

# NOTES ON THE RHINOTRAGINE BEETLES OF THE FAMILY CERAMBYCIDAE, WITH DESCRIPTIONS OF NEW SPECIES

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By W. S. FISHER

*Of the Bureau of Entomology, United States Department of Agriculture*

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In rearranging the material of this tribe in the United States National Museum collection, it is necessary to describe a number of new forms, and it seems also necessary to record some of the notes which have accumulated with the specimens in the collection.

This tribe contains quite a number of species and genera which are confined to tropical America. They are remarkable both for their generally abbreviated elytra, although this is not an essential character for distinguishing the tribe, and for the mimetic resemblance that many of the species bear to Hymenoptera and other Coleoptera. Although the species are not great favorites with the systematist on account of the difficulty of separating the genera, they are full of interest to the general entomologist, because of their mimicry and the many fine illustrations they offer of the mode in which divergent modifications occur in nature. For example, it is most interesting to observe in forms so closely allied that while some species have rudimentary elytra and wasplike bodies or beelike posterior tibiae, such as the species of *Odontocera*, *Tomopterus*, *Epimelitta*, etc., others have the elytra developed to the opposite extreme, and, aided by their general aspects and colors, become analogous to other Coleoptera, such as *Oxylymma* resembling the Galerucinae, the *Erythroplatys* the Hispinae, and the *Ornistomus* various species of Lycidae.

If we believe in the origin of species by natural variation and selection, the species of Rhinotrugini have varied in many directions, and since a protective disguise of one kind or another was necessary to the species, these variations have been gradually extended in many directions to mimic some species which it was advantageous to resemble. In some of the very closely allied species the most abrupt changes are seen, as for instance, between *Odontocera fasciata* Olivier (which resembles a wasp) and *Odontocera compressipes* White

(which resembles a bee, with a pollen-collecting brush of hairs on each posterior tibia). The abruptness with which important structural parts change from species to species renders the definition of genera almost impossible in this tribe, as almost every species offers sufficient characters to render generic separation plausible for the extremist.

An almost universal character of this tribe is the large eyes, especially the lower lobes, which in the males are nearly contiguous in front, but even this character disappears in a few species. The head is generally elongate below the eyes, but this character exists in some of the other tribes of Cerambycidae. The pronotum is cylindrical or ovate and unarmed at the sides. The antennae are almost always more or less serrate from the sixth joint, and the intermediate joints are armed with setae on their inner margins. The prosternal process is always present between the anterior coxae, although it is very narrow in a few species, and the episterna of the metasternum are always triangular and very broad in front.

The adults, whose short elytra and strongly developed membranous wings permit them to fly swiftly, frequent flowers in company with the Hymenoptera, which many of them resemble.

#### ODONTOCERA FASCIATA (Olivier)

*Necydalis fasciata* OLIVIER, Entomol., vol. 4, gen. 74, 1795, no. 9, p. 10, pl. 1, fig. 9.

*Odontocera vitrea* SERVILLE, Ann. Soc. Ent. France, vol. 2, 1833, pp. 547-548.

*Odontocera chrysozone* WHITE, Cat. Col. British Museum, pt. 8, 1855, p. 192, pl. 5, fig. 5.

This species was originally described by Olivier (1795) from South America. Serville (1833) redescribed the same species from Cayenne under the name of *vitrea* and placed it as the first species in his new genus *Odontocera*, and White (1855) redescribed it from the Amazon under the name of *chrysozone*.

This species seems to have a rather wide distribution. Bates<sup>1</sup> writes that it is generally distributed throughout the Amazons, and is not uncommon in the dry season at sweet-smelling flowers. Like all the other species among the beautifully varied and interesting little creatures of this tribe, it flies nimbly from flower to flower, deceiving the eye of the beholder by its strong resemblance to a wasp. A large series has been examined by the writer and scarcely any variations were observed except in size. P. J. Darlington, jr., reared examples of both sexes from the dead wood of *Triplaris* species at Rio Frio, near Santa Marta, Colombia, during May, 1928. James Zetek reared it in numbers from avocado branches collected at Summit, Canal Zone, during 1927, and Ferd. Nevermann collected

<sup>1</sup> Trans. Ent. Soc. London, 1870, p. 324.

adults at Hamburg farm, Costa Rica, August 15, 1923, on fallen "*Quararibea turbinata*."

ODONTOCERA TRIPLARIS, new species

*Male*.—Form similar to *fasciata* Olivier. Head and pronotum yellow, the latter with the anterior margin and base in front of scutellum narrowly black, and the disk ornamented with reddish brown as follows: An oblique spot on each side at lateral margin, a longitudinal median vitta extending from anterior margin to base, and arcuately expanded at anterior margin and middle, and an arcuate vitta on each side of middle, more or less interrupted at middle, and not extending to anterior margin or base; antennae reddish brown; elytra pale yellow, vitreous, with the margins narrowly reddish brown, and a spot of the same color on each elytron near base; beneath uniformly pale yellow.

Head with the front short, flat between the eyes, and with a narrow longitudinal groove extending from vertex to middle of front; surface glabrous, coarsely, vaguely punctate, becoming finely granulose on the occiput. Eyes separated from each other on the front by about the width of the labrum. Antennae short, extending slightly beyond base of elytra; joint 1 shining and sparsely punctate, the following joints subopaque and densely pubescent, and some of the joints armed with long erect hairs on inner margin; joint 1 robust, arcuate, and rather strongly clavate; joints 2 to 4 subcylindrical, the third distinctly longer than the fourth, which is slightly enlarged toward apex; joints 5 to 10 serrate; joint 11 oblong, and acute at apex.

