

**CARINISPHINDUS, A NEW GENUS AND THREE NEW
SPECIES OF NEOTROPICAL SPHINDIDAE
(COLEOPTERA: CLAVICORNIA)**

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ABSTRACT

Carinisphindus, a new genus of Sphindidae (Coleoptera: Clavicornia), is described. *Eurysphindus bicolor* Fisher is redescribed and reassigned to *Carinisphindus*. Three new species of *Carinisphindus* are described: *C. isthmensis* (Panamá), *C. leptosphinctos* (Dominican Republic), and *C. platysphinctos* (Jamaica). A key to the species is provided.

RESUMEN

Se describe a *Carinisphindus*, un nuevo género de Sphindidae (Coleoptera: Clavicornia). Se redescrive a *Eurysphindus bicolor* Fisher y se la transfiere a *Carinisphindus*. Se describen tres nuevas especies de *Carinisphindus*: *C. isthmensis* (Panamá), *C. leptosphinctos* (República Dominicana), y *C. platysphinctos* (Jamaica). Se da una clave para las especies de *Carinisphindus*.

Eurysphindus bicolor Fisher (1936) from Cuba was described and assigned to *Eurysphindus* with reservation. Fisher was concerned because *E. bicolor* lacks the concave prosternal lateral flanges that occur in the type species, *Eurysphindus hirtus* LeConte (1878).

During a revision and phylogenetic analysis of the subfamily Eurysphindinae (McHugh, in press), it was clear that *E. bicolor* and three closely related undescribed species form a monophyletic group outside what has been considered Eurysphindinae (Fig. 2). The new group has the following synapomorphies: (1) clypeal margin weakly cleft, (2) male metafemur with a posterior tooth (Figs. 11, 12), (3) pronotum with a median longitudinal carina (Figs. 1, 8), (4) scutellum with a median longitudinal carina (Figs. 1, 15, 18), and (5) elytra with upturned inner edges anteriorly (Fig. 1). The genus *Carinisphindus* is described to include these four species.

MATERIALS AND METHODS

Specimens were studied with the following three techniques: (1) using a Wild M-5 stereoscopic microscope on alcohol-preserved and pin- or point-mounted specimens; (2) using a Leitz Nomarski optics microscope on specimens that had been disarticulated, cleared in hot KOH, and slide-mounted in glycerin jelly or Canada balsam; and (3) using scanning electron microscopy (SEM) on specimens sputter-coated with gold-palladium. During the course of this study, specimens were placed in Watrous-trays (Wheeler and McHugh 1987) for handling and storage.

Morphological illustrations were made with the aid of either a camera lucida or a gridded eyepiece and graph paper in concert with the above methods 1 and 2.

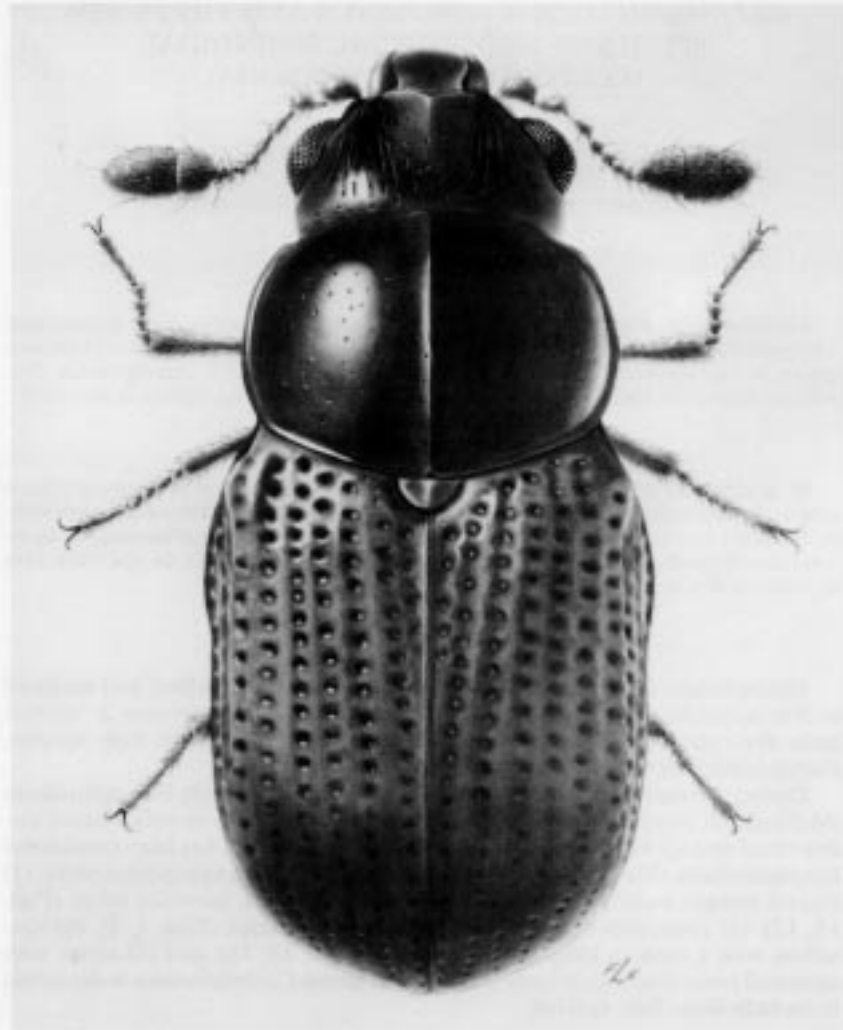


Fig. 1. *Carinisphindus platysphinctus*, new species, holotype male, Jamaica (Troy), dorsal view.

Standardized species descriptions were written using MDP (Monographic Database Program), a presently unreleased computer database system created by Dr. K. Nixon (Cornell University).

Morphometric measurements were made using a ZIDAS image analyzer (Zeiss, Inc.) to digitize images projected by a camera lucida. Measurements of the holotype are given under Type Material using the abbreviations shown in Figs. 3, 4. Measurements given under Description are arithmetic means in species descriptions and keys, and are ranges in the generic description, for all material examined. The units of measure are millimeters.

