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## NOTES ON NEOTROPICAL ARADIDAE XVIII (HEMIPTERA, HETEROPTERA)

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### ABSTRACT

The study of a lot of Aradidae, especially from Brazil and Mexico, is presented. New data on the distribution of several species are presented; *Aneurus carioca*, sp. n. (type-locality, Brazil, Guanabara, Rio de Janeiro), *Mezira pilosa*, sp. n. (type-locality, Mexico, Mexico, Bosenchebe), *Mezira gracilis*, sp. n. (type-locality, Brazil, Amazonas, Manaus), and *Mezira timida*, sp. n. (type-locality, Brazil, Mato Grosso, Utiariti), are described as new species.

By the kind offices of Dr. Henrique M. Canter, of the Departamento de Zoologia, Secretaria da Agricultura, São Paulo, Brazil, I have had the privilege to study a lot of Aradidae from the collections of the above mentioned Departamento, for what I express him my sincere thanks.

The Aradidae in this lot were mostly collected in Brazil, but a small part was collected in Mexico. In total there were about 50 different species belonging to 5 different subfamilies. Four of these species were new and are described below. Most of these species are common for their areas, but some of them merit to be recorded.

All measurements indicated in this paper were taken with a micromillimeter eyepiece, 25 units = 1 mm. In ratios the first figure indicates the length, and the second the width of the measured portion. For convenience, the length of abdomen was taken from the tip of the scutellum to the tip of the hypopygium (♂) or segment IX (♀).

Subfamily Aradinae Amyot & Serville, 1843

*Aradus* Fabricius, 1803

*Aradus penningtoni* Drake, 1942

*Aradus angustellus* Berg (*nec* Blanchard), *in partem*, 1879: 138.

*Aradus penningtoni* Drake, 1942: 151.

Distributed in Argentina, where it is rather common, then in Paraguay, Uruguay, Bolivia and Southern Brazil. In the latter it is mostly replaced by two other species: *Aradus brasiliensis* Usin-

ger, 1936, and *Aradus mexicanus* Usinger, 1936. Belonging to the "lugubris group" of species, all good flyers, it may be expected very far from its main area of distribution.

3 ♂ and 1 ♀, Brazil, Mato Grosso; Salobra, 24.X.1938, F. Lane col.; 1 ♀, Mato Grosso, Corumbá, Serra do Urucum, 23-30.X.1960. K. Lenko col.

Subfamily Calisiinae Stål, 1873

**Calisius** Stål, 1890

**Calisius placidus** Horváth, 1913

*Calisius placidus* Horváth, 1913: 633, fig. 10.

Distributed in SE Brazil. All species of this genus are rather rare, or even very rare.

1 ♂, Brazil, São Paulo, Ilha dos Alcatrazes, X.1920, H. Luederwaldt & J. P. Fonseca col.

Subfamily Aneurinae Douglas & Scott, 1865

**Aneurus** Curtis, 1825

**Aneurus sahlbergi** Bergroth, 1886

*Aneurus sahlbergi* Bergroth, 1886: 58.

Originally recorded from Petrópolis, Rio de Janeiro, Brazil, this species has no later records.

1 ♂ and 1 ♀, Brazil, Minas Gerais, Serra do Caraça, 1380 m, XI.1961, Kloss, Lenko, Martins & Silva col.; 2 ♂ and 1 ♀, São Paulo, Salesópolis, Estação Biológica de Boracéia, 1.VI.1961, H. Reichardt col.

**Aneurus carioca**, sp. n.

(Figs. 1-2)

Female. Closely related to *A. leptocerus* Hussey, 1957 (= *A. tenuicornis* Champion, nec Signoret), but much smaller; antennal segment I shorter and wider, ratio length to width as 1.6:1 (in *A. leptocerus* 2:1); II as long as III, 6:6 (in *leptocerus* 8.5:9.5). Antero-lateral angles of pronotum, and particularly lateral borders of hind lobe, are finely, but distinctly denticulate. Abdomen shorter and wider, ratio length:width as 1.24:1 (in *leptocerus* 1.43:1). Hind wings are abbreviated, reaching to middle of tergum III. Lateral borders of abdomen very finely crenulate (in *leptocerus* they are smooth).

