

Papéis Avulsos de Zoologia

Museu de Zoologia da Universidade de São Paulo

Volume 51(15):233-251, 2011

www.mz.usp.br/publicacoes
http://portal.revistasusp.sibi.usp.br
www.scielo.br/paz

ISSN impresso: 0031-1049

ISSN on-line: 1807-0205

BOLIVIAN RHINOTRAGINI IV: *PARAECLIPTA* GEN. NOV. (COLEOPTERA, CERAMBYCIDAE), NEW SPECIES AND NEW COMBINATIONS

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ABSTRACT

Paraeclipta gen. nov. is described to allocate five new species, and ten transferred from *Eclipta* Bates, 1873: *P. cabrujai* sp. nov.; *P. clementecruzi* sp. nov.; *P. melgarae* sp. nov.; *P. tomhacketti* sp. nov.; *P. moscosoi* sp. nov.; *P. bicoloripes* (Zajciw, 1965), comb. nov.; *P. croceicornis* (Gounelle, 1911), comb. nov.; *P. flavipes* (Melzer, 1922), comb. nov.; *P. jejuna* (Gounelle, 1911), comb. nov.; *P. kawensis* (Peñaherrera-Leiva & Tavakilian, 2004), comb. nov.; *P. longipennis* (Fisher, 1947), comb. nov.; *P. rectipennis* (Zajciw, 1965), comb. nov.; *P. soumourouensis* (Tavakilian & Peñaherrera-Leiva, 2003), comb. nov.; *P. tenuis* (Burmeister, 1865), comb. nov.; and *P. unicoloripes* (Zajciw, 1965), comb. nov. The Bolivian species are illustrated. A key to their identification and host flower records are provided.

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

INTRODUCTION

White (1855) established the genus *Ommata* for one species, *Ommata elegans* (White, 1855), from Venezuela. Using a different set of characters, Lacordaire (1868) redefined the genus to include six further species.

Bates (1873) referred to *Ommata* (sensu Lacordaire) as: "a large number of species of the most diversified forms and colours; and an examination of very copious material has not yielded me any more definite generic distinctions than those supplied by Lacordaire"; and split the genus into three groups, containing six named subgroups, the latter eventually formalised into subgenera (one of which, his Group "IA" *Phoenissa*, containing four species, was transferred by Monné & Giesbert (1992) to the genus *Oregostoma* Audinet-Serville, 1833). One of these subgenera (comprising

Bates' Group II), *Ommata* (*Eclipta*) Bates, 1873 is the subject of the present paper. For provisional diagnoses of the subgenera of *Ommata* see Clarke (2009).

In 1873 the group *Eclipta* contained 20 species with the following diagnosis: "Legs slender; middle femora abruptly but not very broadly clavate; elytra with sides subparallel, apex truncated". *Eclipta* was informally subdivided by Bates (1873) into two unnamed categories: those with "elytra abbreviated" [8 species, including one transferred by himself to *Odontocera* Audinet-Serville, 1833] and those with "elytra nearly reaching tip of abdomen" [12 species].

Martins & Santos-Silva (2010) raised all the subgenera of *Ommata* to generic status, emphasising the need to completely revise each one.

The subgenus *Eclipta* has not been revised since 1873, and Monné & Bezark (2009) included 87 species in it.

MATERIAL AND METHODS

Most of the material examined was collected at, or the environs of, the Hotel Flora & Fauna, 420–440 m, 5 km SE of Buena Vista, Department of Santa Cruz, Bolivia 17°29'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.

The remaining material was collected 250–560 km to the south, in the humid Chaco Forests of the Andean foothills; just south of Abapo and west of Camiri, in the Departments of Santa Cruz and Chuquisaca; and in dry and humid Chaco forests close to Villa Montes, Department of Tarija, 100 km north of the Bolivian–Argentine border.

Nearly all the Bolivian specimens were netted as they flew to or landed on flowers of shrubs, trees and creepers. A list of host flowers is given in the appendix at the end of this account.

Measurements: Total length = tip of mandibles to apex of abdomen. Forebody from apex of gena to apex of metasternum (at middle of hind margin), and abdomen from base of urosternite I (just behind metepisternum) to apex of last visible tergite (because mandible projection and inclination of head is variable these are approximate measurements).

The acronyms used in the text are as follows: American Coleoptera Museum, San Antonio, Texas, USA (ACMT); Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Brazil (DZUP); Florida State Collection of Arthropods, Gainesville, Florida, USA (FSCA); Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brazil (MCNZ); Museo Noel Kempff Mercado, Universidad Autónoma Gabriel René Moreno, Santa Cruz de la Sierra, Bolivia (MNKM); Museo 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 original description, citation of the catalogue by Monné (2005), and omissions and additions to this catalogue.

Taxonomy

Paraeclipta gen. nov. is based on the original work of Zajciw (1965), as outlined below, and

represents a step towards the dismemberment of the genus *Eclipia*, a process which will allow groups of similar species to be placed in well defined new genera, albeit the diverse structure of the Rhinotrugini will require that most of these be diagnosed by combinations of characters rather than unique ones.

Species transferred to *Paraeclipta* were described by various authors as set out below.

Burmeister (1865) described *Rhinotragus tenuis* from Argentina, and Bates (1873) transferred this species to *Ommata* (*Rhopalessa*) Bates, 1873.

Gounelle (1911) described *Ommata* (*Eclipia*) *croceicornis* and *O. (E.) jejuna* (which he stated only differed slightly from Burmeister's *O. (E.) tenuis*).

Fisher (1947) described *Ommata* (*Rhopalessa*) *longipennis* from southern Brazil.

Zajciw (1965) dealt with six species of *Ommata* (*Eclipia*) Bates, 1873 (including *Ommata* (*Rhopalessa*) *longipennis*), which he referred to as the *tenuis*-group, species very similar in appearance, and characterised by: “body slender, elongate and narrow, black in colour, with antennae and legs, at times, partially yellow; prothorax distinctly longer than wide, reticulate punctate; elytra truncate at apex, not strongly shortened, reaching apex, or slightly passing apex, of urosternites III or IV; mesofemora abruptly clavate, but not strongly tumid”. By stating that the elytra are not strongly abbreviated, he seems to suggest (contrary to Gounelle) this group of species belongs to Bates' *Eclipia* Group IIAA: “Elytra nearly reaching the tip of the abdomen”. He did not refer to *O. (Eclipia) croceicornis* Gounelle, 1911, which clearly belongs to this group of species; maybe, excluding it because, with its elongated abdomen, the elytra appear to be more abbreviated than other species of the *tenuis*-group. Zajciw (1970) transferred *Ommata* (*Rhopalessa*) *longipennis* Fisher, 1947 to the subgenus *Ommata* (*Eclipia*).

Tavakilian & Peñaherrera-Leiva (2003) described *Ommata* (*Eclipia*) *soumourouensis*, and Peñaherrera-Leiva & Tavakilian (2004) described *Ommata* (*Eclipia*) *kawensis*.

Peñaherrera-Leiva & Tavakilian (2004) designated *Ommata* (*Eclipia*) *flavicollis* Bates, 1873 as the type-species for the subgenus *Ommata* (*Eclipia*), because, among the eight species included by Bates (1873) in his Group IIA, it was the only one in Bates' collection with both sexes in good condition.

Paraeclipta gen. nov.

Type species: *Ommata* (*Eclipia*) *croceicornis* Gounelle, 1911 here designated.

Diagnosis: separation of the genus *Paraeclipta* from the genus *Eclipta* Bates, 1873 is justified by comparing it with the type-species, *Eclipta flavicollis* Bates, 1873, as follows: apical palpomeres fusiform (in *E. flavicollis* more securiform); rostrum short (in *E. flavicollis* long); antennae usually clubbed, basal segments relatively weakly and sparsely setose (in *E. flavicollis* not clubbed, basal segments strongly and densely setose); prothorax cylindrical, pronotum with dense, alveolate punctures (in *E. flavicollis* prothorax subglobose, pronotum densely micro-punctate); elytra long, at least 3.4 longer than width of humeri, usually reaching urosternite IV or V (in *E. flavicollis* elytra short, three times longer than width of humeri, reaching middle of urosternite III), not dehiscent, and elytron widening close to apex (in *E. flavicollis* strongly dehiscent for apical half, and elytron subacuminate); ratio length of front, middle and hind legs 1.0:1.2-1.3:1.8-2.0 (in *E. flavicollis* ratio 1.0:1.5:2.6), legs moderately robust and short (in *E. flavicollis* relatively slender and long); metafemoral clave only reaching apex of urosternite III to base of IV (in *E. flavicollis* almost reaching apex of abdomen); metatarsomere I equal to II+III (in *E. flavicollis* longer than II-IV together).

