

**REUTEROSCOPIUS CARVALHOI N. SP., A NEW FOSSIL PLANT BUG
(HETEROPTERA: MIRIDAE: PHYLINAE)**

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Abstract.—The fossil mirid *Reuteroscopus carvalhoi* n. sp. is described from Dominican amber and compared to extant species of the genus.

Key Words: Miridae, *Reuteroscopus carvalhoi* n. sp., fossil, Dominican Amber

The mirid genus *Reuteroscopus* Kirkaldy, 1905, occurs in the Greater and Lesser Antilles, northern coast of South America (specimens from the last two places in JMC's collection), Central America, and in North America as far north as Canada. It includes about 40 species that live on weeds and a few species of trees.

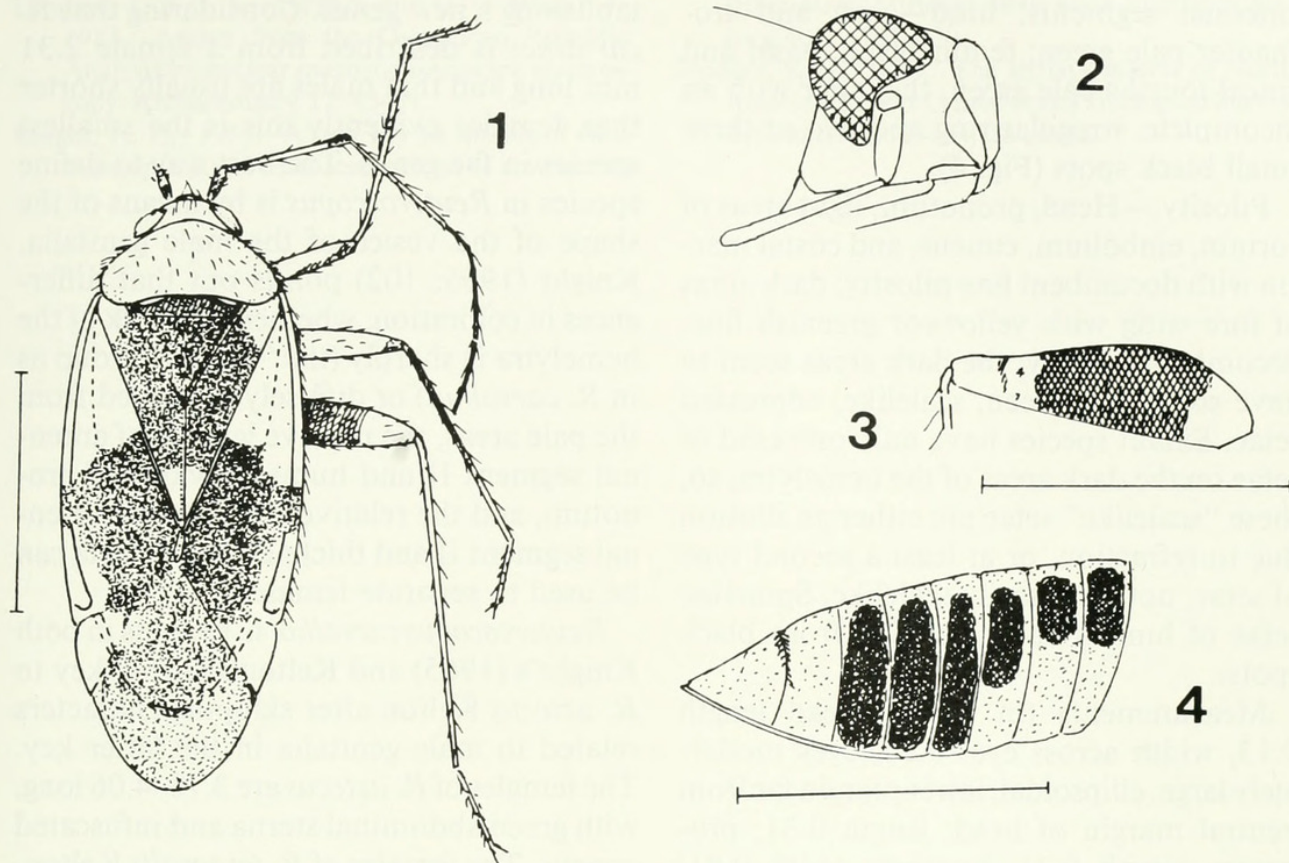
The fossil species described in this paper is very similar to many extant species, especially in the typical color pattern of the hemelytra. In the description we use the same colors used by Knight (1965) to facilitate comparison.

The only morphological difference we noticed between this fossil and modern species of *Reuteroscopus* is the shape of the eyes. In the dorsal view, instead of being hemispherical they are somewhat elliptical. As in modern species, the eyes extend backward for a short distance along the lateral margins of the pronotum, but in this species they extend a little more forward, thus, occupying a slightly larger area of the vertex. In lateral view (Fig. 2), the anterior margin is concave to receive the insertion of the antenna. Extant species have vertical, oval eyes, some of the them with the posterior margin shal-

lowly indented, and the antennae are inserted close to or are slightly separated from the anterior margin. The eyes of specimens from the Antilles, northern South America, Central America and southern United States were examined.

There are few mirid fossil records. As cited by Carvalho (1959), Scudder (1890) described 14 species as mirids from the Florissant (Cenozoic, Oligocene). Carvalho (1959) indicated that Scudder's taxa look more like anthocorids or at least cannot be assigned to annectant genera. Scudder placed his species in *Aporema* Scudder, *Closterocoris* Uhler, *Fuscus* Distant, *Poeciloscopus* Reuter, *Capsus* Fabricius, and *Hadronema* Uhler. Despite such assignments the characters he used are insufficient to place them in subfamilies and tribes. Also cited by Carvalho, Germar and Berent (1856) described 13 species, mostly from Prussian amber, placing all of them in what they loosely called *Phytocoris*.