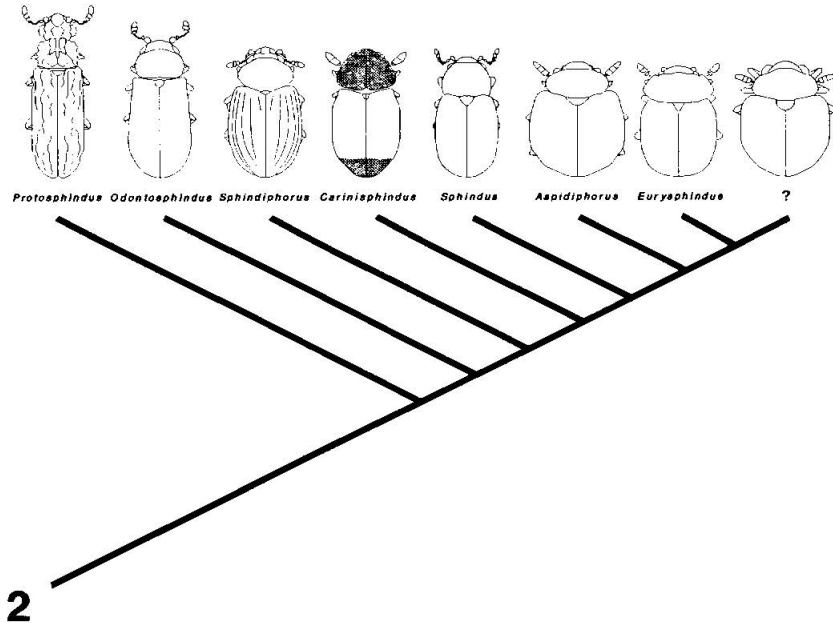


Fig. 2. Cladogram of sphindid genera (from McHugh, in press). "?" is an undescribed Neotropical genus.

The numbers on the distribution map symbols (Fig. 26) represent the number of specimens examined from each particular locality.

Carinisphindus McHugh, new genus

Type species: *Carinisphindus bicolor* (Fisher 1936), designated here.

DIAGNOSIS. Body narrowly oval (Fig. 1). Color uniformly dark brownish (Fig. 27) or with yellowish-brown and black color pattern (Figs. 1, 28–30). Head with 2 pairs of ventral antennal pits (Fig. 6), dorsal surface with punctures coalescing laterally forming grooves (Figs. 1, 5); clypeus weakly bilobed apically; mandibles bidentate. Antenna 10-segmented with 2-segmented club, antennomeres 9–10 about equal in length (Figs. 1, 7, 10). Pronotum with smooth lateral edge and median longitudinal carina (Figs. 1, 8); procoxal cavities nearly closed posteriorly (Fig. 9); prosternal process lacking a carina, posteriorly bilobed (Fig. 9). Mesosternal process flat, bilobed (Fig. 14). Each femur with rounded distal end (Figs. 1, 12), male metafemur each with a posterior spine (Figs. 11, 12). Scutellum small, oval-chordate, carinate (Figs. 1, 15, 18). Wings with 3 anal veins and an anal cell (Fig. 17). Elytral stria interspaces convex (Figs. 1, 20). Pygidium with two large, impunctate patches (Figs. 19, 25).

DESCRIPTION. Body narrowly oval, convex, head visible from above (Fig. 1). Length 1.0–2.2 mm. Color of body uniformly dark brownish (Fig. 27) or with yellowish-brown and black banded color pattern (Figs. 1, 28–30), body shiny. Setation of short, moderately dense to sparse (Fig. 1) hairs.

Head with a pair of dorsal antennal grooves extending from between antennal insertion and clypeus to beyond top of eyes, as well as several other shorter, less distinct grooves (Figs. 1, 5), ventrally with 2 pairs of well-defined antennal pits (Fig. 6), fron-

toctyleal suture arcuate (Fig. 5); dorsal surface shallowly punctured medially, punctures becoming more elongate and coalescing laterally, forming grooves (Figs. 1, 5); clypeus emarginate laterally (Figs. 1, 5), weakly bilobed apically; eyes black or brown, coarsely faceted (Fig. 1); antenna 10-segmented, with robust and asymmetrical antennomeres 1 and 2, antennomere 3 about 3 times as long as wide, 4 slightly elongate, 5-7 submoniliform, 8 wider than 3-7, 9-10 large, forming densely pubescent, compact club (Figs. 1, 7, 10); labrum slightly bilobed apically, nearly completely concealed by clypeus; mandibles robust, bidentate with characteristic tubercle and cavity of family.

Pronotum slightly narrowed in front, weakly rounded at sides, convex, flattened laterally with acute, smooth edge (Figs. 1, 8), flanges flat anteroventrally, with or without depressions, basal margin arcuate (Figs. 1, 8), with narrow, median carina extending from anterior to basal margin (Figs. 1, 8), surface with irregular, shallow punctures (Figs. 1, 8) and weak micropunctures. Procoxal cavities nearly closed posteriorly by lateral extensions of prosternal process and posterior extensions of each hypomeron (Fig. 9); prosternal process slightly raised, punctured, posteriorly with lateral flanges (Fig. 9). Mesosternum irregularly punctured, horizontal anteriorly, reflexed posteriorly (Fig. 14); mesosternal process flat, bilobed (Fig. 14); trochantins exposed. Metasternum inflated, punctured anterolaterally (Fig. 14). Legs long, slender (Figs. 1, 12). Coxae transverse. Femora sparsely setose, rounded at distal ends (Figs. 1, 12); male metafemur with posterior tooth at about one-third length (Figs. 11, 12). Tibiae weakly dilated apically, narrowed basally, with sparse, short setae, lacking spurs except for short crown distally (Fig. 12). Tarsi 5-5-5 female, 5-5-4 male, simple, with apical segment not as long as others combined except on male metatarsus (Fig. 12); tarsomeres with a tuft of setae ventrally; claws with a short, basal comb of spines. Scutellum small, transverse, oval-chordate, weakly margined, with strong, narrow, median carina (Figs. 1, 15, 18).

