

## Studies on the genus *Taphrocerus* Solier, 1833 (Coleoptera: Buprestidae: Agrilinae) part III.

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**Taxonomy, new species, new synonymy, lectotype designation, species-groups, keys, Coleoptera, Buprestidae, *Taphrocerus*, Neotropical Region**

**Abstract.** The third part of the study on the genus *Taphrocerus* Solier, 1833 (Coleoptera: Buprestidae: Agrilinae) is presented. Eight species are newly described: *T. bilyi* sp. nov. (Peru), *T. havai* sp. nov. (French Guiana), *T. huggerti* sp. nov. (Peru), *T. imperator* sp. nov. (Argentina), *T. matouryensis* sp. nov. (French Guiana), *T. mirai* sp. nov. (Ecuador), *T. niger* sp. nov. (French Guiana); *T. semiinterruptus* sp. nov. (Paraguay). The following nomenclatory change is proposed: *T. balthasari* Obenberger, 1934 (= *T. lepidus* Obenberger, 1934 syn. nov.). Lectotype of *T. lepidus* is designated. Two species-groups are defined and keyed: *Taphrocerus depilis* Kerremans, 1896 species-group and *Taphrocerus cupriceps* Kerremans, 1900 species-group.

### INTRODUCTION

This is the third part of the studies on genus *Taphrocerus* serving as a basis for a revision of this genus. During the time of examination of type-specimens from various institutions and many specimens recently collected (a few thousand) it turned out that characters to distinguish individual species given by Obenberger (1924; 1934) (shape of pronotum and elytra, ratios of the individual parts of the head, etc.) are not fully usable due to the large variability of specimens, usually in correlation with the size of the specimen (study in preparation). However, the shape of head and pronotum, the size of eyes and some other proportions are essential features to distinguish related species, but assuming a great number of specimens from the respective „species-group“, together with the study of male genitalia.

### MATERIALS AND METHODS

Lectotype designation is provided in order to preserve the stability of nomenclature by fixing the status of the specimen as the sole name-bearing type of a particular nominal taxon (in agreement with article 74.7 ICZN (1999). The designation of the type specimen (Lectotype) is marked by a printed white label with red border containing all relevant data as: type status (red capital letters), taxon name in the original combination, author name, year of publication, an inscription J. Marek design. with the year of designation.

Abbreviations for the lectotype designation: the slash mark \ is used to indicate data from separate labels; my notations are in parentheses [ ], with the abbreviation [h] = handwritten, [p] = printed, [Obenberger's MS] = Obenberger's manuscript.

Abbreviations used in the text: HT = holotype, LT = lectotype, PT (PTs) = paratype (paratypes), ST = syntype, ST1 (ST2, ST3 ...) = type specimen labelled as syntype number

1 (nr 2, nr 3 ...), DV = dorsal view, FV = frontal view, LV = lateral view.

A Canon D-550 digital camera with the Canon MP-65mm f/2.8 1-5x macro lens was used to capture the colour images, occasional exceptions are noted at relevant place.

The following collection codens are used throughout the text:

JMSC private collection of J. Marek, Sýkořice, Czech Republic (will be deposited in NMPC);

MNHN Muséum national d'Histoire naturelle, Paris, France;

MNCN Museo Nacional de Ciencias Naturales, Madrid, Spain;

NMPC National Museum, Praha, Czech Republic.

## DESCRIPTIONS OF NEW SPECIES

### *Taphrocerus mirai* sp. nov.

(Figs. 1, 1a)

**Type locality.** Ecuador, Machala.

**Type specimen.** Holotype (♂, JMSC): „Ecuador CW, N of Machala, S of Naranjal, lgt. Snížek, 19. i. 2011“.

**Diagnosis.** Medium-sized (3.6 mm), cuneiform, rather stout, moderately convex, shining; dorsal surface bicolorous: head and pronotum golden-brown, frons black with cupreous tinge, elytra and scutellum metallic violet-brown with purple reflections; ventral side cupreous, including legs, antennae black with feeble cupreous lustre; elytra covered by short, cream-white setae, creating a pattern on each elytron; posthumeral elytral carina present at basal second-sixth only, sharp.

**Description of holotype.** Head large, slightly wider than anterior pronotal margin; clypeus widely „V-shaped“, shagreened, separated from frons by very fine groove; epistomal pores small, separated by their own diameter; frons widely depressed, grooved longitudinally at middle, almost smooth; vertex feebly depressed medially, with very fine groove at middle extending from anterior pronotal margin to frons, finely shagreened and punctured, sparsely covered by white setae; eyes large, oval, strongly projecting beyond outline of head; antennae long and rather wide.

Pronotum moderately convex, 1.94 times as wide as long, widest at basal third; narrowly, transversely depressed along anterior margin, deeply and largely, almost conjointly so lateroposteriorly; anterior margin widely rounded, posterior margin biemarginate, almost straight in front of scutellum, sides almost subparallel at anterior fifth, then almost straight, strongly dilated to basal third, then finely constricted to the base; surface very finely shagreened, sparsely covered by circular, shallow punctures with white setae in depressions and at middle of disc; scutellum widely cordiform, medium-sized, distinctly shagreened.

Elytra moderately convex, distinctly wider at humeri than pronotum at base, 2.15 as long as wide, widest at humeri and just before the middle; lateral margins rather deeply emarginate at basal fourth, widely rounded at middle, gradually, almost straightly tapering towards separately rounded apices; apices strongly serrate laterally, the top of apices smooth;

humeral swelling rather feebly developed, basal depression small and shallow; surface finely shagreened at basal depressions and apex only, punctures in longitudinal rows small and shallow, larger and deeper at basal half along suture only, sparsely covered by short, cream-white setae in longitudinal rows and by longer, cream-white setae, creating pattern on each elytron as follows: sparse, wide perisutural strip just behind the middle, rather wide strip transversely at apical fourth; posthumeral elytral carina present at basal second-sixth only, sharp, well marked.

Ventral surface lustrous, abdomen finely shagreened, irregularly punctured by large, shallow punctures, sparsely covered by white, very short setae; anal ventrite widely rounded, preapical groove following outline of margin wide; antennal grooves long, deep and rather wide; prosternal process elongate, feebly constricted between procoxae, apex trapesoidal, surface finely shagreened, without punctures or grooves.

Aedeagus (Fig. 1a).

**Sexual dimorphism.** Female unknown.

**Measurements.** Length 3.6 mm; width 1.3 mm.



Figs. 1-2. 1- *T. mirai* sp. nov., HT male, 3.6 mm; 1a - aedeagus, 0.96 mm; 2- *T. embriki* Obenberger, 1934 ST2 (NMPC), male („Argentina, Misiones“), 3.6 mm; 2a - aedeagus, 1.07 mm.

**Differential diagnosis.** *T. mirai* sp. nov. is very similar to *T. embriki* Obenberger, 1934 (Figs. 2, 2a) (described from Argentina - Misiones and Brasil - Paraná) in the general shape of the body, colouration and pubescent ornamentation. It differs by more projecting eyes beyond outline of head, by male genitalia and namely by the presence of a sharp, posthumeral elytral carina at basal second-sixth only, as well as other morphological details.

**Etymology.** Dedicated to Miroslav Snížek (České Budějovice, Czech Republic), collector of the type-specimen of this species.

***Taphrocerus niger* sp. nov.**

(Fig. 3)

**Type locality.** French Guiana, Saint Laurent du Maroni.

**Type specimens.** Holotype (♀, JMSC): „Guyane Francaise, St. Laurent du Maroni, 12. viii. 2006, Snížek lgt.“. Paratype: „Guyane Francaise, Matoury-Balata, J. Marek lgt. xii. 1992“ (1 ♀, JMSC).

**Diagnosis.** Medium-sized (3.6-3.9 mm), elongate, cuneiform, moderately convex, shining; entire uniformly black, including ventral side, legs and antennae; elytra sparsely pubescent by short, thin, white setae in rows longitudinally; posthumeral elytral carina present, sharp, entire.

