

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Insecta Mundi

Center for Systematic Entomology, Gainesville,  
Florida

---

12-11-2004

## Revision of the Phyllophaga of Hispaniola (Coleoptera: Scarabaeidae: Melolonthinae) – PART 4

Robert E. Woodruff

*Florida State Collection of Arthropods*, BobsGems@aol.com

Milton W. Sanderson

*Milroy, Pennsylvania*

Follow this and additional works at: <https://digitalcommons.unl.edu/insectamundi>



Part of the [Entomology Commons](#)

---

Woodruff, Robert E. and Sanderson, Milton W., "Revision of the Phyllophaga of Hispaniola (Coleoptera: Scarabaeidae: Melolonthinae) – PART 4" (2004). *Insecta Mundi*. 88.

<https://digitalcommons.unl.edu/insectamundi/88>

This Article is brought to you for free and open access by the Center for Systematic Entomology, Gainesville, Florida at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Insecta Mundi by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

**Elytra.** Color fairly uniform reddish brown, except for darker apical declivity near suture; sutural margin barely carinate, except beyond apical declivity. Sutural costae barely raised with a few scattered punctures, suture terminating in a very fine microtooth, but barely noticeable, elytra evenly rounded at apex, lateral margin barely reflexed in anterior three-fourths. Elytra especially iridescent or chatoyant, appearing silky.

**Pygidium** (Fig. 339). Convex, pruinose, iridescent and punctured as elytra, glabrous except for terminal fringe, lighter red-brown than elytra, wider than long,

**Legs.** Protibia tridentate, basal tooth much smaller than other 2, terminal spine acuminate, extending beyond first tarsal joint; tarsal segments 2-4 subequal, fifth 1.5X longer than 4; tarsal claws C-shaped (Fig. 345), teeth sharp pointed, middle tooth near center, projecting longer than terminal tooth, producing large U-shaped notch at base. Mesotibia with longitudinal carina, transverse carina incomplete but indicated by external teeth and spines; terminal spurs fine, straight, acuminate and pointed, inner spur two-thirds length of first tarsal segment, outer spur half length of first tarsal claw; tarsal segments 1-4 progressively shorter, fifth 1.5X fourth; mesotarsal claws same as protarsus. Metatibia with longitudinal carina well-developed, transverse carina less apparent than on mesotibia, apex expanded into a sharp tooth on external edge (Fig. 344), delimiting terminal fringe of 22 spines; terminal spurs similar in shape to those of mesotibia, inner spur 1.5X longer than first tarsal segment, outer spur subequal length of first tarsal segment; segments 2, 3, 4 gradually shorter, 5 subequal to 2, first tarsal segment wider at apex than others but not greatly expanded to sharp spine-like teeth; tarsal claws similar to other legs.

**Abdomen.** Venter color light orange to straw colored, all segments with varying degree of golden setae, slightly pruinose to silky, setae appressed throughout. Penultimate sternite convex, ultimate with a horizontal depression, posteriorly edged by carinate demarcation and slightly depressed medially.

**Male Genitalia** (Fig. 333-338). Totally unlike any other known Hispaniolan *Phyllophaga*, and nearly impossible to describe in words. It is remotely similar to *mali* in the aedeagus with a long central projection, and a bifurcate element below it. The parameres (Fig. 334) are extremely elongated and rounded at their

apex, and their ventral surface with an acute, backward projecting tooth. The phallobase dorsum has a deep median notch or invagination (Fig. 338).

**Allotype female.** (Fig. 346-352). Data same as holotype, except CMNH 307,340 [CMNH]. Similar to male in most respects, except antennal club shorter, nearly subequal to previous 3 antennomeres; pronotum more convex, massive; metatibial spurs flattened spatulate-shaped and straight, metatarsal first segment reduced, half length of inner spur; apical spinule of 26 spines; pygidium less convex, somewhat wrinkled medially; ultimate abdominal sternite without a horizontal carinate demarcation, but slightly depressed and more densely punctate medially; elytra considerably wider in posterior third. Body bulkier than male, less streamlined. **Genitalia** (Fig. 346-352). Exceptionally hard and sclerotized, convex, and reddish to black. Inferior plates fused entire length, their juncture indicated by obvious suture; basally sealed by a broadly triangular plate medially. Apex crisp, cup shaped, without setae. Superior plates projecting, hardened, fused medially, the outline V-shaped in dorsal view; external projections with crisp edge and about 10 long, stiff setae.

**Specimens examined.** Only the holotype and allotype are known.

**Ecology.** Obviously the label data "disturbed forest and fields" reveals little about the habitat. Although much of Haiti's forests have been cut, hopefully the remoteness of the area (1405 m in Massif l'Hotte) will assist in protecting the species, along with its host trees. It is likely that the 2 specimens were a mating pair. It is another of the interesting endemic species restricted to the "South Island".

**Comparisons.** The reddish brown color and iridescence place this species near *mali*, *neglecta*, *rustica* and *barrosa*. When the male holotype was first examined it was suspected to be the male of *barrosa*, which was described from a unique female. However, when the associated female was examined, with the same data, it was obvious that an undescribed species was involved. Male genitalia of the 4 species are easily distinguished (Fig. in parentheses): *haitiensis* (333-338); *mali* (450-456); *neglecta* (513-518); *rustica* (700-707); [*barrosa* (unknown)]. The largest of the group is *haitiensis*.

**Etymology.** The name is obviously for the country of origin, but it was chosen because the species may be

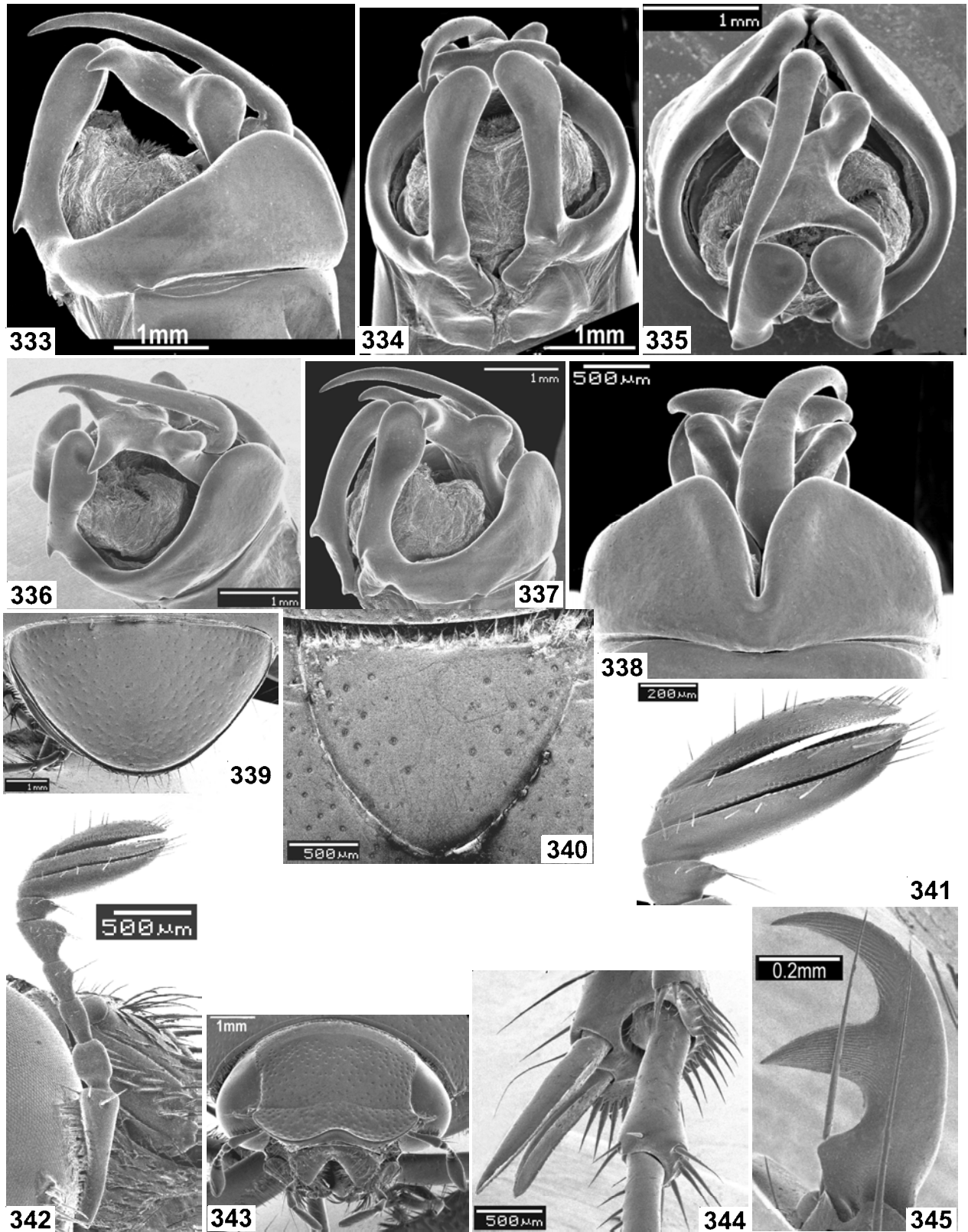


Fig. 333-345. *Phyllophaga haitiensis* Woodruff. Male: 333-338: Male genitalia 333) lateral; 334) ventral; 335) caudal; 336) caudo/lateral; 337) same, more caudal; 338) dorsal; 339) pygidium; 340) scutellum; 341) antennal club; 342) antenna; 343) head, frontal; 344) metatibial apex; 345) mesotarsal claw.

