

NEW SPECIES OF BUPRESTID BEETLES FROM COSTA RICA

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In working over a collection of Buprestid beetles collected in the vicinity of San Jose, Costa Rica, by Ferd. Nevermann, a number of apparently undescribed species have been found; these are described in the present paper. Through the kindness of Mr. Nevermann the types of all the new species have been placed in the collection of the United States National Museum.

AGRILUS TRYPANTIFORMIS, new species

Male.—Elongate, rather broad, shining, and strongly flattened above; head aeneous in front and becoming brownish cupreous on the occiput; pronotum and elytra piceous, with distinct greenish, violaceous and cupreous reflections, and the latter ornamented with distinct white pubescent designs; beneath aureo-cupreous, and more shining than above.

Head with the front wide, very uneven, about equal in width at top and bottom, the lateral margins parallel, with a narrow transverse depression behind the epistoma, the depression deeper at lateral margins, a broad, very deep, somewhat triangular depression on the front extending to the lateral margins, and connected to the transverse depression by a broad, deep, longitudinal depression, causing a large, round gibbosity on each side behind the antennal cavities; surface nearly glabrous, obsoletely reticulate, coarsely, irregularly punctate, and some of the punctures confluent; epistoma transverse between the antennae, deeply, broadly depressed, and broadly, arcuately emarginate in front; antennae extending to base of pronotum, serrate from the fourth joint, and the outer joints distinctly longer than wide; eyes moderately large, broadly oblong, and equally rounded above and beneath.

Pronotum one-half wider than long, about equal in width at apex and base, and widest at basal fourth; sides obliquely expanded from

apical angles to basal fourth, where they are broadly rounded, then more strongly obliquely narrowed to the posterior angles, which are obtusely angulated; submarginal carina visible from above anteriorly, and when viewed from the side the marginal carina is strongly sinuate, the submarginal carina feebly sinuate, the two carinae widely separated anteriorly, and connected to each other at basal fourth; anterior margin strongly sinuate, with the median lobe strongly, broadly rounded; base feebly, broadly emarginate at middle of each elytron, the median lobe strongly produced, and arcuately emarginate in front of the scutellum; disk uneven, with a large, deep, concave median depression extending from anterior margin to base, the depression deeper and broader posteriorly, a deep, narrow depression extending along lateral margins to middle, then irregularly backward and terminating in a deep pitlike puncture at basal emargination, and with a large, strongly elevated round swelling in place of the prehumeral carina; surface coarsely, irregularly punctate, the punctures more or less confluent toward the sides and in the depressions, somewhat rugose, and without distinct pubescence. Scutellum not transversely carinate, but the surface feebly reticulate.

Elytra slightly wider than pronotum at base, and equal in width at base and apical third; sides nearly parallel to apical third (very broadly, vaguely constricted at middle), then obliquely narrowed to the tips, which are separately broadly rounded, and coarsely serrulate; disk strongly, broadly depressed along sutural margins, which are feebly elevated near apex, with broad, deep basal depressions, and each elytron with a vague, broadly obtuse costa extending from humerus to behind middle; surface irregularly, obsolete punctate, more densely punctured in the pubescent areas, vaguely rugose toward the sides, and each elytron ornamented with white pubescent designs as follows: A small, round spot near sutural margin at basal fourth, a larger spot enclosing a dark area along sutural margin at middle, an irregular spot behind it along the lateral margin, a large oblong spot enclosing a dark area along sutural margin at apical fifth and connected to an irregular spot extending to lateral margin, and a small spot at apex.

Abdomen beneath finely, sparsely punctate, the punctures more or less connected transversely on basal segment, sparsely clothed with very short white hairs, and the last three segments with a spot of more densely placed hairs at the sides; sides only feebly exposed above; first segment convex and without longer hairs at middle; last segment broadly rounded at apex; suture between first and second segments not visible; vertical portions of segments slightly more densely pubescent than ventral surface; pygidium without a project-

ing carina at apex. Prosternum finely, rather densely punctate or rugose, and sparsely clothed with long, erect inconspicuous hairs; prosternal lobe rather broad, vaguely declivous, and very broadly, feebly emarginate in front; prosternal process broad, feebly expanded behind the coxal cavities, then obliquely narrowed to the apex, which is obtusely rounded. Tibiae slender, nearly straight, and the anterior and middle pairs armed with a short tooth on inner margin at apex. Posterior tarsi distinctly shorter than tibiae, and the first joint as long as the following two joints united. Tarsal claws similar on all feet, cleft near middle, the inner tooth short and broad, and not turned inward.

Length, 10.75 mm.; width, 2.75 mm.

Female.—Differs from the male in being broader and more robust, front of head uniformly cupreous, antennae slightly shorter, and the prosternum more coarsely punctured and not clothed with long erect hairs.

Length, 12.5 mm.; width, 3.75 mm.

Type locality.—San Jose, Costa Rica.

Type and allotype.—Cat. No. 41604, U.S.N.M.

Described from two examples, male and female, collected on *Erythrina rubrinervia*, at the type locality, July 8, 1923, by Ferd. Nevermann.

This species is allied to *oculatus* Waterhouse described from Mexico, but *oculatus* differs from it in having the pronotum transversely depressed along the base, with the sides only feebly rounded, the elytra expanded behind the middle, and the surface fuscous, strongly shining, and ornamented with numerous aeneous spots and markings which are finely rugose. The species resembles in form some of the species of the genus *Trypantius*.

AGRILUS RAVENTAZONUS, new species

Female.—Elongate, slender, subopaque, and strongly flattened above; above brown, with a more or less cupreous tinge, the head slightly more reddish cupreous, and the elytra ornamented with white pubescent designs; beneath brown, with distinct aeneous and cupreous reflections, and more shining than above.

