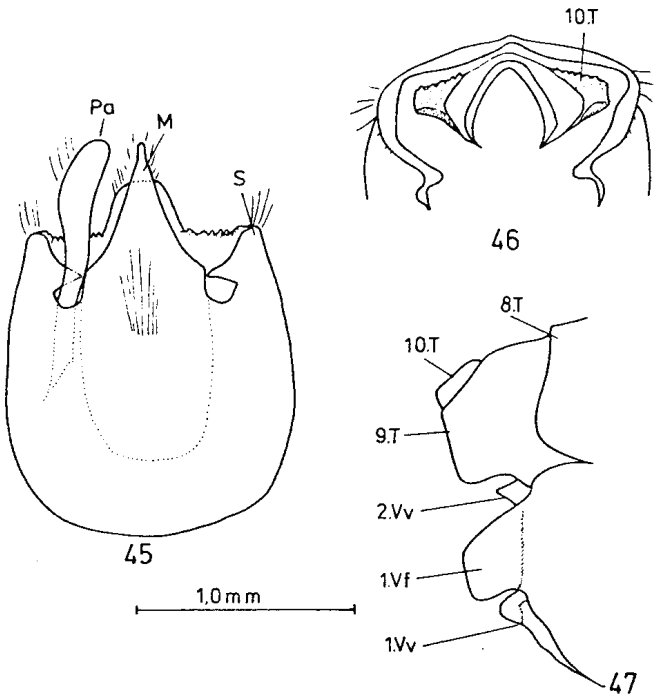

Fig. 45-47 *Jadera pyrrholoma* STÅL — 45. Pygophore, ventral view; 46. Pygophore, posterior view; 47. Genital segments, female, lateral view.

13. sanguinolenta FABRICIUS, **1775 (Fig. 48-52)**

Cimex sanguinolentus FABRICIUS, 1775:Syst. Ent., 721; *Lygaeus sanguinolentus* FABRICIUS, 1794, Ent. Syst., IV, 158; *Jadera sanguinolenta* STÅL, 1870, K. Sv. Vet. Ak. Handl., **9**, Nr.1, 227.

Cimex cruentus FABRICIUS, 1787, Mant. Ins., **2**, 301.

Jadera rubrofusca BARBER pt., 1923:Am. Mus. Novit., **75**, 2 (Syn. nov.)

The species was described by FABRICIUS according to material from America. Two more females exist in the type series, of which one mostly corresponds with the description. FABRICIUS describes *one specimen* as having a red head and a pronotum without spots; based on those characters, I suggest that the other belongs to *aeola. J. aeola* is difficult to distinguish from *sanguinolenta,* and I have debated for a long time whether they are two independent species or two subspecies. They exist sympatrically, although *sanguinolenta* can be only found in Puerto Rico. For reasons unkown to me, very many insects of the species *choprai* had been identified as *sanguinolenta* in many collections. They correspond to neither the type of FABRICIUS nor his description, since they are distinctly spotted. BAYARD, in her revision refers to *choprai* under the name of *sanguinolenta.* Different species have been considered synonymous with *sanguinolenta*, such as *anticus* pt., *cinerea, coturnix*, and *rufoculis*; in my opinion, they all belong to *aeola.* I however consider *Jadera rubrofusca* BARBER conspecific with *sanguinolenta;* BARBER himself expressed this opinion. A part of the paratypes of *rubrofusca* belongs to *aeola* however. *Cimex cruentus* is a synonym to *sanguinolenta*, which was already recognized by STÅL in 1868.

Types: *sanguinolenta* F.: Amer. (Lectotype ♀; Mus. Copenhagen, without information on location or name).

Cruentus F.: Amer. Insul., Schmidt (Lectotype ♀Mus. Copenhagen).—Paralectotype: ♀, without information on location (Mus. Copenhagen).

Rubrofusca Barb. : Aibonita, P.R. June1-3, 1915 (holotype ♂; Mus. New York).

--Paratypes: Aibonita, P. Rico, June 1-3, 1915 (3♂♂+ 1♀) Cayey, P. Rico, 30.-31.5.1915 (2♂♂+ 2♀♀), all Mus. New York.

