Nabidae of the West Indies (Heteroptera)

I.M. Kerzhner

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Eighteen species of Nabidae are recorded from the West Indies. *Alloeorhynchus slateri* sp. n. (Jamaica), *A. jamaicensis* sp. n. (Jamaica), *A. maldonadoi* sp. n. (Puerto Rico) and *Pagasa cobbeni* sp. n. (Curaçao) are described. *Arachnocoris karukerae* Lopez, 1990 is placed in synonymy with *A. berytoides* (Uhler, 1894).

I.M. Kerzhner, Zoological Institute, Russian Academy of Sciences, Universitetskaya nab. 1, St.Petersburg 199034, Russia.

Introduction

Previous papers on the Nabidae of the West Indies contain many misidentifications, and reviews are absent. I give here a critical review of species known to occur in the West Indies. This review started as a paper on the Nabidae collected by the late R.H. Cobben in the Netherlands Antilles in 1956-1957. It was sent to the editors of the "Studies on the fauna of Curaçao and other Caribbean islands", but has not been published for many years. I completed it now with new references and new examined material, except for some specimens, mainly of lesser interest, examined by me in the 1990s during my visits to the two main museums of the USA, of which I did not make detailed notes. Two papers possibly containing additional information (Gowdey, 1926-1928; Miskimen & Bond, 1970) have not been examined by me.

The following abbreviations are used for depositories of the material (curators are given in parentheses): AMNH, American Museum of Natural History, New York (the late P. Wygodzinsky; R.T. Schuh); AUWN, Laboratory of Entomology, Agricultural University at Wageningen (the late R.H. Cobben); BMNH, Natural History Museum, London (W.R. Dolling); JMC, collection of the late J. Maldonado Capriles, will be deposited at USNM; MNHH, National Museum of Natural History, Havana (P. Alayo D.); USNM, U.S. National Museum of Natural History, Washington, D.C. (Th.J. Henry); ZISP, Zoological Institute, Russian Academy of Sciences, St. Petersburg; ZMAN, Zoological Museum, Amsterdam; ZMHB, Zoologisches Museum, Museum für Naturkunde der Humboldt-Universität, Berlin (U. Göllner-Scheiding).

Key to species of Nabidae from the West Indies
(modified from Harris, 1928)

1. Clavus not widened posteriorly. Pronotal collar absent or narrow and indistinct. Rostrum stout. Legs short and thick. (Subfamily Prostemmatinae) 2
– Clavus widened posteriorly. Pronotal collar wide and distinct. Rostrum slenderer. Legs long and slender. (Subfamily Nabinae) 9
2. Fore and middle femora angularly widened to about the middle, with two rows of teeth. (*Alloeorhynchus* Fieber) 3
– Fore femora strongly incrassate, but not widened angularly, with rows of teeth; middle femora not strongly incrassate. (*Pagasa* Stål) 7
3. Corium partly yellow 4
– Corium entirely black or blackish brown 5
4. Hind lobe of pronotum uniformly brown or brownish yellow. Corium yellow in basal 2/3 . . . . . .1. **Alloeorhynchus moritzii**
– Hind lobe of pronotum brownish yellow in median part and dark brown laterally. Corium paler at base and with a transverse dirty yellow spot beyond middle between outer margin and medial suture . . . . . 2. **Alloeorhynchus slateri**
5. Abdomen entirely pale. Hind lobe of pronotum orange-yellow . . . . . 3. **Alloeorhynchus alayoi**
– At least segments III-VII of connexivum with black transverse stripes. Hind lobe of pronotum yellow with narrowly brown hind margin 6
6. Clavus and corium entirely shining. Fore lobe of pronotum without yellow spot. Propleurae with yellow hind corners . . . . . 4. **Alloeorhynchus jamaicensis**
– Clavus and most of corium dull. Fore lobe of pronotum with a yellow spot. Propleurae entirely black . . . . . 5. **Alloeorhynchus maldonadoi**
7. Clavus and inner part of corium dull, differing from the shining outer part of corium. Rostral segment II longer than III, extending distinctly beyond hind margins of eyes . . . . . 6. **Pagasa pallipes**

