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Stenotarsus nigrivestis Shockley, a New Species of Endomychidae (Coleoptera: Cucujoidea) from the Dominican Republic

Floyd W. Shockley
Department of Entomology
413 Biological Sciences Building
University of Georgia
Athens, GA 30602-2603, U.S.A.
fshockley@bugs.ent.uga.edu

Abstract

A **new species** of endomychid, *Stenotarsus nigrivestis* Shockley, is described from the Dominican Republic, representing the first description of a species of Stenotarsinae from the West Indies. A summary of the known West Indian Endomychidae is provided.

The endomychid fauna of the West Indies is very poorly known for all subfamilies, possibly resulting from a lack of intensive collecting effort for mycophagous beetles and insufficient taxonomic expertise. Table 1 summarizes the previously described West Indian endomychids. It is likely that there are more undescribed species currently unidentified beyond the subfamilial level residing in museum collections, especially for Anamorphinae, which appears to be the most diverse subfamily in the West Indies. Currently, there are no published records for any species of Stenotarsinae from the West Indies.

Stenotarsus is easily the most speciose genus of Endomychidae with over 260 species. It is widely distributed throughout the warmer regions of the world with its highest diversity in the Neotropical and Indo-Malaysian regions. Some species of *Stenotarsus* show a wide range of variation in body size and coloration across their distributional range. All, however, share an almost unmistakable habitus. Unfortunately, with the exception of the world-wide treatment by Strohecker (1953), much of what is known about the diversity and distribution of the genus has been limited to regional taxonomic treatments (*e.g.*, Strohecker 1978; Roubik and Skelley 2001).

Material and Methods

Initial observations of the specimens were made using a Leica Wild M10 stereo microscope. One specimen was disarticulated and placed in glycerine on slides for further study. Structural illustrations were made from this prepared specimen using a Leica MZ8 stereo microscope fitted with a camera lucida. The dorsal habitus of the holotype was produced using a Canon EOS-1DS digital camera attached to an ML-1000 Digital Imaging System (Microptics, Inc., Ashland, VA). Terminology used for adult morphology follows Lawrence and Britton (1994) and Kukalova-Peck and Lawrence (1993). Specimens used in this study are deposited in the following collections: Florida State Collection of Arthropods (FSCA), Floyd W. Shockley Collection (FWSC), Michael A. Ivie Collection (MAIC), Museo Nacional de Historia Nacional, Santo Domingo (MHND), Montana State Entomology Collection (MTEC), National Museum of Natural History (NMNH), and the University of Georgia Collection of Arthropods (UGCA).

Table 1. Subfamilies and species of Endomychidae previously reported from the West Indies.

Subfamily	Species	Country	Reference
Anamorphinae	*Anamorphus punctipennis*[1]	Grenada	Gorham 1898
	Bystus globosus[2]	Grenada	Gorham 1898
	Bystus unicolor[3]	St. Vincent	Gorham 1898
	Discolomopsis dominicana[4]	Dominican Republic	Shockley 2006
	Micropsephodes sp.	Dominican Republic	Leschen and Carlton 2000
	Rhymbomicrus nigripennis[5]	St. Vincent, Grenada	Arrow 1920
Epipocinae	*Anidrytus* sp.	Grenada	Gorham 1898
	Anidrytus trinitatus	Trinidad	Strohecker 1997
Eupsilobiinae	*Eidoreus minutus*	Cuba, Guadeloupe	Pakaluk and Slipinski 1990
		Virgin Islands	Tomaszewska 2000
Lycoperdininae	*Amphix vestitus cinctus*[6]	Trinidad	Gorham 1887–1899

[1] Original species description as *Dialexia punctipennis*.
[2] Original species description as *Rhymbus globosus*.
[3] Original species description as *Rhymbus unicolor*.
[4] Fossil in amber.
[5] Original species description as *Micropsephellus nigripennis*.
[6] Original species description as *Corynomalus cinctus* and synonymized as a subspecies of *A. vestitus* by Strohecker (1953).

Stenotarsus nigrivestis Shockley, new species
(Figs. 1–9)

Etymology. The specific epithet is derived from the combination of the Latin root "nigri-," meaning "black" + the suffix "vestis," meaning "clothing or coat." This refers to the unusual black vestiture covering most of the dorsal surface.

