

Two new species of the genus *Taphrocerus* Solier, 1833 (Coleoptera: Buprestidae: Agrilinae) from the collection of the Universidad Federal de Mato Grosso, Cuiabá, Brazil

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Abstract. Two species from Brazil are newly described and illustrated as follows: *Taphrocerus poconensis* sp. nov. and *T. vazdemelloi* sp. nov. The new species are compared to the most related taxa.

INTRODUCTION

During the study and preparation of the monograph revision of buprestid genus *Taphrocerus*, I have currently received several specimens coming from the collection of the Universidad Federal de Mato Grosso (Brazil, Cuiabá), along with a request for determination from Fernando Zagury Vaz-de-Mello. This material also contains two new species, the descriptions of which are given in this paper. The Brazilian *Taphrocerus* fauna, including the two species described here, currently has 129 species (Bellamy 2008, Marek 2019a, b, c, 2020a, b, 2021a, b, 2022).

MATERIALS AND METHODS

Designation of holotype specimens are provided by printed red label with black margin. Designation of paratypes specimens is provided by white label with wide red border and red capital letters paratype. Data from locality labels are cited „verbatim“.

Further abbreviations used in the text: () = my remarks and additions; HT = holotype, PT = paratype, LT = lectotype; DV = dorsal view; FV = frontal view, FLV = fronto-lateral view, FVV = fronto-ventral view.

A Canon D-550 digital camera with the Canon MP-65 mm f/2.8 1-5x macro lens was used to capture the colour images, multiple photographs taken were combined with Helicon Focus image software.

Specimens were measured to the nearest 0.05 mm. The length of the body was measured as distance between anterior margin of the head and the apex of elytra, the width of body was measured across the widest part (usually at humeri). The pronotal length was measured in the middle, the width across the widest part (usually the beginning of basal third). The elytral length was measured as the maximal perpendicular distance between the anterior margin (base) and the tip of elytra. The length of aedeagus was measured as a distance between its base and apex of the parameres, the width across the widest part.

The following collection codens are used throughout the text:
BMNH The Natural History Museum, London, United Kingdom;
CEMT Collection Entomological, Universidad Federal de Mato Grosso, Cuiabá, Brazil;
JMSC collection of Jaroslav Marek, Sýkořice, Czech Republic (it will be deposited in NMPC);
NMPC National Museum, Praha, Czech Republic.

TAXONOMY

Taphrocerus poconensis sp. nov.

(Figs. 1, 1a-c)

Type locality. Brazil, Mato Grosso, Poconé.

Type specimens. Holotype (♂): „Poconé MT, 06 - XII - 1997, Buprestidae, Arm. Mal. Acuri“, (CEMT). Paratypes: the same data as HT but with „27 - II - 1998“, (1 ♀, BMNH); the same data as HT but with „23 -X I - 1997“, (1 ♀, JMSC).

Diagnosis. Medium-sized to large (3.80-4.15 mm), rather broadly elongate, oval, stout, about 2.8 times longer than wide, widest at humeri, moderately convex above, elytra somewhat flattened, rather strongly lustrous above; head light brown-coppery with strong golden-purple lustre, frons green (♂) or black with feeble golden-purplish tinge at middle (♀), pronotum light brown-coppery with strong golden-purple lustre and with violet tinge at the middle longitudinally, elytra dark brown-coppery with slight purplish lustre and slight violet tinge; beneath black, legs and antennae black with bluish-green tinge; elytra with an ornamental pubescence of white setae; prehumeral pronotal carina absent; posthumeral elytral carina present, entire, sharp, strongly elevated, extending from humeri to near of apex.

Description of holotype. Head rather large, wide, narrower than posterior pronotal margin; clypeus very widely „V-shaped“, very strongly shagreened, separated from frons by a fine carina, epistomal pores large, touching each other, in the middle above clypeus; frons feebly convex, with wide, rectangular, rather deep depression at anterior half and shallow, triangular depression at posterior one, the depressions are separated by obsolete (with blunt edge), but well distinct and elevated, not interrupted carina (see Fig. 1c), densely pubescent by long relatively, widened, white setae at anterior depression („fronto-clypeal pubescent stripe“ - ♂) and with a few shorter, white setae at the triangular depression and along the eyes; vertex strongly convex, strongly shagreened, sparsely punctate by fine, simple punctures, with a fine groove at middle longitudinally, rather sparsely covered by thin, relatively long, white and brownish setae; eyes large, ovoid (FLV), moderately projecting beyond outline of head, well visible from above; antennae long, narrow, antennomeres 6-11 somewhat widened.

