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Bolivian Rhinotragini I: New species of *Ecliptoides* Tavakilian & Peńaherrera-Leiva, 2005 new status, and *Clepitoides* new genus (Coleoptera, Cerambycidae)

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ABSTRACT

Bolivian Rhinotragini I: New species of Ecliptoides Tavakilian & Peñaherrera-Leiva, 2005 new status, and Clepitoides new genus (Coleoptera, Cerambycidae). The subgenus Ommata (Ecliptoides) is redefined and raised to generic status, Ecliptoides Tavakilian & Peñaherrera-Leiva, 2005 stat. nov. with three new species: E. julietae, E. titoi and E. vargasi. A new genus, Clepitoides, is described with three new species: C. anae, C. gerardi and C. neei. The new species are illustrated, a key to the species and host-flower records provided.

KEYWORDS: Bolivia; Cerambycinae; Host-flowers; New genus; New species.

INTRODUCTION

White (1855) established the monotypic genus *Ommata* for *O. elegans* White, 1855, characterized by: long antennae surpassing abdomen at antennomere VII, with VIII-XI enlarged; elytra non-dehiscent, long and almost covering body (reaching apex of urosternite IV); legs unequal, front legs relatively short, hind legs very elongate (metafemora passing apex of abdomen at base of club), metatibia with compact brush.

Lacordaire (1869), using other character combinations included *Ommata* White in his group "*Ommatae*". Bates (1873) divided "*Ommatae*" into six groups (eventually accepted as subgenera): *Phoenissa* (later synonymized with *Oregostoma* Audinet-Serville, 1833), *Chrysaethe, Ommata, Rhopalessa, Eclipta,* and *Agaone* Pascoe, 1859. Four more subgenera were added, as follows: *Ecliptophanes* Melzer, 1934, *Chariergodes* Zajciw, 1963, *Oxyommata* Zajciw, 1970, and *Chrysommata* Peñaherrera-Leiva & Tavakilian, 2003.

Tavakilian & Peñaherrera-Leiva (2005: 37) established the subgenus *Ommata* (*Ecliptoides*) for three species: *O.* (*E.*) rouperti, type species, *O.* (*E.*) azadi (Tavakilian & Peñaherrera-Leiva, 2003) and *O.* (*E.*) hovorei (Tavakilian & Peñaherrera-Leiva, 2003) with the following combination of characters: antennae fall short of elytral apex; pronotal punctures contiguous; prosternal process narrow, not arched; mesosternal process narrow, preceded by abrupt declivity; apex of elytra truncate not passing middle of ventrite II, and apical part of suture dehiscent; metasternum convex; metatarsomere I longer than II + III. Colour distribution characteristic: orange, pronotum with longitudinal, central fascia dusky; sides of elytra broadly dark brown from humeri to apex. Males not known.

According to Monné & Hovore (2006) the addition of this last subgenus brought the total subgenera of *Ommata* to ten.

The subgenus *Ecliptoides* clearly does not conform to White's description of *Ommata*, nor to the

other eight subgenera of *Ommata* as outlined below. It is proposed, here, to raise the status of this subgenus to genus. Three new species from Bolivia are added to this genus.

A closely related genus, *Clepitoides* gen. nov., is described for three new species sharing a number of distinctive characters precluding their placement in *Ecliptoides*, or any subgenera of *Ommata*.

MATERIAL AND METHODS

The provision of males for each of the new species from Bolivia facilitates a reinterpretation of *Ecliptoides*, and justifies the establishment of *Clepitoides* gen. nov.

Information on the species of *Ecliptoides* from French Guiana was kindly supplied by Dr. Gérard Tavakilian. This material consists of 13 females of three species. The Bolivian material consists of three species, 20 males (known for all species) and 12 females (not known for two species). The Bolivian species do not entirely conform to the description of the subgenus *Ecliptoides* set down by Tavakilian & Peñaherrera-Leiva (2005); the most notable differences are to be found in males, which are sexually dichromatic. For these, and other reasons discussed below, the genus *Ecliptoides* is given new status and redefined.

The three new species of *Clepitoides* gen. nov. consist of 13 males and 3 females; both sexes are known for each species. Two of these species were captured on the same host-flower, and in the company of *Ecliptoides julietae* sp. nov.

The Bolivian material was collected whilst visiting flowers from three localities near Buena Vista, Department of Santa Cruz. These hilly localities lie in disturbed Tropical transition forest (Semideciduous Chiquitano Forest and Amazonian Humid Forest), 16 km east of the eastern Cordillera of the Andes.

Measurements were taken in milimeters (mm) as follows: total length = length from anterior border of gena to apex of abdomen; length of rostrum = genal length from apex of side to where it meets inferior lobe; length of inferior lobe from its most forward position on frons to its hind margin (in line with side of gena). Interocular distance of inferior lobes is measured at its narrowest point. References to antennal length in relation to body parts are made with head planar to dorsad and antenna straightened. Measurements are sometimes given as units, 1 unit = 0.28 mm.

One useful character, common among the Rhinotragini, is referred to as the *humero-apical costa* (*dor-sal costa* of other authors). This costa, when present,

and in its uninterrupted condition, can be described as the longitudinal convexity separating elytral disc from sides of elytra, running from the most elevated part of humerus (where it is broad) to apex of elytron (where it is narrow and usually elevated). In its interrupted condition it may be evanescent for middle third, or apical third, or only traceable for apical third. Amongst the species revised here, the costa is absent in one genus, present in the other.

The acronyms used in the text are as follows: Florida State Collection of Arthropods, Gainesville, Florida, USA (FSCA); Muséum National d'Histoire Naturelle, Paris, France (MNHN); 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 (MZSP); Robin Clarke/Sonia Zamalloa private collection, Hotel Flora & Fauna, Buena Vista, Santa Cruz, Bolivia (RCSZ).

RESULTS

Taxonomy

The close relationship of Ecliptoides and Clepitoides is demonstrated by the many shared characters as follows: body elongate and slender; head almost entirely occupied by large, convex eyes, leaving rostrum and neck short; antennae slender, shorter than body, not passing elytral apex by more than one and a half segments, nor exceeding middle of urosternite III (usually slightly longer in males than females); antennomeres III-VI(VII) filiform, III or V the longest, (VI)VII-XI or VIII-X incrementally shorter, prolonged and slightly expanded at apex (subserrate), or uniformly thickened, to form weak club; prothorax cylindrical, pronotum with punctures contiguous and usually alveolate; procoxal cavity closed; prosternal process flat to moderately arched, with narrow base and triangular or trapezoidal apex; mesosternal process with narrow base, golf tee-shaped or somewhat ogivoid at apex; elytra distinctly narrowed behind humeri, dehiscent and short, falling between apex of urosternite I and base of III, apices variable (sometimes intraspecifically), transversely or obliquely truncate (always ascending towards suture), angles with or without spicules or small teeth; metasternum distinctly convex but not tumid; abdomen elongate, usually narrow and parallel-sided in male, fusiform in female; legs subequal in length (hind leg longest), pedunculate-clavate; tibiae lacking brushes or specialised pubescence; metafemora not passing apex of abdomen; metatarsomere I longer than II + III.