– Hemelytra uniformly (strongly or moderately) shining. Rostral segment II shorter than III, not extending beyond hind margins of eyes 8
8. Body entirely black . . . . . 7. **Pagasa confusa**
– Pronotum (at least partly) and hemelytra yellow . . . . . 8. **Pagasa cobbeni**
9. Head short, strongly declivous. Pronotum rather globose. Apex of scutellum produced upwards into a distinct spine. Canal of scent glands short, tuberculate. Females without ovipositor. (*Arachnocoris* Scott) 10
– Head moderately long, porrect. Pronotum campanulate. Apex of scutellum not produced into an upward directed spine. Canal of scent glands flattened, directed outward onto mesopleuron. Females with ovipositor 11
10. Smaller (length about 2.5-3.5 mm). Legs yellow; femora annulated with black. Abdomen not constricted at base . . . . . 9. **Arachnocoris berytoides**
– Larger (length about 4.5-5 mm). Legs piceous; apex of each femur and base of each tibia yellowish to reddish. Abdomen constricted at base . . . . . 10. **Arachnocoris trinitatis**
11. Fore coxae rod-like, greatly elongate. Fore acetabula closed behind. Ocelli absent 12
– Fore coxae conical, not greatly elongate. Fore acetabula open behind. Ocelli present 15
12. Tarsi 3-segmented. Hemelytra with costal margins parallel. Large slender species (about 12 mm) (*Neogorpis* Barber) . . . . . .11. **Neogorpis neotropicalis**
– Tarsi 1-segmented. Hemelytra strongly constricted before the middle. Small species (less than 5 mm). (*Carthasis* Champion) 13
13. Antennal segment I 1.3 times as long as head. Pronotum with a median darker stripe or line . . . . . 12. **Carthasis gracilis**
– Antennal segment I and head subequal in length. Pronotum with a median paler stripe 14
14. Antennal segment II distinctly longer than I. Pronotum with fore lobe not strongly arched, hind lobe scarcely higher than fore lobe . . . . . 13. **Carthasis distinctus**
– Antennal segment II slightly shorter than I. Pronotum with fore lobe arched, hind lobe suddenly and strongly raised . . . . . 14. **Carthasis minor**
15. Membrane with straight veins not forming closed cells. Ocelli subcontiguous. Antennal segment I about twice as long as head, suddenly and evenly thickened along its apical third (*Metatropiphorus* Reuter) . . . . . .15. **Metatropiphorus drakei**
– Membrane (except brachypterous specimens) usually with veins forming 3 closed cells. Ocelli rather distant. Antennal segment I less than twice as long as head, not thickened along its apical third 16
16. Fore and middle femora armed beneath with minute, short, rather blunt piceous teeth. Tibiae annulate throughout their length. Macropterous or brachypterous. (*Hoplistoscelis* Reuter) . . . . . .16. **Hoplistoscelis** sp. n.
– Fore and middle femora unarmed or with only minute or long spine-like setae, never with short teeth. Tibiae not annulate, or, if so, only at the base and apex. Always macropterous 17
17. Hind lobe of pronotum strongly punctate. Fore and middle femora each with a row of long, rigid, spine-like setae. (*Lasiomerus* Reuter) . . . . . 17. **Lasiomerus signatus**
– Hind lobe of pronotum impunctate. Femora withot long, spine-like setae. (*Nabis* Latreille) . . . . . 18. **Nabis capsiformis**

Subfamily PROSTEMMATINAE

Tribe **Prostemmatini**

1. **Alloeorhynchus moritzii** (Stein)

Prostemma moritzii Stein, 1860: 77.
Alloeorhynchus moritzii: Stål, 1873: 109; Reuter & Poppius, 1909: 40; Kerzhner, 1986: 192.
Alloeorhynchus armatus Uhler, 1894: 207; Reuter & Poppius, 1909: 41; Harris, 1928: 15; Alayo, 1971: 14; Woodruff et al., 1998: 92.

In the West Indies, the species is known from Cuba (Alayo, 1971), St. John (Stein, 1860) and Grenada (Uhler, 1894; Woodruff et al., 1998). I examined fragments of the specimen from Cuba (it was destroyed, when sent to me for examination) and the specimen from St. John (holotype of *P. moritzii*; ZMHB). Outside of the West Indies, the species is reported from Guatemala. I have seen also specimens from Suriname (new record): 1 ♂, 1 ♀, Plantage de Morgenstond, Suriname Distr., under plants, 22.VIII.1958, P.H. van Doesburg; 3 ♀, Paramaribo, 20.XII.1957, 12.I.1958, XI.1962, P.H. van Doesburg; 1 ♀, Vank-Kolonie, Saramacca Distr., VIII.1959, J. v. d. Drift (all specimens in Rijksmuseum van Natuurlijke Historie, Leiden) and French Guiana (new record: 1 ♀, 11 km SE Cayenne, Point de Mahury, 11.VII.1995, Gusarov, ZISP; 1 ♀, 2 km SSE Sinnamary, Station de Paracou, 16.VI.1995, Gusarov, ZISP). In the specimens from Suriname and French Guiana, body length ♂ 3.7 mm, ♀ 4.1-4.5 mm, hind lobe of pronotum from brown to brownish yellow, hind tibiae yellow.

2. **Alloeorhynchus slateri** sp. n.

Holotype. ♂, **Jamaica**, Parish of St. Ann, 1 mile S. Moneaque, 4.VII.1971, J.A. Slater, R.M. Baranowski, J.E. Harrington, H. Brailovsky's collection, Instituto de Biología de la Universidad Nacional Autónoma de Mexico.
Paratype. ♂, same data as holotype, ZISP.

Description. Coloration. Head blackish brown. Antennae dark brown. Rostrum yellow with segment I dark brown. Collar and fore lobe of pronotum blackish brown; hind lobe brownish yellow with sides widely dark brown; hind margin yellow with brownish middle. Scutellum black. Corium and clavus brown, dirty yellowish at base; apical 2/5 of corium dark brown; in front of this dark brown part a transverse dirty yellow spot between outer margin and medial suture; membrane dark brown. Legs yellow; middle and hind femora brownish with yellow apex; middle and hind tibiae brownish. Ventral side of thorax dark brown to black. Abdomen brown; ventral side with a large yellow spot at base; connexivum yellow, without groups of black spinules, with transverse brown stripes on hind margins of segments III-VII.

Structure. Scutellum and ventral side of metathorax dull, rest of the body shining. Pronotum, clavus and corium covered with semierect pale hairs; scutellum, head and pronotum also with long setae. Head slightly wider than long. Ocelli distinct. Rostrum stout, reaching hind margins of fore coxae. Hemelytra with distinct large punctures on both sides of claval vein and along outer margin of inner vein of corium. Veins of membrane distinct, forming 3 cells. Fore femora angulately widened, widest before the middle, with two subparallel rows of black denticles (12 in fore row and 8 in hind one), of which 2 largest denticles are on projection in widest part. Fore tibiae widened towards apical fourth, with 8 setiferous crenulations in fore row and 7 crenulations in hind row. Middle femora widened at middle, with 2 larger denticles on widest part, 6-7 denticles in fore row and 1-2 in hind row. Middle tibiae with a small fossa spongiosa and with crenulations on inner margin.