Pronotum moderately convex, 1.88 times as wide as long, widest at the beginning of basal third; narrowly and deeply transversely depressed along anterior margin, broadly and rather deeply so lateroposteriorly, with rather deep, short sulcus longitudinally at the middle of disc; with rather well elevated bump laterally at middle; anterior margin widely rounded, slightly emarginate at middle, posterior margin strongly biemarginate, widely emarginate in front of

scutellum, very slightly narrower than base of elytra, sides very shortly subparallel anteriorly, then strongly, almost straight dilated posteriorly to the beginning of basal third, angulate, then moderately emarginate and then subparallel to the base; surface rather finely shagreened, ocellate-punctate by medium-sized punctures at the lateroposterior depressions and in front of scutellum and by small punctures at the anterior transverse depression, each puncture with thin, long relatively, white seta; scutellum more or less cordiform (almost equilaterally triangular), widely rounded anteriorly, rather strongly shagreened, moderately lustrous.

Elytra somewhat flattened, 2.08 times as long as wide, widest at humeri and before the middle, slightly but markedly wider at humeri than pronotum at the widest part; lateral margins widely and shallowly emarginate behind humeri, shortly and rather weakly rounded at middle, then very slowly arcuately, almost straight tapering towards rather widely and separately rounded apices; apices very indistinctly serrate by shallow, blunt teeth; humeral swelling well developed, laterobasal depression medium-sized and rather deep, well distinct; surface strongly shagreened at basal fourth becoming more finely shagreened posteriorly, punctures in rows longitudinally deeper and larger at basal half along suture becoming fine and almost inconspicuous posteriorly, disappearing at apical fourth; an ornamental pubescence (pattern) of long relatively, white setae as follows: a few setae anterolaterally, sparse, wide, perisutural stripe at basal fourth widened posteriorly, narrow, longitudinal stripe at middle of each elytron before the midlength, wide, transverse stripe at the middle, entire apical fifth with dense and somewhat shorter, white setae; posthumeral elytral carina strongly elevated, entire, sharp, extending from humeri to near of apices.

Ventral surface very lustrous, strongly shagreened, abdomen rather densely white pubescent by thin, long setae, more densely laterally and apically, punctate by medium-sized, „U-turned up-shaped“ punctures on all visible sternites, the punctures becoming more finer apically; anal ventrite very widely rounded, with small but rather deep emargination on apical margin, preapical groove following outline of margin wide, widely rounded; antennal grooves long, deep, wide; prosternal process shortly elongate, very strongly constricted between procoxae, very strongly dilated behind, apex rhomboidal, strongly shagreened, impunctate, asetose, coarsely rugose between procoxae.

Sexual dimorphism. Observed in: frons green in male, black with feeble golden-purplish tinge at middle in female; small emargination on apical margin of anal ventrite distinctly larger in female.

Measurements. Length 3.80-4.15 mm (holotype 3.80 mm); width 1.35-1.50 mm (holotype 1.35 mm).

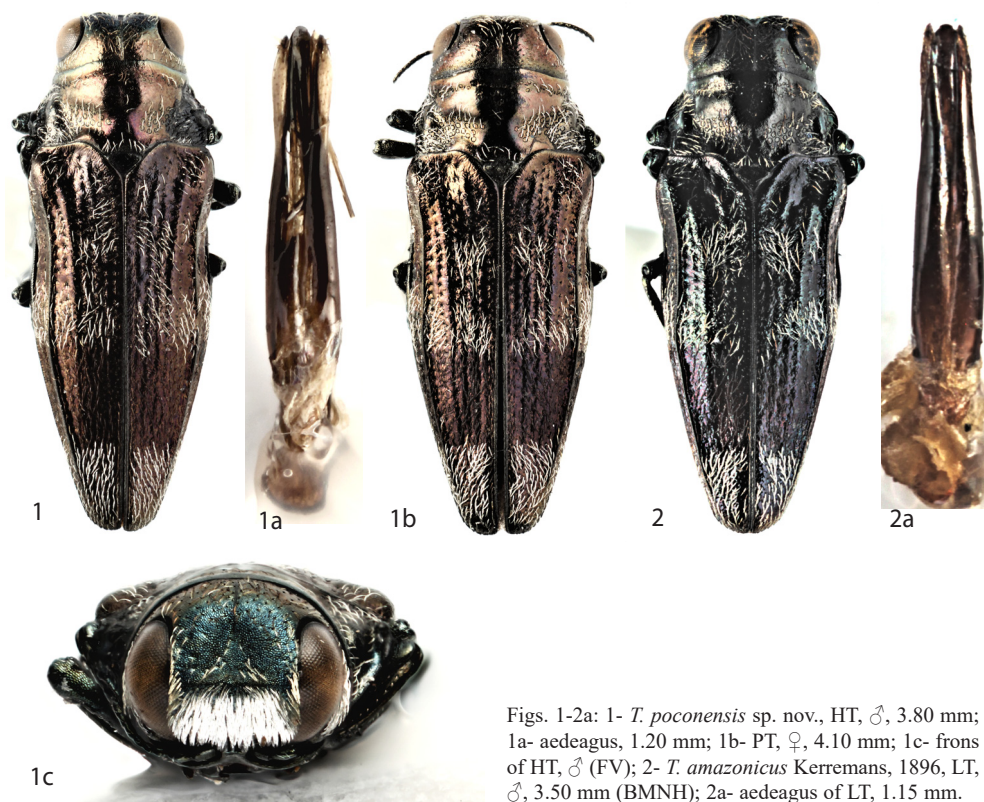
Variability. Except for the size observed very feebly in the density of setae in the elytral ornamental pubescence (pattern) only.

