

NEOTROPICAL MIRIDAE, CLIV: *BICURVICORIS*, *HYALOPSALLUS* AND *NIGRIMIRIS*, NEW GENERA OF PHYLINI (Hemiptera)¹

JOSÉ C. M. CARVALHO * and J. C. SCHAFFNER **

Museu Nacional, Rio de Janeiro and Department of Entomology, Texas A & M
University, Texas, USA.

(With 11 text figures)

The subfamily Phylinae is best represented in the Western Hemisphere in the Nearctic Region with the number of genera and species diminishing in the tropical areas. Current studies of the Miridae occurring in the Neotropics have revealed an undescribed monotypic genus in Mexico, another in the Dominican Republic and the third in Brazil; these genera are described here. The illustrations accompanying the descriptions of these forms were prepared by Mr. Paulo Wallerstein under the direction of Dr. J.C.M. Carvalho.

Bicurvicoris n. gen.

Phylinae, Phylini. Characterized by being small in size; body smooth, compact; covered by a single type of pubescence, for-

med by long fine, erect hairs on hemelytra and long setiform, pale hairs on head, pronotum and outer margin of embolium.

Head strongly inclined; eyes slightly removed from pronotum, reaching ventrally to slightly below antennal socket; vertex convex, not margined; frons strongly inclined, rounded in front; clypeus prominent, compressed, with a few characteristic elongate flattened erect black hairs visible from above; jugum and lorum normal; buccula and gena prominent; gula reduced; rostrum reaching apex of hind coxae; segment I thickest, reaching to about anterior 1/3 of prosternum; antenna relatively short; segment I shorter than width of vertex, cylindrical, tapering at extreme base, thicker than II; II cylindrical, slightly incrassate towards apex; III and IV more slender than II; all segments covered by short dense semierect or decumbent pubescence, the hairs shorter than the diameter of segment.

Pronotum trapezoidal; strongly inclined anteriorly; calli obsolete; anterior margin concave; lateral margins angulate posteriorly; anterior angles with two or three long erect flattened bristles; posterior

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* Pesquisador-conferencista do Conselho Nacional de Pesquisas, Brasil. NSF Senior Foreign Scientist Fellow, Texas A & M University, 1972.

** Associate Professor.

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margin slightly sinuate medially; posterior angles noticeably rounded; mesoscutum broadly exposed; scutellum slightly convex; hemelytra somewhat hyaline especially on exocorium; embolium flat and widened towards apex, basal external portion with several long flattened hairs; cuneus about as long as wide at base, cuneal fracture angulate, sinuate medially; membrane very characteristically biareolate beginning with deep notch beyond apex of cuneus followed by two convexities and two concavities. Under-side with hind femora more developed than others; claws sharply curved; pesudarolia present, small.

TYPES SPECIES OF GENUS, BICURVICORIS NIGROLINEATUS n. sp.

Bicurvicoris is easily recognized by its characteristic membrane, the black bristles on the clypeus (male), and the erect flattened bristles on the anterior angles of the pronotum (female). This genus resembles *Microphyllelus* Reuter and *Macrotylus* Fieber, from which it can be readily distinguished by the pubescence and the characteristic form of the membrane.

***Bicurvicoris nigrolineatus* n. sp.**

(Figs. 1-3)

Characterized by the color, dimensions and structure of the male genitalia.

MALE: Length, 2.64 mm; width, 1.20 mm. Head length, 0.22 mm; head width through eyes, 0.56 mm; vertex width, 0.34 mm. Length of antennal segment I, 0.22 mm; II, 0.70 mm; III, 0.40 mm; IV, 0.26 mm. Pronotal length, 0.36 mm; width, 0.94 mm. Cuneal length, 0.38 mm; width, 0.38 mm.

Color pale yellow to citrine; eyes, external fascia on segment I, segments II-IV and bristles of clypeus black; membrane with two fascia, one running from each marginal convexity. Legs citrine, femora with longitudinal black fascia along upper

margin and apical portion of lower margin; extreme base of tibiae with black spot and upper margin with slender black fascia; apices of tarsi and apex of rostrum fuscous.