Measurements (mm). Head width 0.54, vertex width 0.21, length of antennal segments (I-IV) 0.31, 0.57, 0.55, 0.67, of rostral segments (I-IV) 0.14, 0.43, 0.30, 0.14. Length of pronotum 0.90 (including collar plus fore lobe 0.57-0.60, hind lobe 0.30-0.33), width on fore margin 0.41, on hind margin 1.20. Length of fore, middle and hind femora 0.90, 0.86, 1.20, respectively, of corresponding tibiae 0.70, 0.80, 1.25; width of fore femora 0.35, of middle femora 0.20.

Body length 3.2-3.3 mm, width 1.15 mm.

Comparison. The new species is resembling in the size *A. moritzii* (though slightly smaller), but in the latter the hind lobe of pronotum is unicolorous (brownish yellow to brown), abdomen yellow, connexivum with groups of black spinules, middle femora with greater number of black denticles (13 in the fore row and 9 in the hind row), hemelytra with much larger yellow spot at base of corium. *A. jamaicensis* is larger than *A. slateri*, with entirely black hemelytra and greater number of denticles on femora.

Etymology. The species is named after Professor J. Slater.

3. **Alloeorhynchus alayoi** Kerzhner

Alloeorhynchus sp.: Alayo, 1967: 4, pl. 1, fig. 1; 1971: 14.
Alloeorhynchus alayoi Kerzhner, 1986: 191, figs 1, 2.

Endemic of Cuba (Alayo, 1967, 1971; Kerzhner, 1986).

4. **Alloeorhynchus jamaicensis** sp. n.

Holotype: ♀, **Jamaica**, Blandeville, 25.V.1969, collector not given, BMNH.

Description. Coloration. Head brownish black; antennal segment I brownish yellow (segments II-IV missing); rostrum yellow with brown segment I. Collar and fore lobe of pronotum piceous black; hind lobe pale yellow with narrowly brown hind margin. Scutellum black. Hemelytra piceous black with blackish grey membrane. Legs yellow; middle and hind femora fuscous in apical half. Ventral side of thorax black; hind lobe of prothorax yellow in lateral half. Abdomen dark brown, with a large yellow spot at base reaching segment V; connexivum yellow, without groups of black spinules, with brown bands on hind margins of segments III-VII, which are equally wide on dorsal and ventral side.

Structure. Scutellum and ventral side of metathorax dull, rest of the body shining. Pronotum, clavus and corium covered with semierect pale hairs; scutellum, head and pronotum also with long setae. Head slightly wider than long. Ocelli distinct. Rostrum stout, reaching hind margins of fore coxae. Hemelytra with distinct punctures on both sides of claval vein and along outer margin of inner vein of corium. Veins of membrane distinct, forming 3 cells. Fore femora widest before the middle, with two parallel rows of black denticles (3 larger denticles on projection in widest part and 11 small denticles in each row). Fore tibiae widened towards apical fourth, with about 10 setiferous crenulations in fore row and 8 crenulations in hind row. Middle femora widest slightly before the middle, with 2 larger denticles on widest part, 11 smaller denticles in fore row and 7 in hind row. Middle tibiae with a small fossa spongiosa and with crenulations on inner margin.

Measurements (mm). Head width 0.65, vertex width 0.28, length of antennal segment I 0.42, of rostral segments (I-IV) 0.21, 0.46, 0.33, 0.14. Length of pronotum 1.15 (including collar plus fore lobe 0.75, hind lobe 0.40), width on fore margin 0.50, on hind margin 1.43. Length of fore, middle and hind femora 1.13, 1.13, 1.50, respectively, of corresponding tibiae 1.00, 1.00, 1.57; width of fore femora 0.40, of middle femora 0.30.

Body length 4.2 mm, width 1.5 mm.

Comparison. The new species is closely related to *A. alayoi* and *A. maldonadoi*, but differs from the first in the brown hind margin of pronotum, black inner half of the hind prothoracic lobe, dark brown abdomen, and fuscous apical half of middle and hind femora; from the second, in the smaller size, shorter fore femora and tibiae, pale lateral margins of the pronotal hind lobe, entirely shining hemelytra, and darker abdomen.

5. **Alloeorhynchus maldonadoi** sp. n.

Holotype: ♀, **Puerto Rico**, Guavate St. Forest, at light, July 1987, J. Maldonado C., JMC.

Paratypes. **Puerto Rico**: 1 ♀, Guánica St. Forest, at light, July 1987, V. Becker, JMC; 1 ♀, Maricao St. Forest, 15.VIII.1987, V. Becker, ZISP.

Description. Coloration. Head piceous black. Antennal segments I and II dirty yellow, III and IV dark brown. Rostrum dirty yellow with brown segment I. Collar and fore lobe of pronotum piceous black; fore margin of fore lobe with a triangular yellow spot narrowing caudad; hind lobe yellow with lateral and hind margins narrowly brown. Scutellum dark brown, slightly paler in apical half. Corium and clavus dark brown, apical third of corium almost black; membrane greyish brown. Legs dirty yellow to fuscous-yellow. Ventral side of thorax brown, with a median yellow spot on each segment. Ventral side of abdomen yellow (in Maracao specimen, brownish yellow with a large yellow spot at base); connexivum with brown bands on hind margins of segments III-VII, which are narrower on ventral side.

Structure. Scutellum, clavus, apical 2/3 of corium, except for veins and lateral margin, and ventral side of metathorax dull, rest of the body shining. Pronotum, clavus and corium covered with semierect pale hairs; scutellum, head and pronotum also with long setae. Head scarcely wider than long. Ocelli distinct. Rostrum stout, reaching hind margins or the middle of fore coxae. Hemelytra with less distinct punctures on both sides of claval vein and distinct punctures along outer margin of inner vein of corium. Veins of membrane distinct, forming 3 cells. Fore femora widest before the middle, with two subparallel rows of black denticles (2 larger denticles on projection in widest part and 15 small denticles in fore row and 12, in hind row). Fore tibiae widened towards apical fourth, with 9 setiferous crenulations in fore row and 7 crenulations in hind row. Middle femora widest slightly before the middle, with 2 large denticles on widest part, 8 smaller denticles in fore row and 7 in hind row. Middle tibiae with a small fossa spongiosa and with crenulations on inner margin.

