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## BOLIVIAN RHINOTRAGINI V: NEW SPECIES OF *ERYTHROPLATYS* WHITE, 1855, *RHINOTRAGUS* GERMAR, 1824, *ORNISTOMUS* THOMSON, 1864, AND *AECHMUTES* BATES, 1867 (COLEOPTERA, CERAMBYCIDAE)

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### ABSTRACT

*Bolivian Rhinotragini V: new species of Erythroplatys White, 1855, Rhinotragus Germar, 1824, Ornistomus Thomson, 1864, and Aechmutes Bates, 1867 (Coleoptera, Cerambycidae). Six new species are described: Erythroplatys boliviensis, Rhinotragus antonioi, Rhinotragus monnei, Ornistomus simulatrix, Aechmutes boliviensis, and Aechmutes subandinus. The female of Erythroplatys simulator Gounelle, 1911 is redescribed, and the male for the first time. Ornistomus bicinctus Thomson, 1864, Aechmutes lycoides Bates, 1867 and Aechmutes armatus Gounelle, 1911 are formally excluded from the fauna of Bolivia. All the species are illustrated, and host flower records provided.*

KEY-WORDS: Bolivia; Cerambycinae; Host flowers; Taxonomy.

### INTRODUCTION

This paper, the author's fifth devoted to the Bolivian Rhinotragini, describes six new species, five of which have been misidentified as described ones by a number of expert entomologists. Together with the sixteen new species described by Clarke (2009a, 2009b, 2010, 2011) in his first four papers in this series (and there are many more to come), the picture that is emerging with respect to the Bolivian Rhinotragini fauna is one of an unexpected high level of endemism; "unexpected", because, as this paper illustrates, previous identifications of Bolivian material have been somewhat cursory, and failing close comparison with type material, specimens have been incorrectly allocated to, mainly, known Brazilian species.

### MATERIAL AND METHODS

Most of the material examined was collected in the Department of Santa Cruz, most at, or near to, the Hotel Flora & Fauna, 420-440 m, 5 km SE of Buena Vista (17°30'S/63°39'W). These hilly localities lie in disturbed transition forest (Semi deciduous Chiquitano Forest and Tropical Humid Forest), 16 km from the foot of the eastern Cordillera of the Andes. Two species were collected 30 km south-east of Buena Vista, at Potrerillo de Guenda (17°40'S/63°28'W). The remaining material was collected 300 km to the south, in the sub-humid Chaco Forests of the Andean foothills; at the foot of Incahuasi in the Department of Santa Cruz (19°49'S/63°40'W); and above Incahuasi in the Department of Chuquisaca.

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*Measurements:* total length = tip of mandibles to apex of abdomen. Forebody length (estimated with head straight, not deflexed) = apex of gena to middle of posterior margin of metasternum. Length of abdomen = base of urosternite I (apex of abdominal process) to apex of urosternite V. Length of rostrum = genal length (from apex of side to where it meets inferior lobe of eye). Length of inferior lobe of eye (viewed from above with the scale along side of gena): from the lobes most forward position to its hind margin (adjacent to, and slightly to the side of, antennal insertion). Width of inferior lobe of eye (with head horizontal and level viewed from directly above) = width of head with eyes at its widest point, minus width of interocular space, and divided by two. Interocular space between inferior lobes = its width at the narrowest point (including smooth lateral margins). References to antennal length in relation to body parts are made, as far as is possible, with head planar to dorsad and antenna straightened. Length of leg (does not include coxae) = length of femur (from base of femoral peduncle to apex of claw) + length of tibia + length of tarsus (does not include claws).

The acronyms used in the text are as follows: American Coleoptera Museum, San Antonio, Texas, USA (**ACMT**); Florida State Collection of Arthropods, Gainesville, Florida, USA (**FSCA**); Museo Noel Kempff Mercado, Universidad Autónoma Gabriel René Moreno, Santa Cruz de la Sierra, Bolivia (**MNKM**); Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (**MNRJ**); Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (**MZUSP**); Robin Clarke/Sonia Zamalloa private collection, Hotel Flora & Fauna, Buena Vista, Santa Cruz, Bolivia (**RCSZ**).

The bibliographic references for each taxon correspond to the the original description, citation of the catalogue by Monné (2005), and additions to this catalogue.

### Taxonomy

#### *Erythroplatys boliviensis* sp. nov.

**Figs. 1A, 1B**

*Holotype male:* 15.15 mm. Deposited at MNKM.

*Diagnosis:* Colour distribution (elytra black with orange to yellow spots) in *E. boliviensis* is similar to that of *Erythroplatys corallifer* White, 1855 and *Erythroplatys rugosus* (Lucas, 1857), but very different from the other two species of the genus, as outlined under the description of *Erythroplatys simulator* Gounelle, 1911.

In *E. boliviensis* the black fascia to the sides of pronotal disc are distinct and complete (reaching from front to basal margin), in *E. corallifer* rather indistinct, and falling well short of basal margin. In all three species part of the apical third of the sutural border of the elytra is yellowish; the position of this mark relative to the apical pair of spots on the elytral surface is diagnostic. In *E. boliviensis* the sutural mark lies opposite the pair of pre-apical spots, and falls well short of the apical pair. In *E. rugosus* the sutural mark is situated more posteriorly, between, and almost joining, both pairs of apical spots. In *E. corallifer* this sutural mark is more elongate, and less discrete than it is in the other two species, encroaching on to middle third of elytra, and extending as far as the apical spots. Moreover, in *E. corallifer* the sutural border is yellowish behind the scutellum, not so in the other two species.

*Description of holotype:* colour opaque scarlet, the following black: apex of mandible; antenna; two small, transverse fascia just behind superior lobes of eyes; pronotum with broad fascia to either side of midline (complete from apical to basal margins, united at apex, diverging to base); scutellum; and elytra. Each elytron with the following discrete, orange or yellow spots: one oblique and obovate between scutellum and humerus (this one constant in size and shape, those that follow variable); two subcircular ones centred on middle (one lateral, and one behind, centred on disc, the two always discrete); two on apical third (one lateral, one behind and centred on disc, discrete or joined to the other by narrow extension); and opposite the former, sutural border yellow (this mark is short to very short); and apical margin of elytron narrowly orange.

*General pubescence:* Upperside almost glabrous, except an oval patch of microscopic, setiferous punctures (the hairs white and recumbent) present on sides of pronotum. Underside with similar pubescence on the following: prosternum and mesosternum (including their processes); mesepimera; narrow patch on hind angles of urosternites I-IV. The following with moderately sparse, setose punctures (the hairs suberect and longer than the dense pubescence referred to above): orange hairs (when viewed laterally) on mentum-submentum; sides of pronotum; sides of metasternum; metepisternum; and abdomen (one transverse row of isolated hairs on urosternites I-IV, and apex of urosternite V). Scape, pedicel and antennomeres III to apex of VII with thick, orange setae ventrally. Legs generally covered with reddish setae, sparser on femora, denser on meso- and metatibia; dense and golden on protibia and tarsal pads.

*Surface ornamentation:* the puncturation dense and heavy on upperparts, as follows: on head confused, smaller and contiguous, semi-alveolate punctures, permeated by confused micro-carinas on frons (these larger, longer, and longitudinal at middle), on vertex separated by smooth, elongate carinae; on pronotum (only midline smooth and impunctate) large and semi-alveolate, becoming less dense laterally, not carinate; similarly, on entire surface of elytra, the punctures contiguous and alveolate, larger and rounder along line of evanescent humero-apical costae, smaller towards suture and sides, and on apical half becoming more confluent and scabrous. On the underside as follows: area of mentum-submentum multicarinate, with small individual punctures and rows of contiguous ones; pro- and mesosternal surfaces shagreened with isolated, small, shallow, rounded punctures; sides of metasternum, and most of metepisternum similar to preceding, but surface smooth (at centre of metasternum and base of metepisternum punctures mixed with larger ones, and denser); on abdomen very sparse and smaller, denser along midline, and very dense at centre of urosternite V.

*Structure:* moderately large and broad; elytra dilated towards rounded apex; abdomen and forebody equal in length. Head with eyes (2.5 mm), distinctly narrower than width of prothorax. Rostrum long (1.00 mm), slightly wider at base, and weakly sinuate at middle. Labrum moderately large, projecting, rectangular (with slightly rounded sides and narrowly emarginate apex); nearly twice as wide as long; almost impunctate. Clypeus planar with frons at middle; laterally feebly declivous; only impunctate adjacent to apical margin. Eyes small; length of inferior lobes (0.65 mm) about two-thirds as long as genae; their proximal margins just lying on frons, distal margins oblique; width of one inferior lobe 0.85 times interocular space (1.00 mm). Superior lobes of eye with 13-15 rows of fine ommatidia, separated by (0.80 mm) about three times their own width. Antennal tubercles with rounded apices (but obtusely angled posteriorly); the distance between them more than twice width of scape. Antennae short, just passing apex of metepisterna; antennomeres moderately robust; V-X weakly serrate, the apical angles right-angled; scape subpyriform, as long as antennomere III; pedicel oval (0.25 mm); III cylindrical, longer (1.15 mm) than rest; IV short (0.55 mm); V-VII (0.65 mm) and VIII-IX (0.6 mm) equal; X (0.5 mm); XI (0.7 mm) relatively wide, with notch partially separating apical cone. Prothorax transverse, 1.18 wider than long (2.75 mm); sides irregular in profile, slightly

sinuate to summit of anterior lateral callus (where prothorax is widest, just in front of middle), deeply sinuate to posterior lateral callus (on basal third), and sinuate to hind angle (which is almost right-angled); front margin narrower (2.2 mm) and more prominently bordered than hind margin (3.00 mm); apical constriction distinct (but not strong), basal constriction with deep narrow fovea laterally, narrow at sides, abruptly declivous with disc of pronotum. Pronotum irregularly convex; the following callose: midline (incrementally broader and more strongly elevated from basal constriction towards apex); three pairs of calli, each callus at some distance to either side of midline: anterior calli originating just behind front margin towards sides of disc (each one low, curved and triangular, anteriorly smooth, posteriorly granulate); median calli situated within the bounds of the black fascia, with its centre at apical third (each one low, round, and heavily punctured); posterior calli lying obliquely towards hind angles of pronotum (ovate, abruptly separated from hind edge of anterior lateral callus by deep sulcus, from centre of disc by moderate inclination, and posteriorly by basal constriction, which it slightly overhangs). Prosternum with front margin slightly prominent, then almost flat to middle of apex of prosternal process; the latter with raised sides, base short and moderately broad (0.45 mm), about half width of procoxal cavity; apex subtriangular, broad for basal half, for apical half upturned and strongly diverging into two narrow lobes (which touch apex of postcoxal process, just closing procoxal cavity behind); procoxal cavity ovate, and closed at sides. Mesosternum deeply and abruptly declivous. Base of mesosternal process strongly raised, rectangular (with tubercles surmounting basal angles), moderately broad (0.75 mm), narrower than coxal cavity (1.20 mm); apex of mesosternal process up-turned, bilobed (separated by short notch), the lobes divergent and overlapping inner margin of coxal cavities. Mesocoxal cavity narrowly open to mesepimeron; the latter rather narrow, hardly constricted at middle, depressed at midline. Scutellum short, rounded (slightly transverse), and slightly depressed at middle. Elytra 2.5 longer than width of humeri, reaching middle of urosternite V, broad, completely hiding sterna, and not dehiscent; sides parallel for basal third, distinctly widened for middle third, and for apical third rounded and contracted to apex; apices broadly rounded, unarmed, not gaping, but modestly separated. Surface of elytron somewhat irregular, obliquely bisected (almost to apex) by change in curvature along line of obsolete humero-apical costa; mesally flattened and slightly depressed across middle; laterally strongly

declivous to epipleuron for basal third, incrementally less declivous and more explanate towards apex. Humeri well demarcated, but rounded, weakly prominent, and not projecting. Sides of metathorax slightly sinuate, apical margin slightly oblique. Metasternum large, convex, slightly more so behind (and planar with mesocoxae); longitudinal suture almost complete (albeit very shallow and narrow to front, deep and broad behind); metasternal process broad and rather short, with thick, raised borders at apex, the latter acuminate. Metepisternum wide, widest at base, and moderately narrowed to apex. Abdomen robust, broad, and somewhat depressed, widest at base, gradually tapering to apex. All urosternites strongly transverse, with almost straight, slightly converging sides; length of urosternites II and III (1.15 mm) and IV and V (1.00 mm) equal; V trapezoidal, flattened on disc (more deeply at middle of apex), apical margin truncate. Abdominal process planar with abdomen, triangular, sides raised, intimately inserted between metacoxae; apex yellow in colour. Apical tergite trapezoidal, apex broadly and slightly rounded, and slightly overlapping apex of urosternite V. Legs short; ratio length front, middle, and hind leg 1.0:1.4:1.5; strongly pedunculate-clavate; peduncles moderately robust, claves robust; mesofemora longer (4.5 mm) than metafemora (4.2 mm). Profemoral peduncle very short (about one tenth length of clave); protibia (2.85 mm) nearly as long as profemur (3.00 mm), lateral side obliquely excised at apex, and apical margin raised at middle; protarsomere I quadrate, II transverse, III quadrate (the lobes narrow and well separated, mesal lobe longer than lateral one). Mesofemoral peduncle curved and flattened latero-mesally, about half as long as clave; clave abrupt and more tumid mesally. Mesotibia (3.2 mm) much shorter than mesofemur, subcylindrical, curved, and steadily thickened to apex. Mesotarsus longer (3.5 mm) than mesotibia. Hind leg moderately long (11.6 mm); femoral peduncle cylindrical, about half as long as clave; femoral clave abrupt and tumid laterally; metatibia (3.70 mm) shorter than metafemur, hardly flattened, slightly curved, gradually, but not much thickened to apex; metatarsus as long as metatibia; metatarsomere I hardly elongate (widening slightly to apex, apical angles marked by prominent setiferous puncture); II trapezoidal and quadrate, III quadrate (but not widened, the lobes rather elongate and widely separated); I two-thirds length of II+III (1.2 mm).

