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New genera and species of apterous Carventinae (Hemiptera, Heteroptera, Aradidae) from Lesser Antilles

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A b s t r a c t : Although the Caribbean archipelago of Lesser Antilles comprises about a dozen larger islands and several smaller ones with suitable habitats for Aradidae, their fauna is still insufficiently studied. Thirteen species belonging to the subfamilies Aneurinae (3), Calisiinae (2) and Carventinae (8) are only known from the largest island Guadeloupe and two species of Carventinae from Dominica. All Carventinae are apterous and considered endemic to the island of record.

In the present paper the following apterous Carventinae are described and illustrated: *Antillaptera basseterrana* nov.gen. et sp. (Guadeloupe), *Antillaptera furconotus* nov.sp. (Martinique), *Antillaptera wheeleri* nov.sp. (Dominica) and *Grenadaptera ursulae* nov. gen. et sp. (Grenada). A key to *Antillaptera* species is provided and additional new faunal records are reported from Martinique.

K e y w o r d s : Heteroptera, Aradidae, Carventinae, apterous, new genera, new species, Caribbean, Lesser Antilles.

Introduction

The archipelago of Lesser Antilles bordering the southeastern Caribbean Sea to the Atlantic Ocean is composed of two groups of islands. The Leeward Islands, their larger ones listed from north to south are St. Kitts, Nevis, Antigua, Montserrat, Guadeloupe and Dominica and the Windward Islands comprising Martinique, St. Lucia, St. Vincent, Barbados and Grenada.

They are of different size and outline, but all of them are of volcanic origin, have a tropical climate and vegetation where suitable habitats for endemic flora and fauna could be developed. Guadeloupe is with 1628km² the largest island and La Grande Suffrière the highest mountain with an altitude of 1467m, followed by Martinique with 1128km² and the famous volcano Mt. Pelée reaching 1397m, Dominica with 750km² and its highest mountain Morne Diablotius with 1447m and Grenada with a surface of 348km² and Mt. St. Catherine at central mountain ridge reaches 804m (Map 1).

The flat bug fauna is rather well known only from Guadeloupe, where following species are recorded (KORMILEV & FROESCHNER, 1987, COSCARON & CONTRERAS 2012, PANIZZI & GRAZIA, 2015):

Subfamily Aneurinae: *Aneurosoma dissimile* (BERGROTH, 1898)
Aneurus nasutus KORMILEV, 1966
Aneurus vauriei KORMILEV, 1964

Subfamily Calisiinae: *Calisius contubernalis* BERGROTH, 1913
Calisius elegantulus BERGROTH, 1913
Subfamily Carventinae: *Acaricoris austeris* DRAKE & KORMILEV, 1958
Aglaocoris comes (DRAKE, 1956)
Aglaocoris invisus DRAKE, 1957
Aglaocoris vicinus DRAKE, 1957
Eretmocoris productus USINGER & MATSUDA, 1959
Glyptocoris insularis (DRAKE, 1957)
Glyptocoris verus DRAKE, 1956
Kolpodaptera prominens USINGER & MATSUDA, 1959

Of these species only Aneurinae and Calisiinae are macropterous, while all Carventinae are apterous. The wingless condition prevents them to colonize distant habitats, their distribution range is therefore limited and mostly restricted to natural and undisturbed forests and are – as far as records indicate – endemic. They are usually collected by sifting leaf- or bark litter and feed on fungi. Because of their cryptic life they are rarely collected and underrepresented in collections.

The macropterous *Aneurosoma dissimile* is also recorded from Brazil and Panama and *Calisius contubernalis* from Florida, however island records are only from Gouadeloupe. From Dominica following Aradidae are described, both apterous and presumably endemic.

Subfamily Carventinae: *Aglaocoris clarkei* DRAKE, 1957
Eretmocoris dominicus KORMILEV, 1968

Examination of flat bugs from Guadeloupe, Dominica, Martinique and Grenada proved that they cannot be placed in one of the extant neotropical Aradidae genera and represent new genera and species which are described and illustrated in this paper.

Material and methods

The specimens of apterous Carventinae for this study were borrowed from Smithsonian Institution, Washington USA (USNM), from T. Ramage and M. Coulis (Martinique, France).

Additional material was available from the authors collection (CEHI).

Photos were taken through an Olympus SZX 10 binocular microscope with Olympus E 3 digital camera and processed with Helicon Focus 4.3 software and using Adobe Photoshop and Lightroom 2.3.

Measurements were taken with a micrometer eyepiece and are given in millimetres.

When citing the text on the labels of a pin attached to the specimens / separates the lines and // different labels. Abbreviations used: deltg = dorsal external laterotergite (connexivum), mtg = mediotergite, vltg = ventral laterotergite, ptg = paratergite.

Arrows on figured specimens indicate the position of glandular structures on male sternite VII.

Taxonomy

Subfamily Carventinae USINGER, 1950

Genus *Antillaptera* nov.gen.

T y p e s p e c i e s : *Antillaptera wheeleri* nov.sp.

