

**MELATHRA HUYENAE FRANZ, A NEW GENUS AND NEW SPECIES OF
ENTIMINE WEEVIL (COLEOPTERA: CURCULIONIDAE: ENTIMINAE)
FROM SOUTHWESTERN HISPANIOLA**

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ABSTRACT

Melathra huyenae Franz, **new genus** and **new species**, is described to accommodate an enigmatic species of entimine weevil (Coleoptera: Curculionidae: Entiminae) from southwestern Hispaniola. The new genus is closely related to *Apotomoderes* Dejean and therefore placed in the tribe Geonemini Gistel, but is distinguished by the following unique suite of features: labial palps 2-segmented; post-epistomal region not depressed; scrobe passing over eye; profemur with a small cuticular tooth; metatibial apex simple; elytral humeri not well-defined; wings reduced; female sternum VIII elliptical; spermatheca with corpus swollen; and aedeagus with groups of setae present in dorsal subapical region, flagellum sclerotized, and with paired anterior, narrowly plicate sclerites. The single constituent species *M. huyenae* is characterized by a uniformly grey-silver to brown scale coverage which is most conspicuously interrupted by two anteromesally positioned rusty brown spots on the elytra. *Melathra huyenae* is apparently narrowly endemic to the coastal dry forest habitat of the Jaragua National Park. The host plant associations remain unknown.

Key Words: Caribbean, Geonemini, Jaragua National Park, morphology, systematics

Two recent studies have served to clarify the taxonomic identity of an erstwhile enigmatic species of entimine weevil (Coleoptera: Curculionidae: Entiminae *sensu* Alonso-Zarazaga and Lyal 1999) that is apparently endemic to the Jaragua National Park in the southwestern Dominican Republic (see León *et al.* 2011). The first of these offered a revised circumscription of the closely related genus *Apotomoderes* Dejean, including the description of five new species from Hispaniola and Mona Island, Puerto Rico (Franz 2010a). However, the herein treated species could not be assigned to *Apotomoderes* since it lacked various key characters of the latter, as detailed below. Subsequently, Franz (2011) provided new morphological phylogenetic evidence that confirmed (1) the proximity of the putative new species to *Apotomoderes* and (2) its placement within a Caribbean group of genera presently classified as members of the tribe Geonemini Gistel *sensu* Alonso-Zarazaga and Lyal (1999; formerly also treated as Barynotini Lacordaire; see van Emden 1944; O'Brien and Wibmer 1982). Together, these insights form the basis for describing the new genus and species in the present paper.

MATERIAL AND METHODS

Morphological Studies. The methodological approach taken in this study is in accordance with Franz (2010a, b, 2011) and references therein. The

body length was measured in dorsal view from the anterior margin of the eye to the posterior margin of the elytra. The length of the rostrum was measured from its apex to the anterior margin of the eye. The number of individuals measured is written once in parentheses for all measurements except the length/width relations of the aedeagus. Features that are shared between the male and female are usually mentioned only once (in the male), as are similar traits on serially homologous structures such as the legs. The habitus photographs were taken with a Microoptics XLT imaging system. All drawings of internal structures were prepared with a drawing tube attached to an Olympus BX41 compound microscope (magnification 20–400X). The initial line sketches were scanned and redrawn using an illustration software program, thus highlighting features with diagnostic significance.

Type Material. The labels for new type specimens include the genus name and species epithet, a gender symbol, and the author and year. They are colored red for the holotype and yellow for all paratypes. The insect collection codens are based on Arnett *et al.* (1993), as follows.

- CMNC** Canadian Museum of Nature Collection, Ottawa, Canada
CWOB Charles W. O'Brien Collection, Green Valley, Arizona, USA
FSCA Florida State Collection of Arthropods, Gainesville, Florida, USA

- MHND** Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic
- UPRM** Insect Collection, University of Puerto Rico at Mayagüez, Puerto Rico, USA
- WIBF** West Indian Beetle Fauna Project Collection, Bozeman, Montana, USA

***Melathra* Franz, new genus**

(Figs. 1–14)