Description: small (4.90-7.40 mm); subcylindrical; forebody (f) and abdomen (a) about the same length (in *P. croceicornis* f/a 0.85-0.97; in *P. moscosoi* sp. nov. f/a 0.94-1.00; in other species f/a 1.05-1.11). Head with eyes wider than prothorax in male; as wide as, or slightly narrower than prothorax in female. Rostrum short (usually slightly longer in female). Apical palpomeres fusiform. Inferior lobes of eyes with distal margin close to side of gena; proximal margin transverse to slightly oblique in male (more rounded in *P. moscosoi*), moderately oblique in female; large, convex, and longer than wide in male, smaller, less convex, and distinctly longer than wide in female; contiguous, or moderately so in males (inferior lobes of eyes separated by 6-12 times their own width); in females moderately wide apart ((inferior lobes of eyes separated by 1.2-1.6 times their own width). Superior lobes of eyes separated by 2.5-4.0 times their own width, with (5-7) rows of ommatidia. Mentum-submentum planar, with rectangular area of arced carinas and semi-confluent punctures extending to gula. Apices of antennal tubercles separated by 1.5-2.5 width of scape. Antennae with some inter-specific variation (see individual descriptions), either somewhat thickened throughout (more so in females), or filiform basally and moderately clubbed apically (apical segments may be weakly serrate, more strongly in female *P. cabrujai* sp. nov., or incrassate); not long, not reaching urosternite III

(well short of elytral apex); scape subpyriform (when viewed laterally); antennomeres III-VI cylindrical and setose; VII-X slightly serrate, the latter more strongly in some females; VIII-XI widened to form subcompact, 4-segmented club (VII and VIII often weakly serrate, especially in females). Antennomere III always the longest, IV shorter than V, V equal to, or longer, than scape, the rest incrementally shorter (with some variation), X shorter than XI, XI with apical cone. Prothorax cylindrical, longer (l) than wide (w) (shortest in *P. melgarae* sp. nov. l/w 1.12; longest in *P. croceicornis* l/w 1.33); surface of pronotum somewhat uneven but without calli; sides almost parallel-sided to modestly rounded (especially in females), widest near middle; anterior constriction almost absent (except in *P. moscosoi* and male *P. tomhacketti* sp. nov.); basal constriction moderate and narrow. Prosternal process flat (or almost so), narrow at base, strongly widened to trapezoidal apex. Procoxal cavities closed behind and narrowly notched at sides. Mesosternal declivity subabrupt (or sloping in females). Mesosternal process with narrow base (ca. 0.05-0.10 mm, narrowest in *P. cabrujai*, slightly wider in *P. croceicornis*, *P. melgarae*, and male *P. tomhacketti*, widest in *P. clementecruzi* sp. nov., female *P. tomhacketti* and *P. moscosoi*); and relatively small, wider apex (which may split into two lobes, as in *P. tomhacketti* and *P. moscosoi*). Side of coxal cavities open to epimerum. Scutellum small in *P. cabrujai* and *P. moscosoi*, to very small in *P. croceicornis*, *P. clementecruzi*, *P. melgarae* and *P. tomhacketti*, and often hidden by pubescence. Elytra long, in males longer than length of forebody (from 1.09 longer in *P. croceicornis* to 1.25 longer in *P. cabrujai*); male elytra longer than width of humeri (from 3.48 longer in *P. moscosoi* to 4.12 longer in *P. croceicornis*), usually reaching urosternites IV or V, but in species with elongated abdomen only reaching apex of urosternite III; narrower in male than female, but always wider than base of prothorax (especially in *P. tomhacketti*); contracted towards middle (hiding sides of mesosterna, exposing sides of metepisterna), almost parallel-sided, or slightly diverging, towards apex; not truly dehiscent, but may be slightly separated or gaping (strongest in *P. moscosoi*), especially in gravid females; flat (at least for apical two-thirds), including most of epipleura and sutural margins, giving these a double border when viewed from above (less so in *P. melgarae* and *P. tomhacketti*); inner border of epipleura entire, narrow and keel-like (that of suture also, but less strongly); humero-apical costa variable; apices flat, transversely or obliquely truncate (less oblique in *P. croceicornis*), apical angles never distinctly spinose, or toothed (but may have small one), but sutural and epipleural

borders often slightly extended beyond apex of elytra (to appear spiculate); and lateral angle may look crenellate. Metasternum broad and moderately tumid towards apex (with surface somewhat flattened); longitudinal suture reaching middle of sternum, narrow and deeply inset. Base of metepisternum wide, apex moderately acuminate. Abdomen cylindrical in males, and in females of *P. cabrujai*, *P. tomhacketti* and *P. moscosoi*, fusiform in females of other species. Urosternite V in male usually somewhat tumid laterally (less so in *P. tomhacketti*, or somewhat "winged" in *P. croceicornis* and *P. cabrujai*), and flattened proximally (more widely in *P. moscosoi*); in female conical to subconical and down curved apically. Abdominal process triangular, in male somewhat inclined to abdomen; in female planar with abdomen; not deeply inserted between metacoxae. Last visible tergite usually convex, apex usually passing apex of urosternite V. Legs only moderately robust and short, ratio length of front/middle/hind leg 1.0:1.2-1.3:1.8-2.0; front and middle coxae planar; all legs pedunculate-clavate; profemoral peduncle relatively short, meso- and metafemoral peduncles long and subequal, the former curved, the latter straight and half length of clava; pro- and mesofemoral clavae large, abrupt, flatter laterally, tumid mesally (especially mesofemoral clava); metafemoral clava more elongate, apex reaching apex of urosternite III to base of IV (short of elytral apex); apex of protibia slightly narrowed laterally (not widened or toothed, but may have slightly raised, setose puncture at angle); metatibia usually cylindrical, usually sinuate (curved in *P. tomhacketti*), and without specialised pubescence; tarsi undifferentiated, metatarsomere I equal in length to II+III.

General colour: dull, opaque and sombre, not metallic; body generally blackish; prothorax may be yellow with black fascia on prosternum and pronotum; elytra may have yellow humeri; antennae vary from almost entirely yellow to entirely black; legs usually yellow with varying amounts of black on femoral clavae and tibiae (these differences diagnostic for each species).

Surface ornamentation: generally similar in all species (but see *P. moscosoi*, and discussion of elytral punctures under *P. tomhacketti*); sub-glabrous above (punctures on elytra setiferous, the hairs very short), basal third of elytra usually with sparse, long, erect hairs (relatively dense in *P. moscosoi*, only moderately so in *P. croceicornis* and *P. melgarae*). Middle of prosternum, sides of metasternum, metepisterna (and abdomen in *P. moscosoi*) with distinct, erect, long pubescence. Short, dense, recumbent pubescence usually

present at middle of prosternum, mesosternum and centre of metasternum. Sides of prothorax lacking sexual puncturation. Vertex and pronotum generally uniformly and densely punctate, the punctures alveolate. Elytral punctures variable, usually rounded and separate basally, towards apex may become contiguous to confluent and intricately, transversely carinate, or even *rasp*-like. Ventral surface generally reticulate and puncturation less uniform; usually somewhat alveolate on prosternum, densely micropunctate on mesosternum, mixture of fine and larger punctures on metathorax, and surface of abdomen reticulate with scattered, bevelled punctures.

Discussion: examination of seven species in the MZUSP collection (*P. bicoloripes*, *P. flavipes*, *P. jejuna*, *P. rectipennis*, *P. soumourensis*, *P. tenuis* and *P. unicoloripes*), and scrutiny of the original descriptions, and photographs available on the internet, indicate the inclusion of Zajciw's *tenuis*-group species in *Paraeclipta*.

The following species (10) are transferred to *Paraeclipta* gen. nov.: *P. bicoloripes* (Zajciw, 1965), comb. nov.; *P. croceicornis* (Gounelle, 1911), comb. nov.; *P. flavipes* (Melzer, 1922), comb. nov.; *P. jejuna* (Gounelle, 1911), comb. nov.; *P. kawensis* (Peñaherrera-Leiva & Tavakilian, 2004), comb. nov.; *P. longipennis* (Fisher, 1947), comb. nov.; *P. rectipennis* (Zajciw, 1965), comb. nov.; *P. soumourouensis* (Tavakilian & Peñaherrera-Leiva, 2003), comb. nov.; *P. tenuis* (Burmeister, 1865), comb. nov.; and *P. unicoloripes* (Zajciw, 1965), comb. nov.

***Paraeclipta croceicornis* (Gounelle, 1911),**

comb. nov.

Figs. 1A, 1B

Ommata (Eclipta) croceicornis Gounelle, 1911: 25; Monné, 2005: 503 (cat.).

Diagnosis: among the five Bolivian species, *Paraeclipta croceicornis* is immediately recognizable by the yellow antennae (with dusky club), and more elongate abdomen (the last two urosternites projecting beyond apex of elytra, even though the elytra are the longest in proportion to width of humeri).

Redescription of male (Fig. 1A): general colour black to dark chestnut, epipleura adjacent to humeri may be yellow, legs and antennal segments I-VIII yellow (scape and apex of segment VIII suffused with pale cinnamon), antennal club dusky.