Head with the front rather wide, slightly convex, vaguely wider at top than bottom, the lateral margins feebly, arcuately expanded at middle, a moderately deep depression extending from occiput to middle of front, the depression deeper and broader on vertex, and with a shallow, elongate, triangular depression behind the epistoma; surface glabrous, more or less longitudinally rugose on occiput and vertex, sparsely, irregularly punctate on lower half, and more densely and finely punctate in the triangular depression; epistoma slightly

transverse between the antennae, and the anterior margin semi-circularly emarginate at middle and truncate on each side of the emargination; antennae broken, serrate from the fourth joint, and the outer joints about as wide as long; eyes large, broadly oblong, and about equally rounded above and beneath.

Pronotum nearly one-half wider than long, slightly narrower at base than apex, and widest along apical half; sides nearly parallel from apical angles to middle, then slightly narrowed to near the posterior angles, which are rectangular; when viewed from the side the marginal and submarginal carinae are strongly sinuate, widely separated anteriorly, and connected to each other behind the middle; anterior margin slightly sinuate, and the median lobe feebly, broadly rounded; base angularly emarginate at middle of each elytron, the median lobe strongly produced, broadly rounded, and subtruncate in front of scutellum; disk with two large, feeble depressions placed longitudinally at middle, a broad, deep depression on each side along lateral margin, and with rather strongly elevated, arcuate prehumeral carinae extending from posterior angles to marginal carinae at middle; surface densely, coarsely, transversely rugose at middle, the rugae becoming more oblique toward the sides, and sparsely, finely punctate between the rugae. Scutellum strongly, transversely carinate, and the surface finely reticulate.

Elytra about as wide as pronotum at base, and distinctly wider at base than behind the middle; sides nearly parallel for a short distance behind base, feebly narrowed to behind middle (vaguely constricted in front of middle), then more strongly, obliquely narrowed to near the tips, which are vaguely expanded, broadly subtruncate, and armed with three coarse teeth on each tip, of which the middle tooth is the longest; disk broadly, moderately deeply depressed along sutural margins, causing a more or less distinct longitudinal costa at middle of each elytron, sutural margins slightly elevated toward apex, and with broad, deep basal depressions; surface finely, densely imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with white pubescent designs as follows: A small spot in basal depression, an elongate ring in sutural depression in front of middle, a similar ring in same depression behind middle, an elongate spot near apex, and a similar spot along lateral margin behind middle.

Abdomen beneath rather densely, finely punctate, the punctures more or less connected transversely by vague sinuate lines, especially on basal segment, very sparsely clothed with short, inconspicuous hairs, and with a spot of more distinct hairs at the sides of the third and fourth segments; sides very broadly and abruptly exposed above;

first segment convex and without long pubescence at middle; last segment rather acutely rounded at apex; suture between first and second segments not visible; vertical portions of the third and fourth segments clothed with a more or less distinct pubescent spot; pygidium rather strongly carinate anteriorly, but the carina not projecting at apex. Prosternum sparsely, coarsely punctate, more finely anteriorly, and sparsely clothed with short, inconspicuous hairs; prosternal lobe broad, moderately declivous, and broadly rounded in front; prosternal process broad, expanded behind the coxal cavities, then abruptly narrowed to the apex, which is bent upward and acute. Tibiae slender, the anterior pair slightly arcuate, and armed with a short tooth on inner margin at apex. Posterior tarsi distinctly shorter than tibiae, and the first joint as long as the following three joints united. Tarsal claws cleft near middle, the teeth slender, and the inner ones slightly shorter than outer ones, and turned inward, but their tips distant (claws missing on posterior tarsi).

Length, 9.75 mm.; width, 2.5 mm.

Type locality.—Hamburg farm, which is situated on the Raven-tazon River about midway between Siquires and the coast, in Costa Rica.

Type.—Cat. No. 41612, U.S.N.M.

Described from a single female collected at light at the type locality, May 5, 1923, by Ferd. Nevermann.

AGRILUS OCHRACEOMACULATUS, new species

Female.—Elongate, slender, feebly shining, and slightly flattened above; head green in front, becoming greenish black on the occiput; pronotum and elytra black, with a distinct purplish tinge, and the latter ornamented with distinct orange yellow pubescent designs; beneath aeneous except the prosternum, which is brownish black, and more shining than above.

Head with the front rather wide, feebly convex, slightly wider at top than bottom, the lateral margins feebly obliquely expanded from bottom to top, and with a very broad, shallow concave depression extending from occiput to epistoma; surface finely granulose, rather densely, coarsely punctate, somewhat rugose, and with a few white hairs behind the epistoma; epistoma not transverse between the antennae, broadly, arcuately emarginate in front, and the surface coarsely rugose; antennae extending about to middle of pronotum, serrate from the fourth joint, and the outer joints as wide as long; eyes large, broadly oblong, and equally rounded above and beneath.

Pronotum slightly wider than long, slightly wider at apex than base, and widest at apical third; sides vaguely arcuately rounded from

apical angles to near middle, then more strongly obliquely narrowed to near the posterior angles, which are feebly expanded, and rather acute; when viewed from the side the marginal carina is strongly sinuate, the submarginal carina feebly sinuate, the two carinae widely separated anteriorly, and connected to each other near base; anterior margin feebly sinuate, and the median lobe broadly rounded; base angularly emarginate at middle of each elytron, the median lobe feebly produced, and broadly, arcuately emarginate in front of scutellum; disk broadly, transversely, obsoletely depressed near apex and base, a broad, deep depression on each side along lateral margin, and with strongly elevated, sinuate prehumeral carinae, extending from posterior angles to marginal carinae at middle; surface glabrous, finely but not closely, transversely rugose at middle, becoming more irregularly rugose toward the sides, and finely, sparsely punctate between the rugae. Scutellum moderately, transversely carinate, and the surface finely reticulate.