Elytra elongate, covering abdomen, weakly rounded at sides, tapered posteriorly, disk convex (Figs. 1, 20), with or without (Fig. 1) trace of subhumeral depression, strongly depressed opposite lateral margins of scutellum (Fig. 1), humeral calli weakly to moderately (Fig. 1) produced, epipleuron narrow and complete to basal margin of abdominal sternite 3 to 5; dorsal surface with one scutellary and 10 long punctate striae, punctures darkened or not, decreasing gradually in size posteriorly; striae interspaces convex (Figs. 1, 20) and with 1 or 2 rows of sparse (Fig. 1) to moderately dense (Figs. 20, 21) setae.

Abdomen with 5 visible sternites, sternite 1 about 1.5-3.0 times length of other sternites, 2-5 with a basal row of depressions (Fig. 13) or with a long, continuous depressed band, sternites not in same plane giving shingled appearance. Pygidium with two large, impunctate regions (Figs. 19, 25).

ETYMOLOGY. Latin, "keeled Sphindus," in reference to the characteristic keel on the pronotum and scutellum.

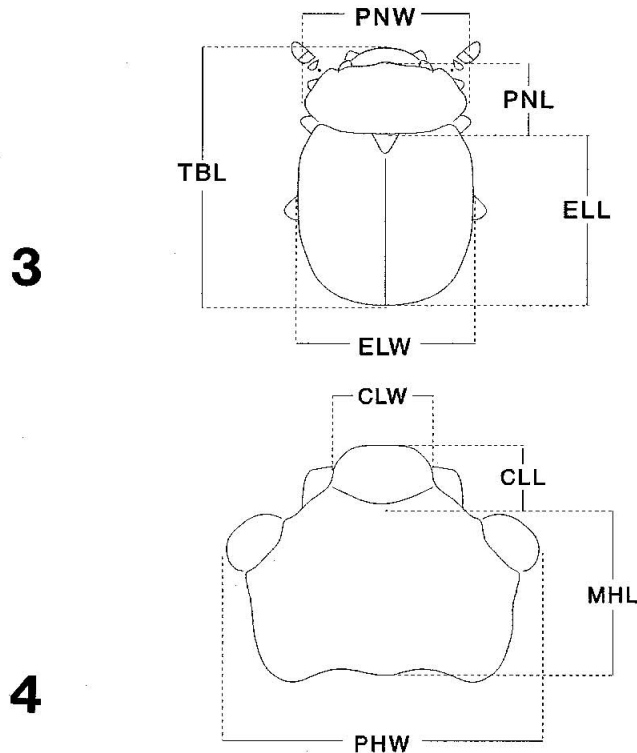
NATURAL HISTORY. All species apparently feed on myxomycetes.

DISTRIBUTION. Central American and Caribbean.

SPECIES INCLUDED. *Carinisphindus bicolor* (Fisher), new combination, transferred from *Eurysphindus*, Cuba; *C. isthmensis*, new species, Panama and Mexico; *C. leptosphinctos*, new species, Dominican Republic; and *C. platysphinctos*, new species, Jamaica.

KEY TO THE SPECIES OF *CARINISPHINDUS*

1. Body uniformly colored (Fig. 27) or nearly so, lacking a yellow and gray or reddish-black color pattern (Central America) *C. isthmensis*
- Body with distinct yellow and gray or black color pattern with dark elytral apices and light basal elytral band (Figs. 1, 28-30) (Caribbean) 2
2. Head and pronotum reddish-yellow (Fig. 28), dorsolateral pronotal punctures with distinct posterior margin and weak, gradual anterior margin (Cuba) *C. bicolor*



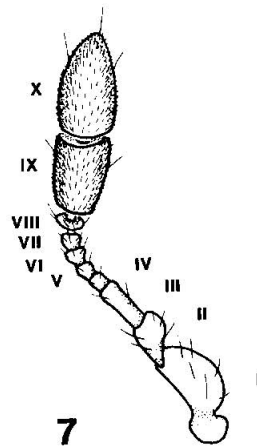
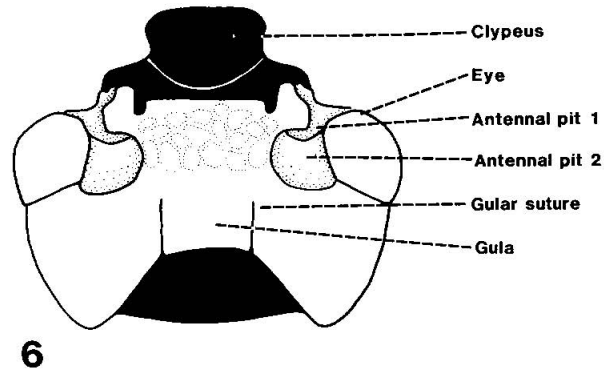
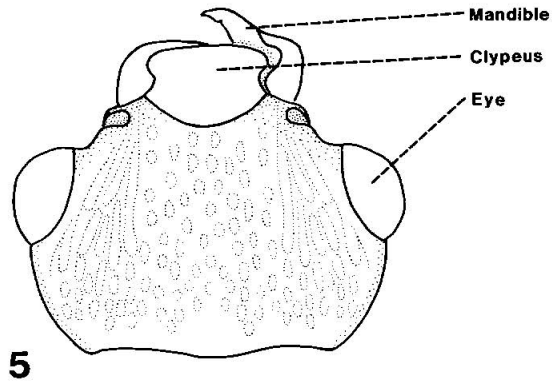
Figs. 3, 4. Morphometric measurements. 3, body measurements. 4, head measurements. Abbreviations: TBL = total body length, ELL = elytral length, ELW = elytral width, PNL = pronotal length, PNW = pronotal width, MHL = median head length, PHW = ocular head width, CLL = clypeal length, CLW = clypeal width.