E t y m o l o g y : Refers to its occurance in Antilles and the apterous condition.

D i a g n o s i s : Apterous, small sized, body elongate oval; antennae slender with first segment thickest; eyes not stalked; surface of thorax glabrous with fine tubercles and rugosities, lateral margins of thorax and abdomen beset with setigerous tubercles; fused median carinate ridge reaching from pronotum to tergal plate; deltg II+III fused; spiracles II+III lateral and visible from above, IV+V sublateral, sometimes faintly recognizable from above, VI+VII lateral and visible from above; sternite VII of male with a shiny glandular tubercle at apices which is visible from above; rostrum arising from a slit – like atrium.

D e s c r i p t i o n : Head about as long as wide, genae produced over clypeus, diverging anteriorly; antenniferous lobes with acute apex; antennae about twice as long as width of head, segment I longest, II shortest; postocular lobes with a small setigerous tubercle adjacent to eyes, then roundly converging to constricted neck; rostral groove wide, posteriorly delimited by a carina.

Thorax: Pronotum strongly transverse, lateral margins slightly concave and converging anteriorly, anterolateral angles subangular; disk with a median groove which is anteriorly delimited by a triangular sclerite, laterally with smooth oblique callosities and tuberculate margin; disk of meso- and metanotum consists as well of ovate flat callosities and tuberculate margin laterad of fused median ridge which is flanked by longitudinal carinae along metanotum and fused mtg I+II; metanotum fused to mtg I+II without a visible suture.

Abdomen: Tergal plate with a median longitudinal elevation on mtg III+IV; deltg II+III fused, posterolateral angles of deltg VI rectangular, of VII triangularly produced posteriorly; spiracles VI and VII are placed on dorsally reflexed expansions of vltg VI and VII; mtg VII of male raised at middle for the reception of the conical pygophore, this with a longitudinal ridge and oval lateral depressions; ptg VIII club shaped.

Legs: Unarmed, scarcely beset with small setigerous tubercles; trochanters fused to femora; pulvilli present.

C o m p a r a t i v e n o t e s : *Antillaptera* nov.gen. shares with the habitually closest related Caribbean genus *Kolpodaptera* USINGER & MATSUDA, 1959 the structure of the median thoracic ridge, non stalked eyes and male vltg VII with shiny apical glandular tubercle. However, it differs by a set of characters as pronotum with lateral margins concave (vs. rounded) and subangular anterolateral angles (vs. dorsally rounded but angularly produced at a lower level), postocular setigerous tubercles distinct (vs. small to inconspicuous), position of spiracles VI + V sublateral (vs. all lateral and visible from above) and by distinctly narrower pygophore in male (wider) with longer ptg VIII (shorter).

Key to species of *Antillaptera* nov.gen.

1 Coloration piceus, median carinate thoracic ridge with longitudinal sulcus. Martinique (Figs. 3-5).....*A. furconotus* nov.sp.

2 Coloration ochraceous, yellowish to reddish brown, median carinate thoracic ridge without longitudinal sulcus 3

3 Antennae longer, about 2.1 times as long as width of head; habitus more elongate. Guadeloupe (Figs 1, 2).....*A. basseterrana* nov.sp.

- Antennae shorter, 2.0 times as long as width of head; habitus with wider abdomen. Dominica (Figs 6-11).....*A. wheeleri* nov.sp.

Antillaptera wheeleri nov.sp. (Figs 6-11)

T y p e m a t e r i a l : Holotype ♂, labelled: Dominica, St.Paul Parish / Springfield Plantation, 5km / NE of Canefield, 350m elev. / 15°20.796'N, 61°22.168'W / 13.Feb. 2005, T.J. Henry & / A.G. Wheeler Jr., *Cymbogon* / *citratus* (Poaceae) //; Loan from / USNMNH / 2042238 //. Paratypes: 4♂♂, 4♀♀ (1 L5) with same data and locality but on *Pennisetum setosum* (Poaceae); 2♂♂, 3♀♀ (1 L5) from same locality, dated 16.Feb.2005 also from *Pennisetum setosum* and 2 L5 with date 14.Feb. 2005 ex. *Rhynchospora polyphylla* (Cyperaceae) (deposited in USNM, 2♂♂, 1♀ in CEHI). They are designated and labelled accordingly.

E t y m o l o g y : It is a pleasure to dedicate this species to Alfred G. Wheeler Jr., Professor of Entomology Clemson University, Clemson, South Carolina USA, recognizing his important contribution to bug taxonomy and collector of this species.

D e s c r i p t i o n : Head as long as wide (0.75 / 0.75); genae surpassing clypeus, diverging anteriorly; antenniferous lobes conical with acute apex; antennae twice as long as width of head (1.5 / 0.75), segment I thickest and longest, II and III thinner, IV fusiform; length of antennal segments I / II / III / IV = 0.5 / 0.275 / 0.4 / 0.325; eyes oval, granulate, not stalked; postocular lobes with a distinct setigerous tubercle adjacent to eyes, sinuately converging posteriorly to constricted neck.

