

**Revision and phylogeny of the Caribbean genus
Apodrosus Marshall, 1922
(Coleoptera: Curculionidae: Entiminae)**

by

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ABSTRACT

The Caribbean weevil genus *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae: Polydrusini Schoenherr) is revised, including a redescription of *A. argentatus* Wolcott, 1924 (Dominican Republic, Vieques Island, St. Croix – new records, Bahamas – error, misidentification, and Puerto Rico) and *A. wolcottii* Marshall, 1922 (Puerto Rico) and description of 11 new species: *A. adustus*, sp.n. (Bahamas), *A. andersoni*, sp.n. (Dominican Republic), *A. artus*, sp.n. (Dominican Republic), *A. earinusparsus*, sp.n. (Dominican Republic), *A. empherefasciatus*, sp.n. (Bahamas), *A. epipolevatus*, sp.n. (Puerto Rico), *A. eximius*, sp.n. (Dominican Republic), *A. mammuthus*, sp.n. (Mona Island, Turks and Caicos Islands), *A. quisqueyanus*, sp.n. (Dominican Republic), *A. stenoculus*, sp.n. (Dominican Republic), and *A. viridium*, sp.n. (Dominican Republic). A key to the species and illustrations of external and internal structures are provided. *Apodrosus* is characterized as a monophyletic group by two unreversed synapomorphies – i.e. the presence of a median fovea on the apex of abdominal sternum VII and a J- or Y-shaped spermatheca – and is furthermore differentiated from related taxa by a unique combination of diagnostic features including the presence of premucro, a complete tegminal plate in males, the absence of longitudinal sclerites in the genital chamber of females, and an apical projection on the spermathecal cornu. A phylogenetic reconstruction of 20 taxa (7 outgroup, 13 ingroup) and 25 morphological characters yielded a single most parsimonious cladogram (L = 61 steps, CI = 42, RI = 74) with the ingroup topology (*A. artus*, (*A. andersoni*, (*A. earinusparsus*, (*A. epipolevatus*, *A. wolcottii*)))), (*A. eximius*, ((*A. argentatus*, *A. mammuthus*), (*A. viridium*, (*A. stenoculus*, (*A. quisqueyanus*, (*A. adustus*, *A. empherefasciatus*)))))). The phylogeny indicates that *Anypotactus bicaudatus* Champion (Anypotactini Champion) is the most closely related sister group to *Apodrosus*, thereby calling into question the traditional tribal placement of this genus in the Polydrusini. The host plant associations of most species remain uncertain.

RESUMEN

Se revisa el género caribeño de gorgojos *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae: Polydrusini Schoenherr), incluyendo una redescrición de *A. argentatus* Wolcott, 1924 (República Dominicana, Vieques, St. Croix – nuevos registros, Bahamas – error de identificación y Puerto Rico), *A. wolcotti* Marshall, 1922 (Puerto Rico) y la descripción de 11 especies nuevas: *A. adustus*, sp.n. (Bahamas), *A. andersoni*, sp.n. (República Dominicana), *A. artus*, sp.n. (República Dominicana), *A. earinusparsus*, sp.n. (República Dominicana), *A. empherefasciatus*, sp.n. (Bahamas), *A. epipolevatus*, sp.n. (Puerto Rico), *A. eximius*, sp.n. (República Dominicana), *A. mammuthus*, sp.n. (Isla de Mona, Islas Turcas y Caicos), *A. quisqueyanus*, sp.n. (República Dominicana), *A. stenoculus*, sp.n. (República Dominicana), y *A. viridium*, sp.n. (República Dominicana). Se provee una clave de las especies e ilustraciones de estructuras externas e internas. *Apodrosus* se caracteriza como un grupo monofilético por dos sinapomorfías sin reversión – i.e. la presencia de una fovea media en el ápice del esterno abdominal VII y una espermoteca en forma de “J” o “Y” – y es además diferenciado de taxa relacionados por una combinación única de caracteres diagnósticos que incluyen la presencia de premuro, una placa tegminal completa en machos, la ausencia de escleritos longitudinales en la cámara genital de las hembras y una proyección apical del cornu de la espermoteca. Una reconstrucción filogenética de 20 taxa (7 outgroup, 13 ingroup) y 25 caracteres morfológicos produjo un solo cladograma más parsimonioso (L = 61 pasos, CI = 42, RI = 74) con la topología del ingroup (*A. artus*, (*A. andersoni*, (*A. earinusparsus*, (*A. epipolevatus*, *A. wolcotti*))))), (*A. eximius*, ((*A. argentatus*, *A. mammuthus*), (*A. viridium*, (*A. stenoculus*, (*A. quisqueyanus*, (*A. adustus*, *A. empherefasciatus*)))))). La filogenia indica que *Anypotactus bicaudatus* Champion (Anypotactini Champion) es el grupo hermano más cercanamente relacionado a *Apodrosus*, cuestionando así la ubicación tradicional de éste género en la tribu Polydrusini. Las asociaciones con las plantas hospederas para la mayoría de las especies permanecen desconocidas.

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Revision and phylogeny of the Caribbean genus *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae)

1 Introduction

The Caribbean entimine weevil genus *Apodrosus* (Coleoptera: Curculionidae: Entiminae) was erected in 1922 by Sir Guy A. K. Marshall who considered it closely related to the continental *Polydrusus* Germar, 1817 (cf. O'Brien and Wibmer 1982) based on several shared features. These include: a relatively small size for entimines (3-7 mm); a strongly reduced mandibular scar which is otherwise characteristic of the subfamily (Thompson 1992, Marvaldi 1997; Oberprieler et al. 2007); the exposed maxillae which are visible along the sides of the pedunculate prementum; the well developed elytral humeri and wings; and the connate tarsal claws. Marshall (1922: 59) consequently placed *Apodrosus* in the tribe Polydrusini Schoenherr where it has remained until present (O'Brien and Wibmer 1982; Alonso-Zarazaga and Lyal 1999). He furthermore provided workable diagnostic features for *Apodrosus*, in particular the presence of a median furrow on the head and a triangular epistome on the rostral apex which is bare and smooth.

Prior to this study only two species were placed in the genus: *A. argentatus* Wolcott, 1924 and the type species *A. wolcottii* Marshall, 1922, both originally described from Puerto Rico (Wolcott 1924: 130). Beyond these brief descriptions, a few publications have presented new information on possible host plant associations of the species of *Apodrosus* (e.g. Wolcott 1924, 1948; Martorell 1976). Wolcott (1941) first documented the presumed occurrence of *A. argentatus* on Mona Island (see also Ramos 1946; Franz et al. 2009); however, according to the present study this record corresponds to another, new species in the genus. Subsequently *A. argentatus* was also reported from the Bahamas (Turnbow and Thomas 2008), though not (until now) from Hispaniola (cf. Perez-Gelabert 2008). However, no taxonomic revision of any species of *Apodrosus* has been undertaken since the mid 1920s.

Here we offer a thoroughgoing revision of the genus, made necessary in part through the acquisition of specimens pertaining to 11 new species – originating from Puerto Rico, Mona Island and the Turks and Caicos Islands, Hispaniola, and the Bahamas – that were either recently

collected or represented in various museum collections. We provide a redescription of *Apodrosus*, a key to all 13 species now contained within the genus, descriptions and illustrations of the species, host plant and distributional information, and a phylogenetic analysis based on external and internal morphological features and using a suitable set of outgroup taxa.

2 Materials and methods

2.1 Taxonomic descriptions

The descriptive approach used in this study follows Franz and Girón (2009). The morphological terminology is generally in accordance with Torre-Bueno (Nichols 1989); with specific terms adopted for characterizing the apex of the rostrum (Vaurie 1963), mouthparts (Ting 1936; Morimoto and Kojima 2003), metendosternite (Velásquez de Castro 1998), wing venation (Zherikhin and Gratshev 1995), tibial apices and abdominal segments (Thompson 1992), and male and female terminalia (Howden 1995; Velásquez de Castro 1997; Wanat 2007). All observations and dissections were performed using Leica MS5 and MZ16 stereomicroscopes (magnification: 7–115x) and an Olympus BX41 compound microscope (magnification: 20–400x), each equipped with an ocular graticule for measurements of lengths. The overall length was measured in lateral view from the apex of the rostrum to the posterior margin of the elytra. Characters mentioned as part of the genus-level redescription are not repeated in the individual species accounts unless they vary among species. The species descriptions were abbreviated to highlight features with diagnostic and phylogenetic relevance. They are primarily based on males but make reference to variations in females where necessary. The species key, descriptions, and figures are for the most part arranged in phylogenetic sequence.

The habitus photographs were taken with a Microptics XLT imaging system using a Canon EOS-1 camera. Scanning electron micrographs were produced with JEOL 5410LV system. Line drawings of internal structures were traced either from digital images taken through the Olympus compound microscope or from sketches produced with a camera lucida attached to it. The simplified line sketches were scanned and redrawn using an illustration software program while highlighting features with diagnostic and phylogenetic significance.

2.2 Specimen material

The specimens examined in this study include material collected during field trips in Puerto Rico (August 2007 to March 2008), Mona Island (May 2008) and the Dominican Republic (June 2008) by using beating sheets on weeds and shrubs (~ 0-2.5 m above ground). Specimen material from the Bahamas, Haiti and Turks & Caicos Islands was received on loan from different institutions to which this material will ultimately be returned for permanent deposition. The insect collection codens are adopted from Arnett et al. (1993), as follows:

AMNH – American Museum of Natural History, New York, New York (USA)

CMNC – Canadian Museum of Nature, Ottawa, Canada

CWOB – Charles W. O'Brien Collection, Green Valley, Arizona (USA)

FSCA – Florida State Collection of Arthropods, Gainesville, Florida (USA)

MEBT – Museum of Entomology and Tropical Biodiversity, Río Piedras, Puerto Rico (USA)

MHND – Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic

NMNH – National Museum of Natural History, Washington, D.C. (USA)

RHTC – Robert H. Turnbow, Jr. Collection, Fort Rucker, Alabama (USA)

UPRM – Invertebrate Collection, University of Puerto Rico, Mayagüez, Puerto Rico (USA)

Labels for type specimens include the genus name and species epithet, a gender symbol, and the authors and year. They are colored red for holotypes and yellow for all paratypes.

2.3 Phylogenetic analysis

All 13 species of *Apodrosus* were distinguished as such through application of the phylogenetic species concept (*sensu* Wheeler and Platnick 2000) and were included as ingroup taxa in the phylogenetic analysis. Suitable outgroup taxa (cf. Nixon and Carpenter 1993) include representative species from the following tribes: (1) Anypotactini Champion – *Anypotactus bicaudatus* Champion, 1911, with a similar general appearance and *Polydacrys scansorius* (Klug 1829), a Caribbean representative of the tribe; (2) Polydrusini – *Cautoderus nigrocinctus* Champion, 1911, *Polydrosodes conicus* Champion, 1911, *Polydrusus mutabilis* (Champion 1911), and *Polydrusus peninsularis* (Horn 1894), representing presumed close relatives of *Apodrosus* according to Marshall (1922); and (3) Sitonini Gistel – *Sitona californicus* (Fåhræus 1840)

which was chosen to root the phylogeny. Preference was given to outgroup taxa from Caribbean and Central American regions.

The character matrix was compiled and edited using ASADO (Nixon 2008). The characters were numbered following the sequence of the taxonomic descriptions. Autapomorphies for species of *Apodrosus* are presented in the individual species accounts descriptions yet were excluded from the cladistic analysis. The most parsimonious cladogram and character state optimizations were identified in a comprehensive search strategy using the parsimony ratchet (Nixon 1999) as implemented in TNT (Goloboff et al. 2008; spawned out of ASADO), based on the following commands: (1) ratchet settings – 200 iterations per replication, 4% up-/down-weighted; (2) drift settings – 100 iterations per replication; (3) tree fusion settings – 10 rounds, 200 MB max RAM; (4) general settings – 1000 tree to hold; (5) analyses – ratchet, drift, sectorial search, tree fusion, TBR-max; and (6) xmult settings – 3 hits, 5 consense. The single resulting cladogram and character state transformations were examined in ASADO under various optimizations. Bremer branch support values (Bremer 1994) were calculated in NONA (Goloboff 1999) with the commands hold 20000, suboptimal 15, and bsupport 15.

3 Systematics

***Apodrosus* Marshall, 1922: 59**

= *Apodrusus* Marshall (in Wolcott 1924: 130 – error)

Type species: *Apodrosus wolcotti* Marshall 1922: 59, by original designation.

Diagnosis. *Apodrosus* is a genus of relatively small sized (3-7 mm), often metallic colored, exclusively (western) Caribbean entimine weevils with phanerognathous mouthparts (i.e., the maxillae are visible along the sides of the prementum; Fig. 2A), without a postocular lobe and vibrissae, and with the humeri and wings being well developed. Species of *Apodrosus* may resemble those of members of the Anypotactini and Polydrusini. According to Marshall (1922: 59), the genus shares with the strictly continental *Polydrusus* "its more salient characteristics", including a laterally situated antennal scrobe and connate claws (see also Anderson 2002). However, *Apodrosus* can be distinguished from *Polydrusus* and other polydrusine genera by a

particular combination of characters including a median furrow on the head (e.g. Fig. 8B); a large, bare, and smooth triangular area formed by the epistome on the rostrum (e.g. Fig. 1B); the presence of premucro; the presence of a median fovea on the ventral sternum VII; and an either J- or Y-shaped female spermatheca (e.g. Figs. 5D and 13G). *Apodrosus* is furthermore distinguished from an undescribed though apparently closely related genus that also occurs at higher elevations in the Hispaniolan Cordillera by having a well defined epistome, well developed elytral humeri, and fully developed wings (pers. obs.). Finally, *Apodrosus* differs from *Anypotactus* Schoenherr in having connate (as opposed to free) claws.



Figure 1. *Apodrosus wolcottii*, habitus of female. (A) dorsal view; (B) head, frontal view; (C) lateral view; (D) ventral view.

Redescription. Body length 2-6 mm; length in dorsal view 2-3x longer than greatest width which is either at humeri or at mid-point to second third of elytra (e.g. Fig. 1A); shape usually subrectangular; dorsal outline in lateral view subplane to strongly convex (e.g. Fig. 1C).

Integument dark brown, paler or more reddish or yellowish on legs, lighter in teneral specimens; surface smooth to undulated; vestiture heterogeneous to uniform, composed of small, circular to elongate, appressed, contiguous, mostly non-overlapping (excepting lateral and apical regions of elytra), white to brown or green, iridescent (yellowish, reddish or greenish), with ribbed surface scales, and short and recurvate or long and erect setae, regularly and sparsely arranged throughout.

Head. Shape in dorsal view subconical (e.g. Fig. 1B). Eyes in dorsal view slightly to strongly projected from the surface of the head (e.g. Figs. 10B and 11B), inner margins converging apically; in lateral view elliptical, 1.4-1.9x longer than wide; eyes 0.3-0.6x width and 0.6-0.8x length of head in lateral view; separated from anterior margin of prothorax by 0.3-0.7x greatest diameter of eye; ocular sclerite well defined all around the eye; imaginary line of anterior margin of eyes usually impressed. Frons trapezoidal (e.g. Fig. 13B), shortest distance between eyes 0.2-0.5x greatest width of pronotum; with a mesal longitudinal furrow of variable length and depth, furrow apically linear or bifurcated. Rostrum in dorsal view nearly as long as head, 1-1.5x longer than wide, lateral margins parallel (or converging towards apex or mesally slightly emarginate – rostrum mesally constricted –); median region of rostrum flat to slightly produced; epistomal area well defined (e.g. Fig. 2B), large, triangular, glabrous and shiny, usually extending to antennal insertion, apically with 3-5 setae situated on each side; nasal plate (on the apical margin of epistome) not always defined, if so, then flat to concave, finely puncturate, variable in size. Rostrum in lateral view slightly curved downwards, length 1-1.6x its basal width; antennal insertion apicad of mid length of rostrum; scrobe curved downwards by 40-70°, well defined throughout, deep, glabrous, initiating in apicodorsal region, ending in basiventral region, posteriorly or ventrally directed, extending at least to anterior margin or at most to anterior third of eye, separated from it (at shortest distance) by 1.2-2.7x width of scrobe; ventral surface (Fig. 2A) with scarce long suberect setae; gular suture clearly visible, with a shallow basal pit, continuing as shallow to deep lateral subgenal sutures with anterior and posterior pits clearly defined.

Mouthparts. Mandibles glabrous and shiny; each mandible with 1-2 long, laterally positioned setae, with pharyngeal process 0.9-1.6x length of mandible; mandibular scar (Fig. 2A) (strongly) reduced, not always clearly visible, apicoventrally situated; deciduous process (Fig. 2B), if present, short and sickle-shaped. Maxillae (Figs. 2A and 2C) visible along the sides of the prementum, with cardo slender, 3-4x longer than its greatest width, apically widened, roundly

and strongly curved at junction with stipes; stipes with 1-4 lateral setae; palpiger usually with one long lateral seta, surface covered with short, sparse setae, fused with galeo-lacinal complex; the latter mesally extending (at least) to apex of maxillary palpomere I or (at most) to midpoint of maxillary palpomere III; galea apically widely rounded, usually with 4-8 tongue-like apically narrowed setae at apex and often with a basal tuft of shorter, narrower, apically rounded setae; lacinia with 3-5 lacinial teeth and two to several or many long fine setae at base; maxillary palps 3-segmented, maxillary palpomeres of variable lengths, I and II usually with 1-2 mesal lateral setae; apex of palpomere III with papillae. Labium (Figs. 2A and 2D) with prementum not covering the maxillae; prementum subquadrate to rectangular, 1.1-1.9x longer than wide, with external surface smooth or reticulate; labial palps 3-segmented, inserted near the apex of prementum; palpomeres often apically gradually reducing in size; frequently labial palpomere I with 1 long lateral or ventral seta, III with papillae; postmentum projected as a peduncle.

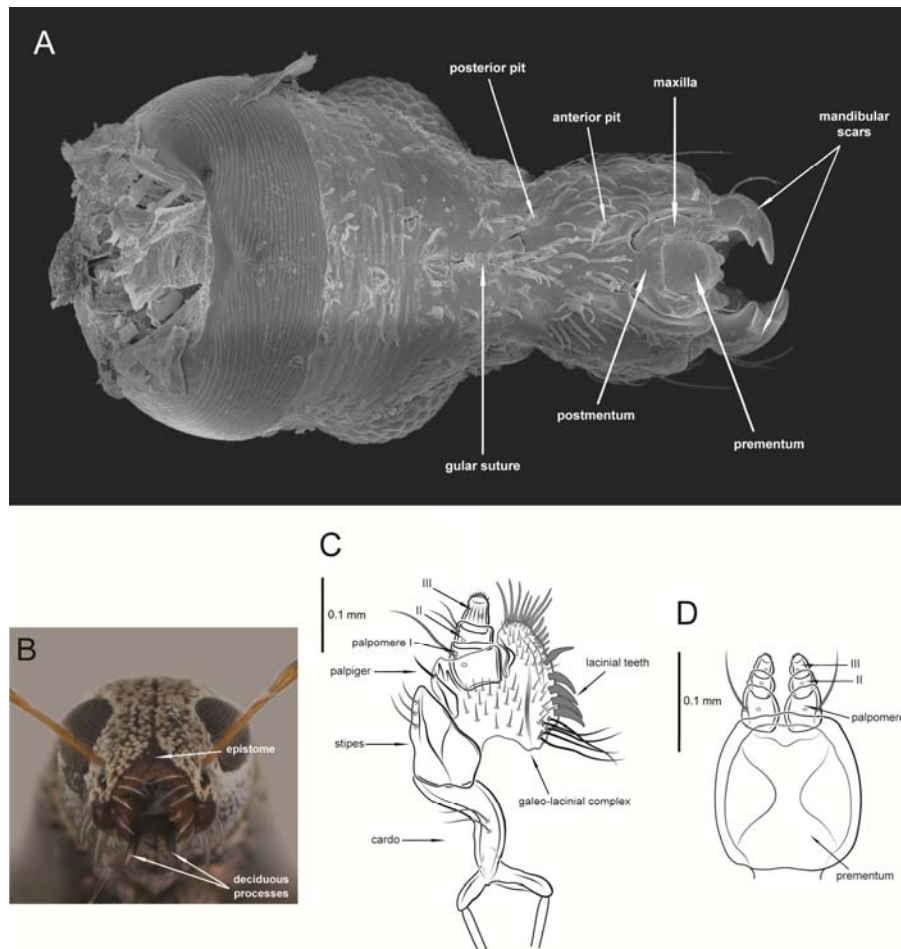


Figure 2. (A) *Apodrosus epipolevatus*, head, ventral view; (B) *A. argentatus*, mandibles with deciduous processes attached; (C) *A. wolcottii*, right maxilla, ventral view; (D) *A. wolcottii*, labial prementum, ventral view.

Antennae. 12-segmented, reddish to yellowish, light brown; antennal scape slender, apically widened, extending (in repose) to second third of eyes up to beyond posterior margin of eyes, though not reaching anterior margin of prothorax, passing far below eye, with scarce and sparse fine setae, almost glabrous; funicle 7-segmented, often as long as scape; funicular antennomere I apically widened, usually longer and thicker than II; II usually cylindrical, longer than remaining antennomeres; funicular antennomeres III to VII clavate, progressing from elongate to equilateral, similar in shape and length; antennal club 4-segmented, finely and densely pilose, 0.5-0.8x length of funicle, 2-3x longer than wide; club segments I and IV usually similar in length, II and III each slightly longer.

Thorax. Pronotum transverse to cylindrical (e.g. Figs 1A and 6A), greatest width at apical third or at midpoint; dorsal surface usually smooth (in some species slightly transversally impressed at anterior third), shallowly and sparsely puncturate, each puncture with a seta; lateral margins subparallel, slightly rounded near midpoint; posterior margin straight to bisinuate, 1-1.3x width of anterior margin; prothorax in lateral view cylindrical, dorsal outline usually straight, 1.3-1.6x longer than ventral outline, with anterior margin straight, postocular setae absent; scutellum conspicuous, variously shaped, shiny, usually with scarce setae, almost glabrous. Prosternum and metasternum nearly the same length (e.g. Fig. 1D), mesosternum 0.5-0.9x length of prosternum and strongly inflected in relation to pro- and metasternum (e.g. Fig. 1D); procoxal cavities contiguous, positioned slightly closer to anterior than to posterior margin of prosternum. Mesosternum with mesocoxal cavities each 3-5x wider than intercoxal process. Mesepimeron and mesepisternum triangular, suture separating them foveate ventrad of midpoint. Metasternum with a median posterior fovea either well developed or reduced, each lateral portion mesally and posteriorly produced (in lateral view, metasternum gradually produced posteriorly), usually each terminating abruptly as a horizontal plica; distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.6-0.9x length of prosternum; distance separating metacoxal cavities 0.5-0.6x width of each metacoxal cavity. Metendosternite (Fig. 3A) with furcal arms longer than stalk, positioned nearly at 120° (or 60°) in relation to horizontal axis (= imaginary straight line connecting hemiducts); ventral margin of stalk 1.3-3.6x its dorsal width; anterior tendons inserted at midpoint or slightly closer to midline than to base of furcal arms.

Legs. Uniformly and densely covered with scales, except on posterior surface of metafemora; femora unarmed, 1.0-1.5x length of pronotum, mesofemur slightly shorter; tibiae straight, slightly curved inwards at apical 1/6, without denticles, usually with spiniform setae on

ventral margin; mucro shorter than tarsal claws, premucro present; apex of protibiae with anterior margin usually straight, with an apical fringe of whitish, yellowish or brownish, stout setae; mesotibiae slightly shorter, with anterior margin dorsally oblique, with an apical fringe of fine, spiniform setae, setae increasing in length towards dorsal margin; metatibiae with anterior margin dorsally oblique, with an apical fringe of yellowish or brownish, fine, spiniform setae, setae increasing in length towards dorsal margin, and with a flange shielding tarsal insertion outwardly (corbel semi-enclosed); surface surrounding tarsal condyle glabrous and shiny; tarsi ventrally densely covered with setae, with tarsomeres I and II subtriangular, I slightly longer than II, III bilobed, 2x wider than II, IV short, 0.2x width of II, V shorter than I + II combined; claws connate, simple, subparallel.

Elytra (e.g. Figs 1A and 6A). Length in dorsal view 1.1-2x their greatest width, which is 1.5-1.9x wider than pronotum; anterior margins straight to sinuate; humeri present, roundly angulate; humeral region 1.5-1.6x width of posterior margin of pronotum; lateral margins usually parallel, divergent on basal two thirds, then straightly to roundly converging to apex; apex widely to narrowly rounded; in lateral view with dorsal outline subplane to strongly convex; posterior declivity gradual, widely rounded to nearly straight; with 10 complete elytral striae, separated from each other by a distance similar to width of a metatibia; punctures deep and glabrous, separated from each other longitudinally by distance similar to the length of each puncture; striae IX and X either completely separated along their entire length by a more or less uniform distance, or fused in mid region along the second third of elytra; intervals uniformly covered with scales, sometimes forming different color patterns, with recurvate and decumbent or straight and erect setae regularly arranged in rows along mid region of elytral intervals; interval X flat to produced along second fifth or sixth of elytra.

Wings (Fig. 3B). Fully developed, 1.2-2.5x length of elytra, 3-3.7x longer than wide; costal margin from nearly straight to emarginate along basal half and slightly rounded thereafter; apex widely to acutely rounded, usually as wide as base (distad of alar sclerites); alar venation usually well developed: R and Rr well defined and rs distinct, darkened; radial window (W) defined; R3 weakly defined, not reaching alar margin; pst distally narrowed, not reaching alar margin; mst weakly defined; h conspicuous, not reaching alar margin; radial and medial margins nearly straight; Mr, Cu, and Cu₁ well defined, af distinct; cubital margin nearly straight; 1A₁ and 1A₂ slightly visible near margin; 2A well defined, vanishing at margin; 3A usually short, at most reaching mid length towards margin of wing, intersecting or not with 2A; 4A visible as a

vanishing light stripe; anal area with margin usually rounded; medial, cubital and anal margins with a fringe of short and fine setae separated from each other by distance similar to the length of a seta.