- Head and pronotum dark reddish-black (Figs. 1, 29, 30), dorsolateral pronotal punctures with distinct margins anteriorly (Jamaica, Dominican Republic) 3
- 3. Yellow band on elytra wide (Figs. 1, 29), extending posteriorly about three-quarters length of elytra, head with small raised bump opposite apex of frontoclypeal suture, elytral punctures not darkened (Jamaica) *C. platysphinctos*
- Yellow band on elytra narrow, not extending posteriorly beyond a quarter length of elytra (Fig. 30), head without raised bump opposite apex of frontoclypeal suture, elytral punctures darkened (Dominican Republic) *C. leptosphinctos*

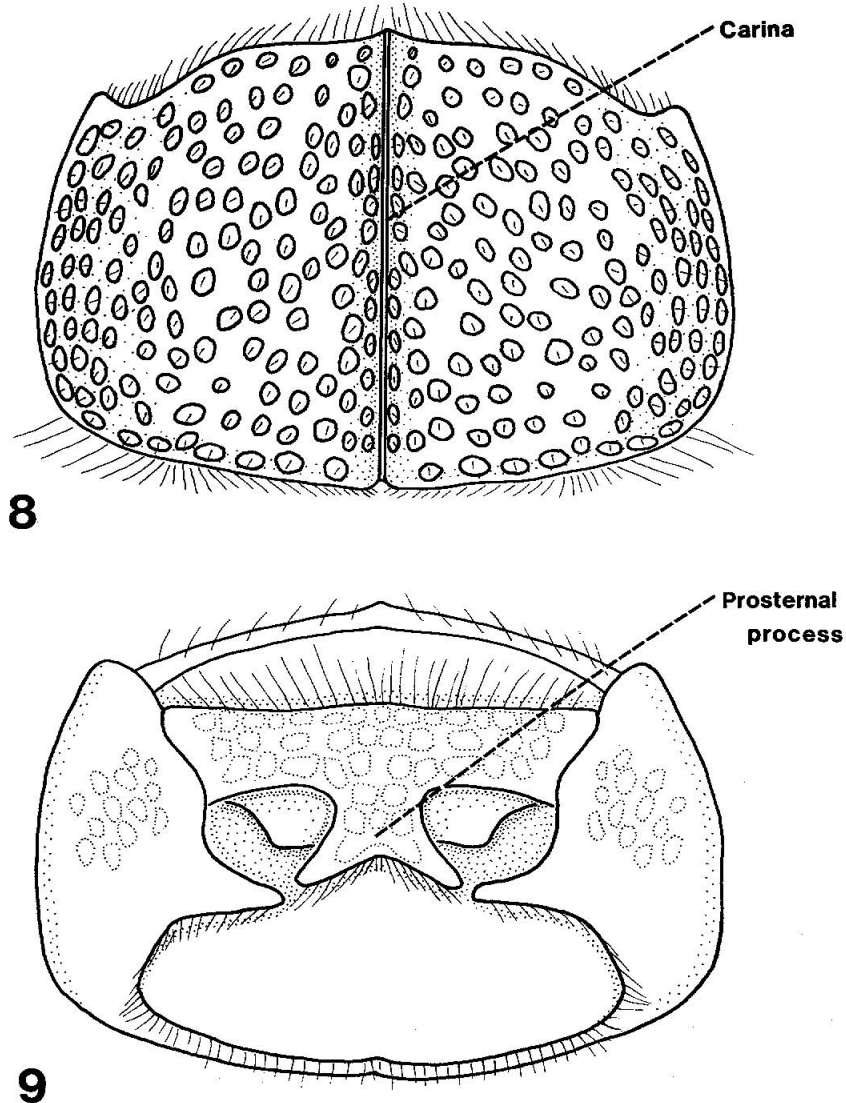
Carinisphindus bicolor (Fisher), **new comb.**
(Figs. 26, 28)

Eurysphindus bicolor Fisher 1936:201-202; Sen Gupta and Crowson 1977:183.

DIAGNOSIS. Head and pronotum reddish-yellow, elytra yellowish on basal half and gray on apical half (Fig. 28); eyes black; antennomeres 9 and 10 about



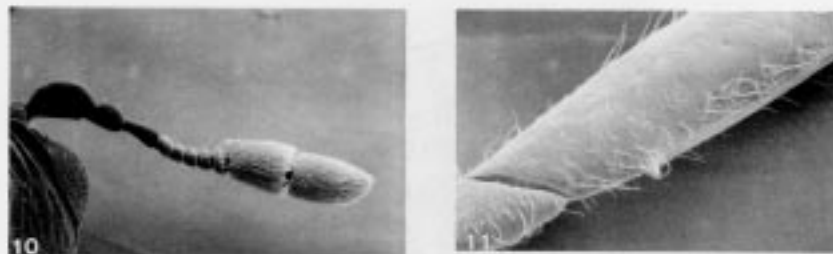
Figs. 5–7. *Carinisphindus isthmensis*. 5, head, dorsal view. 6, head, ventral view. 7, left antenna, dorsal view.



Figs. 8, 9. *Carinisphindus isthmensis*, prothorax. 8, dorsal view. 9, ventral view.

equal in length; lateral pronotal punctures with indistinct anterior margin; lacking paired pronotal depressions; elytra with weak subhumeral depression, punctures not darkened; basal depression on sternites 3–5 incompletely divided into rows of individual depressions.

DESCRIPTION. Length 1.7 mm. Color of head and pronotum reddish-yellow; elytra yellowish on basal half and gray on apical half (Fig. 28); prosternum, mesosternum, and metasternum light yellowish-brown; body very shiny. Setation of short, suberect hairs.



Figs. 10, 11. *Carinisphindus isthmensis*. 10, right antenna, dorsal view. 11, posterior tooth on male metafemur.

Head with dorsal surface sparsely and shallowly punctured medially, punctures elongate and coalescing laterally forming grooves; clypeus width 0.2, length 0.2; eyes small, black, coarsely faceted. Antennomere 3 about 3 times as long as wide; 4 slightly elongate; 5-7 submoniliform; 8 wider than 3-7; 9 and 10 large, about equal in length, symmetrical, and forming densely pubescent, compact club.

Pronotum width 0.7, length 0.5; surface with irregular, shallow punctures, lateral punctures with distinct lateral and posterior edges but anterior edges elongate and gradual. Mesosternum irregularly punctured, with anterior two-thirds horizontal, posterior third slightly reflexed; mesosternal process slightly bilobed.