Structure: rostrum (0.20 mm) about one-third length of inferior lobes. Labrum not strongly transverse, apical margin emarginate. Clypeus impunctate. Frons densely punctate, the punctures elongate and deep; not depressed, but with deep, elongate depression between apices of inferior lobes of eyes. Width of one inferior lobe twelve times interocular space; the latter slightly raised above eyes, glabrous. Superior lobes of eyes separated by about four times their own width. Apices of antennal tubercles separated by 2.5 width of scape. Antennae just reach base of urosternite II; scape (0.45 mm); antennomere III (0.60 mm); IV (0.35 mm); V (0.45 mm); VI (0.40 mm); VII (0.35 mm) elongate, narrow at base; VIII (0.25 mm) less elongate, narrow at base, apex widened; IX-XI equally and entirely widened, forming compact club: IX and X (both 0.25 mm) quadrate, XI (0.30 mm) quadrate. Prothorax one third longer than wide, widest at basal third, sides converging in straight lines to anterior and posterior margins; apical and basal margins of pronotum subequal (0.75-0.80 mm), the former with narrow, smooth, raised border. Prosternal process slightly arched; base narrow, approximately 0.07 mm wide (coxal cavity 0.30 mm wide); apex without raised sides, apical angles somewhat rounded, apical margin straight, and with large central fovea. Elytra just reaching apex of urosternite III; 3.7-4.1 longer than width of humeri, the latter not projecting, outer angle rounded; apical half of elytra slightly and regularly widening almost to apex; elytra not gaping, but apices may be slightly separated; the latter transversely truncate, sutural angle marked by small spicule, outer angle by larger one; humero-apical costa evanescent. Abdomen narrow and convex, parallel-sided (widest at base, slightly tapering to apex), urosternites I-III subequal in length, IV only slightly shorter, V subquadrate, laterally tumid to leave U-shaped depression at midline, apical margin slightly emarginate. Abdominal process an equilateral triangle, long (0.20 mm), apex moderately acuminate. Length of hind leg 4.25 mm, apex of metafemora reaching apex of urosternite III; metatibia (1.75 mm) slightly shorter than metafemora, cylindrical and moderately sinuate, slightly thicker only at apex. Tarsi moderately long, pro- and mesotarsi subequal in length (0.50-0.55 mm), metatarsus longer (0.65 mm); metatarsomere I (0.25 mm).

Description of female (Fig. 1B): colour as male. Head with eyes (0.90 mm) slightly narrower than prothorax (0.95 mm). Length of rostrum 0.25 mm. Width of one inferior lobe 1.2 times interocular space; the latter with distinctly raised sides, slightly depressed

toward midline and almost planar with eyes, anterior area with multiple micro-carinas, posteriorly smooth with about twelve medium sized punctures to each side. Superior lobes of eyes separated by about four times their own width. Antennae not shorter than in male, also reaching base of urosternite II, and slightly more robust. Prothorax 1.27 longer than wide, sides widest just behind middle, regularly and slightly more rounded than male; prosternal process almost flat, otherwise like male. Elytra 3.60-3.81 longer than width of humeri, just reaching base of urosternite IV. Abdomen widest at apex of urosternite II; urosternite V undifferentiated, conical, apical margin rounded. Apex of metafemora reaching base of urosternite III.

Measurements (mm) (16 males/4 females): total length, 5.40-7.10/6.80-7.40; length of pronotum, 0.95-1.20/1.15-1.20; width of pronotum, 0.70-0.95/0.95; length of elytra, 3.10-3.90/3.60-4.00; width at humeri, 0.75-1.00/1.00-1.05.

Material examined: BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 5 km SSE of Buena Vista, 17°29'96"S/63°39'13"W, 430 m, R. Clarke/S. Zamalloa col., on/flying to flowers of "Sama blanca chica": 1 male, 20.X.2005 (MNRJ); 3 males, 21.X.2005 (RCSZ); 6 males, 02.XI.2005 (RCSZ); 1 male, 03.XI.2005 (FSCA); 1 female, 19.IX.2007 (RCSZ); 1 male, 23.IX.2007 (RCSZ); 1 male, 25.IX.2005 (MNKM); 1 male specimen 1a in coitus with 1 female specimen 1b, 29.IX.2007 (RCSZ); 1 female, 08.X.2007 (MZUSP). Road to San Javier, 12 km ENE of Buena Vista, 420 m, 1 male, 30.X.2007, R. Clarke/S. Zamalloa col. (MNKM).

Discussion: Wappes *et al.* (2006; 2011) did not include this species in their list for Bolivia.

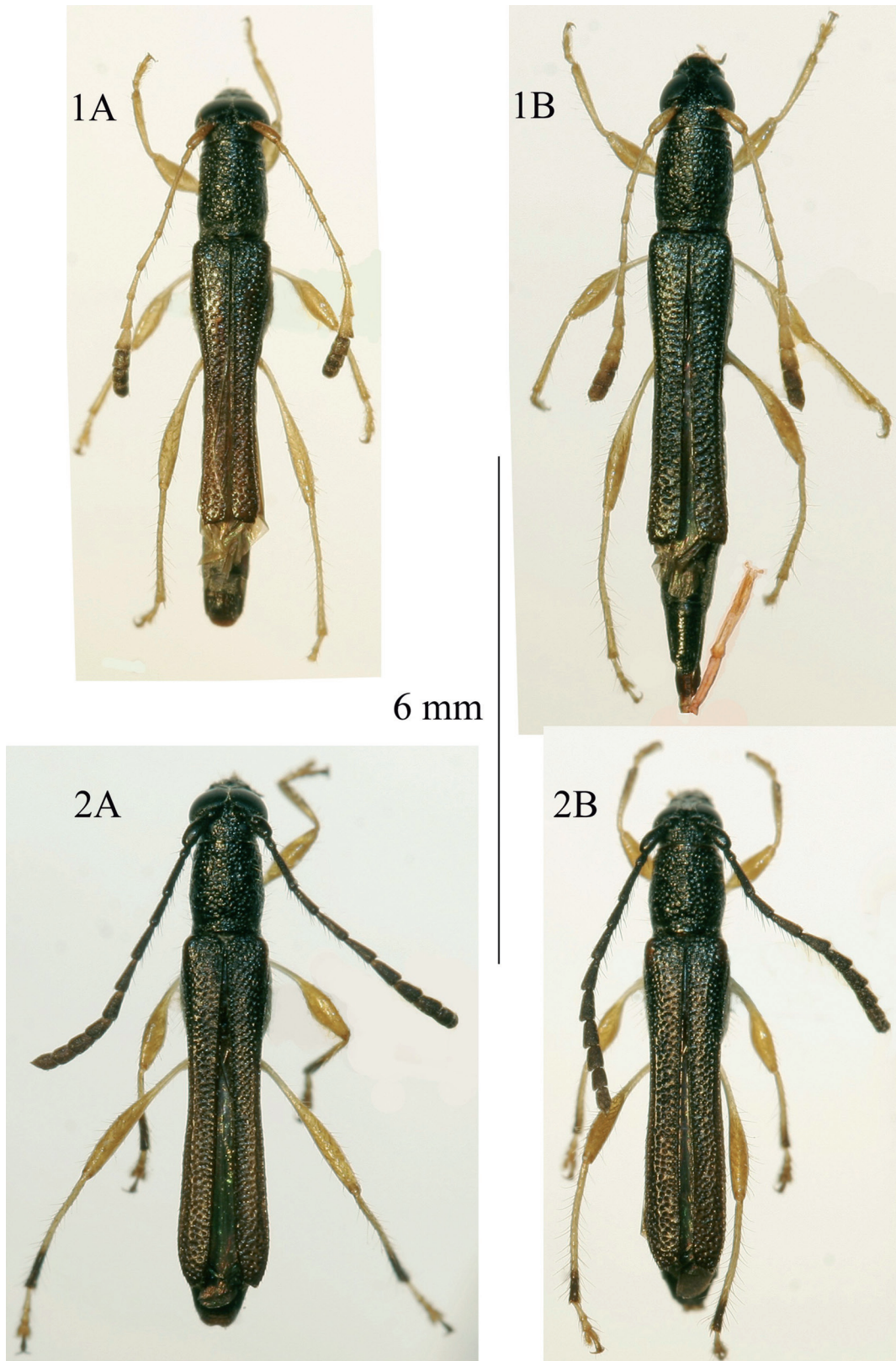
Paraclipta cabrujai sp. nov.

Figs. 2A, 2B

Holotype male: 6.40 mm. Deposited at MNKM.

Diagnosis: this may be separated from the other Bolivian species by its almost entirely black antennae.

Description of holotype: general colour black, apical half of elytra browner; sides of humeri (and adjacent epipleura) and legs yellow (except apices of meso- and metatibiae dusky), antennae black, base of antennomeres VII-X indistinctly yellowish.



FIGURES 1-2: 1, *Paraeclipta croceicornis* (Gounelle, 1911): A male, B female. 2, *Paraeclipta cabrujai* sp. nov.: A male holotype, B female paratype.

Surface ornamentation: pronotal punctures interrupted by band of short transverse striae at base of pronotum.