Pronotum about as wide as long; sides arcuately rounded and strongly constricted toward base; anterior margin and base strongly elevated; surface with the median dark area slightly elevated at middle, finely, confluent punctate or granulose, and clothed toward the sides with short, inconspicuous yellow pubescence. Scutellum triangular, and clothed with a few inconspicuous hairs.

Elytra extending to apex of third abdominal segment, with the tips obliquely truncate and the exterior angles acute, the sutural margins strongly elevated, slightly narrowed, and moderately dehiscent posteriorly; surface with the reddish brown areas clearly defined, glabrous, and densely, coarsely punctate, the vitreous areas finely, very sparsely punctate, and each puncture with a short, erect black hair.

Abdomen beneath coarsely, vaguely punctate, except the first segment, and rather densely clothed with inconspicuous, recumbent yellow hairs. Sternum sparsely clothed with long, semierect yellow hairs. Anterior and middle legs short, and the femora strongly, abruptly clavate. Posterior legs long, the femora strongly, abruptly clavate, and the tibiae straight and cylindrical.

*Female*.—Differs from the male in having the eyes separated from each other on the front by about twice the width of the labrum, and the antennae slightly shorter.

Length, 12–16 mm.; width, 2.6–3.6 mm.

*Type locality*.—Rio Frio, near Santa Marta, Colombia.

*Type, allotype, and paratypes*.—Cat. No. 42820, U. S. N. M.

*Paratypes*.—Darlington collection.

Described from 48 examples (one type), all of which were reared during 1928 by P. J. Darlington, jr., from the dead wood of *Triplaris* species. Darlington was unable to get the specific name of this tree, but he writes that it is the only narrow-leaved species of this genus found commonly along the banks of brooks in the foothills. In a large series of specimens of this species examined, very little variation was observed except in size. There is a slight variation in the shape of the pronotum; in some examples it is slightly wider than long, whereas in others it is slightly longer than wide. The reddish brown markings on the pronotum are also somewhat variable; in some examples the arcuate vittae are distinctly separated in the middle, and in others they are connected anteriorly to the oblique lateral spot.

This species is allied to *tridentifera* Gounelle described from Argentine Republic, but differs from that species in having the head entirely yellow in front, the antennae uniformly reddish brown, pronotum ornamented with three longitudinal reddish brown vittae, which are more or less interrupted at the middle, but not connected to each other at the base, scutellum yellow and nearly glabrous, and in having the tips of the elytra obliquely truncate, with the exterior angles acute.

#### ODONTOCERA BUSCKI, new species

*Male*.—Form similar to *fasciata* Olivier. Head yellow, with a black spot on occiput between upper lobes of eyes; antennae reddish brown, with the dorsal surface of first and second joints black; pronotum yellow, with the anterior margin and base broadly margined with black, the black margin on base becoming narrower at the sides, and the disk ornamented with black markings as follows: A transverse sinuate fascia at middle extending nearly to coxal cavities, a longitudinal median vitta extending from anterior margin to base, and wider behind the transverse fascia; scutellum black; elytra pale yellow, vitreous, with the lateral and sutural margins narrowly brownish red posteriorly, becoming blackish toward the base, and with an elongate arcuate black fascia behind the base of each extending from the lateral margin at basal fourth to the sutural margin a short distance behind the scutellum; body beneath yellow, with the apical segments of the abdomen dark brown, and orna-

mented with black markings as follows: A longitudinal vitta on each side of the head below the eyes, a transverse fascia on anterior part of prosternum, posterior margin of prosternum, a small round spot on each side of prosternum near base, an elongate spot on anterior coxae, anterior margin of episternum, an arcuate fascia on each side of sternum, margin of posterior coxae, and the margins of posterior intercoxal process.

Head with the front short, transversely depressed behind the epistoma, flat between the eyes, and with a narrow longitudinal groove extending from vertex to middle of front; surface glabrous, nearly smooth in front, but becoming densely ocellate-punctate on the occiput. Eyes separated from each other on the front by about one-half the width of the labrum. Antennae short, extending to base of first abdominal segment; joints 1 and 2 shining, and rather densely, coarsely punctate, the following joints subopaque, densely pubescent, and some of the joints armed with long, erect hairs on inner margin; joint 1 robust, straight, and slightly clavate; joints 2 to 4 subcylindrical, the third twice as long as the fourth, which is slightly more robust and feebly enlarged toward apex; joints 5 to 10 serrate, and the joints becoming gradually shorter toward the tip of the antennae; joint 11 oblong, acute at apex, and strongly emarginate.

Pronotum about as wide as long, with the sides regularly arcuately rounded, and the anterior margin and base strongly elevated; disk strongly convex, without tubercles or carinae; surface densely ocellate-punctate, and sparsely clothed with a few inconspicuous hairs. Scutellum triangular, and densely clothed with yellowish pubescence.

Elytra extending to base of fourth abdominal segment, with the tips transversely truncate and vaguely emarginate, the sutural margins strongly elevated, slightly narrowed, and moderately dehiscent posteriorly; surface with the opaque areas coarsely, confluent punctate, and clothed with a few erect hairs in the basal region, the vitreous areas glabrous, and sparsely, obsoletely punctate.

Abdomen beneath sparsely, coarsely punctate, except the basal segments, and sparsely clothed with long erect and recumbent hairs intermixed. Sternum sparsely clothed with long, erect yellow hairs. Anterior and middle legs short, and the femora strongly, abruptly clavate. Posterior legs long, and sparsely clothed with long, stiff, erect black and yellow hairs intermixed, the femora strongly, abruptly clavate, and the tibiae straight and cylindrical.

*Female*.—Differs from the male in having the eyes separated from each other on the front by nearly twice the width of the labrum, and the antennae slightly shorter.

Length, 11.5 mm.; width, 2.4 mm.