Measurements (mm). Head width 0.71-0.74, vertex width 0.29-0.31, length of antennal segments (I-IV) 0.47-0.50, 0.89-0.93, 0.70, 0.93, of rostral segments (I-IV) 0.19, 0.63, 0.36, 0.20. Length of pronotum 1.30 (including collar plus fore lobe 0.77-0.80, hind lobe 0.50-0.53), width on fore margin 0.57-0.61, on hind margin 1.63-1.75. Length of fore, middle and hind femora 1.35, 1.50, 1.86-1.93, respectively, of corresponding tibiae 1.14, 1.14, 1.86-1.93; width of fore femora 0.40, of middle femora 0.35.

Body length 5.0-5.4 mm, width 1.7-1.9 mm.

Comparison. This is the largest of the West Indian species of *Alloeorhynchus*. It differs from other West Indian species in the partly dull corium, coloration of pronotum and other characters.

Etymology. The species is named after the late J. Maldonado Capriles.

6. **Pagasa (Pagasa) pallipes** Stål

Pagasa pallipes Stål, 1873: 108; Champion, 1899: 299, pl. 18, fig. 18; Harris, 1928: 22, pl. 4, fig. 1; Alayo, 1967: 5, pl. 2, fig. 2.

In the West Indies, the species is known from Cuba only (Alayo, 1967). In addition to the material sent by P. Alayo, I examined 2 ♀ from Habana-Alamár collected on 6-14.VI. and 18-26.VII.1965 by J. Prokop (Moravian National Museum, Brno). *P. pallipes* is widely distributed in the southern part of the USA.

7. **Pagasa (Lampropagasa) confusa** Kerzhner

Pagasa fusca (misidentification, non Stein, 1857): Barber, 1923: 13; 1939: 394.

Pagasa (*Lampropagasa*) *confusa* Kerzhner, 1993: 43, figs 23-25, 35, 36.

In the West Indies, the species is found in Puerto Rico only (Barber, 1939; Kerzhner, 1993). It is distributed from the USA to Guatemala.

8. **Pagasa (Lampropagasa) cobbeni** sp. n. (Figs 1-3)

Prostemma sp.: Cobben, 1968: 125, 130, fig. 138.

Holotype. ♂, **Curaçao**, Santa Cruz baai, 2.II.1957, R.H. Cobben, AUWN.

Paratypes. **Curaçao**: 1 ♀, 1 larva, same data as holotype, AUWN; 1 ♂, Santa Cruz, 7.II.1957, Cobben, ZISP; 1 ♀, Santa Cruz, zoer spaarsame begreeing, *Heliotropium*, *Euphorbia*, etc., 9.II.1957, Cobben, AUWN; 1 ♀, Iheresiaklooster Vichy, 16.III.1957, Cobben, ZISP; 1 larva, 1 exuvium, no exact locality, Cobben, AUWN.

Description. Head, pronotum, abdomen, and underside of thorax strongly shining; hemelytra less shining; scutellum dull. Body covered with relatively thin, short, poorly visible pale hairs and with numerous long setae, the most visible of them are (the number on one side is indicated): 1 on labrum, 2 on outer margin of clypeus, 2 near inner margin of eye, about 9 on lateral margin and fore corner of pronotum, 5 along margin of scutellum, 1 at base of clavus, 1 on each tibia, and one on each dorsal laterotergite starting with the fourth. All mediotergites of abdomen laterally with shallow, poorly visible punctures; other body parts impunctate.

Coloration. Head black, with apex at least laterally yellow. First and intercalary segments of antennae yellow with brown apex; segment II yellow with brown apex to completely brown; segments III and IV brown.

Rostrum yellow. Pronotum dirty yellow to brownish yellow, but in one female (Santa Cruz, 9.II) brownish black with fore margin and hind lobe brownish yellow. Scutellum, abdomen, and

underside of thorax brownish black. Hemelytra dirty yellow (Pinkish Buff to Clay Color, according to Ridgway, 1912), sometimes with slightly embrowned inner hind corners. Membrane transparent. Prothorax beneath yellow in some specimens. Canals of stink glands (Fig. 3), thorax around coxal cavities, and legs yellow; last segments of tarsi, fore tibiae and, in the darkest female, hind femora more or less brownish apically.

Structure (all measurements in mm). Head slightly wider than long (0.86 : 0.79). Eyes large, not raised above the level of vertex, 1.25 times as wide as vertex. Length of antennal segments: I 0.29-0.30, intercalary 0.16-0.17, II 0.73-0.80, III 0.69-0.74, IV 0.64-0.71. Rostrum reaching the middle of fore coxae, its segment II not reaching hind margins of eyes.

Pronotum slightly wider than long (♂ 1.29 : 1.21, ♀ 1.50 : 1.31), with a narrow edge along lateral margin; fore lobe weakly arched, 5 times as long as hind lobe; hind margin with a shallow angular concavity in the middle. Scutellum as long as or slightly longer than wide, bifoveate on the disc. Canal of metathotacic scent gland wide. Hemelytra short (macropterous form unknown), reaching base or apex of 2nd abdominal tergite; hind margin rounded; traces of claval, medial and costal (cuneal) fractures present; vein of clavus and inner vein of corium prominent, with indistinct punctures on both sides. Membrane rudimentary, like a narrow stripe. Comissure 0.3-0.4 times as long as scutellum. Outer angles of hemelytra rounded.