Elytra about as wide a pronotum at base, and equal in width at base and behind middle; sides nearly parallel for a short distance behind base, broadly, arcuately constructed in front of middle, broadly, arcuately expanded behind middle, then obliquely narrowed to the tips, which are separately, rather narrowly rounded, and finely serrulate; disk vaguely flattened, without longitudinal costae, sutural margins moderately elevated posteriorly, and with broad, deep basal depressions; surface coarsely, densely imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with orange yellow pubescent designs as follows: A broad vitta extending along sutural margin from basal fourth to middle, and a slightly oblique, elongate spot at apical fourth.

Abdomen beneath finely, obsoletely reticulate, finely, sparsely punctate, the punctures more or less connected transversely on basal segment, sparsely clothed with short recumbent pubescence, which is denser on each side of middle along anterior margin of basal segment, and with a spot of very dense yellowish pubescence at sides of third segment; sides rather broadly exposed above; first segment convex and without long hairs at middle; last segment broadly rounded at apex; suture between first and second segments not visible; vertical portions of the first segment with a spot of dense orange yellow pubescence; pygidium without a projecting carina at apex. Metasternum and external part of posterior coxae densely clothed with orange yellow pubescence. Prosternum densely granulose, finely but not closely rugose, and sparsely clothed with short, recumbent whitish hairs; prosternal lobe broad, strongly declivous, and broadly subtruncate in front; prosternal process broad, the sides parallel to behind the coxal cavities, then abruptly narrowed to the apex, which is rather acute. Tibiae slender, the anterior pair slightly arcuate and

armed with a minute tooth on inner margin at apex. Posterior tarsi about one-half as long as the tibiae, and the first joint as long as the following two joints united. Tarsal claws similar on all feet, cleft near middle, the teeth slender, and the inner ones slightly shorter than outer ones, turned inward, and their tips nearly touching.

Length, 8.5 mm.; width, 2 mm.

Type locality.—Hamburg farm, Costa Rica.

Type.—Cat. No. 41605, U.S.N.M.

Described from a single female collected at light at the type locality, May 20, 1923, by Ferd. Nevermann.

AGRILUS SESOSTRIS, new species

Female.—Elongate, slender, feebly shining, and slightly flattened above; head aeneous; pronotum purplish red; elytra black, with a vague greenish reflection, subopaque, and each elytron ornamented with a longitudinal pubescent vitta; beneath aeneo-cupreous, and strongly shining.

* Head with the front rather wide, feebly convex, distinctly narrower at top than bottom, the lateral margins feebly arcuately expanded at middle and obliquely expanded at bottom, and with a broad, shallow depression on the vertex; surface densely, finely granulose, sparsely punctate, coarsely irregularly rugose, and sparsely clothed with semierect white hairs behind the epistoma; epistoma slightly transverse between the antennae, and broadly, arcuately emarginate in front; antennae extending to middle of pronotum, serrate from the fourth joint, and the outer joints as wide as long; eyes moderately large, broadly oblong, and slightly more acutely rounded beneath than above.

Pronotum slightly wider than long, about equal in width at apex and base, and widest at apical third; sides feebly arcuately rounded from apical angles to behind middle, then parallel to the posterior angles, which are rectangular; when viewed from the side the marginal and submarginal carinae are feebly sinuate, narrowly separated anteriorly, and connected to each other behind the middle; anterior margin strongly sinuate, the median lobe strongly produced, and broadly rounded; base broadly, arcuately emarginate at middle of each elytron, the median lobe feebly produced, and subtruncate in front of scutellum; disk with a very shallow, broad, median depression in front of middle, very broadly, obsoletely transversely depressed behind the middle, a broad, deep depression on each side along lateral margin extending from apical angle to base, and with strongly elevated, straight prehumeral carinae extending from posterior angles to middle, but not connected to the marginal carinae; surface rather coarsely, closely, irregularly rugose, finely, sparsely punctate between the rugae, and densely clothed with recumbent

golden yellow pubescence in the lateral and anterior median depressions. Scutellum strongly, transversely carinate, and the surface finely reticulate.

Elytra slightly wider than pronotum at base, and equal in width at base and behind middle; sides nearly parallel for a short distance behind base, broadly, arcuately constricted in front of middle, broadly, arcuately expanded behind the middle, then obliquely narrowed to the tips, which are separately, rather narrowly rounded, and strongly serrulate; disk feebly, broadly depressed along sutural margins, causing a more or less distinct longitudinal costa at middle of each elytron, sutural margins distinctly elevated toward apex, and with broad, moderately deep basal depressions; surface finely, densely imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with a broad, yellowish white pubescent vitta extending along the sutural depression from the basal depression to near apex.

Abdomen beneath obsoletely reticulate, finely, rather densely punctate, the punctures more or less connected transversely by sinuate lines at sides of segments, sparsely clothed with short inconspicuous hairs at middle, but more densely clothed with longer hairs at the sides; sides narrowly exposed above; first segment convex and without long hairs at middle; last segment broadly rounded at apex; suture between first and second segments indicated at the sides; vertical portions of the segments nearly glabrous; pygidium longitudinally carinate, but the carina not projecting at apex. Prosternum sparsely, finely punctate, somewhat rugose, and sparsely clothed with short recumbent hairs; prosternal lobe broad, moderately declivous, and broadly rounded in front; prosternal process broad, the sides parallel to behind the coxal cavities, then obliquely narrowed to the apex, which is acute. Tibiae slender, straight, and without a distinct tooth on inner margin at apex. Posterior tarsi about one-half as long as the tibiae, and the first joint subequal in length to the following joints united. Tarsal claws similar on all feet, cleft near the middle, the inner tooth broader and much shorter than outer one and not turned inward.