Separation of *Ecliptoides* and *Clepitoides* from the genus *Ommata* has been discussed above. Separation of these two genera from the subgenera of *Ommata* is set out below.

Separation of these two genera from the subgenus *Agaone* Pascoe, 1859: body elongate, slender and delicate (in *Agaone* somewhat robust); prothorax elongate and cylindrical, with sides relatively parallelsided (in *Agaone* quadrate to slightly elongate, with sides regularly rounded); elytra short, not passing middle of urosternite III; narrowing to apex; and dehiscent (in *Agaone* elytra are long and cover abdomen, or almost so; relatively broad throughout; and not dehiscent); legs slender, femora not tumid (in *Agaone* relatively robust, femora may be tumid); metatarsomere 1 as long as II + III; (in *Agaone* much longer than II + III).

Separation of these two genera from the subgenus *Chariergodes* Zajciw, 1963: antennae not exceeding middle of urosternite III (in *Chariergodes* antennae passing apex of abdomen); elytra distinctly narrowed from behind humeri to apex; short, not passing middle of urosternite III; and dehiscent (in *Chariergodes* elytra weakly narrowed behind shoulders; covering abdomen; and not dehiscent); legs relatively subequal; apex of metafemora not passing apex of abdomen (in *Chariergodes* legs markedly unequal, hind legs very long; metafemora passing apex of abdomen at base of clave).

Separation of these two genera from the subgenus *Chrysaethe* Bates, 1873: elytra short, not passing middle of urosternite III; and dehiscent (in *Chrysaethe* elytra almost reach apex of abdomen; and not dehiscent); femora with relatively abrupt claves, and long, narrow peduncles (in *Chrysaethe* femoral claves more cylindrical and peduncles shorter and more robust); tegument semi-opaque or translucent yellow (in *Chrysaethe* tegument generally opaque, and always partly metallic).

Separation of these two genera from the subgenus *Chrysommata* Peñaherrera-Leiva & Tavakilian, 2003: body elongate, slender and delicate (in *Chrysommata* body is more robust); elytra short, in males not passing middle of urosternite III (in males of *Chrysommata* elytra reaching apex of urosternite III); metasternum convex, but not tumid (in *Chrysommata* metasternum tumid); metafemora strongly pedunculate-clavate (in *Chrysommata* metafemora more cylindrical); metatibia without specialised pubescence (in *Chrysommata* metatibia with abundant, long hairs);

tegument semi-opaque or translucent (in *Chrysom-mata* tegument opaque and almost entirely metallic).

Separation of these two genera from the subgenus Eclipta Bates, 1873 (a large subgenus needing complete revision to purge it of its many inconsistencies) does not include a number of species which may belong to either Ecliptoides, or to Clepitoides, as mentioned below: antennal segments may be thickened and subserrate (in Eclipta apical antennal segments may be serrate); elytra short, not passing middle of urosternite III; distinctly narrowed from behind humeri to apex; and dehiscent (in Eclipta most species with elytra reaching beyond middle of urosternite III, except a few species in which the abdomen is unusually long; in many species elytra are only moderately narrowed from behind humeri to apex; and, although the elytra of many of them gape, few could be said to be truly dehiscent); apex of hind femora not passing apex of abdomen; and metafemoral clave relatively abrupt (in Eclipta apex of hind femora may pass apex of abdomen; and metafemoral clave frequently cylindrical); integument predominantly translucent (in Eclipta tegument often opaque).

Separation of these two genera from the subgenus *Ecliptophanes* Melzer, 1934 (a diverse genus in need of radical revision): antennae shorter than body; and not clubbed (in *Ecliptophanes* antennae longer than body; and last two or three antennal segments usually strongly widened to form abrupt club); elytra short, not exceeding middle of urosternite III; and dehiscent (in *Ecliptophanes* elytra vary in length; may gape, but not dehiscent); metatibia without specialised pubescence (in *Ecliptophanes* metatibia often with apical brush).

Separation of these two genera from the subgenus Oxyommata Zajciw, 1970: antennae usually reaching middle of urosternite II or longer (in Oxyommata antennae just passing urosternite I); prothorax elongate and cylindrical, with sides relatively parallelsided (in Oxyommata prothorax quadrate and subglobose); elytra dehiscent from level of metacoxae; and apices truncate (in Oxyommata elytra dehiscent for apical third, well behind level of metacoxae; and apices broadly acuminate); metafemoral peduncle narrow and clave subabrupt (in Oxyommata metafemoral peduncle more robust and clave more cylindrical); tegument predominantly translucent (in Oxyommata tegument opaque).

Separation of these two genera from the subgenus *Rhopalessa* Bates, 1873: antennae short, not exceeding middle of urosternite III; and not clubbed (in *Rhopalessa* antennae always passing apex of abdomen; and widened at apex to form moderate club); elytra

short, not exceeding middle of urosternite III; dehiscent; and apices truncate (in *Rhopalessa* elytra almost reaching apex of abdomen, or longer; not dehiscent; and apices rounded).

The colour distribution of the females in both *Ecliptoides* and *Clepitoides*, and males of *Clepitoides*, will also separate these two genera from all subgenera of *Ommata*; and is as follows: semi-opaque or translucent yellow to orange; pronotum with longitudinal, dusky, central fascia (for brevity, this candlestick-shaped fascia, will be referred to as the candelabrum); margins of elytra rufous to black from, or near, humeri to apex. Among the known males of *Ecliptoides* the sides of pronotum are marked by a dusky, harp-shaped fascia in two species, the prothorax entirely blackish in the third, and elytra may be entirely yellowish.

That *Ecliptoides* and *Clepitoides* should be treated as separate genera seems justified by the following character differences: prothorax subquadrate or elongate; mesosternal declivity abrupt or inclined; elytra with or without secondary pubescence, humero-apical costa absent or present; male urosternite V undifferentiated or "winged" with deep central fovea; outer apex of protibia thickened or narrowed by excision. Sexual dichromatism present or absent.