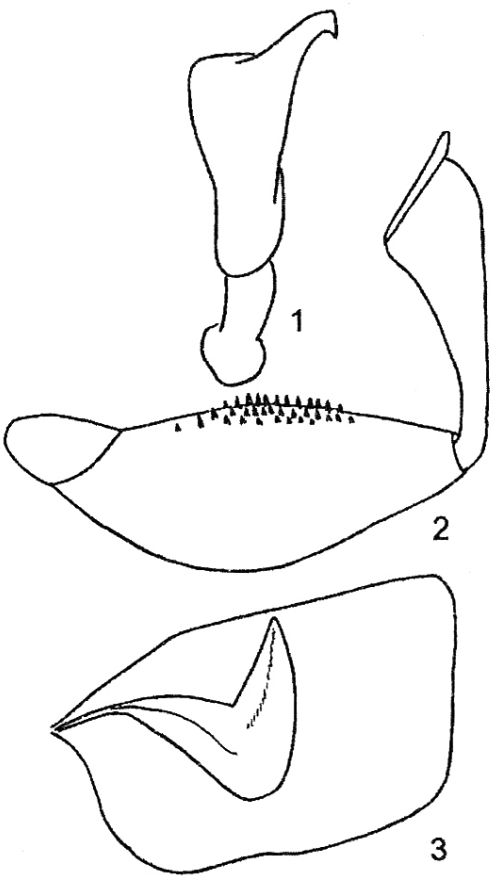
Coxae relatively short. Fore femora strongly thickened (Fig. 2); their ventral side with three convergent at ends rows of black teeth; proximal and distal end of femora without teeth. In hind row, teeth larger, about 13 in number; in middle and especially in fore row, teeth smaller, about 10 in each row. Middle femora slightly thickened. Fore tibiae with straight outer margin, almost gradually widened to their apical third, and then gradually narrowed to apex. Length of hind tibia 1.9-2.0 mm.

Paramere as in Fig. 1.

Length ♂ 4.5-4.7, ♀ 5.3-5.5 mm; width of abdomen ♂ 1.6-1.7, ♀ 1.8-1.85 mm.

Larva. Body black; hind margin of 2nd abdominal sternite, base and sides of abdomen beneath weakly sclerotised, whitish; legs, antennae and rostrum yellowish.

Comparison. The small size, short rostrum, uniformly shining hemelytra, wide apical part of the canal of metathoracic scent glands, and shape of the fore tibiae place this species in the subgenus *Lampropagasa* Reuter. It differs from all other species of the subgenus in the yellow hemelytra and pronotum (both parts are black or brownish black in other species) as well in the shape of the paramere.



Figs 1-3. *Pagasa cobbeni* sp. n. **1**, paramere; **2**, fore femur and tibia; **3**, metapleuron.

Etymology. The species is named after the late R.H. Cobben.

Subfamily NABINAE

Tribe **Arachnocorini**

9. **Arachnocoris berytoides** (Uhler, 1894)

Velidia berytoides Uhler, 1894: 207; Maldonado & Navarro, 1967: 49; Woodruff et al., 1998: 93.
Arachnocoris berytoides: Bergroth, 1914: 116; Harris, 1928: 28.
Arachnocoris karukerae Lopez, 1990: 3, figs 1-8, **syn. n.**

Velidia berytoides was described from one specimen collected at Grenada (not at Trinidad as stated by Harris, 1928), recorded subsequently from Puerto Rico (Maldonado & Navarro, 1967)

and described again as a new species from Guadeloupe and presumably from Martinique by Lopez (1990). The redescription given below is based on the holotype of *V. berytoides*, a male, and a topotypical male, both in BMNH. I examined also specimens from Puerto Rico in JMC and USNM.

Description. Coloration. Head above whitish in fore half and black in hind half; vertex with an yellow transverse stripe from eye to eye, which includes the ocelli; underside of head whitish. Antennal segment I white, with a large black ring in apical third; II white with brownish base and black subapical ring; III yellowish with both ends brownish; IV black with the middle third white. Two basal segments of rostrum whitish, two apical segments brownish. Fore lobe (calli) of pronotum black; collar, narrow carina on each side of fore lobe, and hind lobe whitish yellow; humeri and subbasal region slightly embrowned; hind margin white. Scutellum brown, with an Y-form elevation yellowish and apex white. Hemelytra largely hyaline, with yellowish veins; distal area of corium not transparent, dark red, with white apex. Base of hemelytron and vein on its inner margin reddish. Membrane dark grey; a spot near apex of corium and a longitudinal stripe in hind third paler. Prothorax beneath yellowish, laterally with a large brown spot on each side. Meso- and metathorax beneath black; margins of middle coxal cavities narrowly whitish; meso- and metathorax laterally yellow. Fore and middle coxae black, with narrowly whitish apex; hind coxae whitish, each with a large black spot. All trochanters brown with whitish margins. All femora yellowish, with base narrowly black, subapical ring (much larger on fore and middle legs) reddish brown, and two rings or spots between base and apex red or brown. Tibiae white, slightly infuscate subbasally and subapically. Tarsi dark brown; 2nd segment white, except its extreme base. Underside of abdomen brown, a longitudinal stripe on basal segments, most of segments V-VII, and an Y-form spot on genital segments and around the stigmae yellowish; no raised ivory spots.