Thorax: Pronotum about 3 times as long as wide (1.1 / 0.375); lateral margins slightly concave and converging anteriorly; anterolateral angles subangular, produced over collar; disk with a median groove and lateral irregular smooth callosities, the margin beset with rows of small setigerous tubercles; mesonotum strongly transverse with oblique callosities lateral of median carinate ridge which extends from pronotum to mtg III; metanotum and mtg I+II fused lateral of median ridge which is flanked by longitudinal carinae.

Abdomen: Tergal plate wider than long (1.2 / 0.95), medially raised on mtg III-V; deltg II+III fused, lateral margins beset with small setigerous tubercles; posterolateral angles of deltg VI + VII with triangular expansions of dorsally reflexed vltg VI and VII; tergite VII raised medially for the reception of globular pygophore.

Venter: Spiracles II+III lateral and visible from above, VI-V sublateral and not visible, VI+VII lateral and visible from above; posterolateral angles of vltg VII produced posteriorly with a glabrous glandular tubercle at apex, which is visible from above (Figs. 10, 11).

F e m a l e : Basically as male but of larger size and wider abdomen; tergite VII with a transverse carina on posterior margin; ptg VIII as long as tergite IX.

M e a s u r e m e n t s : Holotype ♂. Body length 3.6; ratio length of antennae / width of head 2.00; width of abdomen across tergite IV 1.82; width of mesonotum 1.375; width of metanotum 1.575; Paratypes. Length of ♂♂ 3.6 – 3.7; ♀♀ 4.15 – 4.25.

E c o l o g y : The records from Poaceae grasses (*Cymbogon citratus*, *Pennisetum setosum*) and Cyperaceae (*Rhynchospora polyphylla*) are very unusual, as flat bugs generally feed on fungi and develop in respective habitats where such sources are available, a fact confirmed by multiple observations by the author. As known from other usually ground living heteroptera (eg. Lygaeidae) adults and larval stages climb under certain circumstances upon lower vegetation, an atypical habitat, where they then get collected by sweeping.

D i s t r i b u t i o n : Small apterous flat bugs have a very limited range of distribution and therefore regarded as endemic to the Island of Dominica.

C o m p a r a t i v e n o t e s : *Antillaptera wheeleri* nov.sp. seems to be closely related to *A. basseterrana* nov.sp. sharing the ochraceous coloration and the median carinate thoracic ridge without sulcus. It differs from the latter by shorter antennae, lateral margin of pronotum more concave and more stout habitus; from *A. furconotus* nov.sp. by characters given in the key.

***Antillaptera basseterrana* nov.sp. (Figs. 1, 2)**

T y p e m a t e r i a l : Holotype ♂, labelled: Antillen / Guadeloupe / Basse Terre / 7.X.82 Heiss //; Paratypes: 2♀♀ collected with holotype (CEHI). They are designated and labelled accordingly.

E t y m o l o g y : Refers to Basse Terre the mountainous larger and still forested part of Guadeloupe Island where this species was collected.

D e s c r i p t i o n : Head slightly wider than long (0.75 / 0.725); genae thin produced over clypeus, diverging anteriorly; antenniferous lobes diverging anteriorly with acute apex; antennae more than twice as long as width of head (1.525 / 0.725), their structure as of *A. wheeleri* nov.sp.; length of antennal segments I / II / III / IV = 0.525 / 0.275 / 0.425 / 0.325; eyes inserted in head with granular surface; postocular lobes with a setigerous tubercle, then sinuately converging posteriorly.

Thorax: Pronotum more than 3 times as long as wide (1.15 / 0.375); lateral margins slightly concave and converging anteriorly; anterolateral angles subangular, produced over collar; structure of disk of pronotum with a median groove and lateral irregular smooth callosities, and fusion of meso- and metanotum with median carinate ridge extending from pronotum to mtg III corresponds to that of *A. wheeleri* nov.sp.

Abdomen: Tergal plate wider than long (1.275 / 1.05), medially raised on mtg III-V; deltg II+III fused, lateral margins beset with small setigerous tubercles; posterolateral angles of deltgVI + VII with triangular expansions of dorsally reflexed vltg VI and VII; tergite VII raised medially for the reception of globular pygophore.

Venter: Spiracles II+III lateral and visible from above, VI-V sublateral and not visible, VI+VII lateral and visible from above; posterolateral angles of vltg VII produced posteriorly with a glabrous glandular tubercle at apex, which is visible from above.

F e m a l e : Basically as male but of larger size and wider abdomen.

M e a s u r e m e n t s : Holotype ♂. Body length 3.8; ratio length of antennae / width of head 2.10; width of abdomen across tergite IV 1.95; width of mesonotum 1.425; width of metanotum 1.625; Paratype♀♀: Length 4.3, 4.5; ratio length of antennae / width of head 2.13.

E c o l o g y : These samples of apterous Carventinae were collected from the under-

side of a decaying log infested by fungi laying at the humid forest floor near Les Chutes du Carbet.

D i s t r i b u t i o n : So far only recorded from the type locality in Basse Terre territory of Guadeloupe and is considered endemic to Guadeloupe.