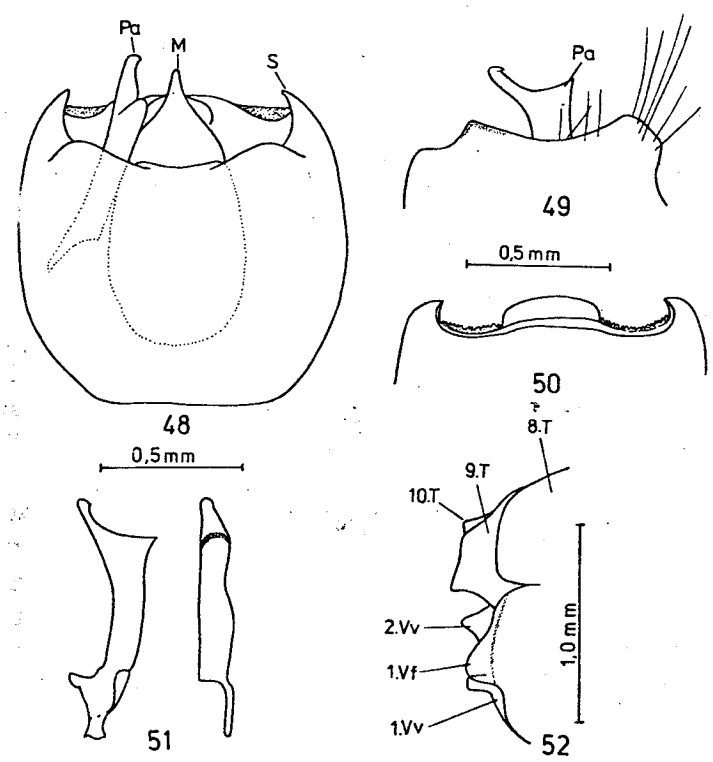

Fig. 48-52. *Jadera sanguinolenta* (F.)—48. Pygophore ventral; 49. Pygophore lateral posterior margin; 50. Pygophore dorsal posterior margin; 51. Paramere, lateral and posterior views; 52. Genital segments, female, lateral view

Description: Medium sized, red-brown insects with a very sparse and fine spotting, and a relatively broad and convex head. Generally, the pronotum is not very-sclerotized and the sides of the hemelytra are strongly spotted.

Head is red, broader and more convex than *aeola,* with almost no or very sparse spotting. The antennae are light brown, and the 2nd segment is distinctly longer than the 3rd. The pronotum is reddish-brown and the surface is often brown. The lateral margins are red and run angularly backwards. The pronotum overall is slightly broader, shorter and less bent than *aeola*, with a fine but distinct spots. The scutellum is mostly red. The hemelytra are reddish-brown without any or only very light spots, and the partially very light-colored side of the corium generally has big, brown spots. The abdomen is red and barely spotted.

Size: Males: Length: 9.6-11.4mm, width 2.9mm-3.1mm

Females: Length: 10.2-11.8mm, width 3.1-3.8mm

Genital segments: a) Males: The ventral posterior margin of the pygophore is similar to *aeola*, it however is more grooved in the center, and runs more straight laterally. Also the lateral edges are more pointed. The paramere has a small, head-shaped end, and the lateral tip is very pronounced and is not grooved laterally (unlike *aeola*). Viewed from above, the final segment is triangular, whereas it is more convex in *aeola.*

b) Females: All in all very similar to *aeola*, the1st valvula is a bit smaller in this species.

Distribution: The material originated merely from Puerto Rico and the neighboring islands St. Croix, Culebra, St. John and St. Thomas.

14. schuhi n. sp. (Fig. 53-56)

Among the material of the museum in New York originating from Venezuela, I found some insects that reminded me of *aeola*. They were less sclerotized and also less extensively spotted than this species. The structure of the pygophore suggested that it is its own species. I would like to name this species after the Curator for the American Museum of Natural History in New York, Dr.R.T. SCHUH, as a thank you for his friendly help in the lending of the material.

Types: Caripitio/Venezuela, 16. VI, 1942 (holotype ♂;Mus. New York).—Paratypes: 10♂♂+ 4♀♀ as holotype, of those 1♂+1♀ Mus. Berlin).

Description: Mostly brown-colored insects with a sparse and fine spotting,. The sides of the head and the pronotum are orange and the sides of the hemelytra bear a narrow section of bright red color. The sides of the hemelytra are not spotted.