Differential diagnosis. *T. poconensis* sp. nov. belongs to *T. amazonicus* species-group (for revision of the species-group see Marek 2021a) and it is the most similar to *T. amazonicus* Kerremans, 1896 (Figs. 2, 2a) by the frons with transverse carina in male and by the aedeagus. For distinguishing of these two species see Table A below.

Table A. Diagnostic characters of *T. poconensis* sp. nov. and *T. amazonicus* Kerremans, 1896.

♂♂	<i>T. poconensis</i>	<i>T. amazonicus</i>
Colouration	brighter, above brown-coppery, with violet and purplish tinge of pronotum and elytra and with strong golden-purple lustre	darker, above black, with strong blue-violet tinge of pronotum and elytra and with greenish lustre
Frons	well distinct and elevated, not interrupted carina present at lower half (see Fig. 1c)	frons separated from vertex by fine carina interrupted at middle
Eyes	smaller (DV, FLV), less projecting beyond outline of head (DV)	larger (DV, FLV), more projecting beyond outline of head (DV)
Pronotal sides	less emarginate behind the widest part	markedly more emarginate behind the widest part
Scutellum	almost equilaterally triangular	widely cordiform
Elytral apices	slightly but markedly separately rounded	conjointly rounded
Aedeagus	apical semimembranous part of parameres larger and wider laterally, well distinct (Fig. 1a)	apical semimembranous part of parameres small, narrower, distinct at the top of the apex only (Fig. 2a)

Etymology. The specific epithet is derived from the type locality, Poconé in the Brazilian state Mato Grosso, where the type specimens were collected; adjective.



Figs. 1-2a: 1- *T. poconensis* sp. nov., HT, ♂, 3.80 mm; 1a- aedeagus, 1.20 mm; 1b- PT, ♀, 4.10 mm; 1c- frons of HT, ♂ (FV); 2- *T. amazonicus* Kerremans, 1896, LT, ♂, 3.50 mm (BMNH); 2a- aedeagus of LT, 1.15 mm.

***Taphrocerus vazdemelloi* sp. nov.**

(Figs. 3, 3a, 3b)

Type locality. Brazil, Rio de Janeiro, Mericá.

Type specimens. Holotype (♂): „BRA, RJ, Restinga de Mericá - Mericá, vi - viii. 2010, baledor dicot., 22,961°S/-42,846°W, T. G. Souza leg., B 384“, (CEMT). Paratypes: the same data as HT but with „baleador palmeira.“ and „B 240“, (1 ♀, CEMT); the same data as HT but with „baleador palmeira.“ and „B 229“ (1 ♂, BMNH); the same data as HT but with „baleador palmeira.“ and „B 399“, (1 ♂, JMSC).