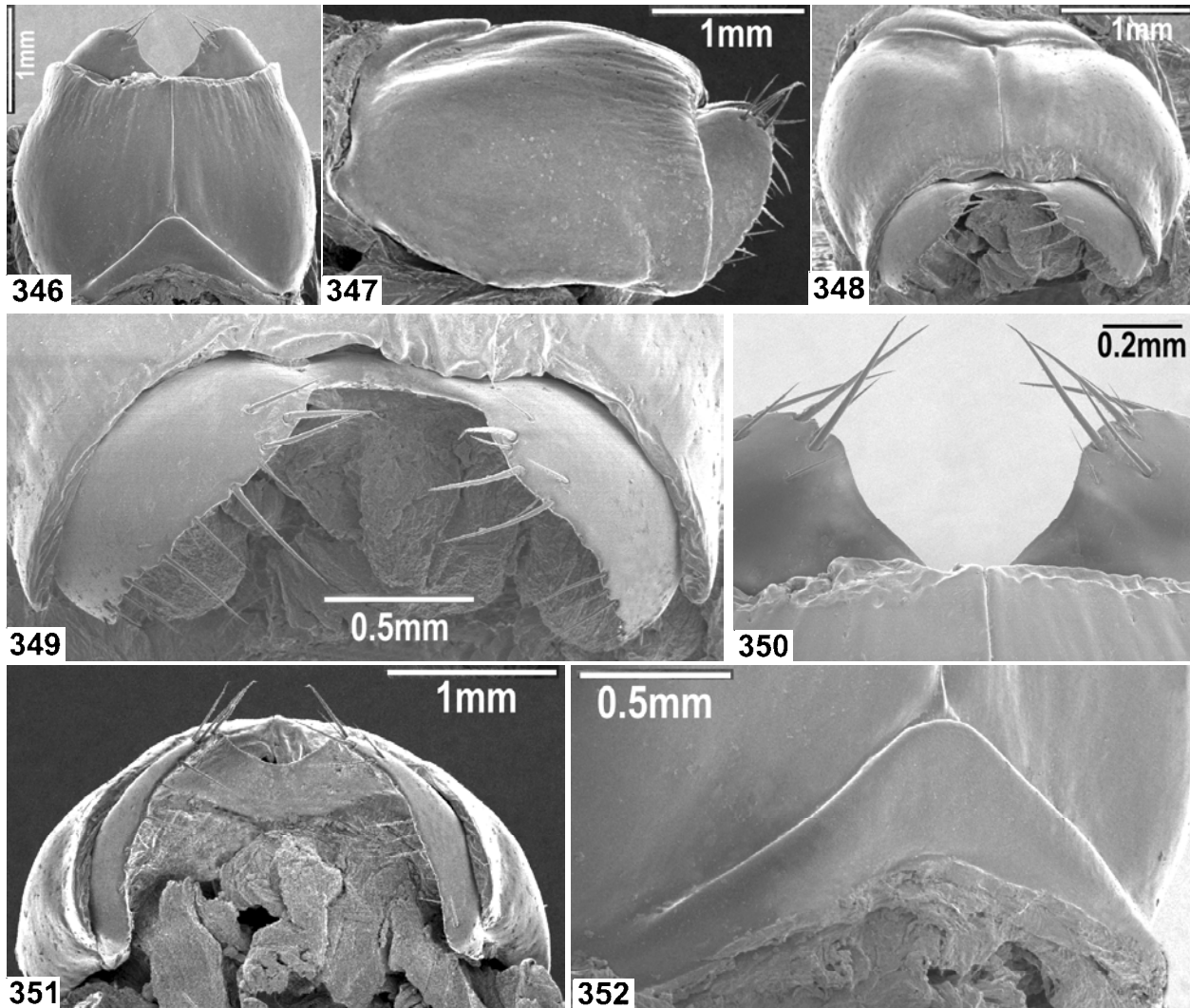


Fig. 346-352. *Phyllophaga haitiensis* Woodruff. Female genitalia: 346) ventral, 347) lateral, 348) caudo/ventral, 349) superior plates, caudo/ventral, 350) pubic process, ventral, 351) caudal, 352) central triangular plate covering base of inferior plates, diagonal/ventral.

restricted to the western mountains of the “South Island”. It is one of the few Hispaniolan species not known from the Dominican Republic as well.

*Phyllophaga hogardi* (Blanchard)  
(Fig. 84, 353-367)

*Ancylonycha hogardi* Blanchard (1850: 137).

*Ancylonycha hogardi* Blanchard, Burmeister, 1855:  
337.

*Phyllophaga hogardi* (Blanchard), Wolcott, 1928a:  
26.

*Phyllophaga hogardi* (Blanchard), Sanderson, 1951:  
260-1; Fig. 10, 11, 61.

This species and *neglecta* were the earliest *Phyllophaga* described from Hispaniola. It is one of the more common species, especially at lower elevations. Along with *romana*, it is probably one of the 2 species most likely to cause economic damage, because of its abundance in sugarcane growing areas. Wolcott (1927: 227–228; Fig. 77) listed *hogardi* as the most common species in Haiti, and illustrated the adult.

On the basis of the strong spine on the elytral suture apex (Fig. 362), Sanderson placed it in a group with *romana*, *leptosfica*, and *permagna*. In the present study, additional species can be added: *baoruco*, *eladio*, and *toni*. Because of other similarities, including habitus and genitalia, *marcano* also belongs in this group, but the sutural spines are much reduced and not as obvious (Fig. 470). Because *hogardi* is

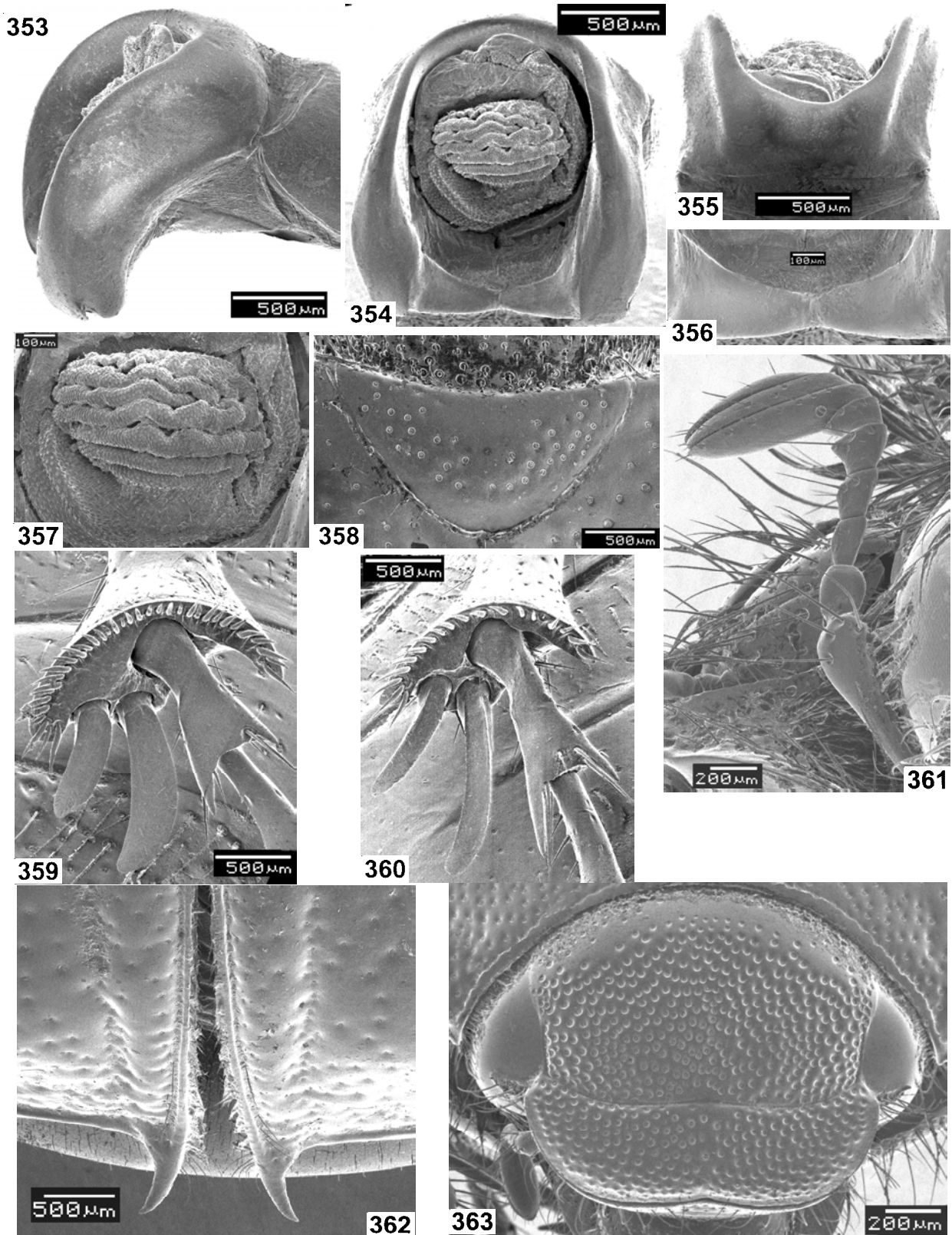


Fig. 353-363. *Phyllophaga hogardi* (Blanchard). 353-357 Male genitalia: 353) lateral; 354) caudal; 355) dorsal; 356) paramere tips; 357) aedeagal tip; 358) scutellum; 359-360) metatibial apex: 359) female; 360) male; 361) antenna, right, male; 362) elytral sutural apex with recurved spines, male; [typical of the *hogardi* species group], 363) head, dorsal.