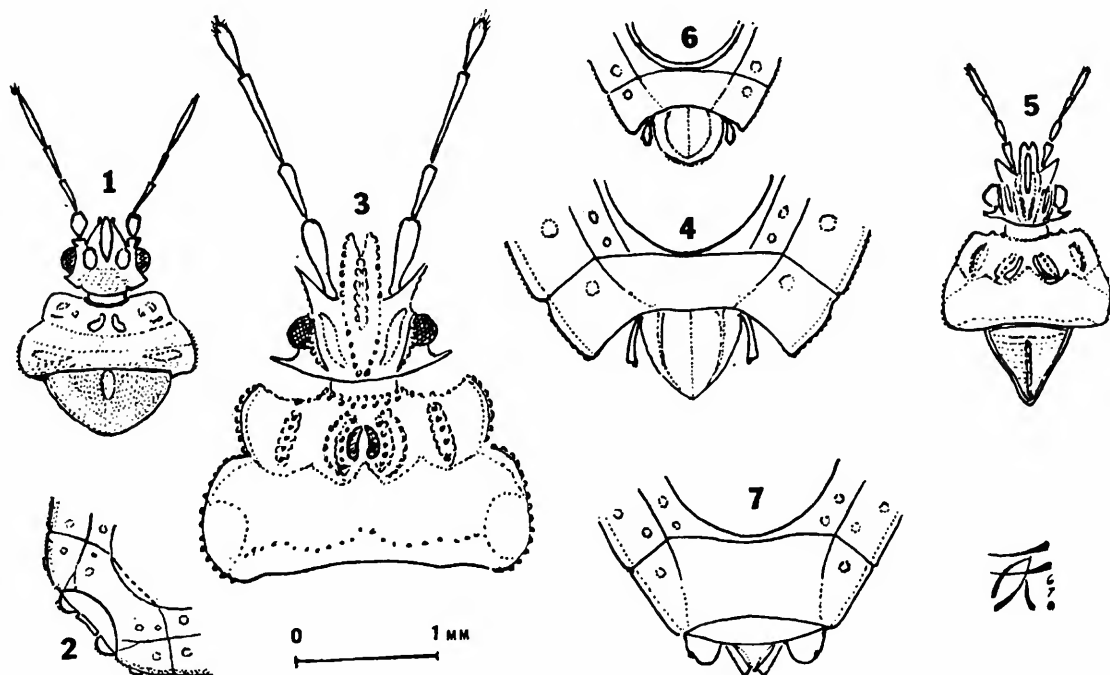
Anterior process of the head reaching to 4/5 of antenal segment I, jugae slightly visible laterad of clypeus; postocular tubercles produced as far as eyes; antero-lateral angles of pronotum rounded, neither produced forward, nor sideways; scutellum short and wide, disc with parallel borders, running from basal border to middle of scutellum; disc longitudinally striate laterad of elevation, concentrically striate along borders. Paratergites large,

rounded, produced far beyond small, truncate segment IX, which is about 1/3 as wide as head (5:14). Spiracles: II and VII lateral, III to VI ventral, VIII terminal.

Measurements: head, 14:14; relative length of antennal segments I to IV are 4:6:6:12.5; pronotum 12.5:30; scutellum 12:21; abdomen 69:49.

Color: ferrugineous, partially infuscate; round callous spots on abdomen yellow.

Holotype ♀ from Brazil, Guanabara, Rio de Janeiro, VIII.1962, Ary Vulcano col.; deposited in the Departamento de Zoologia, Secretaria da Agricultura, São Paulo, Brazil.



*Aneurys carioca*, sp. n., ♀: 1, head, pronotum and scutellum; 2, tip of abdomen from above; *Mezira pilosa*, sp. n., ♂: 3, head and pronotum; 4, tip of abdomen from above; *Mezira gracilis*, sp. n., ♂: 5, head, pronotum and scutellum; 6, tip of abdomen from above; *Mezira timida*, sp. n., ♀: 7, tip of abdomen from above.

