

## NEOTROPICAL ARADIDAE XIII (HETEROPTERA: ARADIDAE)

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**Abstract** Two lots of Aradidae: one from Jamaica, and another from Chile have been studied.

Only two species of Aradidae were known from Jamaica, both macropterous. In the lot received from Dr. Thomas H. Farr were represented five species, of which three were new. The new species are: *Rhysocoris jamaicensis* n.sp., apterous *Atactocoris farri* n.g., n.sp., also apterous and *Mezira brachyptera* n.sp., brachypterous.

Only three species of Aradidae were known from Chile. In the lot received from Dr. Robert L. Usinger were five specimens of a new genus and new species of the subfamily Prosymptestinae, known only from New Zealand, Australia, and Tasmania. They were named *Llaimacorsis penai* n.g., n.sp.

Through the kindness of Dr. Thomas H. Farr, Institute of Jamaica, Kingston, Jamaica, W. I., I have had the privilege of studying some Aradidae from Jamaica, and wish to extend my sincere thanks to him.

Our knowledge of Aradidae in the West Indies is very limited. It is only recently that Drake and Maldonado, and Usinger and Matsuda have described a few apterous genera represented by species from Puerto Rico, Guadeloupe, Hispaniola and Cuba (all of them belonging to the sub-family Carventinae). Only two species, both of them macropterous, have been known from Jamaica; one, *Mezira abdominalis* (Stål), 1873, widely distributed throughout the large islands of the West Indies, and Central America, another, *Mezira jamaicensis* (Bergroth), 1906, apparently endogenous to Jamaica. The new material I examined had five species represented, the two mentioned above and three new species.

Subfam. Carventinae Usinger, 1950

*Rhysocoris* Usinger and Matsuda, 1959.

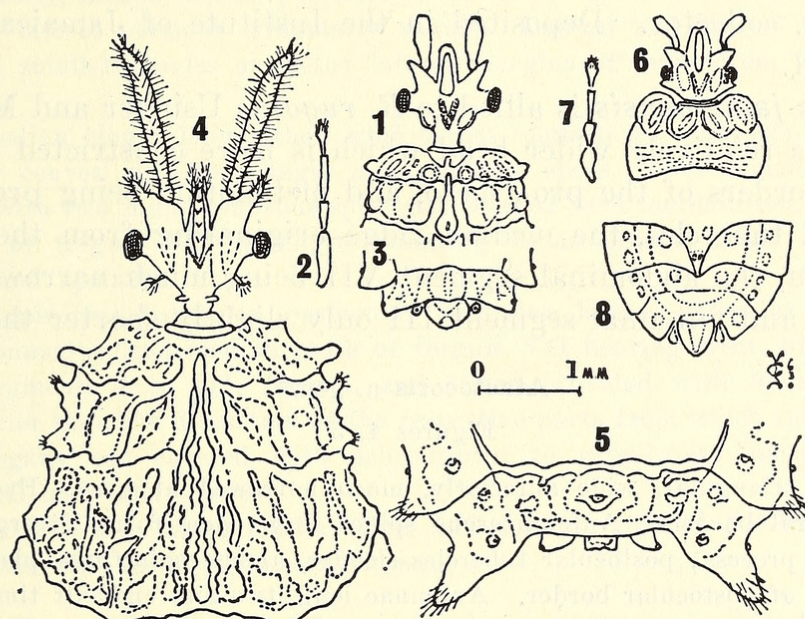
This genus previously contained two species, one from Haiti, another from Puerto Rico. A third is herewith described.

*Rhysocoris jamaicensis* n. sp.

MALE elongate ovate, apterous, glabrous, except for short tufts of hairs on projections of lateral borders; thickly covered with brownish incrustation and accumulated dirt. HEAD slightly shorter than wide through eyes ( $\delta$ -18: 20,  $\eta$ -20: 21.5). Anterior process short, conical, truncate anteriorly; genae as long as clypeus, attaining basal third of antennal segment I. Antenniferous tubercles short, stout, dentiform, divergent, reaching middle of anterior process. Eyes slightly stalked, placed at  $2/5$  length of lateral borders. Postocular borders slightly sinuate; vertex granulate. Antennae rather stout, particularly segment I, twice as long as head; segmental proportions:  $\delta$ -13.7: 7: 9: 6.5,  $\eta$ -15: 8: 10 8: 10: 7. Rostrum short, not reaching hind border of rostral groove, the latter closed posteriorly.