Diagnosis. *Melathra* keys to *Apotomoderes* (“Barynotini”) in van Emden (1944), and variously to the naupactine genera assigned to couplets 117–122 in Anderson (2002); ~ *Artipus* Sahlberg, *Naupactus* Dejean) by virtue of the absence of a postocular lobe and vibrissae on the pronotum, the laterally positioned scrobe, the median sulcus on the rostrum, and the laterally positioned eyes. However, *Melathra* cannot be accommodated within any of the existing North American genera as circumscribed in Anderson (2002), and is indeed more closely related to the predominantly Hispaniolan geonemine genus *Apotomoderes*, sharing with the latter the following diagnostic features (Franz 2011): labial palps 2-segmented; transition of rostrum to head marked by a circum-capital suture; head with a postocular constriction; eyes laterally positioned on head; profemur with one pointed, cuticular tooth; metatibial apex simple (*i.e.*, without an inner flange or an outer bevel); and aedeagus with groups of setae present in the dorsal subapical region. Nevertheless, *Melathra* is readily distinguished from *Apotomoderes* by the following traits (see also Franz 2010a): dorsal half of scrobe passing over eye (not entirely ventrad of eye as in *Apotomoderes*); eyes in dorsal profile not “tilted” posteriad; pronotum not sexually dimorphic; profemoral tooth small, pointed, not knife-like (as in *Apotomoderes*); protibia without an anteromesally positioned, ridge-like (and often toothed), cuticular projection; elytra with humeri obscure; wings partially “reduced” (not fully developed as in *Apotomoderes*); female sternum VIII elliptical (not triangular); spermatheca with corpus swollen; and median lobe with strongly sclerotized flagellum and paired anterior, narrowly plicate sclerites (absent in *Apotomoderes*). *Melathra* furthermore differs from *Apotomoderes* by the more uniformly dark brown scale coloration which is interrupted primarily by two anteromesally positioned, rusty brown spots on the elytra; a much less depressed post-epistomal region; a shorter and more foveate (less narrowly linear) median rostral sulcus; and the lack of a row of teeth along the ventral side of the metatibia in females. The aforementioned characteristics jointly serve to separate *Melathra* also from other as of yet undescribed Caribbean species of entimene weevils that were examined

by the author, thereby justifying the erection of this new genus-level taxon.

Description. Female (Figs. 1–3). Length 6.20–9.97 mm, width 2.76–4.17 mm ($n = 10$); shape elongate-pyriform, length/width ratio 2.25–2.50; widest at midregion to posterior 1/3 of elytra. Integument dark (black), legs dark reddish brown. Small, subcircular, subcontiguous, appressed, variously colored scales densely arranged throughout body surface; scales (where not abraded) mostly pale white or grey-silver to tan or darker brown, somewhat translucent, yet characteristically light rusty brown (to orange) and metallic (visible at higher magnification) on lateral sides of pronotum, epipleura, and in anteromesal regions of elytra. **Mouthparts:** Mandibles (Fig. 3) lacking scales, with 5–8 long, several shorter setae, mandibular scar positioned apicolaterally, slightly projected. Maxillae (Fig. 7) with cardo elongate, basically widely bifurcate, lacking setae; stipes narrowly elongate, with lateral setae; galeo-lacinal complex mesally extending to apex of maxillary palpomere I, apically rounded, covered with short setae throughout, with several lacinal teeth (5–6 narrow and apical, wider and mesal; see Ting 1936), thereafter (along mesal margin) with tuft of long setae; palpiger with transverse row of setae; maxillary palps 3-segmented; I longer than II, with 2 apicolateral setae; II similar in length and wider than III, with multiple circumapical setae; III elongate, with parallel sulci, apically papillate. Labium (Fig. 8) with prementum entirely covering maxillary palps; escudate-pentagonal; apical margin medially projected; each apicolateral region with 3–4 long setae; labial palps 2-segmented, not reaching apical margin of prementum; I and II similar in length, subquadrate; I with 1 apicolateral seta; II apically papillate. **Rostrum:** Length 0.96–1.46 mm, rostral/pronotal length ratio 0.54–0.62, rostral length/width ratio 0.93–1.04. Dorsal outline of rostrum subquadrate; dorsolateral margins anteriorly diverging; apical margin triangularly incised. Nasal plate (Vaurie 1963) weakly defined, slightly concave-inflected, posteriorly not carinate; epistoma forming inversely V-shaped, slightly angulate stripe between nasal plate and basal 3/4 of rostrum. Dorsal surface of rostrum slightly convex, with median, posteriorly narrowing sulcus extending (maximally) to imaginary midpoint between anterior margins of eyes, often shorter. Rostrum in lateral view nearly straight, anteriorly slightly expanded; occipital sutures well-defined, extending to ventral midpoint of rostrum. Ventral surface of rostrum with gular sutures fused (Lyal 1995), anteriorly terminating in large, deep fovea, thereafter hypostomal-labial sutures widely bifurcating, curved, not reaching labial prementum. Antennal insertion near anterior 1/5 of rostrum. Scrobe lateral, strongly curved and posteriorly