*Variation in males:* among the six male paratypes colour variation appears to be negligible (but note elytral spots may be brownish, and in one male elytra

broadly brownish across middle); sides of rostrum parallel in one paratype; ratio width of inferior lobe to width of interocular space variable (0.85-0.91); the depression across middle of elytra is less apparent in one male, stronger in two; apices of elytra may be rounded (as in *E. corallifer*) to moderately truncate (as in *E. rugosus*); and in one male apex of sutural border prolonged into blunt tooth.

*Description of female* (Fig. 1B): the single female examined shows no significant differences of colour or surface ornamentation from the male (including lack of sexual puncturation).

*Structure:* most structural differences limited to sexually dimorphic ones usual in species of this tribe. Large and broad; abdomen one third longer than forebody. Head with eyes (2.5 mm) distinctly narrower than width of prothorax; rostrum long (1.25 mm), widest at base, and sides not sinuate; eyes small; inferior lobes (0.80 mm) about two-thirds as long as genae, their proximal margins reaching sides of genae; well separated, width of one inferior lobe 1.80 times interocular space (1.35 mm). Antennae just reaching apex of metepisterna; antennomeres V-X less serrate than in male, the apical angles rounded; scape slightly longer (1.35 mm) than antennomere III (1.25 mm); V-VI equal (0.75 mm); VII shorter (0.60 mm). Prothorax 1.3 wider than long, slightly more transverse than in male. Prosternum flatter than in male, and apex of prosternal process more triangular (lobes less narrow). Mesosternal process almost planar with mesocoxae (in male, although the process is salient, the mesocoxae are more prominent); base of process broad (1.00 mm), almost as wide as mesocoxal cavity (1.25 mm); apical lobes separated by broad emargination. Scutellum oval and flat. Elytra show few differences from male; 2.3 longer than width of humeri; slightly more dilated behind; narrowly gape from middle to apex. Sides of metathorax not sinuate; apical margin more oblique than in male. Metasternum larger and flatter. Abdomen very similar to male, more robust, broader, segments incrementally shorter to apex; but urosternite V shows little difference. Apical tergite trapezoidal, apex more acuminate, about 2.5 narrower than base (in male about half as wide as base). Legs similar to male, but shorter; ratio length front to hind leg 1.0:1.2:1.4; mesofemora shorter than metafemora; protibia slightly longer than profemur; metatarsus distinctly shorter than metatibia).

*Measurements (mm):* 6 males/1 female: total length, 14.00-15.85/20.40; length of pronotum,

2.50-3.00/3.20; width of pronotum, 3.00-3.40/4.20; length of elytra, 8.50-10.00/11.65; width at humeri, 3.60-4.35/5.00.

*Type material:* Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, 12.XI.2005, flying to/on flowers of "Sama blanca", Clarke & Zamalloa col. (MNKM).

*Paratypes with same data as holotype:* 2 males, 25.XI.2005 (RCSZ); 1 male 25.XI.2005 (MZUSP); 1 male, 26.XI.2005 (RCSZ); 1 male, 01.XII.2005 (MNRJ).

*Paratype with same data as holotype, different host flower:* 1 female, 27.X.2006 flying to/on flowers of "Sama blanca chica" (RCSZ); 1 male, 16-30.XI.2002 (ACMT); 1 male, 26.XI.2005 (ACMT).

*Discussion:* Monné & Fragoso (1990) discussed the subtle distinction between *Rhinotrachus* Germar, 1824 and *Erythroplatys* White, 1855; and provided a generic description of the latter. *Erythroplatys boliviensis* sp. nov. conforms to this description in all respects; confirming its placement in this genus to be correct.

Monné & Hovore (2006) record *E. corallifer* from Brazil (Pará and Goiás) and Bolivia; and Wappes *et al.* (2006) include this species in the Bolivian list. All records of *E. corallifer* in Bolivia are almost certainly referable to *E. boliviensis* sp. nov., since all the specimens were collected in the same locality (near Buena Vista).

Apart from the differences between *E. boliviensis* and *E. corallifer* set down in the diagnosis, the following may be added; in *E. boliviensis* prothorax of both sexes strongly convex, but not tumid (as it is in females of *E. corallifer*); pronotal calli distinctly to strongly raised (less so in *E. corallifer*); basal third of elytra more parallel-sided, in consequence apical half of elytra more abruptly widened (basal third of elytra slightly diverging, and apical half less abruptly widened in *E. corallifer*); basal spots of elytra obovate (irregular in *E. corallifer*).

*Etymology:* Latin, *boliviensis*, meaning from Bolivia.

### *Erythroplatys simulator* Gounelle, 1911

**Figs. 2A, 2B**

*Erythroplatys simulator* Gounelle, 1911:16; Monné & Fragoso, 1990:730, fig. 3; Monné & Hovore, 2006:116; Wappes *et al.*, 2006:17 (distr.).

*Diagnosis:* *E. simulator* can be immediately separated from *Erythroplatys cardinalis* Monné & Fragoso, 1990 by the two moderately large, scarlet fascia on basal half of each elytron, and angular fascia across apical half (in *E. cardinalis* elytra almost entirely scarlet, only humeri with small black fascia); and from the other species of the genus, which have black elytra with numerous orange to yellow spots.

*Description of male:* colour opaque black and scarlet. The following black: apex of mandible; antennal segments I-IX; humeri; and apex of abdomen. The following scarlet: antennomeres X and XI (in figure 2A missing, but almost certainly scarlet as in female); on basal half of each elytron most of epipleuron; tulip-shaped fascia shared by both elytra; and angular fascia crossing margin of apical half of both elytra. Mouthparts testaceous.

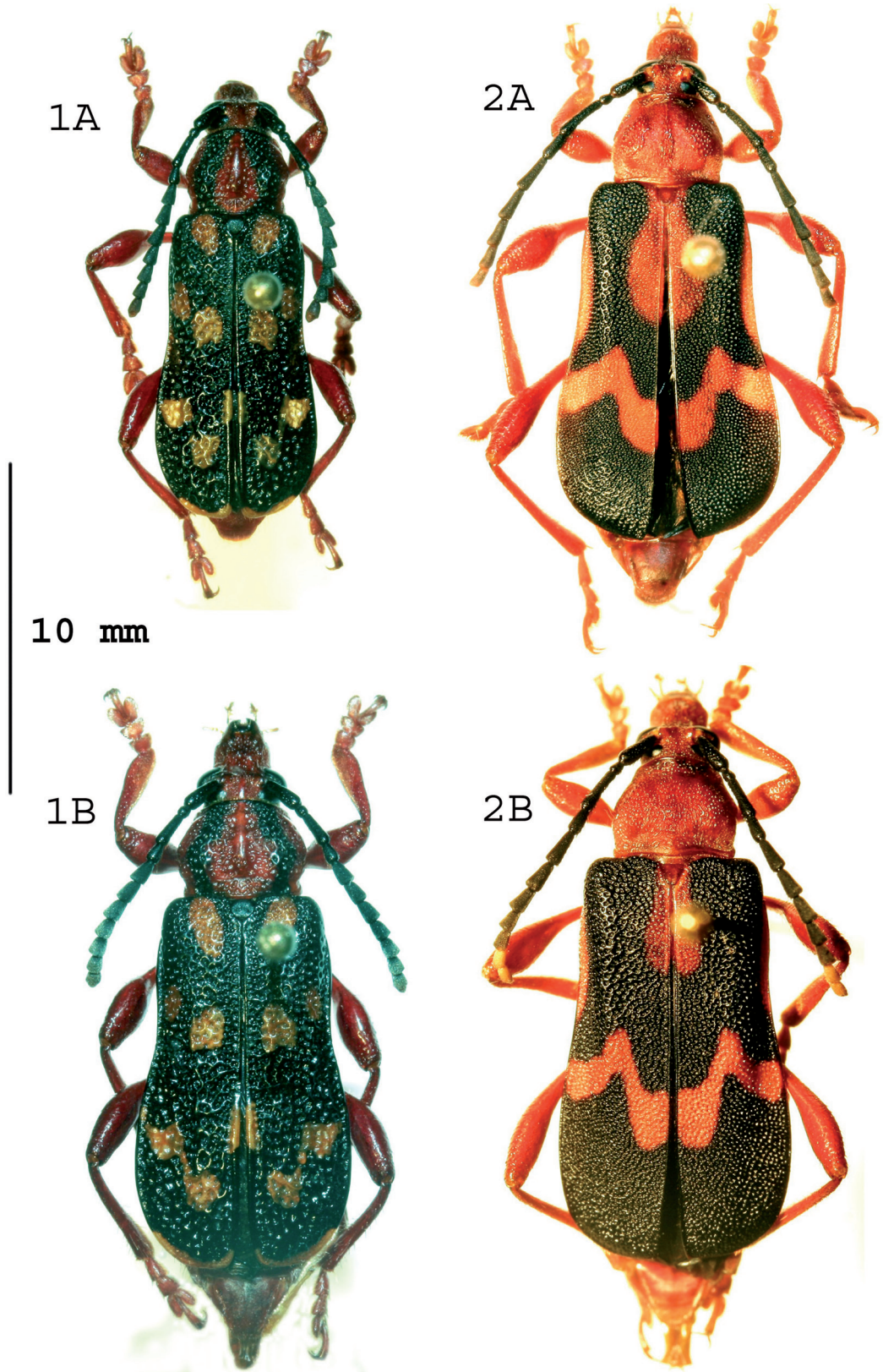
*General pubescence:* usually yellowish. Upperside almost glabrous, except microscopic, setiferous punctures (the hairs white and recumbent) present on prothorax, as follows: oval fascia at sides of pronotum (representing the sexual puncturation), and scattered patches throughout basal constriction. Underside with similar pubescence on the following: triangular fascia at centre of prosternum (absent in female); mesosternum (including its process); golden hairs on mesepimera; narrow fascia on latero-posterior margins of urosternites. The following with moderately sparse, suberect, longer pubescence: orange hairs on mentum-submentum and sides of pronotum; scarlet hairs on metasternum, metepisterna; and on abdomen (but more disperse). Scape, pedicel, and antennomeres III-VI with thick, black setae ventrally. Legs generally covered with reddish setae; sparser on femora; denser on meso- and metatibia; dense and golden on protibia and tarsal pads.

*Surface ornamentation:* puncturation on almost all surfaces of dorsad rugose, dense, confluent, and semi-alveolate. On head: frons with large punctures (anteriorly permeated by longitudinal carination, on interocular space with transverse carination), becoming smaller on vertex. On disc of pronotum carinated towards apex, and at centre of basal constriction. On elytra without carination and less confused, the punctures smaller at base, more bevelled towards apex. Pronotal disc with calli: discrete, narrow, callus just behind centre of midline (this callus strongly carinated); and two large rounded calli to either side of midline (these less carinated, but heavily and closely punctured). Puncturation on the underside as follows:

area of mentum-submentum multicarinate with small individual punctures, and rows of contiguous punctures; on pro- and mesosterna similar to that found on pronotum; on midline of metasternum a broad band with a mixture of dense, somewhat bevelled, shallow punctures of various sizes, and prominent, granulate, smooth punctures; to sides of metasternum and on metepisterna becoming sparser, uniform and shallow; on abdomen surface generally smooth with sparse micro-punctures, interrupted at midline (especially on urosternite V), and here and there laterally, by groups of shallow, dense, small punctures.