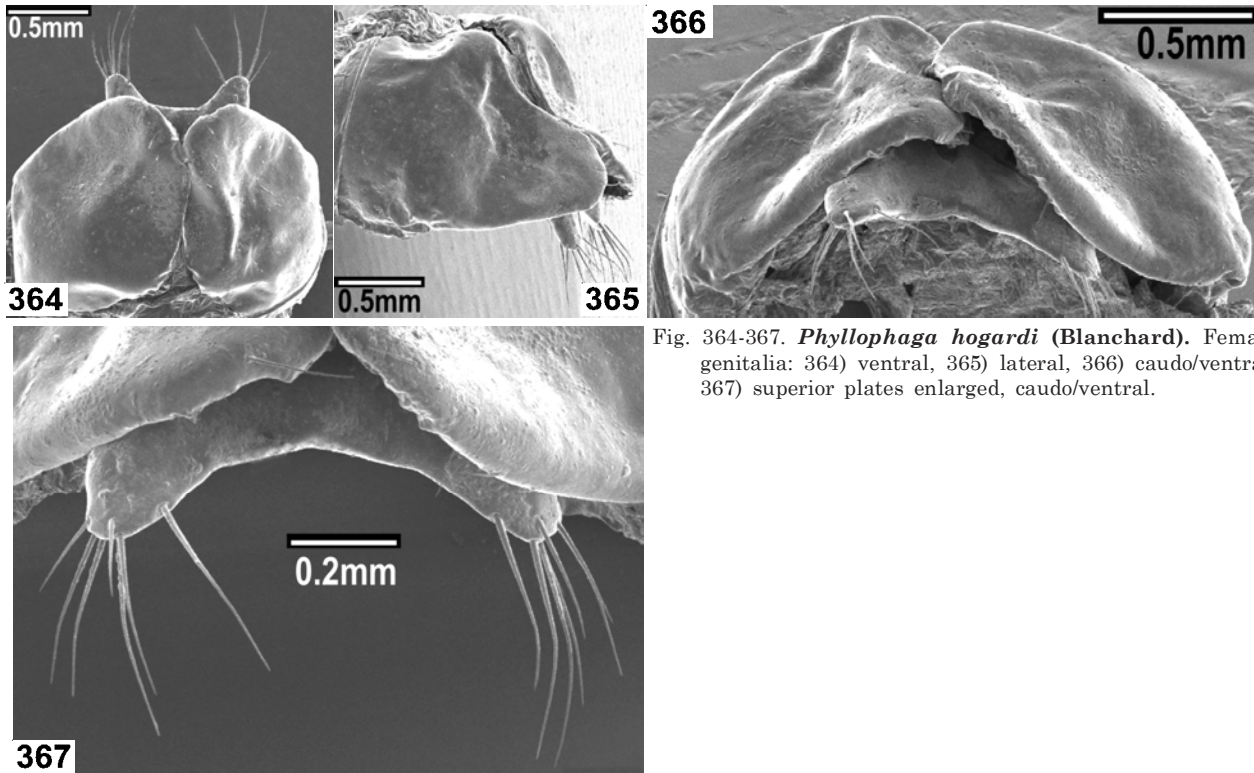


Fig. 364-367. *Phyllophaga hogardi* (Blanchard). Female genitalia: 364) ventral, 365) lateral, 366) caudo/ventral, 367) superior plates enlarged, caudo/ventral.

exceptionally shiny, it is similar in appearance to the female of *canoia*, but that species has no sutural spine and the elytra are more rugosely punctured; the female genitalia (Fig. 364-367 vs. 231-233) are easily distinguished. All of the related species appear to be higher altitude, and perhaps *hogardi* is the ancestral species from the lowlands. It is also variable in size (L. 19-23, W. 9-12 mm) and the degree of shine. Some specimens appear greasy, while others are brilliantly shiny. No genitalic differences were observed to coincide with this variation. Females are often robust and posteriorly swollen, in comparison to males. There is sexual dimorphism in the apical metatibial spines (Fig. 29-30). Sanderson (1951: 261) recorded a male from Puerto Plata with both antennae 8 segmented, but another from the same locality had the normal 9 segments.

**Specimens examined.** Sanderson (1951) recorded it from HAITI: Petionville and Port-au-Prince; and DOMINICAN REPUBLIC: Santiago, Santo Domingo (=Ciudad Trujillo), and Puerto Plata. I have seen several hundred specimens from the following Dominican Provinces: Barahona, Dajabon, Distrito Nacional, Elias Piña, El Seibo, La Altagracia, La Romana, La Vega, Monte Cristi, Peravia, Puerto Plata, San Cristobal, San Juan, Santiago. Most of these were from low elevations, although 113 were taken at 2400

ft at Rio Limpio (Prov. Elias Piña). However, none was taken at 3300 ft at the Larimar Mine (Prov. Barahona) with the 8 other species taken there. Because of its abundance at lower elevations, it would be an easy one to transport in soil, so its present distribution may be more extensive than before man.

*Phyllophaga imprima* Sanderson  
(Fig. 85, 368-383)

*Phyllophaga imprima* Sanderson (1951: 276-277; Fig. 52-53).

This small species (L. 10-11, W. 6 mm) is pruinose in males, some females partially or wholly shiny. The head is deeply punctate, creating an irregular surface, with vague median division, sometime appearing as if weakly bituberculate. In size (habitus, Fig. 85) and male genitalia (Fig. 368-373) it is similar to *cartaba*, *latiungula*, and *panicula*; the aedeagus has only 2 dorsally projecting parallel spines, whereas all the others have more. The pygidium is shiny medially, but disc encircled by heavily pruinose border (Fig. 374, details 375). The metatibia of this group of small species has the apex more deeply notched dorsally (Fig. 378), enabling the tarsi to be raised almost vertically. Adults of the genus *Serica* often raise their metatarsi while feeding, but there are no observations