*Type locality*.—Trinidad River, Panama (type); Tabernilla, Canal Zone (allotype).

*Type and allotype*.—Cat. No. 42821, U. S. N. M.

Described from two examples, the male (type) collected at Trinidad River, Panama, May 7, 1911, by August Busck, and the female (allotype) collected at Tabernilla, Canal Zone, July 23, 1907, by the same collector.

This species is allied to *tridentifera* Gounelle, but is easily distinguished from that species by having the three transverse black fasciae on the pronotum connected to one another by a median longitudinal vitta of the same color.

ODONTOCERA ZETEKI, new species

*Male*.—Form similar to *fasciata* Olivier. Head pale yellow, with a transverse black fascia on the occiput between the eyes; antennae yellowish brown, with the dorsal surface of the basal joint black; pronotum pale yellow, with a broad, transverse black fascia at middle, and along the base and anterior margin; scutellum and elytra pale yellow, the latter vitreous, with the lateral and sutural margins narrowly brownish black, and with a narrow oblique black fascia on each elytron extending from the humerus obliquely backward to the sutural margin behind the scutellum; beneath pale yellow, the legs slightly more brownish, and the body ornamented with black markings as follows: A narrow fascia along anterior margin of prosternum, a transverse fascia at middle and along base of prosternum, but broadly interrupted at middle, base of each abdominal segment, and numerous irregular spots on each side of the mesosternum and metasternum.

Head with the front short, and transversely depressed behind the epistoma; surface nearly smooth in front, becoming coarsely, densely punctate on the occiput, and rather densely clothed with short, recumbent yellow pubescence. Eyes nearly contiguous in front. Antennae short, extending to middle of first abdominal segment, and rather strongly enlarged toward the apex; joint 1 shining, and coarsely, sparsely punctate, the following joints subopaque, rather densely pubescent, and some of the joints armed with long, erect hairs on inner margin; joint 1 robust and slightly arcuate; joints 2 to 4 subcylindrical, the third twice as long as the fourth, which is slightly more robust and feebly enlarged toward apex; fifth joint slightly longer and more strongly enlarged toward apex than the fourth; joints 6 to 10 compact, slightly serrate, and becoming shorter and broader toward the tip of the antennae; joint 11 oblong, and acute at apex.

Pronotum distinctly longer than wide, with the sides feebly, arcuately rounded, slightly more strongly narrowed posteriorly, and the base and anterior margin slightly elevated; disk moderately convex, without tubercles or carinae; surface coarsely, confluent ocellate-punctate, the yellow fasciae densely clothed with long, recumbent yellow pubescence, and the black fasciae with a few long, erect, inconspicuous hairs. Scutellum densely clothed with recumbent yellow pubescence.

Elytra extending to middle of second abdominal segment, with the tips transversely truncate, and the sutural margins feebly elevated, slightly narrowed, and moderately dehiscent posteriorly; surface with the dark margins coarsely, confluent punctate, the vitreous areas sparsely, obsoletely punctate in basal region, and the surface clothed with a few inconspicuous erect hairs.

Abdomen beneath coarsely, vaguely punctate, except the basal segments, and rather densely clothed toward the sides with recumbent yellow pubescence. Sternum rather densely clothed with long, erect and recumbent yellow hairs intermixed. Legs sparsely clothed with long, erect hairs; anterior and middle legs rather short, and the femora strongly, abruptly clavate; posterior legs long, the femora gradually clavate, and the tibiae straight and cylindrical.

*Female*.—Differs from the male in having a longitudinal black vitta and a narrow longitudinal groove on front of head between the eyes, which are separated from each other on the front by nearly twice the width of the labrum.

Length, 11–14.5 mm.; width, 2–2.6 mm.

*Type locality*.—Barro Colorado Island, Canal Zone.

*Type, allotype, and paratypes*.—Cat. No. 42822, U. S. N. M.

Described from eleven examples, four males and seven females (one type), all of which were reared August 8, 1927, by James Zetek, from a small branch of an unknown tree, which had been girdled by a cerambycid, and collected at the type locality. In the series examined scarcely any variation was observed except in size.

This species resembles *fasciata* Olivier very closely, but can be easily distinguished from that species because it has three black and two pale yellow transverse fasciae on the pronotum, whereas in *fasciata* there are four black and two pale yellow fasciae and a median brownish yellow fascia on the pronotum. *Odontocera fasciata* is also more robust, and the elytra are longer, extending to the base of the fourth abdominal segment, the tips being acute and strongly emarginate.

## ODONTOCERA NEVERMANNI, new species

*Male*.—Form similar to *sanguinolenta* Bates. Head, antennae, pronotum, and scutellum black; elytra pale yellow, vitreous, with the lateral and sutural margins and the base broadly black; beneath black, with the bases of the posterior tibiae and femora broadly pale yellow.

Head with the front rather long, and flat between the eyes; surface glabrous, coarsely, irregularly punctate, and longitudinally rugose on the front, becoming coarsely, confluent punctate on the occiput. Eyes separated from each other on the front by about the width of the labrum. Antennae short, robust, extending to base of first abdominal segment, and with the intermediate joints widest; joints 1 to 3 shining, coarsely punctate, and the third densely pubescent, the following joints subopaque, densely pubescent, and some of the joints armed with long, erect hairs on the inner margin; joint 1 robust, slightly arcuate, and rather strongly clavate; joints 2 to 4 subcylindrical, the third twice as long as the fourth, which is slightly more robust; joints 5 to 10 strongly serrate, the outer anterior angle of the joints acute, and the joints becoming narrower and shorter toward tip of antennae; joint 11 oblong and acute at apex.