C o m p a r a t i v e n o t e s : *Antillaptera basseterrana* nov.sp. can easily be distinguished from *A. wheeleri* nov.sp. by its more elongate habitus and longer antennae, from *A.furconotus* nov.sp. by the ochraceous color and more slender habitus.

Antillaptera furconotus nov.sp. (Figs. 3-5)

T y p e m a t e r i a l : Holotype ♂, labelled: Martinique / P1L, Tullgren extraction, 260m / GPS X: 708248, Y: 1634365 / 21 XI 2017, M. Coulis réc. // (MNHN); Paratypes: 1♀ Martinique / P2D, Tullgren extraction, 451m / GPS X: 707779, Y: 1632569 / 19 X 2016, M. Coulis réc.//; 1♀ Martinique / FC1, Barber trap, 433m / GPS X: 704341, Y: 1632777 / 04- 11 VII 2017, M. Coulis réc.//; 1♂ Martinique, 18-Z44-TA2 / Fort de France, ZNIEFF 44, / Colson, le Plateau Dumauzé / Winkler – Moczarski method on / leaf litter, 06 X 2018 T. Ramage //; 1♀ Martinique, 18-Z29-TA2 / Fort de France, ZNIEFF 44, / Le Morne Monésie / Winkler – Moczarski method on / leaf litter, 06 X 2018 T. Ramage //; from Martinique leg. M. Coulis are following specimens labelled: 1♂ 305 – P9 – 04/10/2016 / GPS: 14,6791270282119 - / 61,1063410062342, Alt = 582 / Plateau Concorde, Schoelcher / Tullgren – Foret_1aire //; 1♀ 249 – P1 – 21/11/2017 / GPS: 14,77525 – 61,06527, Alt = 260 / Rivière Sylvestre, Le Lorrain / Tullgren – Foret_2aire //; 1♂ 317 – PC – F / GPS: 14,83215 – 61,11303, Alt = 218 / Pecoul, Basse-pointe / Tullgren – Foret_2aire //. (Coll. CIRAD, Ramage, Coulis, CEHI). They are designated and labelled accordingly.

E t y m o l o g y : Named after the furcate median thoracic ridge along meso-metanotum and fused mtg I+II.

D e s c r i p t i o n : Head wider than long (0.75 / 0.712); genae longer than clypeus, diverging anteriorly; antenniferous lobes diverging anteriorly with acute apex; antennae about twice as long as width of head (1.45 / 0.712), their structure as of previously described species; length of antennal segments I / II / III / IV = 0.5 / 0.25 / 0.375 / 0.325; eyes oval, inserted in head with granular surface; postocular lobes with a cluster of setigerous tubercles, then sinuately converging posteriorly.

Thorax: Pronotum 3 times as long as wide (1.12 / 0.375); lateral margins slightly concave and converging anteriorly; anterolateral angles subrounded densely best with setigerous tubercles, not producing over collar; structure of disk of pronotum with a median groove and lateral irregular smooth callosities, and fusion of meso- and metanotum with median carinate ridge extending from pronotum to mtg III corresponds basically to the other two congeners.

Abdomen: Tergal plate slightly wider than long (1.05 / 1.0), medially raised on mtg III-V; deltg II+III fused, lateral margins beset with small setigerous tubercles; posterolateral angles of deltg VI + VII with triangular expansions of dorsally reflexed vltg VI and VII; tergite VII raised medially for the reception of globular pygophore.

Venter: Spiracles II+III lateral and visible from above, VI-V sublateral and hardly traceable from above, VI+VII lateral and distinctly visible from above; posterolateral angles of vltg VII produced posteriorly with a glabrous glandular tubercle at apex, which is visible from above.

F e m a l e : Basically as male but of larger size and wider abdomen.

M e a s u r e m e n t s : Holotype ♂. Body length 3.7; ratio length of antennae / width

of head 2.03; width of abdomen across tergite IV 1.625; width of mesonotum 1.425; width of metanotum 1.625; Paratype ♀♀: Length 4.25, 4.7; ratio length of antennae / width of head 1.91-2.03.

E c o l o g y : These specimens were extracted from leaf litter or caught in Barber traps. Sifting leaf litter, Barber traps or Tullgren funnels have again proved to be a successful method for collecting small soil arthropods and apterous Aradidae, as they develop in such rather stable environments in tropical and subtropical areas in substrates associated with fungi.

D i s t r i b u t i o n : So far surprisingly recorded from several localities at more occasions in Martinique but is considered endemic to this island.

C o m p a r a t i v e n o t e s : *Antillaptera furconotus* nov.sp. is recognized and differing from both congeners described above by its piceous coloration and the furcate median thoracic ridge.

***Grenadaptera* nov.gen.**

T y p e s p e c i e s : *Grenadaptera ursulae* nov.sp.

E t y m o l o g y : Refers to the Island of Grenada, where it was discovered and the apterous condition of this new genus and first Aradid recorded from there.