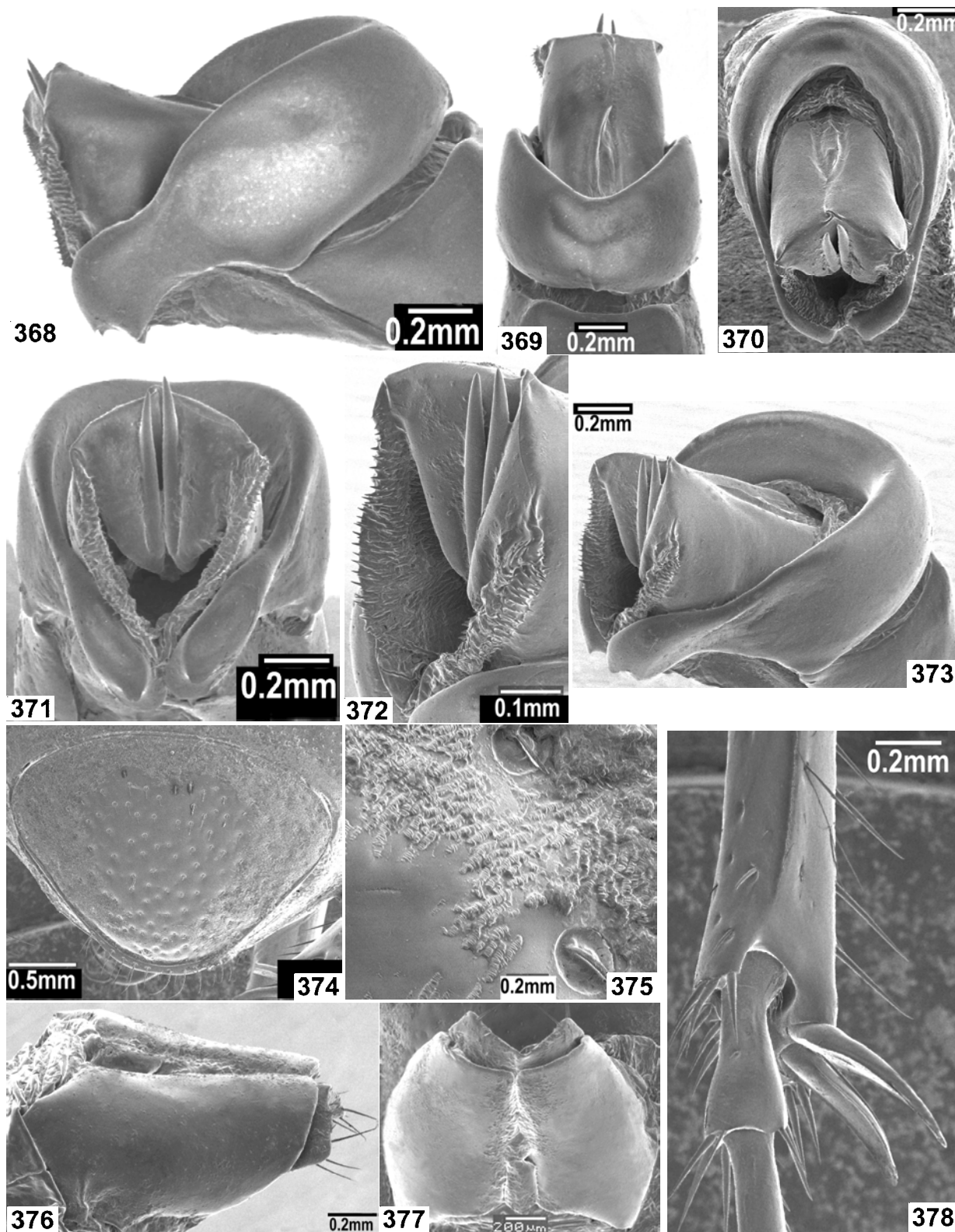


Fig. 368-378. *Phyllophaga imprima* Sanderson. 368-373 Male genitalia: 368) lateral; 369) dorsal; 370) caudal; 371) ventral; 372) aedeagus, lateral; 373) caudo/lateral; 374) male pygidium; 375) same, enlargement of junction between smooth central area and pruinose sides; 376-377 female genitalia: 376) lateral; 377) ventral; 378) metatibial apex, dorsal (note notch in tibia, allowing first tarsal segment to be raised vertically).

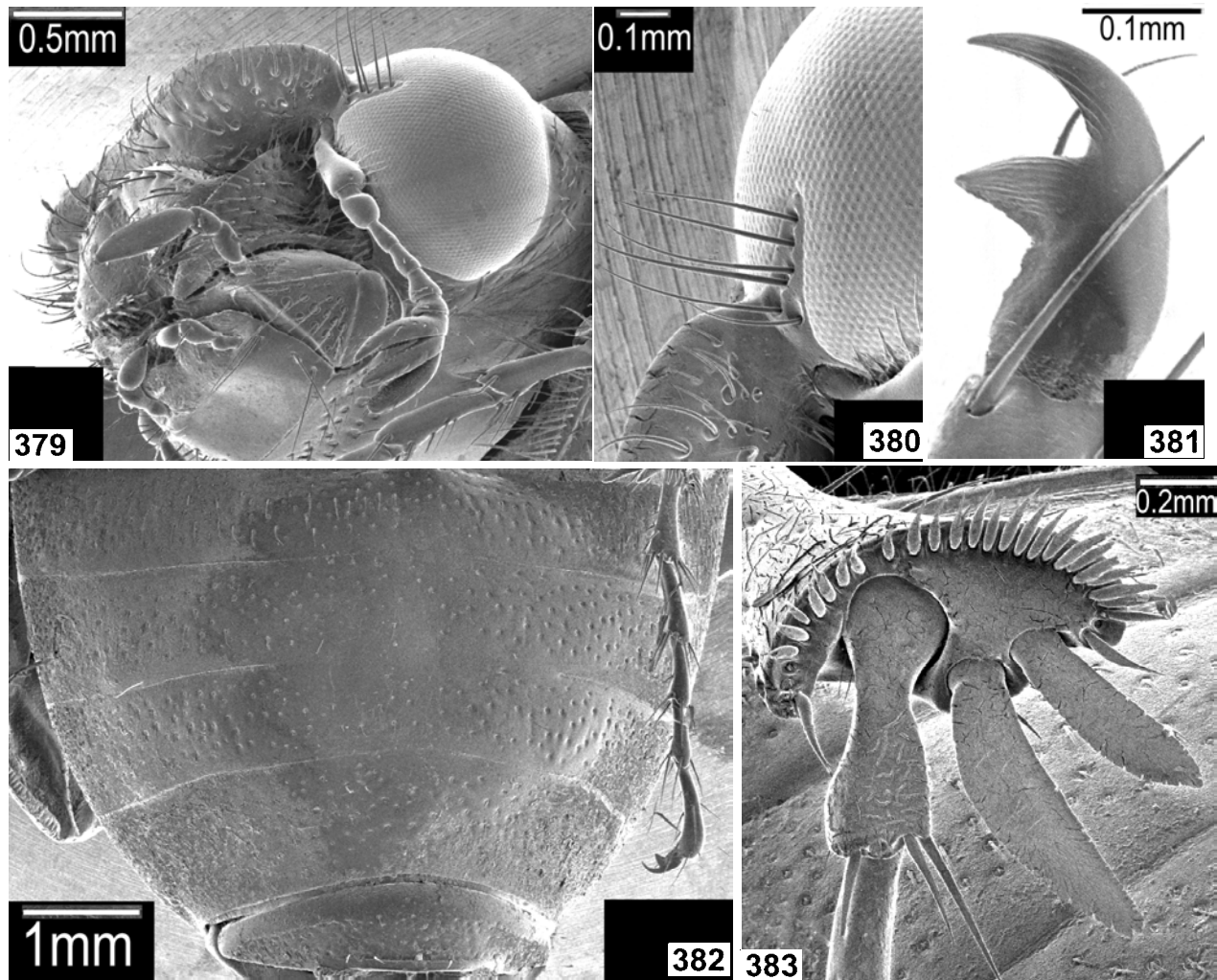


Fig. 379-383. *Phyllophaga imprima* Sanderson. Female: 379) head, diagonal ventral; 380) eye canthus, enlarged [note it is concave; most species have it carinate and raised]; 381) mesotibial claw; 382) abdomen, ventral (note few setae, central area smooth, sides pruinose); 383) metatibial apex, caudal.

on behavior of these *Phyllophaga*. It may also be related to *mella*, which has similar pruinosity on the pygidium, but that species is much larger (L. 13.5-15 mm), and the genitalia (Fig. 484-494) are distinct, especially the female.

**Allotype female** (here designated; genitalia Fig. 376-377). DOMINICAN REPUBLIC: Prov. Elias Piña, Rio Limpio, 26-27-IV-2000, R.E. Woodruff, T.J. Henry, 2400 ft, blacklight trap [FSCA].

Similar to male, except slightly swollen behind, abdomen more convex. Elytra pruinose only in anterior two-thirds (some female specimens merely shiny, appearing without pruinosity). Pygidium less pruinose laterally. Antennal club smaller, shorter than previous 4 antennomeres (Fig. 389). Head rugosely punctate and lumpy, nearly bituberculate. Metatibial

fringe (Fig. 383) of about 28 spines (male with 13-14). Antennal club with small yellow, linear spots (probably sensors). Eye canthus depressed, with 6 long setae (Fig. 379-380). Abdominal sternites pruinose laterally, shiny medially (Fig. 382). Metatarsal claw (Fig. 381) with median tooth, but no notch or gap formed posteriorly with base.

This species and *canoia* are the only ones in which there is striking sexual dimorphism. In both cases, the difference is less or no pruinosity in females, which are shinier. The female genitalia (Fig. 376-377) have inferior plates convex, fused anteriorly, smooth, without terminal spines or projections; base with elongate plate medially covering (but not sealing) median suture; apex gently rounded to sides. Superior plates fused, interior angles acute, apex with about 5 long setae (some may be broken off).



**Specimens examined.** Total 90. This species was originally described from 2 male specimens, the holotype from DOMINICAN REPUBLIC: Mt. Quita-Espuela, 2000-3000 ft, July 1938, [P.J.] Darlington [MCZC]. The single paratype was labelled merely "S. Dom.", which was often used as a label for anywhere in Hispaniola, not restricted to the Dominican Republic or the capital city of Santo Domingo.

It appears to be the common small species in the Cordillera Central. Because only 2 specimens were previously known, full data are recorded for our specimens (all DOMINICAN REPUBLIC): **Prov. Dajabon:** (1) 7 km S. Dajabon, Rio Massacre, Balneario Don Miguel 26-V-1973, D. and M. Davis, 40 m [USNM]. **Prov. Elias Piña:** (15) Rio Limpio, 26-27-IV-2000, R.E. Woodruff, T.J. Henry, 2400 ft, blacklight trap [FSCA]. **Prov. La Estrelleta:** (10) 4 km SE Rio Limpio, 24-25-V-1973, D. and M. Davis, ca. 760 m [USNM]. **Prov. La Vega:** (7) Jarabacoa, 11-V-1959, Sanderson and Farr, RD59-18, 19 [INHS]; (1) Jarabacoa, Pinar del Puerto, 14-X-1984, H. Dominguez [FSCA]; (6) La Cienega de Manabao, [Parque Nacional Armando Bermudez] Pk. Hdqtrs. 3-5-VII-1999, 3000 ft, R.E. Woodruff, blacklight trap [FSCA, MHND]; (1) same, except 20-21-IV-2000. R.E. Woodruff, T.J. Henry [FSCA]; (11) 5 km W. Manabao, Paso de la Perra, Finca Eladio Fernandez, along Rio Yaqui del Norte, 14-16-V-2001, 3050 ft, R.E. Woodruff, blacklight trap [FSCA]; (1) 2 km E. Manabao, 18-VII-1996, M.C. Thomas, R. Turnbow, blacklight trap [FSCA]; (3) 5 km E. Manabao, near mouth Arroyos Dajaos, 19-04N, 70-45W, 9-X-1991, 740 m, Davidson, Young, Rawlins, Thompson, riparian woodland [CMNH]. **Prov. Monseñor Nouel:** (5) Bonao, VI-1989, S. Dunkle [FSCA]; (13) Rio Blanco, Vivero Forestal [Nature Conservancy and Fundacion Moscoso Puello] 11-13-V-2001, R.E. Woodruff, C. Nuñez, 613 m, blacklight trap [FSCA]; (4) same, except Hydroelectric Dam, 13-V-2001. **Prov. San Cristobal:** (1) San Cristobal, 9-V-1974, E.J. Marcano #16343, trampa de luz [FSCA]; (1) Cambite Uribe nr. San Cristobal, 2-V-59, Sanderson and Farr, RD59-2 [INHS]. **Prov. San Juan:** (1) Rio Mijo, 20-22-V-1985, R.E. Woodruff, C. Nuñez, blacklight trap [FSCA]. **Unknown Prov.:** (7) Colonia, III (1), IV (4), V (1), VIII (1), J. and S. Klapperich [NHMB].