*Structure:* moderately large and broad; elytra widening towards rounded apex; forebody slightly longer than abdomen (7.70 mm). Head with eyes (2.40 mm) distinctly narrower than width of prothorax. Rostrum long (1.35 mm) and parallel-sided. Labrum moderately large, projecting, rectangular (with rounded sides and narrowly emarginate apex); more than twice as wide as long; almost impunctate. Clypeus almost impunctate; at middle, separated from frons by moderately deep, densely punctured, U-shaped depression. Eyes small; inferior lobes (0.95 mm) about half as long as genae; their proximal margins lying on frons, distal margins oblique; width of one inferior lobe 1.3 times interocular space (0.60 mm). Superior lobes of eye with 15-16 rows of fine ommatidia, separated by (0.8 mm) about three times their own width. Antennal tubercles with rounded apices, the distance between them 1.5 times width of scape. Antennae short, reaching to about middle of urosternite I; antennomeres moderately robust; VI-IX sub-serrate, the apical angles rounded; scape widening from base to apex, shorter (1.3 mm) than antennomere III; pedicel oval (0.4 mm); III cylindrical, longer (1.6 mm) than rest; IV shorter (0.9 mm) than V; V longer (1.25 mm) than VI; VI (1.05 mm); VII (0.90 mm); VIII (0.8 mm); IX (0.7 mm). Prothorax: transverse; widest at middle; sides rounded to middle, straighter to base; hind angles almost right-angled; front margin narrower (2.5 mm) and more strongly bordered than hind margin (3.25 mm); apical constriction weak (but front margin elevated), basal constriction with rather shallow fovea laterally, narrow, strongly declivous with disc of pronotum. Pronotum irregularly convex with calli. Prosternum abruptly declivous with prominent front margin; well inclined to prosternal process. The latter strongly arched; base short, moderately narrow (0.25 mm), about one fifth width of coxal cavity; apex upturned, subtriangular, long (but not wide), sides slightly rounded, apical margin rather deeply excavate, apical angles projecting

and rounded. Procoxal cavities ovate, closed at sides and behind. Mesosternal declivity moderately deep and abrupt. Mesosternal process depressed to midline; broad (0.90 mm), almost as wide as coxal cavity (1.10 mm); apex of process bilobed, the lobes short, almost parallel-sided, and separated by deep notch. Mesocoxal cavity moderately widely open to mesepimeron; the latter moderately broad and constricted at middle. Scutellum slightly elongate, rounded at apex, depressed to middle. Elytra 2.3 longer than width of humeri, reaching apical third of urosternite IV; broad (and completely hiding sterna); sides parallel for basal third, distinctly widened for middle third, and for apical third rounded and contracted to apex; apices broadly rounded (unarmed), and moderately dehiscent for apical quarter. Surface of elytron somewhat irregular; obliquely bisected (almost to apex) by change in curvature along line of obsolete humero-apical costa; mesally flattened and slightly depressed across apex of basal third; laterally strongly declivous to epipleuron for basal third, incrementally less declivous and more explanate towards apex. Humeri well demarcated (but rounded), weakly prominent, and not projecting. Sides of metathorax rounded, apical margin oblique towards sides. Metasternum large, convex, more so behind (and more prominent than mesocoxae); longitudinal suture complete (albeit very shallow and narrow to front). Metepisterna wide, widest at base, moderately narrowing to apex. Abdomen robust, very broad and strongly depressed, widest at middle of urosternite II. All urosternites strongly transverse, with slightly rounded sides; II and III equal in length (1.60 mm); IV (1.40 mm); and V (1.00 mm) trapezoidal, narrower at base than apex of IV, rather strongly convex, and slightly explanate at sides; apical margin truncate. Abdominal process planar with abdomen; triangular; sides raised; apex intimately inserted between metacoxae. Apical tergite trapezoidal; apex broadly rounded and overlapping apex of urosternite V. Legs moderately robust; ratio length front to hind leg 1.0:1.3:1.6. Pro- and mesofemora strongly pedunculate-clavate, metafemora less abrupt and less tumid; peduncles moderately robust. Front leg (9.10 mm); femoral peduncle short (about one third length of clava); protibia (3.50 mm) as long as femora, sides obliquely excised at apex; pro- and mesotarsi robust, tarsomere I quadrate, II transverse, III broad and slightly transverse, lobes narrowly separated. Middle leg (11.80 mm); femoral peduncle curved and flattened latero-mesally, about as long as clava; mesotibia (4.15 mm) shorter than mesofemur, flattened and curved, and abruptly thickened for apical half. Hind leg (14.7 mm); peduncle cylindrical,



FIGURES 1-2: 1, *Erythroplatys boliviensis* sp. nov.: A male holotype, B female paratype. 2, *Erythroplatys simulator* Gounelle, 1911: A male, B female.

about as long as clavae; metatibia (5.50 mm) slightly shorter than metafemur, moderately flattened, slightly sinuate, and gradually thickened to apex; metatarsi longer (3.1 mm) and more slender than others, metatarsomere I elongate (widening to apex), II trapezoidal, III quadrate (but not widened); I (1.0 mm) not as long as II+II (1.3 mm).

*Description of female* (Fig. 2B): colouration not significantly different from male. Antennomeres X and XI ochraceous-yellow [Gounelle (1911) says base of VII-XI rufous]. Pubescence and puncturation generally reduced in female. As in male, short, dense pubescence present on mesothorax and abdomen, absent elsewhere; the longer, more erect, rufous pubescence much as in male. General puncturation on head, mesothorax, metathorax and abdomen much as in male, somewhat less dense, especially on abdomen. Prothoracic sculpturing very different from male: uniform, consisting only of deep, large punctures permeated by dense network of longitudinal carinae (lacking all the fine, dense punctures between the calli in males).

*Structure*: forebody 1.13 longer than abdomen (8.7 mm). Rostrum slightly narrowed at middle. Eyes slightly smaller; width of one inferior lobe 0.80 times interocular space (1.00 mm). Antennae short, reaching as far as middle of metacoxae; antennomeres VI-X subserrate; X shorter (0.65 mm) than XI; XI (0.80) narrower than X, and with apical cone; scape only slightly shorter (1.45 mm) than antennomere III (1.55 mm). Pronotum equally transverse [Gounelle says slightly longer than wide]; more convex at midline; calli larger and more prominent (the lateral ones projecting beyond sides, to give a more sinuate profile to sides). Base of prosternal process longer than in male; apex subtrapezoidal; apical margin not excavate. Lobes of mesosternal process more dilated at sides. Scutellum more elongate [Gounelle says quadrate], and apex moderately acuminate. Elytra reaching middle of urosternite IV; 2.2 longer than width of humeri; epipleura not as strongly explanate, and lateral margins slightly less sinuate. Metasternum less tumid behind. Abdomen more convex than in male, otherwise very similar to male (which is rather female-like in structure); base of urosternite I declivous, leaving most of abdominal process well below surface of abdomen; and urosternites III and IV fossate at sides (in male, these fossae are represented by semi-circular sulci delimiting rounded, slightly raised areas, on urosternites II-IV).

*Measurements (mm)*: 1 male/1 female: total length 18.9/20.8; length of pronotum 2.90/3.15; width of

pronotum 3.40/3.70; length of elytra 11.00/11.80; width at humeri 4.75/5.40.

*Material examined*: BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, 1 male, 21-25.X.2000, R. Morris col. (FSCA); Reserva Natural, Potrerillo de Guenda, 40 km NW Santa Cruz, 17°40'26"S/63°27'43"W, 370 m, 1 female, 09-28.XI.2006 Dozier & Romero col. (ACMT).

*Discussion*: Monné & Hovore (2006) record this species from Brazil, Goiás (Jataí, the type locality) and Peru; Wappes *et al.* (2006) added Bolivia.

Since full descriptions and photographs of both sexes of this species have not been published before, the opportunity to do so is taken now.

*Biology*: Since both specimens had golden coloured, pollen grains lodged amongst the mouthparts and elsewhere, it would seem the species is anthophilous.

### *Rhinotragus antonioi* sp. nov.

**Figs. 3A, 3B**

*Holotype male*: 11.95 mm. Deposited at MNKM.

*Diagnosis*: *R. antonioi* sp. nov. is similar in colour, and colour distribution, to *Rhinotragus bizonatus* Gounelle, 1911 (a male, probably a cotype from Jatahy in the MZUSP collection, was used for comparison), but easily separated from the latter as follows: antennae, protibia and protarsus almost entirely yellowish (in *R. bizonatus* entirely black); prothorax entirely black (in *R. bizonatus* prosternum mostly yellow for apical half and laterally, leaving sides of pronotum entirely yellow); elytra black with creamy-white fasciae (in *R. bizonatus* black with yellowish fasciae). General puncturation in *R. antonioi* is sparser; most noticeably on the following: pronotum, where the punctures are semialveolate and only contiguous in patches (leaving the broad, slightly raised midline, and pair of low calli towards sides, impunctate); metasternum, where the interstices between punctures are mostly broader than diameter of punctures; and abdomen, which is smooth, with a few larger punctures at midline of urosternite I, and small, dense punctures at centre of V. In *R. bizonatus* general puncturation is denser, especially on the following: pronotum, where it is rugose, the punctures alveolate and entirely contiguous, only leaving the raised, narrow midline impunctate; metasternum, where the interstices are



much narrower than diameter of punctures on basal half; and abdomen, which is liberally sprinkled with punctures of different size. Structurally, the most noticeable difference between the two species is the appearance of the pronotum: in *R. antonioi* pronotal surface lacks prominent calli, and sides are almost regularly rounded (in *R. bizonatus* calli are numerous and moderately prominent; and, together with the granular nature of the punctures, renders the surface strongly irregular, and the sides bisinuate in appearance. These differences affect the appearance of the head of each species: in *R. antonioi* it looks more prominent and narrow-necked, and the width of head with eyes distinctly wider than apical margin of pronotum (in *R. bizonatus* pronotum with pair of distinct lateral calli adjacent to apical margin, giving the latter a broader appearance, and leaving width of head with eyes narrower than apical margin of pronotum, and the appearance of the head retracted and broad-necked).

Separation of *R. antonioi* from *R. monnei*, and other species of *Rhinotragus* recorded for Bolivia, is set down with the description of the latter.

*Description of holotype:* colour opaque black and translucent ochraceous-yellow. Head (including base of submentum, gula and mandibles) black; rostrum and labrum orange-yellow; palps testaceous; antennae ochraceous yellow, antennomeres VIII-XI incrementally fuscous towards apex. Prothorax, mesothorax (including scutellum), metathorax and abdomen black. Elytra black with two broad, creamy-white bands (one across basal fifth, the other across middle). Coxae black. Front leg mostly ochraceous-yellow; dorsal surface and apex of femora black; apex of protibia black mesally; apex of tarsomere III and onychium fuscous. Middle leg (except tarsomere I and II partly yellowish), and hind leg, black.

*General pubescence:* Body almost entirely glabrous with patches of moderately dense, short, yellowish-white, recumbent pubescence on the following: narrow, elongate band at extreme sides of pronotum; centre of prosternum and all of prosternal process; most of mesosternum (including its process); all of mesepimeron; front margin and midline of metasternum; and latero-apical margins of urosternites I-III. Sides of pronotum, most of metasternum, sides of urosternites, and femora, with sparse, semi-recumbent, longer hairs. Protibiae densely clothed with short, shining, golden pubescence mesally. Antennae weakly setose; short and less conspicuous on segments I-III, longer on IV-VI.

*Surface ornamentation:* dorsad with conspicuous, moderately dense, punctures (only alveolate on vertex and elytra). Head: rostrum irregularly and finely punctured (towards sides becoming carinate), but midline smooth with row of five large punctures; interocular space with scattered pairs of confluent punctures; vertex densely punctured adjacent to superior lobes of eyes, the punctures separated anteriorly by smooth, elongate callus; mentum-submentum with moderately dense, confluent punctures (anteriorly becoming impunctate, posteriorly carinate). Pronotum with midline, and arced callus to either side of midline, impunctate, otherwise closely punctured; the punctures moderately deep, large, and mostly contiguous or confluent; sides of pronotum seem to lack sexual puncturation. Elytra smooth with moderately dense, large, round punctures throughout; alveolate on basal two-thirds (shallow on basal fifth), somewhat asperate on apical third. Sterna with moderately dense, large, round punctures; the interstices strongly reticulate on pro- and mesosternum, smooth on metasternum and metepisterna; apical quarter of prosternum impunctate and finely, transversely carinate; on mesosternum punctures shallow and partially obliterated by rugose reticulation towards centre; on metasternum punctures moderately deep on anterior third, but becoming scattered, shallower and smaller towards sides and posteriorly; on metepisternum puncturation characteristic (small and restricted to mesal half, leaving lateral half completely smooth). Abdomen largely smooth and shining, with scattered micro-punctures, the latter slightly larger and denser towards sides and apex of urosternite V; urosternite I with a few larger punctures scattered along midline. Legs generally smooth and impunctate to sparsely punctate; femora with sparse, small, bevelled, setose punctures; tibiae similar, but denser towards apices; and tarsi densely micro-punctate.

*Structure:* medium sized species; with elytra slightly widening to apex; forebody about 1.2 longer than abdomen (4.85 mm). Head with eyes (1.75 mm) distinctly narrower than width of prothorax. Rostrum long (0.70 mm); widest (1.05 mm) at apex. Labrum projecting; moderately large (wider than apex of clypeus); rectangular (with rounded sides and excavate apex); ca. 1.5 wider than long; with scattered, shallow punctures at base. Clypeus almost planar with frons, without distinct punctures. Eyes rather small, rounded and very convex; inferior lobes of eyes shorter (0.60 mm) than genae; their proximal margins lying close to sides of genae, distal margins slightly oblique; width of one inferior lobe 1.8 times interocular space

(0.40 mm). Superior lobes of eyes with 12-13 rows of fine ommatidia; separated by (0.55 mm) slightly less than twice their own width. Antennal tubercles with rounded apices, the distance between them *ca.* twice width of scape (0.40 mm). Antennae short, reaching base of urosternite I; antennomeres somewhat thickened and serrate (the apical angles moderately acute); V-VII more strongly than VIII-X; scape fusiform, almost impunctate, shorter (0.85 mm) than antennomere III; pedicel small (0.25 mm) impunctate and depressed from base to near apex of dorsal surface (a character found in both sexes and other species of the genus); III cylindrical, longer (1.00 mm) than rest; IV short (0.45 mm); V (0.70 mm); VI and VII (0.75 mm); VIII-X progressively shorter; X (0.50 mm); XI (0.65 mm) with small apical cone. Prothorax slightly transverse, 1.07 wider than long (2.15 mm); widest at middle; sides strongly rounded, more contracted in front (1.50 mm wide) than behind (2.10 wide); apical constriction indistinct; basal constriction distinct, narrow and deep, with large fovea adjacent to hind angles; the latter almost right-angled. Pronotum distinctly convex, the surface slightly irregular; front margin broad and moderately elevated; midline (from apex to basal constriction) represented by broad, slightly raised callus; low, crescent-shaped callus to either side of midline (situated between apical third and basal constriction); and sides (from basal angles towards middle of basal constriction) somewhat tumid, and rugose with heavy puncturation. Prosteronum convex (without transverse depression) and almost planar from front margin to middle of prosternal process, the latter arched, with apical half moderately inclined upwards. Base of prosternal process with raised borders, relatively wide (0.25 mm), about one third width of procoxal cavity; apical half large and triangular (with slightly emarginate apical margin). Procoxal cavities almost ovate, closed at sides and behind. Mesosternum with deep, abrupt declivity. Base of mesosternal process strongly depressed along midline; sides elevated and thickened anteriorly; relatively wide (0.50 mm), more than two-thirds width of coxal cavity; apex of process bilobed, the lobes moderately short, slightly diverging and separated by short notch. Mesocoxal cavities moderately widely open to epimerum. Mesepimera wide at base and narrow towards apex, sinuate and hardly constricted at middle. Scutellum small, rounded and convex; sides very slightly constricted at base. Elytra depressed between humero-apical costae (leaving basal margin slightly more prominent than humeri, and mesally more projecting than humeri); moderately declivous with epipleura; hiding sterna; elongate (apex just reaching apex of urosternite