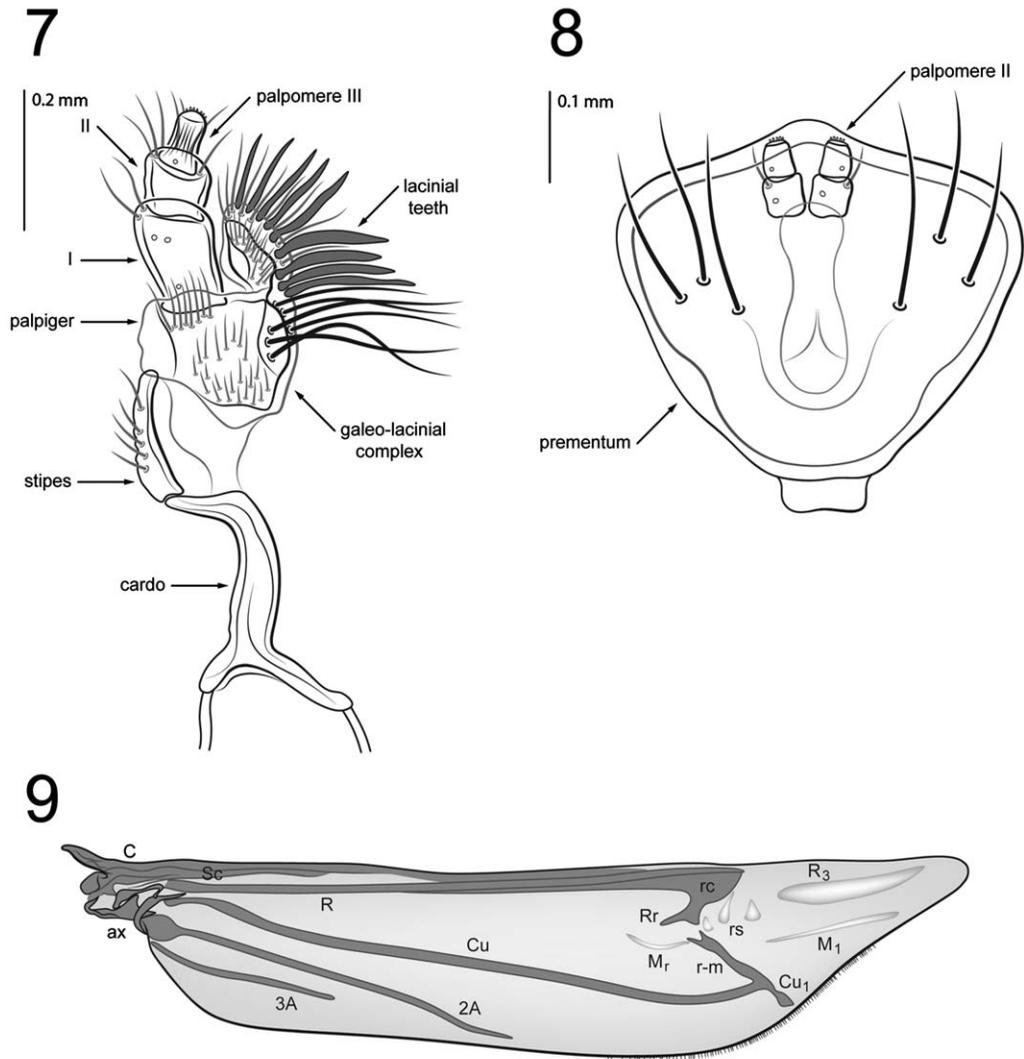
Figs. 1–3. Habitus of *Melathra huyenae*, female. 1) Dorsal; 2) Lateral; 3) Ventral.



Figs. 4–6. Habitus of *Melathra huyenae*, male. **4)** Lateral; **(5)** Head, dorsal view; **(6)** Head, lateral view.

widened, terminating anteriorly and directed ventrad of eye, though dorsal half passing over eye; anterior 1/2 of ventral margin of scrobe wide, convex, set off from lateral surface of rostrum by deep sulcus. Antennae 11-segmented; scape moderately stout; funicular antennomeres progressing from elongate to equilateral, clavate; club similar in length to funicular antennomeres III–VI; otherwise similar to *Apotomoderes* (see Franz 2010a). **Head:** Eyes laterally positioned, more or less evenly globular

and protruded; separated (in dorsal view) by distance more than anterior-to-posterior length of each eye. Head with apparent postocular constriction extending along entire circumference, rostrum and head in lateral view angulate. **Thorax:** Pronotum equilateral, length/width ratio 0.92–0.96, pronotal/elytra length ratio 0.34–0.36, slightly convex and globular; widest near midpoint; surface punctate, punctures homogeneously spaced; median sulcus absent. Anterolateral margins of pronotum slightly

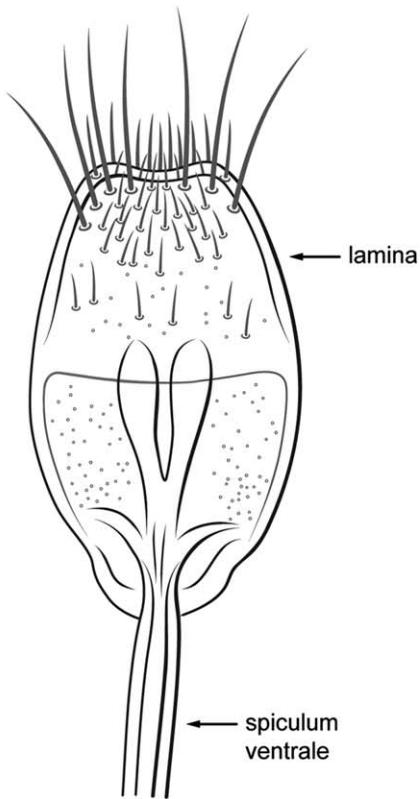


Figs. 7–9. Mouthparts and wings of *Melathra huyenae*. **7)** Right maxilla, ventral view; **8)** Labial prementum, lateral view; **9)** Right hind wing. Not illustrated to scale.