Scrutiny of many original descriptions and photographs available on the Internet suggests the presence of further species of these genera. Some species of *Odontocera* Audinet-Serville (1833) and, at least, thirteen species of *Ommata* (*Eclipta*) Bates (1873) might be better placed in these genera at such time they become available for examination.

A number of secondary characters shared by the six Bolivian species make it possible to abridge the descriptions for Ecliptoides and Clepitoides. Male: rostrum (0.6-0.8 units); frons and genae closely punctured with sericeous pubescence; inferior lobes close together (see E. vargasi for mild exception), distance between them 8-12 times less than width of one lobe (except C. anae, 16 times less). Female: rostrum 0.9 units (except C. neei, 0.12 units) always longer than male's. Width of superior lobes 0.4 units; the distance between them two and a half to three times width of lobe, except male E. julietae twice width of relatively wide lobe (0.5 units), and female C. neei almost four times width of relatively narrow lobe (0.4 units). Antennae (measurements exclude C. neei female because of its large size): scape (0.42-0.48 mm) always shorter than antennomere III (0.45-0.70 mm), III always longer than IV (0.36-0.48 mm), usually longer than V (shorter E. julietae, equal E. vargasi); V (0.48-0.56 mm) always slightly longer than VI

(0.42-0.50 mm); VII-X incrementally shorter, X (0.28-0.34 mm), X subequal or shorter than XI (0.31-0.36 mm); apical 4-5 segments lobate at apex, forming a subserrate, semi-loose club. Prosternal process always consists of narrow base and subtriangular apex, the latter broadly explanate at apex; mesosternal process wider at apex (truncate to slightly ogivoid, but the differences are too difficult to discern to be useful characters). Sterna usually hirsute with scattered patches of recumbent pubescence. Abdomen almost impunctate, sparsely hirsute with scattered shorter pubescence, sometimes denser on disc of urosternites IV and V, but not at sides.

Protibia always dusky on dorsad (reduced to apex in *C. gerardi* and *C. neei*); onychia chestnut to blackish, always as dark as, or darker than tarsomeres I-III.

Ecliptoides Tavakilian & Peñaherrera-Leiva, 2005, stat. nov.

Ommata (Ecliptoides) Tavakilian & Peńaherrera-Leiva, 2005: 37.

Type-species: *Ommata* (*Ecliptoides*) *rouperti* Tavakilian & Peñaherrera-Leiva, 2005 (original designation).

Description: Generally more semi-opaque than translucent. Antennomeres VIII-X slightly lobate at outer side of apex, sometimes uniformly thickened, with XI forming weak club. Prothorax quadrate or slightly elongate (ca. 1.2 times longer than wide), pronotal punctures scabrous or alveolate. Mesosternal declivity abrupt ot relatively abrupt. Elytra without humeroapical costa; and may show decreased dehiscence; with short, semi-recumbent pubescence. Metasternum hirsute, basal half clothed with dense, semi-recumbent pubescence. Sides of male urosternite V not foliate, depression not deep and V-shaped. Outer apex of protibiae expanded laterally, sometimes into distinct tooth.

Sexual dichromatism: male prothorax orange-yellow, sides of pronotum with dusky, harp-shaped figure, or prothorax may be entirely black; females prothorax orange-yellow and pronotum with dusky candelabrum. In both sexes of all species margins of elytra black, except in some males of *E. julietae* they may be entirely yellowish, and male of *E. titoi* partially black.

Species included in this genus: *E. julietae* sp. nov., *E. vargasi* sp. nov., *E. titoi* sp. nov. (from Bolivia); and *E. azadi* Tavakilian & Peñaherrera-Leiva, 2003,

E. hovorei Tavakilian & Peñaherrera-Leiva, 2003, and E. hovorei Tavakilian & Peñaherrera-Leiva, 2005 (from French Guiana).

Ecliptoides julietae sp. nov. (Figs. 1A, 1B)

Holotype: male. Size 5.6 mm. Deposited at MNKM.

Diagnosis: Males of *E. julietae* sp. nov. differ from other species by the blackish pronotum and sterna; the females from other Bolivian species by its entirely black humeri; and from *E. hovorei* of French Guiana by the elytral pubescence (fine and sparse in *E. julietae* sp. nov., dense and silky in *E. hovorei*); from *E. azadi* by the colour of the scutellum (black in the French Guiana species, orange in the Bolivian); and from *E. hovorei* by the colour of metafemoral peduncle (apex black in the French Guiana species, entirely yellow in the Bolivian one).

General colour: chestnut and orange to yellow. Head, prothorax, scutellum, meso- and metasternum blackish. Antenna: scape, pedicel, antennomeres III and IV, apical 3/4 of V and 2/3 of VI dark chestnut, apical half VII-X brown, XI brown. Elytra, including basal fifth and humeri, opaque orange; sides broadly dark brown from basal fifth to apex; extreme apex dark brown. Abdomen translucent orange-yellow, visible tergites opaque brown. Legs, including coxae, yellow, except: dorsad and apex of mesofemoral club, all of metafemoral club and tarsi chestnut; meso- and metatibia, except extreme base almost black. Apex of wings dusky.

Structure: Head. Inferior lobes very large $(1.6 \times 1.4 \times 1.4)$ units) and convex, together slightly wider than pronotum; underside almost entirely carinate with large regularly spaced punctures. Antenna long, passing tip of elytra at middle of antennomere X, and reaching middle of urosternite III; antennomere III slightly shorter than V.

Thorax. Prothorax 1/4 longer than wide, front and hind borders subequal, sides subparallel, not constricted. Pronotum convex, slightly depressed at centre of basal half and narrowly to hind angles, this flattened area bounded laterally by two inconspicuous calli; apical half hirsute; disc with scabrous, subcontiguous punctures, sides mostly smooth with sparse punctures, almost entirely occupied by harp-shaped patch of dense, sericeous pubescence. Elytra not strongly

dehiscent, sides subparallel for apical half, gradually narrowed to apex; apex oblique, protracted laterally into blunt tooth, reaching apex of urosternite II; more or less punctured throughout, denser at sides; hirsute for basal half, from base to apex with sparse, short, fine pubescence.

Abdomen. Narrow, fusiform; widest at apex of urosternite II; length of I-III subequal; V trapezoidal; shallow, V-shaped depression from apex to base; apical border straight. Apex of protibia slightly thickened laterally.