V) and moderately wide, 2.83 longer than width of humeri (2.70 mm); humeri not prominent, nor projecting, but almost right-angled; elytra not dehiscent, but from basal fifth with increasingly wider gape, leaving apices moderately wide apart. Each elytron slightly narrowed to middle and slightly widened towards apex, then rounded to obtuse angle with side of apex; apex truncate with small tooth on sutural angle. Sides of metathorax subparallel, hind margin oblique. Metasternum convex (flattened towards midline), almost planar with pro- and mesocoxae; with complete longitudinal suture (deep behind, but shallow and narrow to front). Lateral margin of metepisternum hidden by elytra; moderately wide, widest at base, moderately acuminate to apex. Abdomen moderately robust, not very deep, regularly narrowing to apex; urosternites II-III subequal in length, IV slightly shorter; II-IV strongly transverse, with weakly rounded sides; V slightly shorter than IV, trapezoidal, undifferentiated (without horseshoe-shaped depression, raised sides, or projecting apices), apical margin straight. Abdominal process planar with abdomen; triangular; sides hardly raised; apex moderately acuminate, not intimately inserted between metacoxae. Apical tergite just overlapping apex of urosternite V; trapezoidal; rather broad; sides slightly excavate; apical margin slightly rounded. Legs moderately robust, and relatively short; ratio length front to hind leg 1.0:1.2:1.4. Front and middle legs strongly pedunculate-clavate (sides of mesofemoral peduncle and lateral side of clava flattened). Hind leg more cylindrical and relatively short; clava long and fusiform (somewhat abrupt), apex reaching middle of urosternite IV; peduncle cylindrical *ca.* one third length of clava; protibia with apex obliquely excised laterally, slightly shorter (2.15 mm) than mesotibia (2.3 mm); metatibia (3.1 mm) shorter than metafemora (3.5 mm), bisinuate, gradually thickened to apex (the latter clothed with short, dense, brownish pubescence mesally). Protarsus shorter (1.55 mm) than mesotarsus (1.75 mm), both shorter than metatarsus (1.90 mm); metatarsomere I much shorter (0.50 mm) than II+III (0.85 mm).

*Variation in males:* colour distribution seems to be limited to small differences, as follows: in all five male paratypes dorsal surface of antennal scape is dusky or black; in one, antennomere VII has dusky apex, in another, only IX-XI; in two, most of mesotibia is yellowish mesally (and one of these, with small, round fascia of the same colour on mesal surface of mesofemoral clava). Structural differences: scutellum more elongate in all paratypes; apex of elytra more rounded in one male, and lacking sutural tooth in three.

*Description of female* (Fig. 3B): colour and surface differences from the male are minor. In both female paratypes, interocular space, and callus occupying midline of vertex, are yellow. In one female, only the apex of scape is black; in the other, all dorsal surface of scape and base of antennomere III are black. In one female, extreme sides of pronotum with two, small, yellow fascia.

*Structure*: most structural differences limited to sexually dimorphic ones usual in species of this tribe. Both female paratypes are larger and distinctly more robust than males. In one, shape of rostrum as male, but considerably longer (0.90 mm); in the other, hardly longer than male, but parallel-sided. Width of one inferior lobe of eye equal to interocular space (0.65 mm). Superior lobes separated by *ca.* 2.5 their own width. Antennae shorter, not passing metacoxal cavities; segments I-VII setose. Prothorax 1.08 wider than long, slightly more transverse than in males. Mesosternal process not much narrower (0.65 mm) than width of coxal cavity (0.75 mm). Abdomen more robust, and distinctly less convex than in males; and urosternite V more triangular, but well rounded at apex. Legs not as short as those of males (but hind femora also reaching middle of urosternite IV); ratio length front to hind leg 1.0:1.3:1.5; metatarsomere I slightly longer than in male, 0.65 length of II+III.

*Measurements (mm)*: 7 males/2 females: total length, 11.65-12.75/13.60-14.00; length of pronotum, 2.10-2.30/2.40-2.55; width of pronotum, 2.15-2.40/2.60-2.75; length of elytra, 7.55-8.00/8.70-8.95; width at humeri, 2.40-2.90/3.15-3.25.

*Type material*: Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, 12.XI.2005, R. Clarke & S. Zamalloa col., on/flying to flowers of "Sama blanca" (MNKM).

*Paratypes with same data as holotype*: 2 males, 09.XI.2005 (RCSZ); 1 male, 12.XI.2005 (MZUSP); 1 male, 25.XI.2005 (MNRJ); 1 male, 26.XI.2005, R. Clarke & S. Zamalloa col. (ACMT); 1 male, 07.XII.2005 (RCSZ).

*Paratype with same locality as holotype, different collecting data*: 1 female, 02.XI.2004, at UV light, R. Clarke & S. Zamalloa col. (MZUSP); 1 female, 15.XII.2010, on/flying to flowers of "Sama blanca chica": 1 male, 08.XI.2011, R. Clarke & S. Zamalloa col. (RCSZ);

2 males, 11.XI.2011, R. Clarke & S. Zamalloa col. (RCSZ); 1 male, 12.XI.2011, R. Clarke & S. Zamalloa col. (RCSZ); 1 male, 27.XI.2011, R. Clarke & S. Zamalloa col. (RCSZ).

*Paratype with different data from holotype*: road to San Javier, 420 m, 12 km ENE Buena Vista, 1 female, 08.XII.2005, on/flying to flowers of "Colorodillo de barbecho", R. Clarke & S. Zamalloa col. (RCSZ).

*Discussion*: Wappes *et al.* (2006) record *R. bizonatus* from Bolivia, but these records are almost certainly referable to *R. antonioi* since all the specimens were collected at the Hotel Flora & Fauna.

*Etymology*: this species is named in honour of Dr. Antonio Santos-Silva for his work on the Parandrinae.

### ***Rhinotragus monnei* sp. nov.**

**Figs. 4A, 4B**

*Holotype male*: 12.0 mm. Deposited at MNKM.

*Diagnosis*: *R. monnei* is readily separated from *R. antonioi* by colour distribution, as follows: in males interocular space and vertex of head yellowish (in *R. antonioi* these black in males; females may be yellow at centre of vertex); antennae almost entirely blackish (in *R. antonioi* almost entirely yellowish); pronotum yellow with U-shaped black fascia occupying most of disc (in *R. antonioi* pronotum is entirely black); basal two-thirds of elytra entirely yellow (in *R. antonioi* basal two-thirds bisected by transverse, black fascia); midline of underside broadly yellow from submentum to middle of metasternum (in *R. antonioi* pro-, meso-, and metasterna are entirely black).

The two species discussed above are easily distinguished from other Bolivian species of the genus by their colour distribution, and comparatively slender form. *R. antonioi* and *R. monnei* have head yellow, and apical third of elytra black (in both *R. apicalis* Guérin-Méneville, 1844 and *R. dorsiger* Germar, 1824 head black, elytral apex only narrowly black, form robust). *R. monnei* could be confused with *R. dorsiger* var. *colaris* Melzer, 1930 (which has similar U-shaped fascia on pronotum; but black head and narrower black elytral apex still serves to separate the latter species from the former). Both *R. antonioi* and *R. monnei* may be separated from *R. lucasii* Thomson 1861 by their dark legs, relatively slender form, and small size (*R. lucasii* has yellow legs, robust form, and is consistently much larger).

*Description of holotype:* colour opaque black and translucent orange-yellow. Head orange-yellow, the following black: mandible; apex of gena; mentum-submentum; narrow fascia behind each superior lobe of eye; and antenna (only segments VII-XI inconspicuously yellow at base). Mouthparts, labrum and clypeus dusky. Prothorax orange-yellow, the following black: postcoxal process, from which an elongate fascia at extreme sides of pronotum projects anteriorly (but not reaching front margin of pronotum); and disc of pronotum occupied by broad horseshoe-shaped fascia (open end reaching front margin, closed end reaching hind margin). Centre of mesosternum (including its process) yellow, sides and mesepimeron black. Scutellum and apical third of elytra black, rest of elytra pale yellow. Metathorax black, except basal half of metasternum with bracket-shaped, orange-yellow fascia. Abdomen black, except midline of urosternite I occupied by diamond-shaped, orange-yellow fascia. Legs black, except coxae and oval fascia on mesal side of profemoral clava orange-yellow.

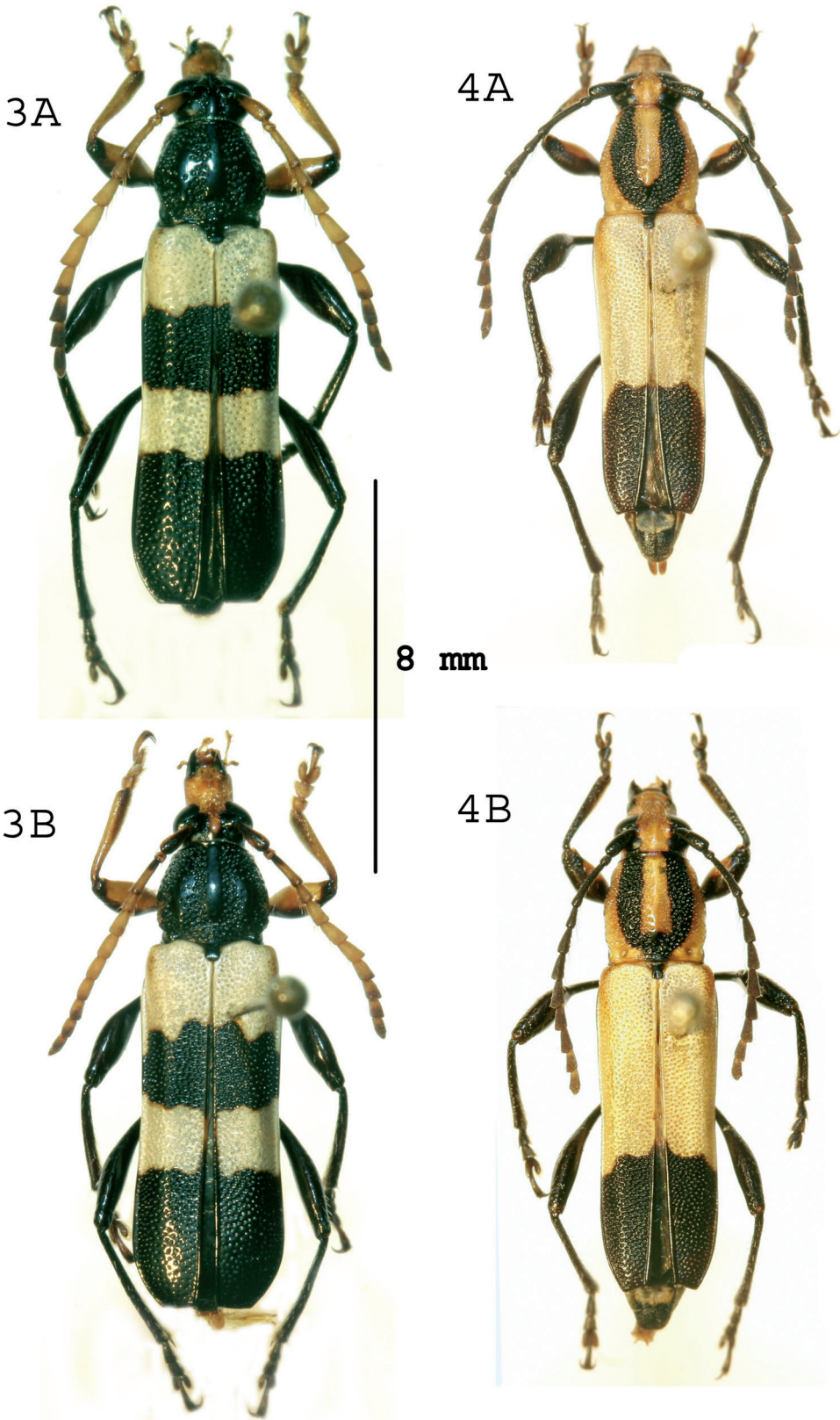
*General pubescence:* yellow. Upperparts almost glabrous, except: short, sparse, pubescence on frons and sides of pronotum; sterna almost entirely clothed by inconspicuous, very short, dense pubescence (less so on prosternum); but longer, erect, sparse hairs more noticeable on metasternum. Abdomen with dense, recumbent patches of short hairs at sides of urosternites I-IV and centre of V; and transverse rows of sparse, longer, erect hairs towards hind margins of each segment. Protibiae densely clothed with short, shining, golden pubescence mesally. Antennae setose, on segments I-III short and inconspicuous, on IV-VI with longer and thicker.