**Description of holotype.** Head large, slightly narrower than anterior pronotal margin; clypeus „V-shaped“, shagreened, separated from frons by fine groove, epistomal pores large, separated by their own diameter; frons widely, deeply depressed at middle, grooved longitudinally, finely shagreened, without pubescence; vertex slightly depressed at middle, longitudinally finely grooved at middle, strongly shagreened, sparsely punctured by fine, small punctures, sparsely, almost inconspicuously covered by short, white setae; eyes large, oval, strongly projecting beyond outline of head; antennae long, wide.

Pronotum moderately convex, 1.82 times as wide as long, widest at basal fifth; narrowly but deeply depressed along anterior margin, largely, rather deeply so along posterior margin but widely interrupted at middle, deeply and narrowly so at lateroanterior angles; with a vague prominence at lateroposterior angles; anterior margin very widely, almost straightly rounded, posterior margin biemarginate, widely emarginate in front of scutellum, sides subparallel at anterior first-sixth, then widely, arcuately dilated to basal fifth, narrowly and rather shallowly emarginate just before the base; surface finely shagreened, at depressions sparsely punctured by large, circular punctures, each puncture with extremely short, white seta; scutellum triangular with very widely rounded anterior margin, strongly shagreened.

Elytra moderately convex, slightly wider at humeri than pronotum at base, 2.18 times as long as wide, widest at humeri and just before the middle; elytral margins shallowly emarginate behind humeri, then widely, arcuately rounded to apical sixth, apex slightly spatular; apices separately rounded, rather finely serrate laterally; humeral swelling feebly developed, basal depression shallow and small; surface strongly shagreened, with rows of large, but very shallow punctures in basal half, smaller laterally, becoming indistinct at apical

half, very sparsely covered by short, thin, white setae in rows longitudinally; posthumeral elytral carina well elevated, entire, sharp, not reaching the top of apices.

Ventral surface very lustrous, abdomen rather strongly shagreened, sparsely, irregularly, almost inconspicuously white pubescent, very sparsely, minutely punctured by very fine punctures; anal ventrite elongately rounded, preapical groove following outline of margin rather narrow, widely rounded; antennal grooves rather long, shallow, but very wide; prosternal process elongate, sides almost subparallel, very slightly constricted between procoxae only, shagreened, narrowly but rather deeply grooved longitudinally.

**Sexual dimorphism.** Male unknown.

**Measurements.** Length 3.6-3.9 mm (holotype 3.6 mm); width 1.3-1.4 mm (holotype 1.3 mm).

**Variability.** Except for the size, paratype possesses elytra with very slight brownish tinge.



Figs. 3-4. 3- *T. niger* sp. nov. HT female, 3.6 mm; 4- *T. nigricollis* Marek, 2015 HT male (French Guiana), 4 mm.

**Differential diagnosis.** *T. niger* sp. nov. belongs to a complex of species characterized by presence of sharp posthumeral elytral carina together with sparsely pubescent and almost smooth elytra. It is similar to *T. nigricollis* Marek, 2015 (described from French Guiana also) (Fig. 4), from which it can be distinguished by its smaller and slender body, uniformly black colouration, depressed frons and vertex, eyes more prominent beyond outline of head, different shape of lateral pronotal margins as well as other morphological details (see also Table A).

Table A. Diagnostic characters of *T. niger* sp. nov. and *T. nigricollis* Marek, 2015.

	<i>T. niger</i>	<i>T. nigricollis</i>
Colouration	uniformly black	markedly bicolorous: head, pronotum, scutellum black, elytra light brown with violet tinge
Frons (DV)	widely depressed at middle	widely convex
Eyes	large, strongly projecting beyond outline of head	medium-sized, slightly projecting beyond outline of head
Pronotum	lateral margins slightly dilated behind	lateral margins strongly dilated to basal second-third, then angularly, strongly constricted to the base
Elytra	slightly wider at humeri than pronotum at base, apices finely serrate	strongly wider at humeri than pronotum at base, apices strongly serrate

**Etymology.** The specific epithet is the Latin adjective *niger* (black) to stress the colouration of the body of this species („deeply“ black).

***Taphrocerus matouryensis* sp. nov.**

(Figs. 5, 5a)

**Type locality.** French Guiana, Matoury-Balata.

**Type specimens.** Holotype (♂, JMSC): „Guyane Francaise, Matoury-Balata, J. Marek lgt. x. 1992“. Paratypes: the same data as HT (2 ♂♂, JMSC); the same data but xi. 1992 (3 ♂♂, 4 ♀♀, JMSC); the same data but xii. 1992 (2 ♀♀, JMSC); „Guyane Francaise, Cayenne Mt. Bourda, v. 1992, J. Marek lgt.“ (1 ♀, JMSC).

**Diagnosis.** Medium-sized (3.3-3.8 mm), slender, elongate, subparallel, moderately convex above, shining; uniformly black with very slight purplish lustre above, ventral side, including legs and antennae shiny black; dorsal surface sparsely covered by long, thin, white setae, densely at pronotum laterally, behind of scutellum, at middle of elytra transversely and at apical fourth of elytra; posthumeral elytral carina present, entire, sharp.

**Description of holotype.** Head medium-sized, as wide as anterior pronotal margin; clypeus widely „V-shaped“, separated from frons by fine groove, epistomal pores missing; frons moderately convex, finely shagreened, rather broadly depressed at middle, deeply, narrowly grooved longitudinally, with „fronto-clypeal pubescent strip“ consisting of short, dense, golden-white setae; vertex strongly convex, finely shagreened, feebly depressed at middle, longitudinally grooved at middle, sparsely, finely punctured, with sparse, long, white setae between eyes; eyes large, oval, slightly projecting beyond outline of head; antennae long, narrow.

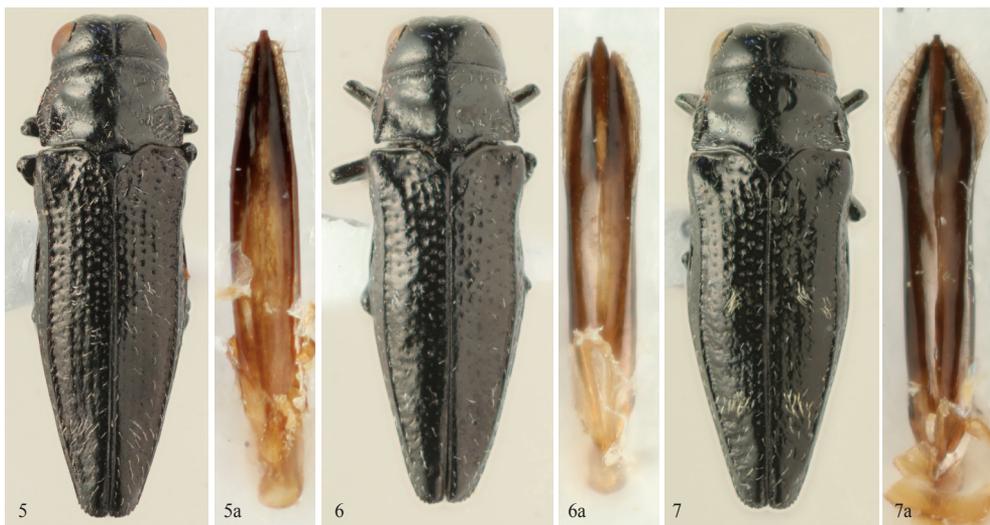
Pronotum strongly convex anteriorly, flattened posteriorly, 1.58 times as wide as long, widest at basal fourth; rather widely depressed along anterior margin, largely, rather deeply so lateroposteriorly; well developed, sharp prehumeral carina in basal third lateroposteriorly;

anterior margin widely, regularly rounded, posterior margin rather feebly biemarginate, sides rather strongly, arcuately dilated to basal fourth, then narrowly emarginate and slightly constricted to the base; surface strongly shagreened, large, shallow, circular punctures at basal depressions and in front of scutellum only, sparse, rather long, thin, white setae at depressions, longitudinally at middle and along the sides; scutellum large, cordiform, strongly shagreened.