In my key for *Aneurys* species from Brazil (in press) *Aneurys carioca*, sp. n. runs to *A. plaumanni* Kormilev, 1965, but differs from it by paratergites (♀) produced far beyond segment IX.

Subfamily Carventinae Usinger, 1950

**Proxius** Stål, 1873

***Proxius gypsatus*** Bergroth, 1898

*Proxius gypsatus* Bergroth, 1898a: 100.

This species has an enormous area of distribution, from Florida to SE Brazil and Bolivia, but is never found in large series.

1 ♀ Brazil, São Paulo, Barueri, 29.V.1966, K. Lenko col.

## Subfamily Mezirinae Oshanin, 1908

**Neuroctenus** Fieber, 1861

This large and heterogeneous genus has a curious distribution: Nearctic, Neotropical, Oriental, Australian and Ethiopian Regions, and Mandchurian Subregion of the Palaeartic Region, but it is absent in the rest of the Palaeartic Region and on most of the South Pacific islands.

**Neuroctenus amazonicus** Kormilev, 1960

*Neuroctenus amazonicus* Kormilev, 1960: 91.

1 ♂ and 5 ♀, Brazil, Mato Grosso, Pôrto Velho (Rio Tapirapé), R. T. Lima col.

**Neuroctenus longulus** Bergroth, 1898

*Neuroctenus longulus* Bergroth, 1898b: 151.

2 ♀, Brazil, Mato Grosso, Utiariti (325 m), Rio Papagaio, VII-VIII.1961, K. Lenko col.

**Neuroctenus uhleri** Bergroth, 1895

*Neuroctenus uhleri* Bergroth, 1895: 169.

1 ♂ and 2 ♀, Mexico, Mexico, Tenancingo, 23.V.1961, F. S. Pereira col.

**Notoplocoris** Usinger, 1941**Notoplocoris robustus** Kormilev, 1963

*Notoplocoris robustus* Kormilev, 1963: 453.

This species was described on the base of a single specimen from Espírito Santo, Brazil. No additional records are available.

1 ♀, Brazil, Espírito Santo, Santa Teresa, I.1964, N. Papaveiro col.

**Placogenis** Usinger & Matsuda, 1959**Placogenis brachyptera** (Kormilev, 1956)

*Diphyllonotus brachypterus* Kormilev, 1956: 151, figs. 4-5.

*Placogenis brachyptera*; Kormilev, 1966: 17.

1 ♀, Brazil, Minas Gerais, Serra do Caraça, 1380 m, XI.1961, Kloss, Lenko, Martins & Silva col.

**Placogenis cockerelli** Usinger & Matsuda, 1959

*Placogenis cockerelli* Usinger & Matsuda, 1959: 353, figs. 57, 100.

1 ♀, Brazil, Rondônia, Vila Rondônia (378 km S of Pôrto Velho), 25.I.-9.II.1961, F. S. Pereira & A. Machado col.

**Placogenis explanata** (Kormilev, 1959)

*Diphyllonotus explanatus* Kormilev, 1959: 62, figs. 1-2.

*Placogenis explanata*; Kormilev, 1966: 17.

1 ♀, Brazil, Território do Amapá, Serra do Navio, X.1965, Bicelli col.; 1 ♀, Pará, Alto Paru d'Oeste, Tiriós, I-II.1963, A. Machado & F. S. Pereira col.

**Artagerus Stål, 1860**

This curious genus is distributed from Central America to SE Brazil and Bolivia.

**Artagerus martinezi** Kormilev, 1959

*Artagerus martinezi* Kormilev, 1959: 68, fig. 6.

This species firstly was described from Bolivia and Peru, and was later also recorded from SE Brazil.

1 ♀, Brazil, Território do Amapá, Rio Amapari, 8-10.VII.1957, J. Lane col.; Amazonas, Benjamin Constant, 12-28.IX.1962, K. Lenko col.

**Artagerus plaumanni** Kormilev, 1959

*Artagerus plaumanni* Kormilev, 1959: 69.

Firstly recorded from Santa Catarina, Brazil.