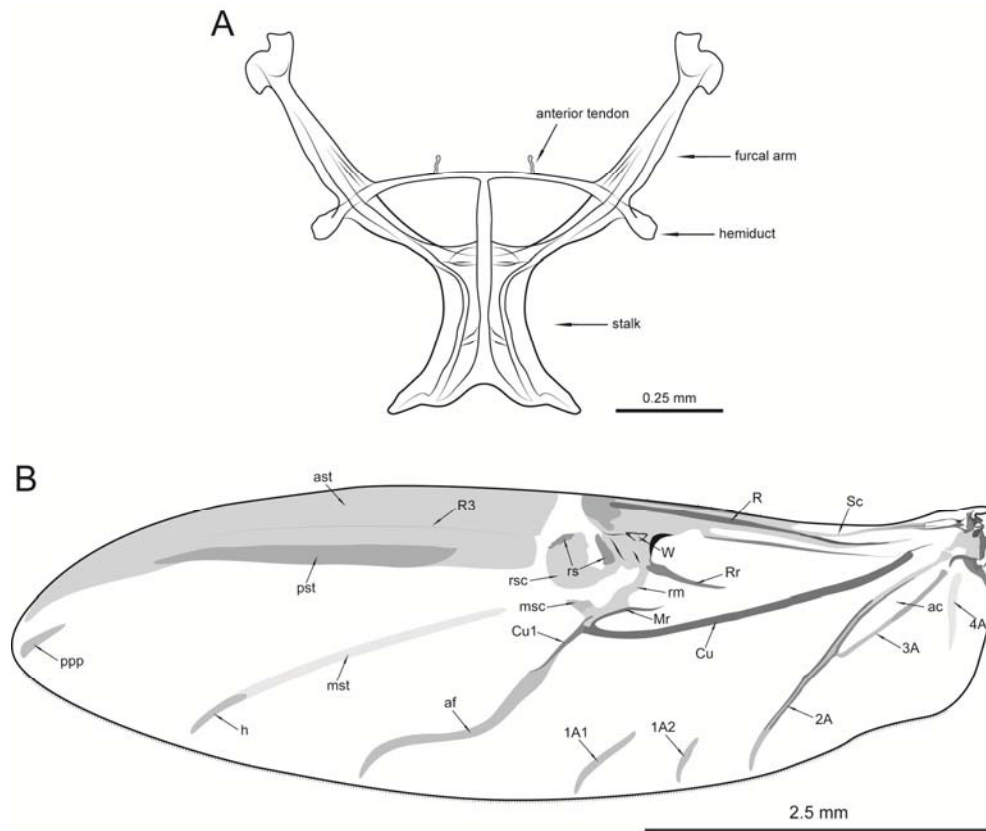


Figure 3. *Apodrosus wolcottii*; (A) metendosternite, posterior view; (B) left wing.

Abdomen. Venter (e.g. Fig. 1D) scarcely to densely covered with scales; segments V-VII separate; posterior margin of IV slightly rounded in mid region; VII with anterior margin 1.9-2.5x wider than its length, usually with a median posterior fovea; ♂: posterior margin of III mesally slightly acutely emarginate, IV 1.2 -2x longer than V to VI jointly, IV 1-1.4x length of VII, posterior margin of VII widely rounded; ♀: posterior margin of III mesally roundly emarginate, IV usually longer than in males, IV 1.4-2x length of VII, VII posterior margin rounded, slightly narrower than in males.

Terminalia. Male with tergum VII (Fig. 4A) transverse to slightly elongate, with two meso-lateral, longitudinally aligned, transversely strigulate stripes extending to posterior margin, continuing laterally into an area with fine, appressed spines, mesal area basally wider than a strigulate stripe, posteriorly widened, with simple or multifid setae particularly concentrated in

posterior area; anterior margin of tergum VII rounded to triangular; posterior margin laterally rounded, mesally emarginate to rounded. Tergum VIII (Fig. 4B) transverse to equilateral, with anterior margin rounded to mesally acutely emarginate; surface usually evenly convex; posteriorly coarsely puncturate, with setae; posterior margin from slightly emarginate in mid region and laterally widely rounded to widely rounded. Sternum VIII (Fig. 4C) forming an entire sickle-shaped plate, usually with spiculum relictum forming a forked process. Sternum IX (spiculum gastrale) (Fig. 4D) with apodeme 1.1-1.6x longer than aedeagus, anteriorly expanded into an asymmetrical, irregular lamina, posteriorly rounded, narrowly truncate; furcal arms opposed, semi-oval to triangular, variable in degree of sclerotization, separated from stylus yet connected to it by a membrane. Tegmen (Fig. 4E) with tegminal apodeme 0.6-1x length of aedeagus; basal piece fused with tegminal plate forming a simple ring; tegminal plate simple or mesally slightly projected posteriorly. Aedeagus in dorsal view (Fig. 4F) 3.3-5x longer than its greatest width, parallel sided to mesally narrowed or apically slightly widened; apex variable.

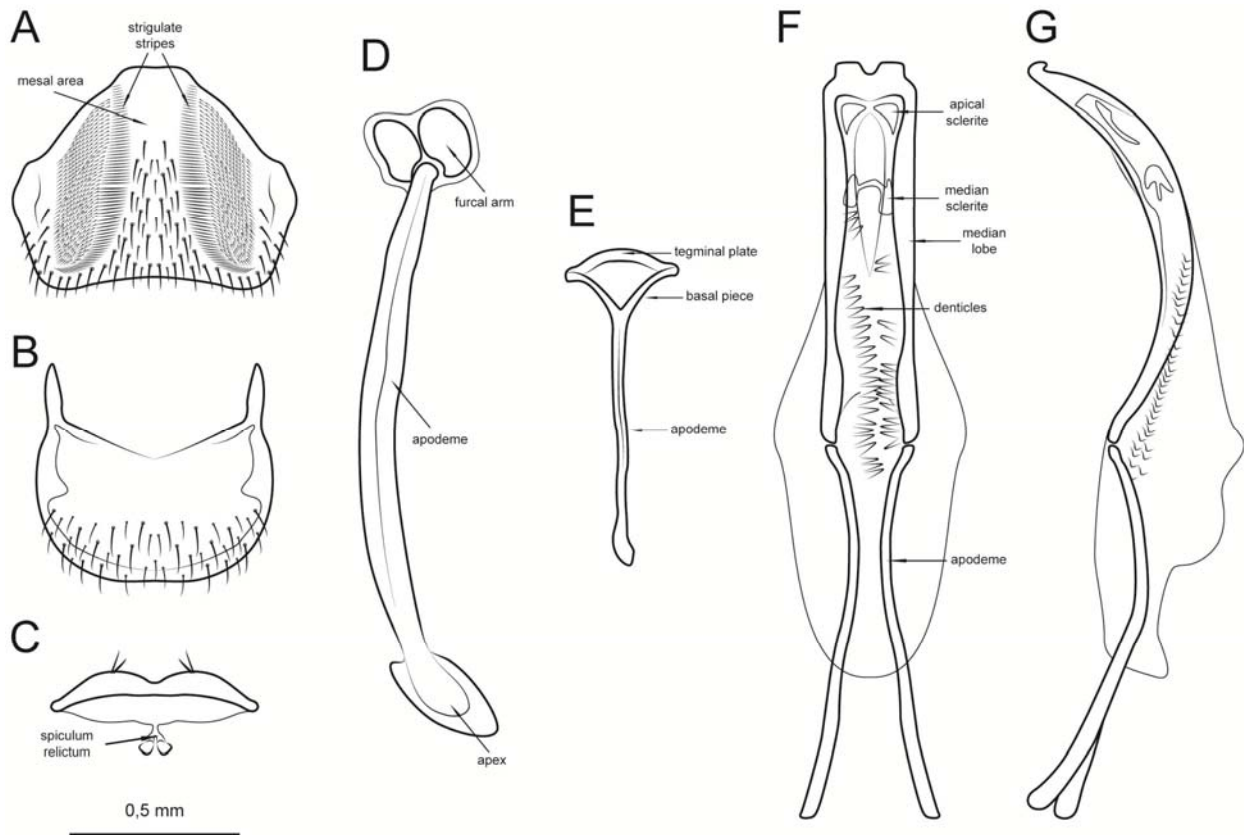


Figure 4. *Apodrosus wolcottii*, male terminalia. (A) tergum VII; (B) tergum VIII; (C) sternum VIII, with spiculum relictum; (D) spiculum gastrale; (E) tegmen; (F) and (G) aedeagus in dorsal and lateral view, respectively.

Endophallus with at least a pair of variously shaped, opposed and sclerotized areas positioned near apex, closing the ostium, and 1-2 single or paired sclerites near midpoint; usually without teeth, if present, accommodated in usually a pair of rows of few (3-6) and stepwise alternating or many and contiguous, directed to median longitudinal axis of aedeagus. Aedeagus in lateral view (Fig. 4G) dorsally convex, length 7-10x its greatest width; dorsal and ventral outlines not uniformly curved, convergent basally. Aedeagal apodemes 0.8-1.1x length of aedeagus, anteriorly widened; curved at some point, thereafter nearly straight towards base of aedeagus.

Female. With tergum VII transverse to slightly elongate, without strigulate stripes; lateral areas with fine, appressed spines; anterior margin rounded; posterior margin mesally emarginate to rounded; marginal area coarsely puncturate, with simple or multifid setae in distal third.

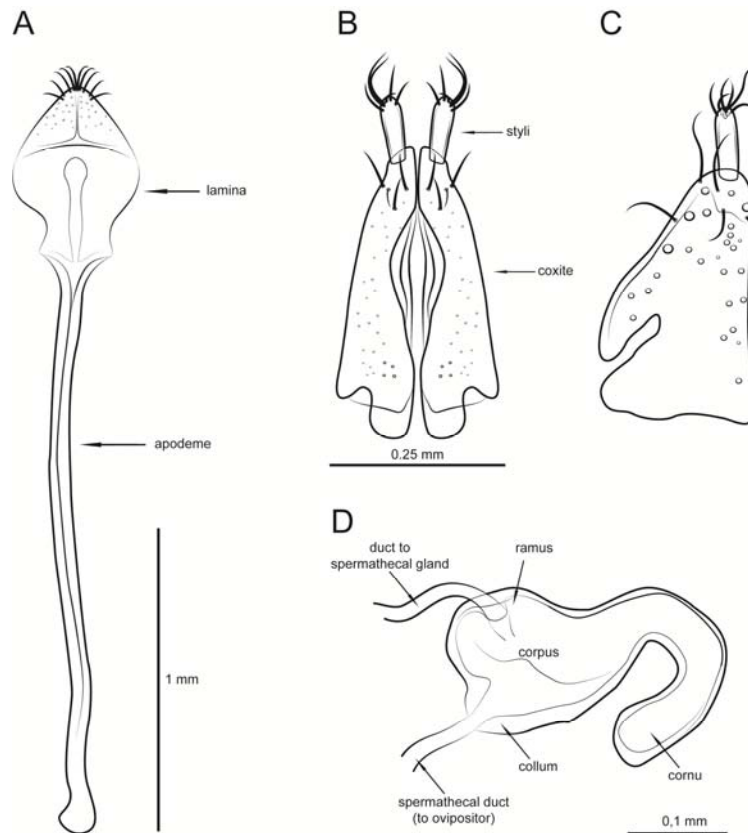


Figure 5. *Apodrosus wolcotti*, female terminalia. (A) sternum VIII; (B) and (C) coxites in ventral and lateral view, respectively; (D) spermatheca.

Tergum VIII subtriangular, transverse to elongate, anterior margin emarginate, apical margin usually rounded and apical area puncturate, with setae. Sternum VIII (Fig. 5A) slightly shorter than ventral sterna III-VII jointly, lamina occupying posterior one fourth to one fifth, triangular, sagittate, rhomboidal or semicircular, with rounded corners; usually median longitudinal region

more sclerotized than basilateral sides, apicolateral areas upwardly plicate, apex with punctures and setae. Coxites + styli (Figs. 5B and 5C) 0.8-1.6x length of lamina of sternum VIII, stylus 2.4-3.6x longer than its greatest width, obovate, inserted apicodorsally, with 2-5 apical setae. Genital chamber 0.6-0.8x length of sternum VIII. Spermatheca (e.g. Figs. 5D and 13G) 1.2-1.8x longer than wide, J- or Y-shaped; cornu nearly straight, length similar to greatest width of spermatheca, usually perpendicular to ramus, with an abruptly narrowed apical projection; margin between cornu and ramus nearly straight; ramus usually longer and wider than collum, apically truncate to rounded, separated from collum by a straight lateral margin; collum usually laterally produced above mid-length of corpus, generally apically narrowed, truncate; surface usually striate, particularly on cornu and ramus.

Etymology. Noun in apposition. Possibly named by Marshall (1922) to express a close affinity to *Polydrusus*, with the Greek term *apo* meaning "related to" and *drosos* meaning "dew, drop" (cf. Brown 1956) which may allude to the weevils' body shape in dorsal view.

***Apodrosus eximius* sp.n.**

Diagnosis. *Apodrosus eximius* is characterized by the combination of a mesally constricted rostrum, strongly projected eyes, a long antennal scape which surpasses the posterior margin of the eyes, the presence of a carinate striped projection on the posterior margin of the epistome, an integument covered with gray and light green, iridescent (greenish to reddish) scales, and posterior femora uniformly colored. This species may be differentiated from *A. argentatus* by its strongly projected eyes, the mesally constricted rostrum, and a more uniformly colored (as opposed to spottily patterned) scale coverage of elytra.

Description. Body length 3.5-4.5 mm; in dorsal view (Fig. 10A) 3x longer than greatest width which is at midpoint of elytra, shape escudate; dorsal outline in lateral view convex. Integument surface smooth; vestiture composed of gray and light green, iridescent (greenish to reddish) scales, with recurvate, semi-erect setae. Eyes (Fig. 10B) 1.5x longer than wide, strongly projected; 0.6x width and 0.5x length of head in lateral view, separated from anterior margin of

prothorax by 0.6x greatest diameter of eye; line of anterior margin of eyes slightly impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 10B) linear, deep, extending from anterior to posterior margin of eyes.

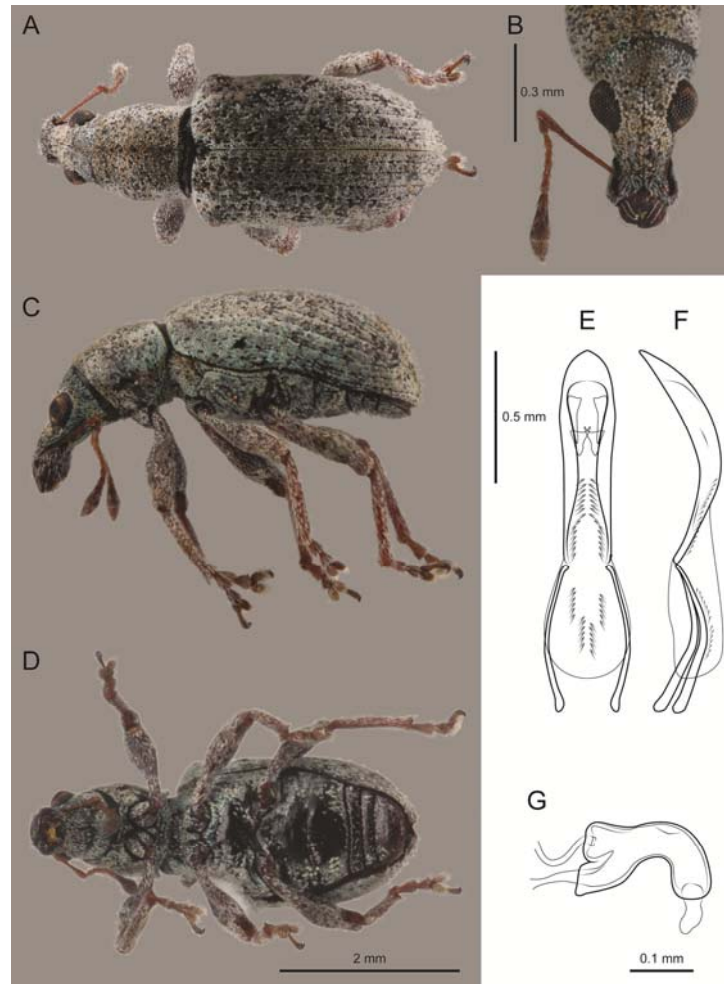


Figure 6. *Apodrosus eximius*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Rostrum (Fig. 10B) 1.1x longer than wide, constricted at midpoint; epistome apically with 4 setae situated on each side, extending posteriorly as a longitudinal narrow keel nearly to midpoint of rostrum; nasal plate weakly defined, large, flat. Length of rostrum in lateral view 1.3x its basal width; antennal insertion at apical third of rostrum; scrobe curved downwards by 40°, directed ventrally at end, extending to anterior margin of eye, separated from it by 1.6x width of scrobe. Mandibles with 2 lateral setae. Antennae yellowish brown; antennal scape extending beyond posterior margin of eye, not reaching anterior margin of prothorax; funicular antennomere I

slightly longer than II; antennal club 0.6x length of funicle, 2.8x longer than wide. Pronotum (Fig. 10A) subquadrate, slightly wider than long, greatest width at midpoint; dorsal surface slightly depressed at apical third, shallowly puncturate, each puncture with a curved, spatulate whitish seta; posterior margin nearly straight, 1.1x wider than anterior margin; prothorax in lateral view with dorsal outline 1.6x length of ventral outline; scutellum suboval, with setiform scales. Mesosternum (Fig. 10D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile roundly produced at third fourth); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.8x length of prosternum. Legs with profemora 1.2x length of pronotum; claws subparallel. Elytra in dorsal view (Fig. 10A) 1.6x their greatest width which is 1.7x wider than pronotum; anterior margins nearly straight; humeral region 1.7x width of posterior margin of pronotum; lateral margins slightly diverging until mid length, thereafter roundly convergent; apex roundly truncate; in lateral view (Fig. 10C) with dorsal outline convex; posterior declivity gradually descending; striae IX and X completely separated along their entire length; intervals completely covered with scales, scale color gray to pinkish on dorsal surface and pale green along sides; interval X slightly produced along basal fourth; with recurvate, spatulate, grayish setae. Venter (Fig. 10D) nearly uniformly covered with greenish scales; VII with anterior margin 1.8x wider than its length; ♂: IV 1.8x longer than V and VI jointly, 1.2x length of VII, VII with posterior margin rounded; ♀: IV 2.4x longer than V and VI jointly, 1.7x length of VII, VII with posterior margin mesally narrowed.

Terminalia. Male with tergum VII 1.2x wider than its mesal length, mesal area with setae on posterior half; anterior margin triangular, mesally rounded; posterior margin emarginate. Tergum VIII 1.4x wider than long, with anterior margin emarginate; posterior margin nearly straight. Sternum VIII with posterior margin rounded; spiculum relictum absent. Spiculum gastrale with apodeme 1.3x longer than aedeagus, each arm sclerotized, oval, with parallel inner margins. Tegmen with tegminal apodeme nearly 0.5x length of aedeagus; tegminal plate not strongly developed. Aedeagus in dorsal view (Fig. 10E) 4.3x longer than its greatest width, slightly constricted near midpoint; apex rounded, mesally acute. Endophallus with a pair of light, elongate, lateral sclerites near apex, with a pair of irregular sclerites positioned apicad of midpoint, and with two lateral rows of lightly sclerotized teeth, teeth more strongly sclerotized basad of base of aedeagus. Aedeagus in lateral view (Fig. 10F) 8.3x longer than its greatest width. Aedeagal apodemes 0.8x length of aedeagus.

Female with tergum VII 1.1x wider than long, posterior margin rounded. Tergum VIII nearly trapezoidal, 1.5x wider than long. Sternum VIII with lamina narrow, semi-circular, occupying posterior one fourth. Coxites + styli 0.8x length of lamina of sternum VIII, stylus 3x longer than its greatest width, with 1-2 long apical setae and 2 anteapical, shorter setae. Genital chamber 0.7x length of sternum VIII. Spermatheca (Fig. 10G) 1.6x longer than wide, Y-shaped; ramus apically rounded; surface slightly striate.

Variation. The examined specimens were mostly teneral; scale coloration varies from dark gray to light brown in teneral specimens to light gray and green in fully pigmented specimens.

Material examined. Holotype ♂ "DOMINICAN REPUBLIC, La Altagracia Province, Guaraguao, 0-5 m, 3.VII.2006, 18°19.994' N, 68°48.710' W, leg. A. Konstantinov" (NMNH); paratypes "D. R., La Romana, Bayahibe, Parque Nacional del Este, Guaraguao Station, main trail, 2 m, N 18°19'52.7" W 68°48'40.7"/ Jun 01/2008, (RD 1-1), leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (CWOB: 1 ♂, 1 ♀; MHND: 1 ♂, 1 ♀; UPRM: 2 ♂, 2 ♀).

Etymology. Named from the Latin *eximius* meaning "exceptional, uncommon" (Brown 1956), based on the perceived rarity of this species (in comparison to others) during the authors' 2008 field trip to the Dominican Republic.

Natural history. *Apodrosus eximius* is known to occur at very low elevations (0-5 m) in the southeastern peninsula of the Dominican Republic (Parque Nacional del Este and Guaraguao; Fig. 19B). The host plant associations remain unknown.

***Apodrosus artus* sp.n.**

Diagnosis. *Apodrosus artus* is characterized by the combination of a relatively narrow body shape (3.2x longer than wide), the absence of a carinate striped projection on the posterior margin of the epistome, an antennal scape that surpasses the posterior margin of eyes, an only slightly produced metasternum (in lateral profile), an irregularly colored vestiture composed of yellowish brown, black and green, iridescent (yellowish, reddish) scales and with recurvate,

lanceolate brown setae, and an aedeagus apex with a mesal, laterally acutely offset projection. This species may be differentiated from *A. andersoni* by its more narrow body shape and parallel-sided elytra with recurvate setae, and from *A. earinusparsus* by a lighter coloration and elytra with recurvate setae. *Apodrosus viridium* has a similar body shape but lacks the irregularly colored scale coverage and presents erect elytral setae.

Description. Body length 3.5-4 mm; in dorsal view (Fig. 6A) 3.2x longer than greatest width which is at second third of elytra, shape subrectangular; dorsal outline in lateral view slightly convex. Integument surface slightly undulated; vestiture composed of yellowish brown, black and green, iridescent (yellowish, reddish) scales, with recurvate, lanceolate brown setae.

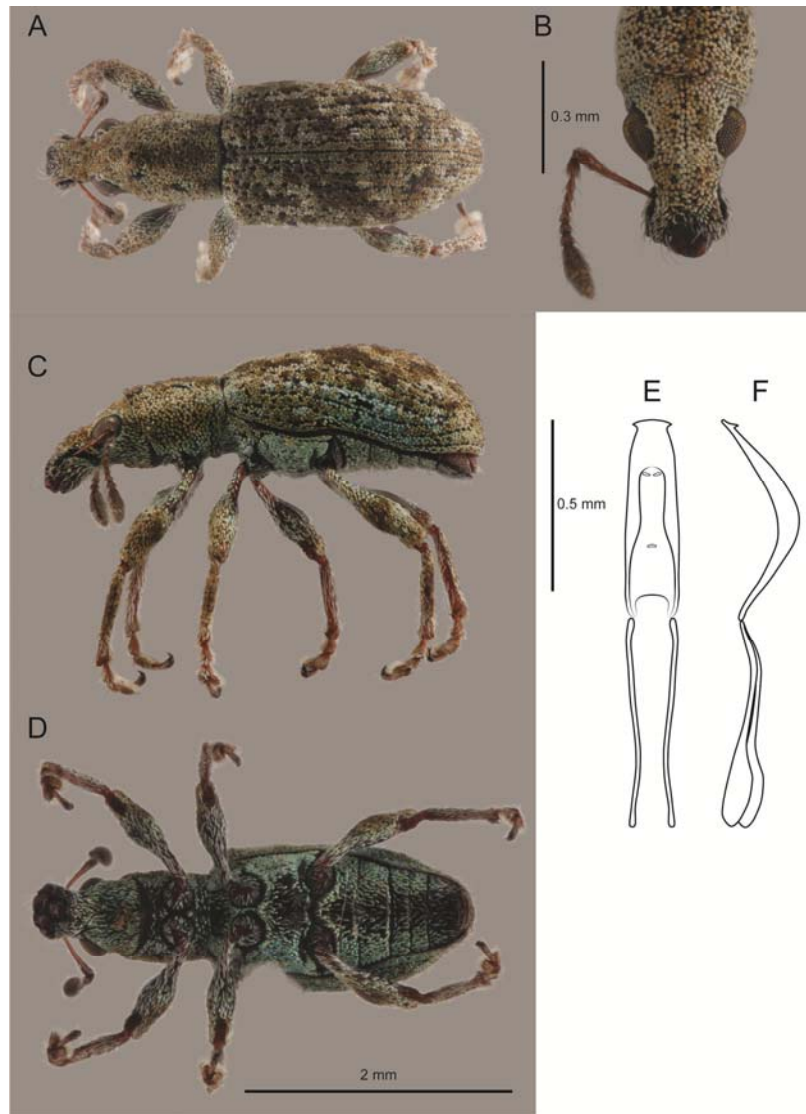


Figure 7. *Apodrosus artus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively.

Eyes (Fig. 6B) 1.3x longer than wide, projected, 0.5x width and 0.7x length of head in lateral view, separated from anterior margin of prothorax by 0.4x greatest diameter of eye; line of anterior margin of eyes slightly impressed; shortest distance between eyes (dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 6B) linear, narrow and shallow, extending from anterior margin of eyes and reaching anterior margin of pronotum. Rostrum (Fig. 6B) slightly longer than wide; epistome (Fig. 6B) apically with 2-3 setae situated on each side; nasal plate weakly defined, flat. Length of rostrum in lateral view 1.4x its basal width; antennal insertion apicad of midpoint of rostrum; scrobe curved downwards by 65°, directed posteriorly at end, reaching anterior third of eye, separated from it by 1.5x width of scrobe. Mandibles with 2 lateral seta. Antennae reddish brown; antennal scape extending beyond posterior margin of eyes, though not reaching anterior margin of prothorax; funicular antennomere I 1.6x longer than II; antennal club 0.6x length of funicle, 2.5x longer than wide. Pronotum (Fig. 6A) cylindrical, slightly longer than wide, greatest width apicad of midpoint; dorsal surface shallowly puncturate, each puncture with a curved, lanceolate brown seta; posterior margin slightly bisinuate, as wide as anterior margin; prothorax in lateral view with dorsal outline 1.5x length of ventral outline; scutellum subcircular, rugose and glabrous. Mesosternum 0.6x length of prosternum (Fig. 6D); mesocoxal cavities 3.4x width of intercoxal process. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior third, thereafter descending roundly, posterior face glabrous); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Legs with profemora 1.2x length of pronotum; tibiae with spiniform setae along ventral margin; claws apically divergent. Elytra in dorsal view (Fig. 6A) 1.9x their greatest width which is 2.2x wider than pronotum; anterior margins sinuate; humeral region of elytra 1.7x width of posterior margin of pronotum; lateral margins parallel until second third, thereafter convergent; apex acutely rounded; in lateral view (Fig. 6C) with dorsal outline slightly convex; posterior declivity gradually descending; striae IX and X fused along their second third; intervals completely covered with scales, with dark and light areas forming an irregular pattern; interval V slightly produced at posterior declivity; interval X flat; with recurvate, lanceolate brown setae. Venter (Fig. 6D) with green scales, denser on sides, scarce and elongate in mid region; segment IV slightly longer than V and VI jointly; ♂: IV as long as VII, VII with anterior margin 2.2x wider than its length, posterior margin of VII widely rounded.