Elytra width 0.3, length 1.1; with weak subhumeral depression and weakly produced humeral calli; epipleuron narrow, complete to about basal margin of sternite 5; surface with punctures decreasing gradually in size posteriorly; stria interspaces weakly convex with sparse, short setation.

Abdomen with sternite 1 about 3 times as long as other sternites; 2-5 basally depressed; 3-5 often with basal divisions of depression; intercoxal process with broad base, acute apex, and a weakly raised, broad, median ridge.

TYPE MATERIAL. Holotype: female (USNM) with following label data: "Baragua, Cuba, June 17, 1936, LCS Scaramuzza Feeding on a myxomycete on sugarcane E.E.A.Cuba, Ento. No. 10798 Type No. 51704 USNM Eurysphindus bicolor Fisher." Measurements: TBL 1.7, ELL 1.0, ELW 0.9, PNL 0.5, PNW 0.7, PHW 0.6, CLL 0.2, CLW 0.2. Paratypes: 2 females (USNM) with same label data as above except with paratype label (with same number as holotype) in place of holotype label.

NATURAL HISTORY. This species was collected feeding on an unidentified myxomycete occurring on sugar cane.

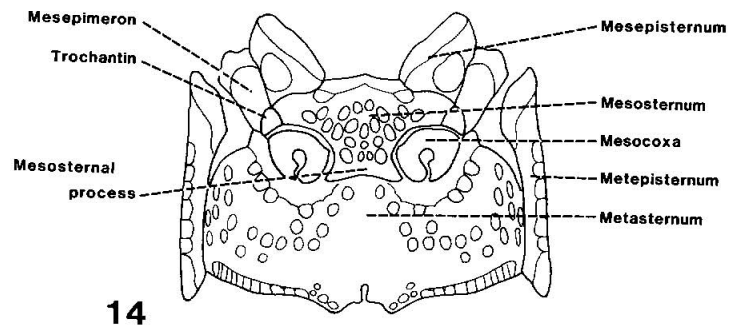
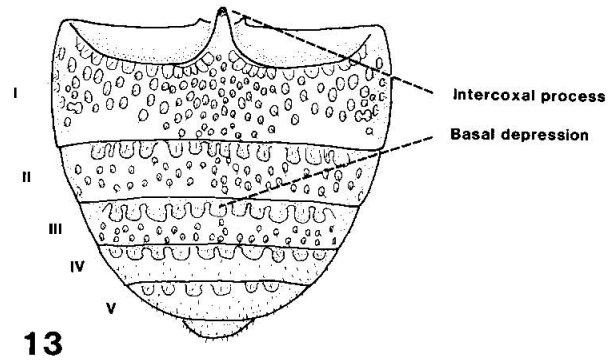
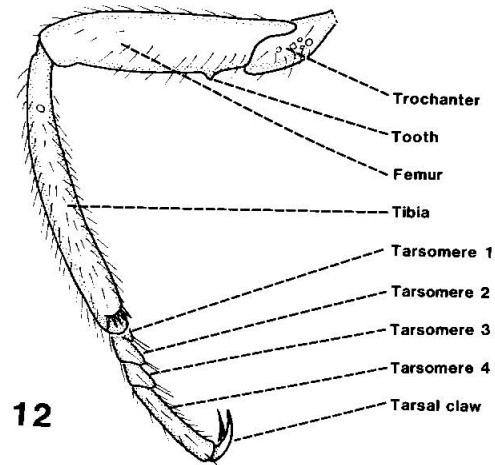
DISTRIBUTION. Known only from the type locality in Cuba (Fig. 26).

Although Fisher (1936) reported that his description was made from 6 specimens collected by Scaramuzza in Baragua on June 17, 1936, I have seen 9 specimens with that label data (USNM). Only two have paratype labels.

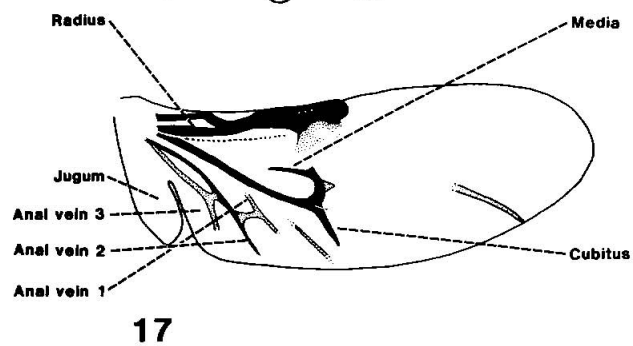
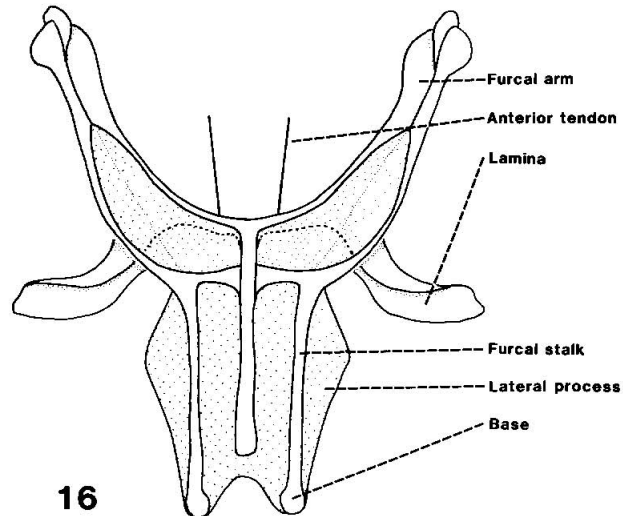
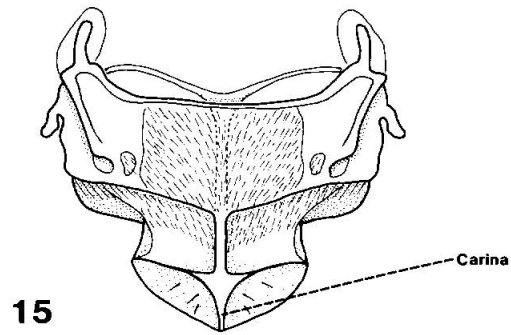
Carinisphindus platysphinctos McHugh, **new species**
(Figs. 1, 26, 29)

DIAGNOSIS. Head and pronotum dark reddish-black, elytra yellow on basal three-quarters grading into reddish-black on apical quarter (Figs. 1, 29); eyes brown; antennomere 9 about half length of 10; pronotum with trace of paired pronotal depressions; elytra with weak subhumeral depression, punctures not darkened; depressions in basal rows on abdominal sternites 2-5 well defined.