Pronotum distinctly longer than wide, the sides feebly arcuately rounded in front, and broadly arcuately constricted behind the middle, the anterior margin strongly elevated; disk strongly convex, without tubercles or carinae; surface coarsely, transversely rugose, coarsely, irregularly punctate between the rugae, and clothed with a few inconspicuous erect hairs. Scutellum densely clothed at apex with long, recumbent cinereous pubescence, which conceals the surface.

Elytra extending to apex of third abdominal segment, the tips broadly subtruncate or obtusely rounded, the sutural margins feebly elevated, slightly narrowed, and slightly dehiscent posteriorly; surface glabrous, with the black areas coarsely, confluent punctate, becoming somewhat scabrous in basal region, and the vitreous area coarsely, obsoletely punctate.

Abdomen beneath shining, very sparsely, finely punctate, and clothed with a few inconspicuous erect hairs. Sternum sparsely clothed with long, erect hairs on posterior half, and the anterior half densely clothed with short, recumbent cinereous pubescence. Anterior and middle legs short, the femora strongly abruptly clavate. Posterior legs moderately long, clothed with long, erect black hairs, the femora strongly clavate, and the tibiae straight and cylindrical.

Length, 15 mm.; width, 3.2 mm.

*Type locality*.—Hamburg farm, which is situated on the Raventazon River about midway between Squires and the coast in Costa Rica.



*Type*.—Cat. No. 42824, U. S. N. M.

Described from a single male collected flying around cut down trees at the type locality, May 21, 1925, by Ferd. Nevermann.

This species is allied to *sanguinolenta* Bates, but it differs from that species in being larger, the antennae robust but with the intermediate joints widest, and the pronotum and underside of the body uniformly black, except the base of the posterior tibiae and femora, which are pale yellow.

ODONTOCERA DARLINGTONI, new species

*Female*.—Form similar to that of *fasciata* Olivier. Head and pronotum yellow, the latter ornamented with black markings as follows: A large, transverse triangular spot, including the anterior margin; a large, straight, transverse fascia in front of scutellum, but not extending to the lateral margins; a transverse sinuate fascia at middle extending nearly to the coxal cavities, which is more or less interrupted externally; and an elongate spot at middle connected posteriorly to the median fascia, but not extending to the transverse spot in front of scutellum; antennae reddish brown; scutellum yellow, with the base blackish; elytra pale yellow, vitreous, with the lateral and sutural margins narrowly reddish brown, and each with an arcuate blackish fascia extending from the humeral region backward to the sutural margin a short distance behind the scutellum; body beneath uniformly yellow (except margin of each posterior coxa which is black), and with a more or less distinct brownish tinge.

Head with the front short, transversely depressed behind the epistoma, flat between the eyes, and with a longitudinal groove extending from vertex to frontal depression; surface glabrous, coarsely, irregularly and vaguely punctate in front, becoming finely punctate or granulose on the occiput. Eyes separated from each other on the front by about one and one-half times the width of the labrum. Antennae short, extending to base of first abdominal segment; joints 1 and 2 shining, and rather densely, coarsely punctate, the following joints subopaque, densely pubescent, and some of the joints armed with long, erect hairs on the inner margin; joint 1 robust, slightly arcuate, and gradually clavate; joints 2 to 4 subcylindrical, the third twice as long as the fourth, which is slightly more robust and feebly enlarged toward apex; joints 5 to 10 serrate and about subequal in length; joint 11 oblong, acute at apex, and feebly emarginate.

Pronotum vaguely wider than long; sides feebly arcuately rounded, and slightly constricted at base; anterior margin strongly elevated; disk strongly convex, slightly depressed along base, but without

tubercles or carinae; surface densely ocellate-punctate and sparsely clothed with long, inconspicuous hairs toward the sides. Scutellum triangular, and rather densely clothed with long, recumbent yellow pubescence.

Elytra extending to middle of third abdominal segment, with the tips transversely truncate and vaguely emarginate, the sutural margins slightly elevated, slightly narrowed, and moderately dehiscent posteriorly; surface with the opaque areas coarsely, confluent punctate, and clothed with a few scattered hairs in the basal regions, the vitreous areas glabrous, and sparsely, obsoletely punctate.

Abdomen beneath sparsely, coarsely punctate, except the basal segments, and sparsely clothed with long, recumbent yellow pubescence. Sternum sparsely clothed with long, semierect yellow hairs. Anterior and middle legs short, and the femora strongly, abruptly clavate. Posterior legs long, and sparsely clothed with long, stiff, erect black and yellow hairs intermixed, the femora strongly, abruptly clavate, and the tibiae nearly straight and cylindrical.

Length, 11–14 mm.; width, 2.6–3.2 mm.

*Type locality*.—Rio Frio, near Santa Marta, Colombia.

*Type and paratypes*.—Cat. No. 42823, U. S. N. M.

*Paratypes*.—Darlington collection.

Described from five females (one type), all of which were reared during May, 1928, from the dead wood of *Triplaris* species collected at the type locality by P. J. Darlington, jr. Scarcely any variation was observed in the specimens examined, except that in two of these examples there are two small black spots between the eyes on the occiput.

This species is very closely allied to *buscki* Fisher, but it differs from that species in being more robust, with the eyes more narrowly separated from each other on front of head, antennae entirely reddish brown, and the anterior and median transverse fasciae on the pronotum not connected to each other by a longitudinal median black vitta. With a larger series for study, this form may prove to be simply a color variety of that species, but since this form is connected up with its host plant, it seems advisable to separate it from that species, at least for the present.

#### ACYPHODERES CRIBRICOLLIS Bates

*Acyphoderes cribricollis* BATES, Trans. Ent. Soc. London, 1892, p. 160, pl. 6, fig. 6.