1 ♀, Brazil, São Paulo, Piassaguera (= Raiz da Serra), 2.X.1906, H. Luederwaldt col.

**Mezira Amyot & Serville, 1843**

*Mezira* Amyot & Serville is a large, almost cosmopolitan genus, which has about eighty species in the Americas.

**Mezira handlirschi** (Bergroth, 1898)

*Brachyrhynchus handlirschi* Bergroth, 1898b: 150.

*Mezira handlirschi*; Drake & Harris, 1944: 42.

This is a Central American species, which was sporadically recorded also from Brazil and Bolivia.

1 ♂, Brazil, Amazonas, Manaus, VIII.1962, K. Lenko col.

**Mezira pilosa**, sp. n.

(Figs. 3-4)

Male. Elongate ovate, slightly widening backwards; the whole upper surface, with exception of the membrane, covered with long, erect, or slightly curled, dispersed, yellow hairs; ventral surface with shorter, curled hairs.

Head as long as width across eyes (27:27). Anterior process long, roughly granulate, with straight lateral borders, and deeply incised anteriorly, reaching to 3/4 of antennal segment I. Antenniferous tubercles long, spiniform, divergent, reaching to middle of antennal segment I. Eyes moderately large, strongly protruding. Postocular tubercles spiniform, produced far beyond outer border of eyes. Infraocular carinae denticulate. Vertex with "V"-form row of granules. Infraocular callosity long and narrow; clypeus high, roughly granulate. Antennae long and thin, twice as long as head (54.5:27); antennal segment I clavate, II slightly tapering toward base; III cylindrical; IV elongate fusiform; relative length of antennal segments I to IV are 15:10.5:17.5:11.5. Labium reaching to hind border of head; labial groove open posteriorly.

Pronotum half as long as its maximum width (30:61). Collar roughly granulate; antero-lateral angles obliquely expanded, rounded and crenulate, produced forward as far as collar. Lateral notch deep, angular; lateral borders of hind lobe convex, converging anteriorly, and roughly granulate, or even denticulate. Hind border almost straight. Fore disc with two (1 + 1) high, granulate ridges, and laterad of them with two (1 + 1) lower and narrower ridges. Hind disc roughly and densely granulate posteriorly, less densely anteriorly.

Scutellum shorter than its basal width (29:33). Lateral borders straight, carinate; apex rounded; disc with a high median ridge, tapering backward lateral of it roughly granulate.

Hemelytra reaching to fore border of tergum VII. Apical border of corium straight; apical angle narrowly rounded.

Abdomen elongate ovate, longer than its maximum width (86:72); connexivum scabrous, its exterior and interior borders granulate: exterior with a double row, and interior with a single row of granules. PE-angles protruding, but blunt. Paratergites cylindrical, reaching to 3/4 of an almost triangular hypopygium; lateral borders of the latter carinate, disc slightly convex. Spiracles II to VII ventral, placed far from border; VIII postero-lateral.

Color reddish brown; callosities between ridges of pronotum black; membrane covered with whitish incrustation.

Total length 7.04 mm; width of pronotum 2.44 mm; width of abdomen 2.88 mm.

Holotype ♂, Mexico, Mexico, Bosenchebe, 1.III.1964, P. Reyes C. col. deposited in the Departamento de Zoologia, Secretaria da Agricultura, São Paulo. 1 ♂ paratype, same data as holotype, in the Kormilev collection.

*Mezira pilosa*, sp. n., runs in my key for the American species of *Mezira* (1962: 260) to *M. hyperlobata* Kormilev, 1962, from Brazil, but may be separated at once by the longer, forked anterior process of the head, by rough, rounded, setigerous granulation, and by long, erect, or curled hairs on upper surface.

### ***Mezira gracilis*, sp. n.**

(Figs. 5-6)

Male. In my key for the American *Mezira* species (1962:260) *Mezira gracilis* runs to *M. vianai* Kormilev, 1953, from N Argen-

tina, but is smaller; antennae more slender, with segment IV subcylindrical, rounded apically, and longer than III; postocular tubercles claw-like, acute, reaching as far as outer border of eyes. Lateral borders of pronotum barely sinuate, and very finely denticulate. Apical border of corium less convex; apical angle acute. PE-angles of connexiva slightly, but distinctly protruding. Spiracles II to VI ventral, placed far from border; VII ventral, but placed nearer to border; VIII dorso-lateral. Granulation with very short, erect setae.