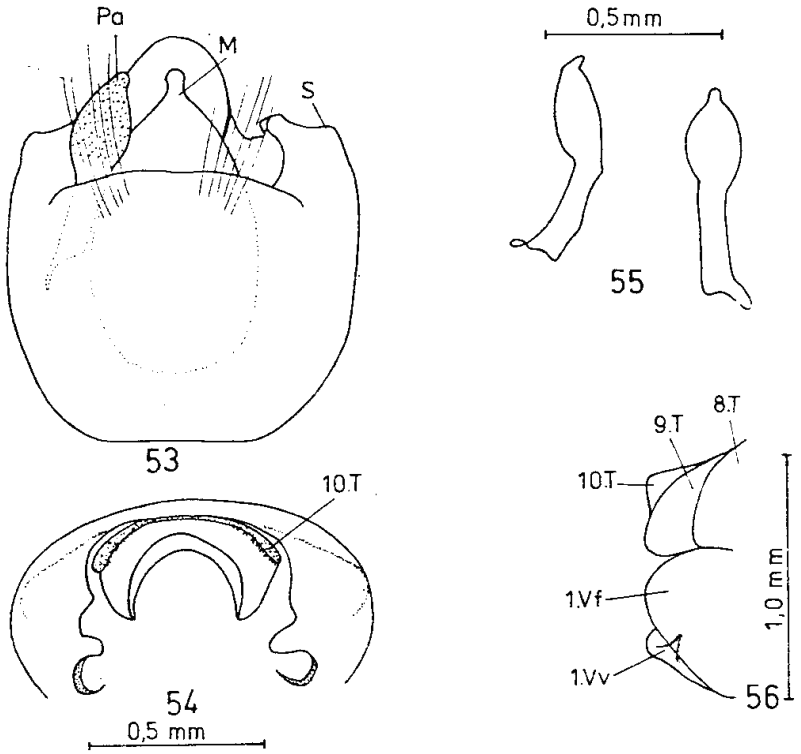

Fig. 53-56. *Jadera schuhi* n.sp. — 53. Pygophore, ventral view; 54. Pygophore, dorsal view; 55. Paramere lateral and posterior views; 56. Genital segments, female, lateral view

The head is relatively short and wide, its frons and vertex are variably brown in color and bear relatively dark spots. The sides, from the outer side of the ocelli are orange, and the distance between the ocelli is relatively big: roughly two times as wide as the distance between eye and ocellus. The antennae are brown, the 1st member is relatively slender, and the others are elongate. The pronotum is relatively long, and widens towards the posterior margin, and is brown with relatively fine spots; the sides are broadly reddish-orange. The tip of the scutellum is somewhat lighter in color. The hemelytra are light brown with very sparse spots; the costal margin and veins are even lighter in color, and they bear short, closely oppressed setae.. The hemelytra are oval-shaped and convex mostly in the center (especially in female specimen); the membrane is very distinctly colored, indistinctly spotted and reaches over the abdomen. The long and slender legs are brown and indistinctly spotted, and bear short, closely oppressed setae. The lower side of the body is light ochre in color, and most of the abdomen is covered in red spots. The beak reaches to the middle of the hind coxae.

Size: Males: Length: 8.7-9.6mm, width 2.5-2.7mm

Females: Length: 10.7-11.1mm, width 3.0-3.2mm

Genital segments: a) Males: The ventral posterior margin of the pygophore has a longer tip in the middle, which is button shaped, and has lateral tips that are distinctly bent towards the inside and that are grooved. The parameres have rounded side and a smaller tip at the end, and do not project past the central point of the pygophore. The sclerotized dorsal part of the 10th segment appears small in dorsal view, and the interlateral side has a rounded tip.

b) Females: In lateral view from the side, the 1st valvula is visible with a small curve, and the 2nd valvula is covered by the broad, rounded 1st valvifer. The 7th sternite is roughly of the same length as the 7th tergite that reaches far to the back, and it is slightly convex in the rear center.

Distribution: The species is only known from Venezuela so far.

15. similaris n. sp. (Fig. 57-60)

Among the material, which was kindly given to me by Prof. ASHLOCK from the Snow Museum in Lawrence, I found a small series of insects from Ecuador, which are very similar to *aeola*, but which also differ from it in certain characteristics. I therefore want to consider it a separate species.

Types: Duran/ Ecuador, 24. VI. 1914, S.A.H.S. PARISH (Holotype ♂; Snow Mus. Lawrence). – Paratypes;1 ♂+ 3 ♀♀ as holotype; 2 ♀♀ 22.VI., 1 ♀23. VI, otherwise like holotype (Snow Mus. Lawrence and Mus. Berlin (1 ♂+1♀)).

Description: Smaller, more light brown species, very similar to *aeola* and *harrisi.* It differs from *aeola* with respect to its slightly wider head, coarser spotting, and more straight lateral margins of the pronotum. It differs from *harrisi* with respect to the thicker and more irregular spotting of the sides of the hemelytra, and the thicker spotting of the area of the hemelytra.

The head is red, the frons and vertex are partially more reddish- brown, relatively broad, convex and long, and bear black warts and strong, short setae. The clypeus is slightly more convex, and with two lines of bristles, the paraclypeus is widely convex, and covered with two lines of warts which are of the same height as the clypeus (a bit higher in *harrisi*). The distance between the ocelli is relatively big, and the head is wider and more convex than with *aeola.* The antennae are brown, the 3rd segment is slightly shorter than the 2nd, and the terminal segment is much shorter than in *aeola.* The pronotum is longer than that of *aeola* and is light brown, has both large and small spots, and short, bristly setae. The anterior margin of the pronotum is slightly longer than in *aeola,* and slightly elongated in the middle (more straight in *aeola*). The lateral margins are red and proceed

relatively straight to the anterior margin. The line in the central suture ends before the posterior margin of the pronotum. The scutellum is red and bears fine dark spots. The hemelytra are light brown, and the subcostal area is variably spotted. The veins are lightly covered with fine brown spots (the area of the wings is more closely covered in spots in *harrisi*), the setae are short, dark, and bristly, and the membrane is brown and spotted. The legs are brown and finely spotted. The dorsal surface of the abdomen is orange red with red spots. The ventral surface of the abdomen is yellowish- red, and the thorax has brown and red spots.