*Phyllophaga jaragua* Woodruff, **new species**  
(Fig. 86, 384-392)

**Holotype male.** DOMINICAN REPUBLIC: Prov. Barahona, 6km S. Cabral, Rd. to Polo, 5-XI-1986, R.E. Woodruff, at night [FSCA].

**General Description** (Habitus, Fig. 86). Medium sized (L. 16, W. 8mm) dorsally glabrous, head and pronotum shiny, elytra pruinose, widest at posterior fourth, appearing somewhat swollen; base color tan. Genitalia of both sexes distinctive (Fig. 384-389).

**Head** (Fig. 390-391). Clypeus emarginate, anterior angles rounded, obtusely angled to frontal suture; margin reflexed; clypeus shorter than frons, surface coarsely punctate, punctures irregularly spaced, most separated by one diameter, denser near frontal suture and lateral angles. Frons punctate as clypeus, some punctures more widely spaced, forming a slight depression medially, coalescing above eyes; posterior band impunctate. Eye canthus carinate, with 7 long setae. **Antenna** 9-segmented, club 3-segmented, oval, receptors noticeable only on margin (Fig. 392), club subequal to previous 4 antennomeres, fourth shorter than 3, fifth about as wide as long with forward projection, 6 wider than long, expanded anteriorly, wider than 5.

**Pronotum.** Wider than long, widest at lateral angles; anterior angles obtuse, not pointed; lateral angles prominent; posterior angles with a notch anterior to posterior margin, lateral margin broken at this point; margin with about 4-5 setae between lateral angle and anterior angle, their origins creating crenulate margin; anterior margin barely raised with a row of dense punctures behind. Surface more coarsely but less densely punctate than frons, punctures denser along anterior margin and anterior angles. Posterior margin with a row of dense punctures paralleling carinate margin, which is nearly obsolete medially; punctures of disc often 2 or more diameters apart, surface shiny and glabrous, reddish.

**Scutellum.** Nearly flat, punctures as on pronotum, with a small V-shaped impunctate area antero-medially, wider than long, shiny, glabrous, and non-pruinose,

**Elytra.** Lighter colored than pronotum, pruinose, except for humeral angles and a short distance behind; surface regularly punctate, glabrous, punctures nearly in rows; sutural costa slightly convex, punctures shallow and scattered; 2 elytral costae barely indicated; sutural margin barely raised, slightly more so on apical declivity, carina ending in imperceptible spine. Elytra widest in posterior fourth, apex gently rounded to suture.

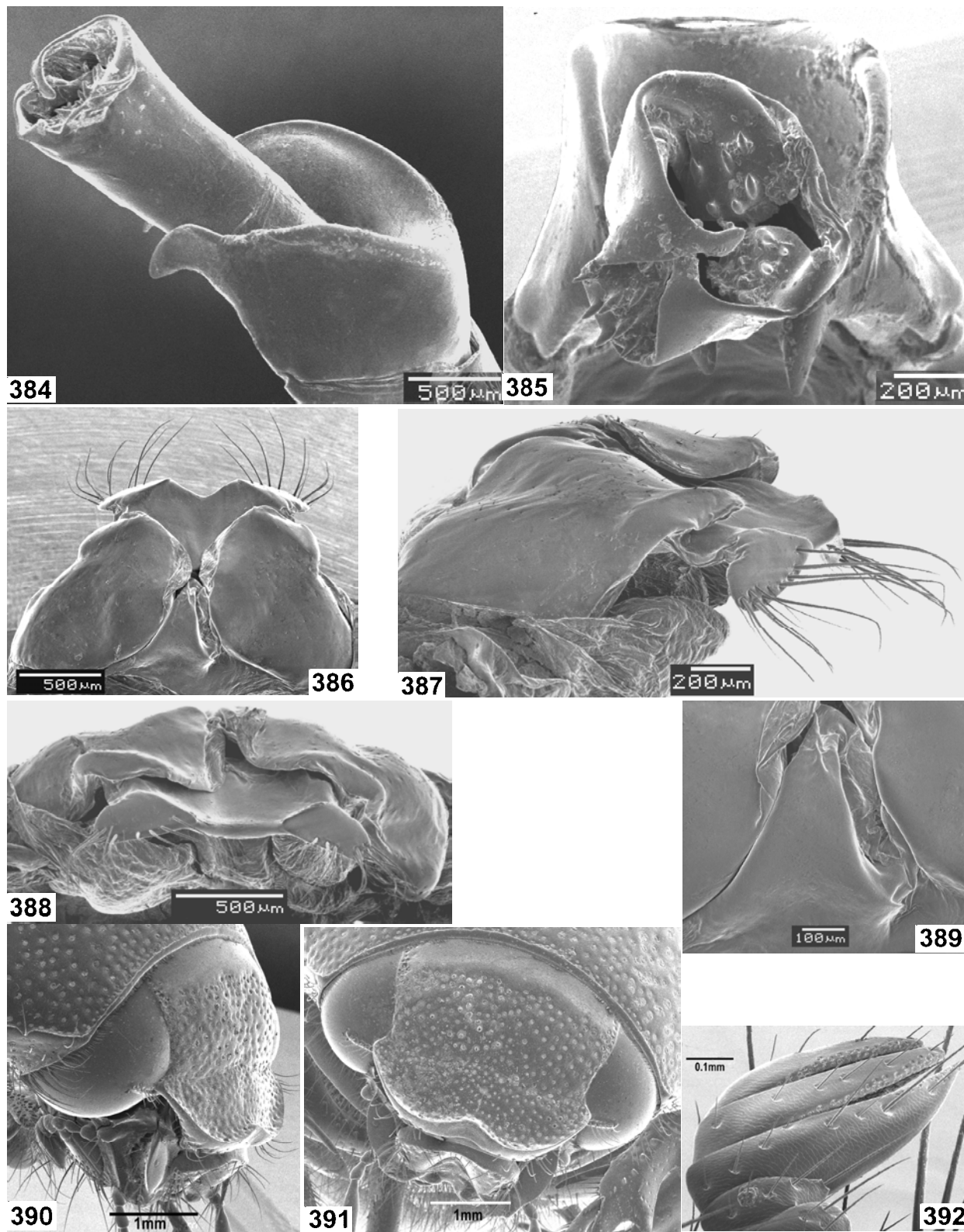


Fig. 384-392. *Phyllophaga jaragua* Woodruff. 384-385 Male genitalia: 384) dorso/lateral; 385) caudal; 386-389 female genitalia: 386) ventral; 387) lateral; 388) caudal; 389) triangular plate separating inferior plates; 390) head, lateral; 391) head, dorsal; 392) antennal club.

**Pygidium.** Wider than long, glabrous except for apical fringe, coarsely punctate to wrinkled, shiny, minutely alutaceous.

**Legs.** Protibia shining, tridentate, basal tooth well-developed, middle tooth nearer proximal; apical spine acuminate, reaching beyond base of first tarsal segment; protarsal segments 1-4 sub-equal, fifth 1.5X longer; tarsal claw sharp-pointed, middle tooth broad at base and longer than apical tooth, forming deep notch behind with base. Mesotibial transverse carina incomplete, but indicated by large teeth and spines, longitudinal carina absent; terminal spurs narrow, acuminate, outer barely shorter than inner, about 75% length of first tarsal segment; terminal fringe of 14 spines. Mesotarsal segments 1-4 sub-equal, fifth 1.5X longer than fourth, claws as in protarsi. Metatibia with inner spur elongate, 25% longer than first tarsal segment, narrow, acuminate, inner surface not noticeably concave, gently, slightly curved inward, outer spur narrow, 2/3 length of inner, gently, slightly curved inward also; apical fringe with 18 spines. Tarsal segment 1 with apex slightly expanded more than remainder, sub-equal in length to 2 and 3, fourth slightly smaller, fifth 1.5X fourth; claws as on protarsi.

**Abdomen.** Venter shining, convex, minutely alutaceous, somewhat pruinose, microsetae on all segments, appressed on all except penultimate, which has a patch of long, curved, fine, golden setae on each side, arising from punctures which are 1 to 2 diameters apart; punctures becoming denser medially, but setae disappearing, slight transverse depression prior to apical margin. Ultimate sternite with a row of setae similar to pygidial fringe, transverse depression densely punctate.