Anterior process of head with parallel sides, reaching to tip of antennal segment I; antenniferous tubercles acute and divergent; vertex with "V"-form granulation; infraocular callosities long and very narrow, streak-like; infraocular carinae finely crenulate. Antennae relatively thick; antennal segment I clavate, II elongate ovate, III tapering toward base, as wide apically as IV, IV cylindrical rounded apically.

Antero-lateral angles of pronotum slightly expanded, rounded and crenulate; fore disc with four (2 + 2) moderately high ridges; hind disc densely granulate.

Scutellum with all sides carinate; disc with "T"-form median carina, high and thin; laterad of it transversely rugose.

Hemelytra reaching to 3/4 of tergum VI; apical angle of corium blunt, but not rounded; apical border slightly convex.

Abdomen elongate ovate; lateral borders very finely crenulate; PE-angles slightly protruding, forming a sharp, right angle; PE-VI and PE-VII forming a slightly acute angle. Paratergites clavate, reaching to 3/4 of hypopygium; the latter moderately large, somewhat flattened, and crenulate posteriorly; median ridge ovate, with thin median suture.

Measurements: head 15:16; relative length of antennal segments, I to IV are 7:5:5:6.5; pronotum 15:30; scutellum 15:16; abdomen 55:35.5; hypopygium 10:12.5.

Color testaceous, hind lobe of pronotum, scutellum and corium infuscate; membrane piceous.

Total length 4.08 mm; width of pronotum 1.20 mm; width of abdomen 1.42 mm.

Holotype ♂ and 2 ♂ paratypes, Brazil, Amazonas, Manaus, VIII.1962, K. Lenko col.; holotype and 1 paratype deposited in the Departamento de Zoologia, Secretaria da Agricultura, São Paulo, Brazil; 1 paratype in the Kormilev collection.

### **Mezira timida, sp. n.**

(Fig. 7)

Female. Elongate ovate, with a fine setigerous granulation, setae extremely short and curled.

Anterior process of the head wide, rounded and incised anteriorly, reaching to tip of antennal segment I. Antenniferous tubercles short, divergent. Eyes small, strongly protruding. Postocular tubercles acute, produced beyond outer border of eyes. Infraocular carinae moderately high, crenulate. Vertex with four (2 + 2) subparallel rows of setigerous granules. Antennae thin, relative length of antennal segments I to IV are 8:5.5:9.5:6.5. La-

bium reaching to hind border of labial groove, which is open posteriorly.

Pronotum with thin, granulate collar: antero-lateral angles slightly expanded and rounded, produced forward as far as collar; lateral borders parallel at humeri, convergent anteriorly, crenulate; lateral notch absent. Fore disc with four (2 + 2) moderately high, granulate ridges; hind disc densely granulate.

Scutellum with all borders thinly carinate; lateral borders slightly sinuate before apex; the latter rounded. Median carina thin, cross-shaped; disc scabrous.

Hemelytra reaching to hind border of tergum VI; apical border of corium slightly convex; apical angle angularly rounded.

Abdomen ovate. Connexivum wide, scabrous; PE-angles barely protruding; outer borders of connexiva finely crenulate. Paratergites (♀) large, rounded, reaching to middle of segment IX; the latter trapezoidal, slightly incised apically. Spiracles: II to VII ventral, placed far from border; VIII lateral.

Measurements: head 20:22.5; pronotum 20:45; scutellum 18:24; abdomen 70:52.

Color: dark brown; corium piceous; membrane infusate, whitish at apical angle of corium.

Total length 5.20 mm; width of pronotum 1.80 mm; width of abdomen 2.08 mm.