Size: Males: Length: 8.3- 9.1mm, width: 2.4mm

Females: Length: 8.8-11.0mm, width: 2.9-3.1mm

Genital Segments: a) Males: The ventral posterior margin of the pygophore tapers centrally into a relatively long point and laterally into short, blunt ends. The lateral posterior margin is relatively straight, and there is a small depression in the center. The dorsal side is more grooved in the middle than *aeola* and the 10th segment has a small point; the parameres are wider distally, and have a small lateral projection that extends past over the central point.

b) Females: They look similar to *aeola,* but the 1st valvula is pointier at the end.

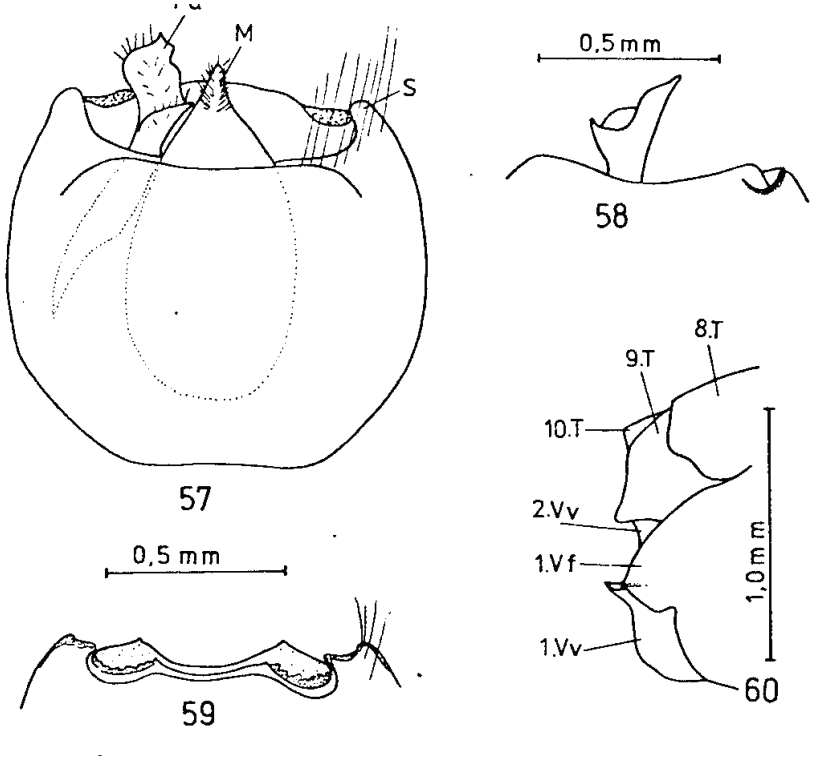

Fig. 57-60. *Jadera similaris* n.sp. — 59 Pygophore, ventral view; 58. Pygophore, posterior margin, lateral view; 59. Pygophore, posterior margin, dorsal view; 60. Genital segments, female, lateral

Distribution: The species is only known from Ecuador (Durban).

List of Species including their Synonyms

(x= valid name)

x *aeola aeola* (DALLAS, 1852)

x *aeola rufoculis* (KIRBY, 1890)

abdominalis WALKER, 1872= *obscura* (WESTWOOD, 1842)

x *antica* (WALKER pt. 1872)

bicolor (WESTWOOD, 1842)= *aeola* s.l. (DALLAS, 1852)

x *choprai* n.sp.

cinerea (AMYOT/SERVILLE, 1843)= *aeola* s.l. (DALLAS, 1852)

conspersus (WALKER, 1872)= *aeola* s.l. (DALLAS, 1852)

coturnix (BURMEISTER, 1835)= *aeola* s.l. (DALLAS, 1852)

cruentus (FABRICIUS, 1787)= *sanguinolenta* (FABRICIUS, 1775)

x *decipiens* n.sp.

discolor (STÅL, 1860)= *obscura* (WESTWOOD, 1847)

x *goldbachi* n.sp.

x *haematoloma* (HERRICH- SCHÄFFER, 1847)

x *harrisi* n.sp.

x *hinnulea* BAYARD, 1943

lateralis STÅL, 1862= *obscura* (WESTWOOD, 1842)

marginalis (WALKER, 1872)= *haematoloma* (HERRICH- SCHÄFFER, 1847)

x *obscura* (WESTWOOD, 1842)

x *parapectoralis* n.sp.

x *pectoralis* STÅL, 1862

x *pyrrholoma* STÅL, 1870

rubrofuscosa BARBER, 1923= *sanguinolenta* (FABRICIUS, 1775)

rufoculis (KIRBY, 1890)= *aeola rufoculis* (KIRBY, 1890)

x *sanguinolenta* (FABRICIUS, 1775)

x *schuhi* n.sp.

x *similaris* n.sp.