PRONOTUM very short and wide ( $\delta$ -9: 32,  $\phi$ -9: 38), clearly separated from mesonotum by deep transverse furrow, interrupted at middle by median ridge. Collar naked; disc with few protuberances, granulate; just behind collar and in front of tip of median ridge, two (1+1) small ovate tubercles, and behind them, laterad of median ridge, two (1+1) larger rounded tubercles; two (1+1) short oblique ridges near lateral borders. Antero-lateral angles of pronotum not produced, rounded; lateral margins with two (1+1) rounded tubercles. Hind border slightly convex. Median ridge arising at middle of disc, expanding posteriorly, reaching transverse furrow between tergum II and central dorsal plate: Limits of pro-, meso-, and metanotum clearly visible only laterad of median ridge. Metanotum completely fused with terga I and II. Median ridge separated from lateral portions of meso-, and metanotum, and from terga I and II by deep furrows. Lateral portions of mesonotum with four (2+2) irregular elevations



*Rhysocoris jamaicensis* n. sp.,  $\delta$ , 1. Head, pronotum, and mesonotum; 2. Antenna; 3. The tip of the abdomen from above.

*Atactocoris farri* n. g., n. sp.,  $\phi$ , 4. Head, notum, and terga I and II; 5. The tip of the abdomen from above.

*Mezira brachyptera* n. sp.,  $\delta$ , 6. Head and pronotum; 7. Antenna; 8. The hind half of the abdomen from above.

placed side by side; lateral borders with four (2+2) tubercles, anterior ones smaller. Lateral portions of metanotum fused with terga I and II into two (1+1) irregular pentagonal plates, longitudinally rugose; lateral borders with two (1+1) low, upright tubercles.

ABDOMEN longer than wide across segment II ( $\delta$ ), IV ( $\phi$ ),  $\delta$ -45: 39,  $\phi$ -56: 52). Tergum I and II fused with metanotum, tergum II lower in middle than I, its hind border emarginate. Terga III to VI together form central dorsal plate, elevated along midline, flat laterad and provided with usual pattern of rounded calloused spots and low ridges. Tergum VII separated from central plate by transverse furrow, disc elevated centrally and posteriorly for reception of hypopygium, less elevated in female. Connexivum separated from tergum by distinct furrow. All connexiva separated from one another by narrow but distinct furrows. In male, lateral borders of connexiva II to IV slightly convex with prominent spiracles; exterior margin of connexivum V dilated posteriorly and forming angle with margin of connexivum VI; width of abdomen across



segment VI greater than across segment VII. PE-angles (postero-exterior of connexiva) of connexivum VII forming two (1+1) slightly acute lobes directed obliquely posteriorly. Hypopygium caudal in position, ovate from posterior aspect, paratergites cylindrical reaching middle of hypopygium. Abdomen in female subquadrate; exterior borders of connexiva II to VI straight, those of VII sinuate, PE-VII rounded, slightly produced; paratergites short, rounded, reaching middle of IX, segment IX rounded posteriorly. Spiracles lateral and visible from above.

LEGS unarmed.

Color under incrustation mahogany red, shiny; incrustation brownish. Total length ♂-4.35 mm., ♀-5.25 mm.; width of pronotum ♂-1.60 mm., ♀ 1.90 mm.; width of abdomen ♂-1.95 mm., ♀-2.60 mm.

HOLOTYPE Male: Corn Puss Gap, St. Thomas, Jamaica, W. I., 12.VI.1949. R.P. Bengry, collector. Deposited in the Institute of Jamaica, Kingston, Jamaica, W.I.

*Rhysocoris jamaicensis* is allied to *R. rugosus* Usinger and Matsuda but differs by the relatively wider head which is more constricted posteriorly, the lateral borders of the pro-, meso, and metanotum being provided with small, round tubercles, the median ridge originating from the middle of the pronotum, the abdominal segment VII being much narrower than VI in the male, and antennal segment III only slightly shorter than II.