DESCRIPTION. Length 1.8 mm. Color of head and pronotum dark reddish-black; elytra yellow on basal three-quarters, grading into reddish-black on apical quarter (Figs. 1, 29);



Figs. 12-14. *Carinisphindus isthmensis*. 12, male left metaleg, anterior view. 13, abdomen, ventral view. 14, pterothorax, ventral view.



Figs. 15–17. *Carinisphindus isthmensis*. 15, scutellum, dorsal view. 16, metendosternite, dorsal view. 17, right wing, dorsal view.

mesosternum, metasternum and abdomen yellow; prosternum reddish-brown; body very shiny. Setation of very short, sparse, inconspicuous hairs (Fig. 1).

Head with raised, weak, anteromedial bump opposite apex of frontoclypeal suture (Fig. 1); dorsal surface sparsely and shallowly punctured medially; punctures elongate, coalescing laterally forming grooves (Fig. 1); clypeus width 0.2, length 0.2; eyes small, brown, coarsely faceted (Fig. 1). Antennomere 3 about 3 times as long as wide, 4 slightly elongate; 5-7 submoniliform; 8 wider than 3-7; 9 and 10 larger, forming densely pubescent and compact club, 9 about half length of 10 (Fig. 1).

Pronotum width 0.8, length 0.5; with trace of paired depressions; surface with irregular, shallow punctures (Fig. 1). Prosternal process slightly raised, punctured; with weak, median anterior ridge extending to anterior margin of prosternum. Mesosternum irregularly punctured, anterior half horizontal, posterior half strongly reflexed.

Elytra width 0.9, length 1.0; with weak subhumeral depression and weakly produced humeral calli; inner edges of elytra reflexed anteriorly (Fig. 1); epipleuron very narrow and complete to about basal margin of sternite 4; surface with punctures decreasing gradually in size posteriorly (Fig. 1); stria interspaces convex with sparse, short, inconspicuous hairs.

Abdomen with sternite 1 about twice length of other sternites; depressions in basal rows on sternites 2-5 well defined; intercoxal process with broad base, blunt apex.

TYPE MATERIAL. Holotype: male (USNM) with following label data: "Jamaica, Troy, Feb 16, 37," "Sta 409, Chapin and Blackwelder." Measurements: TBL 1.8, ELL 1.0, ELW 0.9, PNL 0.5, PNW 0.8, PHW 0.6, CLL 0.2, CLW 0.2. Paratype: none.

ETYMOLOGY. Greek, meaning "broad banded," in reference to the width of the yellow band on this beetle.

DISTRIBUTION. Known only from the type locality in Jamaica (Fig. 26).

Carinisphindus leptosphinctos McHugh, new species
(Figs. 26, 30)

DIAGNOSIS. Head and pronotum dark reddish-black, elytra yellowish on basal quarter and reddish-black on apical three-quarters (Fig. 30); eyes black; antennomeres 9 and 10 about equal in length; pronotum with a pair of depressions; elytra lacking subhumeral depression, punctures darkened; depressions in basal rows of abdominal sternites 2-5 well defined.

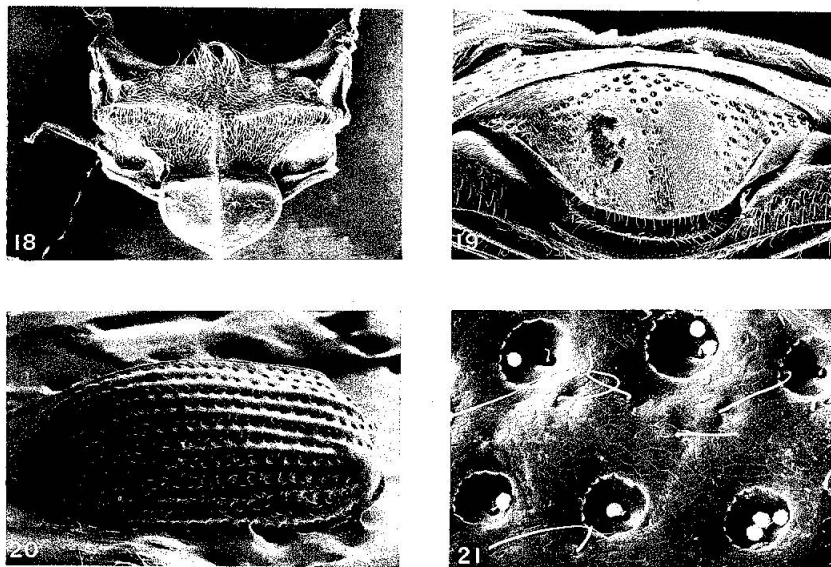
DESCRIPTION. Length 1.9 mm. Color of head and pronotum dark reddish-black; elytra yellowish on basal quarter, reddish-black on apical three-quarters (Fig. 30); prosternum, mesosternum, and metasternum reddish-brown; body very shiny. Setation of very short, sparse, inconspicuous hairs.

Head with dorsal surface sparsely punctured medially, punctures elongate and coalescing laterally forming grooves; clypeus width 0.2, length 0.2; eyes small, black, coarsely faceted. Antennomere 3 about 3 times as long as wide; 4 slightly elongate; 5-7 submoniliform; 8 wider than 3-7; 9-10 about equal in length, forming densely pubescent, compact club.

Pronotum width 0.8, length 0.6; with paired depressions; surface with irregular, shallow punctures medially, punctures slightly enlarged laterally and in row along basal margin. Mesosternum with anterior two-thirds horizontal, posterior third strongly reflexed.