Key for Determination of Species

1	Body area devoid of spots, only the vertex of the head is partially covered in dark warts. Some species are slightly shiny and the corium is lacks bristly setae	**2**
1*	The surface of the body has more or less extensive spotting, which is partially fine and indistinct; the insects are not shiny and the corium has bristly setae	**5**
2	The insects are mostly brownish-black, large to very large insects	**3**
2*	The insects are mostly brownish-red, but also red. In darker specimens, the sides of the head, the anterior and lateral margins of the pronotum, and the scutellum are distinctly red. The body is oval shaped, slightly shiny, and the corium lacks bristles, 7.4-10.3mm. The ventral posterior margin of the pygophore has a broader central point and shorter, rounded lateral projections. These projections have laterally a	*antica,* (WALKER, 1872)

	small concave section. The parameres are rounded at the end, and convex laterally and they extend past the central point and lateral projections of the pygophore; the 1st valvula is widely rounded, the 2nd valvula is nose shaped and projects ventrally. Distributed in Central America and southern regions of the USA	
3	The head in general is uniformly dark, with little red around the eyes. The raised anterior margin of the pronotum is very pronounced, and the lateral margins of the pronotum are broadly red.	**4**
3*	The vertex of the head is dark, the sides of the head are broadly red or broadly yellow. The anterior margin of the pronotum is not very convex, the pronotum is uniformly colored or with a small ochre side. Larger, slender, dark brown, slightly shiny insects. The costal margin of the hemelytra are running almost parallel to the lateral margins of the abdomen (contrary to the smaller, oval shaped *antica*) and they are light brown., 9.4-14.0mm. The ventral posterior margin of the pygophore has a long, slender, central point and short, rounded lateral projections. The parameres have a small head shaped end and stronger lateral swelling; they are covered with bristly setae, and they extend past the central point of the pygophore. The 1st valvifer is rounded in the lower section, 1st valvula more angular, and 2nd valvula is more rounded and protruded. Distributed in Central and South America.	*obscura* (WESTWOOD, 1842)
4	The area of the pronotum is very densely covered in setae, the anterior margin of the pronotum is straighter and covered in fine warts, the pronotum is very wide, and the sides are less red. The costal margin of the hemelytra curves very much, giving the hemelytra a very oval shape. Very big, round insects with a red ventral surface of the abdomen, 14.0-18.4mm. The ventral posterior margin of the pygophore has a long, sharp, central point, and short lateral projections. The parameres are slender, with rounded ends, the outer side is convex, and the inner side is grooved, about the length of the central point of the pygophore. The 1st valvifer is more angular and widely protruding, the 1st valvula is is wide, and the 2nd valvula is pointy and triangular. Distributed in Central and South America.	*pyrrholoma* STÅL, 1870
4*	The area of the pronotum is lightly covered in setae, the anterior margin of the pronotum is longer and slightly elongated in the center, covered with coarse warts, and the lateral margins of the pronotum are relatively broadly red. The sides of the hemelytra are less convex, the ventral surface of the abdomen is mostly dark, only the sides and the last third of the seventh sternite are red. The insects are smaller on average, 9.6-13.3mm. The ventral posterior margin of the pygophore has a longer, wider central point and barely pronounced lateral projections. The parameres have a rounded, head- shaped end, and convex sides, they are lightly covered in bristly setae, and slightly extend over past the central point of the pygophore. The 1st valvifer is widely rectangular and protruding and the 1st valvula is more angular with a small depression in the center. The 7th sternite of the female is only slightly convex in the middle. This species is very prevalently distributed in the southern states of the US, in Central America, and the West Indies, to Columbia and Venezuela	*haematoloma* (HERRICH-SCHÄFFER, 1847)
5	Insects are predominantly brown or reddish (orange).	**7**
5*	Insects are mostly black; two species which resemble each other greatly.	**6**
6	The head is reddish-brown. The lateral margins pronotum have a small amount of red color and run slightly angularly towards the posterior margin; the pronotum is generally wider. Black spots are mostly on the corium and are slightly more pronounced; The costal margin of the hemelytra is more curved. The insects are dark, 9.4-11.5mm. The ventral posterior margin of the pygophore has a wider central point and shorter but more pronounced lateral projections; these are oriented dorsally . The parameres are slender, their ends are straight and in the upper section have a small lateral depression; they extends distinctly over past the central point of the pygophore. The 1st valvifer is more rounded and 1st valvula is flatly protruding. Known from Brazil and Argentina, more common.	*parapectoralis* n.sp.
6*	The head is yellowish-orange. The sides of the pronotum are broadly yellowish-orange, and run straighter to the posterior margin; the pronotum is smaller. The black spots are more fine especially on the corium, the sides of the hemelytra are	*pectoralis* STÅL, 1862