*Surface ornamentation:* dense and heavy on upperparts, variable on underside. Head with confused, smaller, punctures between elongate micro-carinae, the carinae larger on interocular space, and transverse on mentum-submentum. Large, deep, contiguous, alveolate punctures on the following: pronotum (except apical two-thirds of midline and basal angles almost completely smooth); apical third of elytra, and along humero-apical costa (on rest of elytra the punctures shallower). Sterna with moderately dense, large, round punctures; the interstices micropunctate in areas densely pubescent, smooth in areas generally glabrous (especially sides of metasternum and most of metepisternum). Abdomen micro-reticulate with small, rather sparse, shallow punctures, becoming denser below thicker pubescence, and larger at midline of urosternite I. Legs generally smooth and

impunctate to sparsely punctate on femora (their dorsal surfaces with bevelled, setose punctures), but large and confluent at apices of femora, and all tibiae.

*Structure:* medium sized species, with elytra narrowing to apex; forebody 1.22 longer than abdomen (5.10 mm). Head with eyes (1.75 mm) distinctly narrower than width of prothorax. Rostrum long (0.6 mm), widest (1.15 mm) at apex. Labrum projecting; moderately large (wider than apex of clypeus); rectangular (with rounded sides and almost truncate apex); about twice as wide as long; with scattered punctures at base. Clypeus separated from frons by wide declivity; with sparse fine punctures almost to front margin. Eyes rather small, rounded; inferior lobes of eyes longer (0.75) than genae (0.6 mm); their proximal margins lying close to sides of genae, distal margins slightly oblique; width of one inferior lobe 1.75 times interocular space (0.40 mm).

Superior lobes with 12-13 rows of fine ommatidia; separated by (0.55 mm) slightly more than twice their own width. Apex of antennal tubercles rounded, and separated by twice width of scape (0.3 mm). Antennae rather short, reaching base of urosternite II; antennomeres somewhat thickened, VI-X incrementally serrate (the apical angles moderately acute); scape fusiform, with regular rows of fine, close punctures, shorter (0.95 mm) than antennomere III; III cylindrical, distinctly longer (1.25 mm) than rest; IV short (0.50 mm); V and VI equal (0.75 mm); VII (0.70 mm); VIII-X progressively shorter, X (0.55 mm); XI (0.65 mm) with small apical cone. Prothorax subquadrate, 1.09 longer than wide; sides not strongly rounded; more contracted in front (1.80 mm wide) than behind (2.15 wide), and widest at middle; apical constriction distinct but not strong; basal constriction narrow, not strongly declivous (more so laterally), with large fovea adjacent to hind angle. Pronotum strongly convex (obliterating the calli very evident in the female, with its less convex pronotum, as described below); front margin elevated and strongly bordered; hind angles almost right-angled. Prosternum almost planar from front margin to middle of prosternal process, the latter with apical half moderately inclined upwards; base of prosternal process with thick, raised borders, and relatively wide (0.25 mm), about one third width of coxal cavity; apical half large and triangular (with straight apical margin). Procoxal cavities almost ovate, closed at sides and behind. Mesosternum with deep, abrupt declivity. Base of mesosternal process strongly depressed along midline, sides strongly elevated and thickened anteriorly; relatively broad (0.40 mm),



FIGURES 3-4: 3, *Rhinotragus antonioi* sp. nov.: A male holotype, B female paratype. 4, *Rhinotragus monnei* sp. nov.: A male holotype, B female paratype.

more than half width of coxal cavity. Apex of process bilobed, the lobes moderately short, slightly diverging, and separated by short notch. Mesocoxal cavities open to epimeron; mesepimeron wide at base and narrow towards apex, sinuate and constricted at middle. Scutellum narrow, sides slightly excavate, apical half slightly tumid (almost lobate), apical margin almost straight. Elytra hiding sterna; flat and depressed to inside of humeri (leaving basal margin slightly more prominent than humeri); elongate (apex just reaching base of urosternite V), 2.73 longer than width of humeri (2.55 mm); humeri not prominent, nor projecting, but almost right-angled. Each elytron regularly narrowed from behind humerus to apex, but weakly constricted at middle (at which point elytra become slightly elevated and divergent (*i.e.* start to gape), leaving apices well apart. Elytral apices obliquely truncate; sutural margin the shortest, and toothed by short extension of sutural border; lateral margin similarly extended by widening of its border. Elytral surface divided by distinct, broad, humero-apical costa; epipleura gradually flattened from just behind shoulders to apex. Sides of metathorax almost parallel, hind margin oblique. Metasternum large and convex (flattened towards midline), planar with pro- and mesocoxae; with complete longitudinal suture (deep behind, but shallow and narrow to front). Metepisternum partly overlapped by elytra, moderately wide, widest at base, moderately acuminate to apex. Abdomen not robust, somewhat flattened, regularly narrowing to apex; urosternites II-IV equal in length, strongly transverse, with rounded sides. Urosternite V hardly shorter; trapezoidal; with horseshoe-shaped depression occupying apical two-thirds, the sides of this depression slightly raised at apex; the apices acute and slightly projecting; apical margin slightly bisinuate with narrow, raised border. Abdominal process planar with abdomen; triangular; sides hardly raised; apex moderately acuminate, not intimately inserted between metacoxae. Apical tergite far from overlapping apex of urosternite V; elongate; rather narrow; with sides slightly excavate; apical margin characteristic (divided by narrow incision into two, separately rounded halves). Legs moderately robust; ratio length front to hind leg 1.0:1.3:1.6; front and middle legs strongly pedunculate-clavate (sides of mesofemoral peduncle, and lateral side of clava flattened at sides). Hind leg more cylindrical; clava long and fusiform (not abrupt), apex reaching apex of urosternite IV; peduncle cylindrical slightly more than half length of clava. Protibia with apex obliquely excised laterally, front margin not prominent at middle, shorter (2.0 mm) than mesotibia (2.3 mm); metatibia (3.6 mm) not much

shorter than metafemora (4.0 mm), bisinuate, gradually thickened to apex, the latter clothed with short, dense, brownish pubescence mesally. Protarsus shorter (1.50 mm) than mesotarsus (1.70 mm), both shorter than metatarsus (1.90 mm); metatarsomere I short (0.55 mm), much shorter than II+III (0.85 mm).

*Variation in males:* the two male paratypes only show minor differences from the holotype: in one the horseshoe-shaped fascia is interrupted near base by lack of pigmentation; the bracket-shaped, yellow fascia on metasternum is narrower, and the yellow fascia on urosternite I is limited to the abdominal process. In one male the rostrum is parallel-sided, and latero-apical angles of elytra more rounded.

*Description of female* (Fig. 4B): there are no significant differences of colour (except antennae entirely blackish, urosternite I more broadly yellow, and II yellow at midline in one female), or surface features (including lack of sexual puncturation) from the male; and structural differences seem to be limited to sexually dimorphic ones usual in species of this tribe.

*Structure:* most structural differences limited to sexually dimorphic ones usual in species of this tribe. Width of one inferior lobe of eye 1.08 times interocular space (0.65 mm); distal margins of lobe oblique; superior lobes of eyes separated by about twice their own width. Antennae shorter than in male, reaching middle of urosternite I; antennomere III is thicker, and VII-X subserrate (the apical angles obliquely clipped). Apical constriction of prothorax not quite as strong as in male; and side margins rendered more irregular by two weakly projecting calli on pronotum (one at middle of sides, the other overhanging side of basal constriction). Scutellum tumid as in male (but with round depression centred on apex), and slightly more quadrate. Abdomen more robust, deeper and broader than in male; from urosternite III narrowing to apex; V undifferentiated, with slightly rounded apical margin, and group of small punctures at centre. Apical tergite cone-shaped, but not long, densely punctured, especially at apex. Ratio length front to hind leg 1.0:1.3:1.5; mesofemoral clava less tumid than in male; and apex of metafemoral clava reaching base of urosternite IV; otherwise legs similar to male.

*Measurements (mm):* 3 males/2 females: total length, 11.60-12.00/12.9-13.0; length of pronotum, 2.25-2.55/2.50-2.55; width of pronotum, 2.10-2.30/2.40; length of elytra, 6.25-6.95/7.00-7.40; width at humeri, 2.25-2.55/2.60-2.65.

*Type material:* Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, on/flying to flowers of "Sapaimosi", 20.XII.2006, R. Clarke & S. Zamalloa col. (MNKM).

*Paratype with same data as holotype:* 1 male, 21.XII.2005 (MNRJ).

*Paratypes with same data as holotype, but different host-flowers:* on/flying to flowers of "Piton amarillo", 1 female, 21.X.2005 (RCSZ); on/flying to flowers of "Barbasquillo B", 1 male, 28.X.2007 (RCSZ); on/flying to flowers of "Tutumillo espinoso", 1 female, 23.XI.2009 (MZUSP).

*Etymology:* this species is named in honour of Dr. Miguel A. Monné for his work on the Cerambycidae.

***Ornistomus simulatrix* sp. nov.**

**Figs. 5A, 5B**

*Holotype male:* 15.70 mm. Deposited at MNKM.

*Diagnosis:* the two species in this genus differ from all other Rhinotragni by the overlapping elytra. *Ornistomus simulatrix* sp. nov. is readily separated from *O. bicinctus* Thomson, 1864 by the following: with broad, black fascia at centre of pronotum (in *O. bicinctus* the pronotum has two narrower fascia to either side of midline); ventral pubescence brassy in colour (in *O. bicinctus* more golden); male superior lobes of eyes closer together, width of interocular space about one fifth width of one lobe (in *O. bicinctus* these lobes wider apart, about one third width of one lobe); sides of pronotum distinctly sinuate (in *O. bicinctus* sides are straight); surface of pronotal disc more irregular than in *O. bicinctus*, the baso-lateral calli more rounded than in *O. bicinctus*, and not hiding basal angles (as they do in *O. bicinctus*); elytra rather abruptly expanded and, therefore, more rounded (in *O. bicinctus* less abrupt and less rounded); and metatarsomere I shorter than II+III (in *O. bicinctus* I longer than II+III).

*Description of holotype:* colour dull, brownish-black and yellow to orange-yellow. Head orange-yellow, the following brownish-black to black: antennae; mandibles; palpomeres; labrum; clypeus; triangle at centre of frons; anterior margin of gena; and broad transverse fascia behind superior lobes of eyes (covering all of vertex and extending to sides of neck). Prothorax orange-yellow; except the following black: extreme

sides of pronotum with broad longitudinal, fascia (the latter extending to post coxal process); and disc of pronotum with broad vase-shaped fascia at centre. Mesothorax (including scutellum) black; except all of mesosternum orange-yellow. Elytra black; except base of humeri and adjacent epipleura orange; and basal third of apical half translucent yellow (including adjacent epipleura), this transverse band with scalloped front and hind margins. Metathorax black; except small, bifurcate, yellow fascia, centred on metasternal process. Abdomen black; except abdominal process, and centre of urosternite I narrowly, brownish-yellow. Legs black with dark chestnut femora; pro- and meso-coxae orange; and metacoxae brownish-yellow.

*General pubescence:* dorsad almost glabrous, some isolated hairs at sides of pronotum; underside almost uniformly, sparsely pubescent, only denser (unless referred to below) at base of metasternum, and latero-posterior margins of urosternites II-IV.

*Surface ornamentation:* dorsad almost entirely covered by contiguous, semi-alveolate punctures; smaller and uniform on pronotum (except laterally, where larger punctures constitute the sexual puncturation); larger along dorsal costa of elytra; confluent and somewhat asperate for apical third. Underside of head with sparser punctures isolated by multiple carinae. Prosternum almost impunctate; some larger punctures partially hidden by rectangular patch of short pubescence adjacent to prosternal process. Mesosternum reticulate and densely covered by very small setiferous punctures; metepisternum and metasternum with larger ones (especially towards sides of latter). Abdomen shining; reticulation very fine; punctures small and sparse, becoming slightly larger and denser laterally, and on depressed area at apex of urosternite V.