D i a g n o s i s : Apterous, small sized, body oval; coloration reddish brown; antennae slender with first segment thickest; eyes moderately stalked; surface of thorax and abdomen glabrous with oval callosities and rugosities, lateral margins raised and beset with setigerous tubercles; fused median carinate ridge smooth, reaching from pronotum to tergal plate; deltg II+III fused; spiracles II -VII lateral and visible from above; sternite VII of male with a large cone like glandular tubercle at apex, directed posteriorly which is visible from above; rostrum arising from a slit – like atrium.

D e s c r i p t i o n : Head longer than wide, genae produced over clypeus; antenniferous lobes with acute apex; antennae less than twice as long as width of head, segment I and III longest, II shortest; eyes moderately stalked; postocular lobes roundly converging to constricted neck; rostrum arising from a slit like atrium.

Thorax: Pronotum strongly transverse, disk with oval callosities and raised granulate lateral lobes, lateral margins straight; structure of lateral sclerites of meso- and metanotum as of pronotum, medially separated by a smooth finger like ridge which is widening at meso- metanotum border then conical along fused mtg I+II reaching to mtg III.

Abdomen: Tergal plate with a median longitudinal elevation on mtg IV+V; deltg II+III fused, posterolateral angles of deltg V-VII with a triangular expansion of the dorsally reflexed vltg V-VII bearing the spiracles V-VII; venter with fused median parts of pro-, meso-, metanotum and sterna II+III smooth and glabrous; spiracles II-VII lateral and visible from above; sternite VII of male with a distinct large conical glandular tubercle placed at apex and directed posteriorly.

Legs: Unarmed, trochanters fused to femora; pulvilli present.

C o m p a r a t i v e n o t e s : The combination of characters as structure of antennae, stalked eyes, shape of pronotum and of median thoracic ridge and structure and position of male glandular tubercle on vltg VII is not shared by any other apterous neotropical Aradidae (KORMILEV & FROESCHNER, 1987; COSCARON & CONTRERAS, 2012; PANIZZI & GRAZIA, 2015; HEISS 2018).

***Grenadaptera ursulae* nov.sp. (Figs. 12-17)**

T y p e m a t e r i a l : Holotype ♂, labelled: Grenada, Antillen / Grand Etang rain forest / 24.6.96 Heiss // (CEHI); Paratypes. 2♀♀ collected with holotype. They are designated and labelled accordingly.

E t y m o l o g y : It is a pleasure to dedicate this interesting new species to my daughter Ursula, recognizing her understanding for my entomological activities and for sharing her time, interest and company when travelling abroad together.

D e s c r i p t i o n : Head longer than wide (0.875 / 0.8); genae subparallel surpassing clypeus; antenniferous lobes conical with acute apex; antennae less than twice as long as width of head (1.425 / 0.8), segment I thickest and as III longest, II and III thinner, IV fusiform; length of antennal segments I / II / III / IV = 0.45 / 0.25 / 0.45 / 0.275; eyes moderately stalked; postocular lobes with few small setigerous tubercles adjacent to eyes, sinuately converging posteriorly to constricted neck.

Thorax: Pronotum about 3.5 times as long as wide (1.3 / 0.375); lateral margins straight, anterolateral angles subangular, not produced over collar; disk with irregular smooth callosities, lateral margins raised and beset with rows of small setigerous tubercles; mesonotum strongly transverse with oval callosities lateral of smooth subparallel median carinate ridge which extends from pronotum to mtg III; metanotum and mtg I+II fused lateral of median ridge, surface rugose.

Abdomen: Tergal plate wider than long (1.2 / 1.05), medially raised on mtg IV-V; deltg II+III fused, lateral margins beset with small setigerous tubercles; posterolateral angles of deltgV- VII with triangular expansions of dorsally reflexed vltg VI and VII; tergite VII raised medially for the reception of globular pygophore.

Venter: Spiracles II-VII lateral and visible from above; posterolateral angles of vltg VII produced posteriorly with a large glabrous cone like glandular tubercle at apex, which is directed posteriorly and visible from above.

F e m a l e : Basically as male but of larger size and wider abdomen; tergite VII with a transverse carina on posterior margin; ptg VIII shorter than tergite IX.

M e a s u r e m e n t s : Holotype ♂. Body length 3.75; ratio length of antennae / width of head 1.78; width of abdomen across tergite IV 1.825; width of mesonotum 1.5; width of metanotum 1.75; Paratypes. Body length of 2♀♀ 4.65 – 4.75; ratio length of antennae / width of head 1.75, 1.74.

E c o l o g y : Grenada is intensively cultivated by spice and nutmeg plantations and most of the present day forests are secondary, grown after the original tropical vegetation was cut or burned causing the extinction of native soil- and litter fauna. Only few remnants as in the Grand Etang National Park persisted, where a search for apterous Aradidae was successful. This new taxon is the first Aradidae reported to date from Grenada.

D i s t r i b u t i o n : Due to the limited range of movement, *Grenadaptera ursulae* nov.sp. is considered endemic to Grenada.