Terminalia. Male with tergum VII 1.2x wider than its mesal length, posteromesal area with setae; anterior margin nearly triangular, mesally narrowly rounded, posterior margin mesally

emarginate. Tergum VIII transverse, 1.3x wider than its mesal length, with anterior margin mesally roundly emarginate; posterior margin widely rounded. Sternum VIII with posterior margin nearly straight, spiculum relictum lightly sclerotized, forming a forked process with base 4.5x longer than wide, 4.5x longer than arms. Spiculum gastrale with apodeme 1.4x longer than aedeagus, each furcal arm sclerotized, reniform. Tegmen with tegminal apodeme 0.6x length of aedeagus; tegminal plate simple. Aedeagus in dorsal view (Fig. 6E) 3.8x longer than its greatest width; apex roundly truncate, laterally acutely set off. Endophallus with a pair of small sclerites positioned at apical third and a reduced sclerite at basal third. Aedeagus in lateral view (Fig. 6F) almost acutely convex, 11x as long as its greatest width. Aedeagal apodemes slightly longer than aedeagus.

Variation. The scale coloration pattern is irregular and displays some variation between specimens.

Material examined. Holotype ♂ "DOMIN. REP., Prov. La Vega, Jarabacoa-Constanza Rd., Km. 16, 1150 m, 11 Apr 1992, M. A. Ivie, D. S. Sikes & W. Lanier, beating guava" (CMNC); paratypes, same label information as holotype (CMNC: 1 dissected ♂); "DOMIN. REP., La Vega Prov., 2.6-6.4 Km E. of Manabao, 4-VI-1994, coll. M. C. Thomas" (CMNC: 1 ♂).

Etymology. Named in reference to the narrow body shape, with Latin adjective *artus* meaning "narrow" (Brown 1956).

Natural history. *Apodrosus artus* is known to occur in the Central Cordillera at an altitudinal range of 1000-1150 m, in the La Vega province of the Dominican Republic, northeast of Pico Duarte, the highest elevation of the Hispaniola (Fig. 19B). Adults have been taken on guava (*Psidium guajava* Linnaeus, Myrtaceae). The females remain unknown.

***Apodrosus andersoni* sp.n.**

Diagnosis. *Apodrosus andersoni* is characterized by the combination of a shield-shaped body which is widest at the second third of the elytra, the absence of a carinate striped projection on the posterior margin of the epistome, an antennal scape that surpasses the posterior margin of

the eyes, a posteriorly strongly produced metasternum (in lateral profile), a fusion of elytral striae IX and X along their second third, a flat surface along interval X of the elytra, an irregularly colored vestiture composed of brown, coppery and green, iridescent (greenish to yellowish) scales and with erect setae, and a continuously and uniformly rounded aedeagal apex. This species may be differentiated from *A. artus* by its shield-shaped body (particularly in females) with diverging lateral margins of the elytra, accompanied by erect (as opposed to recurvate) elytral setae. It furthermore differs from *A. earinusparvus* by having a lighter coloration and a shorter and shallower median furrow on the head, as well as a fusion of elytral striae IX and X along their second third.

Description. Body length 3-3.5 mm; in dorsal view (Fig. 7A) 2.4x longer than greatest width which is apicad of midpoint of elytra, shape escudate; dorsal outline in lateral view convex. Integument surface smooth; vestiture composed of brown, coppery and green, iridescent (greenish to yellowish) scales, with erect setae. Eyes (Fig. 7B) 1.5x longer than wide, projected; 0.5x width and 0.6x length of head in lateral view, separated from anterior margin of prothorax by 0.7x greatest diameter of eye; line of anterior margin of eyes slightly impressed; shortest distance between eyes (in dorsal view) 0.3x greatest width of pronotum; median furrow (Fig. 7B) linear, deep, extending from mid-length of rostrum and slightly exceeding posterior margin of eyes. Rostrum (Fig. 7B) 1.1x longer than wide, constricted at midpoint; epistome apically with 2-4 setae situated on each side; nasal plate not defined. Length of rostrum in lateral view 1.4x its basal width; antennal insertion at midpoint of rostrum; scrobe curved downwards by 60°, directed ventrally at end, extending to anterior margin of eye, separated from it by width of scrobe. Mandibles with 2 lateral setae. Antennae light brown; antennal scape extending beyond posterior margin of eye, not reaching anterior margin of prothorax; funicular antennomere I 1.5x longer than II; antennal club 0.6x length of funicle, 2.9x longer than wide. Pronotum (Fig. 7A) subquadrate, slightly longer than wide, greatest width at midpoint; dorsal surface shallowly puncturate, each puncture with a curved, spatulate brown seta; posterior margin nearly straight, 1.1x wider than anterior margin; prothorax in lateral view with dorsal outline 1.8x length of ventral outline; scutellum oval and glabrous. Mesosternum (Fig. 7D) 0.8x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior third, thereafter descending roundly, posterior face covered with scales);

distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum.

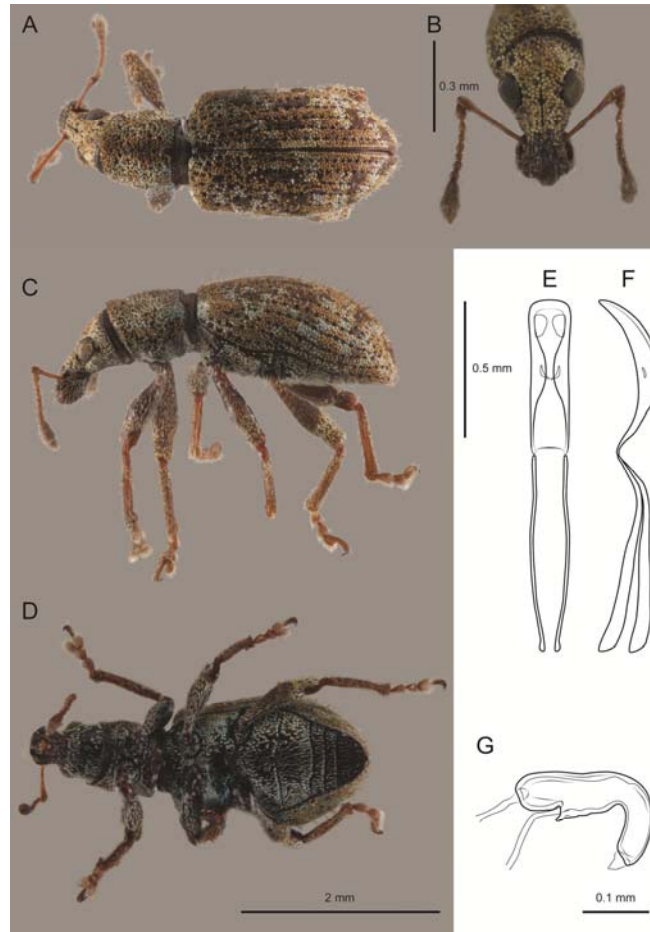


Figure 8. *Apodrosus andersoni*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Legs with profemora 1.2x length of pronotum. Elytra in dorsal view (Fig. 7A) 1.6x their greatest width which is 1.6x wider than pronotum; anterior margins sinuate; humeral region 1.5x width of posterior margin of pronotum; apex acutely rounded; in lateral view (Fig. 7C) with dorsal outline convex; posterior declivity gradual; striae IX and X fused along their second third; intervals completely covered with scales, forming a coppery/green irregular pattern, with brown spots on intervals I, III and V near midpoint of elytra; interval X flat; with erect, linear, apically truncate, brown setae. Venter (Fig. 7D) with elongate, scattered, greenish scales, denser at sides of segments III and IV; VII with anterior margin 1.9x wider than its length; ♂: IV 1.1x longer than V and VI jointly, as long as VII, VII with posterior margin rounded; ♀: IV 1.4x longer than V and VI jointly, 1.7x length of VII, VII with posterior margin mesally narrowed.

Terminalia. Male with tergum VII 1.4x wider than its mesal length, with setae on posterior margin; anterior margin rounded; posterior margin nearly straight. Tergum VIII 1.4x wider than its mesal length; anterior margin nearly straight; posterior margin widely rounded. Sternum VIII with spiculum relictum as a forked process with base 1.8x longer than wide, arms narrow, linear, 1.2x longer than base. Spiculum gastrale with apodeme 1.6x longer than aedeagus, each arm sickle-shaped. Tegmen with tegminal apodeme nearly 0.7x length of aedeagus; tegminal plate simple. Aedeagus in dorsal view (Fig. 7E) 4x longer than its greatest width, slightly constricted apicad of midpoint; apex straight, laterally rounded. Endophallus with a pair of light plates near apex and a pair of parentheses-shaped sclerites positioned near midpoint. Aedeagus in lateral view (Fig. 7F) 8.6x longer than its greatest width. Aedeagal apodemes 1.2x length of aedeagus.

Female with tergum VII suboval, slightly longer than wide, posterior margin rounded. Tergum VIII subtriangular and nearly as wide as long. Sternum VIII with lamina semi-circular, occupying posterior one fourth. Coxites + styli nearly as long as lamina of sternum VIII, stylus 3x longer than its greatest width, with 2 long and 2-3 shorter apical setae. Genital chamber 0.7x length of sternum VIII. Spermatheca (Fig. 7G) 1.5x longer than wide, J-shaped; ramus apically truncate, laterally rounded; collum short, narrower than ramus, apically truncate; surface striate.

Variation. Little variation was noted among the examined specimens, other than a sexually dimorphic body shape with the males being slightly narrower than females.

Material examined. Holotype ♀ "DOMINICAN REPUBLIC, Pedernales, 60 Km. N.W. Cabo Rojo, 1200 m, Las Abejas, cloud forest, 30.IX.1991, sweep, Masner & Peck, 91-354" (CMNC); paratypes, same label information as holotype (CMNC: 2 ♂, including 1 dissected, 1 dissected ♀).

Etymology. Patronymic; named after weevil taxonomist Dr. Robert Anderson (Canadian Museum of Nature) whose strong support is gratefully acknowledged.

Natural history. *Apodrosus andersoni* is known to occur in a cloud forest habitat at 1200 m in Cabo Rojo, in northwest section of the Pedernales province, Dominican Republic (Fig. 19B). The host plant associations remain unknown.

***Apodrosus earinusparsus* sp.n.**

Diagnosis. *Apodrosus earinusparsus* is characterized by the combination of a visible nasal plate, strongly projected eyes, a complete separation of elytral striae IX and X along their entire length, a slightly produced surface along interval X of the elytra, predominantly dark brown scales interspersed with green speckles and long, erect and apically truncate, brown and whitish setae, and a truncate mesal projection of the aedeagal apex. This species may be differentiated from *A. artus* by its shield-shaped body accompanied by erect elytral setae and the completely separated elytral striae IX and X. It furthermore differs from *A. andersoni* by its darker coloration and a longer and deeper median furrow on the head.

Description. Body length 3.5-4.5 mm; in dorsal view (Fig. 8A) 2.8x longer than greatest width which is at second third of elytra, shape escutate; dorsal outline in lateral view convex. Integument surface slightly undulated; vestiture composed of dark brown, light brown and green, iridescent (reddish) scales, with long, erect and apically truncate, brown and whitish setae. Eyes (Fig. 8B) 1.3x longer than wide, strongly projected, 0.5x width and 0.5x length of head in lateral view, separated from anterior margin of prothorax by 0.8x greatest diameter of eye; line of anterior margin of eyes impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 8B) linear, deep, extending from apical fifth of rostrum to posterior margin of eyes. Rostrum (Fig. 8B) 1.2x longer than wide, mesally narrowed; epistome apically with 5 setae situated on each side; nasal plate well defined, flat. Length of rostrum in lateral view 1.4x its basal width; antennal insertion at apical third of rostrum; scrobe curved downwards by 50°, directed posteriorly at end, not reaching anterior margin of eye, separated from it by width of scrobe. Mandibles with 2 long and 1 very short lateral seta. Antennae reddish brown; antennal scape extending beyond posterior margin of eye, not reaching anterior margin of prothorax; funicular antennomere I slightly longer than II; antennal club 0.4x length of funicle, 2.5x longer than wide. Pronotum (Fig. 8A) subquadrate, as long as wide, with greatest width at apical third; dorsal surface deeply puncturate, with curved, brown setae; posterior margin bisinuate, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline 1.4x length of ventral outline; scutellum oval, glabrous. Mesosternum (Fig. 8D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile

gradually ascending towards posterior third, thereafter descending abruptly, posterior face glabrous); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum.

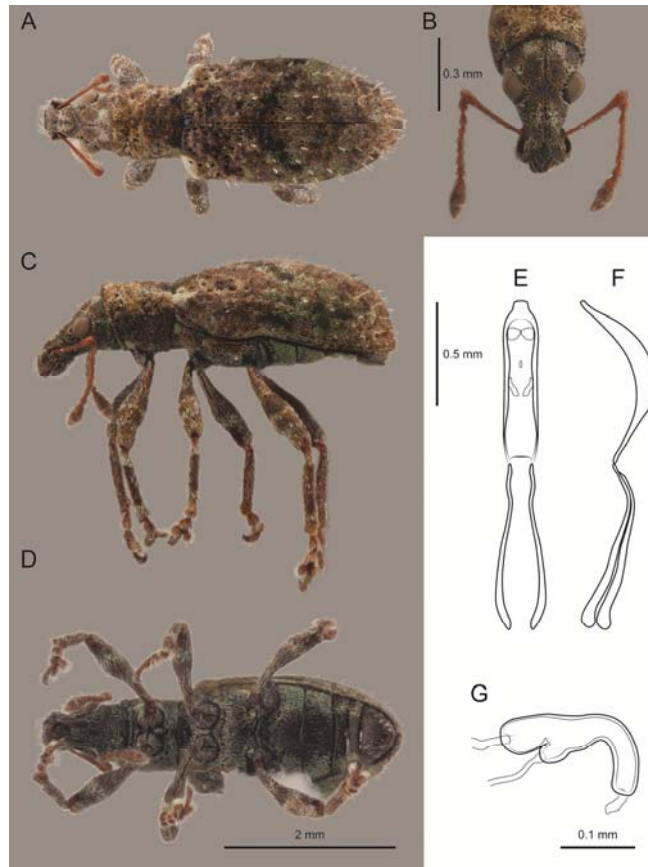


Figure 9. *Apodrosus earinusparsus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Legs with profemora 1.5x length of pronotum; tibiae with scarce, long, spiniform setae along ventral margin; claws divergent. Elytra in dorsal view (Fig. 8A) 1.9x their greatest width which is 1.6x wider than pronotum; anterior margins sinuate; humeral region 1.6x width of posterior margin of pronotum; apex acutely rounded; in lateral view (Fig. 8C) with dorsal outline slightly undulated; posterior declivity gradually descending in males, distinct in females; striae IX and X completely separated along their entire length; intervals covered with scales, with a dark, transversely inverted V-shaped band basad of midpoint, surrounded by green scales and dark spots at margins; interval IV produced at basal sixth and at posterior declivity; interval IX slightly produced along basal fourth; with long, erect, apically truncate brown and yellowish setae. Venter (Fig. 8D) with elongate, green scales on sides, mid region almost glabrous;

posterior margin of VII widely rounded; ♂: IV 1.3x longer than V and VI jointly, as long as VII, VII with anterior margin 2.3x wider than its length; ♀: IV 1.6x longer than V and VI jointly, 1.6x length of VII, VII with anterior margin 1.8x wider than its length.

Terminalia. Male with tergum VII as long as wide; anterior margin nearly triangular, mesally narrowly rounded; posterior margin mesally slightly emarginate; posterior and marginal areas with simple setae. Tergum VIII transverse, 2x wider than its mesal length; anterior margin mesally narrowly rounded; posterior margin mesally slightly emarginate, laterally rounded. Sternum VIII with spiculum relictum not developed. Spiculum gastrale with apodeme 1.4x longer than aedeagus, each furcal arm semi-circular. Tegmen with tegminal apodeme nearly 0.6x length of aedeagus; tegminal plate mesally slightly posteriorly projected. Aedeagus in dorsal view (Fig. 8E) 3.9x longer than its greatest width, slightly narrowed apicad of midpoint; apically narrowed, apex mesally abruptly truncate. Endophallus with a pair of lateral plates at apical fourth, with a small median sclerite and a pair of elongate, irregular lateral sclerites basad of midpoint. Aedeagus in lateral view (Fig. 8F) 8.4x longer than its greatest width; apex dorsally slightly produced. Aedeagal apodemes as long as aedeagus.

Female with tergum VII slightly wider than long; posterior margin rounded. Tergum VIII 1.4x wider than long. Sternum VIII with lamina triangular, occupying posterior one fifth. Coxites + styli as long as lamina of sternum VIII, stylus 3.6x longer than its greatest width, with one long apical seta. Genital chamber 0.4x length of sternum VIII. Spermatheca (Fig. 8G) 1.7x longer than wide, J-shaped; cornu roundly curved towards collum, margin between cornu and ramus slightly emarginate; ramus apically narrowed; collum apically widely rounded; surface striate.

Variation. The examined specimens vary primarily in size and also slightly in their coloration patterns.

Material examined. Holotype ♀ "HAITI, Dept. Sud-Oueste, Parc National La Visite, Morne La Visite, 2100 m, 12-V-1984, M. C. Thomas" (CMNC); paratypes, same label information as holotype (CMNC: 2 ♂, including 1 dissected; FSCA: 5 ♂; 2 ♀); "HAITI, Dept. Sud-Oueste, Parc Nat'l La Visite, between pk. Hdqtrs./ & Morne d'Enfer, 14-V-1984, M. C. Thomas" (FSCA: 1 ♀); "HAITI, Dept. Sud-Oueste, Massif de la Selle, Morne d'Enfer, 1850 m, 15-V-1984, M. C. Thomas" (FSCA: 2 ♀); "HAITI, Dept. Sud-Oueste, Massif de la Selle, saddle between d'Enfer & Fe de Noir, 1700 m, 16-V-1984, M. C. Thomas" (CMNC: 1 dissected ♀); "HAITI, Dept. Sud-Oueste, Massif de la Selle, Morne d'Enfer, 1850 m, 16-V-1984, M. C. Thomas" (FSCA: 2 ♂).

Etymology. Noun in apposition. Named for the predominantly dark brown coloration interspersed with green speckles, with *earinus* meaning "green, the color of the spring" and *sparsus* meaning "strewn, sprinkled" (Brown 1956).

Natural history. *Apodrosus earinusparsus* is known to occur at an elevation range of 1700 m to 2100 m, in the central region of the Department Sud-Ouest of Haiti (Fig. 19B). The host plant associations remain unknown.

***Apodrosus epipolevatus* sp.n.**

Diagnosis. *Apodrosus epipolevatus* is characterized by the combination of subplane to convex dorsal outline in lateral view, an indistinct nasal plate, a slightly tuberculate surface of the elytra, an alternating color pattern of scale vestiture on the legs, a strongly produced surface of the elytra basad of the midpoint of interval X, a complete separation of elytral striae IX and X along their entire length, and a vestiture composed of brown and light brown to white, iridescent (greenish, yellowish to reddish) scales, and with recurvate, semi-erect setae. This species may be differentiated from *A. wolcotti* by its smaller size, the slightly tuberculate elytral surface, and the completely separated elytral striae IX and X.

Description. Body length 2-4 mm; in dorsal view (Fig. 9A) 2.5x longer than greatest width which is at basal third of elytra, shape escudate; dorsal outline in lateral view subplane in males, convex in females. Integument surface slightly tuberculate; vestiture composed of brown and light brown to white, iridescent (greenish, yellowish to reddish) scales, with recurvate, semi-erect setae. Eyes (Fig. 9B) 1.5x longer than wide, projected; 0.6x width and 0.7x length of head in lateral view, separated from anterior margin of prothorax by 0.5x greatest diameter of eye; line of anterior margin of eyes slightly impressed; shortest distance between eyes (in dorsal view) 0.3x greatest width of pronotum; median furrow (Fig. 9B) linear, deep, extending from mid length of rostrum to posterior margin of eyes. Rostrum (Fig. 9B) 1.1x longer than wide, constricted at midpoint; apical half with a shallow V-shaped impression; epistome apically with 2-3 setae situated on each side; nasal plate not defined. Length of rostrum in lateral view 1.4x its

basal width; antennal insertion at apical fourth of rostrum; scrobe curved downwards by 45° , directed ventrally at end, extending to anterior margin of eye, separated from it by 1.2x width of scrobe.

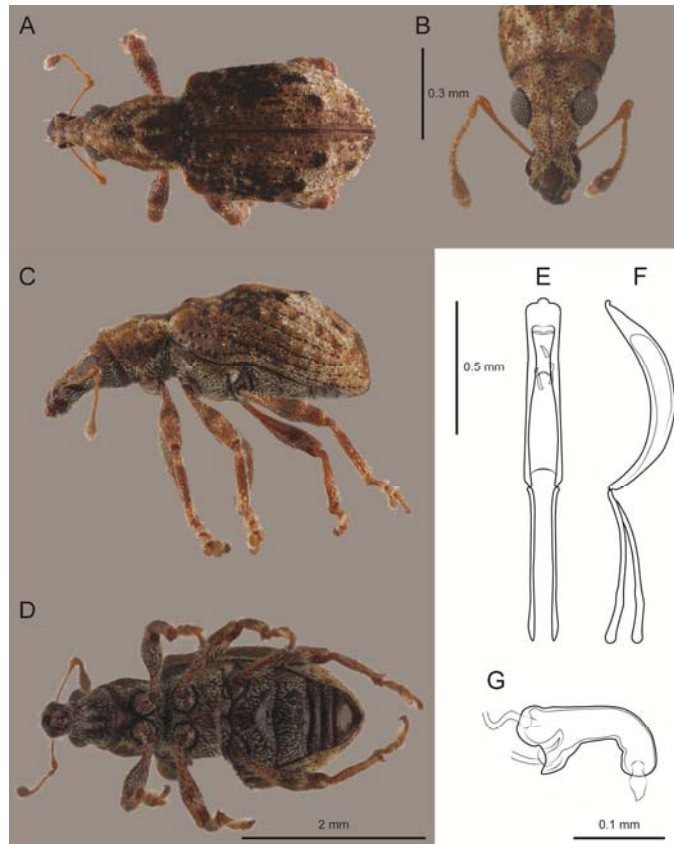


Figure 10. *Apodrosus epipolevatus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Mandibles with 2 lateral setae, pharyngeal process 1.6x longer than mandible. Maxillae with cardo 3x longer than its greatest width; stipes with 2-3 lateral setae; galeo-lacinial complex mesally extending to midpoint of maxillary palpomere II, apex with 4-5 tongue-like apically narrowed setae and a tuft of shorter and apically rounded setae, with 3 lacinial teeth and 4 long fine setae at base of lacinia; maxillary palpomere I slightly longer than II, II slightly longer than III; II and III with 2 mesolateral setae. Labium with prementum 1.9x longer than wide, apex slightly roundly produced in mid region, with external surface sculptured. Antennae yellowish brown; antennal scape extending beyond posterior margin of eye, not reaching anterior margin of prothorax; funicular antennomere I as long as II; antennal club 0.6x length of funicle, 2.2x longer than wide. Pronotum (Fig. 9A) subquadrate, slightly wider than long, greatest width at midpoint;

dorsal surface slightly depressed at apical third, shallowly puncturate, each puncture with a curved, spatulate brown seta; posterior margin slightly bisinuate, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline 1.7x length of ventral outline; scutellum subcircular, with scarce setiform scales. Mesosternum (Fig. 9D) 0.5x length of prosternum. Metasternum with lateral portions mesally produced (in lateral profile mesally roundly produced); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Metendosternite with furcal arms 1.4x longer than stalk, positioned at 120° in relation to horizontal axis; length of ventral margin of stalk 3.1x its dorsal width. Legs with profemora 1.3x length of pronotum; claws subparallel. Elytra in dorsal view (Fig. 9A) 1.6x their greatest width which is 1.6x wider than pronotum; anterior margins sinuate; humeral region 1.5x width of posterior margin of pronotum; lateral margins subparallel until midpoint, thereafter convergent; apex roundly truncate; in lateral view (Fig. 9C) with dorsal outline subplane to convex; posterior declivity gradual; striae IX and X completely separated along their entire length; intervals completely covered with oval scales, forming an irregular dark/light pattern; interval III with three elevations (at base, at second and at third fifth); interval V with two elevations (at second and at third fifth); interval X strongly produced along basal third; with recurvate, spatulate, brown setae. Wings nearly as long as elytra, 3.1x longer than wide; costal margin emarginate along basal third; apex rounded; alar venation reduced, only R, Cu and 2A, defined, vanished apically; radial, medial and cubital margins nearly straight; anal area with margin slightly emarginate. Venter with elongate, scattered, greenish scales, denser at sides; IV 1.5x longer than V and VI jointly; median posterior pit of segment VII reduced to absent; VII with anterior margin 2x wider than its length; ♂: IV as long as VII; VII posterior margin rounded; ♀: IV 1.4x length of VII; VII posterior margin slightly narrowed mesally.

Terminalia. Male with tergum VII 1.5x wider than its mesal length, mesal area with setae on distal half; anterior margin with mesal area projected, truncate; posterior margin nearly straight, posterior area with long multifid setae. Tergum VIII 1.5x longer than its mesal length, with anterior margin acutely emarginate; apical margin rounded. Sternum VIII with posterior margin emarginate; spiculum relictum as a linear process 5.2x longer than wide, with apical fourth darker. Spiculum gastrale with apodeme 1.2x longer than aedeagus, each arm sclerotized, narrowly oval, with parallel inner margins. Tegmen with tegminal apodeme nearly 0.6x length of aedeagus; tegminal plate simple. Aedeagus in dorsal view (Fig. 9E) 5x longer than its greatest width, slightly constricted apicad of midpoint; apex mesally roundly set off. Endophallus with a

pair of lateral plates at apical fifth, with a light, elongate, median sclerite, with a pair of vertical rod-like sclerites positioned near midpoint, between these with 1 n-shaped sclerite. Aedeagus in lateral view (Fig. 9F) 8x longer than its greatest width. Aedeagal apodemes 0.9x length of aedeagus.

Female with tergum VII 1.6x wider than long, posterior margin rounded. Tergum VIII nearly trapezoidal, 1.5x wider than long. Sternum VIII with lamina rhomboidal, occupying posterior one fourth. Coxites + styli nearly as long as lamina of sternum VIII, stylus 3.6x longer than its greatest width, with 3-4 long apical setae. Genital chamber 0.7x length of sternum VIII. Spermatheca (Fig. 9G) 1.8x longer than wide, J-shaped; ramus apically truncate, laterally rounded; surface striate.

Variation. The examined specimens vary mainly in their color pattern which is either slightly spotted or uniformly colored. There is also slight variation in the degree of projection of the elytral elevations.