**Male genitalia** (Fig. 384-385). Laterally with simple parameres pointed ventrally and smoothly rounded dorsally, phallobase median notch evenly rounded. Aedeagus tubular, tip expanded, caudally with 2 overlapping arms, below which arise about 6 dark, heavily sclerotized spines, internally containing 2 additional spine-like clusters.

**Allotype female** (Fig. 386-398). Data same as holotype. Similar to male, except pronotum redder, elytra with more non-pruinose areas, including apical tumosity, patch of setae on penultimate abdominal sternite less extensive and less noticeable; ultimate sternite with a longitudinal bar medially raised from the transverse depression; abdominal segments fused

and barely indicated medially, convex and shiny; metatibial apical fringe of 20 spines (18 on male), first metatarsal segment much reduced, inner spur nearly as long as first 2 tarsal segments, flatter and more concave on inner surface. Antennal club slightly smaller than male, antennomeres 3 and 4 sub-equal. **Female genitalia** with triangular plate basally inserted between inferior plates (Fig. 389); inferior plates not fused medially, not apically prolonged, without terminal setae (few microsetae behind); superior plates with unique outline terminally (Fig. 386), with a V-shaped median notch, lateral projections diagonally truncated, pointed at lateral angles, with 9-10 exceptionally long (subequal in length to superior plates) setae.

**Comparisons.** The habitus (Fig. 86) is distinctive, as are the genitalia (Fig. 384-389). It does not appear to be closely related to any other Hispaniola species except perhaps *alcoa*. The latter is larger (L. 18 vs. 16 mm), less convex, elytra somewhat flattened medially, non-pruinose areas of elytra more extensive, and the genitalia are of a completely different type (Fig. 124-134).

**Specimens examined.** Total 38, including holotype, allotype, and following paratypes (all DOMINICAN REPUBLIC): (2) same data as types [FSCA]. **Prov. Barahona** [should be Pedernales]: (2) Baoruco Mts., 1250 m, 11-IX-1973, T.J. Walker, J.C. Schuster, Coll. # 3 [field note: km 33 above Cabo Rojo, pine forest, grassy understory with few palms, burned 4 years earlier] [FSCA]; (1) 4.5 km S. Barahona, 4 km W. Rt. 2, 17-V-1992, M.C. Thomas [FSCA]. **Prov. Pedernales:** (2) 25 km N. Cabo Rojo, 12-VII-1996, M.C. Thomas, R.H. Turnbow, 700M, MV/ultraviolet [FSCA, RHTC]; (15) 23.5 km N. Cabo Rojo, 18-06N, 71-38W, 26-27-IX-1991, Rawlins, Davidson, Young, Thompson, 540 m, wet deciduous forest [CMNH]; (8) same, except 730M [CMNH]; (3) same, except 20-VII-1990, Rawlins, Young, Thompson [CMNH]; (1) same, except 30 km N., 18-07N, 71-39W, 23-24-VII-1990, 1070 m [CMNH]; (1) same, except 31-VII-1990 [CMNH]; (1) same, except 26 km N, 17-VII-1987, Rawlins, Davidson, 760M [CMNH].

**Ecology.** Most specimens were taken from 730 to 1250 m elevation in the Baoruco Mountains. The habitat varied from "wet deciduous forest" to open pine grassland. Specimens were collected from May to November, with most in September. Host trees are unknown, and most specimens were attracted to blacklight.

**Etymology.** The name “jaragua” is a native Taino name; it was chosen also to recognize both the Parque Nacional Jaragua and Grupo Jaragua, the NGO conservation group who continue assisting in its protection. According to information supplied by José Marcano and Padre Julio Cicéro, the name was originally “Xaragua”, and it referred to the Taino kingdom that occupied the southwestern portion of “Española”, including portions of Haiti and the Dominican Republic; it extended east to San Juan de la Maguana, north to Dajabon, and west to the tip of Haiti.

*Phyllophaga jimenezi* Woodruff and Sanderson,  
**new species**  
 (Fig. 87, 393-402)

**Holotype male.** DOMINICAN REPUBLIC: Prov. La Vega, Jarabacoa, 11-V-1959, [M.W.] Sanderson and [T.H.] Farr, RD59-19(8), mating pair, Acc. #50269 (aedeagus dissected from genital capsule, originally stored in glycerin vial, now mounted on card point below specimen) [INHS].

**General description** (Habitus, Fig. 87). Large (L. 25, W. 12 mm; varies from 22 to 26, 11 to 14). Color uniformly chestnut brown, dorsal surface shiny, glabrous, somewhat flattened medially. Body nearly parallel sided, barely wider near middle. Elytra faintly pruinose only near lateral margin below humeral angle.

**Head.** Clypeus weakly, evenly emarginate, margin somewhat reflexed. Posterior angles gently rounded to clypeo-frontal suture. Surface punctate, punctures fairly even and separated by less than their diameter. Frontal suture impressed, but not deeply so. Frons irregularly punctate, punctures larger medially, smaller and coarser near eyes and with a band of smaller punctures near the basal line, which is impunctate. Eye canthus noticeably raised, with 8 or 9 stiff, curved setae. Terminal segment of maxillary palpi expanded toward apex, bearing long terminal sensory area. **Antennae** orange, 9-segmented, club 3-segmented. Lamellae flattened laterally, so that their shape is conical when viewed terminally, subequal in length to preceding 4 antennomeres. Receptors not noticeable. Segment 3 shorter than 2, 4 shorter than 3, 5 as wide as long, slightly projecting forward, 6 short and broad.

**Pronotum.** Wider than long, lateral margin crenulate on anterior two-thirds where lateral setae arise,

setae present only in anterior two-thirds. Anterior margin raised, lateral margin reflexed posteriorly, posterior margin barely indicated. Punctures shallow, but noticeable, irregularly spaced, but smaller and denser at anterior angles, more widely spaced at lateral angles, mostly 1 to 2 diameters apart. Anterior angles nearly 90 degrees, not sharply pointed. Posterior angles more obtuse, slightly rounded.

**Scutellum.** Punctured as pronotum, except for slight, smooth, central line. Nearly flat, central line slightly more convex; wider than long.

**Elytra.** Sutural striae poorly developed, carinate only on apical fourth, terminating in a microtooth. Elytra somewhat flattened medially near suture on anterior half; barely widest at middle, nearly parallel sided. Sutural costae slightly convex, with a very few scattered punctures. Surface mostly punctate more shallowly (finer) than pronotum, fairly evenly spaced, except less dense at humeral angles and denser along elytral margin. Margin barely reflexed, with slight pruinosity on lateral margin below humeral angle; otherwise, elytra shiny, glossy, and glabrous.

**Pygidium.** Exceptionally convex, punctate as elytra, except punctures more closely spaced, glabrous and shining, no setae except marginal fringe.

**Abdomen.** Venter very convex, shiny, except for golden setal patches on lateral sternites. Penultimate sternite with a dense area of punctures medially; ultimate sternite transversely grooved, with a narrow, longitudinal, median depression; sternite apically margined by a row of golden setae (shorter than pygidial fringe).

**Legs.** Protibiae tridentate, basal tooth well developed and only slightly further from middle tooth than from proximal. Anterior spur acuminate, sharp-pointed and reaching base of first tarsal segment. Protarsal segments 2, 3, and 4 subequal, fifth 1.5X length of 4. Protarsal claw C-shaped, middle tooth nearly central with a curve behind forming a notch with quadrate basal piece. Mesotibia without transverse carina, but with longitudinal carina noticeable. Incomplete transverse carina indicated by lateral projections and stiff setae. Mesotibial apical spurs long, narrow, and sharply pointed; outer spur 25% shorter than inner, both spurs about half length of first tarsal segment. Mesotarsal segments 1 through 4 progressively shorter, fifth 1.5X fourth. Metatibia similar to mesotibia; apical spurs with inner about 1.25X length of first