Elytra moderately convex, distinctly wider at humeri than pronotum at base, 2.44 times as long as wide, widest at humeri and half of elytra; lateral margins very narrowly, deeply emarginate at basal fifth, widely, arcuately rounded at second-third of length, then gradually, almost straightly tapering towards almost conjointly, widely rounded apices; apices strongly serrate laterally; humeral swelling feebly developed, laterobasal depression small and shallow; surface rather strongly shagreened, covered by large, deep punctures in rows longitudinally, disappearing apically; sparse, thin, long, white setae more dense behind of scutellum, transversely at the middle and at apical fourth; subhumeral elytral carina sharp, entire, well marked, present almost from basal margin to near of apex, not reaching apices.

Ventral surface very lustrous, strongly shagreened, abdomen very sparsely punctured by rather large, very shallow punctures, almost inconspicuous apically, with very short, white setae laterally, anal ventrite rather narrowly rounded, preapical groove following outline of margin wide; antennal grooves long, narrow, deep; prosternal process strongly constricted between procoxae, dilated behind, apex trapesoidal, with very fine, short longitudinal groove.

Aedeagus (Fig. 5a).



Figs. 5-7. 5- *T. matouryensis* sp. nov. HT, 3.5 mm; 5a- aedeagus, 1.16 mm; 6- *T. bourdaensis* Marek, 2015 HT (French Guiana), 2.8 mm; 6a- aedeagus, 1.03 mm; 7- *T. collarti* Cobos, 1959 (specimen male from French Guiana), 3.6 mm; 7a- aedeagus, 1.07 mm.

**Sexual dimorphism.** Only by different pubescence of frons - „frontoclypeal pubescent strip“ in males of wide, dense, golden-white setae.

**Measurements.** Length 3.3-3.8 mm (holotype 3.5 mm); width 1.0-1.1 mm (holotype 1.0 mm).

**Variability.** Observed in the elytral shape: elytra 2.30-2.48 times as long as wide (2.44 x in the HT)

**Differential diagnosis.** *T. matouryensis* sp. nov. belongs to a complex of a few species (mostly undescribed) characterized by their uniformly black colouration, sometimes with feeble purple metallic lustre, markedly subparallel sides of body, presence of strongly elevated, entire, sharp posthumeral elytral carina and namely by presence of a sharp, long prehumeral carina on the pronotum. *T. matouryensis* sp. nov. in habitus resembles *T. bourdaensis* Marek, 2015 (described from French Guiana also, Fig. 6, 6a) and *T. collarti* Cobos, 1959 (described from French Guiana also, Fig. 7, 7a), from which it differs by the characters given in Table B.

Table B. Diagnostic characters of *T. matouryensis* sp. nov. and related species.

	<i>T. matouryensis</i>	<i>T. bourdaensis</i>	<i>T. collarti</i>
Size	medium-sized, 3.3-3.8 mm	small, 2.8 mm	medium-sized, 3.2-3.7 mm
Colouration	uniformly black with feeble cupreous lustre	black with cupreous tinge	uniformly black
Eyes	large, more projecting beyond outline of head	small, less projecting beyond outline of head	small, less projecting beyond outline of head
Epistomal pores	missing	present, separated by own diameter	present, almost touching each other
Prehumeral carina	shorter, reaching to basal third	longer, reaching to anterior fourth	longer, reaching to anterior fourth
General shape of body	slender, 3.3 times as long as wide, widest at humeri	slender, 3.2 times as long as wide, widest at humeri	robust, 3.0 times as long as wide, widest at humeri and at half of elytra
Elytral pubescence	sparse, long white setae, densely behind of scutellum, at the middle, at apical fourth	a few long, white setae at apical fourth only	sparse, long white setae along suture and at apical fifth, four (2+2) strips transversely (just behind the middle + at beginning of apical fourth)
Aedeagus	slender, parameres constricted proximally (Fig. 5a)	robust, parameres subparallel, semimembranous part feebly dilated (Fig. 6a)	robust, parameres dilated proximally, semimembranous part strongly dilated (Fig. 7a)

**Etymology.** The specific name is derived from the locality of type-specimens (Matoury), adjective.

***Taphrocerus havai* sp. nov.**

(Figs. 8, 8a)

**Type locality.** French Guiana, Cayenne Mt. Bourda.

**Type specimens.** Holotype (♂, JMSC): „Guyane Francaise, Cayenne Mt. Bourda, J. Marek lgt. v. 1992“. Paratypes: the same data as HT (1 ♂, 3 ♀♀, JMSC); „Guyane Francaise, St. Laurent du Maroni, J. Marek lgt. v. 1993 (1 ♂, 3 ♀♀, JMSC)“; „Fr. Guyane bor., Roura env. 18. xi. 1995, M. Snižek lgt.“ (1 ♂, JMSC); Guyane Francaise, E St. Laurent du Maroni, Rt. Crique Nai, 25. xii. 2006, Snižek lgt.“ (3 ♂♂, 3 ♀♀, JMSC).

**Diagnosis.** Large, (4.1-4.5 mm), slender, elongate, subparallel, convex above, elytra more flattened, shining; uniformly black including legs and antennae, with slight cupreous lustre above; dorsal surface covered by long, thin, sparse, white setae, densely at pronotal depressions, behind of scutellum, transversely at middle of elytra and on apical fifth, two (1+1) white pubescent spots at apical fourth of elytra of longer, wider, more dense setae; posthumeral elytral carina present, entire, sharp.

**Description of holotype.** Head medium-sized, slightly narrower than anterior pronotal margin; clypeus widely „V-shaped“, shagreened, separated from frons by deep, rather wide groove; epistomal pores large, elongate transversely, very narrowly separated; frons strongly convex, deeply, widely depressed at middle, finely shagreened and punctured, „frontoclypeal pubescent strip“ consisting of short, rather dense, white setae; vertex strongly convex, finely shagreened, sparsely, finely punctured, with sparse, short, white setae anteriorly; eyes medium-sized, oval, slightly projecting beyond outline of head; antennae long, rather narrow.

Pronotum convex, 1.76 times as wide as long, widest at basal third; narrowly, deeply depressed along anterior margin, at middle interrupted, broadly, more shallowly so along posterior margin, deeply depressed laterally and narrowly so in front of scutellum; strongly, narrowly elevated bump at lateroposterior angles longitudinally; anterior margin widely, arcuately rounded, median lobe very shallowly emarginate, posterior margin biemarginate, rather strongly, feebly emarginate in front of scutellum, sides almost straightly dilated to basal third, then angularly constricted to the base; surface finely shagreened, shallow circular punctures with white setae at depressions, white, rather dense setae along the sides; scutellum strongly shagreened, triangular, regularly rounded anteriorly.

Elytra moderately convex, the same width at humeri as posterior pronotal margin, 2.32 times as long as wide, widest just before the middle; lateral margins shallowly emarginate at basal fourth, widely, arcuately rounded at middle, then straightly tapering towards widely, almost conjointly rounded apices; apices strongly serrate laterally, minutely so at the top; humeral swelling feebly developed, laterobasal depression very shallow, small; surface very finely shagreened, covered by large, deep punctures in rows longitudinally, disappearing in apical half; thin, long, white setae more dense behind of scutellum, transversely, interrupted at the middle and at basal fourth, where creating rather large, transversely oval spot on each elytron; posthumeral elytral carina entire, sharp, strongly elevated, not reaching apices.

