A NEW SPECIES OF Derancistrus Audinet-Serville (Coleoptera: Cerambycidae: Prioninae) FROM THE DOMINICAN REPUBLIC WITH NOTES ON OTHER SPECIES OF PRIONINAE FROM HISPANIOLA

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Abstract

Derancistrus hovorei Lingafelter & Woodley, new species, is described from the Dominican Republic. A diagnosis is provided to discriminate it from morphologically similar taxa, in particular Derancistrodes vittatus (Olivier) and Derancistrus elegans (Palisot de Beauvois). Biological, distributional, and/or taxonomic notes are provided for other Hispaniolan Prioninae including Solenoptera dominicensis (Gahan), Elateropsis femoratus (Sallè), Sarifer seabrai Fragoso & Monné, and Mecosarthron domingoensis (Fisher).

The West Indies have been of great interest to biologists for generations. Recently, efforts to discover and study the beetle fauna of this region have intensified markedly. The West Indian Beetle Fauna Project of Michael Iwie (WIBF) has generated a tremendous resource of material from throughout the region. Julio Micheli has built over the last 30 years the most important beetle collection for Puerto Rico (JCPC). Through recent funding from the National Science Foundation Biotic Surveys and Inventories program, John Rawlins, Robert Davidson and others at the Carnegie Museum (CMNH), and Brian Farrell at the Museum of Comparative Zoology (MCZC), have also collected valuable Coleoptera from Hispaniola, and helped to enhance the collection of the Museo Nacional de Historia Natural in Santo Domingo (DRMC). The United States Department of Agriculture has also focused on Puerto Rico and Hispaniola due, in part, to the important problem of invasive species entering the United States through Florida. Support from the USDA has generated a very large collection of phytophagous Coleoptera, collected by the authors, as well as Alexander Konstantinov, Charyn Micheli, and Kelvin Guerrero, much of which is deposited in the Smithsonian Institution (USNM). The Florida State Collection of Arthropods (FSCA) holds much valuable Caribbean material, collected primarily by Robert Woodruff and Michael Thomas. Individuals such as the late Edmund Giesbert (EFGC), James Wappes (JEWC), Robert Turnbow (RHTC), and Eugenio Nearns (ENPC) have also collected extensively, developing important collections from the region.

These collections represent a foundation on which numerous Cerambycidae studies have been published and many others are being developed. For example, Fortuné Chalumeau and Julien Touroult published a beautiful book on the Cerambycidae of the Lesser Antilles (Chalumeau and Touroult 2005). Julio Micheli is nearing completion on his book on the longhorned beetles of Puerto Rico. Each species treatment includes a full page, hand drawn dorsal habitus by Julio, a noted artist as well as a coleopterist. Lingafelter and others are developing a field guide to the Cerambycidae of the Dominican Republic that will have...
photographs of nearly all species, including images of over 50 species taken alive. Examples of smaller cerambycid studies based on the above collections include: Lingafelter and Micheli (2004), Lingafelter and Ivie (2005), Lingafelter and Nearns (2007), Micheli (2003), Micheli and Nearns (2005), Nearns, et al. (2006), Nearns and Steiner (2006), and Vitali and Rezbanyai-Reser (2003a,b).

Over the last three years (2004–2006), three expeditions of at least three weeks each were made by a team of entomologists from the USDA at the Smithsonian Institution (the authors and Alexander Konstantinov), University of Florida (Eugenio Nearns), University of Maryland (Charyn Micheli), and University of Minnesota (Lourdes Chamorro-Lacayo). Also participating in some of these expeditions were Daniel Perez-Gelabert (Smithsonian Institution), Kelvin Guerrero (Biological Consultant, Santo Domingo), and Rick Stanley (photographer, Bethesda, Maryland). Together, this team of naturalists has discovered dozens of new species of plant feeding and wood-boring beetles. This paper, along with Lingafelter and Nearns (2007) represents the first of a series of studies describing these new species, and will further serve as a foundation to the Field Guide to the Longhorned Beetles of the Dominican Republic (Lingafelter, et al., in prep.).

The Dominican Republic has some beautiful and rare species of Prioninae. We describe herein what is arguably the most charismatic of all the West Indian Prioninae. This species, known only from three recently collected specimens from the vicinity of Cabo Rojo in southwestern Dominican Republic, is most similar to Derancistrus elegans (Palisot de Beauvois), but upon closer inspection, the two species differ in many characters. Biological, distributional, and/or taxonomic notes are provided for other Hispaniolan Prioninae including Solenoptera dominicensis (Gahan), Elateropsis femoratus (Sallé), Sarifer seabrai Fragoso & Monné, and Mecosarthron domingoensis (Fisher).