*Structure:* forebody slightly shorter (6.50 mm) than abdomen (7.10 mm). Head with eyes (1.90 mm) distinctly narrower than pronotum. Rostrum moderately narrow (slightly wider at apex) and long (0.70 mm), slightly shorter than length of inferior lobes (0.80 mm). Maxillary palps short, but slightly longer than labial palps. Labrum long (half width); sides and base rounded by shared arc; front margin slightly excavate; one large setiferous puncture to each side, twelve smaller ones between them. Apex of clypeus narrower than apex of labrum; separated from frons by transverse convexity; adjacent surface of frons irregular (with depressed and prominent areas). Eyes large and convex; distal margin of inferior lobe adjacent to side of gena, proximal margin oblique;

inferior lobes moderately close, width of one inferior lobe 4.75 times interocular space (0.20 mm); the latter moderately inclined, prominent at sides, with relatively deep, V-shaped depression, and bisected by narrow frontal suture. Width of superior lobe about half interocular space (0.50 mm). Antennal tubercles with rounded apices; the distance between them narrower than maximum width of scape. Antennae short, reaching base of urosternite II; moderately robust; underside of segments I-VI densely setose; antennomeres III-VI increasingly thickened (and V and VI serrate); VII-X incrementally shorter and less serrate; XI as long as X, not serrate, but notched by apical cone; scape strongly pyriform (viewed laterally) and moderately long (0.90 mm); pedicel short (0.25 mm) and rounded at sides; antennomere III longer (1.10 mm) than scape and twice as long as IV (0.55 mm); V (0.95 mm); VI and VII (1.00 mm); VIII (0.80 mm); IX (0.75 mm); X (0.70 mm); XI (0.8 mm). Prothorax trapezoidal, widest at base, narrowest at apex (1.85 mm); slightly shorter (2.15 mm) than wide (2.25 mm); sides rendered sinuate by the following: apical constriction occupying all of apical third; followed by pair of low, lateral calli; followed by slight emargination to second pair of lateral calli (within basal third, see below); followed by basal constriction, and square hind angles. Surface of pronotum irregular, slightly more convex at midline, with one elongate, broad callus to either side, the latter reaching sides (as mentioned above), and increasingly more prominent from apex to rounded base; basal constriction declivous adjacent to callus (where it is narrow, and depressed by ill-defined fovea), broadening and inclined to middle. Prosternum almost flat from apical margin to middle of prosternal process. Base of prosternal process about five times narrower (0.15 mm) than width of procoxal cavity; apex strongly inclined upwards, large, trapezoidal, borders rather weak, and hardly raised. Procoxal cavities closed at sides and behind; procoxae slightly more prominent than mesocoxae. Mesosternal declivity deep and moderately abrupt. Base of mesosternal process with raised sides; moderately narrow (0.25 mm), about one third width of coxal cavity. Apex of mesosternal process bilobed, each lobe truncate apically, separated by relatively deep notch. Procoxal cavity narrowly open to mesepimeron. Scutellum small, oval, depressed at midline. Elytra almost hiding entire underside; racket-shaped, and overlapping one another (the right elytron overlying the left elytron, see variation); basal third moderately broad, parallel-sided, flattened between humero-apical costae, inclined to sides; for apical two-thirds, these characteristics becoming reversed

(*i.e.* between costae maintaining the same level as on basal third, but sides strongly flattened and flared to apex); dorsal costa ill-defined throughout, and absent from apical third. Elytra 3.7 longer than width of humeri (3.00 mm); broadly lobed posteriorly (width at widest point 7.10 mm); suture with slight gape behind scutellum, crossing midline, and closing gape towards apex; laterally much more strongly curved than suture (leaving each lobe asymmetrical); humeri moderately prominent and rounded, not projecting; apices of elytra unarmed, broadly rounded laterally, less so mesally. Metathorax with posterior margin almost truncate. Metasternum not much broader than prothorax; moderately tumid behind (but not as prominent as mesocoxae); metasternal suture entire for apical two-thirds, deeper and wider for basal third. Metepisternum moderately large, broader at base, distinctly tapering to acuminate apex. Abdomen convex, tapering from base to apex; urosternites II-IV transverse with straight, converging sides; V unusually long for male, longer than II-IV, conical, middle of apex slightly flattened, apical margin divided by narrow, shallow notch into two separately rounded halves. Abdominal process triangular; inclined at base; but apex horizontal to abdomen, abruptly acuminate, and deeply inserted between metacoxae. Legs moderately robust and long; length of front, middle and hind legs in the ratio 1.0:1.4:2.1; pro- and mesofemora strongly pedunculate-clavate; profemoral peduncle very short; mesofemoral peduncle flattened laterally, one third length of clava; metafemora long (5.60 mm), pedunculate-clavate, but clava almost cylindrical, 1.5 longer than peduncle, reaching apex of urosternite IV. Protibia thickly clothed with short, dense, yellowish pubescence mesally; apex obliquely excised laterally; metatibia long (4.90 mm), cylindrical, clothed with moderately dense, short setae, but otherwise unspecialised, hardly widening to apex. Pro- and mesotarsi robust, the tarsomeres short and wide; metatarsomere I cylindrical, shorter (0.60 mm) than II+III (0.80 mm), II rectangular, III deeply bifid.

*Variation in males:* colour distribution presents no significant differences among the males; but the transverse fascia on elytra yellow in some, white in others; and palpomeres may be yellowish. Right elytron overlaps left one in four males, the left over right in one.

*Description of female* (Fig. 5B): colour distribution presents no significant differences from the male.

*Structure:* most structural differences limited to sexually dimorphic ones usual in species of this tribe.



Forebody about as long as abdomen (6.75 mm). Rostrum longer (0.85 mm) than length of one inferior lobe of eye (0.70 mm). Labrum more rectangular. Eyes smaller and less convex; width of one inferior lobe 1.25 times interocular space (0.60 mm); the latter less inclined, flat between prominent sides (the surface confused by network of many narrow, short carinae, some encircling small punctures, others not). Antennae more robust and shorter than in male, reaching apex of urosternite I. Base of prosternal process wider (0.20 mm), about four times narrower than width of procoxal cavity. Elytra 3.8 longer than humeri (3.25 mm); right elytron overlying left elytron in one female, as male in the other. Metasternum slightly more tumid behind (and planar with mesocoxae). Abdomen wider than male, otherwise similar; except urosternite V shorter, trapezoidal, and only weakly emarginate at apex; and abdominal process almost planar with abdomen. Middle legs slightly longer, and hind legs slightly shorter than in male (ratio front to hind leg 1.0:1.3:1.9), but apex of metafemora still reaching apex of urosternite IV; metatarsomere I shorter (0.70 mm) than II+III (0.90 mm).

*Measurements (mm):* 10 males/3 females: total length, 15.70-17.3/16.90-17.50; length of pronotum, 2.15-2.50/2.35-2.40; width of pronotum, 2.15-2.50/2.50-2.65; length of elytra, 11.05-12.60/12.40-12.50; width at humeri, 3.00-3.25/3.25-3.40.

*Type material:* Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, on/flying to flowers of "Sama blanca", 23.XI.2007, R. Clarke & S. Zamalloa col. (MNKM).

*Paratypes with same data as holotype:* 1 female, 01-08.XII.2003 (ACMT); 2 males, 28.XI.2004 (RCSZ); 1 male, 23.XI.2005 (MZUSP); 1 male, 25.XI.2007 (MNRJ); 1 male, 26.XI.2007 (RCSZ); 1 female, 29.XI.2007 (RCSZ); 4 males 14.XI.2009 (RCSZ); on/flying to flowers of "Sama blanca chica", 2 males, 08.XI.2011 (RCSZ); 1 male, 11.XI.2011 (RCSZ).

*Paratype with different data from holotype:* Beni, Reyes, 1 female, XI.1921, N.R. Lopez col., Munford Expedition (MZUSP).

*Discussion:* Wappes *et al.* (2006) incorrectly record *Ornistomus bicinctus* for Bolivia; these specimens are referable to *O. simulatrix* sp. nov.

*Biology:* All the specimens of *O. simulatrix* from Buena Vista were collected whilst visiting flowers at the same individual tree; a common, local species called "Sama blanca" (*Cupania cinerea* Poeppig & Endl.) of the family Sapindaceae.

*Etymology:* Latin *simulator*, meaning imitator, with reference to the insect's lycid-like appearance.

### *Aechmutes boliviensis* sp. nov.

**Figs. 6A, 6B**

*Holotype male:* 11.85 mm. Deposited at MNKM.

*Diagnosis:* Separation of *Aechmutes boliviensis* sp. nov., from *Aechmutes subandinus* sp. nov., is outlined under the description of the latter.

*A. boliviensis* is readily separated from *Aechmutes lycoides* Bates, 1867 by the following: pronotum with elongate, bell-shaped fascia occupying basal half of midline (in *A. lycoides* this fascia is absent); antennomeres III-XI chestnut (in *A. lycoides* antennae almost entirely black); metafemoral clave almost entirely dark chestnut, including apex (in *A. lycoides* this clave yellow at base and apex); male abdomen tapering from base to apex (in *A. lycoides* abdomen strongly constricted between urosternites II and III).

*A. boliviensis* is readily separated from *Aechmutes armatus* Gounelle, 1911 by the following: disc of pronotum with three black fasciae (in *A. armatus* only one, on midline); and sides of elytra for apical half only slightly arced (in *A. armatus* moderately strongly arced).

*Description of holotype:* colour opaque; dull, chestnut to black, and yellow to orange-yellow. Head orange-yellow, the following black: apex of mandible; apical palpomeres; vertex with two parallel fasciae behind antennal tubercles; rectangular fascia on area behind eyes; antennal scape and pedicel (rest of antennal segments chestnut, VIII-XI yellow at base). Prothorax orange-yellow, the following black: pronotum with bell-shaped fascia occupying basal half of midline; and from apical margin to basal fifth, broad, elongate fascia to each side of disc (these three fasciae leaving characteristic, inverted, Y-shaped area between them); each side of prosternum (including procoxal process) with broad, parallel fascia. Mesosternum (including mesosternal process) orange-yellow; sides (including mesepimeron), and scutellum, black. Elytra black, the following yellow: humeri for basal quarter broadly orange-yellow (but leaving adjacent margin

of suture broadly black); and broad yellow fascia occupying apical three-quarters (both basal and apical margins of this fascia scalloped). Metathorax almost entirely black, only metasternal process and adjacent area yellowish. Abdomen black, only centre and sides of urosternite I yellowish. Legs dark chestnut (tarsi darker), the following yellowish: coxae; most of sides and underside of profemora; and most of metafemoral peduncle (except extreme base).

*General pubescence:* dorsad almost glabrous, sides and basal depression of pronotum with short, dense, recumbent, golden coloured pubescence. Similar, but white, pubescence on underside; most noticeable on centre of prosternum, sides of mesosternum, mesepimeron, base and midline of metasternum, and latero-posterior margins of urosternites I-IV. Protibiae thickly clothed with short, rigid, yellowish pubescence mesally.

*Surface ornamentation:* dorsad almost entirely covered by contiguous, alveolate punctures; smaller and more uniform on head and pronotum; larger, and semi-alveolate (almost asperate) on elytra (except pre-apical yellow fasciae with small, non-alveolate punctures). Mentum-submentum with sparse punctures, isolated by multiple, arced carinae; but midline almost impunctate. Centre of prosternum strongly shagreened, with large, well-defined, rectangular patch of small, dense, semi-alveolate punctures. Mesosternum reticulate and densely covered by very small setiferous punctures, mixed with larger punctures towards sides and on mesepimera. Midline of metasternum densely and finely punctured, followed by smooth area with large, separated punctures; becoming confluent, and alveolate towards sides, and on metepisterna. Abdomen shining, with very fine reticulation; punctures at centre of urosternite I similar to those of metasternum; small, shallow and sparse at centre of II-V (denser and, somewhat, bevelled laterally). Sexual puncturation seems to be lacking in this species.

*Structure:* forebody 1.2 longer than abdomen (5.25 mm). Head with eyes (1.55 mm), distinctly narrower than pronotum. Rostrum moderately wide (1.00 mm) with sides slightly narrowed to middle; long (0.60 mm), slightly shorter than length of inferior lobes of eyes (0.75 mm). Labrum wide, *ca.* three times wider than long; front margin slightly excavate, sides rounded and explanate; one large setiferous puncture to each side, two groups of 6-8 smaller ones between them. Clypeus with apex narrower than base of labrum, and separated from frons by shallow

declivity. Eyes large and convex; distal margin of inferior lobe lying on frons, proximal margin slightly oblique; inferior lobes moderately close, width of one lobe 5.3 times interocular space (0.15 mm); the latter moderately inclined, prominent at sides, with relatively deep, V-shaped depression (only wide enough to accommodate a single row of punctures to either side of narrow frontal suture). Width of one superior lobe of eye about half interocular space (0.40 mm). Antennal tubercles with rounded, prominent apices; the distance between them narrower than maximum width of scape (0.40 mm). Antennae short, almost reaching apex of urosternite I; basal segments moderately robust, apical ones distinctly less so; underside of segments I-VI densely setose; antennomeres III-VI incrementally wider; V serrate; VI moderately strongly serrate; VII-X incrementally narrower and less serrate; XI not serrate, longer and narrower than X, with relatively long apical cone. Scape strongly pyriform (viewed laterally); moderately long (0.80 mm); and densely punctured (these confluent, large and deep). Pedicel short (0.30 mm) with subparallel sides; the apical half slightly tumid. Antennomere III subcylindrical, short, but slightly longer (0.85 mm) than scape and IV (0.60 mm); V (0.75 mm); VI (0.70 mm); VII (0.65 mm); VIII (0.60 mm); IX (0.55 mm); X (0.50 mm); XI (0.65 mm). Prothorax: subtrapezoidal; slightly longer (2.05 mm) than wide (1.90 mm), widest well behind middle (at this point sides slightly rounded to front margin, straighter and subparallel to basal margin); apical margin (1.30 mm) distinctly narrower than basal margin (1.75 mm). Surface of pronotum weakly convex, slightly irregular (but lacking distinct calli); apical and basal constrictions weak; but the latter deep and narrow, and furnished with large fovea towards each side; basal angles square. Prosternum depressed across apical fifth, moderately inclined to prosternal process; base of latter *ca.* seven times narrower (0.10 mm) than width of procoxal cavity; apex inclined upwards, large, trapezoidal, with weak, slightly raised borders; procoxal cavities closed at sides and behind; procoxae slightly more prominent than mesocoxae. Mesosternal declivity deep and abrupt. Mesosternal process with broad, with raised sides; moderately wide (0.30 mm), half width of coxal cavity; apex bilobed (separated by relatively small notch). Mesocoxal cavity narrowly open to mesepimeron; the latter not broad, and distinctly narrowed towards middle. Scutellum small, elongate, subrectangular, narrowly depressed at midline. Elytra hiding meso- and metasterna; for basal half moderately narrowed; sides subparallel, somewhat flattened between humero-apical costae and suture, and steeply inclined

to sides; towards apex slightly depressed between humero-apical costae and suture, weakly inclined to sides, and moderately flared to apex; humero-apical costa elevated for middle half, absent from apical fifth; border of epipleuron, narrow, from above visible from mid-humerus to apex. Elytra 3.5 longer than width of humeri (2.25 mm); spatula-shaped; suture almost straight, with slight gape from scutellum to apical fifth; laterally distinctly curved outwards from middle to near apex; maximum width (3.35 mm) at apical fifth; humeri slightly rounded, not prominent, nor projecting; apices of elytra divergent, apical margin oblique (suture the longest), and slightly bisinuate; both suture and lateral border prolonged into short spine. Metathorax with posterior margin distinctly oblique. Metasternum not much broader than prothorax; convex, but broadly flattened (and slightly depressed) to either side of midline; and slightly more prominent than mesocoxae; metasternal suture almost entire, deep posteriorly, not quite reaching metasternal process. Metepisternum moderately large, subrectangular, weakly tapering to acuminate apex. Abdomen strongly convex; tapering from base to apex. Urosternites II-IV transverse with slightly rounded, subparallel sides; and subequal in length. Urosternite V long, *ca.* as long as IV; conical; surface slightly convex (not flattened, nor depressed); apex strongly excavate, each side prolonged into oblique, blunt tooth. Abdominal process triangular; almost planar with rest of abdomen; and abruptly acuminate.