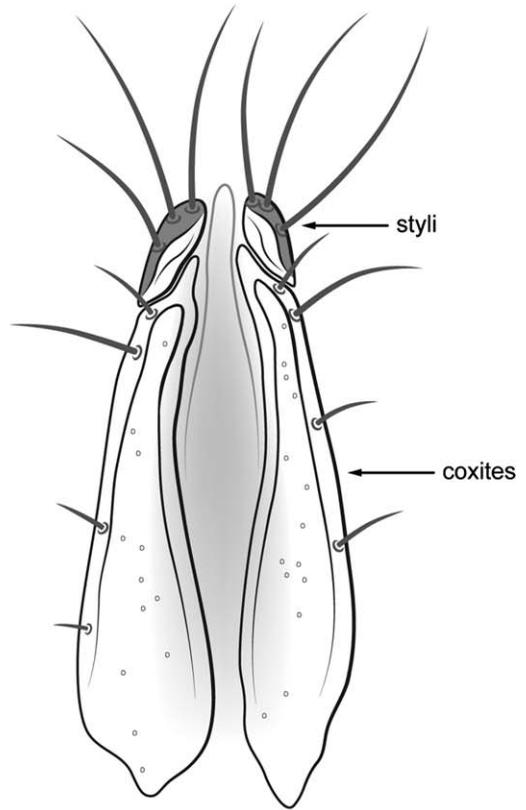
projected, postocular lobe and vibrissae absent. Scutellum exposed, semi-circular, covered with scales. Epipleura with mesepisternum triangular; mesepimeron dorsally obliquely narrowed; metepisternum linear, anteriorly abruptly widened; metepimeron entirely covered by elytron. Prosternum longer than mesosternum; procoxal cavities positioned at midpoint, contiguous, prosternal process short, elevated. Mesosternum slightly shorter than metasternum; mesocoxal cavities separated by distance nearly half as long as width of each mesocoxal cavity. Metasternum with median sulcus present as large, transverse fovea positioned anteriorly of posterior margin; metacoxal cavities widely separated;

otherwise similar to *Apotomoderes* (see Franz 2010a). Metendosternite with stalk wide; hemiducts wide, truncate; dorsal margin of sheath undulate; anterior tendons positioned near midpoint between median keel and base of furcal arms; furcal arms short, slender, diverging at 30–45° in relation to median keel. **Legs:** Prothoracic and metathoracic legs each longer than mesothoracic legs. Profemoral/pronotal length ratio 1.09–1.19; profemur with 1 small, pointed (though not knife-like), cuticular tooth inserted at apical 2/5 on anteromesal margin. Protibial/profemoral length ratio 0.92–1.00; protibia nearly straight, width similar throughout; anteromesal margin with row of 8–10 small, apically obliquely truncate