***Atactocoris* n. gen.\***

Figures 4, 5

HEAD inverted triangular, wide anteriorly, much narrowed at base. Eyes stalked in middle of lateral borders. Antenniferous spines large, dentiform, divergent reaching tip of anterior process; postocular tubercles slender, almost spiniform, placed far from eyes on middle of postocular border. Antennae long, two and one-half times as long as head, basal three segments with dense, erect bristles almost as long as diameter of segments; first segment longest, slightly longer than head, second segment shorter than third, fourth segment shortest. Rostral atrium closed; rostral groove very wide and deep, closed posteriorly, rostrum not reaching hind border of groove.

Pronotum distinctly separated from mesonotum by deep furrow. Mesonotum fused at middle with metanotum, separated from it laterally. Entire notum irregularly, longitudinally rugose, provided with median, elongated triangular, roughened plate which fuses posteriorly with terga I and II. Lateral portion of metanotum faced with lateral portions of terga I and II.

Terga III to VI fused to form central dorsal plate, separated on all sides by deep furrows. All connexiva separated from one another. PE-angles II to V slightly produced, PE-VI produced into short, acute tooth, PE-VII produced into long, divergent lobes, much longer than paratergites, or segment IX in female. Segment IX in female much abbreviated, shorter than paratergites. Spiracles on segment II ventral, placed near border, on III and IV sublateral, but not visible from above, V to VII lateral and visible from above, VIII terminal. All sterna clearly separated from one another. Legs unarmed; arolia present.

Closely allied to *Rhysocoris* Usinger and Matsuda, 1959.

TYPE SPECIES *Atactocoris farri* n. sp.

\* αττακτος = rugged, κορις = a bug



*Atactocoris farri* n. sp.

HEAD slightly shorter than wide through eyes (27.5:30); anterior process small, subtriangular, deeply cleft anteriorly; genae parallel, slender, longer than clypeus; antenniferous tubercles large, subtrapezoidal, strongly divergent, lateral margins converging posteriorly. Eyes small, stalked. Postocular border almost straight, convergent posteriorly. Entire head assuming inverted triangular form. Postocular tubercles thin, slender. Vertex with broad median elevation, slightly depressed longitudinally, separated from lateral discal portions by deep furrows; postocular borders provided with two (1+1) thin longitudinal furrows. Antennae long; segmental proportions: 32:14:17:9.

Pronotum short and wide (13:57); collar separated from disc by thin sulcus; anterior border produced, antero-lateral corners angular, lateral margins sinuate, provided with two (1+1) stout teeth directed laterally and weakly reflexed. Disc with thin median sulcus anteriorly, median carina posteriorly, the latter fused with median plate of mesometanotum; lateral portions irregularly rugose. Lateral margins of mesonotum with four (2+2) small tubercles or teeth; lateral margins of metanotum with two (1+1) minute teeth.

ABDOMEN Median length longer than wide across segment IV (89:82). Central dorsal plate feebly convex with low ridges and glabrous spots. Connexivum wide, segments III to VII with two round glabrous spots not covered with incrustation. Middle posterior portion of tergum VII raised, terminating in an oblique tooth directed slightly posteriorly and upward.

Genae, antenniferous tubercles, postocular tubercles, lateral tubercles of thorax, PE-angles of connexiva, and median tooth of tergum VII bearing erect, brush-like bristles. Antennal segments I to III, femora, and tibiae provided with dense, erect bristles slightly shorter than the diameters of the respective parts from which they arise.

COLOR mahogany red covered with ochre-brown to gray-brown incrustation; genae, antennae, and legs yellow-brown.

Total length 8.75 mm. along median line, 9.05 mm. to tips of PE-VII; width across pronotum 2.85 mm, across abdomen 4.1 mm.

HOLOTYPE Female: Windsor Estate Trelawny, Jamaica, W. I. 22.VII.1955. T. H. Farr, collector. Deposited in the Institute of Jamaica, Kingston, Jamaica, W. I. It is a pleasure to dedicate this striking new species to Dr. Thomas H. Farr, its collector.