Structure. Body shiny. Antennae, pronotum (except for fore lobe), and veins of hemelytra with short hairs. Head strongly declivous. Rostrum reaching base of hind coxae. Fore lobe of pronotum distinctly delimited, glabrous, with a longitudinal furrow; hind lobe and hind part of propleurae strongly punctate. Hind margin of pronotum moderately insinuate in the middle part, laterally very weakly laminately reflexed; lateral margin with a narrow callose edge; humeri distinct. Scutellum with an Y-form elevation; its apex only very slightly raised and pointed. Hemelytra constricted towards the middle of corium; membrane extending well beyond the tip of abdomen, its venation indistinct, except marginal veins. Fore coxae nearly twice as long as the middle and hind ones. Trochanters without hook. Fore and middle femora moderately thickened towards the middle, with two rows of black spines on ventral side. Hind femora slightly thickened near apex. All tibiae slender. Fore and middle tibiae without fossa spongiosa, on ventral side with two rows of small denticles. Claws small, symmetrical. Abdomen not constricted at base, without parastigmal pits, ventrites II-IV fused. Male genital segment large, laterodorsally pressed in on each side. Aedeagus without sclerotized structures; ductus seminis thickened at its distal end.

Measurements (mm). Head width 0.41, vertex width 0.21. Length of antennal segments I 0.39, II 0.65, III 0.83, IV 0.57, of rostral segments I 0.15, II 0.43, III 0.36, IV 0.21. Pronotum width on fore margin 0.36, at humeri 0.76, length medially 0.60 (including collar 0.07, fore lobe 0.19, hind lobe 0.35). Scutellum width 0.26, length 0.21. Comissure length 0.43. Length of fore, middle and hind femora 1.07, 1.00, 1.20, respectively; the same of corresponding tibiae 1.00, 1.00, 1.65; maximum thickness of fore and middle femora 0.15, of hind femora 0.11.

Length 2.85 mm, width at the constricted part of hemelytra 0.5 mm.

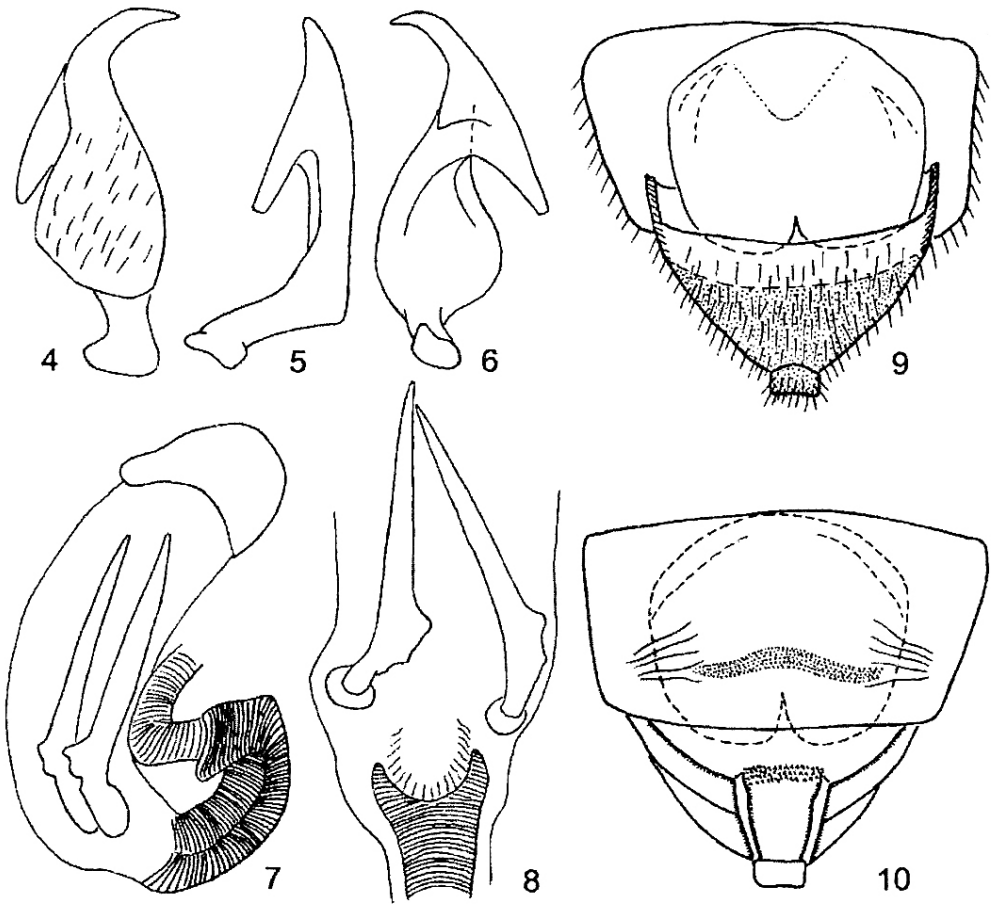
Comments. A. berytoides is omitted in China's (1946) key to *Arachnocoris* and still listed in *Velidia* by some authors. However, in my opinion, Bergroth (1914) correctly placed this species in *Arachnocoris*. It is the smallest species of the genus. It differs also from most other species in the structure of abdomen, which is not constricted at base and has no ivory spots. Judging by the original description, *A. karukerae* is synonymous with *A. berytoides*.

10. **Arachnocoris trinitatis** Bergroth
(Figs 4-10)

Arachnocoris trinitatis Bergroth, 1916: 232; Harris, 1928: 31, pl. 4, fig. 7; China, 1946: 121, 122; Kuznetsova et al., 2007: 17 ("*trinitatus*").

This species was hitherto considered endemic to Trinidad (Bergroth, 1916; Harris, 1928; China, 1946; Kuznetsova et al., 2007), but it occurs also in Venezuela (new record: 1 ♀, Monagas, Maturin, 13.XI.1959, Ed. Owot, USNM). The notes on the morphology of abdomen and the male genitalia and a short description of the larva given below are based on 1 ♂, 1 ♀ and 1 larva labelled "Trinidad, Nariva Swamps, G. Brooke Worth", which are donated by the late P. Wygodzinsky to ZISP. I examined also further specimens from Trinidad (USNM, ZISP), including the holotype (USNM).