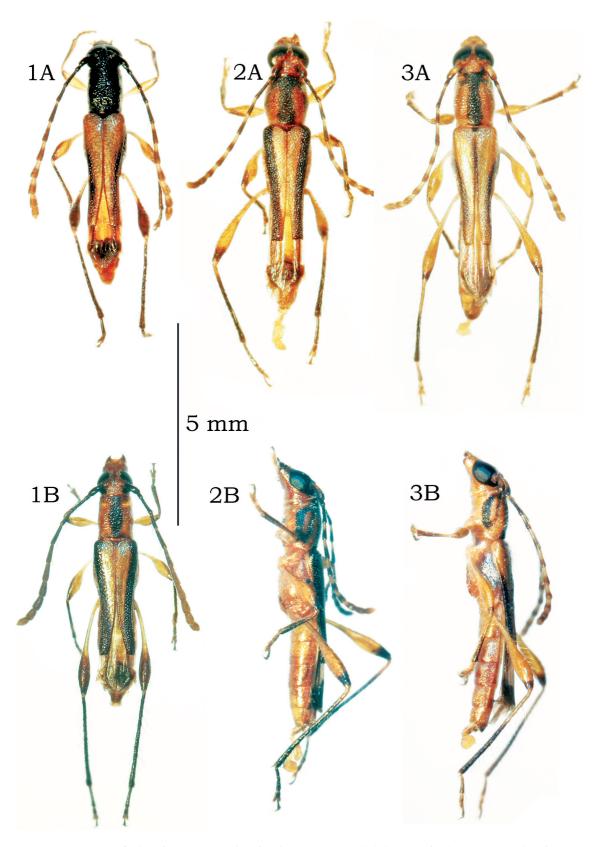
Female sexually dimorphic: General colour: semitranslucent orange and black or dusky. Head, scutellum, and entire underside orange-yellow; pronotum orange-yellow with moderately narrow, unshapely candelabrum; elytra orange yellow, sides and apex broadly blackish. Antenna black basally, becoming increasingly browner to apex; antennomeres without pale annuli. Dorsad of pro- and mesofemoral claves dusky.

Structure: inferior lobe 1.7 x 1.2 units, interocular space (0.9 units) with 2-4 rows of dense punctures; antenna just reach apex of elytra, and apex of urosternite II. Elytral dehiscence stronger, apices of elytra transversely truncate and unarmed. Mentum with three carinas, submentum and gula smooth with large, sparse punctures. Mesosternal process straight. Abdomen as male but more robust, and urosternite V regularly convex.

Variation: Apices of elytra of some males less oblique, and reaching basal 1/4 of urosternite III. Elytra of some females more strongly dehiscent and antennae somewhat thickened from antennomere III to apex. In both sexes some reduction in size and shape of pronotal candelabrum, and extent of dusky pigmentation at sides of elytra.

Measurements (mm) $21 \cite{O}/16\cite{O}$: total length 4.7-6.1/5.5-6.6; length of pronotum 0.9-1.2/1.1-1.3; width of pronotum 0.7-0.8/0.8-1.0; length of elytra 2.3-2.7/2.6-3.0; humeral width 0.9-1.0/1.0-1.2.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'15"W, 440 m, 1 km W Candelaria, 5 km W Buena Vista, 14.VIII.2007, R. Clarke/S. Zamalloa col., on/flying to flowers of Gomphrena vaga (MNKM). Paratypes with same data as holotype: 7 males, 1 female, 14.VIII.2007 (MZSP); 5 males, 3 females, 15.VIII.2008 (RCSZ); 1 female 15.VIII.2008



FIGURAS 1-3: Species of *Ecliptoides* stat. nov. 1. *Ecliptoides julietae* sp. nov., A. male holotype, B. female paratype. 2. *Ecliptoides vargasi* sp. nov., A. male holotype, B. male holotype lateral. 3. *Ecliptoides titoi* sp. nov., A. male holotype, B. male holotype lateral.

(RCSZ); 1 male, 1 female, 22.VIII.2007 (MNHN). Paratypes with different locality from holotype (same collectors): Road to El Cairo-Cafetal, 6 km W Buena Vista, 1 female, 8.VIII.2007 (MNRJ). Paratypes with different plant data from the Hotel Flora & Fauna, 17°29'96"S/63°39'13"W, 5 km SSE Buena Vista, all R.Clarke/S. Zamalloa col.: 2 males, 16.VII.2007, on/ flying to flowers of Mangifera indica (RCSZ); 1 male, 16.VII.2007, on/flying to flowers of Mangifera indica (FSCA); 1 male, 31.VII.2007, on/flying to flowers of "Barbasqillo" vine (RCSZ); 1 male, 1.VIII.2005, on/flying to flowers of "Barbasqillo vine (MNRJ); 1 female, 20.IX.2007, on/flying to flowers of "Sama blanca chica" (FSCA); 1 female, 21.X.2005, on/flying to flowers of "Sama blanca chica" (RCSZ); 2 females, 21.IX.2007, on/flying to flowers of "Sama blanca chica" (MNRJ); 1 female 23.IX.2007, on/flying to flowers of "Sama blanca chica" (MNKM); 1 female, 25.IX.2007, on/flying to flowers of "Sama blanca chica" (RCSZ); 1 male, 3 females, 12.VIII.2008, on/flying to flowers of "Ramoneo" (RCSZ); 1 male, 11.VIII.2008, and 1 female, 14.VIII.2008, S. Abrahamzyk col., 2 km SE of Hotel Flora & Fauna, on/ flying to flowers of "Ramoneo" (RCSZ).

Etymology: This species has been named after Julieta Ledesma for her work on the Bolivian Hawk Moths.

Ecliptoides vargasi sp. nov. (Figs. 2A, 2B)

Holotype: male. Size 6.5 mm. Deposited at MNKM.

Diagnosis: Ecliptoides vargasi sp. nov. is easily separated from *E. titoi* sp. nov. and *E. hovorei* by sparser, semi-recumbent pubescence on elytra; dense, silky and recumbent in the latter two species. From *E. julietae* sp. nov. and *E. hovorei* by the black, harp-shaped figure at sides of pronotum.

General colour: orange and black to dusky. Head opaque above, more translucent below. Antenna: scape chestnut, pedicel and antennomeres III-V darker with pale narrow bases; VI-IX pale for basal half and dusky apical half; X and XI pale with dusky sides. Pronotum semi-opaque, the latter with broad, parallel-sided candelabrum and black harp-shaped figure at sides of pronotum, the latter joining the candelabrum at apex. Scutellum dusky. Elytra orange, semitranslucent, sides from base broadly black to apex, apical 1/5 black. Sternites opaque; prosternum with two, oblique, suboval, black spots just anterior to cox-

al cavities. Abdomen and apical tergites translucent. Legs, including coxae, orange-yellow, except: pro- and mesofemoral clubs chestnut on dorsad from apex to middle; mesotibiae chestnut for apical 2/3; metafemora black for apical third; metatibia black with narrow pale base; protarsus orange, meso- and metatarsi chestnut, all onychia chestnut. Wings dusky at apex.

