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Visiting the neotropics: a new country record and a new species in the flat bug family Aradidae (Heteroptera)

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Abstract – The author reports on the Argentinean occurrence of the species *Iralunelus bispinosus* Kormilev, 1960, previously known only from Brazil, based on a female specimen collected by Ödön Kovács in 1971. Furthermore, he describes a new wingless flat bug heteropteran from the 2003 collectings of Jenő Kontschán taken in Hispaniola (Dominica) under the name *Aglaocoris ovalis* sp. nov. With eight figures.

Key words – Aneurinae, Argentina, apterous, Carventinae, Dominica, Neotropical Region, rarity

INTRODUCTION

Subsequent to the discovery of apterous Aradidae by Miller (1938), many species were described upon specimens deposited in various collections worldwide. Drake & Maldonado (1955) erected the genus *Aglaocoris* for *A. natalii,* and later Drake (1956, 1957) described five species, which were checklisted by Drake & Kormilev (1958). Two further species were discovered by Kormilev (1968) and Grillo-Ravelo (1988). Heiss (2018) remarked, that apterous Aradidae seem to be rare and in general species have a restricted distribution area.

This is especially true for species of *Aglaocoris*, found in the Caribbean Islands, seeming endemic to individual islands, represented only by a single specimen or a short series of specimens. Exceptions are *A. natalii* Drake & Maldonado, 1955 (62 specimens from the same locality), and *A. orientalis* Grillo-Ravelo 1988 (two+ four type specimens from two different localities in the same region). From island of Hispaniola (with independant states Dominican Republic and Haiti) so far two *Aglaocoris* species are known: *A. rectangularis* Usinger et Matsuda, 1959 and *A. drakei* Kormilev, 1969 (Perez-Gelabert 2008).

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In the Aradidae collection of the Hungarian Natural History Museum, Budapest, there are several hundreds of unidentified specimens, originating from various geographic regions, including the Neotropics. During the elaboration of the material an important faunistic record has been found for Argentina, and a hitherto undiscovered species from Dominica. The present paper reports on these findings.

MATERIAL AND METHODS

Exoskeletal structures were studied and drawings were made using an Opton 47 50 52 – 9901 microscope supported by a drawing apparatus. Photographs of the specimen at hand were made by the author in HNHM using a NIKON D7200 digital camera mounted with AF–S Micro Nikkor 105 mm 1:2.8 ED objective (operating software: Helicon Remote v. 4.4.4), stacked photos were rendered using Helicon Focus v. 8.2.2 software.

Unicality of the specimen prevented author from dissecting and clearing the body, with the result, that some morphological features remained difficult to interpret.

When providing label data, lines are separated by /, while different labels on the same pin are separated by //. In the formula of relative lengths of antennal joints 50.7 scale units = 1.0 mm. Abbreviations for morphological terms: deltg = dorsal external laterotergite (connexivum); PE = posterior-exterior. Abbreviation for depositories: HNHM = Hungarian National Museum Public Collection Centre – Hungarian Natural History Museum, Budapest, USNM = National Museum of Natural History, Washington.

RESULTS

Subfamily ANEURINAE Douglas & Scott, 1865

Iralunelus bispinosus (Kormilev, 1960)