This species was described from three males from Ventanas in Durango, Mexico. A small series including both sexes were collected by Ferd. Nevermann at Hamburg farm, Costa Rica, August 15, 1923, on fallen "*Quararibea turbinata*." This is a very elongate

slender species, with the elytra long and only slightly dehiscent posteriorly, in which respect it resembles some of the species of *Odontocera*, but on account of the longitudinal elevations on the pronotum it is placed in the genus *Acyphoderes*. In the series examined scarcely any variation was observed in the color and markings, but the females differ from the males in having the eyes separated from each other on the front of the head by about one and one-half times the width of the labrum, and the antennae are slightly shorter.

**ACYPHODERES BAERI** Gounelle

*Acyphoderes baeri* GOUNELLE, Bull. Mus. Nat. Hist. Paris, vol. 19, 1913, pp. 222-224, fig.

This species seems to be rather common and was described from a large series of specimens from Argentine Republic, Paraguay, and Brazil. Material has been examined by the writer from Bolivia (locality not recorded), and the following localities in Argentine Republic: Tucuman, collected during December, 1917, and January, 1918, by E.W. Rust, and from El Quemado, Jujuy, between March and May, 1926, by G. L. Harrington.

The species shows great variation in color and markings. The typical form is uniformly black above, except for the vitreous areas on the elytra, and this color varies to specimens in which the elytra are reddish brown, and the pronotum black, with yellow vittae. Gounelle<sup>2</sup> has described two of these aberrations in which the elytra are reddish brown and the pronotum ornamented with yellow vittae under the names of *flavonotata* and *biannulata*. In the material collected by Harrington at El Quemado, the typical form, aberration *biannulata* Gounelle, and a form with the elytra reddish brown and the pronotum entirely black were found. E. W. Rust in a letter writes of this species as follows:

There are also a fly and a moth which resemble these beetles so closely that you can scarcely tell the difference when collecting, and all resemble so closely the wasp *Megacanthopus ater* Olivier that I never know which one is going to sting me when I collect them. All four frequent the flowers of *Baccharis* sp. on hot days, and the appearance, habits of flight, and the attitude of the wings in repose or while walking over the flowers is almost identical in all four cases. The beetle with the wings outspread is the nearly natural position it assumes when feeding among the flowers.

This species is frequently erroneously identified as *Sphecomorpha murina* Klug, which it resembles very closely. It can, however, be separated from that species in having the pronotum biimpressed and the elytra gradually narrowed to the apices, each of which terminates in an acute spine, whereas in *murina* the pronotum is strongly

<sup>2</sup> Bull. Mus. Nat. Hist. Paris, vol. 19, 1913, pp. 223-224, figs. 1-4.

convex, and the elytra are abruptly dehiscant at the middle, with the posterior half of each narrow, parallel, and the tip not terminating in a spine.

**ACYPHODERES AURULENTA (Kirby)**

*Necydalis aurulenta* KIRBY, Trans. Linn. Soc. London, vol. 12, 1818, p. 443.

*Acyphoderes sericinus* WHITE, Cat. Cöl. British Museum, pt. 8, 1855, p. 195.

This species was described by Kirby (1818) from Brazil, and White (1855) redescribed the same species under the name of *sericinus* from the same country. In the United States National Museum are two examples of this species which were identified as *abdominalis* Olivier. One of these examples is labeled Mayaguez, Porto Rico, and the other one Cayey, Porto Rico, May 23, 1923, collected by G. N. Wolcott. These two specimens show a slight variation from the typical specimens from Brazil by not having the femora and tibiae black in the middle, and by the elytra being without a furcate black vitta on each side, but these specimens seem to be the extreme light form of this species, and not sufficiently distinct to warrant a new name. In a series examined from Brazil, all of the examples have the black bands on the legs, but in a few of these examples the furcate black vittae on the elytra are absent.

This species is closely allied to *abdominalis* Olivier, but that species differs from *aurulenta* in having the pronotum more sparsely pubescent, and the elytra shining black, each with a short humeral vitta, a small spot on each side of the scutellum, and the vitreous areas pale yellow. The specimens listed as *abdominalis* from Porto Rico by Gahan,<sup>3</sup> and Leng and Mutchler<sup>4</sup> are probably *aurulenta* (Kirby).

**ACYPHODERES RUOFEMORATA, new species**

*Female*.—Form rather slender. Head, antennae, pronotum, and scutellum black; elytra pale yellow, vitreous, with well defined black margins, which are considerably narrower along the sutural margins except for a short distance behind the scutellum. Body beneath black; anterior and middle legs black, except the femora which are pale yellow at the base; posterior legs black, the femora pale yellow on basal half, with a black ring at beginning of club, which is bright red.

Head with the front long, feebly concave between the eyes, and with a vague, narrow, longitudinal carina extending from occiput to middle of front; surface coarsely, irregularly punctate, and sparsely, irregularly clothed with rather long, recumbent yellow hairs. Eyes separated from each other on the front by about one-half the width

<sup>3</sup> Trans. Ent. Soc. London, 1895, p. 111.

<sup>4</sup> Bull. Amer. Mus. Nat. Hist., New York, vol. 37, 1917, p. 446.

of the labrum. Antennae extending to base of first abdominal segment; joints 1 to 3 shining and sparsely punctate, the following joints opaque and densely pubescent; joint 1 slightly clavate; joints 2 and 3 slender and cylindrical, the second small, and the third about as long as the fourth and fifth united; joint 4 feebly enlarged toward apex; joints 5 to 10 compact and slightly serrate; joint 11 oblong, and acute at apex.

Pronotum slightly longer than wide; sides arcuately rounded, and feebly constricted at base; surface depressed, somewhat uneven, but without distinct longitudinal ridges, densely, coarsely, and confluent punctate, and rather densely, irregularly clothed with moderately long, recumbent black and yellow pubescence, with a few erect hairs of the same color intermixed. Scutellum triangular, and densely clothed with yellow pubescence.