Additional faunal records

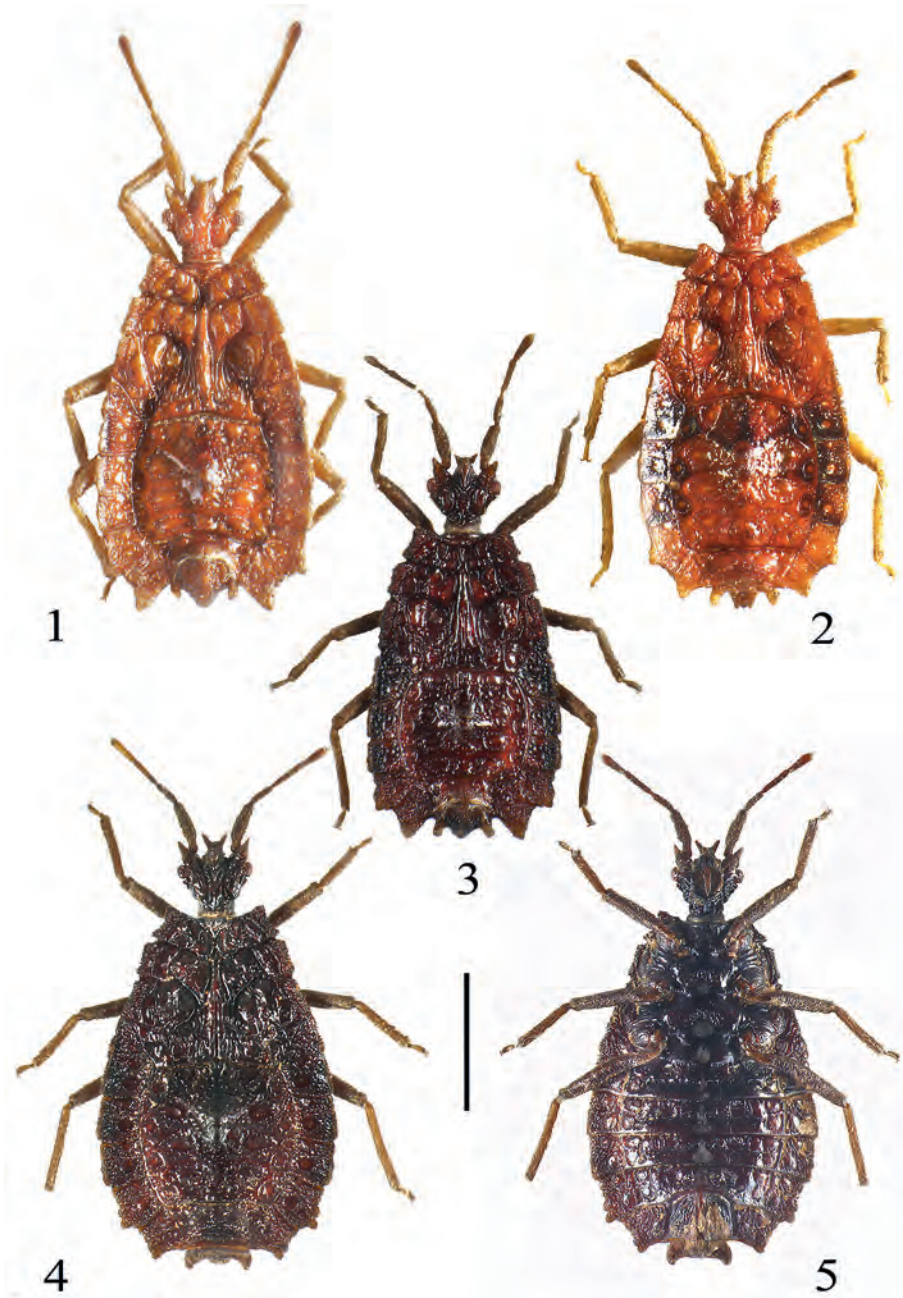
From Martinique following additional records of Aradidae are reported:

Mezira laeviventris (CHAMPION, 1898): 1♂ Martinique / Div – SC1, Morne Rouge, St. Cecile / GPS:704226 – 1632650, Alt 423 / Micro-Hab.: litière – sol, Barber / 7/07/17 (M.Coulis réc.)//; 1♂, 2 L Div.-Cesaise 1 / Fort de France – Morne Cèsaise / Sol Bois morte / 17/09/17, Alt: 541m / CáV / GPS: 706279 – 1623397 //; 4♂♂, 5♀♀, 3L Martinique, (M.Coulis réc.) / 341-PDEP4 Saint-Pierre / CàV – 07/03/2019 / Collection CIRAD – Coulis //.