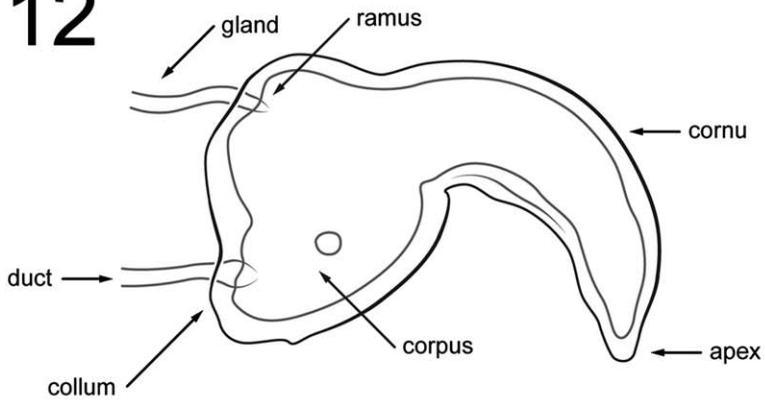
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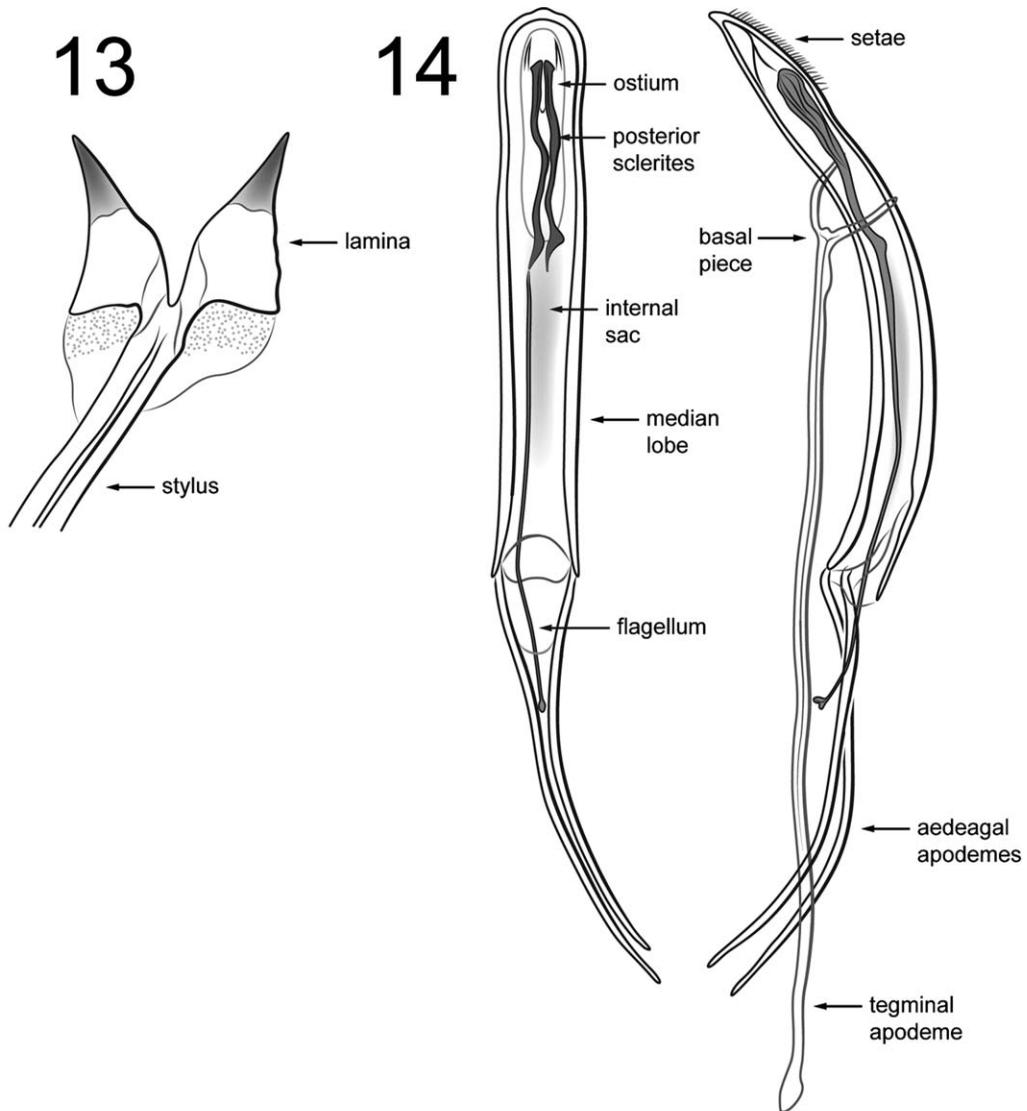
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Figs. 10–12. Female terminalia of *Melathra huyenae*. **10)** Sternum VIII; **11)** Coxites and styli; **12)** Spermatheca. Not illustrated to scale.



Figs. 13–14. Male terminalia of *Melathra huyenae*. **13)** Spiculum gastrale; **(14)** Tegmen and aedeagus, ventral and lateral views. Not illustrated to scale.

cuticular teeth, each tooth distally with brownish, spiniform seta; protibial apex with anterior margin truncate, setal comb absent; mucro similar in length to tarsal claw. Protarsus with tarsomere I nearly 2X as long as II, elongate, clavate; II and III similar in length, equilateral to transverse, jointly similar in length to V; claws paired, separate, simple. Meso- and metafemora unarmed; mesotibia with antero-mesal row of teeth more widely spaced, metatibiae with teeth not well-developed (obscure); metatibial apex simple, mucro absent, lateral margins each with

a comb of spiniform setae of increasing length, yet without a bevel or flange (“corbel open”; Thompson 1992), surface surrounding metatarsal condyle glabrous. **Elytra:** Length/width ratio 1.77–1.81; widest near midregion; anterior margins jointly slightly wider than posterior margin of pronotum, nearly straight; humeri obscure, rounded; lateral margins subparallel along anterior 3/4, thereafter roundly converging, posteriorly attenuate. Elytra in lateral view plane to slightly convex; posterior declivity apparent though not strongly angulate,