Elytra extending to middle of third abdominal segment, rather strongly subulate, strongly deliscent posteriorly, with the tips narrowly rounded; surface glabrous, with the black margins densely, coarsely punctate, becoming tuberculous at the base, and the vitreous areas sparsely, obsoletely punctate.

Abdomen beneath shining, rather coarsely, irregularly punctate, and irregularly clothed with recumbent and erect hairs. Sternum rather densely, irregularly clothed with long, recumbent pale yellow pubescence. Anterior and middle legs short, femora strongly clavate, and the anterior tibiae densely clothed with short brownish pubescence on inner sides. Posterior legs long, femora rather strongly clavate near apex, and the tibiae clothed with erect black hairs, which are denser and longer on the apical half.

Length, 17-18 mm.; width, 3.25-3.5 mm.

*Type locality*.—Bahia, Brazil.

*Type and paratype*.—Cat. No. 42825, U. S. N. M.

Described from two females (one type) collected at the type locality.

This species is closely allied to *femorata* Klug and *carinicollis* Bates. It differs from the former in having the abdomen and tarsi black, and the club of the posterior femora bright red. It resembles *carinicollis* Bates very closely, but *rufofemorata* is larger and more robust than that species, the anterior and middle legs are black except at the base, and the pronotum is not distinctly trisulcate.

#### BROMIADES BRACHYPTERA (Chevrolat)

*Odontocera brachyptera* CHEVROLAT, Rev. Zool., 1838, p. 285.

This species was described from Cuba by Chevrolat, who recorded it as common in all parts of the island during June on the flowers of Jucaro. He also recorded it as living in the wood of Java

(*Andira inermis*). In the United States National Museum collection is a specimen from Habana, Cuba, collected by C. F. Baker, another example from Central Constancia, Cuba, collected by J. F. Merrill, and two examples collected at Cayuga, Guatemala, during September and October by William Schaus. Another example has been examined from the Ferd. Nevermann collection which was collected at San José, Costa Rica, June 20, 1924, by E. Gonzora. Bates<sup>5</sup> records it from Cuba and Santa Marta, New Granada, but states that the specimen from the latter locality differs from the Cuban form in having the hind legs wholly tawny red, with the exception of the two apical joints of the tarsi, which are black. This specimen is without any doubt the same as my new species, *Bromiades meridionalis* from Panama, so *brachyptera* should not be listed in the catalogues from New Granada.

**BROMIADES MERIDIONALIS**, new species

*Female*.—Form similar to *brachyptera* Chevrolat. Head, antennae, pronotum, scutellum, and elytra black, the latter each with a broad, median longitudinal pale yellow vitreous area extending from base to near apex. Body beneath black; anterior and middle legs black, with a more or less reddish yellow spot near the base of the femora; posterior legs yellow, except the femora, which have the swollen parts slightly more brownish and the tips narrowly margined with black, the three apical joints of the tarsi and the tarsal claws black.

Head with the front moderately long, flat between the eyes, and with a smooth longitudinal carina extending from occiput to middle of front, the carina broadly expanded on the occiput; surface coarsely, irregularly punctate, and irregularly clothed with short, recumbent golden yellow hairs. Eyes separated from each other on the front by nearly the width of the labrum. Antennae extending nearly to apex of elytra; joints 1 to 4 shining and sparsely punctate; joints 5 to 11 opaque and densely pubescent, and all of the joints armed with a few long hairs at apex on inner margin; joint 1 strongly clavate; joints 2 to 4 subcylindrical; joint 5 robust and feebly serrate; joints 6 to 10 broadly triangular; joint 11 oblong, and feebly emarginate at apex.

Pronotum about as wide as long; sides arcuately rounded, and strongly constricted near base; surface somewhat depressed, with three broad, smooth, longitudinal elevations, the median one straight and strongly interrupted near base, the lateral ones arcuate, not extending to base or apex, and the surface coarsely rugose posteriorly, the depressions coarsely, irregularly punctate, and densely

<sup>5</sup> Ann. Mag. Nat. Hist., ser. 4, vol. 11, 1873, p. 120.

clothed with long, recumbent golden yellow pubescence. Scutellum triangular, densely clothed with yellow pubescence at apex.

Elytra extending to just beyond base of first abdominal segment, cuneiform, slightly arcuately dehiscent posteriorly, with the tips rather broadly rounded; surface with the black margins clearly defined, glabrous, and coarsely, densely punctate except in the humeral regions, the vitreous areas coarsely, obsoletely punctate, and clothed with a few erect, inconspicuous yellow hairs.

Abdomen beneath slightly flattened, finely, very sparsely punctate, the apical segments densely clothed with short, recumbent cinereous pubescence. Sternum rather densely clothed with short, recumbent cinereous pubescence, with a few long, semierect golden yellow hairs toward the sides. Anterior and middle femora short and strongly clavate; posterior femora long and slightly clavate toward the apices. Anterior and middle tibiae short, densely clothed with golden yellow pubescence on the inner sides; posterior tibiae long, slightly arcuate, clothed with long reddish yellow hairs, which are denser and longer on the apical halves. Tarsi clothed with black hairs except the two basal joints of the posterior legs, which are densely clothed with long reddish yellow hairs, similar to those of the tibiae.

Length, 19 mm.; width, 4 mm.

*Type locality*.—Cabima, Panama.

*Type*.—Cat. No. 42826, U.S.N.M.

Described from a single female collected at the type locality, May 26, 1911, by August Busck.