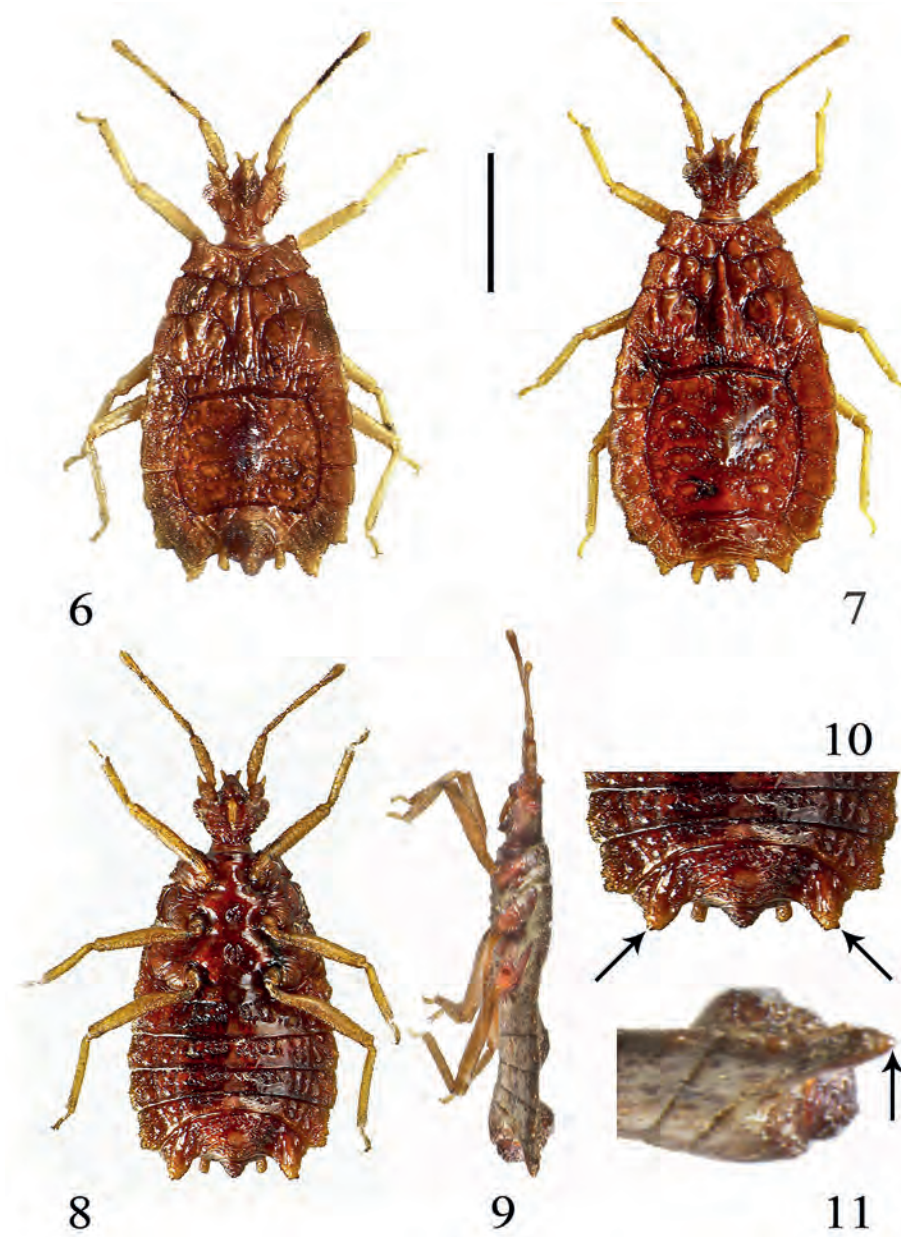
Caribocalisius sp.: Martinique Ravine 332 / GPS: N 14.43342°, W 60.85886° / 06.09.2016 M.Coulis réc. // Deposited in coll. Coulis.

This single female cannot be identified as the description of the two species eventually to be considered: *C. elegantulus* BERGROTH, 1913 (single female), the only one described from Guadeloupe and *C. contubernalis* BERGROTH, 1913, which was described from Florida and mentioned also from Guadeloupe (doubtful) were never figured and are not recognizeable from the descriptions. The habitat of the apterous Carventinae is primary and secondary humid rainforest, in contrast to that of the Calisiinae which is a tropical dry deciduous forest on a karstic soil and climatic conditions are very different from the localities Carventinae were collected.