Ventral surface very lustrous, strongly shagreened, abdomen irregularly, finely punctured and sparsely pubescent laterally, preapical groove following outline of margin very wide



Figs. 8-9. 8- *T. havai* sp. nov. HT, male, 4.2 mm; 8a- aedeagus, 1.40 mm; 9- *T. simillimus* Obenberger, 1924 ST1, male (NMPC) („Brasil, Sao Paulo“), 4.4 mm; 9a- aedeagus, 1.21 mm.

apically; antennal grooves long, narrow, deep; prosternal process wide, strongly constricted between procoxae, strongly dilated behind, apex subrhomboidal, finely shagreened, with short but deep, wide groove longitudinally.

Aedeagus (Fig. 8a).

**Sexual dimorphism.** The „fronto-clypeal pubescent strip“ of white setae missing in females.

**Measurements.** Length 4.1-4.5 mm (holotype 4.2 mm); width 1.3-1.4 mm (holotype 1.3 mm).

**Variability.** Except for the size, observed in shape of frons: less depressed in some of paratypes.

**Differential diagnosis.** *T. havai* sp. nov. is similar to *T. simillimus* Obenberger, 1924 (described from Brasil, Sao Paulo) (Figs. 9, 9a) by large size, shape of body (markedly elongate, subparallel), posthumeral elytral carina, structure of dorsal surface and namely by pubescent design on elytra, from which it differs by the characters given in Table C.

Table C. Diagnostic characters of *T. havai* sp. nov. and *T. simillimus*.

	<i>T. havai</i>	<i>T. simillimus</i>
Prehumeral bump on pronotum	strongly elevated	very feebly elevated
Width of pronotum	the same width at basal third (the widest part) as elytra just before the middle (the widest part)	markedly narrower at basal third (the widest part) than elytra just before the middle (the widest part)
Apices of elytra	almost conjointly rounded, sparsely serrate	separately rounded, densely serrate
Apical fifth of elytra	sparse, thin, but long white setae	asetose
Aedeagus	robust, parameres subparallel (Fig. 8a)	slender, parameres constricted proximally (Fig. 9a)

**Etymology.** Named in honour of Jiří Háva (Praha, Czech Republic), specialist in the taxonomy of Dermestidae, for his „pressure“ on me to start to publish my long-term studies on *Taphrocerus*.

***Taphrocerus huggerti* sp. nov.**

(Figs. 10, 10a)

**Type locality.** Peru, Puerto Maldonado.

**Type specimen.** Holotype (♂, NMPC): „Peru: Madre de Dios, Puerto Maldonado, 6.-11. i. 1984, leg. L. Huggert \ ex coll. S. Bílý, NMPC“.

**Diagnosis.** Large (4.1 mm), elongate, rather strongly flattened above, shining; uniformly black with purplish lustre, more intensive at pronotal depressions, lateroposteriorly and laterally at basal half of elytra, with golden-green lustre along anterior pronotal margin, frons bluish-green (♂); ventral side black, very lustrous; legs and antennae black with feeble golden-green lustre; elytra with an ornamental pubescence of long, white setae; posthumeral elytral carina present, entire, sharp, strongly elevated.

**Description of male holotype.** Head large, slightly narrower than anterior pronotal margin; clypeus „T-shaped“, separated from frons by fine carina, epistomal pores missing; frons very slightly convex, strongly shagreened, finely grooved medially, with very wide, dense pubescent strip of long, white setae along clypeus („fronto-clypeal“ pubescent strip - ♂); vertex convex, longitudinally grooved at middle, strongly shagreened, finely punctured and sparsely covered by white, short setae; eyes medium-sized, oval, slightly projecting beyond outline of head; antennae long, wide.

Pronotum moderately convex, 1.88 times as wide as long, widest just behind the middle; narrowly but deeply, transversely depressed along anterior margin, deeply and broadly so along posterior margin but interrupted at middle, deeply and narrowly so at anterolateral angles, disc shallowly depressed; a vague bump at lateroposterior angles; anterior margin widely rounded, pronotal lobe almost straight, posterior margin strongly biemarginate, widely, feebly emarginate in front of scutellum, sides almost subparallel at anterior first-eight than strongly dilated to just behind the middle, than strongly, narrowly emarginate and

slightly dilated to the base; surface strongly shagreened, with large, circular punctures at the depressions, each puncture with long, white seta; scutellum cordiform, strongly shagreened.

Elytra rather strongly flattened, distinctly wider at humeri than pronotum at base, 2.19 times as long as wide, widest at humeri and just before the middle; margins emarginate behind humeri, widely rounded at the middle, very slowly, gradually tapering to the almost conjointly rounded apices (apex of left elytra missing); apices finely serrate; humeral swelling feebly developed, basal depression shallow and small; surface rather strongly shagreened, with small, shallow punctures in longitudinal rows at basal half, disappearing apically; an ornamental pubescence as follows: rather sparse, but long white setae at lateroanterior angles, more dense perisutural strip at basal fourth, wide, irregular strip transversely at the middle, long, rather dense, white setae at apical fourth; posthumeral elytral carina strongly elevated, sharp, entire, not reaching apices.

Ventral surface very lustrous, abdomen finely shagreened, sparsely, white pubescent, very sparsely and shallowly punctured by circular punctures, anal ventrite rather narrowly rounded, preapical groove following outline of margin wide; antennal grooves long, deep, but rather narrow; prosternal process constricted between procoxae, trapesoidal at apex, strongly shagreened, irregularly punctured by large but very shallow punctures.

Aedeagus (Fig. 10a).

**Sexual dimorphism.** Female unknown.

**Measurements.** Length 4.1 mm; width 1.4 mm.



Figs. 10-11. 10- *T. huggerti* sp. nov. HT, 4.1 mm; 10a- aedeagus, 1.58 mm; 11- *T. klimshi* Obnb., 1917 (specimen ♂ from French Guiana), 4.0 mm; 11a- aedeagus, 1.40 mm.

**Differential diagnosis.** *T. huggerti* sp. nov. belongs to a complex of very similar species by their large size, black colouration with metallic violet or blue tinge, strongly flattened and wide elytra, with entire, well elevated subhumeral elytral carina, by pronotum widest just behind the middle and by elytral pubescent pattern and male genitalia (see Figs. 10, 10a, 11, 11a). From the most similar species of this complex, *T. klimtschi* Obenberger, 1917 (described from Brasil, Rio Grande) (11, 11a, 29, 29a, 29b) it can be distinguished by the characters given in Table D.

Table D. Diagnostic characters of *T. huggerti* sp. nov. and *T. klimtschi*.

	<i>T. huggerti</i> (♂)	<i>T. klimtschi</i> (♂)
Colouration	black with feeble violet lustre	black with strong blue tinge
Head	wider, 2.6 times as wide as long (DV)	narrower, 2.2 times as wide as long (DV)
Eyes	medium-sized, slightly projecting beyond outline of head	large, strongly projecting beyond outline of head
Elytral margins	slowly, arcuately rounded at apical half	almost straight at apical half
Elytral pubescence	more sparse, thin, white setae	more dense, wide, white setae
Aedeagus	slender, semimembranous part feebly dilated proximally (Fig. 10a)	wider, semimembranous part strongly dilated proximally (Fig. 11a)

**Etymology.** Named in honour and memory of collector of the type-specimen, Lars Huggert, 1942-2003 (Sweden), specialist in the taxonomy of Hymenoptera.

