

Research Note

EPITRAGUS AURULENTUS (KIRSCH) (COLEOPTERA: TENEBRIONIDAE): A NEW RECORD AND REPORT FOR PUERTO RICO^{1,2}

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During June of 2001, large tenebrionid beetles were observed eating leaf buds and flowers of citron (*Citrus medica* L., Rutaceae) in a plantation at Santa Isabel, Route 3, Bo. Cortada, approximately 20 km ESE of Ponce, Puerto Rico. In the same area, beetles were also collected from new plantations of mango (*Mangifera indica* L., Anacardiaceae), where they were eating the new leaf growth. The beetles were also observed consuming the "large petals" of the marginal or ray florets in sunflowers (*Helianthus annuus* L., Asteraceae) in several commercial plantations. Furthermore, they were also observed eating about 30% of the new leaf growth in new plantations of avocado (*Persea americana* Mill.) at Santa Isabel, Road 153 Km 9, Bo. Jauca 2, Lomas del Expreso, Finca 115. Some damage in new fruits was observed in peppers (*Capsicum annum* L., Solanaceae) at Santa Isabel Route 3, Bo. Florida.

Collected beetles from all hosts were sent to the laboratory of APHIS Plant Protection Quarantine of the United States Department of Agriculture (San Juan, PR) and to the Systematic Entomology Laboratory, United States Department of Agriculture and the National Museum of Natural History (NMNH), Smithsonian Institution, Washington, DC, where they were identified as *Epitragus aurulentus* (Kirsch), a species apparently native to much of South America (Freude, 1967) (Figure 1A). This proves to be a new record for Puerto Rico (S. Medina-Gaud, Agric. Exp. Sta. Dept. of Crop Protection, Univ. of P.R., Mayagüez, PR, personal communication) according to the records of

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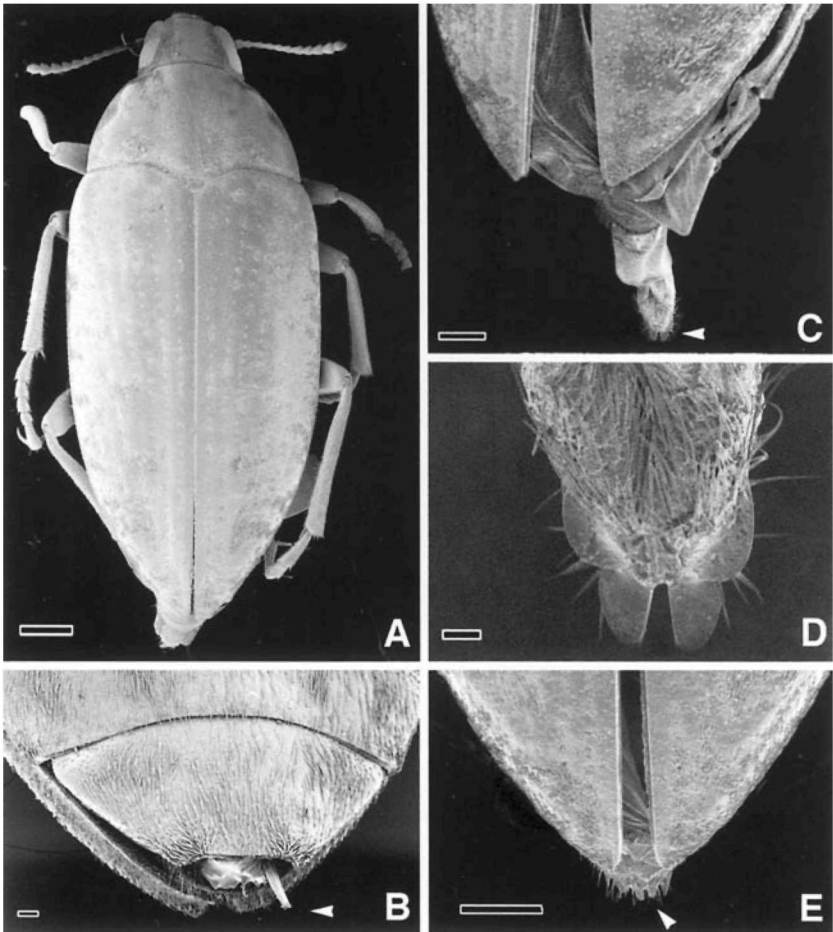


Figure 1. A. Male *Epitragus aurulentus*, dorsal; scale bar = 1 mm. (Females are slightly larger; otherwise, they are indistinguishable from males in dorsal view, except when their genitalia is greatly extruded.) B. Close up of male terminalia, ventral. Arrowhead points to tip of aedeagus; scale bar = 100 u. C. *Epitragus aurulentus* female with extended ovipositor, dorsal. Arrowhead points to paired ovipositor sclerites; scale bar = 1 mm. D. Close-up of ovipositor, terminal aspect, dorsal; scale bar = 100 u. E. *Epitragus aurulentus*, female, ovipositor. Arrowhead points to paired ovipositor sclerites; scale bar = 1 mm.