Material examined. Holotype ♀ "Puerto Rico (USA), Bosque Estatal Toro Negro, Cerro de Punta, 1330 m, N 18°10.2'0" W 66°35.31'0", Beating/ sweeping plants/ Mar 15/2008, Leg. J. Cardona, N. Franz, J. Girón, A. Mazo" (UPRM); paratypes, same label information as holotype (CMNC: 2 ♂, 1 ♀; CWOB: 2 ♂, 1 ♀; MEBT: 2 ♂; NMNH: 2 ♂, 1 ♀; UPRM: 2 ♂); "PUERTO RICO, Guilarte For. Res., Hwy. 131 & 158, July 23-1979, G.B. Marshall" (UPRM: 1 ♀); "PUERTO RICO, Carib. N. F., El Toro Negro, D., Hwy. 143, K16H4, 7-21-1979, C.W.O'Brien/ on *Rubus* sp." (UPRM: 1 ♀); "PUERTO RICO, Carib. N. F., El Toro Negro, D., Hwy. 143, K16H4, 7-21-1979, G.B. Marshall" (UPRM: 1 ♂); "Puerto Rico (USA), Bosque Estatal Toro Negro, Cerro de Punta, 1330m, N 18°10.333' W 66°35.513/ Beating/sweeping plants, Leg. Cardona, Castellanos, Franz & Girón; Jan-04-2008" (UPRM: 4 ♂, 4 ♀); "Puerto Rico (USA), Bosque Estatal Toro Negro, Cerro de Punta, 1320 m, N 18°10.32' W 66°35.53'/ beating/sweeping plants, leg. N. Franz & J. Girón, VIII-07-2007" (UPRM: 2 ♂, including dissected, 1 ♀; MEBT: 1 ♀); "Puerto Rico (USA), Bosque Estatal Toro Negro, Cerro Monte de Jayuya, 1320 m, N 18°10.064' W 66°34.596'/ Beating/sweeping plants, Leg. Cardona, Castellanos, Franz & Girón; Jan-04-2008" (UPRM: 4 ♀); "USA, Puerto Rico, Bosque Estatal Toro Negro, Biol. Stat. UPRM, 935 m, N 18°10'43" W 66°29'19"/ beating/sweeping plants, leg. N. Franz & J. Girón, VIII-07-2007" (UPRM: 1 ♂); "PUERTO RICO, Hwy. 184, K21H1, Carite For. Res., July 20-1979, G.B. Marshall" (UPRM: 1 ♂).

Etymology. Noun in apposition. Named after the Greek *epipole* signifying "surface" and the Latin *levatus* signifying "raise" (Brown 1956), thus referring to the characteristic elytral elevations of this species.

Natural history. *Apodrosus epipolevatus* occurs at some of the highest elevations of the Puerto Rico Central Cordillera (Cerro de Punta, Monte Jayuya, Carite) (Fig. 20A). Under laboratory conditions the oviposition pattern corresponds to "type a" according to Emden (1950; cited by Marvaldi 1999), in which the eggs are laid separately and randomly; the egg shell is white when recently oviposited, becoming darker during subsequent days. The observed eggs hatched within 14-16 days. Only first instar larvae were obtained at that time. The host plant associations remain unknown.

***Apodrosus wolcotti* Marshall 1922: 59**

Diagnosis. *Apodrosus wolcotti* is characterized by the combination of a slightly undulate integument surface, an indistinct nasal plate, large and strongly projected eyes, strongly convex elytra (particularly in females) which are furthermore strongly produced basad of the midpoint of interval X, a fusion of elytral striae IX and X along their second third, a vestiture composed of dark brown and light brown to white, iridescent (reddish) scales and with recurvate, decumbent, brown setae; and non-projected spermathecal cornu. This species may be differentiated from *A. epipolevatus* by its larger size and slightly undulate elytral surface. It furthermore differs from *A. earinusparsus* by its recurvate elytral setae and coverage coloration without green speckles. See figures 1 and 3-5.

Redescription. Body length 4-6 mm; in dorsal view (Fig. 1A) 3x longer than greatest width which is at second third of elytra, shape escudate; dorsal outline in lateral view convex in males, strongly convex in females. Integument surface slightly undulated; vestiture composed of dark brown and light brown to white, iridescent (reddish) scales, with recurvate, decumbent, brown setae. Eyes (Fig. 1B) 1.5x longer than wide, strongly projected, 0.5x width and 0.7x length of head in lateral view, separated from anterior margin of prothorax by 0.3x greatest diameter of eye; line of anterior margin of eyes slightly impressed; shortest distance between eyes 0.3x greatest width of pronotum; median furrow (Fig. 1B) linear, deep, extending from anterior third of eyes beyond their posterior margin though not reaching anterior margin of pronotum. Rostrum 1.5x longer than wide; epistome apically with 3-4 setae situated on each side; nasal plate not

defined. Length of rostrum in lateral view 1.3x its basal width; antennal insertion near apical third of rostrum; scrobe curved downwards by 40°, directed ventrally at end, slightly surpassing anterior margin of eye, separated from it by 2x width of scrobe. Mandibles with 1 lateral seta, pharyngeal process 1.5x longer than mandible. Maxillae (Fig. 2C) with cardo 3.2x longer than its greatest width; stipes with 3 short lateral setae; galeo-lacinial complex mesally extending to apex of maxillary palpomere I, apex with 6-8 tongue-like apically narrowed setae and a tuft of narrower and shorter setae, with 4 lacinial teeth, and 2 long fine setae at base of lacinia; maxillary palpomere I 1.4x longer than II and III each; I and II each with 1 mesolateral seta. Labium (Fig. 2D) with prementum slightly longer than wide, with external surface sculptured. Antennae reddish brown; antennal scape extending beyond posterior margin of eye, not reaching anterior margin of prothorax; funicular antennomere I as long as II; antennal club 0.8x length of funicle, 2.5x longer than wide. Pronotum (Fig. 1A) transverse, 1.3x wider than long, greatest width at basal third; dorsal surface shallowly puncturate, each puncture with a curved, spatulate, brown seta; posterior margin slightly bisinuate, 1.3x wider than anterior margin; prothorax in lateral view with dorsal outline 1.5x length of ventral outline; scutellum subcircular, with scarce setiform scales. Mesosternum (Fig. 1D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly strongly produced (in lateral profile gradually ascending towards posterior fourth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.9x length of prosternum. Metendosternite (Fig. 3A) with furcal arms 1.3x longer than stalk, positioned nearly at 120° in relation to horizontal axis; ventral margin of stalk 2.2x its dorsal width. Legs with profemora 1.5x length of pronotum; tibiae with short, curved setae along ventral margin; claws slightly divergent. Length of elytra in dorsal view (Fig. 1A) 1.7x their greatest width which is 1.7x wider than pronotum; anterior margins sinuate; humeral region 1.6x width of posterior margin of pronotum; lateral margins subparallel until second third, thereafter convergent; apex acutely rounded; in lateral view (Fig. 1B) with dorsal outline strongly convex, particularly in females; posterior declivity gradually descending; striae IX and X fused along their second third; intervals completely covered with oval scales, usually darker along anterior half, thereafter lighter; interval X strongly produced along second fifth; with recurvate, spatulate, brown setae. Wings (Fig. 3B) 2.2x length of elytra, 3x longer than wide; costal margin emarginate along basal third; apex rounded; cubital margin slightly rounded; alar venation well developed, 3A intersecting with 2A; 4A not defined; anal area with margin slightly emarginate. Venter (Fig. 1D) with elongate,

apically truncate, whitish scales, denser on sides, scarce in mid region; IV 1.5x longer than V and VI jointly; posterior margin of VII widely rounded; ♂: IV 1.4x length of VII, VII with anterior margin 2x wider than its length; ♀: IV 1.8x length of VII, VII with anterior margin 2.5x wider than its length.

Terminalia. Male with tergum VII (Fig. 4A) 1.4x wider than its mesal length; anterior margin nearly triangular, mesally narrowly truncate, posterior margin mesally emarginate, posterior area with long bifid setae. Tergum VIII (Fig. 4B) transverse, 1.9x wider than its mesal length, with anterior margin acutely emarginate; posterior margin mesally slightly emarginate, laterally rounded, with setae on posterior half. Sternum VIII (Fig. 4C) with posterior margin mesally emarginate, spiculum relictum present, forming a forked process with base as long as arms, 2x longer than wide, arms darker from midpoint to apex. Spiculum gastrale (Fig. 4D) with apodeme 1.6x longer than aedeagus, each furcal arm sclerotized, suboval, both with parallel inner margins, emarginate at junction with apodeme. Tegmen (Fig. 4E) with tegminal apodeme 0.9x length of aedeagus; tegminal plate simple. Aedeagus in dorsal view (Fig. 4F) 3.8x longer than its greatest width, parallel sided; apex set off, projected laterally, mesally strongly emarginate. Pedon with an oval elongate opening extending from mid length nearly to apex. Endophallus with a pair of apically opposed, elongate, irregular plates, with a median semi-triangular sclerite positioned at apical third, and with 2 lateral irregular rows of 10-30 triangular, narrow teeth, each row with apices of teeth directed mesally. Aedeagus in lateral view (Fig. 4G) 7.6x longer than its greatest width; apex dorsally projected. Aedeagal apodemes 0.8x length of aedeagus.

Female with tergum VII as long as wide; posterior margin rounded. Tergum VIII subtrapezoidal, 1.6x longer than wide. Sternum VIII (Fig. 5A) with lamina spatulate, occupying posterior one fourth. Coxites + styli (Figs. 5B and 5C) 1.6x length of lamina of sternum VIII, stylus 3.1x longer than its greatest width, with 1 long and 3-4 shorter apical setae. Genital chamber 0.6x length of sternum VIII. Spermatheca (Fig. 5D) 1.8x longer than wide, J-shaped; cornu roundly curved towards ramus; margin between cornu and ramus roundly emarginate; ramus apically truncate, almost laterally situated, nearly opposed to collum; collum apically narrowed; surface of cornu striate, reticulate on collum.

Variation. The examined specimens vary mainly in size and coloration pattern, displaying either a defined lighter posterior area preceded by a dark transversal band, or a uniform coloration.

Material examined. "PUERTO RICO, 3 mi S. Maricao, II-9-1969/ at night, L. & C. W. O'Brien" (CWOB: 1 ♂); "PUERTO RICO, II-9-1969, 5 mi S. Maricao, C. W. O'Brien" (CWOB: 1 ♂); "PUERTO RICO, Hwy. 120, K10H2, Maricao For. Res., July 25, 1979, L. B. O'Brien" (CWOB: 1 ♀); "USA, Puerto Rico, Bosque Estatal Maricao, N 18°09'24", W 66°59'52", 750 m, general collecting, leg. N. Franz, III-23-2006" (UPRM: 3 ♀); "USA, Puerto Rico, Bosque Estatal Maricao, N 18°08'26", W 66°58'20", 820 m, beating at night, leg. N. Franz, V-10-2006" (UPRM: 3 ♀, including 1 dissected); "USA, Puerto Rico, Bosque Estatal Maricao, S. Alto Descanso, 760 m, N 18°09'27", W 66°59'56"/ beating at night, leg. N. Franz, J. Conde, J. Metcalf & S. Ríos, VI-21-2006" (UPRM: 1 ♀); "USA, Puerto Rico, Bosque Estatal Maricao, Rt. 120, Km 13.1, 830 m, N 18°08'26", W 66°58'24"/ beating plants, leg. N. Franz & J. Metcalf, VII-14-2006" (UPRM: 2 ♂, including 1 dissected, 1 ♀); "USA, Puerto Rico, Bosque Estatal Maricao, Rt. 120, Km 9.2, 690 m, N 18°08'04", W 66°57'18"/ Beating plants, leg. N. Franz & J. Metcalf, VII-28-2006" (UPRM: 2 ♂, 1 ♀); "USA, Puerto Rico, Bosque Estatal Maricao, Rt. 120, Km 9.2, 680 m, N 18°08'04", W 66°57'18"/ leg. Castellanos, Crespo, Franz, Rivera, Tamaris, Yussef, IX-09-2006" (UPRM: 3 dissected ♂, 1 ♀); "Puerto Rico, (USA), Bosque Estatal Maricao, Route 120, Km 9.2, 670 m/ N 18°08'05", W 66°57'29"/ beating plants at night, leg. N. Franz, XII-22-2006" (UPRM: 2 dissected ♂, 1 ♀); "PUERTO RICO, Maricao, Bosque Estatal Maricao, N 18°9'30", W 66°59'53", 480 m, beating plants, Dec 9/[20]08, Leg. J. Girón, A. Mazo" (UPRM: 1 ♀); "Puerto Rico, Maravilla, Finca Mayol/ 18-VII-71, J. Micheli/ at light/ #11/ Compared with type ♀, *Apodrosus wolcottii* Mshl" (CWOB: 1 ♀); "PUERTO RICO, Guajataca For. Res., July 27, 1979/ Collector: G. B. Marshall" (CWOB: 1 ♂, 1 ♀); "PUERTO RICO, Barrio Carrizales, Indiera Alta, 21-V-1987, N. Virkki" (CWOB: 1 ♀); "Adjuntas, VI-1-1934, C. M. Matos" (UPRM: 1 ♀); "Puerto Rico, (USA), Bosque Estatal Toro Negro, Cerro de Punta, 1330 m/ N 18°10.333', W 66°35.513'/ Beating/sweeping plants, leg. Cardona, Castellanos, Franz & Girón, Jan-04-2008" (UPRM: 3 dissected ♂, 1 dissected ♀); "5 mi. N. E. Jayuya, P. R. VII 17-19, 1969, H. & A. Howden" (CMNC: 1 ♂); "PUERTO RICO, Carraizo Alto, 24 VI-1985, N. Virkki, *Mangifera indica*" (CWOB: 1 ♂); "El Verde Sta., Luquillo Forest, P. R. VII 9, 1969, H. & A. Howden" (CMNC: 1 ♀); "PUERTO RICO: El Verde, 250 m, 24 Sep 1987, M. A. Ivie, at light" (CMNC: 1 ♂); "PUERTO RICO, Caribbean N. F., El Verde Field Sta. 8-14 May 1985 at UV light, 300 m el./ C. U. I. C. 1985 EXP., E. R. Hoebeke, J. K. Liebherr, S. W. Nichols" (CMNC: 2 ♂); "PUERTO RICO, Carib. N. F., El Yunque, Hwy. (191), K11H4, July 29, 1979, C. W. O'Brien" (CWOB: 1 ♀); "El Yunque Sta., Luquillo Forest, P. R. VII 10-16, 1969, H. & A. Howden" (CMNC: 1 ♀); "PUERTO RICO, Carib. Nt. For., Luquillo Div. El Yunque Rec. Ar., 26-V-1986, E. G. Riley & D. A. Rider" (CWOB: 1 ♂); "PUERTO RICO, Carib. Nt. For., Luquillo Div. Catalina, 26-V-1986, E. G. Riley & D. A. Rider" (CWOB: 1 ♀); "PUERTO RICO: 6.5 Km S Mameyes, Rt 966 & 191, 22 Sep 1987, 350 m, M. A. Ivie, sweeping" (CMNC: 1 ♀); "PUERTO RICO, loc. unknown, #144, N. Virkki" (CWOB: 1 ♂).

Etymology. *Apodrosus wolcottii* was named after George N. Wolcott (1889-1965), a renown entomologist and pioneer of Puerto Rican insects (cf. Lawrence 2000).

Natural history. *Apodrosus wolcottii* occurs mainly at higher elevations of the Puerto Rican Central Cordillera, at 300-1320 m above sea level (Fig. 20A). According to Wolcott (1924), the adults feed on *Inga vera* Willd. (Fabaceae) and are found resting on coffee leaves (*Coffea*

arabica Linnaeus, Rubiaceae). Martorell (1976) lists the following additional putative host plant species of *A. wolcottii*: *Inga fagifolia* (Linnaeus) Willd. ex Benth. (Fabaceae) and *Vanilla fragrans* Ames (Orchidaceae).

***Apodrosus argentatus* Wolcott 1924: 130**

= *Apodrusus argentatus* (in Wolcott 1924: 130 – error)

Diagnosis. *Apodrosus argentatus* is characterized by the combination of large and flattened eyes, an indistinct nasal plate, an evenly distributed vestiture composed mainly of whitish (or silvery) to light brown and black, iridescent (greenish to pinkish) scales forming a spotty pattern in the mid region of elytra, and a complete separation of elytral striae IX and X along their entire length. This species may be differentiated from *A. eximius* by its large and flattened eyes, a parallel sided (as opposed to constricted) rostrum, and the spottily patterned scale coverage in the mid region of the elytra. It furthermore differs from *A. mammuthus* by its smaller size, shorter and wider (as opposed to elongate) head, and the lack of a pair of denticled pads on the endophallus, positioned apicad of the midpoint of the aedeagus.

Redescription. Body length 3-5 mm; in dorsal view (Fig. 11A) 2x greatest width which is at midpoint of elytra; dorsal outline in lateral view subplane to slightly convex. Integument surface smooth; vestiture uniformly composed of white to light brown and black, iridescent (greenish to pinkish) scales, with recurvate, decumbent, brown setae. Eyes (Fig. 11B) 1.5x longer than wide, slightly projected, 0.5x width and 0.7x length of head in lateral view, separated from anterior margin of prothorax by 0.3x greatest diameter of eye; line of anterior margin of eyes flat; shortest distance between eyes (in dorsal view) 0.3x greatest width of pronotum; median furrow (Fig. 11B) linear, deep, extending from anterior margin of eyes beyond their posterior margin, though not reaching anterior margin of pronotum. Rostrum (Fig. 11B) 1.1x longer than wide; median dorsal region slightly produced; epistome apically with 3-4 setae situated on each side, extending posteriorly as a longitudinal narrow keel to midpoint of rostrum; nasal plate not defined. Length of rostrum in lateral view 1.1x its basal width; antennal insertion approximately at midpoint of rostrum; scrobe curved downwards by 45°, directed posteriorly at end, extending to anterior third of eye, separated from it by 1.3x width of scrobe.

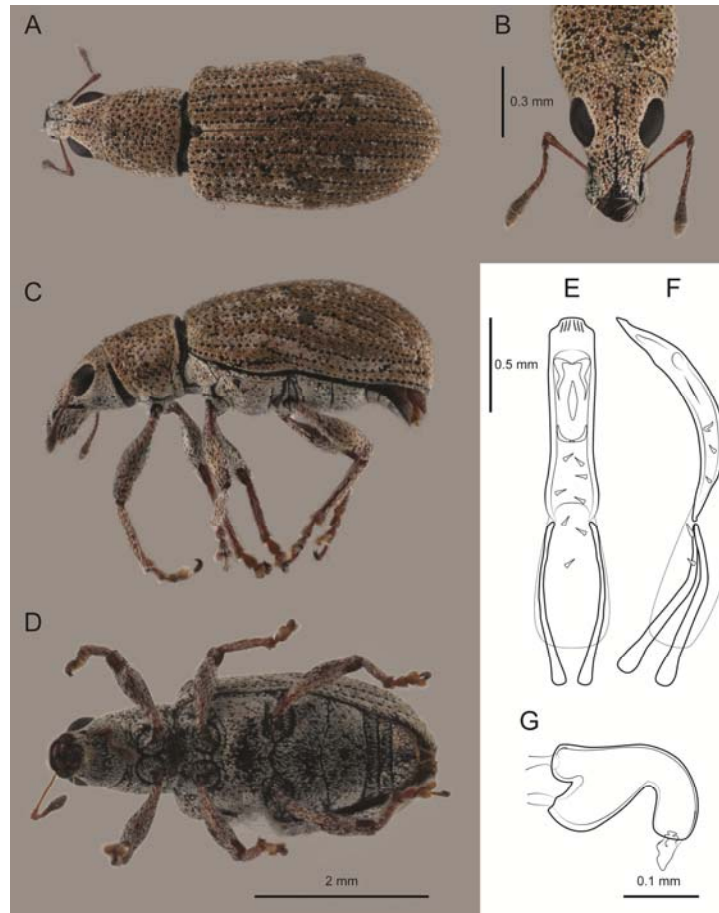


Figure 11. *Apodrosus argentatus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Mandibles with 2 lateral setae, pharyngeal process 0.9x length of mandible. Maxillae with cardo 4x longer than its greatest width; stipes with 2 long lateral setae; galeo-lacinial complex mesally extending to midpoint of maxillary palpomere II, with 6-8 tongue-like apically narrowed setae at apex, a basal tuft of narrower and shorter setae, 3 lacinial teeth, and a tuft of long fine setae at base of lacinia; maxillary palpomeres similar in length, I and II with 2 mesal long lateral setae. Labium with prementum slightly longer than wide, with external surface sculptured. Antennae light brown; antennal scape extending to posterior margin of eye; funicular antennomere I 1.3x longer than II; antennal club 0.8x length of funicle, 3x longer than wide. Pronotum (Fig. 11A) subquadrate, slightly wider than long, greatest width at apical third; dorsal surface shallowly puncturate, each puncture with a curved, spatulate, brown seta; posterior margin slightly bisinuate, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline 1.4x length of ventral outline; scutellum subcircular, covered with scales. Mesosternum (Fig. 11D)

0.8x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior fourth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.8x length of prosternum. Metendosternite with furcal arms 1.5x longer than stalk, positioned at nearly 120° in relation to horizontal axis; ventral margin of stalk 2.7x its dorsal width. Legs with profemora 1.2x length of pronotum; tibiae with fine, long setae along ventral margin; claws subparallel. Elytra in dorsal view (Fig. 11A) 1.8x their greatest width which is 1.4x wider than pronotum; anterior margins slightly sinuate; humeral region 1.5x width of posterior margin of pronotum; apex roundly truncate; in lateral view (Fig. 11C) with dorsal outline subplane to slightly convex; posterior declivity distinct, rounded; striae IX and X completely separated along their entire length; intervals completely covered with oval scales forming a pattern of alternating darker and lighter areas (each with ± 20 scales) in mid region; interval X slightly produced at second sixth; with recurvate, spatulate, brown setae. Wings 1.8x length of elytra, 3.5x longer than wide; costal margin slightly emarginate along basal half; apex rounded, slightly narrower than base; cubital margin slightly rounded; alar venation well developed, 3A intersecting with 2A; 4A as a dark though not sclerotized stripe; anal area with margin slightly emarginate. Venter (Fig. 11D) with long, erect, setiform scales, apically truncate; ♂: IV 1.5x longer than V and VI jointly, 1.1x length of VII, VII with anterior margin 2x wider than its length, posterior margin widely rounded; ♀: IV 1.8x longer than V and VI jointly, 1.7x length of VII, VII with anterior margin 2.5x wider than its length, posterior margin slightly narrowed mesally.

Terminalia. Male with tergum VII 2.1x wider than its mesal length, mesal area 1.5x wider than a strigulate stripe, with scarce setae; anterior margin with mesal area roundly projected, posterior margin emarginate. Tergum VIII 1.7x wider than its mesal length; anterior margin slightly emarginate; surface with an anteapical, concave, rounded fold; posterior margin widely rounded. Sternum VIII with spiculum relictum forming a forked process with base 3x longer than wide and as long as each arm, arms darker for the most part. Spiculum gastrale with apodeme 1.1x longer than aedeagus, each furcal arm sclerotized, subtriangular to oval, with parallel inner margins, corners rounded. Tegmen with tegminal apodeme 0.7x length of aedeagus; tegminal plate posteriorly slightly projected as a central triangle, roundly pointed. Aedeagus in dorsal view (Fig. 11E) 4.2x longer than its greatest width, slightly narrowed basad of midpoint; apex set off, mesally widely projected, apically roundly truncate, with a dark margin continuously and broadly

rounded; mesal region of apex with longitudinal sculptured stripes; apex of lateral margins roundly angulated. Endophallus with a pair of lateral, longitudinal, opposed plates positioned near apex; with an elongate, rhomboidal, median sclerite, positioned apicad of midpoint of aedeagus; with a pair of dark opposed, sickle-shaped sclerites positioned basad of midpoint, between these with a pair of lighter, smaller sclerites; and with 2 lateral rows of 3-6 stepwise alternating triangular teeth. Aedeagus in lateral view (Fig. 11F) 10x longer than its greatest width. Aedeagal apodemes 0.8x length of aedeagus.

Female with tergum VII 1.3x wider than its mesal length, posterior margin rounded. Tergum VIII nearly trapezoidal, 1.4x wider than long. Sternum VIII with semicircular lamina, occupying posterior one fifth. Coxites + styli nearly as long as lamina of sternum VIII, stylus 2.6x longer than its greatest width, with 3-4 apical, long setae. Genital chamber 0.8x length of sternum VIII. Spermatheca (Fig. 11G) 1.5x longer than wide, Y-shaped; cornu slightly shorter than greatest width of spermatheca; ramus apically truncate; collum apically narrowed; surface striate at flexion point of cornu and collum, scale-like at external apex of collum.

Variation. The examined specimens vary mainly in color pattern, often having three unaligned dark spots at or apicad of midpoint of elytra on intervals III, V and VII.