Elytra width 1.0, length 1.1; lacking a subhumeral depression; humeral calli weakly produced, inner edges of elytra reflexed anteriorly; epipleuron very narrow and complete to about middle of sternite 3; punctures darkened, decreasing gradually in size posteriorly; stria interspaces convex with sparse, short, inconspicuous hairs.

Abdomen with sternite 1 about twice length of other sternites; depressions in basal rows on 2-5 well defined. Abdominal intercoxal process broad at base, with blunt apex, raised medially as weak ridge.



Figs. 18–21. *Carinisphindus isthmensis*. 18, scutellum, dorsal view. 19, pygidium, posterodorsal view. 20, elytron, lateral view. 21, elytral surface (note: slime mold spores in punctures).

TYPE MATERIAL. Holotype: male (UCD) with following label data: "Samana, Rep Dom [=República Dominicana] VII 26 1978, ROSchuster." Measurements: TBL 1.9, ELL 1.1, ELW 1.0, PNL 0.6, PNW 0.8, PHW 0.6, CLL 0.2, CLW 0.2. Paratypes: 2 males and 3 females (CUIC, MAIC, MCZ), with following data: "DOM. REP.: Prov. Pedernales, ca. 35 km N. Cabo Rojo, 1,250 m, Las Abejas, 26 AUG–09 SEP 1988, flight intercept trap, M.Ivie, Philips & Johnson." 1 male (MAIC): "DOM. REP.: Prov. Pedernales, ca. 35 km NNW Cabo Rojo, 1,325 m, El Aceitillar, 9 SEP 1988, rotten pine log, M.Ivie, Philips & Johnson."

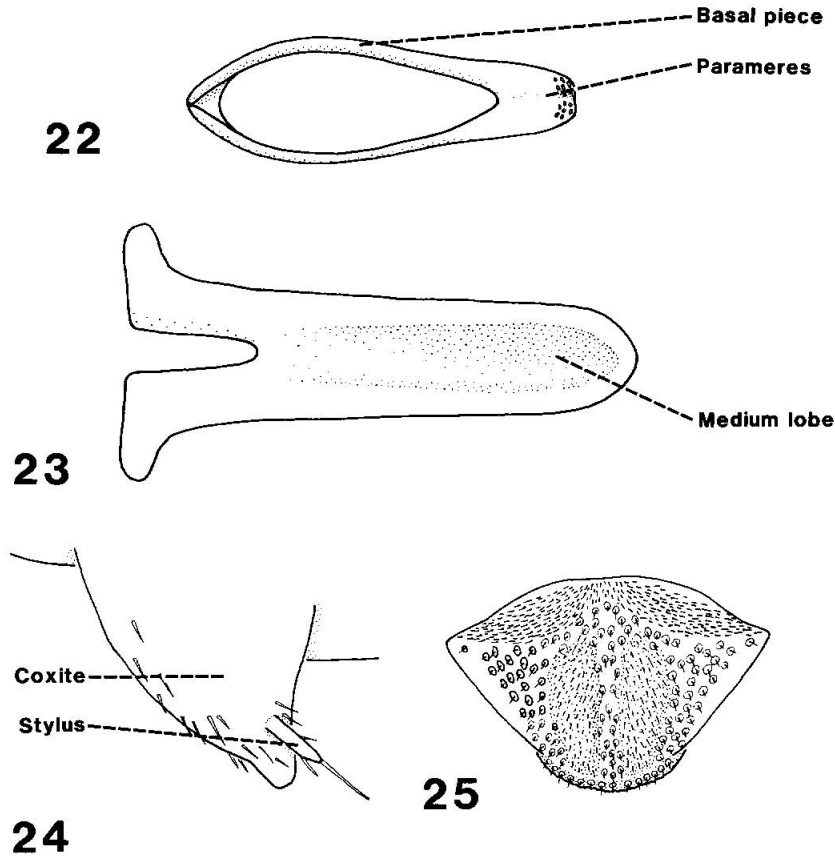
ETYMOLOGY. Greek, meaning "thin banded," in reference to the width of the yellow band on this beetle.

DISTRIBUTION. Known only from three locations in the Dominican Republic (Fig. 26).

Carinisphindus isthmensis McHugh, new species
(Figs. 5–27)

DIAGNOSIS. Head, pronotum, elytra dark reddish-brown (Fig. 27); eyes black; antennomeres 9–10 about equal in length (Figs. 7, 10); pronotum with a pair of weak depressions; elytra with weak subhumeral depression, punctures darkened; depressions in basal rows on abdominal sternites 2–5 well defined (Fig. 13).

DESCRIPTION. Length 2.0 mm. Color of head, pronotum, and elytra dark reddish-brown (Fig. 27); elytra sometimes slightly paler at basal margin and on humeral calli; prosternum, mesosternum, metasternum light reddish-brown; body shiny. Setation of short, suberect hairs.



Figs. 22–25. *Carinisphindus isthmensis*. 22, 23, male genitalia. 22, parameres (fused) and basal piece. 23, median lobe. 24, female genitalia, right coxite and stylus, ventral view. 25, pygidium, dorsal view.

Head with dorsal surface shallowly punctured medially, punctures becoming more elongate and coalescing laterally, forming weak grooves (Fig. 5); clypeus width 0.2, length 0.2; eyes small, black, coarsely faceted. Antennomere 3 about 3 times as long as wide; 4 slightly elongate; 5–7 submoniliform; 8 wider than 3–7; 9–10 large, about equal in length, symmetrical, forming densely pubescent, compact club (Figs. 7, 10).

Pronotum width 0.7, length 0.8; with a pair of weak depressions; basal margin arcuate; surface with irregular, shallow punctures (Fig. 8). Mesosternum irregularly punctured (Fig. 14), anterior two-thirds horizontal, posterior third strongly reflexed. Metendosternite with a narrow base, broad apically, anterior tendons moderately separated, furcal arms with enlarged and complex apices, lateral lobe of ventral flange long and narrow with reflexed apex (Fig. 16). Wings with jugal lobe, media cubitus, medio-cubital cross-vein, costa, radius, 1 well-developed and 2 weakly developed anal veins and an anal cell (Fig. 17).