Length, 8.25 mm.; width, 1.8 mm.

Type locality.—Hamburg farm, Costa Rica.

Type.—Cat. No. 41606, U.S.N.M.

Described from a single female collected on flowers at the type locality, November 30, 1924, by Ferd. Nevermann.

AGRILUS NEVERMANNI, new species

Female.—Small, slender, strongly acuminate posteriorly, feebly shining, and strongly flattened above; head bright cupreous red, becoming bronzy green at bottom and on epistoma; pronotum bright

cupreous red, except the basal third, which is bright green; elytra bluish black, and ornamented with yellowish white pubescent designs; beneath piceous, with a vague aeneous or cupreous reflection, and more shining than above.

Head with the front rather narrow, about equal in width at top and bottom, the lateral margins nearly parallel, and with a large, round, deep depression behind the epistoma; surface nearly glabrous, coarsely, irregularly rugose, and finely, sparsely punctate between the rugae; epistoma transverse between the antennae, and very broadly arcuately emarginate in front; antennae extending nearly to base of pronotum, serrate from the fourth joint, and the outer joints longer than wide; eyes large, broadly oblong, and slightly more acutely rounded beneath than above.

Pronotum only vaguely wider than long, wider at apex than base, and widest near middle; sides feebly arcuately rounded from apical angles to posterior angles, which are rectangular; when viewed from the side the marginal carina is straight, the submarginal carina strongly bisinuate, the two carinae narrowly separated anteriorly, and connected to each other behind the middle; anterior margin strongly sinuate, the median lobe strongly produced and broadly rounded; base feebly emarginate at middle of each elytron, the median lobe feebly produced, and broadly subtruncate in front of scutellum; disk strongly convex anteriorly, broadly transversely concave on basal half, the concavity extending narrowly along the lateral margins to apical angles, a small round depression near posterior angles, and without prehumeral carinae; surface obsoletely granulose, finely but not closely rugose, the rugae more or less concentric anteriorly, transverse on basal half, finely, sparsely punctate between the rugae, and with a few short hairs near posterior angles. Scutellum strongly, transversely carinate, and the surface finely reticulate.

Elytra wider than pronotum at base, and distinctly wider at base than behind middle; sides feebly arcuately rounded for a short distance behind base, broadly arcuately constricted in front of middle, broadly arcuately expanded behind the middle, then strongly obliquely narrowed to the tips, which are conjointly angularly emarginate, and strongly serrulate; disk with a rather broad, elongate depression along sutural margins in front of middle, sutural margins feebly elevated posteriorly, and with broad, deep basal depressions; surface densely, coarsely imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with yellowish white pubescent designs as follows: A small spot in basal depression, a broad vitta along sutural margin extending from basal fourth to middle, where it is expanded transversely, but not reaching the lateral margin, and the apical fourth sparsely clothed with simi-

lar colored hairs, which extend narrowly along the sutural margin to the broad vitta at middle.

Abdomen beneath finely, sparsely punctate, the punctures connected transversely at middle of basal segment by sinuate lines, somewhat imbricate at sides of basal segment, very sparsely clothed with short white hairs, and with a spot of more densely placed white hairs at sides of the third segment; sides broadly, abruptly exposed above; first segment convex and without long hairs at middle; last segment rather narrowly rounded at apex; suture between first and second segments not visible; vertical portions of first segment with a spot of densely placed white hairs; pygidium longitudinally carinate anteriorly, but the carina not projecting at apex. Prosternum sparsely, finely punctate, more or less scabrous, and sparsely clothed with short recumbent white hairs; prosternal lobe broad, moderately declivous, and broadly subtruncate in front; prosternal process broad, the sides parallel to behind the coxal cavities, then arcuately narrowed to the apex, which is rather acute. Tibiae slender, anterior pair arcuate, and the anterior and middle pairs armed with a short tooth on inner margin at apex. Posterior tarsi about one-half as long as the tibiae, and the first joint subequal in length to the following joints united. Tarsal claws cleft near middle, the inner tooth broad and shorter than outer one, and not turned inward (claws on anterior feet missing).

Length, 6 mm.; width, 1.25 mm.

Type locality.—Hamburg farm, Costa Rica.

Type.—Cat. No. 41607, U.S.N.M.

Described from a unique female collected on withered leaves at the type locality, April 11, 1926, by Ferd. Nevermann.

I take great pleasure in naming this species after my friend, Ferd. Nevermann, of San Jose, Costa Rica, through whose careful and energetic collecting our knowledge of the interesting fauna of Costa Rica has been very greatly increased.

AGRILUS OBSOLETOVITTATUS, new species

Female.—Small, rather slender, moderately shining, and feebly flattened above; head green, with a vague pinkish reflection behind the epistoma and on occiput; pronotum aureo-aeneous; elytra brownish black, with a vague greenish or aeneous tinge, and each elytron ornamented with a vague longitudinal pubescent vitta; beneath dark brown, with a distinct aeneous or cupreous reflection, and more shining than above.

Head with the front rather wide, feebly convex, distinctly narrower at top than bottom, the lateral margins obliquely expanded from top to bottom, and with a broad, shallow longitudinal depression extending from occiput to epistoma; surface nearly glabrous,

coarsely, densely, irregularly rugose, and with numerous fine punctures between the rugae; epistoma strongly transverse between the antennae, and broadly, vaguely, arcuately emarginate in front; antennae extending to middle of pronotum, serrate from the fifth joint, and the outer joints slightly wider than long; eyes moderately large, not very broadly oblong, but slightly more acutely rounded beneath than above.