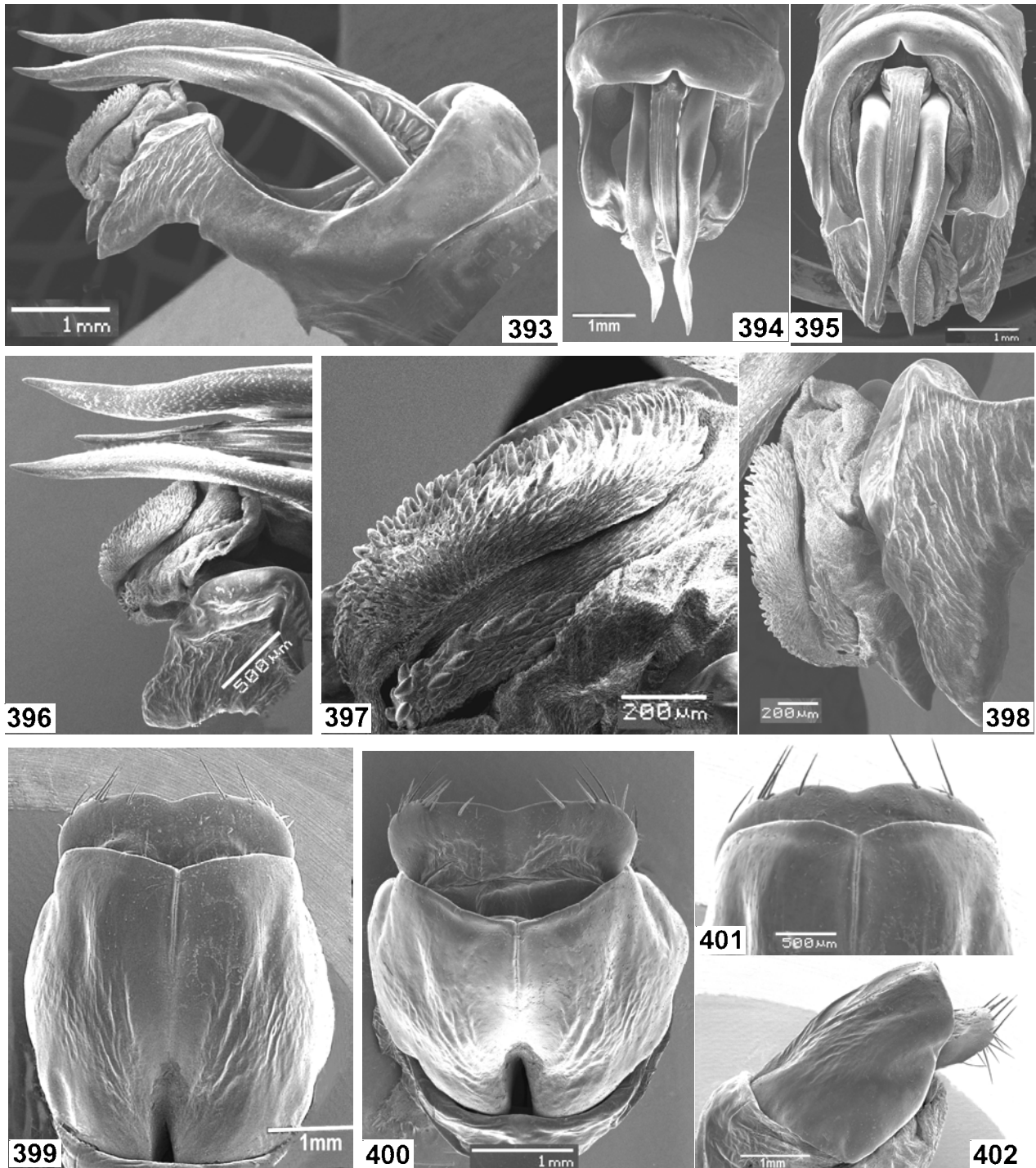


Fig. 393-402. *Phyllophaga jimenezi* Woodruff & Sanderson. 393-398 Male genitalia: 393) lateral; 394) dorsal; 395) caudal; 396) paramere tips and aedeagus; 397) aedeagal tip; 398) enlarged paramere (right, lateral); 399-402 female genitalia: 399) ventral; 400) caudo/ventral; 401) superior plates, ventral; 402) lateral.

tarsal segment; outer spur shorter than first tarsal segment; both concave on inner face, but not expanded, and barely curved; apical fringe about 22 spines; metatarsal segments similar to mesotarsi; tarsal claws subequal on all legs.

**Male genitalia.** (Fig. 393-398). Exceptionally large, parameres elongate, terminating abruptly into beak-like shape, projecting downward, their outer surface wrinkled (as also in *santachloe*, but smooth in *ken-scoffi*); a paired, spongy, setose “cockscomb” at

aedeagal tip between (Fig. 397), others recessed behind; parameres curved in a crescent shape from dorsal apex to phallobase which has a median notch. Aedeagus with heavily sclerotized, trilobed dorsal projection extending beyond parameres; all 3 projections sharply pointed (lateral ones truncate in *kenscoffi* and *santachloe*), median flexible and shorter, without dorsal modification.

**Allotype female.** DOMINICAN REPUBLIC: La Vega, 5km. W. Manabao, Paso de la Perra, Finca Eladio Fernandez, 19-23-IV-2000, R.E. Woodruff, T.J. Henry, 3050 ft, along Rio Yaque del Norte, blacklight trap [FSCA]. (L. 24 mm). Similar to male, except pronotum and elytra broader in posterior third, not as parallel sided as male. Antennal club shorter than preceding 4 antennomeres. Metatibial fringe of 30 spines closely spaced (22 in male) [counts on 10 tibiae range from 27 to 39 spines], apical spurs flattened, spatulate-shaped. Pygidium less convex, with apex slightly upturned (strongly so in *kenscoffi* (Fig. 414-415)). **Female genitalia** (Fig. 399-402) large and heavily sclerotized, with deep trough medially at base. Inferior plates fused, with a suture indicated medially at anterior third; tips of inferior plates somewhat quadrate, gently curved from suture to lateral angles, non-setate, ridges located at least half plate width from suture (closely paralleling it in *kenscoffi*). Superior plates fused, emarginate medially, tip nearly as broad as apex of inferior plates; tip with about 12 long, stiff setae.

**Specimens examined.** Total 55, (all DOMINICAN REPUBLIC) including holotype and allotype; paratypes as follows: (19) with same data as holotype [INHS]; **Prov. Elias Piña:** (1) Rio Limpio, 26-27-IV-2000, 2400 ft, R.E. Woodruff, T.J. Henry, blacklight trap [FSCA]. **Prov. Peravia:** (2) San José de Ocoa, 20-24-III-1977, H.L. Dominguez, on coffee [FSCA]. **Prov. Monseñor Nouel:** (2) Rio Blanco Hydroelectric Plant, 12-13-V-2001, 600 m, R.E. Woodruff, C. Nuñez, blacklight trap [FSCA]; (2) Rio Blanco, Vivero Forestal [Nature Conservancy and Fundacion Moscoso Puello], 11-V-2001, 613 m, R.E. Woodruff, C. Nuñez, blacklight trap [FSCA]; (1) Prov. La Vega/Monseñor Nouel [near border of Province, but not marked], El Chorro, 9.2 km W. of Rt. 1 on Rd. to Constanza, 26-IV-1999, R.E. Woodruff, R.M. Baranowski, feeding on *Trema* at night [FSCA]. **Prov. La Vega:** (7) 5 km W Manabao, Paso de la perra, Finca Eladio Fernandez, along Rio Yaqui del Norte, 3050 ft, R.E. Woodruff, blacklight trap [FSCA]; (2) Buena Vista [near Jarabacoa], Hotel Montaña, 19-VII-1996, M.C. Thomas,

R.H. Turnbow [FSCA, RHTC]; (1) 10 km NE Jarabacoa, 4-VI-1994, R.H. Turnbow, mv+bl [RHTC]; (2) Jarabacoa, 30-IV-1977, H.L. Dominguez [MHND]; (3) Jarabacoa, 10-VIII-1980, A. Norrbom, 600M, blacklight trap [CMNH]; Jarabacoa, Pinar del Puerta, 14-X-1984, H.L. Dominguez (1) [FSCA]; (1) 5 km SSE Jarabacoa, 25-VII-1987, J. Rawlins, 640M [CMNH]; (3) La Cienega de Manabao, Parque Nacional Armando Bermudez, 3-5-VII-1999, R.E. Woodruff, blacklight trap, 3000 ft [FSCA]. **Prov. El Seibo:** (4) 6 km N. Pedro Sanchez, 18-55N, 67-07W, 4-VII-1992, Young, Davidson, Thompson, Rawlins, 475m, disturbed field and woodland [CMNH]; (3) 7 km N. Pedro Sanchez, Loma de Chivo, 25-VI-1998, R.E. Woodruff, R.M. Baranowski, 5000 ft [FSCA].

In addition, I have seen 3 specimens which are not made paratypes: **Prov. Hato Mayor,** Parque Los Haitises, 3 km W. Cueva de Arena, 19-04N, 69-29W, 7-9-VIII-1992, Young, Davidson, Thompson, Rawlins, 20 m, mesic lowland forest [CMNH]. These specimens have genitalia similar to *jimenezi*, but the body resembles *santachloe*. Because these are from a low area (20 m), and all other *jimenezi* are from 475 m to 3050 ft, mostly from Jarabacoa in the Cordillera Central, these may not be conspecific.

**Ecology.** Original notes indicate that the holotype was collected on *Psidium guayava* [sic], along with a series collected on the following plants (numbers in parentheses): *Brysonia crassifolia* (5), *Cupania glabra* (1), *Echites umbellata* (1), *Miconia rubiginosa* (8), *Psidium guayava* (3), and *Pinus* sp. (3). Most other specimens were taken in blacklight traps or attracted to lights. Several specimens were collected near Jarabacoa at the government operated Hotel Montaña, a famous locality for insect collectors. However, this facility has not been operable in the past few years.

Collecting dates range from March (a series was collected as a pest, feeding on coffee) to October, suggesting that it may be found throughout the year. Altitudes range from 475 m to 3050 ft (near Manabao). It appears to be more common in the Jarabacoa region near 600 m elevation in May. It is one of only a few species known to feed on pine.