Legs moderately robust and long; length of front, middle and hind legs in the ratio 1.0:1.3:1.9. Pro- and mesofemora strongly pedunculate-clavate (claves flattened laterally; profemoral peduncle very short; mesofemoral peduncle flattened at sides, *ca.* half length of clavate. Metafemora long (4.35 mm); weakly pedunculate-clavate; clavate hardly longer than peduncle, almost cylindrical, apices prolonged into short spines (lateral one longer); with spine, reaching middle of urosternite V. Apex of protibiae obliquely excised laterally. Metatibia distinctly shorter (3.70 mm) than metafemora; cylindrical; bisinuate; clothed with moderately sparse, short setae (but otherwise unspecialised); hardly widening to apex. Pro- and mesotarsi rather robust (the tarsomeres subequal in length, short and wide). Metatarsomere I cylindrical; slightly shorter than length of II+III (0.70 mm); II (0.35 mm) weakly trapeziform, III bifid.

*Variation in males:* colour distribution presents no significant differences among the males; but both humeral fascia on elytra may be yellow (not orange-yellow); all antennomeres may be black (and those

with yellow at base varying from VII-XI, to only X and XI); and black colour at base of metafemoral peduncle may be more extensive. Shape of labrum is rather variable: in one male rectangular; in several not wider than apex of clypeus, nor rounded at sides. In one male proximal margin of inferior lobes closer to frons, and hind margin transverse; in two males the latter more oblique. Apical segments of antenna may be more serrate than those of holotype. Maximum width of pronotum in three males is only just behind middle. Scutellum is oval in one male paratype, and not as long as holotype in many. Length and size of spines at apex of metafemora variable; but never very long, nor very large (mesal spines always shorter than lateral ones). Metatarsomere I may be slightly shorter or longer than holotype, but never as long as II+III.

*Description of female* (Fig. 6B): colour distribution presents no significant differences from the male; in one female bell-shaped fascia on midline of pronotum reduced to small apical portion.

*Structure:* most structural differences limited to sexually dimorphic ones usual in species of this tribe. Rostrum longer (0.60 mm) than length of inferior lobes (0.50 mm). Eyes smaller; inferior lobes of eyes moderately separated, width of one lobe 1.14 times interocular space (0.35 mm); the latter flat between prominent sides, the surface towards antennal tubercles confused by small, confluent punctures. Antennae more robust, and slightly shorter (reaching middle of urosternite I). Dimensions of prothorax apparently more variable; in one female slightly transverse, in two quadrate, and in one female more elongate than holotype; and in two females the sides are straighter, with maximum width towards base of pronotum. Underside appears to be very similar to that of males; but abdomen slightly wider than male, and apex of urosternite V truncate and devoid of lateral teeth. Legs slightly shorter than in male (but same ratio); apex of metafemora reaching apex of urosternite IV; and basal metatarsomere 0.86 length of II+III.

*Measurements (mm):* 14 males/7 females: total length, 8.8-12.4/11.90-13.95; length of pronotum, 1.45-2.15/1.90-2.40; width of pronotum, 1.4-1.9/1.80-1.95; length of elytra, 5.85-8.25/8.15-9.25; width at humeri, 1.65-2.4/2.35-2.75.

*Type material:* Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 440 m, 20.X.2005, on/

flying to flowers of "Sama blanca chica", Clarke & Zamalloa col. (MNKM).

*Paratypes with same locality as holotype, but different collecting data:* 1 female, 02-13.II.2000, M.C. Thomas col. (FSCA); 1 male, 14-16.X.2000 Wappes & Morris col. (ACMT); 1 male, 05-15.XI.2001, at black light, M.C. Thomas & B.K. Dozier col. (FSCA); 2 males, 01-08.XI.2002, J.E. Wappes col. (ACMT); 1 male, 04-10.V.2003, R. Clarke col. (ACMT); 1 male, 05-08.V.2004, Wappes & Cline col. (ACMT); 1 male, 15.VII.2005, beaten from bush of "Red Powder-puff", Clarke & Zamalloa col. (RCSZ); 1 male, 03.VII.2005, in flight, Clarke & Zamalloa col. (MNKM).

*Paratypes with same data as holotype, but different host flowers:* Flying to/on flowers of "Bejuco hoja lanuda": 1 male and 1 female, 01-06.V.2005 (MZUSP); 4 males, 20-29.IV.2005 (RCSZ). Flying to/on flowers of "Barbasquillo": 1 male, 17.VIII.2005 (RCSZ); 1 male, 28.VIII.2005 (MNRJ); 1 female, 28.IX.2005 (MNRJ). Flying to/on flowers of "Barbasquillo B": 1 female, 28.X.2007 (RCSZ). Flying to/on flowers of "Piton amarillo": 1 male, 12.X.2005 (RCSZ); 1 female, 08.VIII.2007 (RCSZ). Flying to/on flowers of "Ramoneo": 1 female, 08.VIII.2007 (RCSZ). Flying to/on flowers of "Tutumillo espinoso": 1 male, 04.XI.2005 (RCSZ). Flying to/on flowers of "Lechoso coloradillo": 1 male, 11.XII.2005 (RCSZ); 1 female, 08.VIII.2007 (RCSZ). Flying to/on flowers of "Sapaimosi": 1 male, 21.XII.2005 (RCSZ); 1 female, 16.IX.2009 (RCSZ).

*Discussion:* Monné (2005) records *Aechmutes armatus* for Bolivia; but as he states (*pers. com.*): "the record for *A. armatus* from Bolivia, comes from a misidentification by Moure and Seabra, they identified 3 specimens from Provincia Chapare as *A. armatus*, but they are *A. boliviensis*".

Wappes *et al.* (2006) record *Aechmutes lycoides* from Bolivia; but these records are almost certainly referable to *Aechmutes boliviensis*, since the specimens were collected at the Hotel Flora & Fauna.

### *Aechmutes subandinus* sp. nov.

**Figs. 7A, 7B**

*Holotype male:* 11.15 mm. Deposited at MNKM.

*Diagnosis:* *Aechmutes subandinus* is readily separated from *Aechmutes boliviensis*, by the single, black fascia occupying midline of pronotum (in *A. boliviensis* the

pronotum has three black fasciae, one situated at the base of the midline, the other pair laterally placed). Structural differences between the two species are small; but, as described in the text, the slightly wider interocular space, narrow base of the fourth antennomere, and more cylindrical abdomen will separate the two species.

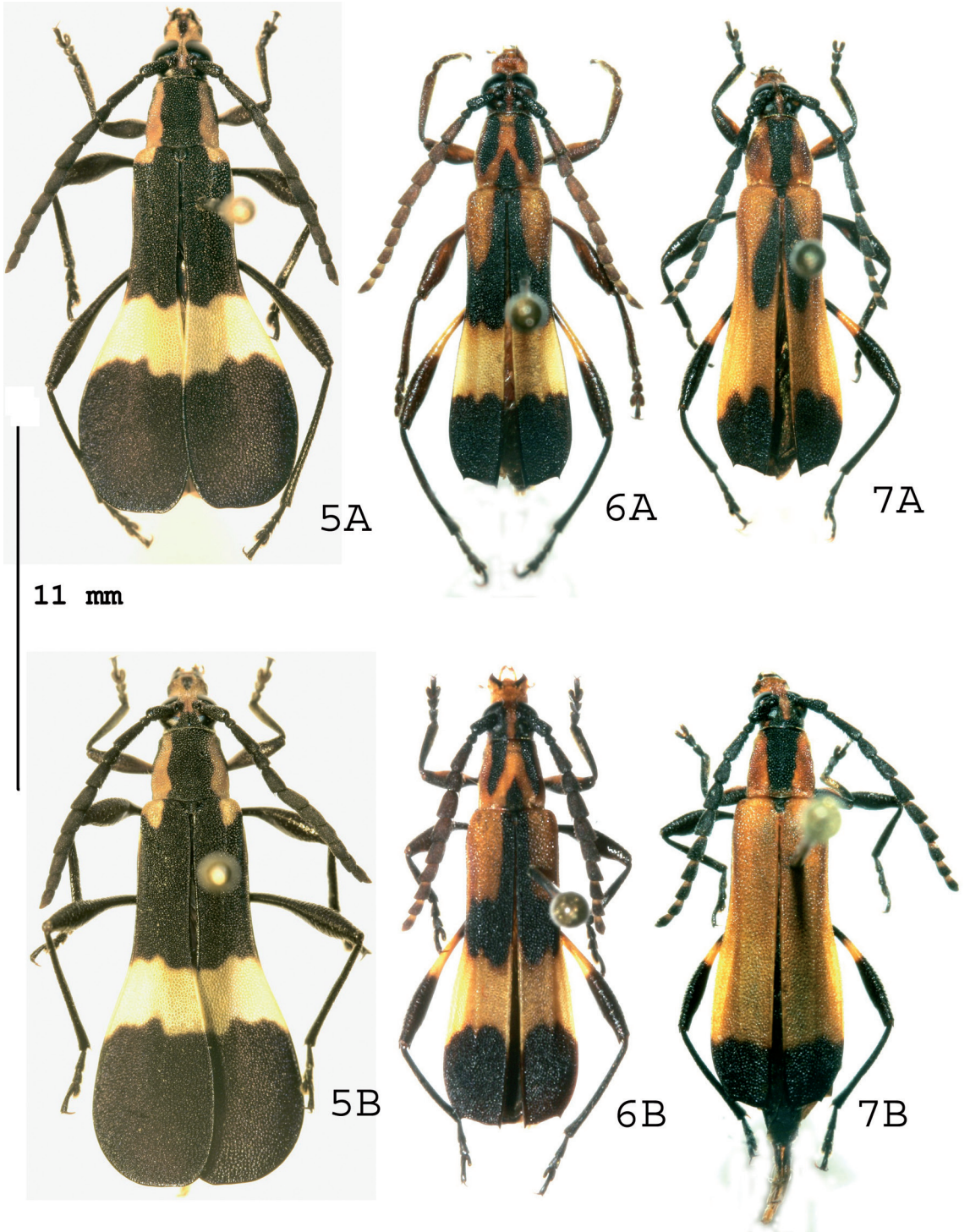
*Aechmutes subandinus* is separated from *A. armatus* by the following differences of colour distribution: lateral margins of black fascia on pronotum subparallel, the apical margin not much wider than basal margin (in *A. armatus* this fascia is wine glass-shaped: narrow at base, and strongly widened towards apex); distance between central and apical black fasciae of elytra greater than width of apical fascia (in *A. armatus* the distance between these fasciae is distinctly less than width of apical fascia); and in females of *A. subandinus* the central black fascia is absent (in *A. armatus* not so).

*Aechmutes subandinus* is readily separated from *Aechmutes lycoides* Bates, 1867 by the following: midline of pronotum occupied by broad, black fascia (*A. lycoides* has paired fasciae at sides of pronotum); metafemoral clave almost entirely black, including apex (in *A. lycoides* the clave is yellow at apex); male abdomen slightly tapering from base to apex (in the only specimen of *A. lycoides* in the MZUSP collection the abdomen is strongly constricted between urosternites II and III).

*Description of holotype:* colour opaque; dull; black and yellow. Head yellow, the following black: apex of mandible; palpomeres; vertex with pair of parallel fasciae behind antennal tubercles; rectangular fasciae on each side of neck; and antennae (segments VIII-XI yellow at base). Prothorax yellow, the following black: on pronotum broad fascia, narrowing from apex to base, occupying all of midline; and to each side of prothorax, running from front to hind margin, a broad fascia shared by sides of pronotum and sides of prosternum. Mesothorax black (including scutellum), the following yellow: mesosternal process; and, adjacent to base of latter, at centre of mesosternum, narrow, rectangular fascia. Elytra yellow; on each elytron the following black: long, lobate fascia, running from base of scutellum towards middle of elytron, situated between humero-apical costa and suture; strongly scalloped fascia occupying apical quarter of elytron. Metathorax almost entirely black; only metasternal process yellow. Abdomen black; except centre of urosternite I with yellow quadrate fascia. Legs black, the following yellow: coxae; most of sides and underside of profemora; and apical half of metafemoral peduncle.

*General pubescence:* dorsad almost glabrous. Sides and basal depression of pronotum with short, dense, recumbent, golden coloured pubescence. Similar (but

pale yellow pubescence) on underside; most noticeable on centre of prosternum, base and midline of metasternum, and latero-posterior margins of urosternites I-IV.