Pronotum about one-third wider than long, distinctly wider at apex than base, and widest near apex; sides feebly arcuately narrowed from apical angles to behind middle, then more strongly narrowed to the posterior angles, which are rectangular; when viewed from the side the marginal and submarginal carinae are strongly sinuate, widely separated anteriorly, and connected to each other behind the middle; anterior margin strongly sinuate, the median lobe moderately produced and broadly rounded; base broadly arcuately emarginate at middle of each elytron, the median lobe slightly produced, and arcuately emarginate in front of scutellum; disk with two broad, shallow median depressions, a rather narrow depression on each side along lateral margin, and with strongly elevated, slightly arcuate prehumeral carinae extending from posterior angles to basal third, but not connected to the marginal carinae; surface coarsely, closely, transversely rugose at middle, more obliquely rugose at the sides, finely, sparsely punctate between the rugae, and clothed with a few short yellow hairs in the lateral depressions near apical angles. Scutellum strongly, transversely carinate, and the surface finely reticulate.

Elytra slightly wider than pronotum at base, and about equal in width at base and behind middle; sides nearly parallel for a short distance behind base, vaguely arcuately constricted in front of middle, feebly arcuately expanded behind the middle, then obliquely narrowed to the tips, which are separately narrowly rounded, and strongly serrulate; disk vaguely flattened, without longitudinal costae, sutural margins slightly elevated posteriorly, and with broad, shallow basal depressions; surface densely, finely imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with a broad vitta of sparsely placed, short yellowish hairs, the vitta not very conspicuous, and extending from the basal depression to near the apex.

Abdomen beneath obsoletely granulose, finely, rather densely punctate, the punctures more or less connected transversely on basal segment by sinuate lines, and sparsely clothed with very short, recumbent whitish hairs; sides rather broadly exposed above; first segment convex and without long hairs at middle; last segment rather broadly rounded at apex; suture between first and second segments not visible; vertical portions of the segments slightly more densely pubescent

than the ventral surface; pygidium without a projecting carina at apex. Prosternum sparsely, finely punctate, somewhat rugose, and sparsely clothed with short recumbent white hairs; prosternal lobe broad, vaguely declivous, and broadly but not deeply, arcuately emarginate in front; prosternal process broad, the sides parallel to behind the coxal cavities, then arcuately narrowed to the apex, which is rather acute. Tibiae slender, straight, and without a distinct tooth on inner margin at apex. Posterior tarsi distinctly shorter than tibiae, and the first joint as long as the following three joints united. Tarsal claws similar on all feet, cleft near the middle, the inner tooth broad and much shorter than outer one, and not turned inward.

Length, 5.25 mm.; width, 1.25 mm.

Type locality.—San José, Costa Rica.

Type.—Cat. No. 41608, U.S.N.M.

Described from a single female collected on bushes at the type locality, May 22, 1925, by Ferd. Nevermann.

AGRILUS VIRIDICEPHALUS, new species

Male.—Form resembling *obsoletovittatus* Fisher; head bright green, becoming reddish brown on the occiput; pronotum blackish, with distinct greenish blue and purplish reflections; elytra aeneous on basal half of disk, becoming bluish black on apical half and toward lateral margins, and ornamented with yellowish white pubescent designs; beneath dark brown, with a more or less cupreous reflection, more shining than above, and the legs greenish.

Head with the front broad, slightly convex, narrower at top than bottom, the lateral margins feebly arcuately expanded at middle, and obliquely expanded at bottom, and without distinct depressions; surface glabrous, densely, finely granulose, sparsely, coarsely punctate, and longitudinally rugose on the occiput; epistoma transverse between the antennae, and broadly arcuately emarginate in front; antennae extending nearly to base of pronotum, serrate from the fifth joint, and the outer joints longer than wide; eyes large, broadly oblong, and about equally rounded above and beneath.

Pronotum vaguely wider than long, slightly wider at apex than base, and widest near apex; sides feebly arcuately narrowed from apical angles to posterior angles, which are rectangular; when viewed from the side the marginal and submarginal carinae are strongly sinuate, rather narrowly separated anteriorly, and connected to each other near base; anterior margin strongly sinuate, the median lobe strongly produced, and broadly rounded; base arcuately emarginate at middle of each elytron, the median lobe feebly produced, and vaguely arcuately emarginate in front of scutellum; disk without distinct median depressions, but with a broad, very shallow depression on each side along lateral margin, and with strongly elevated,

vaguely arcuate prehumeral carinae, extending from posterior angles to marginal carinae near middle; surface glabrous except for a few short hairs along lateral margins, coarsely, rather closely, transversely rugose at middle, more obliquely rugose at the sides, and sparsely, finely punctate between the rugae. Scutellum strongly transversely carinate, and the surface finely reticulate.

Elytra slightly wider than pronotum at base, and about equal in width at base and behind middle; sides nearly parallel for a short distance behind base, broadly arcuately constricted in front of middle, broadly arcuately expanded behind the middle, then obliquely narrowed to the tips, which are separately, rather broadly rounded, and strongly serrulate; disk with a rather broad, elongate depression along sutural margins in front of middle, sutural margins strongly elevated posteriorly, and with broad, shallow basal depressions; surface finely, densely imbricate-punctate, sparsely clothed with very short inconspicuous hairs, and each elytron ornamented with yellowish white pubescent designs as follows: A small spot in basal depression, a broad vitta along sutural margin extending from basal fourth to middle, where it extends transversely outward, but not reaching the lateral margin, and with numerous scattered hairs over the apical fourth.