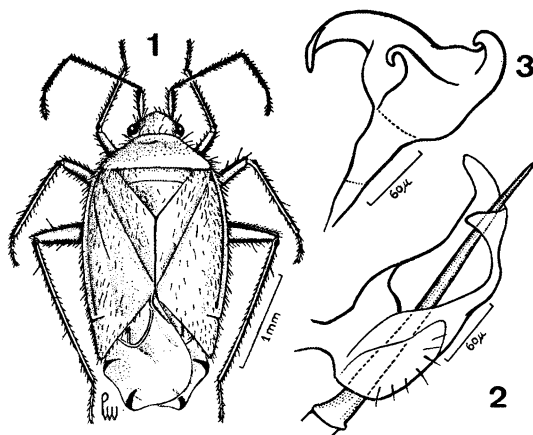
Morphological characteristics as given for genus.

Genitalia: Theca with a characteristic sclerotized subapical dentation; penis with terminal portion simple, filamentous (Fig. 2). Left paramere (Fig. 3) excavated ventrally with characteristic branches with apices recurved. Right paramere small, simple.

FEMALE: Length, 2.60 mm; width, 1.22 mm. Head length, 0.22 mm; width through eyes, 0.56 mm; vertex width, 0.34 mm. Length of antennal segment I, 0.22 mm; II, 0.70 mm; III, 0.42 mm; IV, 0.24 mm. Pronotal length, 0.40 mm; width, 0.94 mm. Cuneal length, 0.38 mm; width, 0.38 mm.

Similar to male in color.

HOLOTYPE: female, 1 mile northwest of Ayutla, Queretaro, Mexico, July 24, 1970, taken at light, Murray, Phelps, Hart, Schaffner. Deposited in the *National Museum of Natural History*, Washington, D.C. **ALLOTYPE:** male, 8 miles west of El



Bicurvicoris nigrolineatus n. sp. Fig. 1 — male, holotype; fig. 2 — outer theca and apex of vesica; fig. 3 — left paramere.

Limon, Tamaulipas, Mexico, July 20, 1970, taken at light, Murray, Phelps, Hart, Schaffner. Deposited in the *National Museum of Natural History*.

Hyalopsallus n. gen.

Phylinae, Phylini. Characterized by the hyaline, completely transparent hemelytra; single tipe of pubescence; and short pseudarolia.

Head strongly curved downward, smooth; eyes at posterior margin of head slightly removed from pronotum, ventrally reaching below antennal socket; vertex slightly convex, neither margined nor carinate, with erect light hairs; frons strongly inclined, rounded in front bearing semierect light hairs; clypeus prominent, not visible from above, somewhat compressed laterally, bearing a few dark semierect hairs; jugum and lorum normal; buccula small; gena normal; rostrum reaching middle coxae, segment I thickest, reaching to about anterior 1/3 of prosternum; segment II longest, III shortest; antennal segment I about 1/2 as long as vertex width, thickened apically; segment II cylindrical, slightly incrassate towards apex, longest; III and IV more slender than II; all segments covered with short decumbent pubescence, segment I also with 2 or 3 long, dark, erect bristles.

Pronotum trapezoidal, only slightly inclined anteriorly, smooth; calli obsolete; anterior margin concave; lateral margins rounded; posterior margin concave, vestiture consisting of light semierect hairs interspersed with semierect setiform hairs (pale under incident light, dark otherwise); mesoscutum broadly exposed; scutellum slightly convex, vestiture as on pronotum; hemelytra minutely punctate; embolium flat, widened towards apex; cuneus slightly longer than wide. Hind femora more developed than others; bases of tibiae with dark

spots at base of dark spines; claws broadly curved; pseudarolia present, small.

TYPE SPECIES, *Hyalopsallus diaphanus* (Reuter)

This genus shows affinities with *Pararagmus* Poppius which occurs in the Palearctic and Oriental Regions but can be distinguished from it by having the vertex and the sides of the pronotum not margined and the hemelytra being completely transparent. The completely transparent hemelytra will also separate it from *Atomoscelis* Reuter.

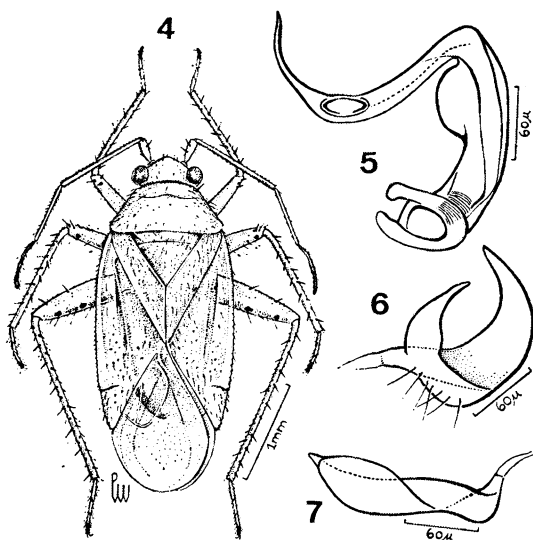
Hyalopsallus diaphanus (Reuter, 1907) n. comb.