Structure: rostrum (0.15 mm) about one quarter length of inferior lobes of eyes. Labrum strongly transverse, apical margin distinctly emarginate. Clypeus impunctate. Frons densely punctate, the punctures elongate and deep; slightly depressed with deep, elongate depression between apices of inferior lobes of eyes. Width of one inferior lobe twelve times interocular space, the latter almost planar with eyes, and furnished with row of pubescence. Superior lobes of eyes separated by (0.25 mm) about three times their own width. Apices of antennal tubercles separated by 1.5 width of scape. Antennae just pass middle of urosternite II; scape (0.45 mm); antennomere III (0.60 mm); IV (0.40 mm); V (0.45 mm); VI (0.40 mm) elongate, narrow at base; VII-XI moderately thickened to form subcompact club: VII (0.35 mm) and VIII (0.30 mm) elongate and widening to apex, IX (0.30 mm) slightly elongate, X (0.25 mm) and XI (0.30 mm) quadrate. Prothorax 1.17 longer than wide, sides subparallel, widest just behind middle; apical and basal margins of pronotum subequal (0.75-0.80 mm), the former with smooth border. Prosternal process slightly arched; base narrow, approximately 0.07 mm wide (coxal cavity 0.30 mm wide); apex somewhat elongate, with raised sides and central fovea, apical margin emarginate. Scutellum small and triangular. Elytra just reaching base of urosternite V; 3.86 longer than width of humeri, the latter not projecting, outer angle slightly rounded; apical half of elytra slightly and regularly widening, and somewhat gaping, almost to apex; apices well separated, obliquely truncate, sutural angle obtuse (but well defined), outer angles acute and prominent; humero-apical costa distinct, but restricted to apical third. Abdomen moderately narrow and convex, parallel-sided (widest at middle of urosternite IV), each urosternite slightly rounded at sides and progressively shorter; urosternite V trapezoidal, with shallow V-shaped depression at midline, apical margin slightly emarginate. Abdominal process an equilateral triangle, long (0.20 mm); apex moderately acuminate. Length of hind leg 4.5 mm; apex of metafemora reaching apex of urosternite III; metatibia (1.75 mm) slightly shorter than metafemora, cylindrical and moderately sinuate, slightly thickening to apex. Tarsi moderately long; pro- and mesotarsi subequal in length (0.60-0.65 mm); metatarsus longer (0.75 mm); metatarsomere I (0.30 mm).

Description of female (Fig. 2B): colour as male except sides of humeri and adjacent epipleura indistinctly

brownish and antennae entirely black. Head with eyes (1.00 mm) slightly narrower than prothorax (1.05 mm); rostrum (0.25 mm) about half length of inferior lobes of eyes. Labrum less transverse. Width of one inferior lobe 1.6 times interocular space; the latter slightly depressed toward midline and almost planar with eyes, with twelve large punctures to each side. Superior lobes of eyes separated by (0.35 mm) about four times their own width. Antennae shorter (just reaching base of urosternite II) and thicker; scape more strongly pyriform; VIII-X slightly serrate, club less compact. Prothorax 1.09 longer than wide; sides slightly more rounded than in male. Elytra 3.96-4.20 longer than width of humeri, reaching apical third of urosternite IV. Abdomen cylindrical, parallel-sided, slightly narrowing from base to apex; sides of each urosternite parallel; urosternite V undifferentiated, slightly more conical than in male, apical margin rounded. Legs more robust than male. Apex of metafemora reaching base of urosternite IV.

Measurements (mm) (1 male/2 females): total length, 6.40/6.60-7.10; length of pronotum, 1.05/1.05-1.20; width of pronotum, 0.90/0.95-1.10; length of elytra, 4.05/4.20-4.55; width at humeri, 1.05/1.00-1.15.

Type material: Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 17°29'96"S/63°39'13"W, 5 km SSE Buena Vista, 22.IV.2005, R. Clarke/S. Zamalloa col., on/flying to flowers of "Bejuco hoja lanuda" (MNKN).

Paratypes with same data as holotype: 1 female, 10.V.2005 (RCSZ); 1 female, 27.X.2005 (RCSZ).

Etymology: this species is dedicated to Italo Cabruja, Director during the establishment of Amboró National Park, Department of Santa Cruz, Bolivia.

Paraclipta clementecruzi sp. nov.

Figs. 3A, 3B

Holotype male: 7.0 mm. Deposited at MNKM.

Diagnosis: this species may be separated from *P. croceicornis* and *P. cabrujai* by its yellow and black pronotum and antennal segments with yellow annulations (in the other species the pronotum is entirely black and the antennae are not annulated with yellow). *P. clementecruzi* may be separated from *P. moscosoi* by its metafemoral clava with one third, or more, of base yellow and its elytra not, or only indistinctly

pubescent (in the latter the metafemoral clave is almost entirely black and the elytra are distinctly pubescent). *P. clementecruzi* may be separated from *P. melgareae* and *P. tomhacketti* by its entirely black abdomen (in the other species urosternite I is yellowish).

Description of holotype: general colour black and yellow. The following black: head, irregularly shaped fascia at centre of prosternum (just in front of process); central fascia on basal two-thirds of pronotum, most of elytra, meso- and metathorax, and all of abdomen. The following yellowish: most of prosternum, sides and apex of pronotum and elytral humeri. Legs: yellow; mesofemoral clave narrowly dusky for apical quarter; metafemoral clave blackish for apical third; mesotibia blackish for apical two-thirds; metatibia blackish for apical third. Antennae: scape yellow, dusky towards apex; pedicel and antennomere III black; antennomeres IV-XI dusky, IV-X narrowly yellow at base.

Surface ornamentation: pronotal punctures interrupted by band of short transverse striae along midline.

Structure: rostrum (0.20 mm) about one third length of inferior lobes. Labrum not strongly transverse, apical margin not emarginate. Clypeus impunctate. Frons densely punctate, the punctures deep, round and irregular in size; slightly depressed without secondary depression between apices of inferior lobes of eyes. Width of one inferior lobe twelve times interocular space, the latter slightly raised above eyes. Superior lobes of eyes separated by (0.30 mm) four times their own width. Apices of antennal tubercles separated by twice width of scape. Antennae reach apical third of urosternite II; scape (0.45 mm); antennomere III (0.60 mm); IV (0.40 mm); V (0.45 mm); VI (0.40 mm); VII (0.40 mm) elongate, narrow at base; VIII (0.30 mm) less elongate, narrow at base, apex widened, and with IX-XI equally and entirely widened, forming moderately compact club; IX and X (both 0.25 mm) quadrate, XI (0.30 mm) quadrate. Prothorax 1.24 longer than wide, widest just behind middle, sides slightly and regularly rounded; apical and basal margins of pronotum equal (0.75 mm), the former with narrow, smooth, raised border. Prosternal process flat, base narrow, approximately 0.07 mm wide (coxal cavity 0.55 mm wide), apex large, with raised sides, and without central fovea. Base of mesosternal process narrow (about 0.10 mm). Scutellum rectangular. Elytra just reaching apex of urosternite IV; 4.05 longer than width of humeri, the latter not projecting, outer angle hardly rounded; apical half of

elytra slightly and regularly widening almost to apex; elytra may slightly gape; apices slightly separated, almost transversely truncate and feebly emarginate; sutural angle marked by small spicule, outer angle by larger one; humero-apical costa almost entire. Abdomen narrow and convex, widest at apex of urosternite II, slightly tapering to apex, urosternites I+II subequal in length, rest sequentially shorter; V trapezoidal, hardly tumid laterally, V-shaped depression shallow, apical margin emarginate. Abdominal process a broad-based triangle, long (0.30 mm), apex moderately acuminate. Length of hind leg 4.10 mm; apex of metafemora just reaching base of urosternite IV; metatibia (1.75 mm) equal in length to metafemora, cylindrical and bisinuate, slightly thicker only at apex. Tarsi moderately long; pro- and mesotarsi subequal in length (0.55-0.60 mm); metatarsi longer (0.65 mm); metatarsomere I (0.25 mm).

Variation: pedicel and antennomere III may be yellow at base. Prothorax (including pronotum) may be entirely black; black fascia on pronotum variable in shape and size; yellow humeral fascia always present but variable, from almost absent to more extensive (sometimes extending to middle third of elytra and nearly to suture). Colour distribution on pronotum and elytra independently variable. Mesofemora may be dusky or brownish for apical third.

Description of female (Fig. 3B): colour as male, but pronotum never entirely black, black fascia usually less extensive; urosternites I-IV yellow, V black. Head with eyes (0.85 mm) narrower than prothorax; rostrum (0.25 mm) half as long as length of inferior lobes of eyes; frons with deep, elongate depression between apices of inferior lobes of eyes. Width of one inferior lobe 1.5 times interocular space; the latter without raised sides, slightly depressed toward midline and almost planar with eyes, anterior area somewhat rugose, posteriorly smooth with about six medium sized punctures to each side. Superior lobes of eyes separated by (0.35 mm) about three times their own width.

Antennae shorter than male, reaching base of urosternite II, and more robust, scape more pyriform, antennomeres widened, especially VII which forms part of club. Prothorax 1.10 longer than wide. Elytra 3.74-3.81 longer than width of humeri, just reaching base of urosternite V. Abdomen widest at apex of urosternite II; urosternite V undifferentiated, conical, apical margin rounded. Apex of metafemora reaching apex of urosternite III.