Subfam. Meziranae Oshanin, 1908

*Mezira* A. and S., 1843

The large, almost world wide, genus *Mezira* has only macropterous species. Usinger and Matsuda (1959, p. 376) mentioned the existence of brachypterous forms but mentioned that they are rare, and hitherto no brachypterous species have been described. A new species from Jamaica shows the first stage of brachypterism, i.e. the abbreviation of the membrane of the fore wings, and reduction of the hind wings to narrow pads.

*Mezira brachyptera* n. sp.

MALE elongate ovate; brachypterous.

HEAD shorter than wide through eyes (13:16); anterior process short, robust, truncate anteriorly; genae as long as clypeus attaining middle of antennal segment I. Antenni-



ferous tubercles slightly acute and divergent. Eyes rather large semiglobose. Postocular tubercles small, dentiform, reaching outer border of eyes. Vertex with V-form row of small tubercles. Infraocular carinae low, granulated, lateral discs semicircular, glabrous. Antennae moderately robust, less than twice as long as head; antennal segmental proportions: 7: 5: 6: 6. Rostrum short, reaching hind margin of rostral groove, the latter closed posteriorly.

Pronotum much shorter than wide (18: 30). Collar separated from disc. Anterior margin with two (1+1) small tubercles; antero-lateral angles rounded; lateral notch rather shallow but distinct; margins before and behind notch granulated, those behind slightly convex; posterior margin slightly sinuate at middle. Anterior portion of disc with four (2+2) equally developed longitudinal ridges; both fore disc and hind disc granulated.

Scutellum shorted than wide at base (12.15: 14). Median ridge thin, granulated; disc transversely rugose.

Hemelytra reduced, reaching only base of tergum V, not overlapping one another, leaving gap between them. Clavus and corium normally developed; membrane abbreviated with reduced venation. Hind wings greatly reduced to form narrow, subfusiform pads with degenerate venation.

ABDOMEN ovate, longer than wide across segment IV (42: 36). Lateral margins regularly rounded, PE-angles not produced. Area of abdominal scent gland ostia, and all of terga V to VII not covered by wings. Tergum VII inflated for reception of hypopygium. Hypopygium cordate, small, paratergites subtriangular reaching middle of hypopygium. Spiracles II to VI ventral, remote from margin, VII sublateral but not visible from above, VIII lateral and visible from above.

COLOR ferruginous, partially blackish; connexivum concolorous; ostia of dorsal scent glands, rostrum, and tarsi yellow brown.

Total length 4.20 mm.; width across pronotum 1.50 mm., width across abdomen 1.80 mm.

HOLOTYPE Male Mt. Diablo Forest Reserve, St. Ann, Jamaica, W. I., 20. V. 1956. Thomas H. Farr, collector. Deposited in the Institute of Jamaica, Kingston, Jamaica, W.I..

PARATYPES Males (3), same data as above, two deposited in collection of author.

In my key for the neotropical species of *Mezira* (1962, p. 260) the new species *M. brachyptera* runs to *M. yucatana* Champion, 1898. It differs from that species however by the abbreviated hemelytra and hind wings, antennal segment III shorter than I (longer in *yucatana*), segment IV longer than II (equal in *yucatana*), pronotum more deeply notched laterally and the exterior margin of connexivum VII straight (sinuate in *yucatana*).

#### Subfam. Prosymptestinae Usinger and Matsuda

Dr. Usinger, University of California, was kind enough to send me a species of aradid from Chile. These were collected by Mr. Luis Peña at Cherquenco in Cautin Province in the foothills of Llaima Vulcain. I wish to thank Dr. Usinger for the chance of studying these unique specimens since they are the first representatives of the subfamily Prosymptestinae to be collected in the New World, the other genera and species are only known from New Zealand, Australia, and Tasmania. Not unexpectedly



these specimens also represent a new genus and species. The aradid fauna of Chile is very poor, only three genera and species being known up to the present time, these being described by Spinola and Blanchard more than a hundred years ago in Gay's "Historia de Chile." These are *Isodermus gayi* (Spinola), *Mezira americana* (Spinola), both from humid forest environments, and *Aradus angustellus* (Blanchard) from more arid situations. It is noteworthy to state that the Prosympiestinae follow the same pattern of distribution as their close allies, the Isoderminae.