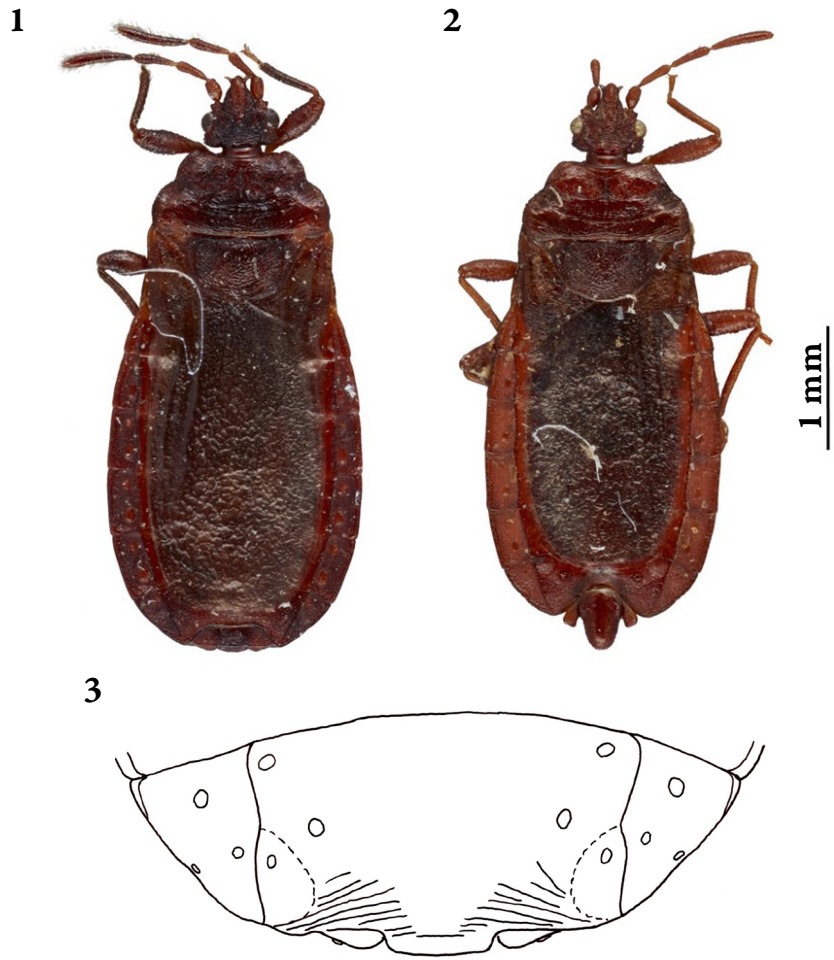
(Figs 1–3)

Aneurus bispinosus Kormilev, 1960: 93–94.

Material – Holotype female and "allotype" male specimens studied on good quality photos provided by the depositor USNM (Figs 1–2). Additional specimen: one female, "Argentina / Delicia // 17.IX.1971. / leg. Kovács Ö.", deposited in the Hemiptera collection of HNHM.

Remarks – The species was described on the basis of a female (holotype) specimen. The male was described later, and the species was transferred to subgenus *Iralunelus* by Kormilev (1979: 342). The male specimen, erroneously considered as allotype of *A. bispinosus* by the author, bears the identification

label with Kormilev's handwriting: "*A. bispiniceps*" (obviously a lapsus calami). Paratergites on segment VII are present in the male while absent in females; nevertheless remnants of parasternites, not separated by a clear suture, are found in females (Fig 3). This fact is mentioned by Contreras (2014), whose photos are not clear enough, therefore photos provided by USNM are published here (Figs 1– 2). The species was described from Brazil and has not been reported from other countries so far. Its discovery in northeastern Argentina represents a new country record.