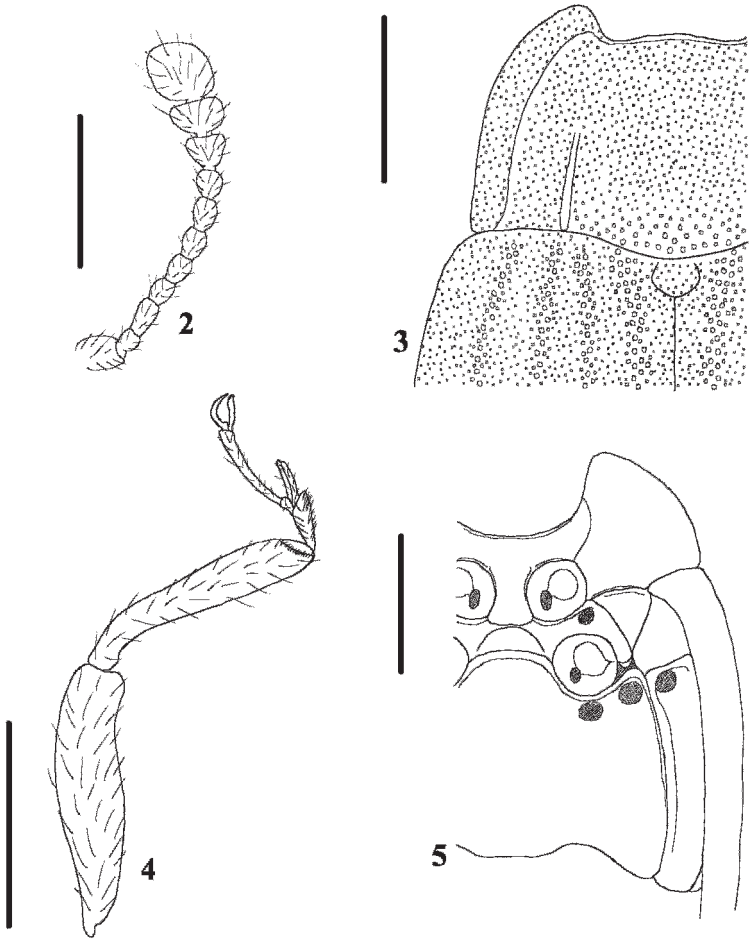
Typology. Holotype (male). "DOMIN. REP: Prov. Pedernales; N. of Pedernales, 188 m; La Aguita, 21 JULY 1989; 18°09.172′N, 71°44.786′W; M.A. Ivie, Guerrero & Dominici." Holotype from West Indian Beetle Fauna Project Collection (WIBF), deposited in the NMNH. **Paratypes.** "DOMIN. REP: Prov. Pedernales; N. of Pedernales, 188 m; La Aguita, 21 JULY 1989; 18°09.172′N, 71°44.786′W; M.A. Ivie, Guerrero & Dominici" [7 ex.]. "DOMINICAN REP.: Prov. Barahona, nr. Filipinas Larimar Mine: 26-VI-7-VII-1992: Woodruff & Skelley, day beating" [2 ex., 1 male, 1 female]. "DOMINICAN REP.: Prov. Barahona, nr. Filipinas Larimar Mine: 20–26-VI-1992, R.E. Woodruff & P.E. Skelley, at night" [1 ex.]. "DOM.REP: Prov. Hato Mayor; W. Sabana de la Mar; Par. Nac. Los Haitises; bosque humido, 01JULY1992; M.A. & R.O. Ivie colrs" [3 ex.]. "DOM.REP: Prov. Hato Mayor; W. Sabana de la Mar; Par. Nac. Los Haitises; 02JULY1992-16JULY1993; D. Sikes & R. Rosenfield; flight intercept trap" [1 ex.]. "DOM.REP: Prov. Hato Mayor; W. Sabana de la Mar; Par. Nac. Los Haitises; bosque humido, 16APR1992; M.A. Ivie, D. Sikes, &; W. Lanier. ex rotten log" [1 ex., male]. Paratypes deposited in the collections listed under Materials and Methods.

Fig. 1. *Stenotarsus nigrivestis* Shockley, n. sp., holotype. Scale bar: 1.0 mm.

Diagnosis. This distinctive species differs from other species of *Stenotarsus* by the combination of the following characters: black vestiture; antenna dark basally with pale club; antennomeres IX–XI short and broad; elytra with weak, irregular rows of coarse punctures at base; elytra with epipleural fold reaching apex; setose pores around mesocoxa large, nearly 1/3 the diameter of mesocoxa; mesosternum with a line demarking a hemispherical plate; male genitalia twisted, with small subapical tooth.

Description. Length 5.5–6.2 mm; width 3.5–4.0 mm. Body elongate-oval, primarily black with red-brown head and elytral humeri; vestiture black except as noted below (Fig. 1)

Head covered with dense golden pubescence dorsally; eyes large, oval, prominent, relatively coarsely faceted, eye width 8–10 facets. Antennal grooves absent; antennae 11-segmented with pale, loose 3-segmented club (Fig. 2); antennomere III = 1.5 times II in length; IV–VIII stout, not elongate, each only



Figs. 2–5. *Stenotarsus nigrivestis* Shockley n. sp. **2)** antenna; **3)** prothorax and elytral base, dorsal view; **4)** left mesothoracic leg; **5)** pro-, meso-, and metasternum, ventral view (legs removed). Scale bars: 1.0 mm.

slightly shorter than III; IX–XI forming a weakly asymmetrical club; XI subcircular; antennomeres I & IX–XI with golden pubescence, II–VIII with vestiture primarily black. Fronto-clypeal suture straight. Clypeus transverse, rectangular, and flat.