nearly straight. Elytra with striae I-IX complete, stria X incomplete and apparent only along marginal anterior 1/4; striae similar in width to intervals; punctures separated by distance similar to width of each puncture; intervals not elevated; with a tuft of aurate, linear, suberect scales at mesal margins of declivity. **Wings** (Fig. 9): Wings present but not fully developed, shorter and more linear in comparison to *Apotomoderes* (see Franz 2010a), distally obliquely narrowed, likely not functional, though most alar veins and sclerites well-defined (see Fig. 9). **Abdomen**: Venter with segments III and IV jointed, slightly convex and elevated, V-VII separate, the latter with linear and increasingly longer, suberect, aurate scales; VII with several small, shallow, irregularly shaped impressions, lateral margins posteriorly triangularly converging, posterior margin narrowly rounded. Tergum VII lacking strigulate regions. Pygidium (tergum VIII) entirely covered by elytra. **Terminalia**: Sternum VIII (Fig. 10) with anterior 3/4 (spiculum ventrale) narrowly stylate; posterior 1/4 (lamina) elliptical, entire (arms jointed), lateral margins continuously rounded, posterior margin slightly emarginate, posterior 1/4 of lamina with increasingly longer setae. Coxites (Fig. 11) similar in length to spiculum ventrale, weakly sclerotized, laterally with sparsely arranged setae; styli more strongly sclerotized, short, ovoid, posteriorly with 2–3 longer setae. Spermatheca (Fig. 12) variously C-shaped; collum and ramus not projected and widely separated; corpus large, tumescent; cornu slightly longer than corpus, continuously curved and apically pointing in a direction perpendicular to “axis” of collum, apex acute.

Male (Figs. 4–6). Overall similar to female, though body shape slightly more slender (not pyriform) and pronotum slightly more globular. Length 6.14–10.03, width 2.49–4.37 ($n = 10$); length/width ratio 2.30–2.47; rostral length 0.92–1.52 mm; rostral/pronotal length ratio 0.50–0.55, rostral length/width ratio 0.92–0.96; pronotal length/width ratio 0.91–0.96, pronotal/elytral length ratio 0.36–0.38; profemoral/pronotal length ratio 1.07–1.22; protibial/profemoral ratio 0.89–0.95; metatibia slightly longer than in female, apically curved, otherwise similar to protibia, row of cuticular teeth and mucro present; elytral length/width ratio 1.73–1.82; elytral declivity rounded, not angulate, less pronounced than in female, mesally positioned tuft of scales absent; venter with segment VII short, posterior margin widely rounded to truncate.

Terminalia: Sternum VIII similar to *Apotomoderes* (see Franz 2010a). Spiculum gastrale (Fig. 13) longer than median lobe; stylus slightly curved; posteriorly bifurcate, furcal arms elongate-triangular, anteriorly weakly sclerotized, posteriorly diverging and more heavily sclerotized, apices finely acute. Tegmen (Fig. 14) more than 1.5X length of

median lobe; tegminal apodeme slender, slightly sinuate; basal piece posteriorly Y-shaped. Aedeagus (Fig. 14) with median lobe (aedeagal pedon) length/width ratio 6.04–6.42; basiventral margin roundly emarginate; lateral margins subparallel, gradually roundly converging along posterior 1/6, apex narrowly rounded. Median lobe in lateral view slightly curved along anterior 3/5, thereafter outline straight to slightly undulate; width similar throughout, except for gradually narrowed posterior 1/6, along which dorsolateral margins (and to a lesser extent the dorsal mesal area) are densely covered with short, fine setae (see also Franz 2010a); apex triangularly narrowed, slightly deflected. Internal sac with variously plicate membranes, though lacking denticulate regions; with well-developed, long and anteriorly and posteriorly strongly sclerotized flagellum (see Wanat 2007; a membranous flagellum was observed in the majority of taxa studied in Franz 2011), anterior end of flagellum with knob-like expansion, midregion not sclerotized, yet posteriorly (along region of ostium) connected to 2 narrowly elongate, subparallel, undulating, plicate sclerites which terminate in plicate “head” region that is acutely narrowed and recurved by 180°; ostium large, elliptical, lateral margins invaginated. Aedeagal apodemes nearly 3/5 as long as median lobe, sclerotized, slender.

Type Species. *Melathra huyenae* Franz.

Etymology. The genus name *Melathra* is a combination of the Ancient Greek words *melas* and *lathra* (see Brown 1956). The former signifies “black, dark” and refers to the dark habitus of the weevils, whereas the latter signifies “secretly, stealthy” and refers to the “mysterious character” of the genus, both taxonomically and in terms of life habits. The gender is feminine.

Melathra huyenae Franz, new species

(Figs. 1–14)

Diagnosis. *Melathra huyenae* is diagnosed by the following combination of traits: integument black, legs dark reddish brown; scales predominantly pale white, grey-silver to tan or brown, yet turquoise metallic on the rostrum, and with two conspicuous sub-elliptical patches of rusty brown metallic scales on anteromesal edges of elytra. The post-epistomal region is not distinctly depressed, and the median rostral sulcus is short and not narrowly linear. The head has a postocular constriction. The profemur is toothed, whereas the female metatibia has neither a row of teeth nor a mucro. The humeri are not well-developed. The female declivity bears a mesal tuft of suberect scales. The female sternum is VIII elliptical (Fig. 10) and the corpus of the spermatheca is swollen (Fig. 12). The male median lobe has a strongly sclerotized flagellum

and paired anterior, narrowly plicate sclerites (Fig. 14). Further differential traits are provided in the genus-level diagnosis.