(Figs. 4-7)

Atomoscelis diaphanus Reuter, *Ofv. F. Vet. Soc. Forth.* 49(5):24; *ibid*, Van Duzee, *Bul. Buf. Soc. Nat. Sci.* 8(5): 28 (note).

Characterized by the color, dimensions and structure of the male genitalia.

MALE (measurements taken from 20 specimens; the average given first followed



Hyalopsallus diaphanus (Reuter). Fig. 4 — male; fig. 5 — penis (excluding outer theca); fig. 6 — left paramere; fig. 7 — right paramere.

in parentheses by the ranges): Length, 2.95 mm (2.80-3.10 mm); width, 1.21 mm (1.16-1.26 mm). Head length, 0.19 mm (0.16-0.24 mm); head width through eyes, 0.69 mm (0.66-0.72 mm); vertex width, 0.37 mm (0.36-0.40 mm). Length of antennal segment I, 0.19 mm (0.18-0.20 mm); II, 0.80 mm (0.74-0.88 mm); III, 0.62 mm (0.58-0.68 mm); IV, 0.41 mm (0.38-0.44 mm). Pronotal length, 0.41 mm (0.40-0.44 mm); width, 1.00 mm (0.96-1.04 mm). Cuneal length, 0.45 mm (0.42-0.50 mm); width, 0.38 mm (0.34-0.42 mm).

General coloration pale yellow to yellowish green; head, antennae, pleural regions of thorax, legs, pale yellow; pronotum, scutellum, at least on apical half, and abdomen greenish yellow; hemelytra completely transparent; first antennal segment with pale fuscous bar ventrally near base and dark fuscous spot ventrally near apex, second antennal segment fuscous at extreme base; hemelytra with small inconspicuous fuscous spot at apex of clavus; membrane very light fuscous with obscure darker fuscous spot near apex of large areolar cell; femora with scattered fuscous spots, also row of fuscous spots along ventral margin from which setae arise; dark spines near base of tibiae with fuscous spot at base; tarsi light fuscous.

Morphological characters as given for genus.

Genitalia: Penis (Fig. 5) with median wing and subapical secondary gonopore, terminating in long slender sclerotized filament. Left clasper (Fig. 6) bifurcate, with both extremities pointed. Right clasper (Fig. 7) excavated ventrally terminating in a sharp sclerotized point.

FEMALE (measurements taken from 20 specimens; those of holotype given first followed in parentheses by the average and ranges of a series from the Dominican Republic): Length, 3.50 mm (2.95 mm, 2.68-3.16 mm); width, 1.42 mm (1.28 mm,

1.18-1.40 mm). Head length, 0.22 mm (0.19 mm, 0.14-0.24 mm); head width through eyes, 0.74 mm (0.69 mm, 0.64-0.74); vertex width, 0.42 mm (0.40 mm, 0.38-0.42 mm). Length of antennal segment I, 0.22 mm (0.19 mm, 0.16-0.22 mm); II, 0.82 mm (0.74 mm, 0.68-0.82 mm); III, 0.64 mm (0.60 mm, 0.54-0.66 mm); IV, 0.42 mm (0.40 mm, 0.34-0.48 mm). Pronotal length, 0.48 mm (0.42 mm, 0.38-0.46 mm); width, 1.16 mm (1.04 mm, 0.90-1.10 mm). Cuneal length, 0.56 mm (0.46 mm, 0.40-0.50 mm); width, 0.48 mm (0.40 mm, 0.36-0.44 mm).

Similar to male in color and structure, antennal segment II less incrassate.

Material examined: holotype, female, Mandev'le Ja., Apr., 06, Van Duzee Collector. In the collection of the *California Academy of Sciences*; loaned through the courtesy of Dr. Paul H. Arnaud, Jr. REPUBLICA DOMINICANA, 27 males, 37 females from Gambita Garabitos, San Cristobal Prov., August 28, 1967, J. C. Schaffner. In the collection of the *Department of Entomology*, Texas A&M University, College Station; J. C. M. Carvalho Collection and others.