Materials and Methods

Specimens were examined from the following collections during the course of this and other research on Cerambycidae of Hispaniola. Acronyms and contact persons are listed below:

DRMC Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic
EFGC Edmund F. Giesbert Collection, Gainesville (at FSCA), FL, U.S.A. (M. Thomas)
ENPC Eugenio Nearns Private Collection, Albuquerque, NM, U.S.A.
FSCA Florida State Collection of Arthropods, Gainesville, FL, U.S.A. (M. Thomas)
JPCP Julio and Charyn Micheli Private Collection, Ponce, Puerto Rico, U.S.A.
JEWC James E. Wappes Private Collection, San Antonio, TX, U.S.A.
MCZC Museum of Comparative Zoology, Harvard University, Cambridge, MA, U.S.A. (B. Farrell)
RHTC Robert H. Turnbow, Jr. Private Collection, Ft. Rucker, AL, U.S.A.
RMPC Roy F. Morris Private Collection, Lakeland, FL, U.S.A.
USNM National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.
WIBF West Indian Beetle Fauna Project, Bozeman, Montana, U.S.A. (M. Ivie)

Label data are formatted consistently for better presentation (e.g., months are spelled out; place names are standardized), and redundancy is minimized by not
repeating identical localities within a species treatment in Material Examined sections. Holotype label data are verbatim, however.

**Derancistrus hovorei** Lingafelter & Woodley, new species  
(Figs. 1a, 2a, 2c)

**Diagnosis.** *Derancistrus hovorei*, with its distinctive coloration, is morphologically similar only to *D. elegans* (Figs. 2b, d) and *Derancistrodes vittatus* (Olivier) (Fig. 2e). *Derancistrus hovorei* differs from *D. vittatus* by its large, lateral spine-like processes on the pronotum (Fig. 2a) and distinctly bilobed posterior margin of the prosternal process. The pronotal margins of male *Derancistrodes vittatus*
are nearly parallel-sided and slightly erose; in females, the pronotal margins are crenulate, with posterolateral margin acutely produced, but not as spine-like as in *D. hovorei*. The posterior margin of the prosternal process is evenly rounded in both sexes of *D. vittatus*. *Derancistrus hovorei* differs from *D. elegans* by having obvious coarse punctation on the elytra (virtually impunctate in *D. elegans*, punctures not apparent to the naked eye) and in having the median lateral spine of the pronotum shorter and less hooked than in *D. elegans*.

**Description.** Female. Large and robust, 36–39 mm long, 13–14 mm wide at humeri, orange (much brighter in life), elytra ochraceous with bold black vittae along suture and near lateral margins, some abdominal sternites piceous. Integument shiny, mostly glabrous, generally impunctate except for elytra which are densely and shallowly punctate. **Head** approximately half as wide as pronotum, with broad, deep impression between the upper eye lobes and antennal tubercles, frontal margin bulging, anteroventral genal projections acute, eyes notched over one-third their depth, finely facetted. Antennae 11-segmented, short, attaining approximately basal third of elytra; third antennomere subequal in length to scape; antennomeres flattened, more strongly on segments 4–7, mostly smooth and glabrous, with sensory poriferous areas limited to antennomeres 8–11. **Pronotum** glabrous and impunctate, with a broad, sub-triangular medial impression at anterior two-thirds; with posterior margin much narrower than base of elytra; lateral margin flattened, produced into two broad spine-like processes on each side, one anterolateral and one mediolateral, joined by crenulate margins. Mediolar process largest, with apex weakly directed posteriorly and not extending beyond plane of maximum elytral width. Venter of prothorax mostly glabrous with only sparse, fine punctuation concentrated around prosternal process which is very broad, about as broad as procoxa, and deeply bilobed around mesosternal process. Prosternum flat from lateral view, without ventral projections; anteromedial region unmodified. **Elytra** glabrous, densely, coarsely and shallowly punctate, ground color ochraceous with a broad black sutural vitta extending from apex anteriorly along suture to scutellum, narrowing but fully continuous around basal margin of each elytron, broadening at humerus and continuing along epipleuron, terminating just before outer apex leaving ochraceous apical margin, or reaching apex with a narrowly darkened apical margin. Elytral apex weakly denticulate with weakly produced sutural spine and outer apical spine. Scutellum orange, glabrous, sparsely micropunctate, subtriangular, narrowly rounded posteriorly. **Legs** short; orange; without noticeable spines or denticles on femora. Femora very weakly clavate, metafemur not attaining fourth abdominal sternite, tibiae subequal in length to femora. **Venter** orange except abdominal sternites 1–4 mostly piceous, shiny, impunctate, and glabrous except translucent golden hairs along metepisternum, narrow oblique band along each side of metasternum, around pro- and mesocoxae, and along lateral margins of abdominal sternites 1–5. Abdominal sternite 5 nearly 1.5× as long as sternite 4 and with a shallow medial notch at apex.