Measurements (mm) (43 males/20 females): total length, 5.50-7.10/5.60-6.90; length of pronotum, 1.00-1.15/1.00-1.20; width of pronotum, 0.80-0.90/0.90-1.05; length of elytra, 3.60-4.30/3.80-4.30; width at humeri, 0.95-1.10/1.00-1.15.

Type material: Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 17°29'96"S/63°39'13"W, 5 km SSE Buena Vista, 28.X.2006, R. Clarke/S. Zammalloa col., on/flying to flowers of "Tutumillo espinoso" (MNKN).

Paratypes with same data as holotype: 3 males, 04.XI.2005 (RCSZ); 2 females, 06.XI.2005 (RCSZ); 6 males and 2 females, 28.X.2006 (MZUSP); 1 male and 1 female, 20.XI.2007 (RCSZ); 1 female, 09.XI.2008 (RCSZ).

Paratypes with same data as holotype, on/flying to flowers of "Sama blanca": 2 males, 06-11.XII.2004 (RCSZ); 1 male, 07.XII.2005 (RCSZ); 2 males, 09.XII.2005 (MCNZ); 1 female, 22.XI.2006 (RCSZ).

Paratypes with same data as holotype, on/flying to flowers of "Bejuco hoja lanuda": 1 male, 20.V.2004 (ACMT); 5 males and 2 females, 22.IV.2005 (MNRJ); 2 males, 23.IV.2005 (DZUP); 1 female, 29.IV.2005 (DZUP); 1 male specimen 1a in coitus with 1 female specimen 1b, 29.IV.2005 (RCSZ); 1 female, 30.IV.2005 (RCSZ); 2 males, 04-05.V.2005 (RCSZ); 1 male and 1 female, 10.V.2005 (MNKM); 1 female, 11.V.2005 (MCNZ).

Paratype with same data as holotype, on/flying to flowers of "Barbasquillo": 1 male, 04.VIII.2005 (RCSZ).

Paratypes with same data as holotype, on/flying to flowers of "Sama blanca chica": 1 male, 20.X.2005 (RCSZ); 1 male and 1 female, 21.X.2005 (FSCA); 2 males, 25.X.2005 (RCSZ); 3 males, 02.XI.2005 (RCSZ); 2 males and 1 female, 03.XI.2005 (MNHN); 1 male specimen 2a in coitus with 1 female specimen 2b, 04.XI.2005 (RCSZ).

Paratypes with same data as holotype, on/flying to flowers of "Sapaimosi chica": 2 males, 1 female, 06.XI.2008 (RCSZ); 3 males, 09.XI.2008 (RCSZ). Paratype with same data as holotype, on/flying to flowers of "Sapaimosi": 1 male, 21.XII.2008 (RCSZ).

Paratypes with same data as holotype, without host flower record: 1 male, 23-25.X.2000, R. Morris col. (FSCA);

1 female, 27-29.X.2000, R. Clarke col. (FSCA); 1 female, 14-17.X.2003, Morris, Nearn & Wappes col. (FSCA); 2 females, 13-24.XI.2003, Wappes, Morris & Nearn col. (ACMT); 1 male, 05-08.V.2004, Wappes & Cline col. (ACMT).

Discussion: this species was included in the list of Bolivian ones by Wappes *et al.* (2006) under the name *O. (E.) kawensis*, a species from French Guiana, but are sufficiently similar, and collected from the same host flower and type-locality, to be referred to *P. clementecruzi*. The two species are very similar, but geographical distribution (with its marked environmental changes), together with the differences given below, indicate the validity of their separate status.

P. clementecruzi differs from the description of the French Guiana species as follows: scape always partly yellow, usually dusky towards apex, often entirely yellow; antennomeres thickened from VII (not V, as in *P. kawensis*); mesosternal process more rounded at apex (not quadrate, as in *P. kawensis*); apex of urosternite V regularly excavate (not bisinuate, as in *P. kawensis*); pubescence of underside white (not golden, as in *P. kawensis*), and profemora yellow, without dusky apex (with dusky apex in *P. kawensis*).

Etymology: this species is named in honour of the late Clemente Cruz, dedicated Park Guard, who died whilst pursuing hunters in Amboró National Park, Department of Santa Cruz, Bolivia.

Paraeclipta melgarae sp. nov.

Figs. 4A, 4B

Holotype male: 5.70 mm. Deposited at MNKM.

Diagnosis: this species may be separated from *P. tomhacketti* by the sparser elytral punctures of the basal third; and in the female the width of inferior lobe of eye is 1.75 the width of the interocular space, and the latter is not rugosely punctured (in *P. tomhacketti* the elytral punctures are uniformly dispersed; and in the female the width of inferior lobe of eye is 1.0-1.5 width of the interocular space, and the latter is rather rugosely punctured); colour differences between *P. melgarae* and *P. tomhacketti* are outlined with the description of the latter. *Paraeclipta melgarae* may be separated from the rest of the Bolivian species by the yellowish first abdominal segment.

Description of holotype: general colour black and yellow. The following body parts black: head, most of

prothorax (and all of pronotum), scutellum, meso- and metathorax and urosternites II-V. The following body parts yellow: apex of prosternal process and urosternite I. Antennae black except the following yellow: scape, upper side of pedicel, basal third of antennomeres III-VII, and basal half of VIII-XI. Elytra blackish, except basal fifth with oblique fascia centred on humeri (including adjacent epipleura) orange-yellow. Legs orange-yellow, except pro- and mesotibiae blackish on upper side, and metafemoral clava and metatibia black for apical 3/5; tarsi (including onychium) dusky, except the following: protarsomeres I+II yellow, III brown; meso- and metatarsomeres I+II yellow with brown apices, and III brown.

Structure: rostrum (0.20 mm) about one third length of inferior lobes of eyes. Labrum not strongly transverse, apical margin emarginate at middle. Clypeus impunctate. Frons pubescent and densely punctate, the punctures deep, round and irregular in size; slightly depressed, with small secondary depression between apices of inferior lobes of eyes, curtailing apex of frontal suture (which remains well short of clypeus). Width of one inferior lobe ten times interocular space, the latter slightly below level of eyes, bisected by narrow frontal suture, and bordered with row of short hairs. Superior lobes of eyes separated by (0.25 mm) about 2.5 times their own width. Apices of antennal tubercles separated by twice width of scape. Antennae reach middle of urosternite II; scape (0.35 mm); antennomere III (0.50 mm); IV (0.35 mm); V (0.40 mm); VI (0.35 mm); VII (0.35 mm) elongate, narrow at base; VIII (0.30 mm) less elongate, equally narrow at base, apex moderately widened, and with IX-XI (equally and entirely widened) forming loose club: IX (0.30 mm) and X (0.25 mm) quadrate, XI (0.35 mm) elongate. Prothorax 1.12 longer than wide, widest just behind middle, sides slightly and regularly rounded; apical and basal margins of pronotum subequal (0.70-0.75 mm), the former with narrow, smooth, raised border. Prosternal process completely flat; base long and narrow, approximately 0.05 mm wide (coxal cavity 0.30 mm wide); apex large, without raised sides, and with small central fovea. Scutellum rounded. Elytra just reaching apical third of urosternite IV; 3.7 longer than width of humeri, the latter not prominent, nor projecting, but outer angle hardly rounded; apical half of elytra slightly and regularly widening almost to apex; elytra not gaping; apices of elytra slightly separated, obliquely truncate; sutural angle obtuse with small tooth, outer angles acute and prominent; humero-apical costa distinct, but restricted to apical third.

Distribution of elytral punctures almost uniform, only moderately sparser (and smaller) towards base. Size and shape (round) of elytral punctures not uniform, adjacent to humero-apical costa forming short chains, these punctures larger, with smooth, slightly raised interstices; between costa and suture forming oblique to slightly arced rows of two or four punctures, these smaller towards suture, and many of them contiguous. Abdomen narrow and convex, widest at base of urosternite I, slightly tapering to apex and sequentially shorter; V trapezoidal, hardly tumid laterally, U-shaped depression shallow, apical margin emarginate. Abdominal process not long (0.20 mm), rather broad-based and triangular, with acuminate apex. Length of hind leg (3.90 mm long); apical two-thirds of protibia gradually widening to apex (apex almost twice as wide as base); apex of metafemora reaching apex of urosternite III; metatibia (1.50 mm) shorter than metafemora (1.75 mm), cylindrical and almost straight, gradually thickening to apex. Tarsi moderately long; pro- and mesotarsi subequal in length (0.55-0.60 mm); metatarsi longer (0.65 mm); metatarsomere I (0.25 mm).

Variation (see also discussion below): prosternum may be yellowish in less than 10% of the paratypes. In one example this colour spreading on to sides of pronotum. Shape of prothorax variable, sides almost parallel-sided in smaller specimens, rounder in larger ones. Elytra may be almost entirely brownish; yellow humeral fascia always present but variable, from almost absent to more extensive (may extend as far as middle third of elytra, and nearly to suture). Abdominal process may be triangular, with slender pointed apex, or apex replaced with wide, blunt projection in some males.