***Taphrocerus bilyi* sp. nov.**

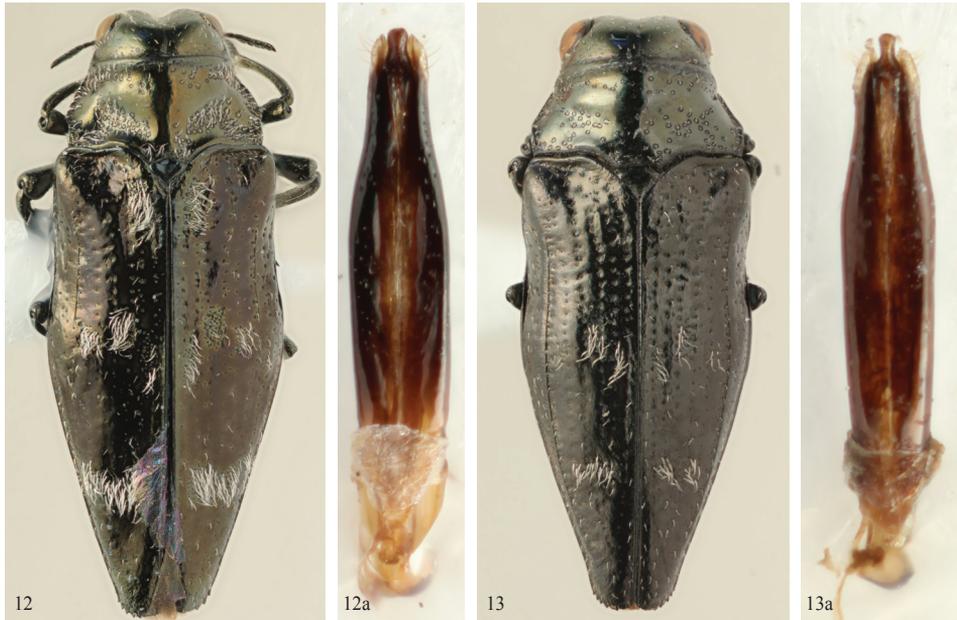
(Figs. 12, 12a)

**Type locality.** Peru, Cusco.

**Type specimen.** Holotype (♂, NMPC): „Peru: Cusco. Aqua Caliente, 20. xii. 1983, leg. L. Huggert \ ex coll. S. Bily, NMPC“.

**Diagnosis.** Large (4.6 mm), stout, moderately convex, very shining; head and pronotum brownish-gold with greenish reflections, scutellum black with blue lustre, elytra dark brown with greenish lustre along the suture and at the apex, purple lustre at basal depressions and lateroanteriorly; ventral side including antennae black, lustrous, legs black with brown lustre; elytra covered by long, rather dense, white setae, creating an ornamentation on each elytron; posthumeral elytral carina present at basal second fourth only, sharp, fine.

**Description of holotype.** Head rather small, narrower than anterior pronotal margin; clypeus widely „V-shaped“, separated from frons by fine, transverse carina, epistomal pores small, separated by 2x own diameter; frons widely, deeply grooved longitudinally at middle, widely depressed in front of clypeus, finely shagreened and punctured, sparsely covered by short, white setae, densely in „frontoclypeal pubescent strip“; vertex depressed at middle, with very fine groove extending from anterior pronotal margin to the wide groove on frons, sparsely and finely punctured, sparsely covered by white setae; eyes small, reniform, very slightly projecting beyond outline of head; antennae long, wide.



Figs. 12-13. 12- *T. bilyi* sp. nov. HT male, 4.6 mm; 12a- aedeagus, 1.18 mm; 13- *T. strandi* Obenbenberger, 1934 LT (NMPC) („Coroico, Bolivia“), 4.0 mm; 13a- aedeagus, 1.13 mm.

Pronotum convex, 1.90 times as wide as long, widest at basal third; narrowly, transversely depressed along anterior margin, deeply, narrowly so along posterior margin but interrupted at middle, deeply, narrowly so at lateroanterior angles; anterior margin widely rounded, very slightly emarginate at middle, posterior margin deeply biemarginate, sides dilated to basal third, then shortly, angularly constricted and subparallel to the base; rather large bump at lateroposterior angles; surface very finely shagreened, with large, circular punctures along all margins and at the depressions along posterior margin, each puncture with white seta; scutellum widely cordiform, finely shagreened.

Elytra moderately convex, distinctly wider at humeri than pronotum at base, 1.96 times as long as wide, widest just before the middle; margins slightly, widely emarginate at basal third, widely, arcuately rounded at middle, then straight tapering towards separately rounded apices; apices strongly serrate laterally; humeral swelling rather feebly developed, basal depression large, rather deep; surface finely shagreened and punctured, more coarsely in areas covered by long, white setae, which create ornamental pubescence as follows: wide perisutural strip behind of scutellum, two irregular spots (1+1) transversely at middle, short, narrow perisutural strip just behind the middle, wide, irregular strip transversely at the beginning of apical fourth, a few short setae very sparsely on apical fourth; posthumeral elytral carina present at basal second fourth only, sharp but very fine, not reaching the middle of elytra.

Ventral surface lustrous, abdomen indistinctly shagreened and pubescent, irregularly punctured by large, shallow punctures; anal ventrite rather narrowly rounded, preapical

groove following outline of margin wide, semicircular; antennal grooves long, very broad but very shallow; prosternal process elongate, constricted to procoxae, subparallel between and behind of them, surface strongly shagreened, with shallow, rather wide groove longitudinally at middle.

Aedeagus (Fig. 12a).

**Sexual dimorphism.** Female unknown.

**Measurements.** Length 4.6 mm; width 1.9 mm.

**Differential diagnosis.** *T. bilyi* sp. nov. is not related to any known species of *Taphrocerus* in its large size, shape of body and presence of sharp posthumeral elytral carina at basal second-fourth only. Nevertheless it resembles *T. strandi* Obenberger, 1934 (described from Bolivia, Curoico) (Fig. 13, 13a) by its large size, general shape of body, pubescent pattern and by very similar male genitalia (see Figs. 12a, 13a). *T. strandi* can be easily distinguished by presence of entire, sharp, strongly elevated posthumeral elytral carina as well as many other details of morphology.

**Etymology.** Named in honour of Svatopluk Bílý (Prague, Czech Republic), specialist in the taxonomy of *Buprestidae*, especially in the genus *Anthaxia*.

***Taphrocerus semiinterruptus* sp. nov.**

(Fig. 14)

**Type locality.** Paraguay, Calle Florida.

**Type specimen.** Holotype (♀, JMSC): „Paraguay, Dep. Guaira, Calle Florida, 14. ix. 1992“.

**Diagnosis.** Medium-sized (3.9 mm), oval, stout, moderately convex, shining; above uniformly light bronze with strong golden lustre, ventral side dark bronze, including legs, antennae black; elytra with four (2+2) white pubescent spots, smaller at the middle, larger, moderately transversal at the beginning of apical fourth; posthumeral elytral carina present sharply at basal second-sixth and third-sixth, than becoming in obsolete, but well marked carina with blunt edge at fourth-sixth, at fifth-sixth becoming in sharp carina again, missing at apical sixth.

**Description of holotype.** Head large, the same width as anterior pronotal margin; clypeus widely „V-shaped“, strongly shagreened, separated from frons by deep, strongly curved up groove; epistomal pores large, separated by their own diameter; frons widely, deeply depressed at middle, very finely shagreened, asetosae; vertex widely depressed at middle, deep and rather wide groove at middle extending from anterior pronotal margin to frontal depression, sparsely, irregularly punctured by shallow, circular punctures, with short, thin, white setae, disappearing lateroposteriorly; eyes large, oval, rather strongly projecting beyond outline of head; antennae short, narrow (right antenna missing).

Pronotum moderately convex, 1.98 times as wide as long, widest just before the base; narrowly, transversely depressed along anterior margin, more broadly so along posterior margin, shallowly so at middle, with a vague bump lateroposteriorly; anterior margin very widely rounded, almost straight at middle, posterior margin moderately biemarginate, sides feebly dilated at anterior first-sixth, than more strongly, arcuately dilated to just before the base; surface shagreened at pronotal depressions, punctured by large, shallow, circular punctures at depressions, each puncture with short, thin, white seta, fine punctures and white setae along lateral margins; scutellum widely cordiform, strongly shagreened.