This species is closely allied to *brachyptera* Chevrolat, but differs from that species in having the antennae entirely black, the elytra more arcuately dehiscent toward the tips, and the posterior legs yellow, with the exception of the tips of the femora and the three apical joints of the tarsi, which are black. It also resembles *Acyphoderes abdominalis* Olivier very closely, but can be readily separated from that species by its short cuneiform elytra, which barely pass the base of the first abdominal segment.

PHYGOPODA MANNI, new species

*Male*.—Head, pronotum, and scutellum black; antennae reddish brown, becoming slightly paler on the basal segments; elytra pale yellow, somewhat vitreous, with the lateral and sutural margins brownish black, the brownish-black areas very broad along the lateral margins, and with an oblique spot of the same color on each elytron behind the scutellum; body beneath black except the last abdominal segment, which is reddish; anterior and middle legs reddish brown, the femora slightly darker; posterior legs black, with the tarsi and bases of femora and tibiae pale yellow.

Head with the front rather short, flat, and with a narrow longitudinal groove between the eyes; surface rather coarsely, irregularly punctate, and rather densely clothed with long, recumbent cinereous pubescence. Eyes narrowly separated on the front. Antennae extending nearly to apex of elytra; joint 1 shining and sparsely punctate, the following joints opaque, densely pubescent, and with a few long, stiff hairs at apex on inner margin; joint 1 slightly clavate; joints 2 to 4 slender and cylindrical, the third only slightly longer than fourth, which is subequal in length to the fifth; joints 5 to 10 triangular, the joints becoming shorter and broader toward tip of antennae; joint 11 oblong, and feebly emarginate at apex.

Pronotum about as wide as long; sides slightly arcuately rounded, and rather strongly constricted at base; surface moderately convex, without tubercles or longitudinal ridges, rather coarsely reticulate-punctate, each puncture with a small round elevation in the middle, and the surface rather densely, irregularly clothed with long, recumbent cinereous pubescence, which is denser along the anterior part of the lateral margins. Scutellum triangular, densely clothed with cinereous pubescence at apex.

Elytra extending to just beyond base of first abdominal segment, abruptly subulate behind the middle, strongly dehiscent posteriorly, the tips narrowly rounded; surface glabrous, with the brownish-black areas coarsely, confluent punctate, and the vitreous areas with a few coarse, inconspicuous punctures.

Abdomen beneath, except last segment, densely clothed with long, recumbent cinereous pubescence, which nearly conceals the surface. Sternum finely, densely punctate, and clothed with pubescence similar to that on the abdomen. Anterior and middle legs short, the femora strongly clavate. Posterior legs very long, the femora feebly, gradually clavate, coarsely scabrous, and sparsely clothed with short, stiff, semierect white hairs; tibiae armed on apical halves with a rather dense tuft of long, erect white and black hairs intermixed, the white hairs predominating apically.

*Female*.—Differs from the male in having the eyes separated from each other on the front by about the width of the labrum, the antennae shorter, extending only to middle of elytra, and the posterior femora yellowish brown, becoming dark brown on the upper margin and at middle of outer surfaces.

Length, 8.5–9 mm.; width, 2.4 mm.

*Type locality*.—Rurrenabaque and Canamina, Bolivia.

*Type and allotype*.—Cat. No. 42827, U. S. N. M.

Described from two examples, the type (male) collected at Rurrenabaque (Beni River), Bolivia, December, 1921, and the female collected at Canamina, Bolivia, July, 1921. Both specimens were



collected by William M. Mann, with the Mulford Biological Exploration in Bolivia during 1921–1922.

This species is allied to *albitarsis* Klug and *fugax* Thomson, but differs from *albitarsis* in not having the pronotum longitudinally carinate, and from *fugax* by having the elytra abruptly subulate and strongly dehiscent posteriorly.

**TOMOPTERUS VESPOIDES** White

*Tomopterus vespoides* WHITE, Cat. Col. British Museum, pt. 8, 1855, pp. 176–177, pl. 5, fig. 8.

This interesting little species was described by White from Guatemala, and has been collected in numbers by Ferd. Nevermann at Hamburg farm, Costa Rica, during August, 1925, flying like wasps around freshly cut timber, apparently "Sapotaceae," and he has observed a female depositing eggs in a hole in the dry bark. Nevermann writes that the females seem to be very rare, as out of 35 examples collected, only two were females.

The sexes of this species are quite different; the males have the eyes nearly contiguous in front, and are dull black above, with the anterior and posterior margins of the pronotum, two spots on the metanotum, last dorsal segment of abdomen, and the posterior margins of the ventral surface of the abdominal segments clothed with golden yellow pubescence. The elytra have the anterior part of the lateral margins and a narrow, oblique vitta on each elytron reddish yellow, the vitta extending from the humerus to middle of elytron at apex. The females have the abdomen more robust, the eyes distinctly separated from each other on the front, the surface sparsely clothed with yellowish pubescence, and in addition to the yellow pubescence mentioned on the males, have the median part of the pronotum sparsely, and the scutellum densely clothed with golden yellow pubescence. The reddish yellow margins and vittae on the elytra are distinctly broader, and in some examples these unite and the entire lateral half of the elytron is reddish yellow, which is the form figured by White.

**TOMOPTERUS VITTIPENNIS**, new species

*Male*.—Form similar to *quadratiennis* Bates. Above uniformly black, each elytron with the lateral margin and a narrow oblique vitta brownish yellow, the color becoming paler posteriorly, and the vitta extending from the humeral region to apex at middle of elytron; beneath brownish black, with the base of posterior femora and the inner surface of posterior femora and posterior tibiae paler.