Structure: Head. Inferior lobes large (1.8 x 1.6 units) and convex, together slightly narrower than pronotum, the distance between them relatively long, equal to the width of antennomere III; submentum closely carinate with isolated punctures, rest of underside smooth and impunctate. Antenna moderately long, just reaching apex of elytra and reaching apex of urosternite II; antennomere III equal in length to V.

Thorax. Prothorax almost quadrate, front and hind borders subequal, sides rounded, basal constriction distinct. Pronotum convex, surface of candelabrum very slightly depressed for basal half and basally, adjacent surface of disc, raised into indistinct calli; apical half hirsute and densely covered by sericeous pubescence, and spreading to cover apical part of harp-shaped mark; disc with contiguous, alveolate punctures. Mesothorax with elytra reaching apex of urosternite II; broad, gradually narrowing to rather wide apices; completely covered with dense punctures, those on the black panels contiguous and alveolate; hirsute for basal half, from base to apex with moderately dense, semi-recumbent, shorter, pubescence; apex transversely truncate, protracted laterally into blunt spicule.

Abdomen. Narrow, tapering from base to apex; length of urosternites I-III subequal; urosternite V slightly trapezoidal, with shallow, V-shaped depression from apex to base (the depression with group of twelve black spicules at centre), and sinuate apical border.

Measurements (mm), 1 \circlearrowleft : total length 6.5; length of pronotum 1.2; width of pronotum 1.1; length of elytra 2.8; humeral width 1.1.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'13"W, 420 m, Hotel Flora & Fauna, 5 km SSE Buena Vista, 19.IX.2007, R. Clarke/S. Zamalloa col., on/flying to flowers of "Sama blanca chica" (MNKM).

Etymology: This species has been named after Ruperto Vargas for sharing with me his expert knowledge of the local flora.

Ecliptoides titoi sp. nov. (Figs. 3A, 3B)

Holotype: male. Size 6.4 mm. Deposited at MNKM.

Diagnosis: separation of *E. titoi* sp. nov. from the other Bolivian species of this genus has been outlined in the discussion following those species. From *E. hovorei* it can be separated by the black, harp-shaped figure at sides of pronotum, absent in the French Guiana species; and sides of elytra entirely black in the other two French Guiana species, partially black in *E. titoi* sp. nov.

General colour: opaque yellow and black to dusky. Head pale yellow. Antenna: scape yellow with dusky apex; pedicel chestnut; antennomeres III and IV chestnut with narrow yellow base; V-X with basal half yellow, apical half brown; XI brown. Pronotum yellow, the latter with broad, parallel-sided candelabrum at centre, and black harp-shaped figure at sides of pronotum, the latter just touching candelabrum at apex. Scutellum black. Elytra yellow, sides from basal 2/3 narrowly black to apex, extreme apex almost entirely yellow. Entire underside yellow, except: inner margin of mesepisternum, sides of metasternum and entire metepisternum dusky; abdomen slightly orange; apical tergite with black apex. Legs, including coxae, yellow, except: dorsad of mesofemora with small, chestnut fascia at apex; small, irregular, chestnut ring around apex of metafemoral club, extending for short distance abapically along mesal side; apical half of mesotibia and 2/3 of metatibiae black; pro- and mesotarsi yellow with dusky onychium, metatarsomere I pale chestnut with narrow yellow base, II and III yellow, onychium chestnut. Apex of wings dusky.

Structure: Head. Inferior lobes very large (1.8 x 1.6 units) and convex, together equal to width of pronotum; submentum sparsely carinate with isolated punctures, rest of underside smooth and impunctate. Antenna long and slender, just passing apex of elytra as far as apex of urosternite II; antennomere III comparatively long (0.59 mm).

Thorax. Prothorax elongate, 1/5 longer than wide, front and hind borders subequal, sides rounded, basal constriction distinct. Pronotum convex, surface of candelabrum very slightly depressed for basal half and basally, adjacent surface of disc, raised into indistinct calli; apical half sparsely hirsute and densely covered by sericeous pubescence, and spreading to cover harp-shaped mark almost entirely; disc with mixture of scabrous and alveolate, contiguous, punctures. Mesothorax with

elytra weakly dehiscent, reaching apex of urosternite II; broad, gradually narrowing to apices; uniformly covered with relatively sparse punctures, denser on middle third of sides; hirsute for basal half, from base to apex with moderately dense, recumbent, short, pubescence, becoming denser towards apex; apex truncate and slightly oblique, lateral angle with spicule.

Abdomen. Elongate, narrow, slightly tapering from base to apex; length of I-III subequal; urosternite V slightly trapezoidal, with deep, V-shaped depression from apex to base, and sinuate apical border.

Measurements (mm), 1 \circlearrowleft : total length 6.4; length of pronotum 1.2; width of pronotum 0.9; length of elytra 2.7; humeral width 1.0.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'13"W, 420 m, Hotel Flora & Fauna, 5 km SSE Buena Vista, 2.XI.2005, R. Clarke/S. Zamalloa col., on/flying to flowers of "Sama blanca chica" (MNKM).

Etymology: This species has been named after my good friend, Alberto ("Tito") Descarpontriez, and generous supporter of our work.

Clepitoides gen. nov.

Type species: *Clepitoides anae* sp. nov., here designated.

Description: Generally more translucent than semiopaque. Antennomeres (6)7-10 lobate at one side of apex (subserrate), with VII-XI forming loose club. Prothorax more elongate (ca. 1.5 times longer than wide), pronotum with alveolate punctures; sides almost glabrous, orange-yellow with candelabrum at midline. Mesosternal declivity inclined. Elytra markedly dehiscent; without short, semi-recumbent pubescence; with humero-apical costa from middle to apex (best seen with the light coming from the side). Metasternum uniformly hirsute with sparse, shorter hairs. Urosternite V of males characteristic (viewed laterally): sides foliate (expanded dorsally and ventrally, and slightly prolonged into "wings"), these demarcating a deep, horseshoe-shaped depression occupying most of ventral surface. Outer apex of protibiae usually slightly excised, not expanded laterally or toothed. Colour dimorphism almost absent; both sexes with dusky fascia between superior lobes; prothorax orange-yellow, pronotum with blackish candelabrum.