**Etymology.** The species epithet is a noun in apposition named for Frank Hovore (1945–2006), a talented, energetic, and charismatic researcher who will be greatly missed. Frank had a love for cerambycids, especially Prioninae. We have no doubt that he would have delighted in the discovery of this species, and it is especially fitting to dedicate this elegant species to his memory.

**Discussion.** Two described species strongly resemble *Derancistrus hovorei* due to their shiny, nearly glabrous integument marked by broad, black longitudinal vittae. The first, *Derancistrodes vittatus*, is easily distinguished as noted above by
the structure of the pronotum. This species is endemic to Hispaniola, and only five specimens are known (data summarized in Galileo and Martins 1993a). The second species, Derancistrus elegans, is most similar morphologically to *D. hovorei* but is easily distinguished based on its smooth elytra. The two species can be further distinguished by the following characters (most shown in Figs. 2a, b). In *D. elegans*, the frons is less sharply impressed between the antennae and the ventral pilosity is denser than in *D. hovorei*, particularly on the metepimeron which is essentially obscured. The anterior margin of the prosternum is somewhat inflated into a margined collar in *D. elegans* but not in *D. hovorei*. The pronotum has a sharp medial impression that divides into Y-shaped arms posteriorly and anteriorly in *D. elegans*; the median impression is broader but less sharply impressed, and the Y-shaped arms, especially posteriorly, are not well developed in *D. hovorei*. The black vitta is completely continuous around the base of the elytron and throughout the humeral region in *D. hovorei*; the humeral region is mostly pale in *D. elegans*. Finally, the posterior region of the scutellum lies in a more pronounced sutural depression of the elytra in *D. hovorei*. This region is more level and less recessed in *D. elegans*. There are only seven known specimens.
of *D. elegans*, three of which are in the USNM and were not recorded by Galileo and Martins (1993b). The USNM specimens have the following data: Haiti, Île de la Tortue, La Vallee, EC & GM Leonard, May 1929 (1 male); Haiti, Tippmann collection (1 female); and Venezuela, Tortuga Island, May 17, W. Schauss (1 female). The last specimen listed is clearly mislabeled and almost certainly originated from Île de la Tortue, Haiti.

Unfortunately, only females are known for *D. hovorei*, so we cannot comment on sexual dimorphism. However, sexual dimorphism in *D. elegans* is minimal and we presume that sexual differences are similar in *D. hovorei*. We have examined the pronotal impression, pilosity, antennal poriferous regions, and prosternal modifications and have not found significant differences between the sexes in *D. elegans*. The one male we examined of *D. elegans* has a slightly more slender habitus than females, slightly longer antennae, and the fifth abdominal sternite is broadly emarginate at the apex rather than with a small medial notch.

The holotype was collected on a hot afternoon flying near a dark forest trail (Fig. 3a) with dappled sunlight. It was seen flying low to the ground and landed on the ground just before it was collected. After its discovery, at least 30 h of intensive collecting around the type locality, during both day and night in 2005 and 2006, failed to produce additional specimens.


*Solenoptera dominicensis* (Gahan)

(Fig. 1b)

This species is not very common in collections, but is abundant in eastern Dominican Republic. Our team has collected this species during every expedition from 2004–2006. Like many Solenopterini, adults are diurnal and encountered flying or resting on vegetation on hot days. Most of our specimens were collected at the El Veron locality, along the road to Hoyo Azul, in an area where the forest has been mostly cut for cattle grazing but with numerous standing and fallen dead trees and outcroppings of limestone. Most specimens were collected as they were clinging to grasses and other herbaceous plants along the road.