Description. General morphological characteristics and measurements as specified in genus-level account above. Post-epistomal area of rostrum with more widely spaced, bluish or pale turquoise metallic scales, thereafter with contiguous pale silver/grey to brown scales typically forming alternating linear stripes along dorsal surface of rostrum (Figs. 1, 5). Body surface primarily covered with homogeneously intermixed pale white to grey-silver and variously brown scales, resulting in uniform dark brown appearance without magnification; patches of rusty (to orange) brown metallic scales present on lateral sides of pronotum, thoracic and abdominal sterna, and elytra as well as 2 distinct sub-elliptical patches of such scales in mesal anterior corners of elytra (Figs. 1, 4). Lateral and ventral sides of rostrum, head, and femora (particularly on lateral sides near region of ventral tooth) more frequently with pale white scales (Figs. 2, 3). Setae short, lobulate, recurved, rusty brown and inconspicuous except on nasal plate, femora, ventral sides of tibiae (particular male metatibiae), and ventral sternites.

Variation. Other than substantive differences in body size, there is little apparent variation among specimens in terms of shape, surface structure, and coloration. Macroscopic differences in color patterns are largely due to varying levels of scale abrasion; worn specimens show more parts of the underlying black integument.

Type Material. Holotype female “D.R. [Dominican Republic] Pedernales [Province], Las Cuevas, Bahía de las Águilas Station, afternoon & night collecting (incl. Hg & UV lights), 40 m, N 17°51'43.8" W 71°38'18.3" / June 08/2008 (RD 8-3), Leg. N. Franz, J. Girón, A. Mazo, S. Navarro” (UPRM); paratypes, same label as female holotype (18 males, 9 females); “DOMINICAN REPUBLIC, Pedernales Prov.[ince], Cabo Rojo, 18-V/1992, M. C. Thomas” (8 males, 6 females); “DOMINICAN REPUBLIC, Pedernales Prov. [ince], Cabo Rojo, 21-V-1992, M. C. Thomas (4 males, 4 females).

Etymology. Named to acknowledge the author’s love and appreciation for his best friend and greatest supporter, Huyen Dotran.

Natural History. Numerous specimens of *M. huyenae* were collected while beating shrubby plants at night along trails in the coastal dry forest (“main platform”) of the Jaragua National Park, near the Bahía de las Águilas Station, at only 40 m above sea level (Fig. 15; see also León *et al.* 2011). The host plant associations remain unknown. No additional specimens were taken while collecting repeatedly on similar vegetation at higher elevations, *i.e.* moving uphill from Carretera 44 along the

Carretera Cabo Rojo to Aceitillar, thus suggesting that *M. huyenae* is narrowly restricted to the coastal zone of the Jaragua National Park. Similarly, narrowly endemic species are reported for the phylogenetically and ecologically related Greater Antillean genera *Apotomoderes*, *Artipus*, and *Scelianoma* Franz and Girón (Woodruff 1985; Franz and Girón 2009; Franz 2010a).

DISCUSSION

The separate phylogenetic identity of *Melathra huyenae* (= “Geonemini gen. et sp. nov.”) from *Apotomoderes* was previously established (Franz 2011). It is reconfirmed here through a suite of external and internal characteristics, as provided in the diagnosis. Although erecting monotypic genera is perhaps not optimal (see Platnick 1976, 1977; Wiley 1977), the inclusion of the new taxon within *Apotomoderes* would result in an unsuitably wide redefinition of the latter genus, thereby leaving it “open” to other species additions that would further reduce its phylogenetic coherence (Franz 2010a).

The southwestern Hispaniolan region bears a highly diverse and insufficiently documented fauna of entimine weevils (Franz 2010a; Girón and Franz 2010) – an observation congruent with the presumed longstanding (Oligocene-Miocene) isolation of the Tiburón Ridge (Iturralde-Vinent 2006). Other species from this region and closely related to *Apotomoderes* and *Melathra* are already on hand in research collections (NMF, personal observation), but will likely be described in additional new genera.

Melathra is herein provisionally assigned to the entimine tribe Geonemini *sensu* Alonso-Zarazaga and Lyal (1999) and Franz (2011), based (*i. a.*) on the 2-segmented labial palps and setose, dorsal subapical region of the aedeagus which concur with the geonemine genus *Apotomoderes*. However, the Geonemini as traditionally circumscribed represent a paraphyletic “grade” which contains several genera assigned to other tribes such as the Eustylini Lacordaire (see Franz 2010b; *e.g.* *Achrastenus* Horn) and Naupactini Gistel (*e.g.* *Artipus*). A more inclusive analysis of eustylina and geonemine genus-level relationship is underway and will hopefully resolve the tribal placement of *Melathra* and its Caribbean relatives.