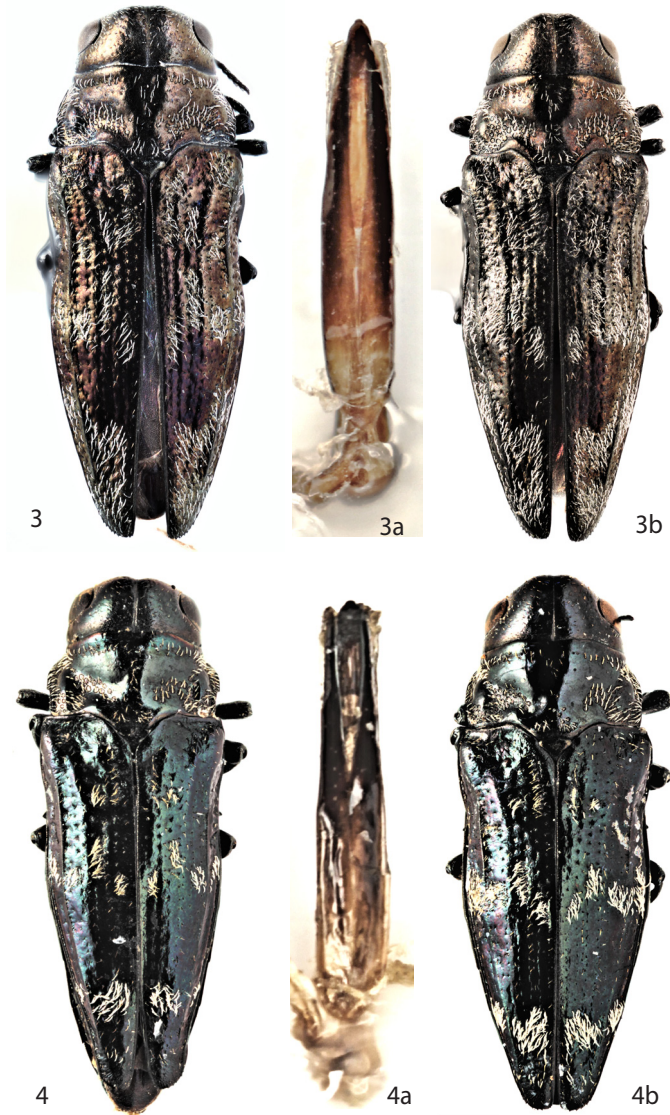
Diagnosis. Large (4.35-4.70 mm), elongate, broadly oval, male about 2.70 times as long as wide, female about 2.85 times as long as wide (vertex very strongly protruding forward in female!), widest at humeri, moderately convex above, rather strongly lustrous above; above brownish-coppery with rather strong golden-purple lustre and violet tinge on elytra along the suture, frons bluish-green (♂) or black with feeble bluish tinge at middle (♀); beneath black with very strong golden lustre including legs and antennae, moderately lustrous; elytra with an ornamental pubescence of white setae; prehumeral pronotal carina absent; posthumeral elytral carina present, entire, sharp, strongly elevated, extending from humeri to very near of apex, but at elytral midlength present from obsoletely manifesting to completely missing (interrupted).

Description of holotype. Head rather large, wide, distinctly narrower than posterior pronotal margin, sides very weakly attenuate anteriorly (DV); clypeus widely „V-shaped“, strongly shagreened, separated from frons by a fine carina, lateral branches wide, epistomal pores large, elongate transversely, touching each other; frons almost flat, strongly shagreened, widely and shallowly depressed above clypeus, triangularly and shallowly so towards vertex, the depressions are conjoined by wide, shallow sulcus, with rather dense, white setae at anterior depression („fronto-clypeal pubescent stripe“ - ♂) and distinctly more sparser ones at the triangular depression, punctate by coarse, simple punctures at the triangular depression; vertex widely and strongly convex (FVV), weakly protruding forward (DV), weakly depressed at middle longitudinally, with well distinct groove at middle longitudinally, strongly shagreened, sparsely punctate by simple punctures, each puncture with short, thin, white seta, the setae are markedly longer anteriorly; eyes medium-sized, ovoid (FLV), moderately projecting beyond outline of head, rather well visible from above; antennae rather long, narrow, antennomeres 6-11 widened.

Pronotum moderately convex, 1.98 times as wide as long, widest in the end of second-third; narrowly transversely depressed along anterior margin, the depression is deeper laterally and almost interrupted at middle, largely and deeply depressed lateroposteriorly, with small, oval longitudinally depression on the disc anteriorly; with large, well elevated bump lateroposteriorly; anterior margin triemarginate (shortly but distinctly laterally and widely and rather deeply at middle), posterior margin very strongly biemarginate, slightly narrower than base of elytra, almost straight in front of scutellum, sides very shortly subparallel anteriorly, then widely arcuately dilated to the end of second-third, drawn in a very small but well defined, blunt bump and then widely arcuately constricted to the base; surface finely shagreened laterally and rather strongly so on the disc, densely

ocellate-punctate by medium-sized punctures at the lateroposterior depressions and by very small punctures at anterior transverse depression and on the disc, each puncture with long relatively, thin, white seta; scutellum medium-sized, wide, widely cordiform, almost straight anteriorly, strongly shagreened, moderately lustrous.