**Llaimacoris** n. gen.

Figures 9-17

Elongate ovate, rather flat, finely granulated.

HEAD slightly shorter than wide through eyes; anterior process conical tapering to narrowly rounded apex; clypeus free, much longer than juga; antenniferous tubercles short, acute, slightly divergent. Eyes moderately large, strongly exerted but not stalked. Postocular borders forming right angle, tubercles absent; posterior border arcuate. Vertex slightly convex, granulated, lateral discs, between eyes and vertex, elongate ovate, glabrous; infraocular acinae absent. Antennae long, slender, more than two and one-half times as long as head, first segment shortest, second and third subequal, fourth longest. Rostrum inserted remote from apex of head; bucculae short, parallel, convex, open both anteriorly and posteriorly; rostrum slender, slightly exceeding fore border of prosternum, apical segment as long as preceding ones combined. Rostral groove absent, ventral side of head behind bucculae flattened, in some cases slightly depressed.

Pronotum less than half as long as wide, divided into narrower anterior lobe and broader posterior lobe; collar very narrow indistinctly separated from disc; antero-lateral angles rounded, narrowly depressed, produced forward as far as collar; lateral borders of anterior lobe divergent posteriorly, lateral notch almost rectilinear; disc of anterior lobe transversely inflated with four (2+2) indistinctly marked ridges, and six (3+3) round glabrous spots, two (1+1) in fore row, four (2+2) in hind row. Interlobal depression distinct. Lateral borders of posterior lobe strongly convergent anteriorly, less so posteriorly, widest portion of lobe in middle, lateral margins there obtusely rounded. Posterior border slightly convex centrally then weakly sinuate each side. Disc of hind lobe weakly declivous anteriorly, impressed mesad of humeri. Entire pronotum finely granulated.

Scutellum triangular, shorter than wide at base, lateral margins slightly convex at middle, feebly sinuate toward base and toward apex, provided with median, low, slender, transversely rugose carina, disc finely granulated. Hemelytra complete, almost attaining posterior margin of tergum VII; corium reaching base of connexivum II (first visible), outer margin straight, finely granulated, feebly reflexed, posterior margin of exocorium excavated, apical margin of corium rounded, disc with two elevated veins (R and Cu). Membrane large, irregularly wrinkled, vein R. clearly visible, vein Cu obsolete. Hind wings fully developed, venation greatly reduced, only vein R. visible.

Abdomen exhibiting pronounced sexual dimorphism; in male subrectangular, with slightly convex lateral margins, antero-exterior angles of connexivum VII produced into long, curved hooks; in female ovate, simple, devoid of hooks on connexivum VII. Connexivum narrow, finely granulated, margins of segments straight, PE-angles not produced. Male with short, conical paratergites (absent in other genera of Prosympiestinae) with terminal spiracles. Hypopygium in dorsal aspect subtrapezoidal, de-



pressed in middle with two (1+1) oblique elevations at base, in posterior aspect rotund with small, round depression on upper half of middle. Tergum VIII in female long, flat, with large rounded paratergites fused with disc, no sulci or sutures showing. Spiracles in male II to VI ventral, remote from margin, VII sublateral, not visible from above, VIII terminal; in female are spiracles ventral remote from margin.

Prosternum flat, feebly depressed centrally, meso- and metasterna flat, feebly depressed laterally near acetabula, all finely granulated along with thoracic pleura. Ostia of metathoracic scent glands behind middle acetabula, with short, curved, narrow canal, without large pit or setae.

Venter finely granulated, with seven longitudinal rows of calloused spots, one median, six (3+3) lateral. In male, margins of sterna II to IV straight, V slightly sinuate, VI strongly sinuate, VII weakly sinuate; sternum VIII visible as narrow strip, terminating laterally in short, conical paratergites. In female posterior margin of sternum II slightly sinuate, III to V barely convex at middle, VI roundly, deeply sinuate centrally, VII split into two contiguous lobes which apparently reach hind border and there touch tergum IX.

LEGS unarmed. Coxae globose, femora fusiform separated from trochanters, tibiae cylindrical, slightly dilated apically; claws with arolia. Femora granulated.

TYPE SPECIES *Llaimacoris peñai* n. sp.