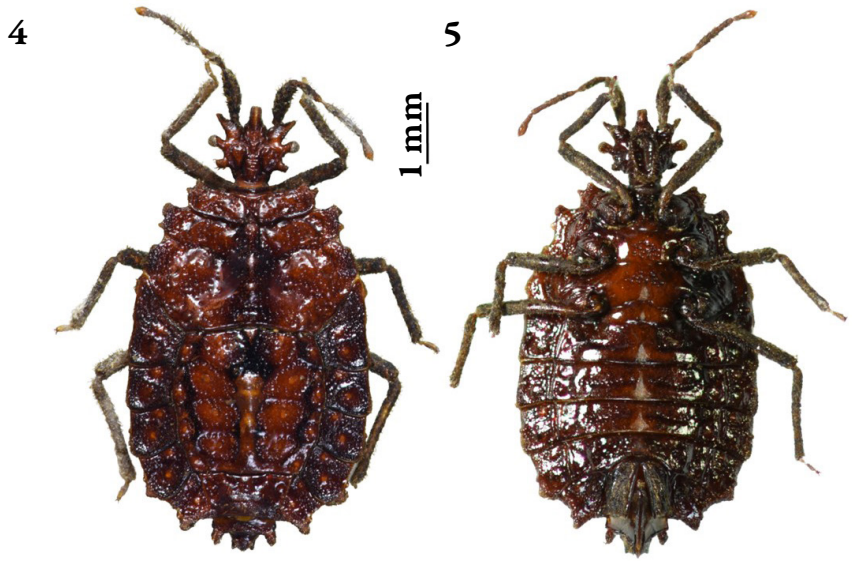


Figures 1–3. *Iralunelus bispinosus* (Kormilev, 1960) type documentation and morphological details. 1 = USNM holotype female; 2 = USNM male (photo: Alyssa Seeman) (scale bar is added using the measurements given by Contreras 2014); 3 = HNHM female, NW Argentina, tip of abdomen in ventral view (enlarged).

Subfamily CARVENTINAE Usinger, 1950
***Aglaocoris ovalis* sp. nov.**
(Figs 4–8)

Type material – Holotype: female, "REP. DOMINICA, La Vega / Constanza, wet Pinus forest, / 2040 m, at the edge of // escarpment. N slope (25°) / N18°49.762' W70°41,556' / 20. XI. 2003. leg. Kontschán", specimen card-mounted, deposited in the Hemiptera Collection of HNHM (Figs 4–5).

Diagnosis – Body oval (widest across segment IV); under greyish incrustation shiny reddish-brown, deltgs dark brown except reddish-brown glabrous spots; with sporadic short pilosity, which is, nevertheless, standing out of incrustation. Lateral margin of pro- and mesonotum each with two lobes (bifid). Tergal plate with even punctuation around glabrous areas.



Figures 4–5. *Aglaocoris ovalis* sp. n. type documentation. 4 = HNHM holotype, female, in dorsal view; 5 = ditto, in ventral view. Scale as indicated.

Description – Head relatively small, about 1.7 times as wide as long. Antenniferous and postocular tubercles laterally almost reaching lateral level of eyes. Anterior process reaching about 1/3 of antennal joint I, genae anteriorly bent downwards, sligthly surpassing clypeus; latter dorsally elevated on anterior part, transversally rugose; posterior part and vertex elevated above level of lateral surface of head. Antenniferous tubercles strong, directed dorso-anterolaterally, tip pointed. Eyes with long stylus, narrower than eyes. Postocular tubercles originating well behind eyes, cylindric, with blunt apex, directed dorso-posterolaterally. Hind border of head strongly narrowing towards neck.

Antennae and protuberances on head with dense pilosity. Antennae long, joint I club-shaped, II and III subcylindrical, III distinctly stylate, IV fusiform, relative length of joints I to IV as 43:25:43:23 (Fig. 7).

Rostrum arising from a slit-like opening, reaching to end of wide rostral groove, latter with 5 transversal coarse furrows.

Pronotum with distinct, protruding collar. Anterior and posterior borders forming wide V, parallel with each other. Lateral border bifid. Dorsal surface with elevations and with posteriorly widening and deepening median fossa. Mesonotum distinctly wider and longer than pronotum, but the general appearance similar to pronotum, including bifid lateral borders. Median longitudinal ridge elevated, anterior apex rounded, reaching slightly above posterior margin of pronotum, widening posteriorly, continuous towards abdominal plate. Meso- and metanotum completely fused with the first two abdominal tergites, but their border marked by evenly punctuated groove, borders of first two abdominal tergites uncertainly also marked by not so even punctuation. Lateral border of metanotum with a narrow, horizontal keel. Trochanter and femur seem to be separated, moving as if fused. Pro- meso- and metasternum completely fused, together with abdominal sterna I+II+III, medially as well as laterally to the legs, borders marked by transversal grooves and partly by punctuation. Pretarsus with pulvilli bristle-like, tip slightly flattened, reaching near to tip of claws.