Galileo and Martins (1993a, 1993b, 1993c, 1994) revised the Solenopterini. One species, *S. fradulenta* Galileo and Martins (1993c: 445), was described from Cuba and said to be similar to *S. dominicensis*, however, the former has a pubescent scutellum, while the latter has a glabrous scutellum. Galileo and Martins (1993c) had a photograph of the holotype of *S. dominicensis* but had no additional specimens and Gahan (1890) did not describe the scutellum as it was apparently damaged. We have also seen a photograph of the holotype of *S. dominicensis* and could not discern the vestiture of the scutellum. Our large series of *S. dominicensis* shows that short and sparse scutellar pubescence is present, although it is occasionally denser, but not nearly as dense as in *S. scutellata* (Gahan). We think it is quite possible that *S. fradulenta* is a synonym of *S. dominicensis*.

This species exhibits considerable variation in size, with males and females ranging from 17 to 29 mm and 18 to 38 mm long, respectively. Sexual dimorphism typical for *Solenoptera* is present in *S. dominicensis*, and color dimorphism is present. Males of *S. dominicensis* have a narrow band of black
coloration at the elytral bases, while in females the band is much broader, usually occupying about the basal fourth of the elytra.

**Material examined:** (all Dominican Republic, La Altagracia Province, USNM unless otherwise noted): Punta Cana near Ecological Reserve, 18°30.477’N, 68°22.499’W, 0–5 m, 2–7 July 2005, S. W. Lingafelter (2 males, 1 female); 1 July
2006, N. E. Woodley (1 female); 3 July 2006, N. E. Woodley (2 females); 5 July 2006, N. E. Woodley (1 male); 3 July 2006 E. H. Nearns (2 male, 3 females, ENPC); 6 July 2006, E. H. Nearns (1 male, ENPC); Parque Nacional del Este, Boca de Yuma, 18°21.508’N, 68°36.956’W, 20 m, 19–20 July 2004, D. Perez (2 males, 1 female); El Veron, road to Hoyo Azul, 18°33.805’N, 68°26.543’W, 25–40 m, 1 July 2005, S. W. Lingafelter (4 males, 2 females); same data except 4 July 2005, N. E. Woodley (1 female); 4 July 2006, S. W. Lingafelter, beating veg. (1 female); 21 July 2006, N. E. Woodley (1 male); 26 June 2005, Nearns & Lingafelter (1 female) (RMPC); same data (8 males, 2 females, ENPC); Parque Nacional del Este, Valle de Orqueta, 18°22.934’N, 68°46.631’W, 25 m, 29 June 2005, N. E. Woodley (1 male, 1 female); same data except Nearns & Woodley (1 male, 1 female, ENPC); Parque Nacional del Este, Guaraguao, 18°19.568’N, 68°48.500’W, 0–5 m, 21 July 2004, S. W. Lingafelter (1 female).

*Elateropsis femoratus* (Sallé)

Galileo and Martins (1994) reported only the two syntypes of this species, collected near Santo Domingo, Dominican Republic in the 19th Century. We collected some black specimens of *Elateropsis* Chevrolat lacking pronotal pubescence that we initially thought represented an undescribed species, as *E. femoratus* was reported to have reddish brown femora. However, we have since encountered some specimens with reddish femora and even parts of the tibiae reddish that are otherwise structurally like the all black specimens, sometimes from the same locality. We have come to the conclusion that all of these specimens are conspecific. This was the most commonly encountered *Elateropsis* species during our expeditions, but it is nonetheless quite scarce. We collected two additional species, each represented by only a single specimen.

**Material examined:** (all Dominican Republic, La Altagracia Province, USNM unless otherwise noted): Santo Domingo Province, H. H. Keays (1 male); Santo Domingo Province, Puerto Vaca, Sierra Preta, 18°38’N, 69°57’W, 27 May 2004, R. H. Bastardo (2 males); same data but 12 June 2004, Anderson (1 female); Punta Cana near Ecological Reserve, 18°30.477’N, 68°22.499’W, 0–5 m, 2–7 July 2005, S. W. Lingafelter (1 female); Parque Nacional del Este, Valle de Orqueta, 18°22.934’N, 68°46.631’W, 25 m, 29 June 2005, N. E. Woodley (1 female); El Veron, road to Hoyo Azul, 18°33.805’N, 68°26.543’W, 25–40 m, 7 July 2006, N. E. Woodley (1 male); 9.7 km NW of Punta Cana, 18°35’11”N, 68°26’22”W, 36 m, 29 May 2004, J. Rawlins, J. Fetzner, C. Nunez, C. Young, disturbed dry forest, limestone (1 female, CMNH).