Elytra moderately convex, slightly wider at humeri than pronotum at base, 1.99 as long as wide, widest at humeri and just before the middle; elytral margins rather narrowly but deeply emarginate at basal fourth, widely, arcuately rounded at middle, then gradually tapering to almost conjointly rounded apices; apices strongly serrate laterally; humeral swelling moderately developed, laterobasal depression rather large and deep; surface finely shagreened at basal two thirds, strongly shagreened at apical third, punctures in longitudinal rows larger and deeper at basal half, fine, almost inconspicuous at apical third; sparse, short, white setae in rows longitudinally, longer and denser white setae in four (2+2) spots, smaller at middle, larger, moderately transverse at the beginning of apical fourth; posthumeral elytral carina sharp in the second, third and fifth sixths of elytral length, in the fourth-sixth obsolete, with blunt edge, but well marked.

Ventral surface lustrous, abdomen strongly shagreened, rather densely punctured by large, shallow, „U-shaped turned-up“ punctures; irregular, sparse, short, white pubescence more conspicuous laterally; anal ventrite widely rounded, preapical groove following outline of margin almost straight posteriorly; antennal grooves long, broad, shallow; prosternal process shagreened, very feebly constricted between procoxae, angulate at apex, with fine groove longitudinally.

**Sexual dimorphism.** Male unknown.

**Measurements.** Length 3.9 mm; width 1.5 mm.

**Differential diagnosis.** *T. semiinterruptus* sp. nov. is unique among of all known species by its form of the posthumeral elytral carina. Nevertheless it is similar to *T. catacaustus* Obenberger, 1941 (described from Brasil, Manaus) (Fig. 15) and *T. pereirai* Cobos, 1959 (described from Brasil, Parahiba) (Fig. 16) in the shape of body, presence of elytral carina, pubescence (2+2 spots on elytra, at the middle smaller one) and structure of dorsal surface. *T. semiinterruptus* sp. nov. differs from them (except of form of elytral carina mentioned above) by bronze-gold colouration, pronotum widest just before the base (at basal third in *T. catacaustus* and *T. pereirai*) as well as many other details of morphology.

**Etymology.** The specific epithet is an adjective derived from the Latin noun semis (half) and adjective interruptus (disconnect) to stress the form of posthumeral elytral carina of this species, which is unique among of all known species (sharp x obsolete, blunt x sharp).



Figs. 14-16. 14- *T. semiinterruptus* sp. nov. HT female, 3.9 mm; 15- *T. catacaustus* Obnbenberger, 1941 ST (NMPC) („Manaos“), 3.2 mm; 16- *T. pereirai* Cobos, 1959 PT (MNMS) („Brasil, Paraiba“), 3.5 mm (photo S. Bílý).

***Taphrocerus imperator* sp. nov.**  
(Figs. 17, 24)

**Type locality.** Paraguay, Serrania San Luis.

**Type specimen.** Holotype (♀, JMSC): „Cerania [error] S. Luis, 23. i. 2001, Paraguay, leg. Kondler“.

**Diagnosis.** Medium-sized (4.0 mm), oval, stout, moderately convex above, shining; head golden-cupreous, pronotum cupreous, with strong violet tinge on the disc, strong gold lustre along anterior margin and on vague bumps at lateroposterior angles, elytra dark violet with purplish lustre laterally and on apical half; ventral side including legs and antennae black with purplish lustre; above covered by long, white setae, creating an ornamental pubescence on elytra; posthumeral elytral carina interrupted, present at basal second-sixth and at apical fifth-sixth only, sharp, well marked.

**Description of holotype.** Head large, slightly wider than anterior pronotal margin; clypeus widely „V-shaped“, strongly shagreened, separated from frons by fine groove, epistomal pores large, separated by their own diameter; frons feebly convex, depressed at middle, strongly shagreened and finely punctured; vertex widely depressed at middle, with longitudinal groove, extending from anterior pronotal margin to the frontal depression, strongly shagreened, finely punctured, with a few short, white setae laterally; eyes large, reniform, slightly projecting beyond outline of head; antennae long, wide.

Pronotum convex, 1.69 times as wide as long, widest just behind the middle; three depressions along anterior margin as follows: shallow, circular at the middle, broader and deeper so laterally of them; very broad, rather deep, almost conjoined depressions lateroposteriorly; strongly elevated bumps longitudinally at lateroposterior angles; anterior margin widely rounded, posterior margin strongly biemarginate, sides subparallel in first-fifth, widely rounded at middle, strongly, narrowly emarginate before the base; surface shagreened, more strongly at depressions, irregularly punctured by shallow, circular punctures with long, white setae, densely at depressions; scutellum triangular, strongly shagreened.

Elytra moderately convex, the same width at humeri as posterior pronotal margin, 2.18 times as long as wide, widest at humeri and just behind the middle; elytral margins rather narrowly emarginate at basal fourth, than widely, arcuately rounded at the middle, slowly, arcuately tapering towards almost conjointly rounded, rather strongly serrate apices; humeral swelling feebly developed, basal depression at middle of base small and shallow; surface rather strongly shagreened at basal half and on the apex, very finely at third fourth; on basal half with rather deep, large punctures, becoming smaller and shallower at the middle, disappearing at apical third; elytral ornamental pubescence, consisting of long, white setae as follows: almost circular, sparse spots at lateroanterior angles, wide perisutural strip behind of scutellum, becoming in transversal strip posteriorly, irregular, rather wide, interrupted strip transversely just behind the middle, more dense, zigzag, transversal strip at beginning of apical fourth, apical eight wholly pubescent, dense anteriorly; posthumeral elytral carina present at basal second-sixth and apical fifth-sixth only, but well marked, sharp.



Figs. 17-18. 17- *T. imperator* sp. nov., HT female, 4.0 mm; 18- *T. holiki* Obenberger, 1924, ST1 female (NMPC) („Paraguay, San Luis“), 4.0 mm.

Ventral surface lustrous, abdomen finely shagreened, irregularly punctured by rather shallow, circular punctures, shortly, white pubescent, densely laterally; anal ventrite transversely truncate, preapical groove following outline of margin wide, very feebly, widely emarginate apically; antennal grooves long, broad, rather shallow, prosternal process constricted between procoxae, rhomboidal at apex, strongly shagreened.

**Sexual dimorphism.** Male unknown.

**Measurements.** Length 4.0 mm; width 1.4 mm.

**Differential diagnosis.** *T. imperator* sp. nov. belongs to the *T. cupriceps* Kerremans, 1900 species-group (definition of the species-group and the key see below). It differs from the others species of this group especially by its depressed frons and shape of head and by other characters given in the key. It's most similar to *T. holiki* Obenberger, 1924 (Figs. 18, 23) in the general shape of body and colouration.

**Etymology.** The specific epithet is the Latin noun imperator (ruler) to stress the shape of head of this species in contrast to the shape of heads of all known species of this species-group (frons and vertex depressed in *T. imperator* sp. nov., protruding in the others species - crown x helmet“, see Figs. 22-26).