Elytra width 1.1, length 1.4; with weak subhumeral depression and weakly produced humeral calli (Fig. 20); epipleuron narrow and complete to about basal margin of sternite 4; surface with punctures darkened, decreasing gradually in size posteriorly; striae interspaces convex (Fig. 20).

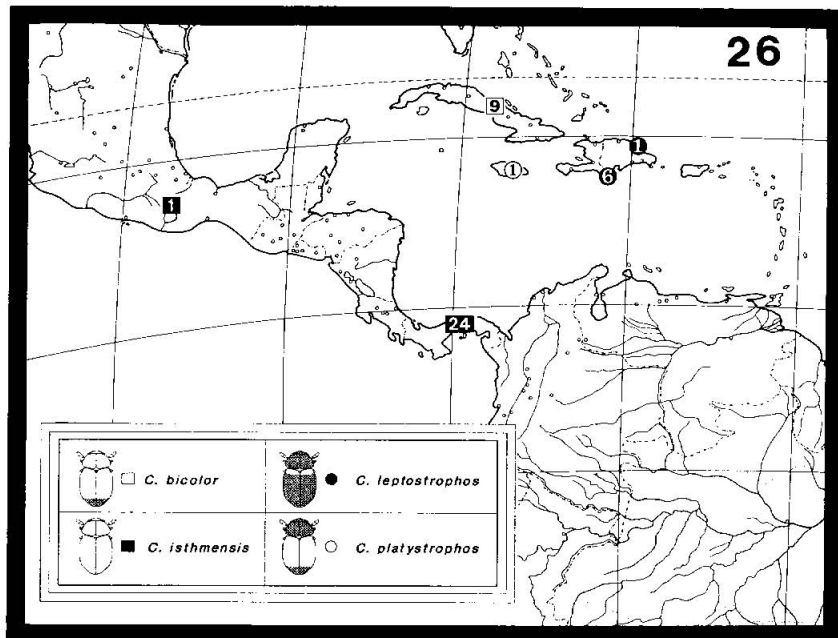


Fig. 26. Distribution of *Carinisphindus* spp.

Abdomen with sternite 1 punctured and about twice length of other sternites; punctures in basal rows on 2–5 well developed; intercoxal process with broad base, acute apex, and weakly raised, broad, median ridge.

MALE. Aedeagus with fused parameres (Fig. 22), median lobe concave apically (Fig. 23) housing fused tip of parameres.

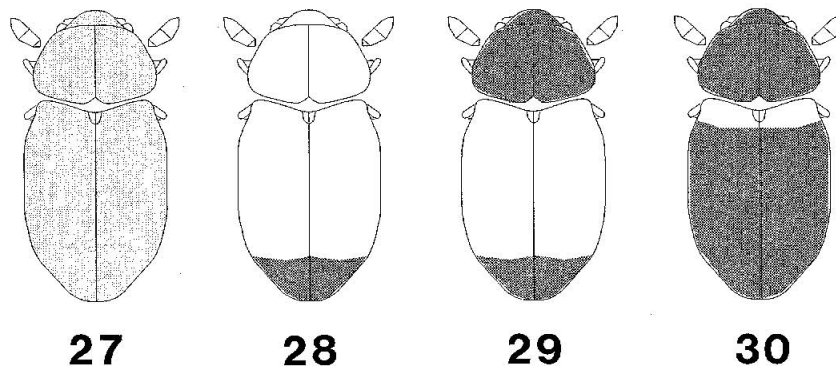
FEMALE. Genitalia with long, preapical stylus (Fig. 24).

TYPE MATERIAL. Holotype: female (USNM) with following label data: "Canal Zone [Panama]; Barro Colorado, I.Feb., 1976," "J. F. Lawrence, Lot No. 4097," "A. Newton, Collector," "ex *Fuligo septica*," "GENUS?, Det. J. F. Lawrence." Measurements: TBL 2.2, ELL 1.4, ELW 1.2, PNL 0.6, PNW 0.9, PHW 0.7, CLL 0.2, CLW 0.2. Paratypes: 1 male and 1 female (USNM), 1 male (ANIC) with same label data as holotype. 5 males and 2 females (ANIC, CUIC, USNM): "CANAL ZONE: Is. Barro Colorado II/19–III/9-75 Lawrence, Erwin J. F. Lawrence Lot 3776 *Stemonitis* sp." 6 males and 5 females (ANIC, CUIC, FMNH, USNM): CANAL ZONE: Barro Colorado Island II/19–III/9-1975 3776 JF Lawrence *Stemonitis* sp." 2 males and 3 females (ANIC, FMNH): "CANAL ZONE: Barro Colorado Island Feb. 18, 1976 4097 JFL (A. Newton) *Fuligo* sp.?"

ETYMOLOGY. Latin, meaning "from the isthmus," in reference to the Central American distribution.

NATURAL HISTORY. This species was collected feeding on *Fuligo septica* and *Stemonitis fusca*.

DISTRIBUTION. In addition to the type locality in Panama, I have seen a single male specimen (ANIC) from Oaxaca, Mexico (Fig. 26), that I am tentatively assigning to this species. It is larger and darker than the type specimens



Figs. 27–30. Color patterns in *Carinisphindus* spp. 27, *C. isthmensis*. 28, *C. bicolor*. 29, *C. platysphinctos*. 30, *C. leptosphinctos*.

and has more convex stria interspaces. It has the following label data: "MEX., Oax., 15 mi. S. Valle Nacional, 4,000' 21.V.1971 S.Peck Ber. 204, leaf litter."

DISCUSSION

Little is known about the biology of this group. All other species in the family Sphindidae are apparently myxomycophagous (Lawrence and Newton 1980; Lawrence 1989; McHugh, in press). It is not surprising therefore, that *C. bicolor* was collected on "a myxomycete on sugarcane" and that *C. isthmensis* was collected on *Fuligo* sp. and *Stemonitis* sp.

A natural dichotomous key, cladistic analysis, classification scheme, and discussion of biogeography are provided by McHugh (in press) for the genera of Sphindidae including *Carinisphindus*.

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