Holotype ♀ and 2 ♀ paratypes, Brazil, Mato Grosso, Utiariti, Rio Papagaio, XI.1966, K. Lenko & F. S. Pereira col.; 1 ♀ paratype, same locality, 23-30.XI.1960, K. Lenko col.; holotype and 2 paratypes deposited in the Departamento de Zoologia, Secretaria da Agricultura, São Paulo, Brazil; 1 paratype in the Kormilev collection.

*Mezira timida*, sp. n., runs in my key for the American *Mezira* species (1962:260) to *M. peruviana* Kormilev, 1960, from Peru, but the anterior process of the head is dilated anteriorly, reaching to tip of antennal segment I; postocular tubercles are distinctly produced beyond outer border of eyes, and relative length of antennal segments is different.

### ***Mezira laeviventris* (Champion, 1898)**

*Brachyrhynchus laeviventris* Champion, 1898:98, pl. VI, figs. 24-25.  
*Mezira laeviventris*; Usinger & Matsuda, 1959: 380.

It is a rather rare species; firstly it was recorded from Panama, but later it was found in Brazil, Bolivia and Peru.

1 ♂, Brazil, São Paulo (Santo Amaro), XI.1951, J. Lane col.

### ***Dysodius* Lepeletier & Serville, 1825**

#### ***Dysodius lunatus* (Fabricius, 1794)**

*Acanthia lunata* Fabricius, 1794: 72.

*Aradus lunatus*; Fabricius, 1803: 117.

*Dysodius lunatus*; Burmeister, 1835: 255.

*Dysodius lunatus* (Fabricius) is one of the oldest recorded Aradids from the Neotropical Region, but only recently Bloete found out (1965: 31) that there are two different forms: *lunatus* (Fabricius) s. str., which is larger, and *lunatus vandoesburgi* Bloete, which is smaller and lives on different plants. It is a pity that characters which he gives, besides size, for separation of these two forms, are too vague to be used by persons who do not specialize in Aradidae.

Examining the specimens of *D. lunatus* (Fabricius) in this lot and from my private collection, we could see that the real *lunatus* (Fabricius) is restricted principally to the Amazonas basin, penetrating somewhat into Colombia, Venezuela and Guianas (cf. Bloete). The other form is distributed across most of the Neotropical Region, from Mexico to SE Brazil, Bolivia, and even N Argentina. Among this "other form" we could distinguish two varieties, but as their areas of distribution are practically identical, and there are intermediate specimens, we should leave the question of their separation open until we know more about their biology.

The main differences between *D. lunatus* (Fabricius) s. str. and *lunatus vandoesburgi* Bloete, are the following:

1. Much larger, length 16 to 18 mm. Anterior process of the head deeply and widely cleft, with strong lateral teeth; postocular lobes large, distinctly produced beyond the outer border of eyes; paratergites in both sexes are longer than the hypopygium, or segment IX respectively; lateral lobes of abdomen and antero-lateral lobes of pronotum are longer  
 ..... *lunatus lunatus* (Fabricius)

Smaller, length 12 to 14, rarely 15 mm. Anterior process mostly with contiguous jugae, rarely with narrow split between them; postocular lobes not so wide, mostly not produced beyond the outer border of the eyes, rarely slightly produced; paratergites produced as far as hypopygium, or segment IX, or even less; lateral lobes of abdomen and antero-lateral lobes of pronotum are shorter and narrower ....  
 ..... *lunatus vandoesburgi* Bloete

#### ***Dysodius lunatus lunatus* (Fabricius, 1794)**

1 ♂, Brazil, Amazonas, Manaus, VIII.1964, F. S. Pereira col.;  
 1 ♀, Amazonas, Tapuruquara, VIII.1964, F. S. Pereira & A. Machado col.; 2 ♂ and 1 ♀, km 86 road Belém-Brasília, Pará, V.1960, E. Dente col.; 1 ♂, Alto Paru d'Oeste, Tiriós, Pará, I-II.1963, A. Machado & F. S. Pereira col.; 1 ♀, Amazonas, Benjamin Constant, XI.1962, A. Silva col.

#### ***Dysodius lunatus vandoesburgi* Bloete, 1965**

Various specimens from Bolivia (Chapare, Cochabamba), Brazil (Alto Paru d'Oeste, Amazonas) and Costa Rica.

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