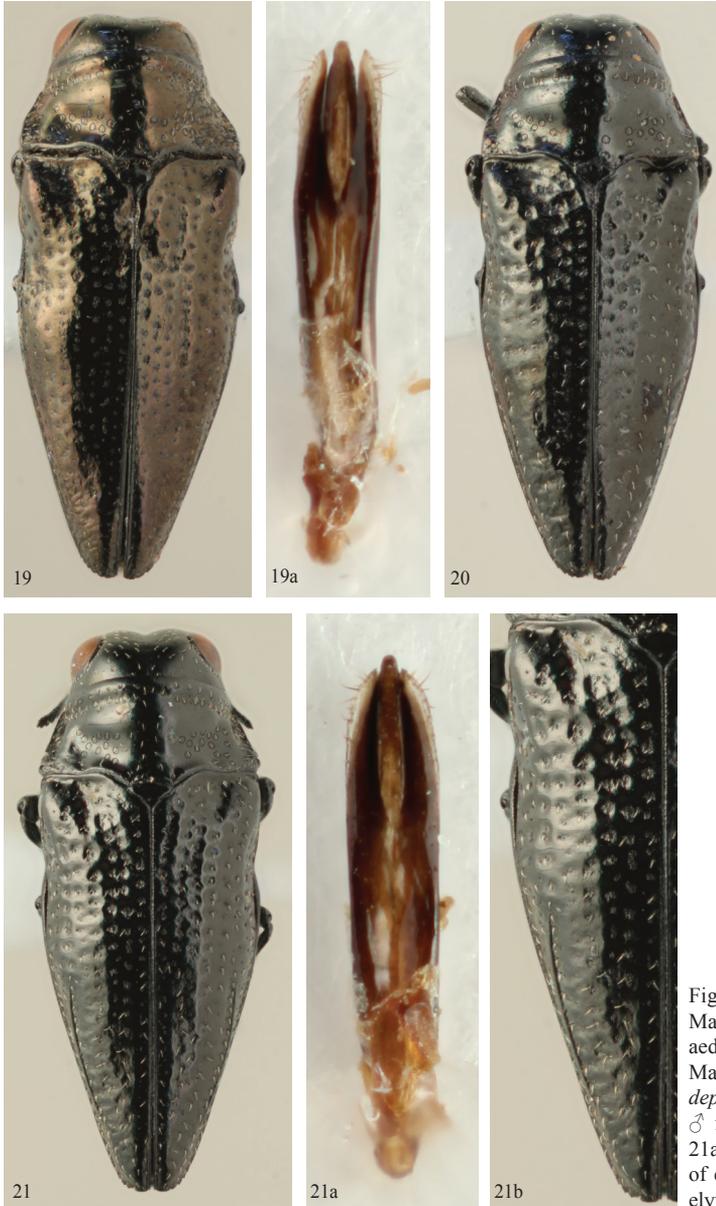
#### DEFINITIONS OF THE SPECIES-GROUPS

##### **Definition of the species-group of *Taphrocerus depilis* Kerremans, 1896**

##### ***Taphrocerus depilis* Kerremans, 1896 species-group** (Figs. 19, 19a, 20, 21, 21a, 21b)

**Diagnosis.** Small to medium-sized (2.8-3.4 mm), fusiform, convex, stout, lustrous species; dorsal surface black or dark brown; frons longitudinally depressed; epistomal pores missing; pronotum 1.6-2.0 times as wide as long, widest just before the base, without prehumeral carina; elytra 2.0-2.5 times as long as wide, widest just before the middle or just before the middle and at humeri; posthumeral elytral carina present at apical third only, not reaching apices, sharp, well marked (Fig. 21b); elytral sculpture consisting of rather large, simple punctures in rows longitudinally, well marked at basal half, gradually disappearing apically; elytral pubescence uniform, sparse, short, white.

**Species included.** *T. depilis* Kerremans, 1896  
*T. brevicarinatus* Fisher, 1929 syn. (Hespenheide, 1979: 119)  
*T. anayahani* Marek, 2015  
*T. hrnyi* Marek, 2015



Figs. 19-21. 19- *T. anayahani* Marek, 2015 HT, 2.9 mm; 19a- aedeagus, 0.80 mm; 20- *T. hrnyi* Marek, 2015 HT, 2.8 mm; 21- *T. depilis* Kerremans, 1896 (specimen ♂ from French Guiana), 3.3 mm; 21a- aedeagus, 0.89 mm; 21b- form of elytral carina (apical part of left elytron).

### A key to the species of *T. depilis* species -group

- 1 (2) Eyes large (FV, LV), distinctly projecting beyond outline of head (DV). Larger size (2.9-3.4 mm). Amazonia, Central America to South of Mexico. Habitus as in Fig. 21..... *T. depilis* Kerremans, 1896
- 2 (1) Eyes small (FV, LV), not or very slightly projecting beyond outline of head (DV). Smaller size (2.8-2.9 mm). French Guiana.
- 3 (4) Black species; frons and vertex narrower, eyes very slightly projecting beyond outline of head. Habitus as in Fig. 20 ..... *T. hrnyi* Marek, 2015
- 4 (3) Brown species with cupreous lustre; frons and vertex more wide; eyes not projecting beyond outline of head. Habitus as in Fig. 19 ..... *T. anayahani* Marek, 2015

### Definition of the species-group of *Taphrocerus cupriceps* Kerremans, 1900

#### *Taphrocerus cupriceps* Kerremans, 1900 species-group

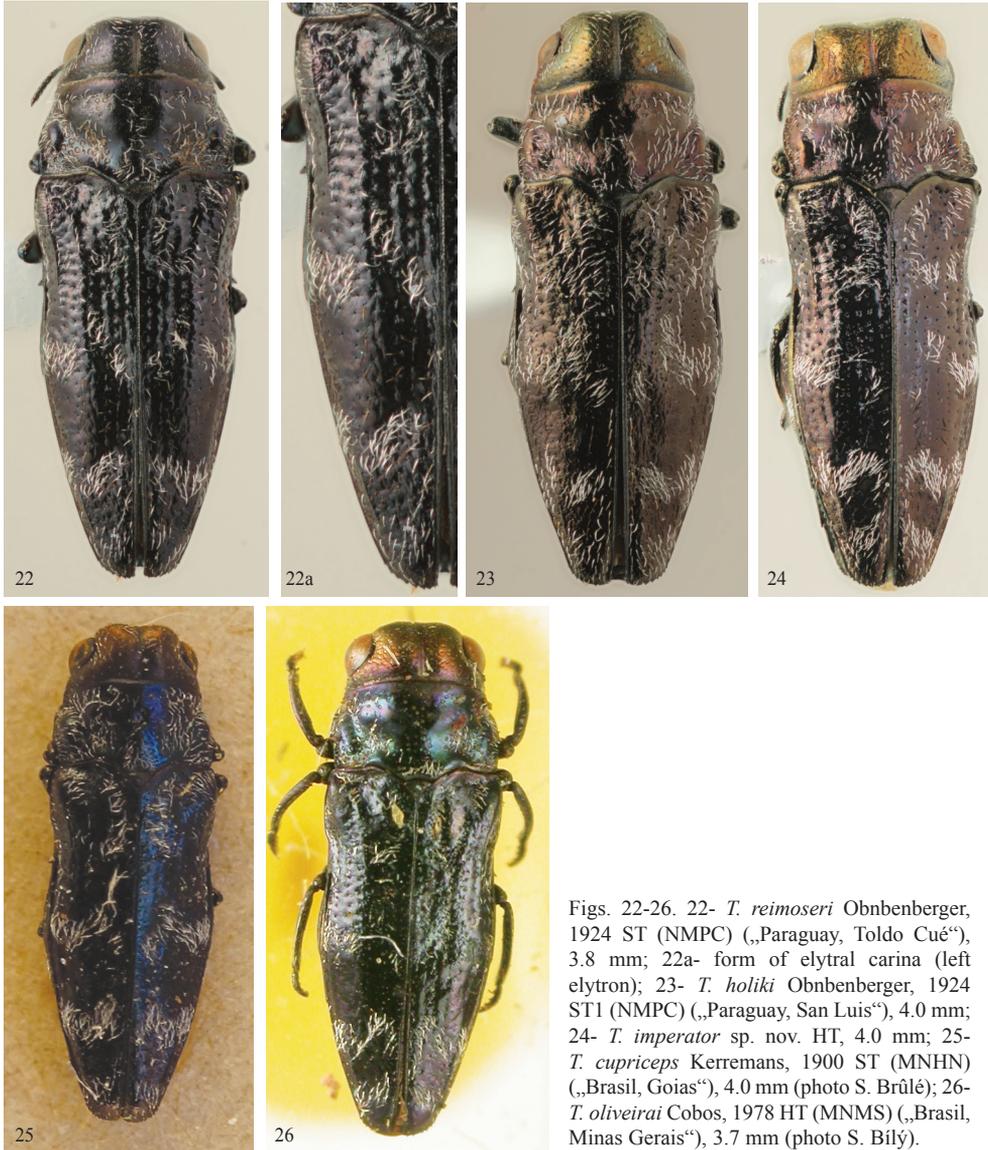
(Figs. 22, 23, 24, 25, 26)

**Diagnosis.** Medium-sized (3.8-4.0 mm), moderately convex, elongate, subparallel, lustrous species; dorsal surface dark brown with strong metallic tinge (purple, violet, blue); frons and vertex longitudinally grooved; epistomal pores missing; pronotum 1.6-1.8 times as wide as long, without prehumeral carina - vague bump or prominence at lateroposterior angles only; elytra 2.2-2.4 times as long as wide, posthumeral elytral carina always missing at middle, present very shortly at humeri and at apical fifth-sixth only, but in mentioned areas sharp, well marked; elytral pubescence ornamental, consisting of long, white setae.