Abdomen beneath obsoletely reticulate, finely, sparsely punctate, the punctures more or less connected transversely on basal segment by sinuate lines, and sparsely clothed with short recumbent white hairs; sides narrowly exposed above; first segment convex and without long hairs at middle; last segment broadly rounded at apex; suture between first and second segments not visible; vertical portions of segments not conspicuously pubescent; pygidium without a projecting carina at apex. Prosternum coarsely, densely rugose, somewhat scabrous, and sparsely clothed with short recumbent white hairs; prosternal lobe broad, strongly declivous, and densely clothed with long, erect yellow hairs along anterior margin, which is broadly subtruncate; prosternal process broad and concave, the sides parallel to behind the coxal cavities, then abruptly narrowed to the apex, which is obtusely rounded. Tibiae slender, straight, and the anterior and middle pairs armed with a short tooth on inner margin at apex. Posterior tarsi distinctly shorter than tibiae, and the first joint as long as the following two joints united. Tarsal claws cleft near the middle, the inner tooth broad and much shorter than outer one, and not turned inward (claws on middle and posterior feet missing).

Length, 5.25 mm.; width, 1.2 mm.

Type locality.—Hamburg farm, Costa Rica.

Type.—Cat. No. 41609, U.S.N.M.

Described from a single male collected at light at the type locality, November 15, 1923, by Ferd. Nevermann.

AGRILUS COERULEONIGRA, new species

Female.—Small, very slender, strongly acuminate posteriorly, shining, and rather strongly flattened above; head and pronotum bottle green, and the former with a ruby tinge on the front; elytra bluish or greenish black, and ornamented with pubescent markings; beneath reddish cupreous, and more shining than above.

Head with the front moderately wide, convex, wider at top than bottom, the sides feebly arcuately expanded at middle, and with a rather broad, shallow, longitudinal depression on the occiput and vertex; surface finely, sparsely punctate, becoming coarsely, irregularly rugose toward top, and clothed with a few short hairs behind the epistoma; epistoma very narrow between the antennae, and the anterior margin broadly, deeply, arcuately emarginate at middle; antennae extending scarcely to middle of pronotum, serrate from the fourth joint, and the outer joints as wide as long; eyes very large, broadly oblong, and about equally rounded above and beneath.

Pronotum one-third wider than long, about equal in width at base and apex, and widest at middle; sides arcuately rounded, more strongly posteriorly to near the posterior angles, which are slightly expanded and rather acute; when viewed from the sides the marginal and submarginal carinae are vaguely sinuate, narrowly separated anteriorly, and connected to each other behind the middle; anterior margin slightly sinuate, and the median lobe feebly, broadly rounded; base angularly emarginate at middle of each elytron, the median lobe broadly rounded, feebly produced, and subtruncate in front of scutellum; disk moderately convex, broadly concave along base, the concavity extending along lateral margins, but becoming narrower toward the apical angles, and with strongly elevated, arcuate prehumeral carinae extending from posterior angles to the marginal carinae at middle; surface glabrous, finely but not closely rugose, the rugae more or less transverse at the middle, more oblique toward the sides, and with a few fine punctures between the rugae. Scutellum strongly, transversely carinate, and the surface finely, densely reticulate.

Elytra slightly wider than pronotum at base, and distinctly wider at base than behind middle; sides nearly parallel for a short distance behind base, feebly narrowed to behind middle (vaguely constricted in front of middle), then strongly narrowed to apical sixth, where they are nearly parallel to the tips, which are separately, deeply, acutely emarginate, with the two teeth long, acute, and the inner one distinctly shorter than outer one; disk broadly, vaguely, longitudinally depressed along sutural margins, causing a more or less distinct longitudinal costa at middle of each elytron, sutural margins rather strongly elevated posteriorly, and with broad, moderately deep

basal depressions; surface coarsely but not deeply imbricate-punctate, sparsely clothed with short inconspicuous hairs, and each elytron ornamented with yellowish white pubescent designs as follows: A large elongate spot in sutural depression in front of middle, and a narrower vitta in the sutural depression extending from the apex to just behind the middle, where the vitta is slightly enlarged.

Abdomen beneath finely, sparsely punctate, the punctures coarser and connected transversely by sinuate lines on the basal segment, very sparsely clothed with short recumbent white hairs, and the last three segments with a small spot of denser white hairs at the sides; sides rather broadly exposed above; first segment convex and without long pubescence at middle; last segment rather acutely rounded at apex; suture between first and second segments not visible; vertical portions of first segment with a spot of dense golden yellow pubescence; pygidium longitudinally carinate, but the carina not projecting at apex. Prosternum coarsely rugose, and sparsely clothed with short recumbent hairs; prosternal lobe broad, moderately declivous, and broadly rounded in front; prosternal process broad, slightly expanded behind the coxal cavities, then abruptly narrowed to the apex, which is bent upward and acute. Tibiae slender, straight, and the anterior pair armed with a minute tooth on the inner margin at apex. Posterior tibiae missing. Tarsal claws on anterior and middle feet similar, cleft near middle, the teeth long and acute, the inner one turned inward, and the tip nearly touching that of the opposite side.

Length, 6.25 mm.; width, 1.25 mm.

Type locality.—San José, Costa Rica.

Type.—Cat. No. 41610, U.S.N.M.

Described from a single female collected at the type locality during May, 1922, by Ferd. Nevermann.

AGRILUS TURRIALBENSIS, new species

Female.—Elongate, slender, shining, and strongly flattened above; head reddish cupreous in front but becoming greenish brown on the occiput; pronotum dark olivaceous green, with a feeble purplish reflection toward the lateral margins; elytra greenish black, with a feeble purplish tinge at humeral angles and apex, and ornamented with whitish pubescent spots; beneath piceous, with distinct aeneous and cupreous reflections, and more shining than above.