Description of female (Fig. 4B): colour as male, but pronotum varies from almost entirely yellow, or mostly yellow with variable black fascia at base (often *rubber stamp*-shaped, as in Fig. 4B); urosternites I-IV yellow, V black or dusky. Punctures on area of mentum-submentum contiguous, larger and less confused than male. Head with eyes (0.80 mm) narrower than prothorax. Rostrum (0.25 mm) half as long as length of inferior lobes of eyes. In some females interocular space extending on to frons, without depression between apices of inferior lobes of eyes. Inferior lobes of eyes much smaller and not as convex, moderately wide apart, width of one inferior lobe 1.0-1.3 times interocular space; the latter without raised border, slightly depressed toward midline and almost planar with eyes, anterior area densely micro-carinate, posteriorly semi-carinate,



6 mm



FIGURES 3-4: 3, *Paraecliptea clementecruzi* sp. nov.: A male holotype, B female paratype. 4, *Paraecliptea melgarae* sp. nov.: A male holotype, B female paratype.

smooth at midline, with about twelve medium sized, elongate punctures to each side. Superior lobes of eyes separated by (0.30 mm) about three times their own width. Antennae slightly shorter than male, reaching base of urosternite II, otherwise little different from male. Prothorax 1.25 longer than wide; sides usually rounder than in males; base of prosternal process wider (0.10 mm), and apex more triangular, than in male. Elytra 3.41-3.63 longer than width of humeri, just reaching base of urosternite V. Abdomen widest at apex of urosternite II; urosternite V undifferentiated, subconical, apical margin rounded. Apex of abdominal process blunt. Apex of metafemora reaching apex of urosternite III; metatibia slightly curved latero-mesally.

Measurements (mm) (35 males/11 females): total length, 5.10-6.10/4.90-6.10; length of pronotum, 0.90-1.00/0.90-1.10; width of pronotum, 0.70-0.80/0.80-0.95; length of elytra, 3.00-3.50/3.10-3.75; width at humeri, 0.85-0.95/0.90-1.05.

Type material: Holotype male, BOLIVIA, Santa Cruz, Hotel Flora & Fauna, 17°29'96"S/63°39'13"W, 5 km SSE Buena Vista, 04.X.2005, R. Clarke/S. Zamalloa col., on/flying to flowers of "Cusé" (MNKN).

Paratypes with same data as holotype: 4 males, 04.X.2005 (RCSZ).

Paratypes with same data as holotype, different host plant: 1 male, 04.XI.2005, on/flying to flowers of "Tutumillo espinoso" RCSZ); 1 female, 22.IX.2007, on/flying to flowers of "Laguno" (RCSZ); 1 male, 27.X.2007, on/flying to flowers of "Barbasquillo" vine B (RCSZ).

Paratypes with same data as holotype, on/flying to flowers of "Sama blanca chica": 1 male specimen 3a in coitus with 1 female specimen 3b, 09.X.2006 (RCSZ); 3 males, 05.IX.2007 (RCSZ); 1 male, 05.IX.2007 (ACMT); 1 male, 05.IX.2007 (FSCA); 2 males, 06.IX.2007 (DZUP), 2 males, 06.IX.2007 (MCNZ); 5 males, 09.IX.2007 (MNRJ); 7 males, 11.IX.2007 (MZUSP); 1 female, 13.IX.2007 (DZUP); 3 males, 14.IX.2007 (MNHN); 1 male and 1 female, 18.IX.2007 (MNKM); 1 female, 19.IX.2007 (MNHN); 1 male and 1 female, 20.IX.2007 (FSCA); 1 male specimen 1a in coitus with 1 female specimen 1b, 20.IX.2007 (RCSZ); 2 females, 22.IX.2007 (MNRJ); 2 females, 23.IX.2007 (MZUSP).

Discussion: In the field male specimens of *P. melgarae* and *P. tombacketti* can be separated from male

P. clementecruzi (with its entirely black abdomen) by the pale colour of urosternite I; and their separation from each other is discussed at length under the description of *P. tombacketti*.

Etymology: This species is dedicated to Miriam Melgar, for her educational work during the establishment of Amboró National Park, Department of Santa Cruz, Bolivia.

***Paraeclipta tombacketti* sp. nov.**

Figs. 5A, 5B

Holotype male: 5.70 mm. Deposited at MNKM.

Diagnosis: Males of *Paraeclipta tombacketti* are best separated from those of *P. melgarae* by their more testaceous colour (in *P. melgarae* orange-yellow), and almost uniformly dense punctures on elytra (in *P. melgarae* elytral punctures are sparser on basal third). *Paraeclipta tombacketti* may be separated from the rest of the Bolivian species by the yellowish first abdominal segment; and the female from most of the others by its cylindrical abdomen, only shared with *P. tombacketti* and *P. moscosoi*.

Description of holotype: general colour as *P. melgarae* with the following differences: the yellow colour is nearer testaceous (lacking orange tint); prosternum (including all of process) yellow with black triangular fascia at centre; front and hind angles of pronotum yellow; antenna with some differences of colour distribution, the following yellow: all of scape and pedicel, basal half of antennomeres III-IV and VIII-X, and basal third of V-VII and XI; elytra brown; basal quarter with broad yellow fascia centred on humeri (inc base and epipleura) yellow; the rest of each epipleuron, suture, and area around and behind scutellum blackish; legs noticeably more testaceous, femora and tibiae of front and middle legs entirely yellow; metafemoral clave and metatibia black for apical half.

Structure: rostrum (0.20 mm) slightly less than half length of inferior lobes of eyes. Clypeus punctate. Frons densely punctate, the punctures deep, oval and irregular in size; interocular space extending and slightly widening to middle of frons, leaving middle of frons intact, but sides of frons somewhat divided from extension of interocular space by slight declivity; frontal suture almost reaching clypeus (prolonged by extension of interocular space). Inferior lobes of

eyes hardly contiguous, width of one lobe about six times interocular space, the latter slightly raised above eyes. Superior lobes of eyes separated by (0.25 mm) about three times their own width. Apices of antennal tubercles separated by 2.5 width of scape. Antennae reach middle of urosternite II; scape (0.35 mm); antennomere III (0.45 mm); IV (0.35 mm); V (0.40 mm); VI (0.35 mm); VII (0.30 mm) elongate, narrower at base; VIII (0.30 mm) less elongate, wider at base, apex moderately widened; IX-XI (equally and entirely widened) forming loose club; IX (0.30 mm) and X (0.25 mm) quadrate, XI (0.35 mm) elongate. Prothorax 1.23 longer than wide, widest just behind middle, from here to front margin sides slightly emarginate, and oblique to basal constriction; apical and basal margins of pronotum subequal (0.65-0.70 mm), the former with narrow, smooth, raised border. Prosternal process almost completely flat (apex slightly upturned and declivous across middle), base long and narrow, *ca.* 0.05 mm wide (coxal cavity 0.30 mm wide); apex large, with slightly raised sides, and flat centre. Scutellum rounded. Elytra just reaching base of urosternite V; 3.6 longer than width of humeri, the latter not prominent nor projecting, outer angle hardly rounded; apical half of elytra slightly and regularly widening almost to apex (where apices abruptly narrower); apices relatively widely separated (due to short, but abrupt gape), slightly obliquely truncate; sutural and lateral angle obtuse with small tooth; humero-apical costa almost entire. Size and shape (round) of elytral punctures almost uniform; more disperse and irregularly distributed on yellow fascia; denser and more regularly distributed posteriorly, adjacent to humero-apical costa with wider, slightly raised interstices; between costa and suture forming transverse to slightly arced rows of two or three punctures, and few of them contiguous. Abdomen parallel-sided, narrow and convex, widest at middle of urosternite I-II; II-IV subequal (0.65-0.60 mm) with rounded sides; V trapezoidal shorter (0.45 mm), hardly tumid laterally, U-shaped depression almost obsolete, apical margin emarginate. Abdominal process not long (0.20 mm), rather narrow and triangular, with acuminate apex. Legs: claws less abrupt and moderately tumid mesally. Length of hind leg 3.80 mm; apical two-thirds of protibia parallel-sided (apex 1.4 wider than base); apex of metafemora reaching apex of urosternite III; metatibia (1.50 mm) shorter than metafemora (1.60 mm), cylindrical and almost straight, slightly thickening to apex. Tarsi moderately long, pro- and mesotarsi subequal in length (0.50-0.60 mm), metatarsi longer (0.70 mm); metatarsomere I (0.25 mm).

Variation: the single, smaller, male paratype shows no significant differences from the holotype: the eyes are slightly more contiguous, and some of the surface sculpture is reduced.