**Species included.** *T. cupriceps* Kerremans, 1900  
*T. holiki* Obenberger, 1924  
*T. reimoseri* Obenberger, 1924  
*T. oliveirai* Cobos, 1978  
*T. imperator* sp. nov.

### A key to the species of *T. cupriceps* species -group

- 1 (2) Species monochromatic. Paraguay. 3.8 mm. Habitus as in Fig. 22 ..... *T. reimoseri* Obenberger, 1924
- 2 (1) Species two or multicoloured.
- 3 (4) Eyes small (FV, LV), slightly projecting beyond outline of head, vertex strongly protruding between eyes. Paraguay, Argentina. 4.0 mm. Habitus as in Figs. 18, 23 ..... *T. holiki* Obenberger, 1924
- 4 (3) Eyes large (FV, LV), distinctly projecting beyond outline of head (DV), vertex not or moderately protruding between eyes.
- 5 (6) Vertex wide, 0.47 times narrower than anterior pronotal margin (DV). Paraguay. 4.0 mm. Habitus as in Figs. 17, 24 ..... *T. imperator* sp. nov.
- 6 (5) Vertex narrow, 0.61 times narrower than anterior pronotal margin (DV).
- 7 (8) Vertex more protruding between eyes. Brasil. 4.0 mm. Habitus as in Fig. 25. *T. cupriceps* Kerremans, 1900
- 8 (7) Vertex less protruding between eyes. Brasil. 3.7 mm. Habitus as in Fig. 26 ..... *T. oliveirai* Cobos, 1978



Figs. 22-26. 22- *T. reimoseri* Obnbenberger, 1924 ST (NMPC) („Paraguay, Toldo Cué“), 3.8 mm; 22a- form of elytral carina (left elytron); 23- *T. holiki* Obnbenberger, 1924 ST1 (NMPC) („Paraguay, San Luis“), 4.0 mm; 24- *T. imperator* sp. nov. HT, 4.0 mm; 25- *T. cupriceps* Kerremans, 1900 ST (MNHN) („Brasil, Goias“), 4.0 mm (photo S. Brûlé); 26- *T. oliveirai* Cobos, 1978 HT (MNMS) („Brasil, Minas Gerais“), 3.7 mm (photo S. Bílý).

#### NEW SYNONYMY

#### ***Taphrocerus balthasari* Obenberger, 1934**

(Figs. 27, 28, 28a)

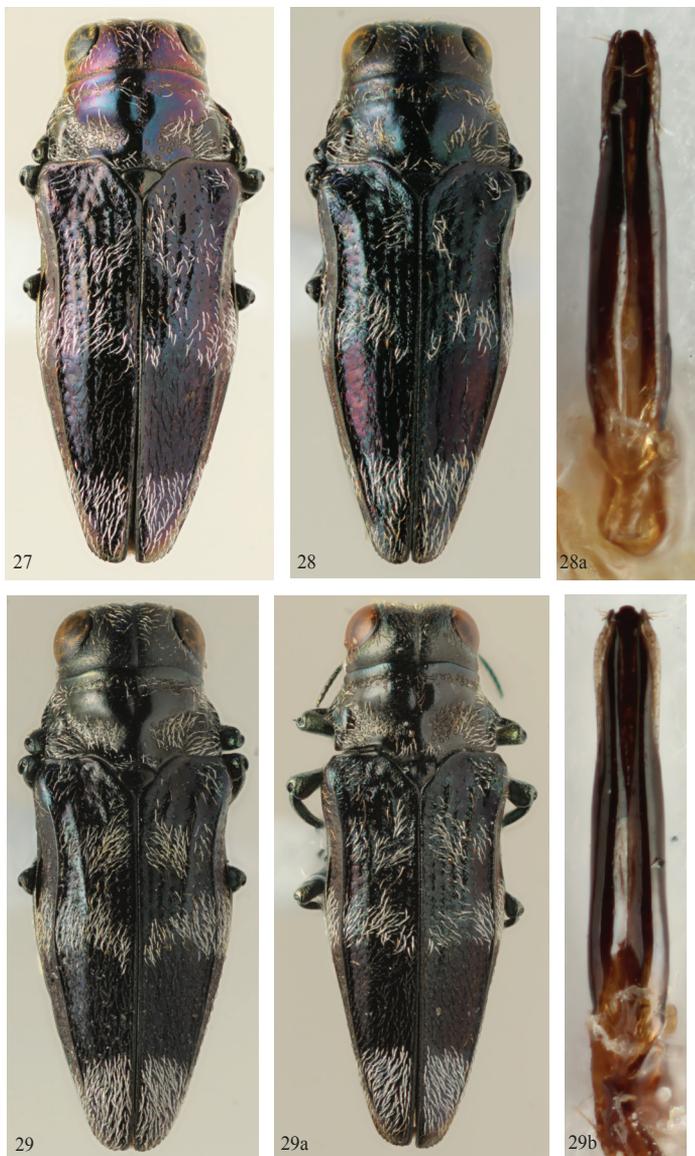
*Taphrocerus balthasari* Obenberger, 1934: 40.

*Taphrocerus lepidus* Obenberger, 1934: 41. **syn. nov.**

**Type material.** *Taphrocerus balthasari*: lectotype (♀, NMPC): LT designation Marek, 2014, correction Marek, 2015.

*Taphrocerus lepidus*: lectotype (♂, NMPC), by present designation: „Amazonas [h] \ TYPUS [p][red label with black margin] \ Taphrocerus lepidus m. Type [h][Obenberger’s MS] Det. Dr. Obenberger [p]“. Number of syntypes unknown.

The lectotype of *T. lepidus* is conspecific with the lectotype of *T. balthasari*. The name *T. lepidus* is a new subjective synonym of the name *T. balthasari*.



Figs. 27-29. 27- *T. balthasari* Obenberger, 1924 LT (NMPC) („Bol.,Sta.Cruz,Buenavista“), 3.8 mm; 28- *T. lepidus* Obenberger, 1934 ST (NMPC) („Amazonas“), 3.2 mm; 28a- aedeagus, 1.01mm; Fig. 29- *T. klimschi* Obenberger, 1917 female LT (NMPC) (“Rio Grande”), 4.0 mm; 29a- specimen male from French Guiana, 3.8 mm; 29b- aedeagus, 1.37 mm.

**Remarks.** Both *T. balthasari* and *T. lepidus* were described in the same paper of Obenberger (1934) and considered to be closely related in the key. The differences given there (width of body, colouration of frons, presence of „fronto-clypeal pubescent strip“ in *T. lepidus*, measurement of head, etc.) are mostly description of sexual dimorphism (see also Figs. 29, 29a, 29b - male and female of closely related species *T. klimbschi* Obenberger, 1917).

**Distribution.** Bolivia, Brasil (under *T. lepidus*).



TYPE LOCALITIES OF SYNONYMIZED SPECIES

*T. balthasari* - red circle („Bol., Sta Cruz, Buenavista“)

*T. lepidus* - red ellipse („Amazonas“)

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