Pronotum (Fig. 3) with broad, flat lateral margin demarked by a weak groove which continues forward and merges with the anterior marginal groove; lacking a basal sulcus; basal pores (one on each side) each connected to a short, straight groove that extends anteriorly; pronotum with an even covering of fine punctures each bearing a black seta, except at base between the 2 pores where punctures are enlarged and nearly touch each other. Scutellum rounded, nearly hemispherical. Elytron oval, strongly convex; elytral length = 3.25 times pronotal length;

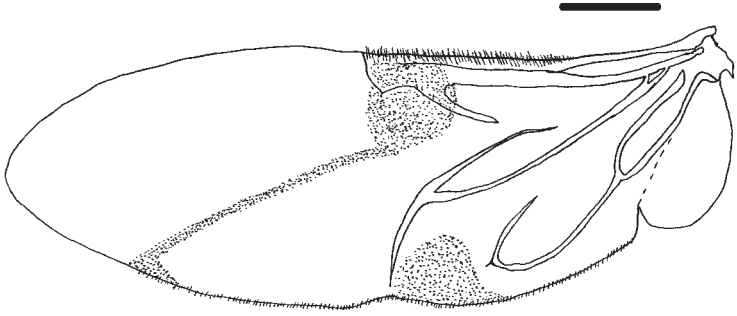


Fig. 6. *Stenotarsus nigrivestis* Shockley n. sp., wing. Scale bar: 1.0 mm.

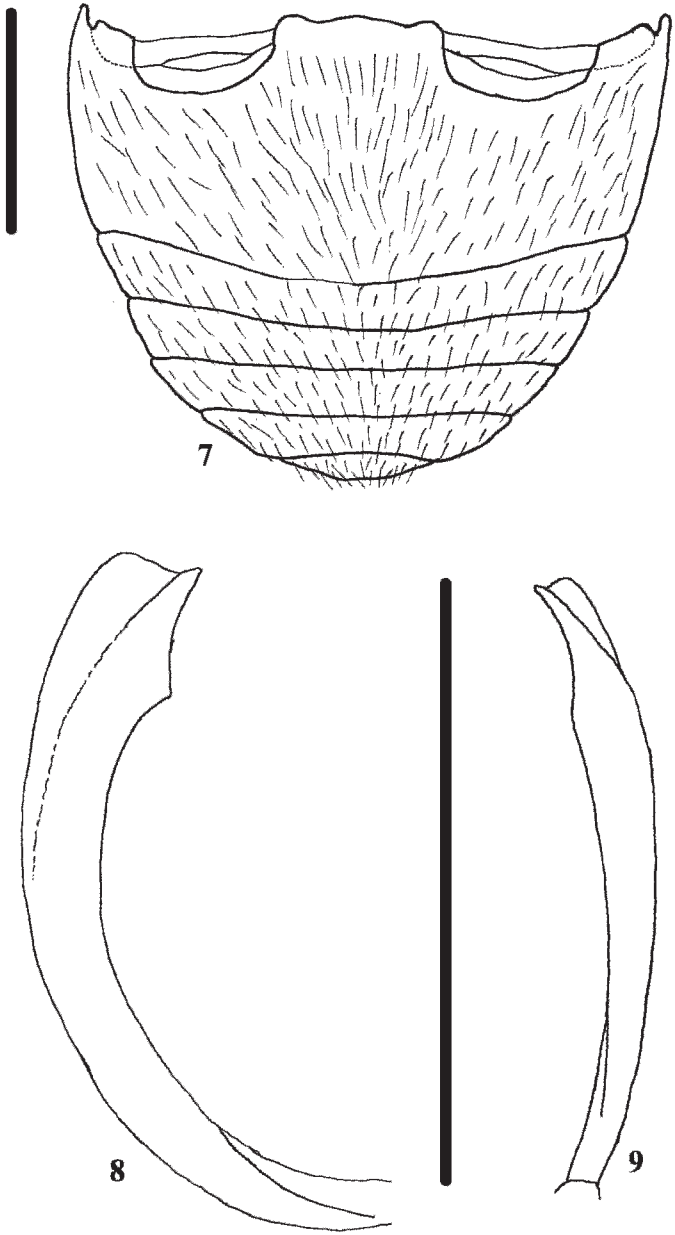
vestiture black except over the red-brown humerus and on extreme apex where vestiture is golden; punctation dense and fine as on pronotum except near base where coarse punctures appear in weakly defined rows (Fig. 3); epipleural fold gradually decreases in width before reaching sharply-margined elytral apex.