Head with the front wide, slightly convex, about equal in width at top and bottom, the lateral margins feebly arcuately expanded at middle, and with a broad, deep, longitudinal depression extending from epistoma to occiput; surface coarsely, irregularly rugose, with a few fine punctures between the rugae, except at bottom where the

surface is very sparsely, coarsely, and irregularly punctate, and clothed with whitish pubescence behind the epistoma and antennal cavities; epistoma not transverse between the antennae, but deeply arcuately emarginate in front; antennae extending nearly to middle of pronotum, serrate from the fourth joint, and the outer joints about as wide as long; eyes large, broadly oblong, and equally rounded above and beneath.

Pronotum nearly one-half wider than long, about equal in width at base and apex, and widest at middle; sides slightly arcuately rounded from apical angles to posterior angles, which are rectangular; when viewed from the side the marginal and submarginal carinae are feebly sinuate, rather narrowly separated anteriorly, and connected to each other behind the middle; anterior margin feebly sinuate and without a distinct median lobe; base feebly emarginate at middle of each elytron, the median lobe broadly rounded, and subtruncate in front of scutellum; disk with two large, vague depressions placed longitudinally at middle, a broad, deep depression on each side along lateral margin, and with strongly elevated, arcuate prehumeral carinae extending from posterior angles to marginal carinae at middle; surface coarsely but not deeply transversely rugose at middle, becoming irregularly rugose toward the sides, finely punctate between the rugae, and sparsely clothed with very short whitish hairs in the lateral depressions. Scutellum strongly, transversely carinate, and the surface smooth.

Elytra slightly wider than pronotum at base and distinctly wider at base than behind middle; sides nearly parallel for a short distance behind base, feebly narrowed to behind middle (vaguely constricted in front of middle), then more strongly, obliquely narrowed to near the tips, which are slightly expanded, broadly subtruncate, and coarsely, irregularly dentate; disk broadly, deeply depressed along sutural margins, causing a broadly rounded longitudinal costa at middle of each elytron, sutural margins distinctly elevated posteriorly, and with broad, deep basal depressions; surface vaguely rugose, sparsely, finely punctate, sparsely clothed with short inconspicuous black hairs, and each elytron ornamented with whitish pubescent spots as follows: Four elongate spots placed in the sutural depression, one at base, one in front of middle, one behind middle, and one near apex, and an additional elongate spot along lateral margin behind middle.

Abdomen beneath finely, sparsely punctate, the punctures more or less connected transversely by vague sinuate lines on basal segment, sparsely clothed with short inconspicuous hairs, and with a large spot of white pubescence at sides of third segment; sides very broadly, abruptly exposed above; first segment convex and without long pubescence at middle; last segment broadly rounded at apex;

suture between first and second segments not visible; vertical portions of all segments except the second clothed with distinct spots of white pubescence; pygidium broadly sinuate at apex, but without a projecting carina. Prosternum sparsely, coarsely punctate, more finely anteriorly, and clothed with short, recumbent white hairs; prosternal lobe broad, moderately declivous, and broadly, vaguely emarginate in front; prosternal process broad, feebly expanded behind the coxal cavities, then abruptly narrowed to the apex, which is bent upward and acute. Tibiae slender, the anterior pair slightly arcuate, and armed with a very short tooth on inner margin at apex. Posterior tarsi distinctly shorter than tibiae, and the first joint as long as the following three joints united. Tarsal claws nearly similar on all feet, cleft near middle, the teeth slender, and the inner ones slightly shorter than outer ones and turned inward, but their tips distant.

Length, 11.75 mm.; width, 2.75 mm.

Type locality.—San Jose, Costa Rica.

Type.—Cat. No. 41611 U.S.N.M.

Described from a single female collected on "guava leaves (*Inga* sp.)" at the type locality, September 1, 1926, by Ferd. Nevermann. This is not the guava found in the southern part of the United States, which belongs to the genus *Psidium* and known under the name of guava by the English-speaking peoples, but is the Spanish name for various species belonging to the genus *Inga* found in Central America, where it is considered the best tree for shading the coffee plants.

TAPHROCERUS BREVICARINATUS, new species

Elongate, more strongly attenuate posteriorly, moderately convex, feebly flattened above, and nearly glabrous; above uniformly aeneous; beneath piceous, with a strong aeneous tinge.

Head much narrower than pronotum at base, strongly convex from top to bottom, nearly flat transversely, the lateral margins vaguely wider at top than bottom, and with a broad, longitudinal, very shallow concave depression extending from epistoma to middle of front; temple about one-third as wide as the transverse diameter of the eye; surface obsoletely reticulate, and glabrous.

Pronotum moderately convex, nearly twice as wide as long, distinctly wider at base than apex, and widest at base; sides when viewed from above obliquely expanded from apical angles to posterior angles, which are nearly rectangular; anterior margin transversely truncate; base transversely truncate to middle of each elytron, with the median lobe feebly produced and vaguely emarginate in front of scutellum; disk with a narrow transverse depression behind the anterior margin, broadly depressed along lateral margins, and

broadly, deeply, transversely concave on basal half, the concavity more shallow in front of the scutellum; surface obsoletely reticulate, and with a few scattered, inconspicuous ocellate punctures in the depressions. Scutellum small, triangular, obsoletely granulose, and feebly arcuately rounded in front.

Elytra feebly convex above, about as wide as pronotum at base, and equal in width at base and middle; humeral angles obtusely angulated; sides obliquely expanded from base to basal sixth, arcuately constricted at basal fourth, broadly arcuately rounded at middle, then obliquely narrowed to near the tips, which are conjointly, rather broadly rounded, and finely, irregularly serrulate; humeri smooth and strongly developed; disk with broad, shallow basal depressions, and with a distinct, vaguely arcuate lateral carina on each elytron extending from middle to near apex; surface clothed with a few short inconspicuous hairs near apex, very coarsely and irregularly punctate, the punctures coarser and forming more or less distinct rows in basal region along sutural margins, more irregular toward the sides, becoming finer and more obsolete toward the apex, and the intervals smooth.