Elytra moderately convex, 2.04 times as long as wide, widest at humeri, weakly but distinctly wider at humeri than pronotum at the widest part; lateral margins rather narrowly and deeply emarginate behind humeri, rather narrowly and markedly rounded at middle, then slowly arcuately tapering towards rather narrowly and very slightly separately rounded



Figs. 3-4b: 3- *T. vazdemelloi* sp. nov., HT, ♂, 4.50 mm; 3a-aedeagus, 1.00 mm; 3b- PT, ♀, 4.70 mm; 4- *T. cocois* Bondar, 1922, bluish coloured ♂ from Bahia, 4.70 mm (BMNH); 4a-aedeagus, 1.15 mm; 4b- bluish coloured ♀ from Bahia, 5.10 mm (JMSC).

apices; apices minutely serrate by sharp teeth; humeral swelling well developed, laterobasal depression small and shallow, poorly distinct; surface rather finely shagreened, punctures in rows longitudinally larger and deeper at basal half becoming more finer posteriorly, almost disappearing at apical fourth; an ornamental pubescence (pattern) of long relatively, white setae as follows: a few setae anterolaterally, wide, interrupted stripe in the end of basal fourth obliquely down, wide, „zig-zag“, transverse stripe at the middle, consisting of more or less separated longitudinal stripes, entire apical fourth with dense, white setae, the setae are markedly sparser at middle transversely; posthumeral elytral carina present, entire, sharp, strongly elevated, extending from humeri to very near of apex, but at elytral midlength present obsoletely, almost interrupted.

Ventral surface strongly shagreened, lustrous, abdomen punctate by small „U-turned-up-shaped“ punctures, the punctures are almost the same size on all visible sternites, pubescent by thin, white setae, somewhat more densely laterally and apically; anal ventrite rather widely, regularly rounded, preapical groove following outline of margin regularly semicircular, very narrow (!); antennal grooves long, widened on prosternum; prosternal process elongate, constricted between procoxae, strongly dilated behind, apex rhomboidal, punctate by coarse, simple punctures, almost inconspicuously pubescent by extremely short, thin, white setae.

Sexual dimorphism. Species with very strong sexual dimorphism: frons bluish-green in male, black with feeble bluish tinge at middle in female, distinctly more densely pubescent above clypeus in male („fronto-clypeal pubescent stripe“); vertex weakly protruding forward (DV) in male, strongly so in female; anal ventrite with small but rather deep emargination on apical margin in female, the emargination missing in male.

Measurements. Length 4.35-4.70 mm (holotype 4.50 mm); width 1.50-1.65 mm in ♂♂ (holotype 1.65 mm), 1.65 mm in ♀.

Variability. Except for the size not apparent.

Differential diagnosis. *T. vazdemelloi* sp. nov. belongs probably among the *Taphrocerus*-species associated with palm trees according to its considerable resemblance to *T. cocois* Bondar, 1922 (mainly by characteristic strong sexual dimorphism in body shape (frons and vertex), to which it is also the most similar and probably closely related. For distinguishing of this two species see Table B below.

Table B. Diagnostic characters of *T. vazdemelloi* sp. nov. and *T. cocois* Bondar, 1922.

	<i>T. vazdemelloi</i>	<i>T. cocois</i>
Colouration	above brownish-coppery in general	above from dark brown to metallic blue
Microsculpture of dorsal side	distinctly more strongly shagreened, less lustrous above	distinctly more finely shagreened, with large areas almost without microsculpture (almost smooth)
Eyes	distinctly smaller relatively (FV, FLV)	distinctly larger relatively (FV, FLV)
Elytral apices	more narrowly and very slightly separately rounded	more widely and separately rounded
Elytral ornamental pubescence (pattern)	consisting from finer, sparser and narrower setae; markedly larger extension (laterally from apex to the middle almost not interruptly, apical fourth almost entire pubescent, etc. - see Figs. 3, 3b)	consisting from denser and wider setae (looks mostly as tomentose spots); markedly smaller extension (laterally present at the middle and at the beginning of basal fourth only, the apical eight almost glabrous, etc. - see Figs. 4, 4b)
Aedeagus	parameres attenuate to the top behind the middle (apically); parameres emarginate on inner side more than to the middle = penis (median lobe) visible more than from a half (Fig. 3a)	parameres attenuate to the top before the middle (apically); parameres emarginate on inner side less than to the middle = penis (median lobe) visible less than from a half (Fig. 4a)

Etymology. Named in honour of Professor Fernando Zagury Vaz-de-Mello, from the Universidad Federal de Mato Grosso (Cuiabá, Brazil), specialist in Neotropical Scarabaeoidea; patronymic.

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