Thoracic venter (Fig. 5) covered in a mixture of dark brown and gold vestiture. Prosternum with anterior margin marked by a small complete groove; postero-lateral margin incomplete, broken near midpoint into two lines, one running anterior to procoxa and one running along margin between procoxae; procoxa globose; prosternum prolonged behind procoxae and expanded, apically truncate, fitting into a depression on mesosternum. Mesosternum somewhat transverse; bearing a secondary line that encloses a hemispherical plate; with a large setose pore on each side near mesepisternum. Mesocoxa globose. Metasternum evenly covered with fine punctures, with a deeply impressed submarginal groove that runs parallel to anterior margin and anterior portion of lateral margin; two large, impressed, setose pores located posterior to mesocoxa along the submarginal groove, each pore nearly 1/3 diameter of mesocoxa. Metepisternum with submarginal line along medial margin opposite metasternum; bearing a large, impressed, setose pore anteriorly.

Legs (Fig. 4) red-brown with golden vestiture, except for darker bases of the tibia and femur, which also have a darker vestiture; all legs similar in overall appearance; femur widest near midlength; tibia straight and gradually widening apically; tarsi 4-4-4, pseudotrimerous with tarsomeres I–II ventrally lobed, III much reduced; claws simple.

Wing (Fig. 6) with reduced venation in apical region, bearing fringe of stout setae along distal 2/3 of costa. Posterior margin bearing short, fine setae from the claval fold to a point equidistant between cubital fold and the wing apex. MP_{1+2} long, sclerotized, connected with partially reduced radius posterior. Medial bridge present. Medial fleck with long narrow portion extending posterodistally to midpoint between wing apex and cubital fold, extension abruptly widened at posterior wing margin. Radial cell reduced. Anal anterior (AA) fused with the cubitus posterior (CuP) and extending as a single vein posterodistally before connecting to incomplete cubitus anterior (CuA) to form a distinct "hook."

Abdomen (Fig. 7) with six freely articulated ventrites; ventrite I black, with scattered coarse punctures; II–V red-brown; length of I = length of II–IV combined; II–IV subequal in length. Aedeagus (Figs. 8, 9) stout, comparatively long, relatively narrow, sclerotized, curved and twisted, appearing laterally



Figs. 7–9. *Stenotarsus nigrivestis* Shockley n. sp. **7)** abdomen, ventral view; **8)** aedeagus, lateral view; **9)** aedeagus, ventral view. Scale bars: 1.0 mm.

flattened; tegmen reduced; median lobe with apex sharply pointed and bearing a subapical tooth.

Biology/Ecology. According to field notes provided by M.A. Ivie (*in litt.*), specimens from the type series were collected near a small stream along the border road north of Pedernales at a water-gathering spot between Rio Banana and Aguas Negra. This is a disturbed mesic forest on a limestone base. Larvae and adults were intermixed and exposed on the surface of a fungus mostly on the underside of a dead log, though some were taken from the upper surface of the log as well. The 16 April 1992, 01 July 1992 and 16 July 1993 FIT specimens are all from the same site, a mesic sea-level forest in the karst formations of Los Haitises National Park. The area is mostly secondary forest with large regrowth of trees in and around old Cacao, citris and banana plots. The specimens were on a fungus on a large dead log and were running around exposed on the surface. The specimens collected by Woodruff and Skelley in Prov. Barahona were collected just above the lower edge of the cloud forest line in the mountains inland from the small coastal town of El Arroyo. The site was primarily old overgrown coffee fields that had natural woodlands nearby (P.E. Skelley, *in litt.*). The similar conditions under which all examined specimens were collected, in pre-montane to montane secondary forest, suggests that *S. nigrivestis* may prefer these conditions though examination of additional material is needed to confirm this.

In addition, larvae were collected on two separate occasions: DOM. REP. Prov. Pedernales; N. of Pedernales; La Aguita 620′; 18°09.172′N, 071°44.786′W; 21 JULY 1999; endomychids on fungus & log; Ivie, Guerrero & G. Dominici (40+ larvae). DOM. REP. Prov. Barahona; 18 km from Cabral off Polo Rd.; 25 km SE Montear Nuevo; 18°06.452′N, 71°14.717′W; 3370′ 26 JULY 1999; M.A. Ivie & K.A. Guerrero; coffee-Magnolia forest (1 larva). These larvae are in the process of being described with other endomychid larvae in a separate manuscript.

Sexual dimorphism, fairly common albeit inconsistent among *Stenotarsus* species (Roubik and Skelley 2001), does not appear to be present in *S. nigrivestis*. Based on the limited number of specimens available for study, there does not appear to be any secondary sexual features useful for separating sexes.

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