Head with the front moderately long, and with a narrow longitudinal carina on the occiput; surface finely, densely punctate, and

densely clothed between and below the eyes with long, recumbent silvery-white pubescence. Eyes nearly contiguous in front. Antennae short, extending to base of pronotum, and strongly expanded toward apex; joint 1 long and strongly clavate; joints 2 to 4 cylindrical, and the third slightly longer than fourth; joint 5 subequal in length to the third, and strongly enlarged toward apex; joints 6 to 10 compact, short, about subequal in length, and only feebly serrate; joint 11 slightly oblong, emarginate, and acute at apex.

Pronotum slightly wider than long, and distinctly narrower at base than at apex; sides arcuately rounded in front of middle, and obliquely narrowed posteriorly to the base; disk strongly convex, with a narrow transverse depression along anterior margin and base; surface coarsely, confluent ocellate-punctate, densely clothed with very short, inconspicuous silvery-white pubescence, which is visible in certain lights only, with a few erect black hairs intermixed, and ornamented with a narrow fascia of long, recumbent yellow hairs along the anterior margin. Scutellum very large, elongate, triangular, and the surface coarsely, confluent punctate.

Elytra very short, not extending to base of abdomen, quadrangular, not dehiscent posteriorly, the tips broadly rounded exteriorly, more or less obliquely toward the sutural margins; surface very coarsely, confluent punctate, and sparsely clothed with fine, inconspicuous, erect hairs in the basal region.

Abdomen beneath rather densely, coarsely punctate, the posterior margin of segments broadly clothed with long, recumbent yellow pubescence. Sternum coarsely, densely punctate, finely granulose, and rather densely clothed with moderately long, recumbent silvery-white pubescence, with a few semierect hairs of the same color intermixed. Prosternum clothed with a few very long, erect black hairs. Anterior legs short; anterior femora robust, gradually clavate; middle femora feebly arcuate, and strongly abruptly clavate. Posterior legs long; femora strongly arcuate, strongly clavate on apical two-thirds; tibiae cylindrical, slightly sinuate.

Length, 8.8 mm.; width, 2.6 mm.

*Type locality*.—Buenavista, Bolivia.

*Type*.—Cat. No. 42828, U. S. N. M.

Described from a single male collected at Buenavista, Bolivia, between February and April, 1925, and labeled "Provincia d'Sara, 1,700 ft."

This species is allied to *quadratipennis* Bates, but *quadratipennis* differs from *vittipennis* in having the antennae reddish brown, the base and anterior margin of pronotum narrowly margined with yellow pubescence, a narrow transverse pubescent fascia on each side at lateral margin, the oblique reddish vitta on each elytron extend-

ing from the humeral angle to the apex at sutural margin, the abdominal segments not distinctly margined with yellow pubescence, and the legs reddish brown.

**TOMOPTERUS SIMILIS, new species**

*Male*.—Form similar to *quadratipennis* Bates. Above uniformly black, antennae brownish black, with the base of the first joint reddish, and each elytron with the lateral margin very narrowly reddish brown and a short, oblique, smooth ivory white vitta, which does not extend to base or apex of elytron; beneath brownish black, the legs reddish brown, with the base of the posterior femora ivory white.

Head with the front moderately long, broadly, deeply concave between the antennae, and with a short, longitudinal carina on the occiput; surface finely, densely punctate, densely clothed below the eyes with long, recumbent silvery white pubescence, and with a row of similar hairs between the eyes, which are nearly contiguous in front. Antennae short, extending to base of pronotum and strongly expanded toward apex; joint 1 long, arcuate, and strongly clavate; joints 2 to 4 cylindrical, the third distinctly longer than the fourth; joint 5 subequal in length to the third, and strongly enlarged toward the apex; joints 6 to 10 compact, short, subequal in length, and strongly serrate; joint 11 slightly oblong, broadly truncate and emarginate at apex.

Pronotum distinctly wider than long, nearly equal in width at base and apex; sides broadly, arcuately rounded, more strongly toward the base; disk moderately convex, vaguely flattened on top, and with a deep narrow, transverse depression along anterior margin and base; surface coarsely, confluent ocellate-punctate, densely clothed with very short, inconspicuous silvery white pubescence, which is only visible in certain lights, with numerous long, erect black hairs intermixed, and ornamented in the basal depression with long, recumbent golden yellow pubescence. Scutellum very large, elongate, triangular, the surface coarsely, densely, and irregularly punctate.

Elytra very short, not extending to base of abdomen, quadrangular, not dehiscent posteriorly, the tips broadly rounded externally, more or less obliquely toward the sutural margins; surface densely, confluent punctate, the punctures very coarse in basal region, but becoming finer toward the apex, and sparsely clothed with fine, inconspicuous, erect hairs in basal region.

Abdomen beneath finely, densely punctate, the posterior margin of segments densely clothed with long, recumbent pubescence, which is silvery white on basal segments and golden yellow on apical segments. Sternum closely clothed with long, erect and recumbent

silvery white pubescence intermixed. Prosternum sparsely clothed with long, erect black hairs. Anterior legs short; anterior femora robust and gradually clavate. Middle femora strongly arcuate, and strongly, abruptly clavate. Posterior legs long; femora strongly arcuate, and strongly clavate on apical two-thirds; tibiae cylindrical and slightly sinuate.

Length, 8.4 mm.; width, 2.8 mm.

*Type locality*.—Rio Negro, Bolivia.

*Type*.—Cat. No. 42829, U.S.N.M.

Described from a single male collected at the type locality during January, 1922, by William M. Mann with the Mulford Biological Exploration in Bolivia during 1921–1922.

This species is allied to *quadratiennis* Bates, but differs from that species in having the antennae brownish black, the transverse basal depression on pronotum densely clothed with golden yellow pubescence, the oblique ivory white vitta on each elytron not extending to the base or apex, and the underside of the abdominal segments broadly clothed along the posterior margins with silvery white or golden yellow pubescence.