	less oval and very small and light in color. The insects 10.0-12.4mm. The ventral posterior margin of the pygophore has a thin central point and less pronounced lateral projections; these flatten out dorsally. The parameres are slender, their ends are distinctly outwardly bent, and extend past the central point of the pygophore. The 1st valvifer and 1st valvula are angularly protruding. Very rare and only known from Brazil.	
7	The surface of the corium is brown with extensive orange color. The head, pronotum and scutellum are also partially of a distinct orange color. Species only occur in South America	**8**
7*	Surface of the corium is brown without orange color. Head, pronotum and scutellum partially red. Occurs in North, Central and South America.	**9**
8	Medium sized, somewhat larger insects of ochre orange color with distinct, irregular spots. The corium in general is more orange (veins and cells), and the sides and the veins of the hemelytra have a distinct, loose brown spotting. Typically 8.6-12.3mm in length, although some brachypterous individuals also occur and are 7.1-8mm. The ventral posterior margin of the pygophore has a broad central point and very pronounced, lateral projections which are rounded at the end; they also have small dorsal points which project downwards,. The parameres are slender, and distally rounded, and slightly grooved laterally, and extend little past central point of the pygophore. The 1st valvifer is rounded, and elongated downwards, and the 1st valvula has a nose shaped point. Very common species, distributed in South America.	*choprai* n.sp.
8*	Slightly smaller insects of ochre- orange to reddish- brown coloration, with fine, dark spots. The corium is less extensively orange (veins only partially spotted) and only the sides of the hemelytra are coarsely dark spotted; otherwise the wings are covered in fine and regular spots. Typically 7.7-9.3mm in length, although some brachypterous individuals also occur and are 7.4-8.1mm. The ventral posterior margin of the pygophore is has a wider central point and pointy lateral projections, which are oriented dorsally and have a small, inward-pointing spout. The parameres are slender, and extend past the central point of the pygophore. The lateral projection of the 1st valvifer is pointier, and the end of the 2nd valvula is more straight. So far known to occur in the British- West Indies, Curaçao, Brazil and Argentina.	*decipiens* n.sp.
9	The scutellum is generally brown, with a red central suture; if more red, the spots of the body surface are brown or the insects are bigger and broader with a relatively wide pronotum, or they are generally more light brown. They occur in North and South America.	**10**
9*	The scutellum is distincly orange with black spots, and also irregularly black or dark brown. The pronotum is slender with relatively straight sides. Brown insects that are typically 7.7-9.3mm in length, although some brachypterous individuals also occur and are 7.4-8.1mm. The ventral posterior margin of the pygophore has a slender central point, and barely pronounced lateral projections. The parameres are slender, and have a small lateral spout at the end, which extends past the central point of the pygophore. The 1st valvifer has a small projection, and the 1st valvula is wider and slightly pointy in the middle. Known from Bolivia, Ecuador, and Argentina.	*goldbachi* n.sp.
10	The sides of the corium are more or less distinctly spotted; they are rarely without spots, if so then the veins are spotted and not lighter in color.	**12**
10*	The sides of the corium are more of less widely unspotted; if insects are more slender, then the veins of the hemelytra are mostly unspotted and lighter in color.	**11**
11	Mostly dark brown, medium sized insects, with distinct dark spots. The vertex of the head is dark with red sides, the anterior margin of the pronotum is slender, and the sides of the pronotum are generally a bit convex. The sides of the corium are distinctly lighter in color than adjacent sections of the hemelytra, and they lack spots. The insects are 8.2-11.8mm in length. The ventral posterior margin of the pygophore has a shorter central point and barely pronounced lateral projections. The parameres are slender, with a small head and a lateral swelling; this however is without any distinct lateral tip, and it extends past the central point of the	*hinnulea* BAYARD, 1943.