Species included in this genus: *C. anae* sp. nov., *C. ge-rardi* sp. nov. and *C. neei* sp. nov.

Etymology: Clepitoides is an anagram of Ecliptoides.

Clepitoides anae sp. nov. (Figs. 4A, 4B)

Holotype: male. Size 7.5 mm. Deposited at MNKM.

Diagnosis: both sexes of *C. anae* sp. nov. can be separated from *C. gerardi* sp. nov. by the entirely yellow-orange underside, narrow elytra, and differences related to the length of the antennae, elytra and abdomen; in the latter the base of metepisternum is blackish and elytra broader; male antenna of *C. anae* sp. nov. just pass apex of elytra and reach apex of urosternite II, male antenna of *C. gerardi* sp. nov. fall short of elytral apex and reach middle of urosternite II; female antenna of *C. anae* sp. nov. reach middle of urosternite II, and elytra basal 1/3 of III, female antenna of *C. gerardi* sp. nov. reach base of urosternite II, and elytra apical 1/3 of II.

Both sexes of *C. anae* sp. nov. can be separated from *C. neei* sp. nov. by their smaller size and broader candelabrum. The males by the relative length of antennae, *C. anae* sp. nov. reaching apex of urosternite II, *C. neei* sp. nov. middle of II; and underside entirely yellow in *C. anae*, sp. nov. metepisternum black at base in *C. neei* sp. nov. The females by the relative length of elytra, in *C. anae* sp. nov. reaching basal 1/3 of urosternite III, in *C. neei* sp. nov. apical 1/4 of II.

General colour: translucent yellow and black or dusky. Head yellow with two triangular, dusky fascia between superior lobes; rostrum pale yellow. Antenna: scape yellow with dusky apex; pedicel black for apical half; antennomeres III-IX yellow with dusky apices; most of X and all of XI dusky. Pronotum yellow with broad, shapely candelabrum. Scutellum black. Elytra yellow, sides from basal 1/5 narrowly black to apex; area adjacent to scutellum and sutural margin black. Entire underside yellow, abdomen slightly more orange, visible tergites more so, and opaque. Legs, including coxae, yellow, except: apex of mesofemoral club and apical 1/4 of metafemoral club, apical half of meso- and metatibiae, pro- and mesotarsi, apex of metatarsomere I and rest of metatarsus blackish. Apex of wings dusky.

Structure: Head. Inferior lobes very large (1.9 x 1.6 units) and convex, almost touching, together slightly wider than pronotum; underside moderately carinate

with isolated punctures. Antennae long, just pass apex of elytra, and reach apex of urosternite II.

Thorax. Prothorax one and a half times longer than wide, front and hind borders subequal, sides subparallel with slight apical and stronger basal constrictions. Pronotum convex, sparsely hirsute; disc with alveolate, subcontiguous punctures; sides glabrous, mostly smooth with sparse punctures. Mesothorax with elytra reaching apical 1/4 of urosternite II; narrow, especially apical third; only densely punctured along sutural and lateral margins and at apical quarter; hirsute for basal half, otherwise glabrous; apex slightly oblique and slightly protracted laterally into blunt tooth.

Abdomen. Long and narrow, individual segments fusiform; length of I-III subequal, V slightly trapezoidal, with foliate sides and horseshoe-shaped depression. Apical tergite slightly rounded at apex.

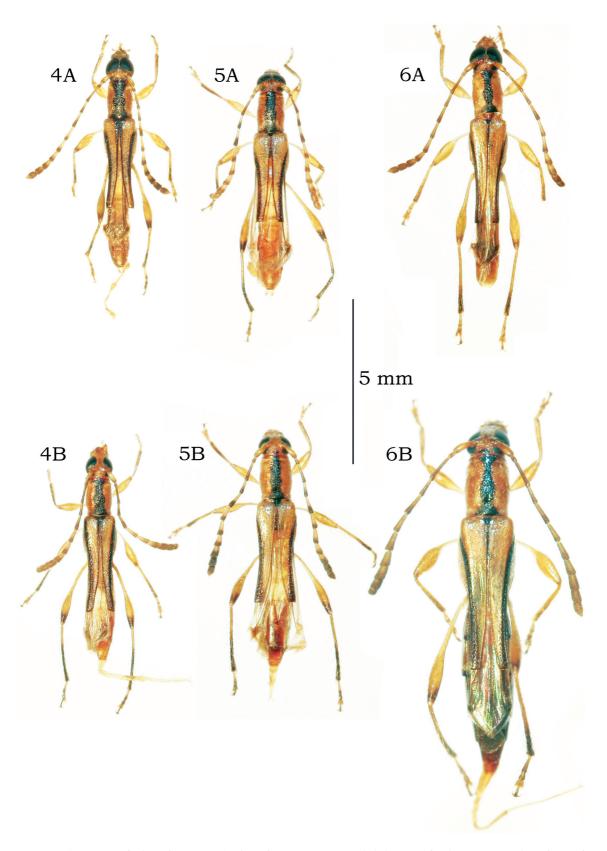
Female slightly sexually dichromatic: General colouration as male except: head almost uniform yellow, black fascia between superior lobes reduced to small spots; candelabrum slightly narrower; sides of elytra black from base of epipleur, but humeri remaining mostly yellow; metatibia black for apical 2/3, otherwise legs same as male; antennal colouration less contrasting, antennomeres IX-XI uniform brown. Wings almost lacking dusky colour.

Structure: inferior lobes 1.5 x 1.2 units, interocular space (0.7 units) comparatively small, with 2-4 rows of dense punctures; antenna reach apical 1/6 of elytra, and middle of urosternite II. Abdomen moderately robust, fusiform, widest at apex of urosternite II; V markedly trapezoidal, regularly convex with rounded apex.

Measurements (mm), $4\sqrt[3]{1}$: total length 6.2-7.5/6.8; length of pronotum 1.1-1.2/1.2; width of pronotum 0.8/0.8; length of elytra 2.7-2.9/3.1; humeral width 0.9-1.0/1.0.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'13"W, 420 m, Hotel Flora & Fauna, 5 km SSE Buena Vista, 22.IX.2007, R. Clarke/S. Zamalloa col., on/flying to flowers of "Sama blanca chica" (MNKM). Paratypes with same data as holotype: 1 male, 20.IX.2007 (MNHN); 1 male, 1 female, 22.IX.2007 (RCSZ); 1 male, 23.IX.2007 (MZSP).

Etymology: This species has been named after Ana Peńaherrera-Leiva for her work on the Rhinotragini of French Guiana.