Material examined. "DOM. REP., Independencia, Postrer Rio, Hwy 48, 8-29-1997, C. W. O'Brien" (CWOB: 4 ♂); "DOM. REP., Independencia, 8 Km W. Duverge, 8-29-1997, P. W. Kovarik" (CWOB: 1 ♂); "D. R., Independencia, Lake Enriquillo National Park, La Azufrada, 4 km east of La Descubierta; -20 m, N 18°33'45.9" W 71°41'53.1" Jun 11/2008 (RD 11-1), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM: 3 ♂, 2 ♀); "REPUBLICA DOMINICANA, Bar., 6 Km NW. Fundación, 1 September 1983, W. E. Clark" (CWOB: 8 ♂, 6 ♀); "REPUBLICA DOMINICANA, Barahona, 11 Km SW. Paraiso, 4 September 1983, W. E. Clark" (CWOB: 2 ♂, 1 ♀); "DOM. REP., S. R., 9 Km E. Stgo. Rodriguez, May 28, 1978, C. W. & L. B. O'Brien & Marshall" (CWOB: 35 ♂, including 1 dissected, 22 ♀, including 1 dissected); "DOM. REP., S. R., 12 Km E. Stgo. Rodriguez, May 28, 1978, C. W. & L. B. O'Brien & Marshall" (CWOB: 10 ♂, including 1 dissected, 8 ♀); "DOM. REP., S. R., 14 Km E. Stgo. Rodriguez, May 28, 1978, C. W. & L. B. O'Brien & Marshall" (CWOB: 7 ♂, 4 ♀); "DOM. REP., Stgo., 6 Km NE. Jose de Bisoño, May 28, 1978, C. W. & L. B. O'Brien & Marshall" (CWOB: 30 ♂, 21 ♀); "DOMINICAN REPUBLIC, Monte Cristi Prov., 5.3 Km N Villa Elisa, 26 May 1992, R. Turnbow" (CMNC: 1 ♀; RHTC: 1♂, 1♀); "DOMINICAN REPUBLIC, Monte Cristi, 4.8 Km N Villa Elisa, mv + bl, 31 May 1994, R. Turnbow" (RHTC: 1♀); "DOMINICAN REPUBLIC, Monte Cristi, 5 Km N Villa Elisa, 31 May 1994, R. Turnbow" (RHTC: 1♂, 2♀); "DOMINICAN REPUBLIC, Monte Cristi, 4.8 Km N Villa Elisa, 2 June 1994, R. Turnbow" (RHTC: 1♂); "DOMINICAN REPUBLIC, Monte Cristi, 5 Km N Villa Elisa, 3 June 1994, R. Turnbow" (RHTC: 1♂); "DOM. REP., S. J., 28 Km SE. San Juan, August 6 1979, C. W. O'Brien" (CWOB: 9 ♂, incl. 1 dissected, 6 ♀, including

1 dissected); "DOM. REP., S. J., 16 Km SE. San Juan, August 8 1979, C. W. O'Brien" (CWOB: 3 ♂, 3 ♀); "DOM. REP., S. J., 28 Km SE. San Juan, August 8 1979, C. W. O'Brien" (CWOB: 3 ♂, including 1 dissected, 3 ♀); "DOM. REP., Pto. Plata, 6 Km W. Puerto Plata, V-28-1978, C. W. & L. B. O'Brien & Marshall" (CWOB: 1 ♀); "DOM. REP., Azua, 20 Km E. Azua, August 6 1979, G. B. Marshall" (CWOB: 9 ♂, 10 ♀); "DOM. REP., Azua, 20 Km E. Azua, August 6 1979, L. B. O'Brien" (CWOB: 1 ♀); "DOMINICAN REP., Bani, 4 Nov 1973, J. & S. Klapperich" (CWOB: 2 ♀); "DOMINICAN REP., Bani, 2-III-1974, J. & S. Klapperich" (CWOB: 1 ♂); "D. R., Ázua, El Número, Rd. Baní to Ázua, Km 21, dry forest (middle of trail), 190 m, N 18°22'8.6", W 70°30'41.8"/ Jun 07 2008, (RD 7-2), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro, G. de los Santos" (UPRM: 10 ♂, including 1 dissected; 4 ♀, including 1 dissected); "Faro de Cabo Rojo, P. R., IV-20-1929/ Coll: S. T. Danforth" (UPRM: 2 ♀); "Faro de Cabo Rojo, P. R., 22 Aug 1936, Coll: J. A. Ramos" (UPRM: 1 ♂); "Faro de Cabo Rojo, P. R., June-12-1943, Coll: J. A. Ramos" (UPRM: 1 ♂); "PUERTO RICO, Cabo Rojo, light house, 4-I-1988, N. Virkki" (CWOB: 4 ♂); "PUERTO RICO, Cabo Rojo, Faro de Cabo Rojo, 140 m, N 17°56'3", W 67°11'30", Beating plants, Dec 9-2008, Leg. J. Girón, A. Mazo" (UPRM: 7 ♂, 4 ♀); "PUERTO RICO, Cabo Rojo, Faro de Cabo Rojo, 140 m, N 17°56'3", W 67°11'30", Beating plants, Dec 9-2008, Leg. J. Girón, A. Mazo" (UPRM: 7 ♂, 4 ♀); "Mayaguez, P. R., I-1936, Coll: J. A. Ramos" (UPRM: 1 ♂); "Puerto Rico (USA), Bosque Estatal Susúa, nr. Quebrada Peces, 180 m, N 18°03.99', W 66°54.50'/ on vegetation at night, leg. N. Franz, J. Girón & C. Castellanos, IX-29-2007" (UPRM: 6 ♂, 4 ♀); "Puerto Rico, Lajas, Llanos, Laguna Cartagena, National Wildlife Refuge/ Feb 03-2008, Leg. J. Cardona, N. Fanz, J. Girón, A. Mazo (UPRM: 20 ♂, 16 ♀); "Puerto Rico, La Parguera, 18-VI-1969, W. C. Gagné" (CWOB: 1 ♀); "La Parguera, P. R., July 28, 1969, H. & A. Howden" (CMNC: 28 ♂, 31 ♀; FSCA: 2 ♂, 1 ♀); "Puerto Rico (USA), Lajas, La Parguera, Rte. 324 Km 6.3, 25 m, N 17°58.50', W 66°59.15'/ attracted to Hg/UV lights, leg. N. Franz & C. Molini, I-01-2007" (UPRM: 5 ♂, 7 ♀); "Lajas, P. R., 4 Sept 1948, Coll: Doittreau" (UPRM: 1 ♀); "Yauco, P. R., XI-1934, Coll: V. Biaggi" (UPRM: 1 ♂, 1 ♀); "Santa Rita, P. R., June 1914, E. G. Smyth, coll. Ac. No. -1" (CWOB: 2 ♂); "Insular Forest Guanica, P. R., July- 193-, Coll: F. Mora" (UPRM: 1 ♂); "Guánica Insular Forest, P. R., Nov 6, 1953/ J. Maldonado Capriles Coll." (UPRM: 1 ♀); "PUERTO RICO, Guanica Forest, II-20-1969, night, L. & C. W. O'Brien" (UPRM: 1 ♂); "Guanica Forest, P. R., VII 25-26, 1969, H. & A. Howden" (CMNC: 14 ♂, 19 ♀; FSCA: 1 ♂); "Guanica Forest, P. R., VII 27, 1969, H. & A. Howden" (CMNC: 24 ♂, 20 ♀); "Guanica Forest, P. R., VII 29, 1969, H. & A. Howden" (CMNC: 4 ♂, 5 ♀); "PUERTO RICO, Guanica For., Hwy 333 nr Playa Tamarindo, 27-V-1986, E. G. Riley & D. A. Rider" (CWOB: 1 ♂, 1 ♀); "PUERTO RICO, Guanica Forest, Hwy 334 at Ranger Sta., 28-V-1986, E. G. Riley & D. A. Rider" (CWOB: 6 ♂, 3 ♀); "USA, Puerto Rico, Bosque Seco de Guánica, Sendero Ballena, 30 m, N 17°57'31", W 66°51'43"/ Beating at night, leg. N. M. Franz & N. J. Martinez, V-23-2006" (UPRM: 11 ♂, including 2 dissected; 11 ♀); "Puerto Rico (USA), Bosque Seco Guánica, N 17°57.31', W 66°51.43'/ 30 m, at UV light trap, leg. N. Franz, V-23-2006" (UPRM: 4 ♂, 1 ♀); "USA, Puerto Rico, Bosque Seco Guánica, Sendero Ballena, 65 m, N 17°57'45", W 66°51'45"/ Beating plants, leg. N. Franz & J. Metcalf, VII-20-2006" (UPRM: 29 ♂, including 4 dissected, 16 ♀); "USA, Puerto Rico, Bosque Seco Guánica, Sendero Ballena, 40 m, N 17°57'37", W 66°51'44"/ Night collecting (UV light), leg. Castellanos, Franz, Velázquez, Tamaris, Yussef, IX-22-2006" (UPRM: 29 ♂, including 1 dissected, 16 ♀); "Puerto Rico (USA), Bosque Seco Guánica, Sendero Ballenas, 45 m, N 17°57.64', W 66°51.74'/ beating plants at night, leg. J. López & N. Franz, VI-18-2007" (UPRM: 11 ♂, 19 ♀); "USA, Puerto Rico, Bosque Seco Guánica, Sendero Ballenas, 80 m, N 17°57'72", W 66°51'86"/ beating plants at night, leg. N. Franz & J. Girón, IX-01-2007" (UPRM: 2 ♂, dissected, 6 ♀); "PUERTO RICO, Rte. 333, near Pta. Vaquero, 20-VI-1969/ Pygmy Thorn

Scrub Forest, W. C. Gagné" (CWOB: 1 ♂, 2 ♀); "PUERTO RICO, Peñuelas Mountains, 9-I-1986, N. Virkki" (CWOB: 3 ♀); "PUERTO RICO, Playa de Ponce, 16-III-1987, N. Virkki" (CWOB: 1 ♂, 2 ♀); "Caja de Muertos, P. R., March 22-23, 1935, Coll: V. Biaggi Jr." (UPRM: 1 ♀); "P. R. Acc No. 49-89, Juana Diaz, P. R., Fortune Agr. Exp. Sta., Ex: Pepper plant, June 9 1989, H Ruiz" (CWOB: 1 ♂, 1 ♀); "Vieques, P. R., 27-Dec-1935, Coll: S. T. Danforth/ in stomach of *Elaenia martinica riisi*" (UPRM: 1 ♂); "Puerto Rico (USA), Vieques, Cerro/ Playa Caracas, 5 m, beating/sweeping plants/ N 18°06.67', W 65°24.77', leg. N. Franz & J. Girón, XI-17-2007" (UPRM: 2 ♀); "North Coast, St. Croix, V. I., June 1942, O. García" (UPRM: 1 ♀).

Etymology. *Apodrosus argentatus* was surely named in reference to the silvery scales that cover most of the integument (see Wolcott 1924).

Natural history. *Apodrosus argentatus* has the widest distributional range among all species of the genus, occurring primarily in lower-elevation (-13 m to 280 m) and dry forest habitats in the northern and southwestern regions of the Dominican Republic (**new record**), southwestern Puerto Rico, Vieques Island (**new record**), and St. Croix (**new record**) (Fig. 20B). Turnbow and Thomas (2008: 30) have reported this species from Andros Island (Forfar Field Station, Maidenhair Coppice, and Stafford Creek), however these specimens correspond to *A. empherefasciatus*; therefore the previous (2008) record must be now be considered an error (**emended record, misidentification**). Conversely, previous report of *A. argentatus* occurring on Mona Island (e.g. Wolcott 1941, 1948; Ramos 1946; Franz et al. 2009) must now be regarded as erroneous (**emended record, misidentification**), since the species in question is the closely related *A. mammuthus*. The adults of *A. argentatus* have been reported feeding on *Dalbergia ecastophyllum* Taub. (Fabaceae) and *Guaicum sanctum* Linnaeus (Zygophyllaceae) (Wolcott 1924, 1948), although the actual host range is assumed to be much wider (pers. obs.). Martorell (1976) lists the following additional putative host plant species of *A. argentatus*: *Cassia polyphylla* Jacq. (Fabaceae), *Colubrina elliptica* (Sw.) Briz. & W.L. Stern (Rhamnaceae), *Conocarpus erectus* Linnaeus (Combretaceae), *Gossypium barbadense* Linnaeus (Malvaceae), *Guaiacum officinale* Linnaeus (Zygophyllaceae), and *Tamarindus indica* Linnaeus (Fabaceae).

***Apodrosus mammuthus* sp.n.**

Diagnosis. *Apodrosus mammuthus* is characterized by the combination of its large size (at 6 mm it is the largest species in the genus), a long and escudate body form which is 2.8x longer than its greatest width in dorsal view which is at the anterior third of the elytra, a visible nasal

plate, only slightly projected eyes, and a vestiture composed of white iridescent (reddish) scales and with curved, decumbent white setae. This species may be differentiated from the otherwise very similar *A. argentatus* by its more elongate head, and the aedeagus with a pair of denticulate pads on the endophallus, positioned apicad of midpoint, and a thickened apical margin.

Description. Body length 6 mm; in dorsal view (Fig. 12A) 2.8x longer than greatest width which is at basal third of elytra, shape escutate; dorsal outline in lateral view (Fig. 12C) slightly convex. Integument surface smooth; vestiture composed of white iridescent (reddish) scales, with curved, decumbent setae.

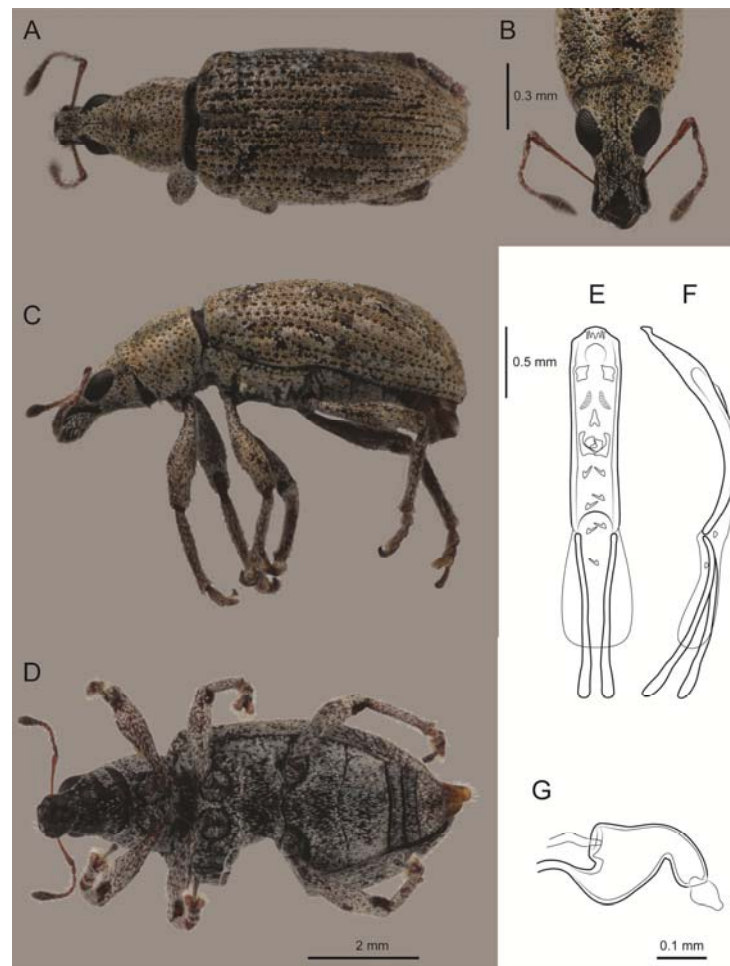


Figure 12. *Apodrosus mammothus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Eyes (Fig. 12B) 1.7x longer than wide, slightly projected; 0.5x width and 0.6x length of head in lateral view, separated from anterior margin of prothorax by 0.5x greatest diameter of eye; line of

anterior margin of eyes flat; shortest distance between eyes (in dorsal view) 0.2x greatest width of pronotum; median furrow (Fig. 12B) linear, deep, extending from anterior margin of eyes to their posterior margin. Rostrum (Fig. 12B) 1.1x longer than wide; epistome apically with 2-4 setae situated on each side, extending posteriorly as a longitudinal narrow keel nearly to base of rostrum; nasal plate visible (though poorly defined), flat. Length of rostrum in lateral view 1.3x its basal width; antennal insertion apicad of midpoint of rostrum; scrobe curved downwards by 45°, directed posteriorly at end, extending to midpoint of eye, separated from it by width of scrobe. Mandibles with 2 lateral setae. Antennae light brown; antennal scape extending to posterior margin of eye; funicular antennomere I 1.1x longer than II; antennal club 0.5x length of funicle, 2.5x longer than wide. Pronotum (Fig. 12A) subquadrate, slightly wider than long, greatest width at midpoint; dorsal surface shallowly puncturate, each puncture with a curved, white seta; posterior margin bisinuate, 1.4x wider than anterior margin; prothorax in lateral view with dorsal outline slightly convex, 1.5x length of ventral outline; scutellum suboval, covered with scales. Mesosternum (Fig. 12D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior fourth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Legs with profemora 1.1x length of pronotum; claws divergent. Elytra in dorsal view (Fig. 12A) 1.7x their greatest width which is 1.6x wider than pronotum; anterior margins sinuate; humeral region 1.5x width of posterior margin of pronotum; apex rounded; in lateral view (Fig. 12C) with dorsal outline convex; posterior declivity gradually rounded (not angulate); striae IX and X completely separated along their entire length; intervals covered with white, gray and light brown scales forming a spot pattern on anterior and apicad of midpoint areas of elytra; interval X produced apicad of basal sixth; with curved, decumbent setae. Venter (Fig. 12D) with gray scales denser on sides and scattered setae; ♂: IV 1.6x longer than V and VI jointly, slightly longer than VII, VII with anterior margin 1.9x wider than its length, posterior margin widely rounded; ♀: IV 1.8x longer than V and VI jointly, 1.6x length of VII, VII with anterior margin 2.2x wider than its length, posterior margin rounded.

Terminalia. Male with tergum VII 1.5x wider than its mesal length, mesal area 1.4x wider than a strigulate stripe, with scarce setae; anterior margin with mesal area roundly projected, posterior margin emarginate. Tergum VIII 1.4x wider than its mesal length; anterior margin slightly emarginate with a mesal deep and narrow emargination; surface with an anteapical,

concave, rounded fold; posterior margin widely rounded. Sternum VIII with spiculum relictum forming a forked process with base 1.5x longer than wide and as long as each arm, arms darker for the most part. Spiculum gastrale with apodeme 1.1x longer than aedeagus, each furcal arm sclerotized, sub-oval, with parallel inner margins. Tegmen with tegminal apodeme 0.6x length of aedeagus; tegminal plate posteriorly widely and roundly slightly projected. Aedeagus in dorsal view (Fig. 12E) 3.5x longer than its greatest width, slightly narrowed basad of midpoint, apically slightly widened; apex roundly triangular, with narrow round lateral corners, mesally thickened; mesal region of apex with longitudinal stripes. Endophallus with a pair of lateral, equilateral, opposed plates positioned near apex, a pair of denticulate pads positioned apicad of midpoint, and an elongate, rhomboidal, median sclerite, positioned at midpoint of aedeagus; with a pair of dark opposed, sickle-shaped sclerites positioned basad of midpoint, between these with a pair of smaller sclerites and with 2 lateral rows of 5-6 stepwise alternating triangular teeth. Aedeagus in lateral view (Fig. 12F) 9.2x longer than its greatest width. Aedeagal apodemes 0.8x length of aedeagus.

Female with tergum VII as wide as its mesal length, posterior margin rounded. Tergum VIII nearly trapezoidal, 1.6x wider than long. Sternum VIII with semi-oval lamina, occupying posterior one fifth. Coxites + styli slightly shorter than lamina of sternum VIII, stylus 3.2x longer than its greatest width, with 3-4 apical, long setae. Genital chamber 0.6x length of sternum VIII. Spermatheca (Fig. 12G) 1.5x longer than wide, Y-shaped; cornu slightly shorter than greatest width of spermatheca; ramus apically truncate; collum apically narrowed; surface not particularly sculptured.

Variation. The examined specimens vary little beyond slight differences in scale coverage, with some abraded specimens appearing darker. There are only minimal inter-population differences in aedeagal structure.

Material examined. Holotype ♀ "PUERTO RICO, Mona Island, Bajura Los Cerezos, 45 m, N 18°5'18", W 67°54'4", May 22 2008, Leg. N. Franz" (UPRM); paratypes, same label information as holotype (CWOB: 1 ♂, 1 ♀; MEBT: 1 ♂, 1 ♀; UPRM: 3 ♂, 1 dissected ♀); "TURKS & CAICOS ISLS., Grand Turk; North Wells, 21°29'50"N, 71°08'20"W, 7 February 2001/ At black light in mixed scrub near salt pond; Coll. W. E. Steiner & J. M. Swearingen" (NMNH: 1 dissected ♂); "Mona Id., P. R., Coll: Martorell/ April 1/ 40 Acc# 283-40/ on *Colubrina colubrina*" (UPRM: 1 ♂); "PUERTO RICO, Mona Island, near Playa Pájaros, 35 m, at night, N 18°3'52", W 67°52'12", May 18-2008, Leg. N. Franz" (UPRM: 2 ♂, including 1

dissected, 1 dissected ♀); "PUERTO RICO, Mona Island, Playa Sardinera, 0 m, N 18°5'19", W 67°56'17", May 20-24 2008, Leg. N. Franz" (UPRM: 4 ♂, 1 ♀); "PUERTO RICO, Mona Island, Sendero Capitán, 40 m, at night, incl. Hg/UV lights, N 18°5'16", W 67°56'16", May 20 2008, Leg. N. Franz" (UPRM: 6 ♂, including 1 dissected, 3 ♀, including 1 dissected).

Etymology. Named after giant mammoths (genus *Mammuthus*) since it is the largest species presently assigned to the genus. The species epithet is to be treated as a noun in apposition.

Natural history. *Apodrosus mammuthus* occurs in coastal shrubby habitats (0-55 m) on Grand Turk of the Turks and Caicos Islands as well as on Mona Island, Puerto Rico (previously misidentified as *A. argentatus*; see above) (Fig. 19B). On Mona Island the adults have been taken on *Colubrina colubrina* Millsp. (Rhamnaceae).

***Apodrosus viridium* sp.n.**

Diagnosis. *Apodrosus viridium* is characterized by the combination of a relatively small size (2.5-3.5 mm), a reduced and linear median furrow on the head, a shiny green uniform scale coverage (excepting the legs which have pink scales), and straight, erect, yellowish setae on the elytra. This species may be differentiated from *A. artus* by its uniformly green colored dorsal vestiture. It furthermore differs from the similarly colored *A. stenoculus* by the presence of a linear median furrow on the head, long erect elytral striae, and widely oval (as opposed to narrow, linear) eyes in lateral view.

Description. Body length 2.5-3.5 mm; in dorsal view (Fig. 13A) 3.2 x longer than greatest width which corresponds to humeri, shape subrectangular; dorsal outline in lateral view subplane. Integument surface smooth; vestiture composed of green and pink, iridescent (reddish) scales, with straight, erect, yellowish setae. Eyes (Fig. 13B) 1.7x longer than wide, projected, 0.4x width and 0.8x length of head in lateral view, separated from anterior margin of prothorax by 0.3x greatest diameter of eye; line of anterior margin of eyes impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 13B) linear, apically

shallow, basally deep, extending from basal third of rostrum and surpassing posterior margin of eyes though not reaching anterior margin of pronotum.

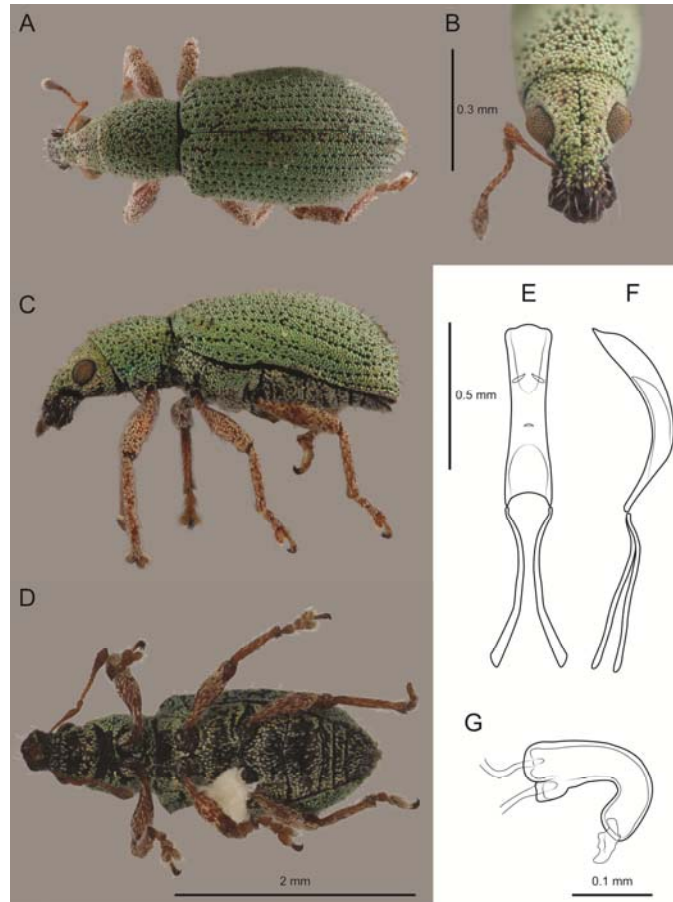


Figure 13. *Apodrosus viridium*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Rostrum (Fig. 13B) slightly longer than wide, sides slightly constricted at mid length; epistome apically with 3-5 setae situated on each side, extending posteriorly as a longitudinal narrow keel to almost midpoint of rostrum. Length of rostrum in lateral view 1.6x its basal width; antennal insertion approximately at mid length of rostrum; scrobe curved downwards by 45°, directed ventrally at end, extending to anterior fourth of eye, separated from it by width of scrobe. Mandibles with 2 lateral setae, pharyngeal process 1.4x longer than mandible. Maxillae with cardo 3.3x longer than its greatest width; stipes with 1 long lateral seta; galeo-lacinial complex mesally nearly extending to apex of maxillary palpomere I, with an apical mid-sized setae, followed by 6-7 tongue-like apically rounded, mid-sized setae, 5 lacinial teeth, and a tuft of long fine setae at base of lacinia; maxillary palpomere III slightly longer than I; III longer than II; I

and II each with a mesolateral seta. Labium with prementum subquadrate, slightly longer than wide, lateral margins rounded, anterior margin slightly projected in mesal region; in lateral profile with ventral surface slightly depressed at base, then continuously upwardly curved to apex, not strongly sculptured. Antennae yellowish brown; antennal scape extending beyond posterior margin of eye though not reaching anterior margin of prothorax; funicular antennomere I 1.6x longer than II; antennal club 0.6x length of funicle, nearly 2.3x longer than wide. Pronotum (Fig. 13A) subquadrate, slightly wider than long, with greatest width near midpoint; dorsal surface shallowly puncturate, each puncture with a short, erect, yellowish seta; posterior margin nearly straight, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline slightly convex, 1.4x length of ventral outline; scutellum subcircular, with scarce scales. Mesosternum (Fig. 13D) 0.8x length of prosternum. Metasternum with lateral portions mesally slightly produced (in lateral profile slightly elevated at midpoint); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.6x length of prosternum. Metendosternite with furcal arms 1.2x longer than stalk, positioned at 120° in relation to horizontal axis; ventral margin of stalk 3.2x its dorsal width. Legs covered with pink iridescent scales; profemora slightly longer than pronotum; tibiae with long spiniform setae along ventral margin; claws subparallel, with inner margins clearly divergent. Elytra in dorsal view (Fig. 13A) 1.9 x their greatest width which is 1.4x wider than pronotum; anterior margins sinuate; humeral region 1.4x wider than posterior margin of pronotum; lateral margins parallel; apex roundly narrowed; in lateral view (Fig. 13C) with dorsal outline subplane; posterior declivity distinct, rounded; striae IX and X fused along their second third; intervals completely covered with green scales; interval X not produced; with straight, erect setae. Wings nearly 2x length of elytra, 3.2x longer than wide; costal margin emarginate along basal half; apex rounded; radial and medial margins slightly and uniformly rounded; Mr short, af weakly defined; cubital margin slightly rounded; 3A almost reaching basal third of length towards margin of wing, not intersecting with 2A. Venter (Fig. 13D) covered with scales, denser on sides; VII with anterior margin 1.9x wider than its length; ♂: IV 1.3x longer than V and VI jointly, as long as VII, posterior margin of VII rounded; ♀: IV 1.9x longer than V and VI jointly, 1.6x longer than VII, posterior margin of VII mesally narrowed.