*Llaimacoris*, being macropterus, at first sight looks like the genus *Prosympiestus* Bergroth, but is actually more closely allied to the brachyterous genus *Adenocoris* Usinger and Matsuda. Similar sexual dimorphism appears in both these genera, although it is much less developed in *Adenocoris* than in *Llaimacoris*, and both show similar patterns of the meta-thoracic ostia of the scent glands. *Llgimacoris* differs from *Adenocoris* by its triangular scutellum, greater development of the postocular portion of the head, the naked and shiny body, and long curved hooks on connexivum VII in the male.

*Llaimacoris peñai* n. sp.

HEAD shorter than wide through eyes (♂-14: 16.5 ♀-15: 15.6); anterior process reaching middle of first antennal segment; antennal tubercles reaching only base of antennal segment I; Antennal segmental proportions: ♂-5:10:9.5:12.5, ♀-6:11:10:13. Pronotum shorter than wide (♂ 13:36; ♀ 11.5:38). Scutellum shorter than wide at base (♂-16: 21.5, ♀-19:23). Abdomen longer than wide across segment IV (♂-57:43, ♀-69:48). COLOR dark brown; hind portion of pronotum, connexiva III-VII (interiorly and posteriorly, (abdominal venter light brown to yellow brown; rostrum, tarsi yellow brown. TOTAL LENGTH ♂-5.35 mm., ♀-6.15 mm., width pronotum ♂-1.80 mm., ♀-1.90 mm., width across abdomen ♂-2.15 mm., ♀-2.40 mm.

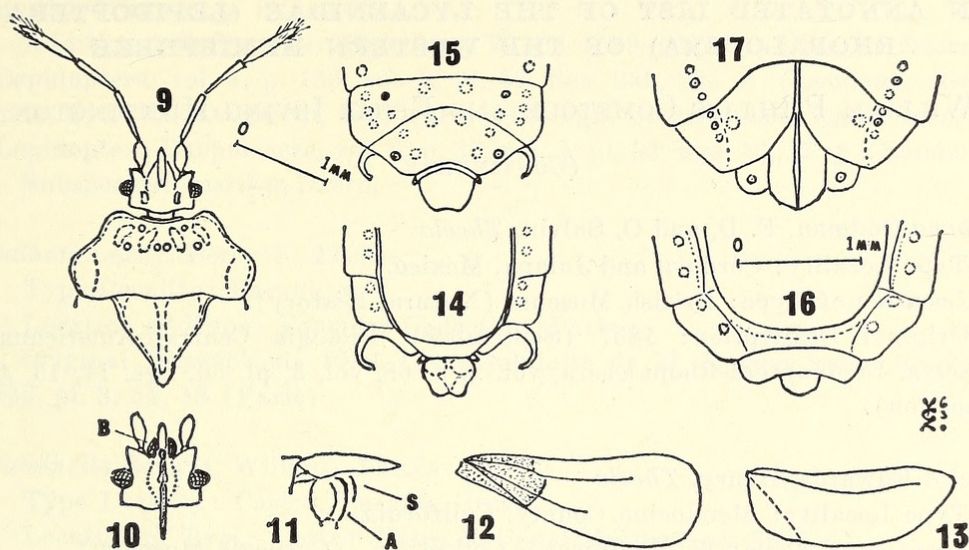
HOLOTYPE Male Cherquenco, Cautin, Chile. January-February, 1954. Luis Peña, collector. Deposited in the United States National Museum.

ALLOTYPE Female Same data as above, deposited in collection of author.

PARATYPES Males (3): Same data as above, one deposited with Luis Peña, one with R. L. Usinger, one with author.

It is a pleasure to dedicate this striking species to its collector Mr. Luis Peña.





**Llaimacoris peñai** n. g., n. sp., ♂, 9 Head, pronotum, and scutellum; 10. Head from below, B- bucculae; 11. Left mesopleuron with the base of the wing, A- middle acetabula, S- stink gland opening (canal); 12. Right fore wing (hemelytron); 13. Right hind wing; 14. The hind half of the abdomen from above; 15. The tip of the abdomen from below; ♀, 16. The hind half of the abdomen from above; 17. The tip of the abdomen from below.

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