Descriptive notes. Imago. All tergites of abdomen, except I, II, IX and middle part of III,



Figs 4-10. *Arachnocoris trinitatis* Bergroth. **4-6**, paramere; **7**, aedeagus; **8**, base of endosoma; **9**, **10**, apex of female abdomen with removed tergite VIII (9, dorsal view; 10, ventral view).

membranous or only with small sclerotised areas in the middle. One pair of abdominal scent gland openings. Abdomen constricted between segments II and III, sternum III the longest, sterna II-IV fused. Sterna II to VII, mostly in their lateral parts, with large round white spots formed by weakly sclerotised areas. Sternum VIII of male not drawn under the VII, subequal to it in length, with a row of teeth on hind margin. Paramere as in Figs 4-6. Aedeagus (Figs 7, 8) short, with two symmetrical, long, pointed spiculi; ductus seminis in apical two-thirds with strongly thickened walls. Apex of female abdomen as in Figs 9, 10.

Larva (apparently of 3rd instar). Body ant-like, shining. Abdomen slightly constricted at base. Tergite III large, its median part forms an elongate hump. One pair of abdominal scent gland openings between tergites III and IV, they are wide apart. Tergites IV-VI and margins of tergites III, VII and VIII weakly sclerotised. Fore tibiae with one row of teeth; middle tibiae with hairs. Lateral margins of abdomen turned downwards. Colour bright red; legs, rostrum and antennae brownish red. Apices of 1st and 2nd and middle of 4th antennal segments, hind margin of pronotum laterally, a spot at base and another in the hind third of hemelytral pads, fore half and sides of tergite I, fore margin and middle of the II, hind corners of the III, fore corners of IV and V and a spot on each side of tergite IV, sternite II, spots in the middle of hind margin of sternites III and V, large swellings in lateral corners of sternite VI, anal ring, borderings of all coxal cavities, trochanters (except 2 brown spots on each), apices of femora, bases and apices of tibiae, and the middle of 2nd tarsal segments white. Length of body 2.6 mm; as in adults, head strongly declivous, short, rostrum reaching hind coxae, fore and middle femora with small dark teeth on ventral side.

Tribe **Gorpini**

11. **Neogorpis neotropicalis** (Barber)

Gorpis neotropicalis Barber, 1923: 8.
Neogorpis neotropicalis: Barber, 1924: 136; Harris, 1928: 83; Barber, 1939: 396, fig. 31; Wolcott, 1950: 213; Kerzhner, 1986: 191, fig. 37.

Endemic of Puerto Rico (Barber, 1923, 1924, 1939; Harris, 1928; Wolcott, 1950; Kerzhner, 1986). I have examined 1 ♂ and 1 ♀, paratypes (AMNH).

Tribe **Carthasini**

12. **Carthasis gracilis** Harris

Carthasis minor (misidentification, non Reuter, 1908): Barber, 1923: 13.
Carthasis gracilis Harris, 1925: 172, 1928: 77, pl. 4, fig. 14; Barber, 1939: 396; Wolcott, 1950: 213; Alayo, 1967: 9.

Cuba (Harris, 1925, 1928; Alayo, 1967), Puerto Rico (Barber, 1923, 1939; Harris, 1928; Wolcott, 1950). Endemic of the West Indies. I have examined several specimens from Puerto Rico (AMNH), including the specimen misidentified by Barber, 1 ♀ from St. Thomas (new record: Cidra, 26.II.1955, A.M. Nadler; AMNH), as well as specimens from Cuba identified by P. Alayo (MNHH).

13. **Carthasis distinctus** Harris

Carthasis distinctus Harris, 1925: 173; 1928: 78, pl. 4, fig. 9; Alayo, 1967: 9, pl. 1, fig. 2.

Endemic of Cuba (Harris, 1925, 1928; Alayo, 1967). I have examined specimens identified by P. Alayo (MNHH); besides, 1 ♀ was collected by myself at San Antonio d. l. Baños, prov. La Habana, in 1986.

14. **Carthasis minor** Reuter

Carthasis rufonotatus (misidentification, non Champion, 1898): Van Duzee, 1907: 25.
Carthasis minor Reuter, 1908: 97; Harris, 1925: 174; 1928: 79, pl. 4, fig. 13.

Endemic of Jamaica (Van Duzee, 1907; Reuter, 1908; Harris, 1925, 1928).

Tribe **Nabini**

15. **Metaropiphorus drakei** Harris

Metatropiphorus belfragii (misidentification, non Reuter, 1872): Van Duzee, 1907: 25; Harris, 1926: 4; Alayo, 1967: 8, pl. 2, fig. 5; Maldonado & Navarro, 1967: 49.
Metaropiphorus drakei Harris, 1928: 73, pl. 4, fig. 5; Barber, 1939: 595.

Described from Puerto Rico (Harris, 1928) and so far recorded from here only. I have seen specimens from Bahamas (2 ♂, Nassau, 23.VI.1954, W.L. Nadler, AMNH), Jamaica (3 ♂, Whitehouse, 25.III.1955, W.L. Nadler, AMNH; 1 ♀, Runaway Bay, II.1969, W.W. Wirth, USNM) and Puerto Rico (4 ♂, El Verde, VI.1967, J. Maldonado C., USNM; 1 ♀, Maricao State Forest, 29.VI.1953, J.A. Ramos, USNM), as well as specimens from Cuba and Puerto Rico misidentified as *M. belfragii* by Alayo (1967) and Maldonado & Navarro (1967), respectively (MNHH, JMC). I think that old records of *M. belfragii* from Jamaica (Van Duzee, 1907) and Cuba (Harris, 1926) also belong to *M. drakei.*

16. **Hoplistoscelis** sp. n.