Abdomen wide, with barrel-shaped central tergal plate formed by entirely fused tergite III–VI. Medial part on tergite IV–VI elevated above surface of the plate. Deltgs II–III completely fused, IV–VII well separated from each other. Inner border of deltgs III–VI forming slight S. Lateral borders of V–VII straight or arcuate, with similar keels as on metanotum, these outgrows expand to ventral side, PE angles increasingly protruding caudally, deltg VII even forming a triangulate process. Tergite VII elevated in middle, posterior border straight. Segment VIII partially protruding on the holotype; position of segment VIII–IX corrected on the dorsal, but not on the ventral view drawing.

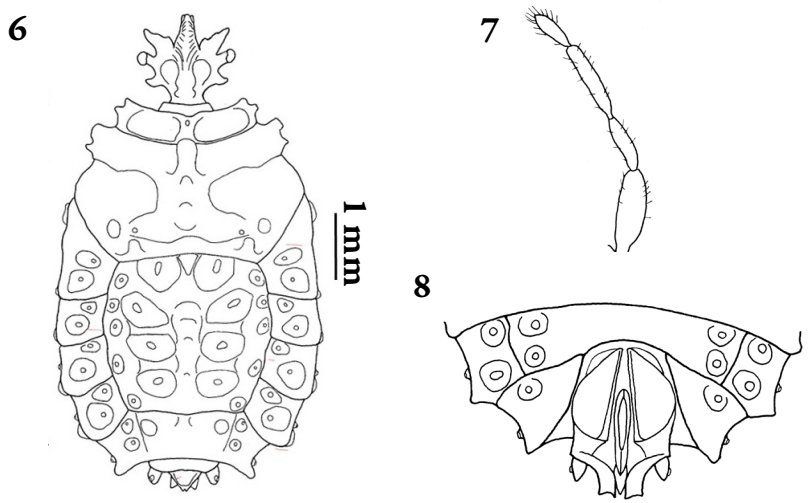
Ventrites I–III completely fused to thoracic sterna, these ventrolaterotergites also fused. Ventrolaterotergites I–VI separated from ventrites by sharp groove, but they seem to be fused. Ventrolaterotergite VII not separated by such groove from ventrite VII, which is ventrally represented by two triangular plates, positioned lateral to segment VIII, removed from each other. 1st valvifers of segment VIII opened on the specimen, ovipositor is visible.

Spiracles II–IV ventral, not far, and increasingly closer to lateral border, V ventrolateral, clearly visible from above, VI–VII lateral, on flat tubercle, VIII subapical, on lateral tubercle on margin of segment (Figs 6, 8).

Measurements – Holotype female: length of head 1.01 mm, width of head 1.78 mm, length of pronotum 0.59 mm, width of pronotum 2.15 mm, length of median ridge 1.71 mm, width of mesonotum 2.96 mm, width of metanotum 3.43 mm, maximum width of abdomen 3.96 mm across segment IV, width of

abdomen across segment VI 3.27 mm, across segment VII 2.12 mm, length of tergal plate 2.35 mm, total length of body 7.17 mm.

Etymology – The name *ovalis* refers to the general shape of the body, for distinguishing the species from several congeners with general "rectangular" appearance.



Figures 6–8. *Aglaocoris ovalis* sp. n. morphological details. 6 = HNHM holotype female, habitus; 7 = same, left antenna; 8 = same, tip of abdomen in ventral view, with protruded position of segment VIII. Scale as indicated.