*Sarifer seabrai* Fragoso & Monné (Fig. 1c)

During 2004 and 2005, 11 specimens of this striking prionine were collected at lower elevations along the Los Tablones River along the trail leading to Pico Duarte (Fig. 3b). Males of this species were attracted to blacklight, usually between 9:00 and 11:00 PM, and flew during light rain, when few other beetles were attracted. The only other species of *Sarifer*, *S. flavirameus* Kirsch, is widespread but uncommon in South America (Monné 2006).

**Material examined:** (all Dominican Republic): La Vega Province, Parque Nacional Armando Bermudez, km 5–10 along trail W of La Ciénaga, 900–1100 m, near Los Tablones, 19°01.753’N, 70°54.654’W, blacklight, 22 June 2005,
Ivie (1985) examined the holotype of *Xixuthrus domingoensis* Fisher and concluded that it should be placed in *Mecosarthron* Buquet. He indicated that the relatively short third antennomere (relative to scape), the shorter profemora in males (relative to mesofemora), and the arcuately indented anterior margin of the pronotum all differentiate *Mecosarthron* (a South American genus) from *Xixuthrus* Thomson (an Asian genus). While a critical assessment of this is beyond the scope of this paper, there are striking morphological similarities between *M. domingoensis* and both *Mecosarthron* (Macrotomini) and *Xixuthrus* (Xixuthrini). However, the relative length of the third antennomere to scape is not consistent as some female *Xixuthrus* have third antennomere shorter than the scape. Further, the length of the forelegs is allometric and variable (Yanega et al. 2004), and the pronotal margin shape is also variable and difficult to code into discrete states. Characters that exhibit less intraspecific and allometric variation need to be identified to truly understand the relationships among prionines and this dilemma further illustrates the need for worldwide systematic phylogenetic analyses of Cerambycidae.

In 2005, 13 specimens of this enigmatic species were collected in Punta Cana in the eastern Dominican Republic from 12–14 June and 2–7 July. Specimens were attracted to lights at the edge of the Punta Cana Ecological Reserve between 9:00 PM and midnight on very hot, humid nights (temperature over 80 degrees, humidity over 80%). Two additional specimens were collected in July 2006 at the same locality (one was found dead). Other than the holotype (Santiago, Dominican Republic, 1926) and one paratype (San Pedro de Macoris, Dominican Republic, 1919), described by Fisher in 1932, and one additional specimen collected by Kelvin Guerrero and a group of students in 2004 (Guerrero, pers. comm.), these represent the only known specimens. The collection of a large series in 2005 and two specimens at the same locality a year later indicates that a viable population of this species exists at Punta Cana. Because the other two known species of *Mecosarthron* occur in Brazil, Ivie (1985) suggested that *M. domingoensis* was introduced to Hispaniola and subsequently died out, however our collection events refute this. Furthermore, other discoveries in the Hispaniolan insect fauna have involved surprisingly disjunct distributions. For example, *Sarifer seabrai* (discussed above) is an enigmatic prionine known only from Hispaniola, while the only other species in the genus, *S. flavirameus* Kirsch, occurs throughout much of South America (Monné 2006). Another example, *Paradejeania xenisma* Woodley, a large, colorful tachinid fly, was discovered in the early 1980s (Woodley 1993). *Paradejeania* is very distinctive and easily characterized, and prior to the discovery of *P. xenisma*, only two species were known, one ranging from western North America to Central America and the
other known only from Colombia. The discovery of the Hispaniolan species extended the range of this genus by hundreds of kilometers and was totally unexpected. We believe that *M. domingoensis* is very likely a species native to Hispaniola and has gone undetected for long periods due to lack of collecting and perhaps biological factors that keep population levels low except in exceptional years.

**Material examined:** (all Dominican Republic, La Altagracia Province, Punta Cana near Ecological Reserve, 0–5 m, 18°30.477’N, 68°22.499’W): 12–17 June, 2005, S. W. Lingafelter (1 male, USNM); 2–7 July 2005, S. W. Lingafelter (1 male, 1 female, USNM); 2–7 July 2005, N. E. Woodley (1 female, USNM); 3 July 2006, S. W. Lingafelter (1 male, USNM); 3 July 2005, Charyn J. Micheli (1 female, JCPC); 28 June (1 female, JCPC); 3 July 2006, found dead, E. H. Nearns (1 male, ENPC); found dead, 12 June 2005, Nearns & Lingafelter (1 male, ENPC); at light, 12 June 2005, Nearns & Lingafelter (1 male, 1 female, ENPC); same data (1 male, RMPC); same data (1 male, JEWC).

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**Literature Cited**


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