Terminalia. Male with tergum VII slightly longer than wide, mesal area with simple setae extending from basal fourth to apex; anterior margin rounded, mesally slightly narrowed, posterior margin mesally straight, laterally rounded. Tergum VIII transverse, 1.3x wider than its mesal length, anterior margin straight, mesally strongly emarginate; posterior margin nearly

straight in mid region, laterally widely rounded. Sternum VIII with posterior margin emarginate, with long lateral setae; spiculum relictum present as a forked process with base 1.6x wider than arms which are 4x longer than base. Spiculum gastrale with apodeme 1.3x longer than aedeagus, furcal arms parallelogram shaped, lightly sclerotized. Tegmen with tegminal apodeme nearly 0.6x length of aedeagus, tegminal plate simple. Aedeagus in dorsal view (Fig. 13E) 4x longer than its greatest width, mesally narrowed; apex rounded, mesally roundly set off. Endophallus with a pair of boomerang-like sclerites positioned nearly at apical third, with a small, horizontally oriented, slightly downwardly curved sclerite basad of midpoint, and with a basal patch of small, light, tooth-like sclerotizations and another set of darker, small sclerotizations basad of midpoint of aedeagal apodemes. Aedeagus in lateral view (Fig. 13F) 7x longer than its greatest width. Aedeagal apodemes slightly shorter than aedeagus.

Female with tergum VII slightly wider than long; posterior margin mesally emarginate. Tergum VIII subtriangular, 1.5x wider than long. Sternum VIII with lamina subtriangular, occupying posterior one fourth. Coxites + styli slightly longer than lamina of sternum VIII, stylus 3x longer than its greatest width, with 2-3 apical setae. Genital chamber 0.6x length of sternum VIII. Spermatheca (Fig. 13G) 1.2x longer than wide, J-shaped; cornu as long as greatest width of spermatheca; ramus apically truncate, laterally rounded; collum apically irregular; surface of collum and ramus striate.

Variation. The examined specimens showed only very slight variations on size and tone of green scales.

Material examined. Holotype ♀ "D. R., Santiago, Cordillera Septentrional, 4.0 Km N of Jacagua on Rd. to Pico Diego de Ocampo, 460 m; N 19°32'40.4", W 70°42'45.9"/ Jun 15-2008 (RD 16-3), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro"; paratypes "DOMINICAN REP., Bani, 4 Nov. 1973, J. & S. Klapperich" (CWOB: 1 ♀); "DOM. REP., S. R., 9 Km E. Stgo. Rodriguez, May 28, 1978, C.W. & L. B. O'Brien & Marshall" (CWOB: 4 ♂, 1 ♀); "DOM. REP., S. R., 12 Km E. Stgo. Rodriguez, May 28, 1978, C.W. & L. B. O'Brien & Marshall" (CWOB: 4 ♂, 4 ♀); "DOM. REP., Peravia, 13 Km N.W. Bani, August 6, 1979, G. B. Marshall" (CWOB: 13 ♂, including 1 dissected; 15 ♀, including 1 dissected); "DOM. REP., S. R., 14 Km E. Stgo. Rodriguez, May 27, 1978, C.W. & L. B. O'Brien & Marshall" (CWOB: 13 ♂, 1 ♀).

Etymology. Noun in apposition. Named for the green iridescent scale coloration and relatively small body size, with *viridis* meaning "green", combined with the diminutive suffix *-ium* (Brown 1956).

Natural history. *Apodrosus viridium* occurs at relatively low elevations (150-255 m) in the northwestern and central southern regions of the Dominican Republic (Fig. 19B). The host plant associations remain unknown.

***Apodrosus stenoculus* sp.n.**

Diagnosis. *Apodrosus stenoculus* is characterized by the combination of having a rostrum without a mesal constriction, an apically bifurcated median furrow on the head, linearly narrowed eyes in lateral view, and a uniform scale coverage which is green throughout yet with white to pinkish scales on legs and with recurvate, decumbent, light brown setae. This species may be differentiated from *A. viridium* by having an apically bifurcated (as opposed to linear) median furrow on the head and narrow (as opposed to widely oval) eyes in lateral view while lacking long erect elytral setae. It furthermore differs from *A. quisqueyanus* by virtue of the general uniformly colored scale coverage and a mesally non-constricted rostrum.

Description. Body length 3.5-5 mm; in dorsal view (Fig. 14A) 2.6x longer than greatest width which is at mid length of elytra, shape subrectangular; dorsal outline in lateral view subplane. Integument surface smooth; vestiture uniformly composed of green and white iridescent (reddish) scales, with recurvate, decumbent, light brown setae. Eyes in dorsal view (Fig. 14B), 1.9-times longer than wide, projected; in lateral view (Fig. 14C), linearly narrow, 0.3-times width and 0.7-times length of head, separated from anterior margin of prothorax by 0.6x greatest diameter of eye; line of anterior margin of eyes flat; in dorsal view, shortest distance between eyes 0.8x greatest width of pronotum; median furrow (Fig. 14B) apically bifurcated, shallow, extending between anterior and posterior margin of eyes. Rostrum (Fig. 14B) nearly as long as wide, lateral margins slightly concave at mid length; epistome apically with 3-5 setae situated on each side, extending posteriorly as a longitudinal narrow keel almost to base of rostrum. Rostrum in lateral view slightly longer than its basal width; antennal insertion near apical third of rostrum; scrobe curved downwards by 45°, directed ventrally at end, extending to anterior third of eye, separated from it by 2x width of scrobe. Mandibles with 2-3 lateral setae, pharyngeal process as long as mandible. Maxillae with cardo 3x longer than its greatest width;

stipes with 3 long lateral setae; galeo-lacinial complex mesally nearly extending to apex of maxillary palpomere II, apex with scarce mid-sized setae, with 6-7 tongue-like apically rounded setae and a tuft of shorter and apically rounded setae, with 4 lacinial teeth and scarce long and fine setae at base of lacinia; maxillary palpomere I with 1 mesal lateral seta; II with 2 mesal lateral setae. Labium with prementum subquadrate, slightly longer than wide, apically widened, slightly projected at apical mesal region, corners widely rounded; in lateral profile with ventral surface slightly depressed at base, then abruptly roundly produced, continuing upwardly straight to apex, not strongly sculptured.

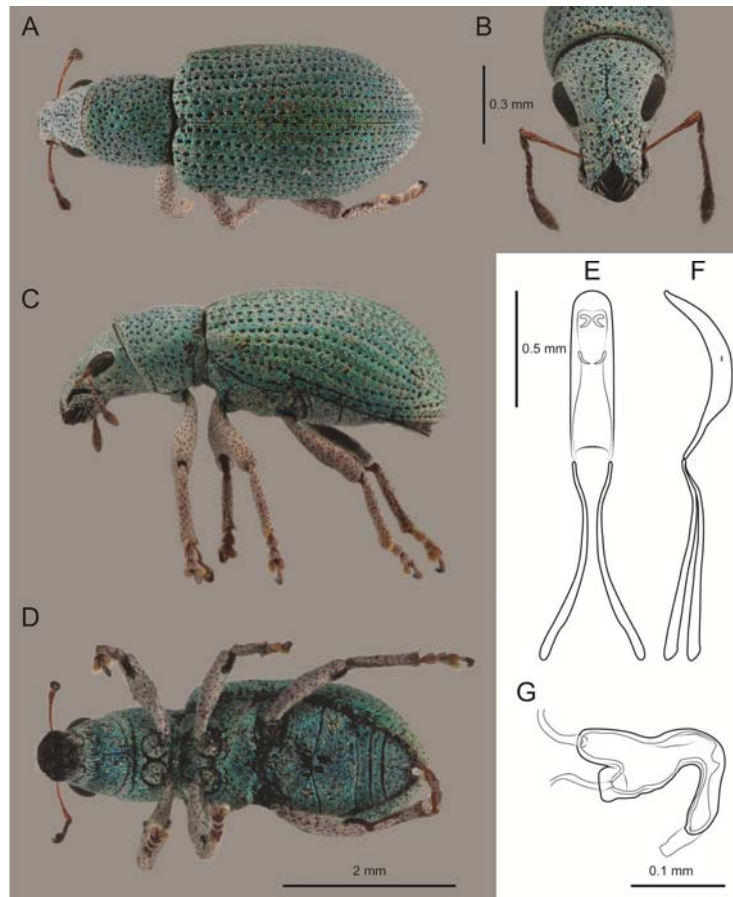


Figure 14. *Apodrosus stenoculus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Antennae reddish brown; antennal scape nearly extending to posterior margin of eye; funicular antennomere I 1.4x longer than II; antennal club 0.6x length of funicle, 2.6x longer than wide. Pronotum (Fig. 14A) subquadrate, slightly wider than long, greatest width at mid length; dorsal surface shallowly puncturate, each puncture with a curved, spatulate brownish seta; posterior

margin bisinuate, 1.1x wider than anterior margin; prothorax in lateral view with dorsal outline 1.5x length of ventral outline; scutellum subcircular, with scales. Mesosternum (Fig. 14D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior fourth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Metendosternite with furcal arms 1.2x longer than stalk, nearly positioned at 110° in relation to horizontal axis; ventral margin of stalk 1.8x its dorsal width. Legs covered with white, iridescent reddish scales; profemora slightly longer than pronotum; claws subparallel. Elytra in dorsal view (Fig. 14A) 1.7x their greatest width which is 1.5x wider than pronotum; anterior margins sinuate; humeral region 1.5x wider than posterior margin of pronotum; lateral margins parallel; apex acutely rounded; in lateral view (Fig. 14C) with dorsal outline subplane; posterior declivity distinct, rounded; striae IX and X fused along their second third; intervals completely covered with green scales; interval X not produced along basal third; with recurvate, spatulate setae. Wings 2.2x length of elytra, 3.2x longer than wide; costal margin emarginate along basal half; apex narrowly rounded; cubital margin slightly rounded; 3A not intersecting with 2A. Venter densely covered with scales; VII with anterior margin 2.1x wider than its length; posterior margin of VII rounded; ♂: IV 1.4x longer than V and VI jointly, 1.2x longer than VII; ♀: IV 2.1x longer than V and VI jointly, 1.6x longer than VII.

Terminalia. Male with tergum VII pentagonal, slightly longer than wide, mesal area with multifid setae on distal fourth; anterior margin subtriangular, mesally narrowly rounded, posterior margin mesally slightly emarginate, laterally rounded. Tergum VIII transverse, 1.5x wider than its mesal length. Sternum VIII without spiculum relictum. Spiculum gastrale with apodeme 1.4x longer than aedeagus, each furcal arm lightly sclerotized, sickle-shaped. Tegmen with tegminal apodeme nearly 0.8x length of aedeagus; tegminal plate mesally posteriorly produced. Aedeagus in dorsal view (Fig. 14E) 4x longer than its greatest width; apex rounded. Endophallus with a pair of opposed, comma-shaped sclerites positioned near apical fourth, and a pair of parentheses-like sclerites apicad of midpoint; without teeth. Aedeagus in lateral view (Fig. 14F) 8.3x longer than its greatest width. Aedeagal apodemes slightly longer than aedeagus.

Female with tergum VII slightly longer than wide, with multifid anteapical and unifid apical setae. Tergum VIII suboval, 1.4x longer than wide. Sternum VIII with semicircular lamina occupying posterior one fifth. Coxites + styli nearly as long as lamina of sternum VIII, stylus 2.4x longer than its greatest width, with 4-5 long apical setae. Genital chamber 0.7x length of

sternum VIII. Spermatheca (Fig. 14G) 1.4x longer than wide, J-shaped; margin between cornu and ramus emarginate; distance between cornu and base of corpus longer than width of cornu; ramus apically rounded; surface of cornu striate.

Variation. The examined specimens vary primarily in size and also somewhat in the tone of the green scale color.

Material examined. Holotype ♀ "D. R., Independencia, Lake Enriquillo National Park, La Azufrada, 4 km east of La Descubierta; -20 m, N 18°33'45.9" W 71°41'53.1"/ Jun 11/2008 (RD 11-1), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM); paratypes, same label information as holotype (AMNH: 5 ♂, 5 ♀; CMNC: 5 ♂, 5 ♀; CWOB: 5 ♂, 5 ♀; MEBT: 5 ♂, 5 ♀; MHND: 5 ♂, 5 ♀; NMNH: 5 ♂, 5 ♀; UPRM: 97 ♂, including 1 dissected, 48 ♀, including 1 dissected); "DOM. REP., Independencia, Postrer Rio, Hwy 48, 8-29-1997, C. W. O'Brien" (CWOB: 1 ♂); "DOM. REP., Independencia, 8 km W. Duverge, 8-29-1997, C. W. O'Brien" (CWOB: 6 ♂, 4 ♀); "DOM. REP., Independencia, ESE Jimaní, La Florida, 18°24' N, 71°44' W, 20 m, moist site, 14 Apr 1993, M. A. Ivie, D. Sikes, W. Lanier" (CMNC: 2 ♂); "D. R., Independencia, Sierra de Neyba, 8.0 Km inwards from Rd. Neyba to La Descubierta, Sección El Guayabal, 280 m, N 18°35'58.6" W 71°38'17.8"/ Jun 10/2008 (RD 10-4), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM: 2 ♂, 2 ♀); "REPUBLICA DOMINICANA, Barahona, Barahona, 1 September 1983, W. E. Clark" (CWOB: 2 ♂, 2 ♀); "REPUBLICA DOMINICANA, Bar., 6 Km N.W. Fundacion, 1 September 1983, W. E. Clark" (CWOB: 14 ♂, 9 ♀); "D. R., Barahona, Rd. 46, Barahona to Duvergé, Km 44.5, dry shrub hábitat, 30m, N 18°13'53.1" W 71°9'5.7"/ Jun 10/2008 (RD 10-1), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM: 1 ♂); "Bani, 65m, 20.2.1971/ Rep. Dominic., J. & S. Klapperich" (CWOB: 1 ♀).

Etymology. Noun in apposition. Named for the narrowed eyes as apparent in lateral view, with *steno* meaning "narrow" and *oculus* meaning "eye" (Brown 1956).

Natural history. *Apodrosus stenoculus* occurs at various lower-elevation sites (-30 m to 280 m) in the southwestern Dominican Republic (Fig. 19B). Most specimens were collected on legume species in open dry habitats along the shore of the hyper-saline Lake Enriquillo.

***Apodrosus quisqueyanus* sp.n.**

Diagnosis. *Apodrosus quisqueyanus* is characterized by the combination of having an apically bifurcated median furrow on the head, a mesally constricted rostrum, and an irregular

scale coloration pattern composed of white and brown, iridescent (yellowish, reddish to greenish) scales with recurvate, decumbent, yellowish setae. This species may be differentiated from of *A. stenoculus* by its more widely oval (as opposed to narrow) eyes in lateral view, a mesally constricted rostrum, and irregularly colored scale coverage.

Description. Body length 3-5.5 mm; in dorsal view (Fig. 15) 2.8x longer than greatest width which is at humeri, shape subrectangular; dorsal outline in lateral view subplane. Integument surface smooth; vestiture uniformly composed of white and brown, iridescent (yellowish, reddish to greenish) scales, with recurvate, decumbent, yellowish setae.

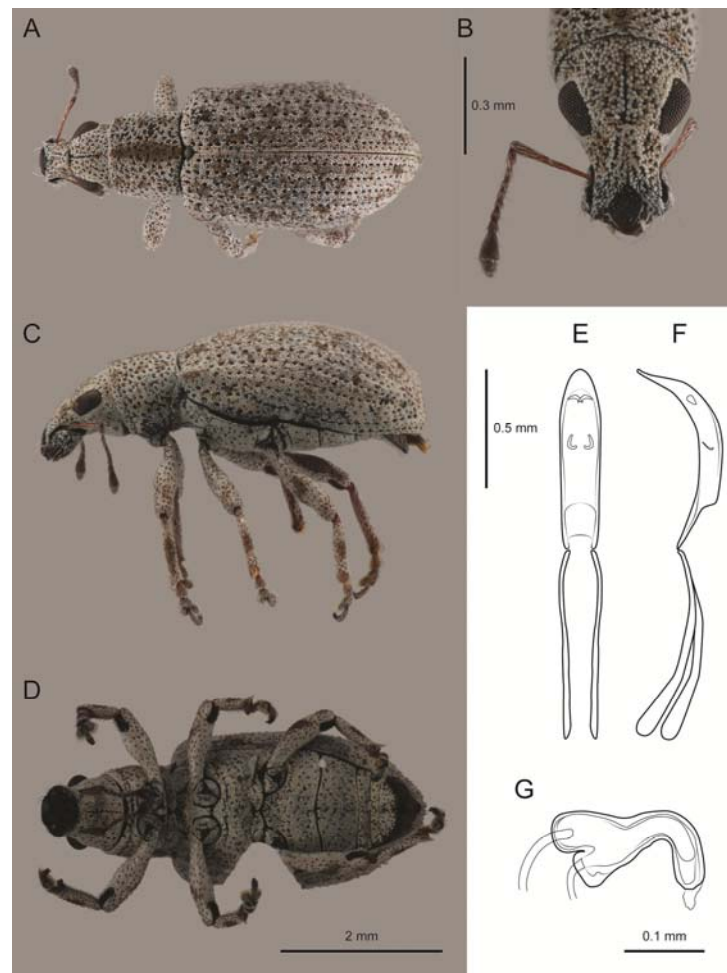


Figure 15. *Apodrosus quisqueyanus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Eyes (Fig. 15B) 1.7x longer than wide, projected, 0.4x width and 0.7x length of head in lateral view, separated from anterior margin of prothorax by 0.5x greatest diameter of eye; line of

anterior margin of eyes impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 15B) apically bifurcated, narrow and shallow, extending from anterior margin of eyes beyond their posterior margin, though not reaching anterior margin of pronotum. Rostrum (Fig. 15B) nearly as long as wide, with lateral margins slightly constricted at basal third; epistome apically with 3-5 setae situated on each side, extending posteriorly as a longitudinal, narrow keel to midpoint of rostrum, nasal plate well defined, concave. Rostrum in lateral view slightly longer than wide; antennal insertion near apical third of rostrum; scrobe curved downwards by 50°, directed ventrally at end, extending to anterior third of eye, separated from it by 3x width of scrobe. Mandibles with 3 lateral setae, pharyngeal process slightly longer than mandible. Maxillae with cardo 3.4x longer than its greatest width; stipes with 4 lateral setae; galeo-lacinial complex mesally extending to apex of maxillary palpomere I, apex slightly acute, with 3-4 apical mid-sized setae, with a tuft of tongue-like apically rounded mid-sized setae, with 4 lacinial teeth and a small tuft of long fine setae at base of lacinia; maxillary palpomere I as long as III, each 1.5x longer than II; I with 1 apicolateral seta; II with 1 mesolateral and 1 anteapical dorsal seta. Labium with prementum subquadrate, slightly longer than wide, lateral margins rounded, apical margin slightly projected in mid region; in lateral profile with ventral surface slightly depressed at base, thereafter roundly projected and upwardly curved towards apex, not strongly sculptured. Antennae reddish brown; antennal scape extending to posterior margin of eye; funicular antennomere I 1.5x longer than II; antennal club 0.5x length of funicle, 2.7x longer than wide. Pronotum (Fig. 15A) subquadrate, slightly wider than long, greatest width at midpoint; dorsal surface shallowly puncturate, each puncture with a curved, brownish seta; posterior margin bisinuate, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline 1.6x length of ventral outline; scutellum subcircular, with scales. Mesosternum (Fig. 15D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly slightly produced (in lateral profile gradually ascending towards posterior fourth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.9x length of prosternum. Metendosternite with furcal arms 1.3x longer than stalk, positioned at nearly 120° in relation to horizontal axis; ventral margin of stalk 1.9x its dorsal width. Legs with profemora 1.2x length of pronotum; claws subparallel, with inner margins divergent. Elytra in dorsal view (Fig. 15A) 1.9x their greatest width which is 1.5x wider than pronotum; anterior margins sinuate; humeral region 1.6x wider than posterior margin of pronotum; lateral margins parallel; apex narrowly rounded; in lateral view (Fig. 15C) with dorsal

outline subplane; posterior declivity distinct, rounded; striae IX and X fused along their second third; intervals completely covered with brown and white to grey scales, sometimes forming irregular spotted patterns (each spot consisting of ± 15 brown scales); interval X slightly produced along second fifth; with recurvate, decumbent setae. Wings 1.9x length of elytra, 3.7x longer than wide; costal margin nearly straight; apex slightly wider than base; 3A not intersecting with 2A. Venter (Fig. 15D) densely covered with scales; VII with median posterior pit interrupting posterior margin, anterior margin 2.4x wider than its length; ♂: IV 1.2 x longer than V and VI jointly, as long as VII, VII with posterior margin rounded; ♀: IV 2x longer than V and VI jointly, 1.7x longer than VII, VII with posterior margin mesally narrowed.

Terminalia. Male with tergum VII subpentagonal, nearly as long as wide; anterior margin subtriangular, mesally narrowly rounded, posterior margin mesally emarginate, laterally rounded. Tergum VIII transverse, slightly wider than its mesal length; anterior margin rounded; posterior margin straight in mid region, laterally widely rounded. Sternum VIII with 3-4 apical setae; spiculum relictum forming a forked process with base slightly longer than wide, arms 1.5x length of base. Spiculum gastrale with apodeme 1.5x longer than aedeagus, each furcal arm suboval. Tegmen with tegminal apodeme nearly 0.7x length of aedeagus, tegminal plate slightly projected posteriorly. Aedeagus in dorsal view (Fig. 15E) 4x longer than its greatest width, lateral margins apically slightly divergent; apex narrowly rounded. Endophallus with a pair of opposed lightly sclerotized areas positioned near apex, and a pair of J-shaped sclerites apicad of midpoint. Aedeagus in lateral view (Fig. 15F) 7x longer than its greatest width. Aedeagal apodemes slightly longer than aedeagus.

Female with tergum VII slightly wider than long, posterior margin acutely rounded. Tergum VIII subtriangular, 1.2x wider than long. Sternum VIII with lamina triangular, occupying posterior one fifth. Coxites + styli slightly shorter than lamina of sternum VIII, stylus 3x longer than its greatest width, with 3-5 long apical setae. Genital chamber 0.7x length of sternum VIII. Spermatheca (Fig. 15G) 1.4x longer than wide, J-shaped; margin between cornu and ramus emarginate; ramus slightly widened distally, apically truncate; surface of cornu and ramus lightly striate.

Variation. The examined specimens vary considerably in their color patterns yet are never uniformly colored.

Material examined. Holotype ♀ "D. R., Pedernales, Las Cuevas, Bahía de las Aguilas Station, afternoon & night collecting (incl. Hg & UV lights), 40 m, N 17°51'43.8" W 71°38'18.3"/ Jun 08/2008, (RD 8-3), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM); paratypes, same label information as holotype (AMNH: 3 ♂, 4 ♀; CMNC: 3 ♂, 4 ♀; CWOB: 3 ♂, 4 ♀; MEBT: 3 ♂, 4 ♀; MHND: 3 ♂, 4 ♀; NMNH: 3 ♂, 4 ♀; UPRM: 9 ♂, including 1 dissected, 8 ♀, including 1 dissected); "D. R., Pedernales, Sierra de Batoruco, Km 10.5 Rd. Cabo Rojo to Aceitillar, night collecting (incl. Hg & UV lights), 100 m, N 18°0'36.1" W 71°38'48.1"/ Jun 09/2008, (RD 9-5), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro" (UPRM: 16 ♂, including 1 dissected, 9 ♀, including 1 dissected); "REP. DOMINICANA, 3 Km S. E. Pedernales, 9 July 1985, W. E. Clark" (CWOB: 6 ♂, including 1 dissected, 8 ♀, including 1 dissected); "DOMINICAN REPUBLIC, Pedernales Prov., 25.5 Km N. Cabo Rojo, 12-21-V-1992, coll. M. C. Thomas" (FSCA: 1 ♂, 1 ♀); "DOMINICAN REP.: Prov. Pedernales, 25.5 Km N. of Cabo Rojo, 25-VI-1992, P. Skelley, beating misc. brush" (FSCA: 2 ♀); "DOMINICAN REPUBLIC, Pedernales, Cabo Rojo, 10 m 28.XI-2.XII.1991, coastal thorn scrub, pool, L. Masner & S. Peck, 91-362" (CMNC: 2 ♂, 4 ♀); "DOMINICAN REPUBLIC, Pedernales Prov., Cabo Rojo, 18 May 1992, R. Turnbow" (FSCA: 8 ♂, 3 ♀); "DOMINICAN REPUBLIC, Pedernales Prov., Cabo Rojo, 18-V-1992, M. C. Thomas" (FSCA: 6 ♂, 5 ♀); "DOMINICAN REPUBLIC, Pedernales, 4 Km W. Oviedo, 10 m arid thorn for., 91-344, 28.XI-4.XII.1991, FIT, L. Masner & S. Peck" (CMNC: 4 ♂); "DOMINICAN REPUBLIC, Pedernales, 13 Km NE Oveida, 18 May 1992, R. Turnbow" (RHTC: 1 ♂); "DOMINICAN REPUBLIC, Pedernales Prov., 25.5 Km N. Cabo Rojo, 20 May 1992, R. Turnbow" (CMNC: 1 ♂); "DOMINICAN REPUBLIC, Pedernales Prov., Cabo Rojo, 18-V-1992, M. C. Thomas" (CMNC: 2 ♂, 2 ♀); "DOMINICAN REPUBLIC, Pedernales, Cabo Rojo, 18 May 1992, R. Turnbow" (RHTC: 8 ♂; 7 ♀); "DOMINICAN REP., Prov. Pedernales, 25.5 Km N. Cabo Rojo, 25-VI-1992, P. Skelley, beating misc. bush" (CMNC: 1 ♂); "DOMINICAN REPUBLIC, Pedernales, Cabo Rojo, 10 July 1996, R. Turnbow" (CMNC: 3 ♂, 1 ♀); "DOMINICAN REPUBLIC, Pedernales, 7 Km N Pedernales, 12 July 1996, R. Turnbow" (CMNC: 1 ♀); "DOM. REP., Pedernales, 18 Km W. Oviedo, 8-30-1997, P. W. Kovarik" (CWOB: 12 ♂, 5 ♀); "DOM. REP., Pedernales, 18 Km W. Oviedo, 8-30-1997, C. W. O'Brien" (CWOB: 17 ♂, including 1 dissected, 14 ♀, including 1 dissected); "DOM. REP., Peravia, 31 Km N. San Jose de Ocoa, IX-1-1997, P. W. Kovarik, Hwy. 41" (CWOB: 1 ♂, dissected, 5 ♀, including 1 dissected); "DOMINICAN REPUBLIC, Pedernales Prov., 1 Km N. of Banano, 18°09.258' N, 71°45.384' W, 290 m, 12-VII-2004, leg. A. Konstantinov" (NMNH: 1 ♂); "DOMINICAN REP., Prov. Barahona, ca. 5 Km N. Caletón, 25-VI-1992, P. E. Skelley" (FSCA: 1 ♂); "DOMINICAN REP., Prov. Barahona, nr. Filipinas, Larimar Mine, 27-VI-1992, F. W. Skillman Jr., beating" (CWOB: 1 ♂); "DOMINICAN REP., Prov. Barahona, near Filipinas, Larimar Mine, 26-VI/ 7-VII-1992, F. W. Skillman Jr., beating" (CWOB: 2 ♂, 2 ♀).