FIGURAS 4-6: Species of *Clepitoides* gen. nov. 4. *Clepitoides anae* sp. nov., A. male holotype, B. female paratype. 5. *Clepitoides gerardi* sp. nov., A. male holotype, B. female paratype. 6. *Clepitoides neei* sp. nov., A. male holotype, B. female paratype.

Clepitoides gerardi sp. nov. (Figs. 5A, 5B)

Holotype: male. Size 7.1 mm. Deposited at MNKM.

Diagnosis: separation of *C. gerardi* sp. nov. from *C. anae* sp. nov. is discussed following the description of the latter.

Clepitoides gerardi sp. nov. and males of *C. neei* sp. nov. can be immediately separated from all other species by the blackish triangle at the base of the metepisternum. Clepitoides gerardi sp. nov. can be separated from both sexes of *C. neei* sp. nov. by smaller size and broader candelabrum; and female of *C. neei* sp. nov. from all other species by its large size, and elongate, conical fifth urosternite.

General colour: translucent yellow and black to dusky. Head yellow with small, dusky fascia between superior lobes; rostrum paler yellow. Antenna: scape yellow with slightly darker apex; pedicel darker for apical half; antennomere III brown with base narrowly yellow; IV-V black with basal half yellow; VI-IX yellow with incrementally large chestnut apices; X and XI uniform chestnut. Pronotum yellow with moderately broad, almost parallel-sided, candelabrum. Scutellum black. Elytra yellow; sides from basal 1/6 moderately narrow black to apex; extreme apex uniform blackish. Entire underside yellow, except: hind edge of prothorax narrowly blackish at sides; triangular black fascia ocupying basal 1/6 of metepisternum; abdomen slightly more orange, visible tergites more so, and opaque. Legs, including coxae, almost entirely yellow, except: dorsad at apex of protibiae, extreme apex of mesofemoral club, apex of metafemoral club, apical half of meso- and metatibiae, blackish. Tarsi: protarsus entirely, and basal 3/4 of meso- and metatarsomere I yellow, rest of these tarsi blackish. Apex of wings almost entirely translucent, only dusky just before apex of anterior sector.

Structure: Head. Inferior lobes very large (1.9 x 1.6 units) and convex, together slightly wider than pronotum; underside with submentum finely but densely carinate and punctured, rest much more sparsely. Antennae moderately long, almost reaching apex of elytra, and reaching apex of urosternite II.

Thorax. Prothorax one and a half times longer than wide; front and hind borders subequal; sides subparallel with slight basal constrictions, widest at middle. Pronotum convex, sparsely hirsute; disc with alveolate, subcontiguous punctures; sides almost glabrous, mostly smooth with isolated groups of punctures. Mesothorax with elytra reaching apical 1/4 of uroster-

Mesothorax with elytra reaching apical 1/4 of urosternite II; broad, regularly narrowed to apex; punctura-

tion only moderately dense at sides and apex; hirsute for basal half, otherwise glabrous; apex transversely truncate, each angle with spicule.

Abdomen. Long and narrow; individual segments fusiform; length of I-III subequal; V slightly trapezoidal, with foliate sides and horseshoe-shaped depression. Apical tergite slightly rounded at apex.

Female with reduced sexual dimorphism: General colour: distribution as in male.

Structure: inferior lobe 1.6 x 1.2 units, interocular space (1.1 units), with 4 rows of moderately dense punctures; submentum carinate with isolated punctures, rest almost smooth; antenna reaching apical 1/6 of elytra, and base of urosternite II. Abdomen moderately robust, fusiform, widest at apex of urosternite II; V markedly trapezoidal, regularly convex with rounded apex.

Measurements (mm), $5\sqrt[3]{1}$: total length 5.8-7.1/7.1; length of pronotum 1.0-1.3/1.3; width of pronotum 0.8-0.9/1.0; length of elytra 2.5-3.0/3.0; humeral width 1.0-1.1/1.1.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'13"W, 420 m, Hotel Flora & Fauna, 5 km SSE Buena Vista, 20.IX.2007, R. Clarke/S. Zamalloa col., on/flying to flowers of "Sama blanca chica" (MNKM). Paratypes with same data as holotype: 1 female, 2.XI.2005 (RCSZ) 1 male, 20.IX.2007 (MNRJ); 1 male, 21.IX.2007 (MZSP); 1 male, 23.IX.2007 (MNHN); 1 male, 23.IX.2007 (RCZS); 1 male and 1 female, 5.X.2009 (RCSZ)..

Etymology: This species has been named after Gérard Tavakilian for his indefatigable work on the cerambycids of French Guiana.

Clepitoides neei sp. nov. (Figs. 6A, 6B)

Holotype: male. Size 8.3 mm. Deposited at MNKM.

Diagnosis: separation of *C. neei* sp. nov. from *C. gerardi* sp. nov. and *C. anae* sp. nov. is discussed below the descriptions of these species. Female of *C. neei* sp. nov. from all other species by its large size, and elongate, conical prosternite V.

General colour: translucent yellow and black or dusky. Head yellow with small, dusky fascia between superior lobes. Antenna: scape and pedicel yellow; antennomeres III-IX yellow with slightly dusky apices (narrow on basal segments, broader on apical ones); X and XI entirely dusky. Pronotum yellow with narrow, shapely candelabrum. Scutellum black. Elytra yellow, sides from basal 1/8 narrowly dusky to apex, apical 1/8 entirely chestnut. Entire underside yellow, except: triangular black fascia occupying basal 1/6 of metepisternum; abdomen slightly more orange on urosternite III; visible tergites ochraceus and opaque. Legs, including coxae, almost entirely yellow, except: extreme apex of metafemoral club, apices of all tibiae, and onychia chestnut. Apex of wings dusky.

Structure: Head. Inferior lobes very large $(2.2 \times 2.0 \text{ units})$ and convex, almost touching, together distinctly wider than pronotum; underside entirely smooth. Antennae short, reaching apical 1/5 of elytra and middle of urosternite II.

Thorax. Prothorax one and a half times longer than wide, front and hind borders subequal, sides almost parallel without constrictions. Pronotum convex, very sparsely hirsute; disc with alveolate, contiguous punctures; sides glabrous, mostly smooth with sparse punctures. Mesothorax with elytra reaching apex of urosternite II; moderately broad, gradually narrowed to apex; only densely punctured along sutural and lateral margins, and at apex; hirsute for basal half, otherwise glabrous; apex slightly oblique, each angle slightly protracted into blunt tooth. Abdomen. Very elongate, narrow, parallel-sided to apex (sides of each segment slightly subparallel); widest at apex of urosternite II; length of I-IV subequal; V quadrate, not much narrower than IV; V slightly trap-

ezoidal, with foliate sides and horseshoe-shaped depression. Apical tergite emarginate at middle of apex.