**Comparisons.** This species is superficially similar to *kenscoffi* and *santachloe*, with which it forms a species group. Both sexes can be distinguished readily by the distinctive genitalia (Fig. 393-402). In addition, *santachloe* has more noticeable pruinosity (often a violet blush), and it occurs on the coastal plain near the north coast. Because *kenscoffi* was described from Haiti (Kenscoff), it appears to be a species of the

“South Island”, but the 2 species are difficult to distinguish on external characters. On genital characters, *kenscoffi* males (Fig. 403-409) are easier to distinguish by the smooth, rounded parameres (not wrinkled and pointed as in *jimenezi* and *santachloe*, Fig. 398, 710) and the somewhat truncate tips of the aedeagal “parameres”; females of *kenscoffi* (Fig. 410-413) have deep ridges paralleling the fused inferior plates, and *jimenezi* (Fig. 399-402) has no such ridges, but lesser ridges occur away from the fused suture, and the base has a deep groove or depression.

**Etymology.** This species is named in honor of Dr. José J. de Jiménez, physician and distinguished amateur botanist of Santiago, who assisted Dr. M. W. Sanderson during his field work in the Dominican Republic in 1959.

*Phyllophaga kenscoffi* Wolcott  
(Fig. 88, 403-415)

*Phyllophaga kenscoffi* Wolcott (1928a: 24; Fig. 1; Sanderson, 1951: 269-271; Fig. 33-34, 66)

This, one of the largest Hispaniolan species (L. 26-31, W. 12-15 mm), was described from 2 pairs from HAITI: Kenscoff, 1400 m, 7-VII-1927, Emanuel Ducasse, on apple [holotype male, NMNH Cat. # 40658 and allotype female, examined]. Sanderson (1951) saw only 1 additional specimen from DOMINICAN REPUBLIC: Mt. Diego de Ocampo, 3000-4000 ft, July, 1938, [P.J.] Darlington [MCZC].

The most striking feature is the upturned apical pygidial margin (Fig. 414-415), which is found to a lesser degree in the other 2 members of this group, *jimenezi* and *santachloe*. The male genitalia are similar, but the latter 2 species have the paramere apices beak-shaped (Fig. 398, 710), with sharp angles, whereas it is rounded and smooth (Fig. 406) in *kenscoffi*; from *jimenezi* it also differs by having lateral aedeagal projections truncated (Fig. 407), not acuminate pointed. Female genitalia are similar, but *kenscoffi* has inferior plates fused, paralleled by broadly carinate ridges (Fig. 410-413), with no deep concavity at base as in *jimenezi* (Fig. 399-400). In addition to genitalic differences, *santachloe* is smaller, slightly pruinose, and occurs only at lower elevations.

**Specimens examined.** Total 256 (except types, all DOMINICAN REPUBLIC): The following Provinces are represented: (1) Baoruco, (205) Barahona, (12) Dajabon, (37) Elias Piña, (1) La Vega, (1) San Juan.

The largest series of specimens (192) was taken during a 3 week period (6-VI-7-VII, 1992) at the Larimar Mine (Barahona Prov.) in cloud forest at 3300 ft in the Baoruco Mountains. It appears to be an uncommon species elsewhere.

*Phyllophaga larimar* Woodruff, **new species**  
(Fig. 89, 416-428)

**Holotype male.** DOMINICAN REPUBLIC: Prov. Barahona, nr. Filipinas, Larimar Mine, 3-11-VII-1992, 3300 ft, P. Landolt, F. Skillman, P.E. Skelley, R.E. Woodruff, blacklight trap [FSCA].

**General description.** (Habitus, Fig. 89). Medium sized (L. 21, W. 10 mm), yellowish brown, glabrous, shiny, head and pronotum more reddish, pygidium with many elongate curved setae (Fig. 425, 428), in addition to apical fringe. Habitus and genitalia similar to *recorta* (compare Fig. 426-427).

**Head.** Clypeus deeply emarginate, anterior angles smoothly rounded to posterior angles, which extend laterally into base of frontal suture; carinate eye canthus with 7 externally curved setae; clypeal margin reflexed, more so medially; surface coarsely, densely punctate, most punctures about 1 diameter apart. Frontal suture deeply impressed, nearly straight across, slightly curved posteriorly at eye. Frons longer than clypeus, punctures sparse in anterior half, dense in posterior; posterior band with 3 or 4 punctures. **Antenna** 9-segmented, club 3-segmented, antennomeres 3 and 4 sub-equal, 5 wider than long, its anterior projection not sharp, 6 wider than long, club without noticeable receptors, ovate, shorter than previous 4 segments combined, outer lamella short and ovate.

**Pronotum.** Wider than long, anterior angles obtuse, not pointed, lateral angles obtusely rounded, posterior angles smoothly rounded; anterior margin raised, bordered posteriorly by row of punctures; lateral margin raised, but terminating just above elytral humeral angles; apical margin not well-defined. Surface punctate as frons, punctures denser in anterior third and anterior angles; disc with vague median impression, densely punctate in anterior two-thirds, impunctate in a longitudinal, short line posteriorly; margin anterior to lateral angle with 4 or 5 setae, barely crenulate at their origins.

**Scutellum.** Wider than long, flat, densely punctate and colored as pronotum.

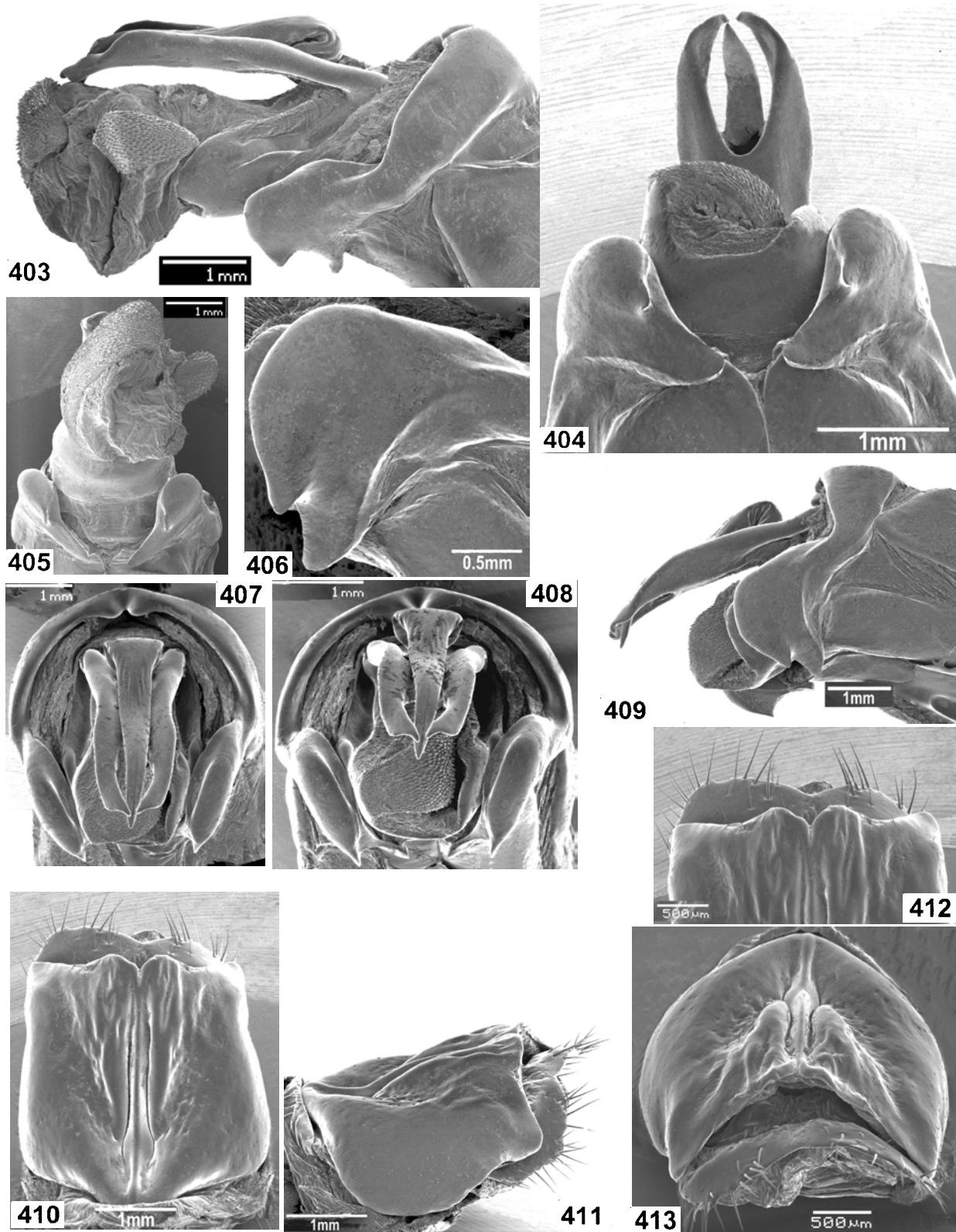


Fig. 403-413. *Phyllophaga kenscoffi* Wolcott. 403-409 Male genitalia: 403) lateral; 404) ventral; 405) ventral, aedeagus extended; 406) parameres, lateral; 407) caudal; 408) caudo/ventral; 409) parameres and aedeagal "parameres"; lateral; 410-413 female genitalia: 410) ventral; 411) lateral; 412) superior plates and inferior plate apices, ventral; 413) caudal.