Etymology. Named after Quisqueya, the original name of Hispaniola in the Taíno language.

Natural history. *Apodrosus quisqueyanus* occurs in dry, shrubby lower-elevation forests (5-450 m) in the southwestern Dominican Republic (Fig. 19B). Adult specimens have been taken primarily on legume species.

***Apodrosus adustus* sp.n.**

Diagnosis. *Apodrosus adustus* is characterized by the combination of having a mesally constricted rostrum, an apically bifurcated median furrow on the head, uniformly colored legs, a slightly produced interval X along the second fifth of the elytra, and a uniform coverage of brown, iridescent (reddish) scales, except on the ventral surface where the scales are whitish. This species may be distinguished from *A. empherefasciatus* by its uniformly brown dorsal coloration, the lack of a constriction between the cornu and corpus of the spermatheca, and a less developed ramus of the spermatheca.

Description. Body length 4-4.5 mm; in dorsal view (Fig. 16A) 2.1x longer than greatest width which is at midpoint of elytra, shape subrectangular; dorsal outline in lateral view subplane. Integument surface smooth; vestiture uniformly composed of brown, iridescent (reddish) scales, and white scales on ventral surface, with recurvate, decumbent, brown setae. Eyes (Fig. 16B) 1.8x longer than wide, projected, 0.3x width and 0.6x length of head in lateral view, separated from anterior margin of prothorax by 0.6x greatest diameter of eye; line of anterior margin of eyes impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 16B) apically bifurcated, narrow, shallow, extending from anterior margin of eyes though not reaching their posterior margin. Rostrum (Fig. 16B) 1.2x wider than long, with lateral margins slightly constricted at basal third; epistome apically with 3-4 setae situated on each side, extending posteriorly as a longitudinal, narrow keel to midpoint of rostrum, nasal plate defined, concave. Rostrum in lateral view slightly wider than long; antennal insertion near apical third of rostrum; scrobe curved downwards by 45°, directed ventrally at end, extending to midpoint of eye, separated from it by 2x width of scrobe. Mandibles with 2-3 lateral setae. Antennae yellowish brown; antennal scape almost reaching posterior margin of eye; funicular antennomere I 1.8x longer than II; antennal club 0.5x length of funicle, 2.6x longer than wide. Pronotum (Fig. 16A) subquadrate, 1.2x wider than long, with greatest width at anterior third; dorsal surface shallowly puncturate, each puncture with a curved, brown seta; posterior margin slightly bisinuate, 1.2x wider than anterior margin; prothorax in lateral view (Fig. 16C) with dorsal outline 1.5x length of ventral outline; scutellum subcircular, with scales. Mesosternum (Fig. 16D) 0.6x length of prosternum. Metasternum with lateral portions posteriorly produced (in

lateral profile gradually ascending towards posterior third, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Legs with profemora 1.2x length of pronotum; claws subparallel.

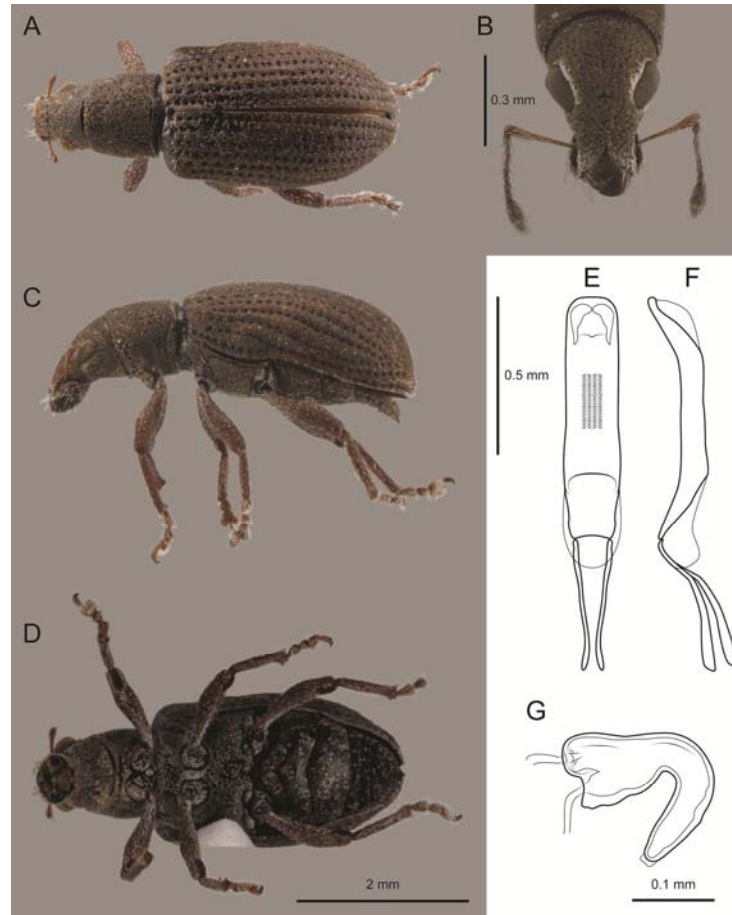


Figure 16. *Apodrosus adustus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Elytra in dorsal view (Fig. 16A) 1.8x their greatest width which is 1.6x wider than pronotum; anterior margins straight; humeral region 1.5x wider than posterior margin of pronotum; apex rounded; in lateral view (Fig. 16C) with dorsal outline subplane; posterior declivity rounded; striae IX and X fused along their second third; intervals completely covered with brown scales; interval X slightly produced along second fifth; with recurvate, decumbent setae. Venter (Fig. 16D) densely covered with whitish scales; VII with median posterior pit interrupting posterior margin, anterior margin 2.4x wider than its length; ♂: IV 1.2x longer than V and VI jointly, as

long as VII, with VII posterior margin rounded; ♀: IV 2x longer than V and VI jointly, 1.7x longer than VII, VII with posterior margin mesally narrowed.

Terminalia. Male with tergum VII subpentagonal, nearly as long as wide; anterior margin subtriangular, mesally narrowly rounded, posterior margin mesally emarginate, laterally rounded. Tergum VIII transverse, 2.2x wider than its mesal length; anterior margin roundly emarginate; posterior margin widely rounded. Sternum VIII with 2-3 apical setae. Spiculum gastrale with apodeme 1.3x longer than aedeagus, each furcal arm suboval. Tegmen with tegminal apodeme nearly 0.6x length of aedeagus, tegminal plate mesally slightly projected posteriorly. Aedeagus in dorsal view (Fig. 16E) 3.6x longer than its greatest width, lateral margins parallel; apex widely rounded. Endophallus with a pair of opposed lightly sclerotized areas positioned near apex, and a median reticulate area. Aedeagus in lateral view (Fig. 16F) 7.4x longer than its greatest width. Aedeagal apodemes 0.5x as long as aedeagus.

Female with tergum VII as long as wide, suboval, posterior margin acutely rounded. Tergum VIII subtriangular, as wide as long. Sternum VIII with lamina triangular, occupying posterior one fifth. Coxites + styli as long as lamina of sternum VIII, stylus 3.6x longer than its greatest width, with 1 long and 3 shorter apical setae. Genital chamber 0.6x length of sternum VIII. Spermatheca (Fig. 16G) 1.2x longer than wide, J-shaped; cornu roundly curved towards ramus; margin between cornu and ramus nearly straight; ramus apically truncate; surface not particularly sculptured.

Variation. The examined specimens vary slightly in size. All examined specimens are apparently teneral.

Material examined. Holotype ♀ "GRAND BAHAMA ISLAND, Freeport, 20-27 June 1987, W. E. Steiner, M. J. & R. Molineaux" (NMNH, dissected); paratypes, same label information as holotype (NMNH: 1 dissected ♂, 1 dissected ♀).

Etymology. Named in reference to the uniform brown dorsal scale coloration, with the Latin term *adustus* meaning "brown, tanned, swarthy" (Brown 1956).

Natural history. *Apodrosus adustus* is apparently restricted to Grand Bahama Island (Fig. 19A). The host plant associations remain unknown.

***Apodrosus empherefasciatus* sp.n.**

Diagnosis. *Apodrosus empherefasciatus* is characterized by the combination of a mesally constricted rostrum, an apically bifurcated median furrow on the head, uniformly colored legs, a slightly produced interval X at the basal third of the elytra, and a predominantly white coloration with light brown, iridescent (yellowish to reddish) scales forming an apparent striped pattern along the elytra and with recurvate, decumbent setae. This species may be differentiated from *A. quisqueyanus* by its more or less uniform (as opposed to irregularly patterned) coloration, and by the acutely angled cornu and ramus of the spermatheca. It furthermore differs in scale coloration from the darker *A. adustus* and in having a characteristic constriction between the cornu and corpus of the spermatheca.

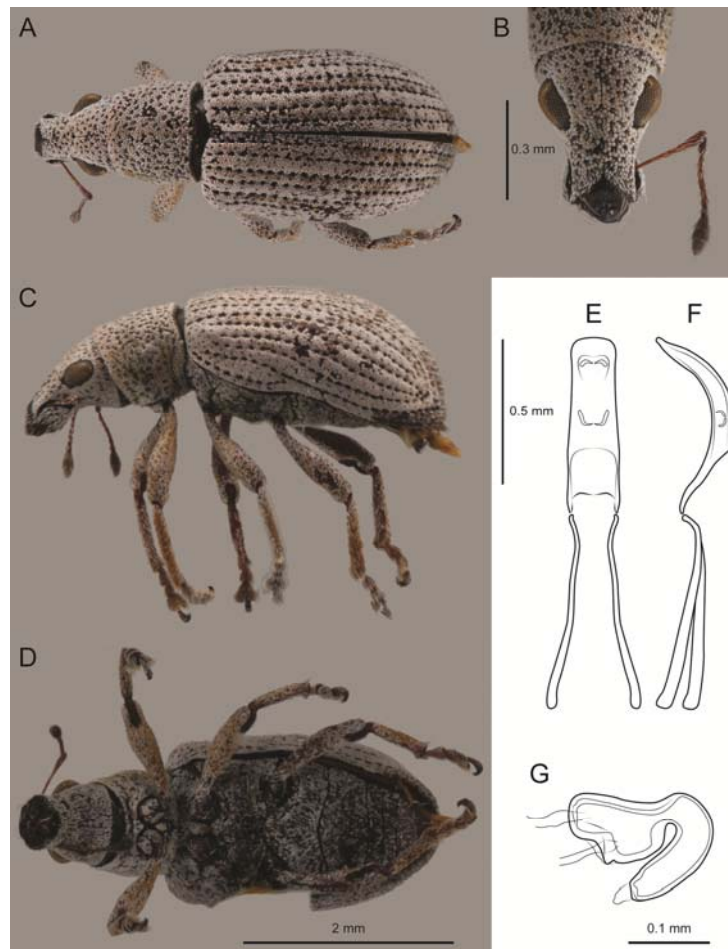


Figure 17. *Apodrosus empherefasciatus*. (A) habitus, dorsal view; (B) head, frontal view; (C) habitus, lateral view; (D) habitus, ventral view; (E) and (F) aedeagus in dorsal and lateral view, respectively; (G) spermatheca.

Description. Body length 3-5 mm; in dorsal view (Fig. 17A) 2.5x longer than greatest width which is at second third of elytra; dorsal outline in lateral view subplane. Integument surface smooth; vestiture uniformly composed of white and brown, iridescent (yellowish to reddish) scales, with recurvate, decumbent setae. Eyes (Fig. 17B) 1.5x longer than wide, projected, 0.4x width and 0.6x length of head in lateral view, separated from anterior margin of prothorax by 0.4x greatest diameter of eye; line of anterior margin of eyes impressed; shortest distance between eyes (in dorsal view) 0.4x greatest width of pronotum; median furrow (Fig. 17B) apically shortly bifurcated, shallow, extending between anterior and posterior margins of eyes. Rostrum (Fig. 17B) slightly longer than wide, mesally slightly constricted; epistome apically with 3-5 setae situated on each side, posteriorly extending as a longitudinal, narrow keel almost to base of rostrum; nasal plate evident, concave. Rostrum in lateral view slightly longer than wide; antennal insertion approximately at apical fourth of rostrum; scrobe curved downwards by 45°, directed ventrally at end, extending to anterior third of eye, separated from it by 2x width of scrobe. Mandibles with 2 lateral setae, pharyngeal process nearly as long as mandible. Maxillae with cardo 3.6x longer than its greatest width; stipes with 3-4 lateral setae; galeo-lacinal complex mesally extending to midpoint of maxillary palpomere III, apex with 2-3 long setae, with 4 tongue-like apically narrowed setae and a tuft of shorter and apically rounded setae, with 4 lacinal teeth and a tuft of long fine setae at base of lacinia; maxillary palpomere I longer than III, III slightly longer than II; I and II with a mesolateral seta. Labium with prementum suboval, slightly longer than wide, apical margin slightly mesally projected; in lateral profile with ventral surface slightly depressed at base, thereafter abruptly roundly produced, continuing straight to apex, sculptured. Antennae reddish brown; antennal scape extending to posterior margin of eye; funicular antennomere I 1.5x longer than II; antennal club 0.5x length of funicle, 2.3x longer than wide. Pronotum (Fig. 17A) subquadrate, slightly wider than long, greatest width at mid length; dorsal surface shallowly puncturate, each puncture with a curved, spatulate, brownish seta; posterior margin nearly straight, 1.2x wider than anterior margin; prothorax in lateral view with dorsal outline 1.7x length of ventral outline; scutellum subcircular, with scarce scales. Mesosternum (Fig. 17D) 0.5x length of prosternum. Metasternum with lateral portions posteriorly produced (in lateral profile gradually ascending towards posterior fifth, thereafter descending roundly, posterior face covered with scales); distance between posterior margin of mesocoxae and anterior margin of metacoxae 0.7x length of prosternum. Metendosternite with furcal arms as long as stalk, positioned nearly at 120° in relation to horizontal axis; ventral

margin of stalk 3.3x its dorsal width. Legs with profemora 1.1x longer than pronotum; claws subparallel. Elytra in dorsal view (Fig. 17A) 1.6x their greatest width which is 1.5x wider than pronotum; anterior margins sinuate; humeral region 1.5x wider than posterior margin of pronotum; lateral margins parallel; apex roundly truncate; in lateral view (Fig. 17C) with dorsal outline subplane; posterior declivity distinct, rounded; striae IX and X fused along their second third; intervals completely covered with oval scales, forming a pattern of dark and light intervals, appearing striped; interval X slightly produced along basal third and along apex of elytra; with recurvate, spatulate setae. Wings 1.7x length of elytra, 3.1x longer than wide; costal margin emarginate along basal third; apex rounded; medial margin slightly rounded; cubital margin slightly emarginate; 3A intersecting with 2A. Venter (Fig. 17D) densely covered with scales; anterior margin of VII 2.4x wider than its length; ♂: IV 1.8 x longer than V and VI jointly, 1.4x longer than VII, VII with posterior margin rounded; ♀: IV 1.7x longer than V and VI jointly, 2x longer than VII, VII with posterior margin slightly narrowed mesally.

Terminalia. Male with tergum VII 1.4x wider than its mesal length, distal third with multifid setae; anterior margin nearly triangular, mesally narrowly truncate, posterior margin mesally slightly emarginate, laterally rounded. Tergum VIII 1.6x wider than its mesal length, anterior margin slightly emarginate, apical margin nearly straight in mid region, laterally widely rounded. Sternum VIII without spiculum relictum. Spiculum gastrale with apodeme 1.3x longer than aedeagus, each furcal arm lightly sclerotized, suboval. Tegmen with tegminal apodeme nearly 0.6x length of aedeagus; tegminal plate mesally slightly projected posteriorly. Aedeagus in dorsal view (Fig. 17E) 3.3x longer than its greatest width, parallel sided; apex truncate, laterally rounded. Endophallus with a pair of subtriangular sclerites positioned near apical fourth, and a pair of hook-like sclerites near midpoint. Aedeagus in lateral view (Fig. 17F) 9x longer than its greatest width; apex slightly curved upwards. Aedeagal apodemes nearly as long as aedeagus.

Female with tergum VII 1.2x longer than wide; posterior margin acutely rounded, with anteapical multifid setae and apical unifid setae. Tergum VIII suboval, 1.3x longer than wide. Sternum VIII with lamina sagittate, occupying posterior one fifth. Coxites + styli nearly as long as lamina of sternum VIII, stylus 2.8x longer than its greatest width, with 4-5 long apical setae. Genital chamber 0.7x length of sternum VIII. Spermatheca (Fig. 17G) 1.2x longer than wide, J-shaped; cornu slightly rounded, roundly acutely curved towards ramus, margin between cornu and ramus emarginate; distance between cornu and base of corpus shorter than width of cornu; ramus apically truncate.

Variation. The examined specimens vary primarily in their patterns of coloration which range from uniformly white to appearing striped, turning light brown when abraded.

Material examined. Holotype ♀ "BAHAMAS: Andros Is., Maidenhair Coppice, 24-28-VII-2006, M. C. Thomas, T. R. Smith, UV trap in interior coppice" (CWOB); paratypes: "Bahamas, Andros I. Morgan's Bluff Rd., cocconut grove, 4 V 1987, J. Browne & D. Myles, coast, coppice edge, sweeping. 87-152J" (CMNC: 1 ♀); "BAHAMAS: Andros, Morgans Bluff, 25 July 2006, R. Turnbow" (CWOB: 1 ♂); "Bahamas, Andros I. San Andros, Robinson's Place, J. Browne 10 VI 1987, wet pineland, -blk. lt. 87-41J" (CMNC: 1 ♂); "Bahamas, Andros I. CDC Farm, Shotgun Coppice, 19 VII 1987, J. Browne, high interior coppice, blk. lt. 87-107J" (CMNC: 2 ♂); "Bahamas, Andros I. Menne-nite's Farm, 30 VII 1987, J. Browne, crop, blk. lt. 87-107J" (CMNC: 1 ♂, 2 ♀); "Bahamas, Andros I. Menne-nite's Farm, 31 VII 1987, J. Browne, crop, blk. lt. 87-143J" (CMNC: 1 dissected ♂); "Bahamas, Andros I., Behring Pt., Behring Pt. Beach, 12 VIII 1987, J. Browne, random srch. of beach drift. 87-198J" (CMNC: 2 ♀); "Bahamas, Andros I., Man-O-War Snd., 13 VIII 1987, J. Browne, high interior coppice mornng., shrub & tree beating. 87-199J" (CMNC: 2 ♂, 2 ♀); "BAHAMAS: Andros, Captain Bill's Blue-hole, 27 July 2006, R. Turnbow" (FSCA: 1 ♀); "BAHAMAS: Andros, Capt. Bill's Blue Hole, Central Andros Nat. Pk., 27-VII-2006, coll. G. B. Edwards" (FSCA: 1 ♂, 1 ♀); "BAHAMAS: Andros, Forfar Field Station, 2 June 2001, R. Turnbow" (CWOB: 1 ♂, dissected); "BAHAMAS: Andros, Forfar Field Station, 6 June 2004, R. Turnbow" (RHTC: 2 ♀, 1 dissected); "BAHAMAS: Andros Is., Forfar Field Sta., nr Stafford Creek, 8-VI-2004, M. C. Thomas, BLT" (FSCA: 1 ♂); "BAHAMAS: Andros, Forfar Field Station, 8 June 2004, R. Turnbow" (RHTC: 1 ♀, 1 dissected); "BAHAMAS: Andros, Forfar Field Station, 22 July 2006, R. Turnbow" (CWOB: 2 ♂, 1 ♀; RHTC: 4 ♂); "BAHAMAS: Andros, Forfar Field Station, 22-VII-2006, T. R. Smith, beating" (FSCA: 1 ♀); "BAHAMAS: Andros Is., Forfar Field Sta., nr Stafford Creek, 22-28-VII-2006, M. C. Thomas, T. R. Smith, UV trap in coastal coppice" (FSCA: 3 ♂, 2 ♀); "BAHAMAS: Andros Is., Forfar Field Sta., nr Stafford Creek, 22-28-VII-2006, G. B. Edwards" (FSCA: 3 ♀); "BAHAMAS: Andros, Stafford Creek, 4 June 2001, R. Turnbow" (CWOB: 3 ♂; RHTC: 2 ♂, 2 ♀); "BAHAMAS: Andros, Stafford Creek, 8 June 2001, R. Turnbow" (CWOB: 1 ♀; RHTC: 1 ♀); "BAHAMAS: Andros Is., Maidenhair Coppice, 9 June 2004, R. Turnbow" (CWOB: 1 ♀; RHTC: 2 ♂); "BAHAMAS: Andros Is., Maidenhair Coppice, 9 June 2004, M. C. Thomas" (FSCA: 1 ♂; 1 ♀); "BAHAMAS: Andros Is., Maidenhair Coppice, 11-VI-2004, M. C. Thomas, BLT." (CWOB: 1 ♂); "BAHAMAS: Andros Is., Maidenhair Coppice, 23-VII-2006; M. C. Thomas, beating vegetation" (CWOB: 1 ♂, 1 dissected ♀; FSCA: 1 ♂); "BAHAMAS: Andros Is., Maidenhair Coppice, 23-VII-2006; T. R. Smith, beating" (FSCA: 1 ♀); "BAHAMAS: Andros Is., Maidenhair Coppice, 23 July 2006, R. Turnbow" (CWOB: 1 ♀; RHTC: 3 ♂, 1 dissected; 1 ♀); "BAHAMAS: Andros Is., Maidenhair Coppice, 24-28-VII-2006, M. C. Thomas, T. R. Smith, UV trap in interior coppice" (FSCA: 2 ♂); "BAHAMAS: Andros Is., Maidenhair Coppice, 27 July 2006, R. Turnbow" (RHTC: 1 ♂); "BAHAMAS: Andros Is., Maidenhair Coppice, 23-VII-2006; T. R. Smith, beating" (CWOB: 2 ♂); "BAHAMAS: Andros, Cargill Creek, 24 July 2006, R. Turnbow" (CWOB: 1 ♂, dissected; RHTC: 1 ♀); "BAHAMAS: Andros, Cargill Creek, 26 July 2006, R. Turnbow" (CWOB: 1 ♂, 1 ♀; RHTC: 1 ♂); "BAHAMAS: Andros, Small Hope, 27 July 2006, R. Turnbow" (CWOB: 2 ♂, 3 ♀; RHTC: 1 ♂; 1 ♀).

Etymology. Noun in apposition. Named after the Greek term *empheres* meaning "resembling" and the Latin term *fascia* meaning "band, stripe" (Brown 1956), in reference to the apparent striped scale coloration pattern on the elytra.

Natural history. *Apodrosus empherefasciatus* is apparently restricted to shrubby, coastal habitats on Andros Island, Bahamas (Fig. 19A). The host plant associations remain unknown.

Key to the species of *Apodrosus*

1. Posterior margin of epistome projected basad of rostrum as a carinate stripe; antennal scape surpassing posterior margin of eyes.....2
- 1'. Posterior margin of epistome not projected; antennal scape usually not or merely reaching posterior margin of eyes..... 6
- 2(1). Lateral profile of metasternum posteriorly strongly projected.....3
- 2'. Lateral profile of metasternum posteriorly only slightly produced; body narrow in dorsal view (3.2x longer than wide); vestiture composed of yellowish brown, black and green, iridescent (yellowish, reddish) scales, with recurvate, lanceolate brown setae (Fig. 6).....**A. artus sp.n.**
- 3(2). Surface of elytra produced basad of midpoint of interval X.....4
- 3'. Surface of elytra flat along interval X; in dorsal view shield-shaped; elytral striae IX and X fused along their second third; vestiture composed of brown, coppery and green, iridescent (greenish to yellowish) scales, with erect setae; apex of aedeagus uniformly rounded (Fig. 7).....**A. andersoni sp.n.**
- 4(3). Surface of elytra strongly produced basad of midpoint of interval X; nasal plate indistinct.....5

4'. Surface of elytra slightly produced along basal fourth of interval X; nasal plate visible; eyes strongly projected; vestiture composed of dark brown, light brown and green, iridescent (reddish) scales, with long, erect and apically truncate, brown and whitish setae (Fig. 8).....***A. earinusparsus* sp.n.**

5(4). Elytral striae IX and X completely separated along their entire length; scale coverage of legs with color pattern; dorsal outline in lateral view subplane to convex; integument surface slightly tuberculate; vestiture composed of brown, light brown to white, iridescent (greenish, yellowish to reddish) scales, with recurvate, semi-erect setae (Fig. 9).....***A. epipolevatus* sp.n.**

5'. Elytral striae IX and X fused along their second third; scale coverage of legs uniformly colored; dorsal outline in lateral view convex to strongly convex; integument surface slightly undulate; vestiture composed of dark brown, light brown to white, iridescent (reddish) scales, with recurvate, decumbent, brown setae (Fig. 1).....***A. wolcotti* Marshall**

6(1'). Antennal scape not or merely reaching posterior margin of eyes**7**

6'. Antennal scape surpassing posterior margin of eyes; eyes strongly projected; vestiture composed of gray and light green, iridescent (greenish to reddish) scales; apex of aedeagus uniformly rounded (Fig. 10).....***A. eximius* sp.n.**

7(6). Eyes in dorsal view large and flattened; elytral striae IX and X completely separated along their entire length; vestiture composed of white, light brown or silvery scales.....**8**

7'. Eyes in dorsal view mid-sized and produced; elytral striae IX and X fused along their second third; vestiture composed of brown, white or green scales.....**9**

8(7). Nasal plate indistinct; body length 3-5 mm; in dorsal view 2x its greatest width which is at midpoint of elytra, shape subrectangular; aedeagus without denticulate pads on endophallus (Fig. 11).....***A. argentatus* Wolcott**

8'. Nasal plate visible; body length 6 mm; in dorsal view, shield-shaped, 2.8x longer than its greatest width which is at anterior third of elytra; aedeagus with a pair of denticulate pads positioned apicad of midpoint of aedeagus (Fig. 12).....***A. mammuthus* sp.n.**

9(7'). Median furrow of head apically bifurcated.....**10**

9'. Median furrow of head reduced, linear; body length 2.5-3.5 mm; vestiture composed of green and pink (on legs), iridescent (reddish) scales, with straight, erect, yellowish setae (Fig. 13).....***A. viridium* sp.n.**

10(9). Rostrum mesally constricted; interval X of elytra slightly produced along second fifth.....**11**

10'. Rostrum without a mesal constriction; interval X of elytra flat; eyes narrow in lateral view; vestiture uniformly composed of green and white (on legs) iridescent (reddish) scales, with recurvate, decumbent, brown setae (Fig. 14).....***A. stenoculus* sp.n.**

11(10). Legs coverage uniformly colored; cornu and ramus of spermatheca forming an acute angle of 40-60°.....**12**

11'. Legs coverage not uniformly colored; vestiture composed of white and brown, iridescent (yellowish, reddish to greenish) scales, with recurvate, decumbent, yellowish setae; cornu and ramus of spermatheca forming an angle of nearly 90° (Fig. 15).....***A. quisqueyanus* sp.n.**

12(11). Vestiture composed of white and light brown, iridescent (yellowish to reddish) scales; spermatheca with a constriction between cornu and corpus (Fig. 16).....***A. empherefasciatus* sp.n.**

12'. Vestiture uniformly composed of brown, iridescent (reddish) scales and white scales on the ventral surface; spermatheca not constricted between cornu and corpus (Fig. 17).....***A. adustus* sp.n.**

4 Phylogenetic analysis

A matrix of 25 parsimony-informative characters was constructed for 20 terminal taxa, including seven outgroup species and 13 ingroup species (Table 1). Implementation of a comprehensive search strategy (parsimony ratchet as implemented in TNT, see above) yielded a single most parsimonious cladogram (Fig. 20) with a length of 61 steps, a consistency index (CI) of 42, and a retention index (RI) of 74 (cf. Farris 1989).