Although the specimens in the series from the Dominican Republic are somewhat smaller than the holotype from Jamaica, they appear to be the same in all other aspects.

Nigrimiris n. gen.

Phylinae, Phylini. This genus is characterized by having species of small size; the body smooth with decumbent pubescence of a single type.

Head smooth, strongly inclined, wider than long; eyes as seen from above touching pronotum, projected laterally, distance between eye and antennal socket less than thickness of antennal segment II in the male, about equal to segment in female; vertex

distinctly margined, slightly carinate; frons strongly inclined, rounded in front; clypeus wide, flat, vertical, slightly rounded anteriorly; lorum, jugum and gena reduced; buccula small; rostrum reaching apex of middle coxae, segment I reaching beyond middle of prosternum, slightly thicker than others, II, III and IV diminishing in sequence in length. Segment I of antenna about 1/2 the width of vertex, incrassate with a few erect setae shorter than 1/2 the width of the segment; segment II incrassate especially so in males, cylindrical, about four times as long as I in males, slightly shorter in females, erect hairs not longer than about 1/2 width of diameter of segment; III and IV cylindrical, covered with hairs twice as long as diameter of segment.

Pronotum trapezoidal; calli obsolete; lateral margins rounded; posterior margin very slightly sinuate; posterior corners rounded; mesoscutum exposed; scutellum very slightly convex; hemelytra with slender embolium; cuneus about as long as wide at base. Legs with large front and hind femora; tibiae with dark spines, lacking distinct dark spots at base; pseudarolia large, almost reaching apex of claws.

TYPE SPECIES OF GENUS *NGRIMIRIS* *PALLIDIPES* n. sp.

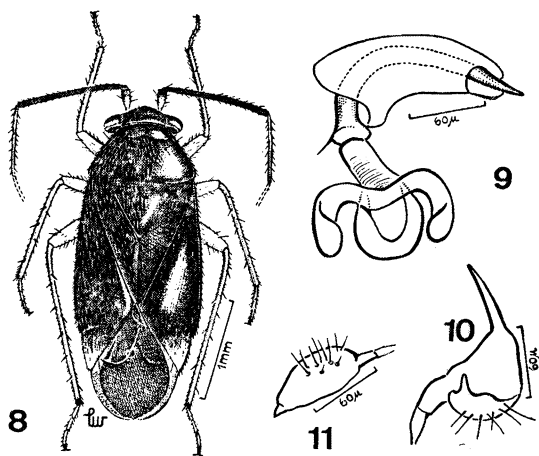
This genus belongs to the group of Phylini genera having a smooth pronotum, a single type of pubescence, the second antennal segment longer than the head width through the eyes, hind femora pale and the tibial spines black. *Nigrimiris* is similar in some respects to *Maurodactylus* Reuter found in the Palearctic Region but can be distinguished from it by the thickened second antennal segment and by the relative lengths of the segments.

***Nigrimiris pallidipes* n. sp.**

(Figs. 8-11)

Characterized by the color, dimensions and structure of the male genitalia.

MALE (measurements taken from six specimens, those of holotype given first followed in parentheses by the average and ranges): Length, 2.74 mm (2.68 mm, 2.60-2.76 mm); width, 1.10 mm (1.07 mm, 1.04-1.10 mm). Head length, 0.14 mm (0.16 mm, 0.14-0.18 mm); width of head through eyes, 0.78 mm (0.76 mm, 0.74-0.78 mm); vertex width, 0.40 mm (0.38 mm, 0.38-0.40 mm). Length of antennal segment I, 0.20 mm (0.21 mm, 0.20-0.22 mm); II, 0.98 mm (1.00 mm, 0.94-1.06 mm); III, 0.40 mm (0.42 mm, 0.36-0.48 mm); IV, 0.24 mm (0.24 mm, 0.22-0.26 mm). Pronotal length 0.50 mm (0.50 mm, 0.48-0.52 mm); width, 1.00 mm (1.01 mm, 1.00-1.02 mm). Cuneal length, 0.36 mm (0.36 mm, 0.34-0.38 mm); width, 0.32 mm (all).



Nigrimiris pallidipes n. sp. Fig. 8 — male, paratype; fig. 9 — penis and outer theca; fig. 10 — left paramere; fig. 11 — right paramere.