	pygophore only slightly, if at all. Female genital segments are very hard to distinguish from *aeola*. Occurs in Texas, Mexico, Guatemala, British- Honduras, and Panama	
11*	Light -brown insects, with very fine and loosely distributed brown spots on the pronotum and corium. The head is relatively wide and short, the vertex is dark with reddish- yellow lateral margins and covered in dark spots. The pronotum is relatively long, with a longer anterior margin, and lateral margins that angle away from the body as they proceed towards the posterior margin. The hemelytra bear closely appressed white pubescence, the sides of the corium are more slender and not lighter in color than adjacent sections of the hemelytra, and the veins are brighter and for the most part devoid of spots. Individuals are 8.7-11mm in length. The ventral posterior margin of the pygophore has a shorter button shaped central point that curves inwardly, and shorter lateral projections. The Parameres are rounded at the sides and do not extend past the central point of the pygophore. The 1st valvifer is widely rounded and 1st valvula has a small curve. Only known from Venezuela	*schuhi* n.sp.
12	The vertex of the head is less convex and narrower and the spots are well developed and more loosely distributed; insects from Central America are sometimes less well developed and redder in color. The pronotum is longer and the lateral margins of the pronotum are more rounded. Three similar species, to be separated by the genital segments.	**13**
12*	The vertex is more convex and wider, and the spots are not well developed and fine. The pronotum is shorter and the lateral margins are straighter. Medium sized to large, reddish-brown insects, they are very difficult to distinguish from *aeola*. The parameres are well developed with a small apical swelling, the lateral point is very long and lacks a lateral depression, and the paramere itself extends straight to the back and past the central point of the pygophore. Not very common, only from Puerto Rico and neighboring islands.	*sanguinolenta* FABRICIUS, 1775
13	The lateral margins of the pronotum are generally more rounded and the surface is more convex (wider in brachypterous insects)	**15**
13*	The lateral margins of the pronotum proceed more straight to the posterior margin, and the surface is less strongly convex	**14**
14	The subcostal area of the hemelytra is brighter in color and mostly covered in coarse spots; the surface of the corium is fine and the veins are loosely coarsely spotted. The head is pointier and strongly convex, the clypeus is flat and has 1-2 rows of bristles, and the paraclypeus is distinctly convex and slightly higher than the clypeus. Medium ochre to light brown insects that are 9.0-11.4mm in length. The ventral posterior margin of the pygophore has a shorter central point and barely pronounced lateral projections. The parameres are rounded distally have a small lateral swelling on the inside (which can vary in height, and they do extend past the central point of the pygophore. The 1st valvifer is pointy and pronounced and the 1st valvula is pointy at the top. So far only known from Bolivia and Brazil.	*harrisi* n.sp.
14*	The subcostal area of the hemelytra is more slender and more densely covered in spots; the hemelytra are also generally more densely covered in spots. The head is wider, the clypeus is convex and covered with 2 rows of bristles, the paraclypeus is wide, distinctly convex and of the same height. Smaller, more light brown insects that are 8.3-11.0mm in length. The ventral posterior margin of the pygophore has a shorter, sharper central point, and the lateral projections are barely pronounced; the side is only slightly grooved, and the dorsal posterior margin is more grooved in the middle than *aeola*. The parameres are wider at the end, and have a small lateral swelling inside, which extends past the central point of the pygophore. The female genital segments are similar with those of *aeola*; however, the 1st valvula is distally a bit more pointy. So far only known from Ecuador.	*similaris* n.sp.
15	Insects are brown, more or less densely covered with spots of variable size; the Southern American insects often are more brown and more distinctly covered in spots; the Central American insects are rather red and bear significantly fewer spots. The lateral margins of the pronotum are generally more rounded. Red,	*aeola aeola* (DALLAS, 1852)

	medium sized, very variable insects that are 8.7-12.6mm in length. The ventral posterior margin of the pygophore has a shorter tip central point, which laterally has a small edge, and lateral projections of are barely developed; lateral posterior margin is relatively grooved in the middle, and the dorsal posterior margin is almost straight. The form of the parameres changes: it is rounded distally, and generally has a very pronounced lateral projection and a small ventrally projecting depression; in insects from Jamaica this lateral projection is almost undeveloped, but still more distinct than in *hinnulea*; in South American insects the projection is very well developed, and the parameres extend far past the central point of the pygophore. The 1st valvifer is rounded, the 1st valvula is rectangular and protrudes relatively far, and 2nd valvula is small and triangular. Distributed in Mexico and Argentina	
15*	Insects are redder, and covered with relatively small spots. Only known females are brachypterous; in such individuals the head, pronotum and abdomen wider. Although males are more similar to *aeola*, s.l., they also sometimes brachypterous. Insects are 9.2mm-11.1mm in length. Genital segments are as *aeola* s.l. Occur only on the Island of Fernando Noroha/Brazil	*aeola rufoculis* (KIRBY, 1890)

Addendum to: Revision of the species *Harmostes.* –Mitt. Zool. Museum Berlin, **54**, 257ff.,1978.