4.1 List of characters

The character states and inferred optimizations are presented simultaneously in this section, and the consistency and retention indices for individual characters (ci and ri, respectively) are provided in cases of homoplasy. Characters 19-25 were coded as missing for *A. artus* because of a lack of female specimens. Due to limited outgroup representation, the subsequent discussion of synapomorphies is restricted to the ingroup taxa.

1. Head, presence of a median furrow: (0) present; (1) absent. Synapomorphy for the *P. conicus*-*A. adustus* clade, with a subsequent reversal in the *A. bicaudatus*-*Apodrosus* clade (ci = 50; ri = 66).

2. Head, shape of the median furrow: (0) linear; (1) apically bifurcated. Coded as inapplicable for taxa which lack a median furrow (see character 1). Synapomorphy for the *A. stenoculus*-*A. empherefasciatus* clade.

3. Eyes, degree of projection: (0) flattened; (1) produced. Synapomorphy for the *P. mutabilis*-*A. empherefasciatus*, clade with a subsequent reversal in the *A. argentatus*-*A. mammothus* clade (ci = 50; ri = 75).

4. Rostrum, mesal constriction: (0) absent; (1) present. Synapomorphy for *A. bicaudatus*-*A. empherefasciatus* clade, with a subsequent reversal in the *A. argentatus*-*A. empherefasciatus* clade and apparent regain in the *A. quisqueyanus*-*A. empherefasciatus* clade (ci = 33; ri = 77).

5. Epistome, presence of a basal carinate-striped projection: (0) absent; (1) present. Synapomorphy for the *P. peninsularis*-*A. empherefasciatus* clade, with a subsequent reversal in the *A. artus*-*A. wolcotti* clade (ci = 50; ri = 88).

6. Nasal plate, degree of development: (0) indistinct; (1) visible. Synapomorphy for the *P. scansorius*-*A. empherefasciatus* clade, with two independent reversals in the *A. epipolevatus*-*A. wolcotti* clade and in *A. argentatus* (ci = 33; ri = 33).

7. Antennae, length of scape: (0) Not or merely reaching posterior margin of eyes; (1) surpassing posterior margin of eyes. Synapomorphy for the *P. scansorius*-*A. empherefasciatus* clade, with a subsequent reversal in the *A. argentatus*-*A. empherefasciatus* clade (ci = 50; ri = 85).

8. Metasternum, degree of projection: (0) slightly projected; (1) strongly projected. Convergently present in the *P. mutabilis*-*C. nigrocinctus* clade and in the *A. andersoni*-*A. wolcotti* clade (ci = 50; ri = 80).

9. Legs, scale coverage of anterior surface of posterior femur: (0) not uniformly colored; (1) uniformly colored throughout. Coded as inapplicable in *P. mutabilis* in which the femora are not covered with scales. Convergently present in *P. conicus*, *P. peninsularis*, and in the *A. eximius*-*A. empherefasciatus* clade, with a subsequent reversal in *A. quisqueyanus* (ci = 25; ri = 62).

10. Legs, presence of premucro on the tibial apex: (0) present; (1) absent. Synapomorphy for the *P. conicus*-*A. empherefasciatus* clade, with a subsequent reversal in *Apodrosus* (ci = 50; ri = 75).

11. Elytra, separation of striae IX and X: (0) completely separated along their entire length; (1) fused along their second third. Convergently present in *A. bicaudatus*, *A. andersoni*, *A. wolcotti* and in the *A. viridium*-*A. empherefasciatus* clade (ci = 25; ri = 57).

12. Elytra, projection of surface of interval X basad of midpoint: (0) flat; (1) slightly produced; (2) strongly produced. Coded as additive, thus presuming a phylogenetic transition sequence. State (1) is convergently present in the *A. earinusparsus*-*A. wolcotti* clade, the *A.*

argentatus-*A. mammuthus* clade, and in the *A. quisqueyanus*-*A. empherefasciatus* clade; whereas state (2) is present as a secondary transformation in the *A. epipolevatus*-*A. wolcotti* clade (ci = 50; ri = 75).

13. Abdomen, presence of a median posterior fovea on sternum VII: (0) absent; (1) present. Synapomorphy for *Apodrosus*, with an apparent reversal in *A. epipolevatus* (ci = 50; ri = 85).

14. Abdomen, posterior margin of male abdominal sternum VII: (0) mesally emarginate to straight; (1) rounded. Synapomorphy for the *P. peninsularis*-*A. empherefasciatus* clade.

15. Male terminalia, configuration of sternum VIII: (0) configured as two hemisternites; (1) configured as a complete plate. Coded as inapplicable in *C. nigrocinctus* and *P. mutabilis* which present a third, intermediate state in which two hemisternites are joined by a narrow sclerotized bridge. Slow optimization preferred. Synapomorphy for *P. peninsularis*-*A. empherefasciatus* clade.

16. Male terminalia, arms of spiculum gastrale: (0) continuous with apodeme; (1) separated from apodeme yet connected to it via a membrane. Synapomorphy for the *A. bicaudatus*-*A. empherefasciatus* clade.

17. Male terminalia, tegminal plate: (0) incomplete; (1) complete. Convergently present in *P. conicus*, *C. nigrocinctus* and in *Apodrosus* (ci = 33; ri = 50).

18. Male terminalia, shape of apex of aedeagus in dorsal view: (0) mesally projected, not uniformly roundly continuous; (1) simple, uniformly roundly continuous. Convergently present in *A. andersoni*, *A. eximius*, and in the *A. stenoculus*-*A. empherefasciatus* clade (ci = 33; ri = 60).

19. Abdomen, presence of two mesolateral, longitudinally aligned, transversally strigulate stripes on female tergum VII: (0) absent; (1) present. Synapomorphy for the *P. conicus*-*A. empherefasciatus* clade, with a subsequent reversal in the *A. bicaudatus*-*A. empherefasciatus* clade (ci = 50; ri = 66).

20. Female terminalia, presence of longitudinal sclerites along genital chamber: (0) absent; (1) present. Synapomorphy for the *P. conicus*-*A. empherefasciatus* clade, with a subsequent reversal in *Apodrosus* (ci = 50; ri = 80).

21. Female terminalia, shape of spermatheca: (0) C-shaped; (1) J- or Y-shaped. Synapomorphy for *Apodrosus*.

22. Female terminalia, presence of a projection on the cornu of the spermatheca: (0) absent; (1) present. Synapomorphy for the *P. scansorius*-*A. empherefasciatus* clade, with two independent reversals in *C. nigrocinctus* and in *Apodrosus*, as well as an apparent subsequent regain in *A. wolcotti* (ci = 25; ri = 40).

23. Female terminalia, angle formed between cornu and corpus of spermatheca: (0) acute, 40-60°; (1) more or less obtuse, 80-110°. Synapomorphy for the *A. bicaudatus*-*A. empherefasciatus* clade, with two subsequent reversals in *A. viridium* and in the *A. adustus*-*A. empherefasciatus* clade (ci = 33; ri = 75).

24. Female terminalia, projection of ramus of spermatheca: (0) not or only slightly projected; (1) strongly projected. Convergently present in *P. scansorius* and in the *P. peninsularis*-*A. empherefasciatus* clade, with a subsequent reversal in *A. wolcotti* (ci = 33; ri = 50).

25. Female terminalia, development of collum of spermatheca: (0) reduced or very short; (1) well developed. Fast optimization preferred. Synapomorphy for the *P. peninsularis*-*A. empherefasciatus* clade, with three independent reversals in the *A. artus*-*A. wolcotti* clade, in *A. viridium*, and in *A. quisqueyanus* (ci = 25; ri = 50).

Table 1. Character matrix for the cladistic analysis of the species of *Apodrosus* with select outgroup taxa, arranged in phylogenetic sequence. Character 12 was coded as additive; "-" represents inapplicable character states and "?" represents missing information.

Taxon / character	1		2	
	5	0	5	0
<i>Sitona californicus</i>	00000	00000	00000	00000
<i>Polydacrys scansorius</i>	00000	11000	00000	00001
<i>Polydrosodes conicus</i>	1-000	11011	00000	01011
<i>Polydrusus mutabilis</i>	1-100	111-1	0000-	00011
<i>Cautoderus nigrocinctus</i>	1-100	11101	0000-	01011
<i>Polydrusus peninsularis</i>	1-101	11011	00011	00011
<i>Anypotactus bicaudatus</i>	00111	11001	10011	10001
<i>Apodrosus artus</i>	00110	11000	00111	110??
<i>Apodrosus andersoni</i>	00110	11100	10111	11100
<i>Apodrosus earinusparvus</i>	00110	11100	01111	11000
<i>Apodrosus epipolevatus</i>	00110	01100	02011	11000
<i>Apodrosus wolcottii</i>	00110	01100	12111	11000
<i>Apodrosus eximius</i>	00111	11010	00111	11100
<i>Apodrosus argentatus</i>	00001	00010	01111	11000
<i>Apodrosus mammothus</i>	00001	10010	01111	11000
<i>Apodrosus viridium</i>	00101	10010	10111	11000
<i>Apodrosus stenoculus</i>	01101	10010	10111	11100
<i>Apodrosus quisqueyanus</i>	01111	10000	11111	11100
<i>Apodrosus adustus</i>	01111	10010	11111	11100
<i>Apodrosus empherefasciatus</i>	01111	10010	11111	11100

4.2 Systematics and phylogeny of *Apodrosus*

According to the most parsimonious cladogram (Fig. 18), the monophyly of *Apodrosus* is well supported by the combination of two unreversed synapomorphies, viz. the presence of a median fovea on the apex of sternum VII (char. 13) and a J- or Y-shaped spermatheca (char. 21). In addition, four homoplasious features bear out the monophyly of the genus as presently redefined; including the presence of premucro (char. 10), a complete tegminal plate in males (char. 17), the absence of longitudinal sclerites in the genital chamber of females (char. 20), and an apical projection on the spermathecal cornu (char. 23). *Apodrosus* is furthermore distinguished from similar appearing Caribbean anypotactine and polydrusine weevils by several diagnostic features such as the presence of a median furrow on the head; a large, triangular and glabrous

epistome (cf. Marshall 1922); and phanerognathous mouthparts. However, these character states are also convergently present in numerous other groups of entimine weevils that are not closely related (e.g. some Naupactini), and are therefore not included in this analysis. The present redefinition of *Apodrosus* is more restrictive and precise in comparison to Marshall's (1922) original concept of the genus, and at the same time includes 11 species in addition to the previously known *A. argentatus* and *A. wolcottii*.

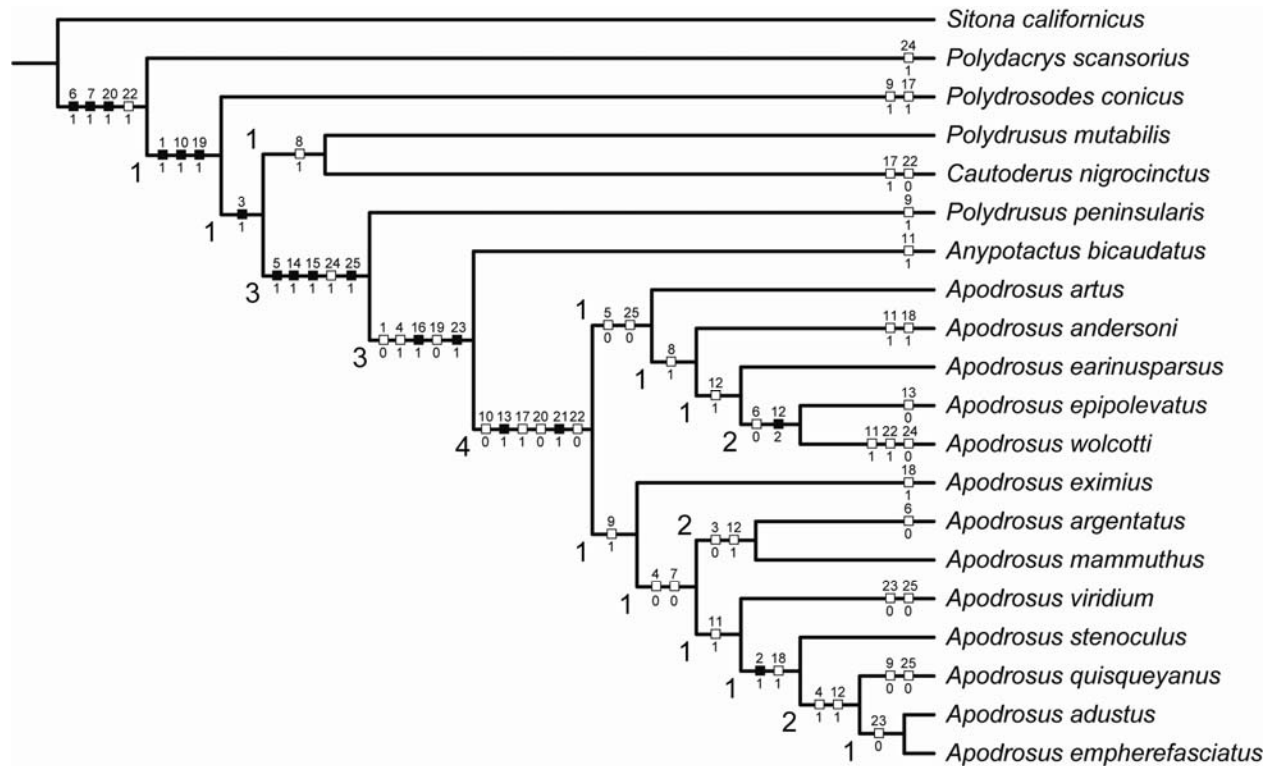


Figure 18. Phylogeny of the species of *Apodrosus* and select outgroup taxa according to the single most parsimonious cladogram (L = 61; CI = 42; CI = 74). Character 15 is mapped under DELTRAN optimization, whereas character 25 is mapped under ACCTRAN optimization (cf. Agnarsson & Miller 2008); all other characters have unambiguous optimizations. Black rectangles represent single, non-homoplasious character state transformations and white rectangles represent multiple, homoplasious character state transformations. The small numbers above and below each rectangle correspond to character numbers and states, respectively. The larger numbers displayed at the left end of each branch represent Bremer support values.

Among the selected outgroup taxa *A. bicaudatus* (Anypotactini) was inferred to represent the closest relative of *Apodrosus*, even though the latter is traditionally placed in the vicinity of *Polydrusus* in the Polydrusini, grounded in the shared presence of connate claws (e.g. Marshall 1922; Blackwelder 1947; O'Brien and Wibmer 1982; Alonso-Zarazaga and Lyal 1999). The validity of this placement is called into question here since the two studied North and Central

American species of *Polydrusus* appear more phylogenetically removed from *Apodrosus* than *Anypotactus* (Fig. 18). However, at present we cannot conclusively resolve this issue, in part because *Polydrusus* is an exceedingly diverse and nonmonophyletic genus (N.N. Yunakov, pers. comm.) with some 188 species distributed primarily in the Palearctic region and with 24 New World species (Champion 1911; Sleeper 1957; O'Brien and Wibmer 1982). Due to a lack of adequate phylogenetic analyses of anypotactine-polydrusine relationships, we provisionally maintain the tribal placement of *Apodrosus* in the Polydrusini sensu Alonso-Zarazaga and Lyal (1999).

Within *Apodrosus* two main clades are inferred: *A. artus*-*A. wolcottii* clade, reported mainly from high elevations in the Hispaniola Island and Puerto Rico and the more speciose and widespread western Caribbean *A. eximius*-*A. empherefasciatus* clade, collected mainly at low elevations or coastal areas of the islands, usually coinciding with dry places (see figures 19 and 20). The available character support for each clade is relatively weak, and is constituted by homoplasious states such as the presence of a carinate stripe projecting from the base of the epistome (char. 5), the development of the spermathecal collum (char. 25), and the uniform versus heterogeneous scale coloration on the hind femora (char. 9), respectively. Slightly higher support is evident for less inclusive species groups, including *A. epipolevatus* and *A. wolcottii* (char. 12: elytral interval X strongly produced near midpoint) and the *A. stenoculus*-*A. empherefasciatus* clade (char. 2: median furrow of head apically bifurcated).

Most species of *Apodrosus* are readily identified by externally visible characters such as the overall size, shape, and scale coloration patterns, with the principal exception of the *A. argentatus*-*A. mammuthus* complex where dissections of the terminalia are essential to species identification. It is likely that further sampling of *Apodrosus* specimens will produce additional new species, particularly in more remote habitats of Hispaniola or in Islands in which it has not been registered yet, such as the remaining Bahamas and Turks & Caicos Islands. It is also possible that the here described species display wider distributions.

Lastly, the available information on host plant association is limited and too imprecise to facilitate strong inferences. However, it appears that over time *Apodrosus* populations are more responsive to certain ecological conditions of their habitat than to the composition and chemistry of specific host plants. This is a common condition in many entimine lineages (Oberprieler et al.

2007); then, much of the diversification within *Apodrosus* may instead be related to historical biogeographic factors.

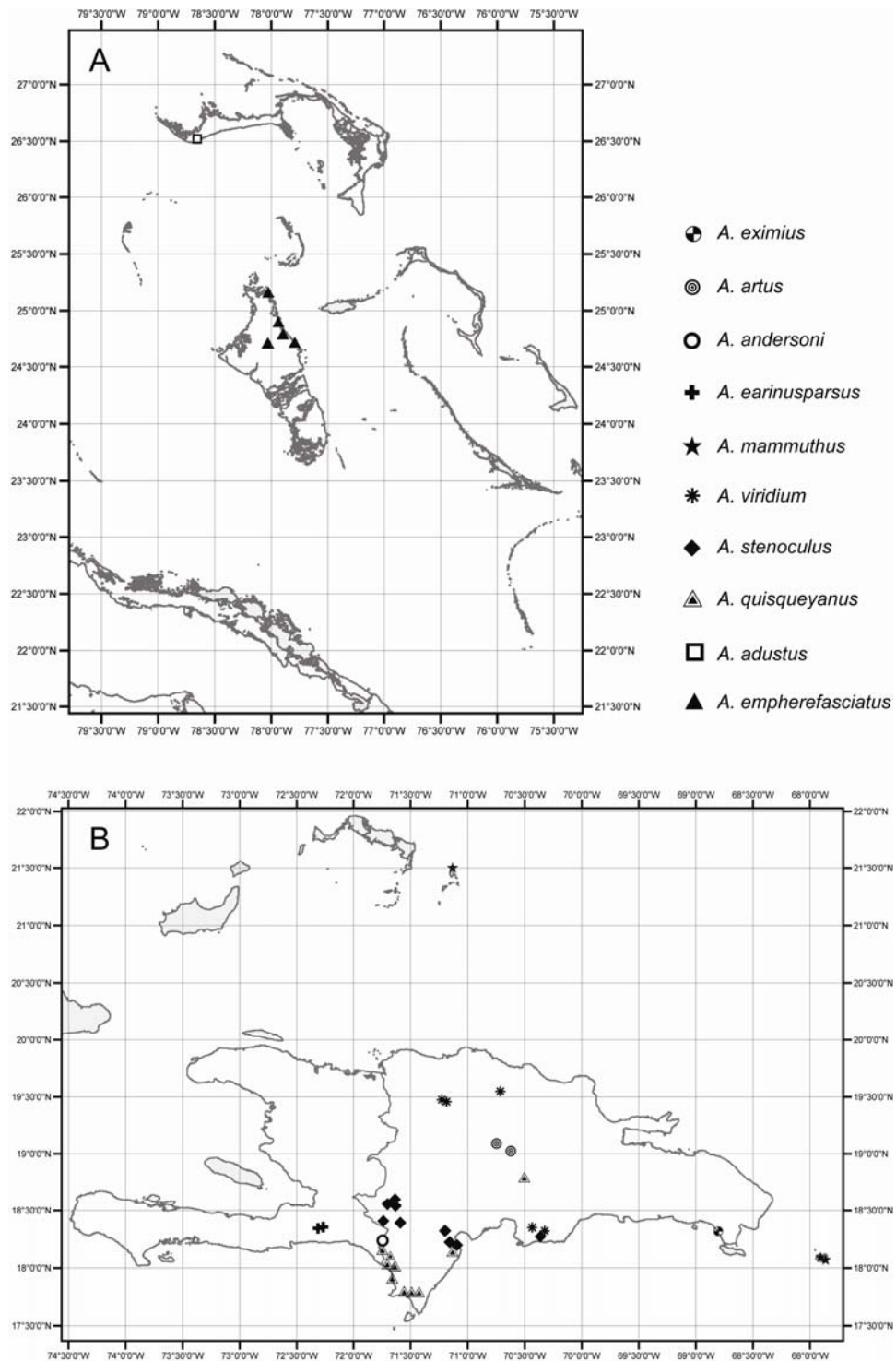


Figure 19. Occurrences of *Apodrosus* species in (A) the Bahamas (Grand Bahama and Andros Island) and (B) Hispaniola, Mona Island, and the Turks and Caicos Islands.

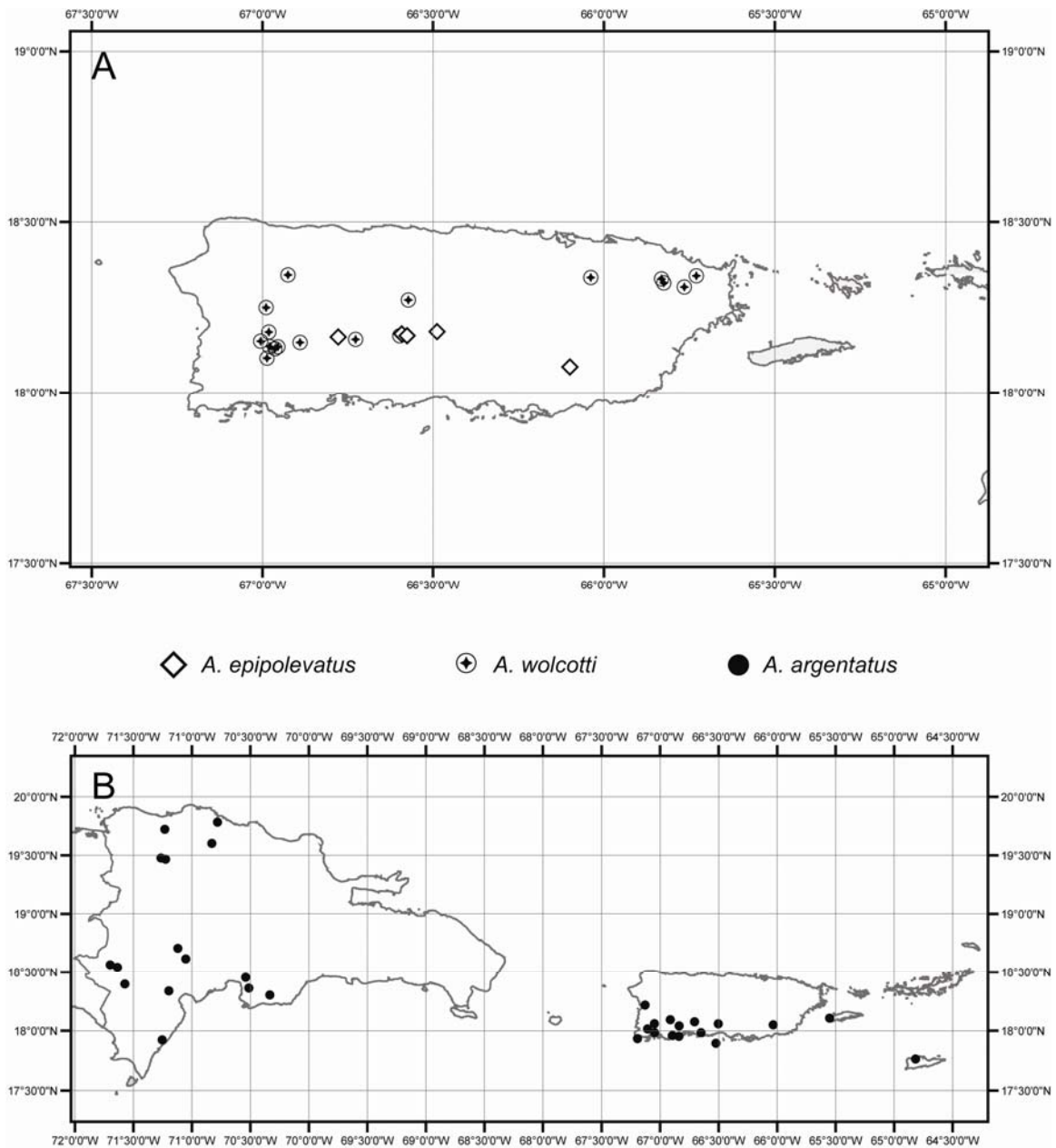


Figure 20. Occurrences of Puerto Rican *Apodrosus* species: (A) *A. epipolevatus* and *A. wolcottii*; (B) *A. argentatus* which is also present on the islands of Hispaniola, Vieques and St. Croix.

5 Conclusions

The number of species of the genus *Apodrosus* was increased to 13 by adding 11 new species to the two previously described species. The distribution of the genus includes the major groups of western Caribbean islands from the Bahamas to St. Croix, yet excluding Cuba for which there

are no records (neither historical nor present), although it is possible that additional species of *Apodrosus* occur there and elsewhere in the Caribbean region. The altitudinal range extends from -20 to 2100 m.

According to the phylogenetic analysis, *Apodrosus* is a monophyletic group and more closely related to *Anypotactus bicaudatus* than to the species Polydrusini studied, thus calling into question the traditional tribal placement and underscoring the need for a more comprehensive analysis of the related genera and tribes.

Most of the characters that support the relationships between taxa are homoplasious, which may be influenced in part by the outgroup selection and poorly known relationships within and among the studied taxa.

This study constitutes a promising first step towards a better understanding of the taxonomy and evolution of Caribbean entimine weevils, with new insights into the ecology and historical biogeographic relationships of the typically narrowly endemic constituent species.

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