General coloration shining black; segment I of antenna pale towards base, III and IV pale yellow; cuneus towards apex and fascia on membrane bordering cuneus pale yellow. Underside of body black; anterior portion of propleuron, posternum, jugum, lorum, gena, gula and lower margin of eyes, legs including coxae, rostrum except apex, and midventral area of abdomen pale yellow; tibiae slightly infuscate with rows of minute corrugations and dark

spines, the latter absent basally; apex of hind femora slightly infusate.

Morphological characters as given for genus.

Genitalia: Penis (Fig. 9) simple with subterminal secondary gonopore. Left paramere (Fig. 10) terminating in two slender sharp points. Right paramere (Fig. 11) small, globose, terminating in a short sclerotized point.

FEMALE (measurements taken from six specimens; those of allotype given first followed in parentheses by the average and ranges): Length, 3.00 mm (2.65 mm, 2.48-3.00 mm); width, 1.26 mm (1.23 mm, 1.20-1.26 mm). Head length, 0.16 mm (0.15 mm, 0.14-0.16 mm); width through eyes, 0.78 mm (0.78 mm, 0.76-0.80 mm); vertex width, 0.44 mm (0.44 mm, 0.42-0.44 mm). Length of antennal segment I, 0.16 mm (0.17 mm, 0.16-0.18 mm); II, 0.62 mm (0.60 mm, 0.56-0.62 mm); III, 0.40 mm (0.37 mm, 0.36-0.40 mm); IV, 0.22 mm (0.22 mm, 0.22-0.24 mm). Pronotal length, 0.52 mm (0.52 mm, 0.50-0.54 mm); width, 1.02 mm (1.02 mm, 1.00-1.06 mm). Cuneal length, 0.40 mm (0.38 mm, 0.36-0.40 mm); width, 0.36 mm (0.38 mm, 0.36-0.40 mm).

Similar to male but with narrower second antennal segment; cuneus and membrane usually darker.

HOLOTYPE: male, Nova Teutonia, Santa Catarina, Brazil, 27°11'N, 52°23'W, September, 1970, Fritz Plaumann. Deposited in the collection of J. C. M. Carvalho, Rio de Janeiro. **ALLOTYPE**: female, same data as holotype. Deposited in the collection of

J. C. M. Carvalho. **PARATYPES**: 3 males, 5 females, same data as holotype; 1 male, same locality and collector, May, 1970; 1 male, same locality and collector, November, 1970. Deposited in the *Museu Nacional*, Rio de Janeiro, Brazil and in the authors' collections.

SUMMARY

The authors describe three new genera, two new species and redescribe one species of Phylini (Phylinae, Miridae) as follows: *Bicurvicoris* n. gen., *B. nigrolineatus* n. sp. from the state of Tamaulipas, Mexico; *Hyalopsallus* n. gen., *H. diaphanus* Reuter (n. comb.) from the West Indies; *Nigrimiris* n. gen., *N. pallidipes* n. sp. from the state of Santa Catarina, Brazil. Illustrations of the insects and the male genitalia are included.

BIBLIOGRAPHICAL REFERENCES

- IEBER, F. X., 1858, Kriterien zur generischen Theilung der Phytocoriden (Capsini auct.). *Wien. Ent. Monatsch.* 2: 325.
- POPPIUS, B., 1911, Beiträge zur Kenntniss der Miriden-Fauna von Ceylon. *Ofv. F. Vet. Soc. Forth.* 53 A (2):34.
- REUTER, O. M., 1875, Revisio critica Capsinarum praecipue Scandinaviae et Fenniae. *Akad. Afhandl. Helsingfors.* 8^o, 101-190 p.
- REUTER, O. M., 1878, Hemiptera Gymnoceratae Europae. *Acta Soc. Sci. Fenn.* 13: 1-188, 13 pls.
- REUTER, O. M., 1907, Capsidae novae in Insula Jamaica mense Aprilis 1906 a D. E. P. Van Duzee collectae. *Ofv. F. Vet. Soc. Forth.* 49(5): 27 p.
- REUTER, O. M., 1909, Bemerkungen über nearktische Capsiden nebst Beschreibung neuer Arten, *Acta Soc. Sci. Fenn.* 36(2): 86 p. 3 pls.
- VAN DUZEE, E. P., 1907, Notes on Jamaican Hemiptera: a report on a collection of Hemiptera made on Island of Jamaica in the Spring of 1906. *Bull. Buffalo Soc. Nat. Sci.* 8(5): 3-79.