Female. General colour as in male, except: sterna slightly more orange; metepisternum lacking black base; abdomen, especially urosternites III-V, dark chestnut; antenna almost uniform brown, only scape yellow.

Structure: inferior lobes 1.8 x 1.6 units, interocular space (1.3 units) impunctate on middle third, with 1-2 rows of dense punctures to each side; area of submentum slightly carinate with sparse punctures; antenna reaching apical 1/6 of elytra, and base of urosternite II. Abdomen robust, fusiform; widest at apex of urosternite II; length of I-III subequal; V narrow, conical, with shallow rectangular depression from middle to apex; apical border rounded.

Measurements (mm), $1\sqrt[3]{1}$: total length 8.3/9.5; length of pronotum 1.4/1.6; width of pronotum 1.0/1.2; length of elytra 3.5/3.6; humeral width 1.2/1.3.

Type material: Holotype male, BOLIVIA, Santa Cruz, 17°29'96"S/63°39'13"W, 420 m, Hotel Flora & Fauna, 5 km SSE Buena Vista, 25.X.2007, R. Clarke/S. Zamalloa col., on/flying to flowers of "Barbasquillo" B (MNKM). Paratype same data as holotype: 1 female, 19.X.2007 (RCSZ).

Etymology: This species has been named after Michael Nee for teaching me a minute portion of his knowledge of the Neotropical flora.

Key to the species of *Ecliptoides Tavakilian & Peñaherrera-Leiva*, 2005, and *Clepitoides* gen. nov.

The key to the species of *Ecliptoides* and *Clepitoides* is largely based on differences of colour distribution, only creditable in these genera because intraspecific variation (sexual dichromatism excepted) appears to be minimal. This seems to be especially valid with respect to colour distribution on the legs. Other useful characters separating similar looking species are set out in the discussion following the description of each species.

1.	Prothorax orange with longitudinal, dusky fascia	2
	Prothorax black. Male. Bolivia. Fig. 1A	
2.	Elytra hirsute and with shorter pubescence. Mesosternal declivity abrupt	3
_	Elytra hirsute without shorter pubescence. Mesosternal declivity inclined Bolivia	8
3.	Sides of pronotum with harp-shaped, dusky figure. Male. Bolivia	4
_	Sides of pronotum uniform orange. Female	5
4.	Sides of elytra broadly black from humeri to apex. Shorter pubescence sparser and semi-recumbent. Ma	ale.
	Bolivia. Fig. 2A	ov.
_	Sides of elytra narrowly black from basal 1/4 to apex. Shorter pubescence denser, recumbent and sligh	ıtly
	scaly. Male. Bolivia. Fig. 3A	ov.
5.	Metafemoral peduncle entirely yellow	6
_	Metafemoral peduncle broadly black at apex. Female. French Guiana	
		05

6.	Elytra hirsute with sparse semi-recumbent pubescence (often rubbed towards apex). Female. Bolivia7
_	Elytra hirsute with dense, recumbent, slightly scaly pubescence. Female. French Guiana
7.	Metafemoral club almost entirely brown or dusky brown. Scutellum orange. Female. Bolivia. Fig. 1B
	Ecliptoides julietae sp. nov.
_	Metafemoral club yellow with blackish apex. Scutellum black. Female. French Guiana
	Ecliptoides azadi (Tavakilian & Peñaherrera-Leiva, 2003)
8.	Size smaller, 5.8-7.1 mm. Pronotal candelabrum broader, less shapely
_	Size larger, 8.3-9.5 mm. Pronotal candelabrum narrow and shapely. Figs. 6A, 6B Clepitoides neei sp. nov.
9.	Metepisterna black at base. Male antenna just passing apex of eytra. Figs. 4A, 4B Clepitoides anae sp. nov.
_	Metepisternum entirely yellow. Male antenna short, do not reach apex of elytra. Figs. 5A, 5B

Biology

According to Tavakilian, et al. (1997) the French Guiana material was bred from host-plants (Ormosia nobilis Tulasne), captured in Malaise trap, flying during the day, or coming to light (4 specimens). All the Bolivian specimens were netted whilst approaching, or feeding on, flowers of trees, creepers and vines. None of the Bolivian species came to light in spite of regular light trapping over six years, close to the flowering plants visited by them.

It is interesting to note that the data supplied with the many new species of Rhinotragini described by Tavakilian & Peñaherrera-Leiva frequently refers to their attraction to lights, whereas, our records of Bolivian Rhinotragini coming to light are rare.

RESUMO

Rhinotragini Bolivianos I: Novas espécies de Ecliptoides Tavakilian & Peñaherrera-Leiva, 2005 stat. nov., e Clepitoides, gen. nov. (Coleoptera, Cerambycidae). O subgênero Ommata (Ecliptoides) é redefinido e elevado a status genérico, Ecliptoides Tavakilian & Peñaherrera-Leiva, 2005 stat. nov., com três espécies novas: Ecliptoides julietae, E. titoi, e E. vargasi. Um novo gênero, Clepitoides, é descrito com três espécies novas: C. anae, C. gerardi e C. neei. As novas espécies são ilustradas e chave para as espécies e registros de flores-hospedeiras são fornecidas.

Palavras-Chave: Bolívia; Cerambycinae; Floreshospedeiras; Gênero novo; Espécies novas.

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Dr. Gérard Tavakilian for supplying information about the French Guiana species. Dr. Ubirajara Martins for his steady encouragement and help. 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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APPENDIX

Flowering plants visited by species of *Ecliptoides* and *Clepitoides*.

Local Name

Barbasquillo

Ecliptoides julietae sp. nov.

Barbasquillo B

Clepitoides neei sp. nov.

Gomphrena

Ecliptoides julietae sp. nov.

Mango

Ecliptoides julietae sp. nov.

Ramoneo

Ecliptoides julietae sp. nov.

Sama blanca chica

Ecliptoides julietae sp. nov. Ecliptoides titoi sp. nov.

Ecliptoides vargasi sp. nov.

Clepitoides anae sp. nov. Clepitoides gerardi sp. nov. Serjania lethalis St. Hilaire

SAPINDACEAE

indet.

SAPINDACEAE

Gomphrena vaga Mart.

AMARANTHACEAE
ANACARDIACEAE

Mangifera indica Linn.

Iresine diffusa Willd.

AMARANTHACEAE

Matayba guianensis Aublet

SAPINDACEAE