Description of female (Fig. 5B): colour different from male: antennae and prothorax cinnamon and black; middle and front legs orange-yellow, hind legs as male; apical half to third of antennomere III black or dusky; prothorax entirely translucent cinnamon-yellow, except basal quarter of pronotum with opaque, black, trapezoidal fascia at middle (in one female this fascia small and conical); meso- and metasternites black, except mesepimeron yellow; elytra completely yellow across extreme base, otherwise similar to male; abdomen entirely transparent yellow. Rostrum as male. Clypeus almost impunctate. Sides of frons densely punctate, the punctures deep, oval and regular in size, and divided into rows by elongate, fine sulci; interocular space extending and widening to base of clypeus as uninterrupted level surface (and almost planar with clypeus), leaving genae demarcated from extension of interocular space by distinct declivity; frontal suture hardly traceable, represented by very fine sulcus from antennal tubercles to middle of inferior lobes of eyes. Inferior lobes of eyes not widely separated, width of one lobe 1.6 times interocular space, the latter slightly raised above eyes, slightly depressed at midline, with irregular row of 6-7 punctures to each side (these divided into groups by micro-carinae), and at middle a group of five towards apex. Superior lobes of eyes separated by (0.25 mm) about 2.5 times their own width. Prothorax 1.22 longer than wide, widest at middle, apical constriction obsolete, sides regularly rounded from apex to basal constriction. Prosternal process entirely flat, base wider than in male (*ca.* 0.10 mm), about one third width of coxal cavity. Elytra flat, more so apically than male; 3.45 longer than width of humeri; humeri slightly projecting; humero-apical costa less distinct; apical dehiscence shorter and not as wide as in male; elytral punctures less disperse on basal third. Abdomen cylindrical, almost parallel-sided, broad, deep, and convex, widest at apex of urosternite II, length of I+II equal (1.35 mm), III to V (0.55 mm) incrementally shorter; V trapezoidal, slightly declivous across middle, apical margin quadrate, otherwise undifferentiated. Abdominal process rather wide and triangular, and blunt at apex. Legs very similar to male, including narrower protibiae, but metatibia strongly curved latero-mesally (almost straight in male).

Measurements (mm) (2 males/5 females): total length, 5.00-5.20/6.00-7.50; length of pronotum, 0.85-0.95/1.10-1.20; width of pronotum, 0.70-0.75/0.90-1.05; length of elytra, 2.90-3.20/3.80-4.45; width at humeri, 0.80-0.90/1.10-1.20.

Type material: Holotype male, BOLIVIA, Santa Cruz, Quebrada Angostura, 19°48'S/63°39'W, 1,070 m, 26 km W Ipati, 6 km W Estancia Caraparacito, 03.I.2008, R. Clarke/S. Zamalloa col., on/flying to flowers of *Croton* sp. A (MNKN).

Paratypes with same data as holotype: 1 male and 1 female (RCSZ).

Paratypes with different data from holotype: Chuquisaca, Incahuasi, 1,600 m, E. Muyupampa, 3 females, XII.1984, L.E. Peña col. (MZUSP); Monteagudo, 1,300 m, 1 female, XII.1984, L.E. Peña col. (RCSZ).

Discussion: *Paraclipta tomhacketti* is close to *P. melgarae*, but their distribution (submontane Chaco Forest, as opposed to lowland Amazon Forest), the many small differences in colour and structure, and their presence in different kind of flower and plant (open bushes with large flower spikes, as opposed to dense, leafy trees with relatively small flower spikes) will separate the two species in the field.

Without field data males of *P. melgarae* and *P. tomhacketti* can only be separated under magnification (and only reliably with larger specimens): *P. melgarae* lacks the extension of the interocular space on to frons (but present in half of the females), and interocular space is about as wide as width of inferior lobe (in *P. tomhacketti* about two-thirds width of lobe); prothorax more rounded at sides (but more like *P. tomhacketti* in small specimens), and not much narrower than base of elytra (distinctly narrower in *P. tomhacketti*); elytral punctures almost uniformly dense (seems to be a constant character, and maybe the best), and elytral apices less gaping; protibial differences between the two species (as recorded under their descriptions are not reliable with small specimens); metafemoral clave appears to be more abrupt in *P. melgarae*, and generally 3/5 of the apex black, but these differences are too close to *P. tomhacketti* (clave more cylindrical, half of femoral apex black) to exclude the equalizing effects of variation.

Fortunately the females of the two species present more cogent differences. Colour differences: none of the eleven paratypes of *P. melgarae* have a trapezoidal black fascia at the base of pronotum (as

in four of the five females of *P. tomhacketti*), eight of them have the *rubber stamp-shaped* fascia, in one this is reduced to an irregular triangle, and in two pronotum is unicoloured; in one female of *P. melgarae* the mesepimeron is yellowish, in the rest black (in *P. tomhacketti* it is yellow); in *P. melgarae* urosternite V is normally chestnut to black, but yellowish in two specimens (in *P. tomhacketti* it is yellow). Surface of interocular space between inferior lobes is somewhat rugose with dense punctures in all females of *P. melgarae* (in *P. tomhacketti* punctures on interocular space are separated by smooth interstices). Female structural differences are: abdomen (see diagnosis); width of inferior lobe of eye divided by interocular space: the mean for the five females of *P. tomhacketti* is 1.53 (range 1.20-1.75), the mean for all females of *P. melgarae* is 1.13 (range 1.0-1.5); female protibia is narrower and more parallel-sided in *P. tomhacketti*, wider and less parallel in *P. melgarae*; the metatibia in *P. tomhacketti* is rather strongly curved, in *P. melgarae* straight to slightly curved; and comparison of one female of each species of equal size (6.00 mm) legs and antennae are more robust, and antennal club more incrassate in *P. melgarae*, than they are in *P. tomhacketti*.

Etymology: this species is dedicated to Thomas Hackett; with a generous donation, the first to support the establishment of Amboró National Park, Department of Santa Cruz, Bolivia.

Paraclipta moscosoi sp. nov.

Figs. 6A, 6B

Holotype male: 6.6 mm. Deposited at MNKM.

Diagnosis: *Paraclipta moscosoi*, with its rather wide body (in both sexes), and distinctly pubescent and heavily punctured elytra, is unlikely to be confused with any other Bolivian species.

Description of holotype: general colour black and yellow to orange. The following black: head, central fascia on pronotum (on basal half square with arced fascia to front margin on either side of midline); all of elytra, meso- and metathorax, and abdomen. The following orange: prosternum and apical half and sides of pronotum, apex of mesosternal process. Legs yellow, metafemoral clave and metatibiae entirely blackish, apical two-thirds of mesotibia dusky. Antennae black, except basal half of antennomeres VII-X yellow.



5 mm



FIGURES 5-6: 5, *Paraeclipta tombacketti* sp. nov.: A male holotype, B female paratype. 6, *Paraeclipta moscosoi* sp. nov.: A male holotype, B female paratype.

Surface ornamentation: pubescence. Long, fine, erect white hairs on prosternum, sides and base of pronotum, basal half of elytra, metepisterna and abdomen, becoming dense and recumbent on metasternum. Pronotal punctures less dense than in other species. Scutellum rugosely punctured. Abdomen moderately densely punctured throughout, the punctures moderately large and bevelled anteriorly.

Structure: rostrum (0.20 mm) about one third length of inferior lobes. Labrum strongly transverse (four times wider than long), with group of 5-6 small punctures to each side, apical margin emarginate. Clypeus impunctate. Frons pubescent and closely punctate, the punctures deep, round and irregular in size; depressed without secondary depression between apices of inferior lobes of eyes. Width of one inferior lobe about nine times interocular space; the latter below level of eyes, midline moderately deep, with double row of short hairs. Superior lobes of eyes separated by (0.30 mm) about four times their own width. Apices of antennal tubercles separated by 2.5 width of scape. Antennae nearly reach apex of urosternite II; scape (0.40 mm); antennomere III (0.55 mm); IV (0.40 mm); V (0.45 mm); VI (0.40 mm); VII (0.45 mm) and VIII (0.35 mm) elongate, narrow at base and widened at apex; apex of VIII, with IX-XI (equally and entirely widened), forming loose club; IX (0.35 mm) slightly elongate, X (0.30 mm) quadrate, XI (0.40 mm) elongate, with small apical cone. Prothorax 1.15 longer than wide, widest well behind middle, sides from apex to widest point slightly excavate; apical and basal margins of pronotum subequal (0.80-0.90 mm), the former with narrow, smooth, raised border. Prosternal process slightly arched, base not very narrow (0.10 mm), about one-third width of coxal cavity; apex large, without raised sides, and without central fovea. Scutellum rounded. Elytra just reaching apex of urosternite IV; 3.48 longer than width of humeri; the latter not projecting, outer angle hardly rounded; apical half of elytra relatively strongly and regularly widening almost to apex; elytra with long gape, steadily increasing from scutellum to apex, leaving elytral apices well separated; the latter oblique from sutural angle to side; sutural angle obtuse with small tooth-like extension; outer angles slightly acute and prominent; humero-apical costa evanescent. Abdomen cylindrical, narrow, convex and parallel-sided, slightly tapering from urosternite IV to apex, length of I-IV subequal; V trapezoidal, not tumid but all of ventral surface flat, apical margin straight. Abdominal process a broad-based triangle with pointed apex, scarcely angled with abdomen, moderately short

(0.20 mm). Length of hind leg 4.6 mm long; apex of metafemora reaching base of urosternite IV; metatibia (1.75 mm) shorter than metafemora (2.00 mm), slightly flattened and almost straight, slightly thickening to apex. Tarsi moderately long, pro- and mesotarsi subequal in length (0.60-0.65 mm), metatarsi long (0.85 mm); metatarsomere I (0.30 mm).