Wolcott (1948) and a new insect for citron, mango, sunflower, and avocado in Puerto Rico (Martorell, 1976). The pinned specimens are deposited at the NMNH (Entomology Collection). The specimens bear a secondary yellow label that reads "*Epitragus aurulentus* Voucher—Cabrera and Santiago-Blay". These yellow tags state the sex of the specimen and a number, which refers to our computerized database. Ten other coated specimens, also vouchers, glued to SEM stubs and used for electron microscopy, are also deposited at

the NMNH (Entomology Collection). The plastic box containing the stubs has an identification label. Additional specimens have been deposited in the Museum of Entomology of Puerto Rico (P.R. A.C. No. 12-2001).

Adults of *E. aurulentus* are about 11 mm long (females average 11.5 mm; males, 10.8 mm), fusiform, shiny black, and strongly convex dorsally. The head is as narrow as the anterior aspect of the prothorax, the scutellum is tiny, and the slightly pubescent elytra bear wide shallow punctuations (Figure 1A) (Zayas, 1988).

Coloration patterns, antennal length, antennomere morphology, leg morphology and abdominal sterna, frequently useful characters to sex beetles, are all unreliable characters to distinguish the sexes in *E. aurulentus*. We found that the definitive way to sex *E. aurulentus* beetles is by observing their terminalia with a hand lens. During April and May 2002, we collected numerous *E. aurulentus* beetles from different hosts (mango, citrus and sunflowers) in Santa Isabel, and sent them to NMNH Washington, D.C., for determining the sex of the beetles. The terminalia is deeply retracted in both sexes, the aedeagus is pointed in males (Figure 1B), and females have two subapical sclerites (Figures 1C-1E). Collected female beetles were slightly larger in dorsal surface ($x = 46.6 \text{ mm}^2$, range = 38.1 to 53.8 mm^2 , $n = 13$) than males ($x = 40.6 \text{ mm}^2$, range = 33.8 to 45.9 mm^2 , $n = 19$). T-test, $p = 0.0002$ significant, two tails, heteroscedascity (Sokal and Rohlf, 1995).

Epitragus aurulentus is a circum-Caribbean species. This Neotropical tenebrionid beetle has been reported for the United States (Texas), Mexico, Costa Rica, Panama, Brazil, Ecuador, Colombia, Venezuela, Aruba, Curaçao, Margarita, Haiti and Jamaica (Freude, 1986; Marcuzzi, 1984). Although a separate but unnamed species of *Epitragus* was reported from Cuba (Zayas, 1988), the presence of *E. aurulentus* in some of the largest of the Antilles has not yet been reported in the literature (S. B. Peck, Carleton University, Biology Department, Ottawa, Ontario, Canada, personal communication). In 1963 *Epitragus aurulentus* was reported for the first time in the Dominican Republic, where it attacked several crops, including West Indian cherry [*Malpighia emarginata* (Sessé & Mociño) Malpighiaceae]; mangos [*Mangifera indica*, (L.), Anacardiaceae]; mesquite [*Prosopis juliflora* (Sw.) D.C., Fabaceae]; pigeon peas [*Cajanus cajan* (L.) Mill sp., Fabaceae]; orange [*Citrus sinensis* (L.) Osbeck, Rutaceae]; corn [*Zea mays* L., Poaceae]; and bananas [*Musa sapientum* L., Musaceae] (Bonelli, 1976; Schmutterer et al., 1990). Polyphagy is not typical in the Tenebrionidae (S. Warren, NMNH, Washington, D.C. personal communication).

The life history of *E. aurulentus* has never been described. However, in other species of the Epitragini the larvae and pupae live in the soil (Steiner, 1988; 1995) (S. Warren, NMNH, personal communication). The adults are attracted to flowers, probably by their smell, as shown for *E. sallaei* in mango flowers (Cruz-López et al., 2001), perhaps eating pollen (Andrade, 1984) and new leaves, thus causing severe damage in the cultivars it attacks. Given the taxonomically broad (Judd et al., 1999) and voracious polyphagy of *E. aurulentus*, this species should be studied in Puerto Rico: biology, population dynamics and cultural and biological control measures. As far as we are aware, no natural biological enemies of *E. aurulentus* are known (Commonwealth Institute of Biological Control, 1943-1965).

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