Our new species is in a piece of amber originating from mines in Cordillera Septentrional between Puerto Plata and Santiago in northern Dominican Republic. These mines are in the Altamira facies of the El



Figs. 1–4. *Reuteroscopus carvalhoi* Maldonado and Poinar, n. sp., holotype, female. 1, habitus, dorsal view. 2, head, lateral view. 3, hind femur, lateral external view. 4, abdomen, lateral view. Scale lines represent 1.0 mm.

Mamey Formation and the estimated age ranges between 25 and 40 million years (upper Oligocene-upper Eocene) (Lambert et al. 1985).

Reuteroscopus carvalhoi

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Figs. 1–4

Female. Overall coloration of body probably pale green in life, hemelytra, hind femur and abdomen conspicuously ornamented with black. Head, pronotum, lateral angles of mesoscutum, base and apex of clavus, most of corium including its apex (mesad to cuneus), embolium, and cuneus pale green. Excluding membrane, remaining parts of fore wings black (Fig. 1); membrane—basal half apparently black, most of inner cell blackish, outer cell grayish, caudad of cells to apex of membrane grayish. Antennal segments: I black basally, apical

half pale because of its silvery pilosity; II fuscous, basally and apically black; III and IV uniformly dark fuscous, slightly darker than II. Rostrum probably fuscous, at least not pale. Pronotum laterally, most of mesopleura except for pale area around base of mesocoxa, and metapleura black. Osteolar peritreme pale greenish. Abdominal sterna pale green along upper margin; first three segments black above the pale green below, next three with a small pale green basal area, the black areas almost contiguous with the pale green ovipositor (Fig. 3). Legs: anterior—coxa mostly pale green, inner and outer surfaces with a small black central area; trochanter pale green; femur pale green, ventral edge thinly lined with black; tibia with basal $\frac{2}{3}$ blackish, apically pale fuscous; tarsi pale fuscous; middle—coxa and trochanter green, fuscous apically, tibia fuscous, slightly lighter than last two

antennal segments; hind—coxa and trochanter pale green; femur black, basal and apical fourths pale green, the latter with an incomplete, irregular ring and two or three small black spots (Fig. 4).

Pilosity.—Head, pronotum, light areas of corium, embolium, cuneus, and costal margin with decumbent fine pilosity; dark areas of fore wing with yellow or greenish fine, decumbent pilosity; the dark areas seem to have some pale green, scalelike, adpressed setae. Extant species have only one kind of setae on the dark areas of the hemelytra, so, these “scalelike” setae are either an illusion due to refraction, or at least a second type of setae, not necessarily scalelike. Spinelike setae of hind tibia not arising from black spots.

Measurements (in mm).—Head length 0.13, width across eyes 0.50, eyes moderately large, ellipsoidal, lower margin far from ventral margin of head, length 0.31; pronotum length 0.31, humeral width 0.81; mesoscutum exposed; scutellum width 0.50, length 0.37. Antennal segments: I, 0.13; II, 0.56; III, 0.31; IV, 0.50; all short decumbent setose. Rostrum 1.56, reaching IV sternum, i.e., surpassing base of ovipositor. Legs—fore: femur 0.53, tibia 0.53; middle: femur 0.62, tibia 0.68; hind: femur 0.76, tibia 1.15. Tarsi as in Phylinae, linear, about $\frac{1}{2}$ length of corresponding tibia, parempodia apparently small, not visible, claws elongate, slender. Hemelytra well surpassing abdominal apex, length 1.87, greatest width 1.00. Abdomen length 1.1. Total length of body 2.31.

Holotype female, from Dominican Amber, DOMINICAN REPUBLIC; the amber piece containing the specimen is designated HE-4-47 and is deposited in the Poinar collection of Dominican amber maintained at the University of California, Berkeley. We take pleasure in naming the species after J. C. M. Carvalho, the father of modern miridology.

Discussion.—The morphological differences between the eyes of this fossil and modern species do not seem to warrant es-

tablishing a new genus. Considering that *R. carvalhoi* is described from a female 2.31 mm long and that males are usually shorter than females evidently this is the smallest species in the genus. The best way to define species in *Reuteroscopus* is by means of the shape of the vesica of the male genitalia. Knight (1965: 102) points out that differences in coloration, whether the black of the hemelytra is sharply (the “ornata” group as in *R. carvalhoi*) or diffusely separated from the pale areas, the relative lengths of antennal segment II and humeral width of pronotum, and the relative thickness of antennal segment II and thickness of protibia can be used to separate females.

Reuteroscopus carvalhoi n. sp. runs in both Knight's (1965) and Kelton's (1964) key to *R. aztecus* Kelton after skipping characters related to male genitalia in the latter key. The females of *R. aztecus* are 3.78–4.06 long, with green abdominal sterna and infuscated cuneus. The females of *R. femoralis* Kelton, from Mexico and *R. hamatus* Kelton are slightly under 3.00 long, but in both the rostrum extends to the tip of hind coxae. Other species in the genus are 3.00 or longer and differ in coloration. In *R. carvalhoi* the humeral width is 1.4 times greater than the length of antennal segment II, whereas in the two species mentioned above, the humeral width is 1.0–1.1 greater than antennal segment II, and their abdominal sterna are yellow.

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