Variation: arced fascia on pronotum may be reduced to small fascia adjacent to apical border.

Description of female (Fig. 6B): colour as male, except: black fascia on pronotum reduced to small, square fascia at base, and two, ill-defined, transverse fascia anteriorly; epipleura adjacent to humeri yellowish, abdomen brown, sides and apex of urosternite black. Surface ornamentation as male except abdomen less uniformly and densely punctured. Head with eyes (0.90 mm) slightly narrower than prothorax; rostrum longer than male in (0.25 mm), half as long as length of inferior lobes of eyes; frons almost planar with clypeus, with callus between apices of inferior lobes of eyes (instead of depression as in other species); inner border of eyes projecting on to frons nearly as far as mentum. Inferior lobes of eyes much smaller than in male, width of one inferior lobe 1.2 times interocular space, the latter with raised borders, almost planar with eyes, smooth and depressed to either side of midline (the latter represented by distinct frontal suture); anterior part of interocular space with 3-5 punctures to either side, posteriorly with group of 9-10 dense punctures to each side, all these punctures moderately large, round and deep. Superior lobes of eyes separated by (0.35 mm) about three times their own width. Antennae as male, but distinctly shorter (just reaching apex of urosternite I). Prothorax 1.3 longer than wide; prosternal process completely flat, apex more trapezoidal. Elytra 3.43 longer than width of humeri, just reaching apex of urosternite IV. Abdomen widest at apex of urosternite II; urosternite V undifferentiated, subconical, apical margin almost straight; abdominal process short (0.20 mm), apex broadly rounded. Last visible tergite slightly convex; apex emarginate. Apex of metafemora reaching apex of urosternite III.

Measurements (mm) (6 males/1 female): total length, 6.00-6.50/5.60; length of pronotum, 1.10-1.20/1.15; width of pronotum, 0.90-1.00/1.05; length of elytra, 3.85-4.00/3.95; width at humeri, 1.10-1.15/1.15.

Type material: Holotype male, BOLIVIA, Tarija, 30 km N of Villa Montes, 4 km E of Camatindi 21°01'S/63°18'W, ca. 600 m, Semi-dry Chaco Forest,

11.XII.2007, R. Clarke & S. Zamalloa col., on *Croton* sp. A flower (MNKM).

Foothill Chaco Forest, 1 male, 13.XII.2007 (RCSZ).

Paratypes with same data as holotype: 4 males, 11.XII.2007 (2 males, RCSZ; 1 male, MNRJ; 1 male, MZUSP), 1 female (RCSZ).

Etymology: this species is dedicated to Arturo Moscoso, for his unfailing support as Chief of Parks and Wildlife Services (Santa Cruz) during the establishment of Amboró National Park, Department of Santa Cruz, Bolivia.

Paratype with same data as holotype but different locality: Santa Cruz, 20 km S of Abapo, 680 m,

Key to the Bolivian species of *Paraeclipta* gen. nov.

The following key to the Bolivian species of *Paraeclipta* is largely based on differences of colour distribution, only creditable in this genus because intraspecific variation (colour distribution on the pronotum and elytra, and slight sexual dichromatism excepted) appears to be minimal.

1. Body entirely black. Antennae almost entirely yellow or black2
- Body not entirely black, or if so, antennal segments black and annulated yellow.....3
2. All legs entirely yellow. Antennae yellow with dusky club. Brazil (GO), Bolivia (Amazon Forest). (Figs. 1A, 1B).....*P. croceicornis* (Gounelle, 1911), comb. nov.
- Legs yellow but apices of meso- and metatibiae black. Antennae entirely black. Bolivia (Amazon Forest). (Figs. 2A, 2B).....*P. cabrujai* sp. nov.
3. Antennal segments I-V entirely black. Metafemoral clave almost entirely black. Elytra distinctly pubescent. Bolivia (Chaco Forest). (Figs. 6A, 6B)*P. moscosoi* sp. nov.
- Antennal segments I-V not entirely black. Metafemoral clave with one third, or more, of base yellow. Elytra not, or only indistinctly pubescent.....4
4. Metafemoral clave with one third, or less, of apex black. Male abdomen entirely black. Scape dusky towards apex. Antennal tubercles closer than maximum width of scape. Bolivia (Amazon Forest). (Figs. 3A, 3B)*P. clementecruzi* sp. nov.
- Metafemoral clave with half to two-thirds of apex black. Male urosternite I entirely pale yellow, rest of abdomen black. Scape entirely yellow. Antennal tubercles separated by more than maximum width of scape.....5
5. Elytral punctures regularly dispersed. In female, width of inferior lobe of eye 1.0-1.5 width of interocular space, the latter rather rugosely punctured. Bolivia (Amazon Forest). (Figs. 4A, 4B) ...*P. melgarae* sp. nov.
- Elytral punctures sparser on basal third. In female, width of inferior lobe of eye 1.75 width of interocular space, the latter not rugosely punctured. Bolivia (Chaco Forest). (Figs. 5A, 5B) ...*P. tomhacketti* sp. nov.

RESUMO

Rhinotrugini bolivianos IV: Paraeclipta gen. nov. (Coleoptera, Cerambycidae), espécies novas e combinações novas. Paraeclipta gen. nov. é descrita para lotar cinco espécies novas, e dez transferidos de Eclipta Bates, 1873: P. cabrujai sp. nov.; P. clementecruzi sp. nov.; P. melgarae sp. nov.; P. tomhacketti sp. nov.; P. moscosoi sp. nov.; P. bicoloripes (Zajciw, 1965), comb. nov.; P. croceicornis (Gounelle, 1911), comb. nov.; P. flavipes (Melzer, 1922), comb. nov.; P. jejuna (Gounelle, 1911), comb. nov.; P. kawensis (Peñaherrera-Leiva & Tavakilian, 2004), comb. nov.; P. longipennis (Fisher, 1947), comb. nov.; P. rectipennis (Zajciw, 1965), comb. nov.; P. soumourouensis

(Tavakilian & Peñaherrera-Leiva, 2003), comb. nov.; P. tenuis (Burmeister, 1865), comb. nov.; and P. unicoloripes (Zajciw, 1965), comb. nov. As espécies bolivianas são ilustradas. São fornecidos chave e lista de flores-hospedeiras das espécies bolivianas.

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

ACKNOWLEDGEMENTS

Dr. Ubirajara Martins for his steady encouragement and help. Dr. Gérard Tavakilian for a

photograph of *O. (E.) flavicollis* lectotype. Two plant experts: Dr. Michael Nee, Curator of the New York Botanical Gardens, for identifying the plants and Señor Ruperto Vargas, for their local names. My wife, Sonia Zamalloa for the many hours of help I have received from her in the field.

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Recebido em: 20.12.2010

Aceito em: 07.06.2011

Impresso em: 30.06.2011

APPENDIX

Summary: Flowering plants visited by species of *Paraeclipta*.

Local name	Scientific name	Family
Barbasquillo <i>P. clementecruzi</i> sp. nov.	<i>Serjania lethalis</i> St. Hilaire	SAPINDACEAE
Barbasquillo B <i>P. melgarae</i> sp. nov.	<i>Serjania</i> indet. sp.	SAPINDACEAE
Bejuco hoja lanuda <i>P. cabrujai</i> sp. nov. <i>P. clementecruzi</i> sp. nov.	<i>Gouania mollis</i> Reiss.	RHAMNACEAE
Tinajero <i>P. tomhacketti</i> sp. nov. <i>P. moscosoi</i> sp. nov.	<i>Croton</i> indet. sp. A	EUPHORBIACEAE
Cusé <i>P. melgarae</i> sp. nov.	<i>Casearia sylvestris</i> Swed.	SALICACEAE
Laguno <i>P. melgarae</i> sp. nov.	<i>Ilex</i> indet. sp.	AQUIFOLIACEAE
Sama blanca <i>P. clementecruzi</i> sp. nov.	<i>Cupania cinerea</i> Poeppig and Endl.	SAPINDACEAE
Sama blanca chica <i>P. cabrujai</i> sp. nov. <i>P. clementecruzi</i> sp. nov. <i>P. croceicornis</i> (Gounelle, 1911) <i>P. melgarae</i> sp. nov.	<i>Matayba guianensis</i> Aublet	SAPINDACEAE
Sapaimosi <i>P. clementecruzi</i> sp. nov.	<i>Trichilia elegans</i> Adr. Juss.	MELIACEAE
Sapaimosi chica <i>P. clementecruzi</i> sp. nov.	<i>Trichilia</i> indet. sp.	MELIACEAE
Tutumillo espinosa <i>P. clementecruzi</i> sp. nov. <i>P. melgarae</i> sp. nov.	<i>Casearia aculeata</i> Jacq.	SALICACEAE