Coriscus roripes (misidentification, non Stål, 1860): Uhler, 1893: 706.
Coriscus crassipes (misidentification, non Reuter, 1872): Uhler, 1894: 205.
Coriscus sericans (misidentification, non Reuter, 1872): Uhler, 1894: 205.
Nabis nigriventris (St. Vincent record only; misidentification, non Stål, 1862): Champion, 1899: 302; Harris, 1928: 45.
Nabis sordidus (misidentification, non Reuter, 1872): Champion, 1899: 303 (part); Van Duzee, 1907: 25; Barber, 1923: 13; Harris, 1926: 2; 1928: 41, pl. 2, fig. 3 (part); Barber, 1939: 395; Alayo, 1967: 6, pl. 1, figs 3, 4.
Hoplistoscelis pallescens (misidentification, non Reuter, 1872): Kerzhner, 1993: 40, figs 10-12, 15, 16.
Hoplistoscelis dentipes (misidentification, non Harris, 1928): Woodruff et al., 1998: 92.
Hoplistoscelis sericans (misidentification, non Reuter, 1872): Woodruff et al., 1998: 92.

In the West Indies, this species is known from Cuba (Harris, 1926, 1928; Alayo, 1967), Hispaniola (Harris, 1926, 1928), Puerto Rico (Barber, 1923, 1939), Jamaica (Van Duzee, 1907), St. Vincent (Uhler, 1893; Champion, 1899; Harris, 1928) and Grenada (Uhler, 1894; Champion, 1899; Harris, 1926, 1928). In addition to the material from Jamaica (AMNH), Puerto Rico (AMNH), Hispaniola (USNM) and Cuba (MNHH), I examined specimens from Grenada and St. Vincent misidentified by Uhler (1893, 1894) and Champion (1899), all of them belong to this species. The species is widely distributed, from the south of USA to Brazil. It was misinterpreted by me (Kerzhner, 1993) as *H. pallescens*. A new species will be described elsewhere.

17. **Lasiomerus signatus** (Uhler)

Coriscus capsiformis (part?, see Champion, 1899): Uhler, 1893: 706.
Coriscus signatus Uhler, 1894: 205.

Nabis signatus: Champion, 1899: 304, pl. 18, figs 31-33; Barber, 1923: 13.
Nabis spinicrus (misidentification, non Reuter, 1890): Harris, 1926: 2; 1928: 47, pl. 2, fig. 7; 1930: 247; Barber, 1939: 395; Alayo, 1967: 7.
Lasiomerus signatus: Kerzhner, 1986: 191; Woodruff et al., 1998: 92.

The species is recorded in the West Indies from Cuba (Harris, 1928, 1930; Alayo, 1967), Hispaniola (Harris, 1926, 1928, 1930), Puerto Rico (Barber, 1923, 1939), Guadeloupe (Harris, 1930), St. Vincent (Champion, 1899; Harris, 1928) and Grenada (Uhler, 1894; Harris, 1928, 1930; Woodruff et al., 1998). I have examined 10 syntypes from Grenada (USNM, ZISP), 2 ♀ from Puerto Rico (AMNH, USNM), 1 ♀ from Hispaniola (USNM), 2 ♀ from Jamaica (new record: Mandeville, 2000 ft, 17.VII.1960, P. & G. Vaurie, AMNH; Manchioneal, 23.VII.1935, Blackwelder, USNM) as well as specimens from Cuba identified by P. Alayo (MNHH).

The distribution of *L. signatus* outside of the West Indies needs verification. In the material examined by me to date, the true *L. signatus* is found from Mexico up to Panama; specimens which may belong to this species, but are at least subspecifically distinct are at hand from Venezuela, Guyana, Ecuador, Peru and Bolivia. The synonymy with *L. spinicrus* (Reuter) from Brazil proved to be erroneous, and the "brachypterous form" noticed from Mexico and Florida has been described as a separate species, *L. andabata*, by Kerzhner (1993).

18. **Nabis (Tropiconabis) capsiformis** Germar

Nabis capsiformis Germar, 1838: 132; Harris, 1928: 64, pl. 3, fig. 4; Kerzhner, 1981: 294, figs 371, 398, 419, 446, 471, 511; 1996: 105.
Tropiconabis capsiformis: Kerzhner, 1968: 852.
For synonymy and references see Kerzhner (1981, 1996).

In the West Indies, this species is reported from Bermuda (Van Duzee, 1909; Ogilvie, 1928; Harris, 1939; Henry & Hilburn, 1990), Bahamas (southern island of Bimini: Barber, 1954), Cuba (Harris, 1928, 1939; Alayo, 1967), Hispaniola (Harris, 1928), St. Thomas (Barber, 1939), Puerto Rico (Wolcott, 1950) and nearly lying island Mona (Ramos, 1946), Jamaica (Van Duzee, 1907, misidentified as *Nabis ferus* L., but descriptive notes clearly refer to *N. capsiformis*), St. Vincent (Uhler, 1893), Grenada (Uhler, 1894; Reuter, 1913; Harris, 1939; Woodruff et al., 1998) and Trinidad (Harris, 1928). In addition to specimens from Cuba (including I. de la Juventud), Hispaniola, Puerto Rico, St. Thomas and Grenada, I examined specimens (new records) from Cayman Brac (AMNH), St. Lucia (AMNH), Tobago (AMNH), Curaçao (AUWN, JMC, ZMAN), Bonaire (AUWN) and St. Martin (AUWN, ZMAN). The species is widely distributed in nearly all tropical and subtropical regions of the world, in Americas from USA to Argentina.

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