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Fig. 15. Habitat of *Melathra huyenae*: dry forest vegetation at the Bahía de las Águilas, Jaragua National Park, Pedernales Province, southwestern Dominican Republic.

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REFERENCES CITED

- Alonso-Zarazaga, M. A., and C. H. C. Lyal. 1999.** A World Catalogue of Families and Genera of Curculionoidea (Insecta: Coleoptera) Excluding Scolytidae and Platypodidae. Entomopraxis, S.C.P., Barcelona, Spain.
- Anderson, R. S. 2002.** Family 131. Curculionidae [pp. 722–815]. *In*: American Beetles, Volume 2, Polyphaga: Scarabaeoidea to Curculionoidea (R. H. Arnett Jr., M. C. Thomas, P. E. Skelley, and J. H. Frank, editors). CRC Press, Boca Raton, FL.
- Arnett Jr., R. H., G. A. Samuelson, and G. M. Nishida. 1993.** The Insect and Spider Collections of the World, 2nd Edition. Fauna & Flora Handbook No. 11. Sandhill Crane Press, Gainesville, FL.
- Brown, R. W. 1956.** Composition of Scientific Words, Revised Edition. Smithsonian Institution Press, Washington, D. C.
- Emden, F. I. van. 1944.** A key to the genera of Brachyderinae of the world. *Annals and Magazine of Natural History* 11(11): 503–532, 559–586.
- Franz, N. M. 2010a.** Revision and phylogeny of the genus *Apotomoderes* Dejean (Coleoptera: Curculionidae: Entiminae). *ZooKeys* 49: 33–75.
- Franz, N. M. 2010b.** Redescriptions of critical type species in the Eustylini Lacordaire (Coleoptera: Curculionidae: Entiminae). *Journal of Natural History* 44: 41–80.

- Franz, N. M. 2011.** Phylogenetic reassessment of the *Exophthalmus* genus complex (Curculionidae: Entiminae: Eustylini, Geonemini). Zoological Journal of the Linnean Society. (in press)
- Franz, N. M., and J. C. Girón. 2009.** *Scelianoma elydimorpha*, a new genus and new species of entimine weevil from southwestern Puerto Rico (Coleoptera: Curculionidae: Entiminae). Neotropical Entomology 38: 219–230.
- Girón, J. C., and N. M. Franz. 2010.** Revision, phylogeny, and historical biogeography of the genus *Apodrosus* Marshall, 1922 (Coleoptera: Curculionidae: Entiminae). Insect Systematics & Evolution 41: 339–414.
- Iturralde-Vinent, M. A. 2006.** Meso-cenozoic Caribbean paleogeography: implications for the historical biogeography of the region. International Geology Review 48: 791–827.
- León, Y. M., E. Rupp, Y. Arias, L. Perdomo, S. J. Incháustegui, and E. Garrido. 2011.** Estrategia de Monitoreo para Especies Amenazadas de la Reserva de Biósfera Enriqueillo-Bahoruco-Jaragua. Grupo Jaragua, Santo Domingo, Dominican Republic.
- Lyal, C. H. C. 1995.** The ventral structures of the weevil head (Coleoptera: Curculionidae). Memoirs of the Entomological Society of Washington 14: 35–51.
- O'Brien, C. W., and G. J. Wibmer. 1982.** Annotated checklist of the weevils (Curculionidae sensu lato) of North America, Central America, and the West Indies (Coleoptera: Curculionoidea). Memoirs of the American Entomological Institute 34: 1–382.
- Platnick, N. I. 1976.** Are monotypic genera possible? Systematic Zoology 25: 198–199.
- Platnick, N. I. 1977.** Monotypy and the origin of higher taxa: a reply to E. O. Wiley. Systematic Zoology 26: 355–357.
- Thompson, R. T. 1992.** Observations on the morphology and classification of weevils (Coleoptera, Curculionoidea) with a key to major groups. Journal of Natural History 26: 835–891.
- Ting, P. 1936.** The mouth parts of the coleopterous group Rhynchophora. Microentomology 1: 93–114.
- Vaurie, P. 1963.** A revision of the South American genus *Hyphantus* (Coleoptera, Curculionidae, Otiorhynchinae). Bulletin of the American Museum of Natural History 125: 239–304.
- Wanat, M. 2007.** Alignment and homology of male terminalia in Curculionoidea and other Coleoptera. Invertebrate Systematics 21: 147–171.
- Wiley, E. O. 1977.** Are monotypic genera paraphyletic? – a response to Norman Platnick. Systematic Zoology 26: 352–355.
- Woodruff, R. E. 1985.** Citrus weevils in Florida and the West Indies: preliminary report on systematics, biology, and distribution (Coleoptera: Curculionidae). Florida Entomologist 68: 370–379.

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