As I already mentioned in the above named journal, I found a new species of the genus *Harmostes*. This new species resembles *Harmostes fracterculus* (SAY) so much that I originally thought it to be this species. The examination of additional material, however, confirmed that it is indeed a separate species, belonging to the subgenus *Harmostes*, just as *fraterculus.*

Harmostes (Harmostes) parafraterculus (Fig N1- N3)

Types: Santa Barbara, Serra do Caraca, Minas Geraes / Brazil, 1450 m, Jan. 1970, F.M. OLIVEIRA (holotype ♂; Mus. New York).—Paratypes:Bocaiuva, 25° 11'S, 49°04'W, Parana/ Brazil, December 1963, FRITZ PLAUMANN (2♀♀; Texas A & M Univ.); Nova Teutonia, , Santa Caterina/ Brazil, 27°11'S, 52°23'W, November 1967, FRITZ PLAUMANN (♀; Mus. Berlin)

Description: Medium sized, light brown insects, which are very similar to *fraterculus,* with an extensively red corium. The sides of the pronotum are almost sleek and slightly curvy, the scutellum is relatively wide, and the sides of the corium are brown spotted.

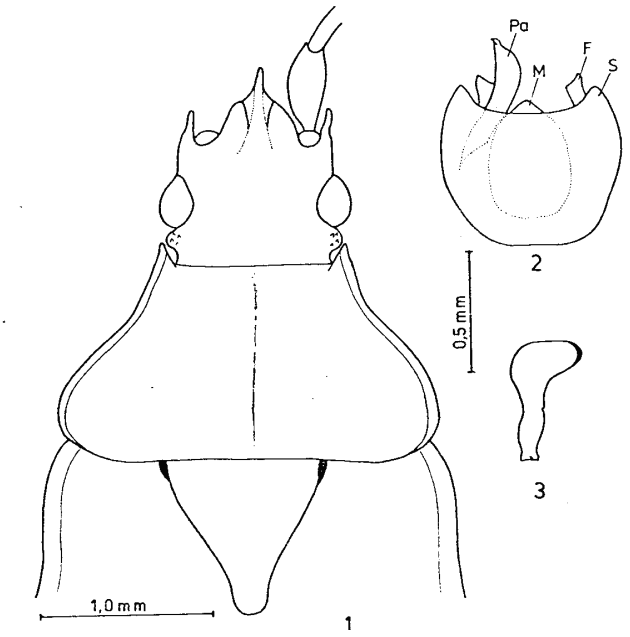

Fig N1-N3: *Harmostes (harmostes) parafaterculus* n.sp. – 1. Head, pronotum and scutellum, dorsal view; 2. Pygophore, ventral view; 3. Paramere.

(F=lateral appendix of the pygophore, Pa= Paramere).

Head: As wide as long, clypeus and the protruberance for the antennae are relatively long and pointy, longer and pointier than *faterculus.*

Antennae: 1st segment pronounced and extends over the head (more so than *fraterculus*); the antennae are longer than *fraterculus*.

Pronotum: The frontal lateral tips are distinctly visible, the dise are almost sleek, elongated to the back, and the posterior margin is about twice the width of the anterior margin, the rear edges are rounded (another very similar species *splendens* has a slightly longer pronotum, and the sides run more angular to the back, with

angular edges as well), slightly more slender in the wing basis, the area of the pronotum is strongly dotted, and the line in the center is mostly visible.

Scutellum: Finely dotted, relatively wide with smaller shorter tip, generally wider than in *fraterculus* and shorter tip.

Hemelytra: the corium is brown, partially ± extensively red, the sides are coarsely brown spotted, and from the tip of the scutellum on strongly wider (less distinct in *faterculus*), the area is strongly dotted, the membrane is bright, partially with brown spots.

Legs: Yellow, the tibia and the femurs are brown dotted, the hind femora are strong, shorter than *splendens,* but slightly stronger and longer than *fraterculus.*

Dorsum: red-lilac, last segment and the connexivium are yellow.

Genital segments: a) Males: The pygophore is relatively wide and short, the lateral tips of the ventral posterior margin are short, shorter than *fraterculus,* the tip in the middle is relatively small, lateral tips of the ventral posterior margin are short, shorter than *fraterculus*, the tip in the middle is small, lateral processes of the lateral side on the inside are bigger than *fraterculus,* and they are lightly angular. The parameres are relatively far protruding, their lateral end is rounded, more edgy in *fraterculus,* and the lateral end is more pointy.

b) Females: Looked at from behind they seem triangular.

Size: Males:length: 6.6mm-6.9mm, width: 2.1-2.2mm

(2 specimen)

Females: Length: 6.9-7.4mm, width 2.2-2.3mm

(4 specimen)

Distribution: The species is only known from a few specimens from Brazil (Bocaiuva/ Parana, Santa Barbara/Minas Geraes, Nova Teutonia/ Santa Caterina) and Argentina (Tucuman, Ladasma).

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