FIGURES 5-7: 5, *Ornistomus simulatrix* sp. nov.: A male holotype, B female paratype. 6, *Aechmutes boliviensis* sp. nov.: A male holotype, B female paratype. 7, *Aechmutes subandinus* sp. nov.: A male holotype, B female paratype.

*Surface ornamentation:* dorsad almost entirely covered by contiguous, alveolate punctures; smaller and more uniform on head and pronotum; larger, and semi-alveolate (and somewhat asperate) on elytra (except pre-apical yellow fascia with small, non-alveolate punctures). Mentum-submentum with large punctures anteriorly, posteriorly almost impunctate; the surface transversely carinate. Centre of prosternum strongly shagreened, with large, well-defined, rectangular patch of dense punctures (the latter small and semi-alveolate). Mesosternum reticulate and densely covered by very small, setiferous punctures; mixed with larger punctures towards sides and on mesepimera. Midline of metasternum densely and finely punctured; followed by smooth area with large, separated punctures; these becoming confluent and alveolate towards sides, and on metepisternum. Abdomen very shining, with reduced reticulation; punctures at centre of urosternite I similar to those of metasternum; small, shallow and sparse at centre of II-V, denser, and somewhat bevelled laterally.

*Structure:* length of forebody and abdomen (5.00 mm) subequal. Head with eyes (1.45 mm) distinctly narrower than pronotum. Rostrum moderately wide (0.70 mm) and long (0.50 mm); sides parallel; slightly shorter than length of inferior lobes (0.65 mm). Labrum wide, *ca.* twice as wide as long; front margin slightly excavate; sides rounded and explanate; one large setiferous puncture to each side, two groups of 4-5 smaller ones between them. Apex of clypeus slightly narrower than apex of labrum; separated from frons by shallow declivity. Adjacent surface of frons irregular (with depressed and prominent areas). Eyes large and convex; distal margin of inferior lobe lying on gena, proximal margin moderately oblique. Inferior lobes of eyes moderately close; width of one lobe 3.82 times interocular space (0.17 mm); the latter almost planar, prominent at sides, with relatively deep, V-shaped depression (wide enough to accommodate two rows of punctures to either side of narrow frontal suture). Width of one superior lobe of eye about half interocular space (0.40 mm). Antennal tubercles with rounded, slightly prominent apices; the distance between them slightly wider than maximum width of scape (0.40 mm). Antennae short, just reaching apex of urosternite I; basal segments moderately robust, apical ones distinctly less so. Underside of antennal segments I-VI densely setose; antennomeres III-VII incrementally wider; V serrate; VI and VII moderately strongly serrate; VIII-X incrementally narrower and less serrate; XI not serrate, slightly longer than X, with relatively

short apical cone. Scape strongly pyriform (viewed laterally), moderately long (0.75 mm), and densely punctured (these confluent, large and deep). Pedicel short (0.25 mm) with rounded sides. Antennomere III cylindrical, short, but slightly longer (0.80 mm) than scape and IV (0.60 mm); V (0.75 mm); VI (0.70 mm); VII (0.65 mm); VIII (0.60 mm); IX (0.55 mm); X (0.50 mm); XI (0.55 mm). Prothorax subtrapezoidal; slightly longer than wide (1.80 mm), widest well behind middle (at this point sides slightly rounded to front margin, straighter and subparallel to basal margin); apical margin (1.20 mm) distinctly narrower than basal margin (1.70 mm). Surface of pronotum weakly convex, slightly irregular, on basal third, with one, rather weak, but large callus to either side of midline; apical and basal constrictions weak; but the latter deep and narrow, and furnished with large fovea towards each side; basal angles square. Prosternum depressed across apical fifth, moderately inclined to prosternal process; base of latter *ca.* seven times narrower (0.10 mm) than width of procoxal cavity; apex inclined upwards, large, trapezoidal, with weak, slightly raised borders. Procoxal cavities closed at sides and behind; procoxae slightly more prominent than mesocoxae. Mesosternal declivity deep and abrupt. Mesosternal process with broad, raised sides; moderately wide (0.30 mm), about half width of mesocoxal cavity; apex bilobed (the lobes separated by relatively small notch). Mesocoxal cavity narrowly open to mesepimeron; the latter not broad, but distinctly narrowed towards middle. Scutellum small, elongate, subrectangular; narrowly depressed at midline. Elytra hiding meso- and metasterna; for basal half moderately narrowed and subparallel (flattened between humero-apical costae and suture, only moderately steeply inclined to sides); towards apex moderately flared (slightly depressed between humero-apical costae and suture, weakly inclined to sides). Humero-apical costae elevated for middle half, absent from apical fifth. Border of epipleura, narrow, from above visible from mid-humerus to apex. Elytra 3.4 longer than width of humeri (2.25 mm); spatula-shaped; suture not completely straight (with slight dehiscence from well behind level of humeri to apex); laterally distinctly curved outwards from middle to near apex; maximum width (3.35 mm) at apical fifth. Humeri slightly rounded, not prominent, nor projecting. Apices of elytra divergent; apical margin oblique (sutural margin the longest); hardly bisinuate; both suture and lateral borders prolonged into short spine. Metathorax with posterior margin distinctly oblique. Metasternum not much broader than prothorax; convex (but most of midline occupied by relatively deep, oval

depression); and planar with mesocoxae; metasternal suture almost entire, deep posteriorly, not quite reaching metasternal process. Metepisternum moderately large; subrectangular; weakly tapering towards acuminate apex. Abdomen strongly convex; only slightly tapering from base to apex. Urosternites II-IV transverse with slightly rounded, subparallel sides. V long (for a male), *ca.* as long as IV; trapezoidal (but transversely constricted before apex); surface slightly convex (not flattened, nor depressed); apex strongly excavate, each side prolonged into sharp tooth. Abdominal process triangular; almost planar with rest of abdomen; and abruptly acuminate. Legs moderately robust and long; length of front, middle and hind legs in the ratio 1.0:1.4:1.8. Pro- and mesofemora strongly pedunculate-clavate (claves flattened laterally); profemoral peduncle very short; mesofemoral peduncle flattened at sides, relatively long (*ca.* half length of clave). Metafemora relatively short (3.80 mm); weakly pedunculate-clavate; clave longer than peduncle, almost cylindrical, apices prolonged into short spines (lateral one longer); with spine, reaching apical third of urosternite IV. Protibia thickly clothed with short, rigid, yellowish pubescence mesally; apex obliquely excised laterally. Metatibia distinctly shorter (3.20 mm) than metafemora; cylindrical; bisinuate; hardly widening to apex; clothed with moderately sparse, short setae, but otherwise unspecialised. Pro- and mesotarsi rather robust (the tarsomeres subequal in length, short and wide). Metatarsomere I cylindrical; slightly shorter than length of II+III (0.65 mm); II (0.35 mm) weakly trapeziform, III moderately bifid.

*Variation in males:* the single male paratype shows one significant difference of colour distribution: the central black fascia on each elytron is slightly broader at base; and extended to epipleuron by the addition of a narrow longitudinal patch (the latter partially separated from the proximal part of the fascia by a deep indentation anteriorly).

*Description of female* (Fig. 7B): in both female paratypes colour distribution is little different from the male; except for the following: in one female the central, black fascia on the pronotum is deeply bifid apically; in both female paratypes the elytra of both females are entirely yellow as far as the apical, black fascia; and in one the anterior margin of the latter is not scalloped.

*Structure:* most structural differences limited to sexually dimorphic ones usual in species of this tribe. Rostrum longer (0.60 mm) than length of inferior

lobes (0.50 mm). Eyes smaller, but equally convex; width of one inferior lobe 1.5 times interocular space (0.40 mm). Frontal suture represented by two fine, contiguous striae; and closely and confusedly punctured throughout. Antennae slightly more robust than male, but of equal length. Prothorax quadrate, more trapezoidal (*i.e.* sides straighter) than in male, with maximum width close to base of pronotum. Underside appears to be very similar to that of males, but abdomen wider, and sides of urosternites straighter. Urosternite V constricted well before apex, apical margin slightly sinuate, and each side extended to form small, blunt tooth. Abdominal process less acuminate at apex, and planar with rest of abdomen. Legs slightly shorter than in male (but almost same ratio); apex of metafemora just passing base of urosternite IV; and basal metatarsomere 0.92 length of II+III.

*Measurements (mm):* 1 male/1 female: total length 11.15/12.25; length of pronotum 1.85/1.80; width of pronotum 1.80/1.80; length of elytra 7.60/7.70; width at humeri 2.25/2.30.

*Type material:* Holotype male, BOLIVIA, Santa Cruz, Estancia Caraparicito, 19°48'76"S/63°39'67"W, 1070 m, 6 km W Caraparicito, on/flying to flowers of *Croton* sp. A, 03.I.2008, Clarke & Zamalloa col. (MNKM).

*Paratypes:* *Chuquisaca*, Incahuasi, 1600 m, E. Muyupampa, XII.1984, L.E.Peña col., 1 male and 1 female (MZUSP), and 1 female (RCSZ).

*Discussion:* Comparison between *A. armatus* and the other species of the genus had to be made using a photograph of the holotype available on the internet. Unfortunately, Gounelle was not sure which sex his specimen represented, he thought it might be a female, and the photograph of it does not provide the information to clarify its sex. However, comparison with males and females of the two Bolivian species indicate it to be a female, because the eyes do appear to be slightly further apart than males, and the antennae more crassate as in other females.

In the MZUSP collection there are three specimens from southern Bolivia, identified by Dr. Martins as *A. armatus*; these have been treated as paratypes of *A. subandinus* as shown above. Apart from the distinct differences of colour distribution set out in the diagnosis, the radical difference between the two ecosystems from which they come (*A. armatus* from Amazonian forest, *A. subandinus* from Chaco Forest) present cogent arguments for recognising the two species.

*Etymology*: in this case *A. subandinus* implies the lower section of the Andes, where the specimens were collected.

## RESUMO

*Rhinotragini bolivianos V: novas espécies do Erythroplatys White, 1855, Rhinotragus Germar, 1824, Ornistomus Thomson, 1864, e Aechmutes Bates, 1867 (Coleoptera, Cerambycidae). Seis espécies novas são descritas: Erythroplatys boliviensis, Rhinotragus antonioi, Rhinotragus monnei, Ornistomus simulatrix, Aechmutes boliviensis, e Aechmutes subandinus. A fêmea do Erythroplatys simulator Gounelle, 1911 é redescrita, e o macho é descrito pela primeira vez. Ornistomus bicinctus Thomson, 1864, Aechmutes lycoides Bates, 1867 e Aechmutes armatus Gounelle, 1911 são formalmente excluídas de la fauna do Bolívia. Todas as espécies são ilustradas e flores-hospedeiras são fornecidas.*

PALAVRAS-CHAVE: Bolívia; Cerambycinae; Flores-hospedeiras; Taxonomia.

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## APPENDIX

## Summary: Host flowers visited by Bolivian Rhinotragini.

LOCAL NAME	SCIENTIFIC NAME	FAMILY
<b>Barbasquillo</b> <i>Aechmutes boliviensis</i> sp. nov.	<i>Serjania lethalis</i> St. Hilaire	SAPINDACEAE
<b>Barbasquillo B</b> <i>Aechmutes boliviensis</i> sp. nov. <i>Rhinotragus monnei</i> sp. nov.	<i>Serjania</i> indet. sp.	SAPINDACEAE
<b>Bejuco hoja lanuda</b> <i>Aechmutes boliviensis</i> sp. nov.	<i>Gouania mollis</i> Reiss.	RHAMNACEAE
<b>Colorodillo de barbecho</b> <i>Rhinotragus antonioi</i> sp. nov.	<i>Adenaria floribunda</i> H.B.K.	LYTHRACEAE
<b>Lechoso coloradillo</b> <i>Aechmutes boliviensis</i> sp. nov.	<i>Sapium glandulosum</i> (Linn.)	EUPHORBIACEAE
<b>Piton amarillo</b> <i>Aechmutes boliviensis</i> sp. nov. <i>Rhinotragus monnei</i> sp. nov.	<i>Talisia hexaphylla</i> Vahl.	SAPINDACEAE
<b>Ramoneo</b> <i>Aechmutes boliviensis</i> sp. nov.	<i>Iresine diffusa</i> Willd.	MARANTHACEAE
<b>Sama blanca</b> <i>Erythroplatys boliviensis</i> sp. nov. <i>Ornistomus simulatrix</i> sp. nov. <i>Rhinotragus antonioi</i> sp. nov.	<i>Cupania cinerea</i> Poeppig & Endl.	SAPINDACEAE
<b>Sama blanca chica</b> <i>Aechmutes boliviensis</i> sp. nov. <i>Erythroplatys boliviensis</i> sp. nov. <i>Ornistomus simulatrix</i> sp. nov. <i>Rhinotragus antonioi</i> sp. nov.	<i>Matayba guianensis</i> Aublet	SAPINDACEAE
<b>Sama blanca mediana</b> <i>Rhinotragus antonioi</i> sp. nov.	Indet. sp.	
<b>Sapaimosi</b> <i>Aechmutes boliviensis</i> sp. nov. <i>Rhinotragus monnei</i> sp. nov.	<i>Trichilia elegans</i> Adr. Juss.	MELIACEAE
<b>Tinajero</b> <i>Aechmutes subandinus</i> sp. nov.	<i>Croton</i> sp. A indet.	EUPHORBIACEAE
<b>Tutumillo espinosa</b> <i>Aechmutes boliviensis</i> sp. nov. <i>Rhinotragus monnei</i> sp. nov.	<i>Casearia aculeata</i> Jacq.	SALICACEAE