Discussion – Fusion of abdominal tergite III to IV–VI and ventrite III to I–II and the thoracic sternum was reported for three *Aglaocoris* species (*A. comes* Drake, 1956, *A. vicinus* Drake, 1957 and *A. clarkei* Drake, 1957). The fusion was not reported by Drake & Maldonado (1955) in the description of the genus, neither by Usinger & Matsuda (1959), who treated the genus and described a new species; nor by Grillo-Ravelo (1988), although fused abdominal ventrites were mentioned. The character state is advanced in an evolutionary line from free segments (flexibility) towards fusions and consequent rigidity of body in apterous Aradidae.

The species is alone in the genus in having bifid lateral border of both pro- and mesonotum. Only *A. vicinus* Drake, 1957 is described (without figures) within the genus as having bifid lateral margin of only the pronotum. The description of *A. vicinus* has a clear statement: "without tubercle or protuberance just back of each eye, strongly narrowed behind eyes to neck", which may indicate, that this species belongs to *Eretmocoris* Harris et Drake, 1944 rather than to *Aglaocoris*.

The three *Aglaocoris* species, which are reported from the island Hispaniola, can be distinguished by the combination of the following character states.

character state	***A. drakei***	***A. ovalis***	***A. rectangularis***
Female body length	under 6 mm	over 7 mm	over 7 mm
Anterior process of head	strongly narrowing than borders parallel	strongly narrowing than borders parallel	continuously narrowing
Anterior margin of head between anterior process and antenniferous tubercles (a trend is visible)	cut out deep, almost to basis of eye-stalk	least cut out	less cut out
Antennal joint I is longer than II	1.44 times	more than 1.70 times	more than 1.70 times
Antennal joints II–IV	III and IV missing	III is more than 1.5 times as long as II or IV	equilongous
Lateral border of pronotum	angular behind the middle	with two lateral lobes	angular behind the middle
Lateral border of mesonotum	one lobe angular anterior to the middle, then subparallel posteriorly	with two lateral lobes	one lobe angular anterior to the middle, then subparallel posteriorly
Lateral borders of abdomen	subparallel from segment II to V	subparallel from segment II to V	subparallel from segment II to VI
Paratergite VIII	not surpassing segment IX	surpassing tip of segment IX	surpassing tip of segment IX
Body length / width ratio	2.00	2.09	2.27 (measured upon drawing)

*

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Látogatás a neotrópikus területeken: új országadat és új faj az Aradidae kéregpoloska családban (Heteroptera)

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Összefoglalás – A szerző az eddig csak Brazíliából ismert *Iralunelus bispinosus* Kormilev, 1960 faj argentínai honosságát bizonyítja, Kovács Ödön által 1971-ben gyűjtött nőstény példány alapján. Továbbá Kontschán Jenő 2003-as hispaniolai (Dominika) gyűjtéséből leírja a tudományra új szárnyatlan kéregpoloska fajt *Aglaocoris ovalis* sp. nov. néven. Nyolc ábrával.

Kulcsszavak – Aneurinae, Argentína, Carventinae, Hispaniola, Neotrópikus faunabirodalom, ritkaság, szárnynélküliség

ÁBRAMAGYARÁZATOK

1–3. ábra. *Iralunelus bispinosus* (Kormilev, 1960) 1 = USNM holotípus nőstény; 2 = USNM hím (méret Contreras 2014 alapján); 3 = HNHM nőstény, Északnyugat-Argentína, a potroh csúcsa ventrális nézetben (nagyítva) (1– 2. ábra fotó: Alyssa Seeman).

4–5. ábra. *Aglaocoris ovalis* sp. nov. típus dokumentáció. 4 = HNHM holotípus, nőstény, dorzális nézetben; 5 = ugyanaz, ventrális nézetben (méret a jelzet szerint).

6–8. ábra. *Aglaocoris ovalis* sp. nov. típus dokumentáció és morfológiai részletek. 6 = HNHM holotípus nőstény, habitus; 7 = ugyanaz, bal csáp; 8 = ugyanaz, a potroh csúcsa ventrális nézetben, a VIII. szelvény kiemelkedő helyzetével (méret a jelzet szerint).