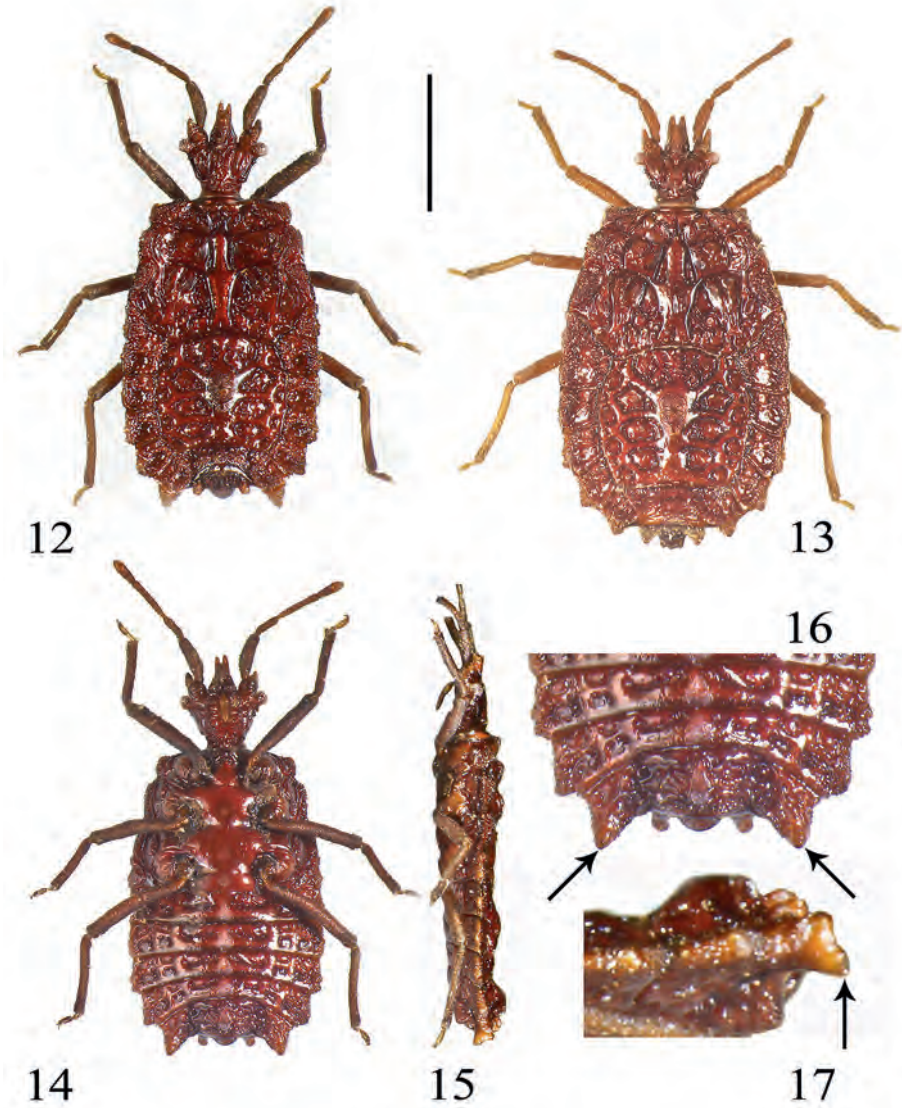
Map 1. Caribbean Sea with Antilles Islands archipelago. (© Maps in Minutes)



Figs. 1-5: 1-2 *Antillaptera basseterrana* nov.gen. et sp., (**1**) Holotype ♂; (**2**) Paratype ♀; 3-5 *Antillaptera furconotus* nov.sp., (**3**) Holotype ♂; (**4**) Paratype ♀ dorsal, (**5**) Paratype ♀ ventral. Scale 1mm.



Figs. 6-11: *Antillaptera wheeleri* nov.gen. et sp., (**6**) Holotype ♂; (**7**) Paratype ♀; (**8**) ♂, ventral; (**9**) ♂ lateral; (**10**) ♂ terminal sternites; (**11**) ♂ terminal abdomen lateral. Arrows indicate the position of glabrous glandular structures. Scale for Figs. 6-9 = 1mm.



Figs. 12-17: *Grenadaptera ursulae* nov.gen. et sp., (**12**) Holotype ♂; (**13**) Paratype ♀; (**14**) Holotype ♂ ventral; (**15**) ♂ lateral; (**16**) ♂ terminal sternites; (**17**) ♂ terminal abdomen lateral. Arrows indicate the position of the pivot like glabrous glandular structures. Scale for Figs. 12-15 = 1mm.

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Zusammenfassung

Die Inselgruppe der Kleinen Antillen (Lesser Antilles) in der östlichen Karibik erstreckt sich von den Jungferninsel in Norden bis vor die venezolanische Küste. Sie sind alle vulkanischen Ursprungs und setzen sich aus den Inseln unter dem Wind (Leeward Islands) mit den größeren Inseln Guadeloupe und Dominica und den Inseln über dem Wind (Windward Islands) mit Martinique, St.Lucia und Grenada, zusammen. Deren Aradidenfauna ist kaum erforscht und nur von Guadeloupe sind bisher 13 Arten aus 3 Unterfamilien und von Dominica zwei Arten flügelloser Carventinae beschrieben worden. Nun liegen Belege flügelloser Carventinae von Guadeloupe, Dominica und Martinique vor, welche zu keiner bekannten neotropischen Gattung gestellt werden können. Sie werden als *Antillaptera wheeleri* nov.gen. et sp.; *Antillaptera furconotus* nov.sp. und *Antillaptera basseterrana* nov.sp. beschrieben und abgebildet. Von der südlichsten Insel über dem Wind, Grenada, sind bisher keine Aradiden bekanntgeworden. Der Erstfund, eine flügellose Carventinae wird als *Grenadaptera ursulae* nov.gen.et sp. nachstehend beschrieben. Als Ergänzung zur obengenannten Aradidenfauna von Martinique werden Belege von *Mezira laeviventris* und einem nicht bestimmbaren *Caribocalisius* sp. mitgeteilt.

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