Abdomen beneath sparsely, irregularly ocellate-punctate, the punctures very shallow, elongate, open posteriorly, and from the center of each arises a very short white hair; intervals obsoletely reticulate; last segment rather narrowly rounded at apex, with the apical groove deep, and following the outline of the apical half of the segment. Metasternum punctured similarly to that of the abdomen. Prosternum finely, densely reticulate.

Length, 3 mm.; width, 1.2 mm.

Type locality.—Las Mercedes, Costa Rica.

Type.—Cat. No. 41613, U.S.N.M.

Described from a single specimen collected on bushes at the type locality, November 15, 1922, by Ferd. Nevermann. Las Mercedes is on the northern slope of the volcano Turrialba, at an altitude of 150 meters, in the Santa Clara district.

In Doctor Obenberger's paper on a Revision of the Genus *Taphrocerus*,¹ this species runs down to *laesicollis* Chevrolat in his table to the species, but there seems to be an error in the placing of *laesicollis* in the table. Doctor Obenberger places it among the species having the elytral carinae distinct only in the apical region, whereas they are distinct only in the humeral region. Chevrolat,² in the original description of this species from Cuba, describes the elytra as having the "callo humerali elevato costulam longitudinalem efficienti." *Taphrocerus brevicarinatus* is also allied to *depilis* described by Kerremans from Brazil, but that species is shining black above, with

¹ Sbornik, vol. 2, 1924, p. 48.

² Ann. Soc. Ent. France, ser. 4, vol. 7, 1867, p. 587.

a feeble bronzy green reflection, and the elytra are sparsely clothed with more or less distinct whitish hairs.

BRACHYS NEVERMANNI, new species

Male.—Broadly cuneiform, more than twice as long as wide, broadly rounded in front, more acuminate posteriorly, moderately shining, and sparsely pubescent, the pubescence forming more or less distinct designs on the elytra; above dark brown, with more or less distinct aeneous and greenish reflections in certain lights; beneath piceous, with a feeble aeneous tinge.

Head feebly convex, strongly flattened in front, and without gibbositities on the vertex, but with a narrow longitudinal groove on the front, the groove becoming obsolete on the occiput and behind the epistoma; surface finely, sparsely punctate or granulose on occiput and vertex, with a smooth area on each side of the front, densely, finely punctate on lower half, sparsely clothed with recumbent yellowish hairs on occiput and vertex, and densely clothed with long, semierect silvery white hairs behind the epistoma; epistoma very narrow between the antennal cavities, slightly elevated, and not transversely carinate in front.

Pronotum moderately convex, nearly two and one-half times as wide as long at middle, distinctly narrower at apex than base, and widest at base; sides obliquely narrowed from base to apical angles; when viewed from the side the lateral margins are feebly sinuate, and more strongly arcuate near the posterior angles for the reception of the anterior legs; anterior margin transversely truncate; base transversely truncate to middle of each elytron, where it is feebly arcuately emarginate, then turning obliquely backward to the scutellum, in front of which it is feebly arcuately emarginate; posterior angles rectangular; disk broadly, transversely concave on basal half, the concavity extending obliquely forward to the apical angles, causing the antero-median part of the disk to be regularly convex, and with an elongate elevation and a distinct short carina on each side near the posterior angles; surface densely, obsolete reticulate, and sparsely, irregularly punctate, the punctures fine and very sparse on convex area, but becoming ocellate-punctate in the depressions, and sparsely, irregularly clothed with rather long, recumbent yellow hairs, with a few white hairs near the apical angles. Scutellum triangular, vaguely wider than long, with the anterior margin feebly rounded, and the surface densely, obsolete reticulate.

Elytra slightly narrower than pronotum at base; humeral angles obtusely rounded; sides nearly parallel to middle (feebly arcuately emarginate at basal fourth), then obliquely narrowed to the tips, which are separately narrowly rounded, with the lateral margins

entire; disk with distinct lateral carinae, which are sinuate, strongly elevated, and extending from humeral angles to near the apex, a broad, deep depression on each side behind the humeral angles, and with broad, moderately deep, transverse basal depressions; surface finely, sparsely, irregularly punctate, with a few coarser punctures forming more or less distinct rows in basal region, the intervals alutaceous, and each elytron ornamented with pubescent designs as follows: A single row of brownish yellow hairs extending from basal lobe to near middle, a shorter row between it and the humerus, a broad, irregular fascia at middle, composed of sparsely placed pale yellow and brownish yellow hairs intermixed, with a few small indistinct spots of white hairs anteriorly, a similar fascia covering the apical fourth, with a more distinct white pubescent spot anteriorly near sutural margin, a few scattered hairs of the same color in the humeral region, and between the median and apical fasciae the surface is sparsely clothed with inconspicuous, semierect dark brown hairs.

Abdomen beneath sparsely ocellate-punctate, the punctures large, distinct, oblong, open posteriorly, and from each puncture arises a long, recumbent white hair; intervals densely, obsoletely reticulate; last segment broadly, obtusely rounded at apex, with the margin entire, and the apical groove deep and following the outline of the posterior margin.

Length, 3 mm.; width, 1.25 mm.

Type locality.—Hamburg farm, Costa Rica.

Type.—Cat. No. 41614, U.S.N.M.

Described from a unique male collected on an unknown bush at the type locality, December 15, 1824, by Ferd. Nevermann.

This species resembles *ornatus* Fisher, but in that species the front of the head is not densely clothed with long silvery white pubescence, the surface above is piceous and more strongly shining, and the white pubescence on the elytra forms distinct designs, whereas in *nevermanni* it simply forms a few inconspicuous spots.