

Species of the genus *Taphrocerus* (Coleoptera: Buprestidae: Agrilinae) collected by Bates and Darwin during their fabulous voyages with description of eight new species

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Abstract. The species and specimens of the genus *Taphrocerus* Solier, 1833 (Coleoptera: Buprestidae: Agrilinae) collected by Henry Bates in „Para“ (now Belém), „Ega“ (now Tefé) and Santarem (all in Brazil) and by Charles Darwin in Bahia, Rio de Janeiro (Brazil) and Maldonado (Uruguay) are presented. Eight species are newly described and illustrated as follows: *T. barclayi* sp. nov. (Brazil), *T. batesi* sp. nov. (Brazil), *T. bellus* sp. nov. (Brazil, Peru), *T. darwini* sp. nov. (Brazil), *T. laticeps* sp. nov. (Brazil, French Guiana), *T. longus* sp. nov. (Brazil), *T. santaremensis* sp. nov. (Brazil) and *T. subcyaneus* sp. nov. (Brazil). The new species are compared to the most related taxa. Records new to country are presented for *T. abscondus* Marek, 2018 (Brazil), *T. argentinus* Bruch, 1909 (Uruguay), *T. halffteri* Cobos, 1978 (Brazil), *T. nugator* (Gory, 1841) (Brazil) and for *Taphroceroides curlettii* Brûlé, 2012 (Brazil). Other species and specimens of *Taphrocerus* collected by Bates and Darwin are noted and the list of species/specimens is contributed.

INTRODUCTION

Recently I received a larger number (cca 200 specimens) of undetermined *Taphrocerus* stored in The Natural History Museum (London) from extraordinary kindness of curators there. The material also contains the specimens collected by Henry Bates and Charles Darwin during their „fabulous“ voyages to South America in the first half of the nineteenth century. There are twelve previously described species (together with one species of the genus *Taphroceroides* Hespenseide, 2008 that I contribute in this paper) and eight undescribed species in this material. Five of the undescribed species I already know from the collecting trips of another collectors (see below „Type specimens“ under of five of newly described species) and I contribute the Batesian and Darwinian specimens in the type series.

Henry Walter Bates (1825-1892) was an English naturalist and explorer who gave the first scientific account of mimicry in animals. He was most famous for his expedition to the rainforest of the Amazon with Alfred Russel Wallace, starting in 1848. Wallace returned in 1852, but lost his collection on the return voyage when his ship caught fire. Bates arrived home in 1859 after a full eleven years (!), he had sent back all his huge collection (mostly of insects). Bates wrote up his findings in 1863 (*The Naturalist on the River Amazons*).

Charles Robert Darwin (1809-1882) was an English naturalist, geologist and biologist, best known for his theory of evolution and the process of natural selection. He participated in a survey voyage around the world on the H.M.S. *Beagle*. The voyage began on the 27th of December 1831 and it lasted almost five years. He published his notes in 1839 (*The Voyage of the Beagle*).

MATERIALS AND METHODS

The specimens collected by Bates are labelled by small handwritten circle label with locality („Santarem“ or „Ega“ or „Pará“) and inscription „Bates“ and by printed label „Saunders. 74.18.“, sometimes with third label - printed number (f.e. „27“) on small light blue label. Collecting in „Pará“ (now Belém) took place around 1848, in „Ega“ (now Tefé) around 1855.

The specimens collected by Darwin have three different types of labels: 1) printed label with locality (f.e. „Rio Janeiro, Brazil“) and „C. Darwin“, printed label with „Darwin Coll. 1885.-119.“ and handwritten locality label (f.e. „Rio“) with a number on reverse side (about 500 specimens of insects in BMNH); 2) label with handwritten locality (f.e. „Bahia“) and printed „C. Darwin. 87-42.“ (about 2000 specimens of Coleoptera in BMNH); 3) handwritten locality label (f.e. „Bahia“), sometimes with a number on reverse side and handwritten small blue circle label with „58.60.“ (5628 insects coming to BMNH from collection of The Entomological Society in 1858). For more details about the present location, labelling of specimens and collecting methods of the insects collected by C. Darwin see Smith 1987. (Note: most of the collecting was almost certainly done by Darwin and his servant Syms Covington together (Smith 1987: 12).

Designation of holotype specimens are provided by printed red label with black margin. Designation of paratype(s) specimen(s) 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 (PTs) = paratype (paratypes), ST = syntype, ST 1 (ST 2, ST 3 ...) - specimen labelled as syntype number 1 (nr 2, nr 3 ...); DV = dorsal view; FV = frontal view, FVV = fronto-ventral view, LV = lateral view; (p) = printed, (h) = handwritten.

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, occasional exceptions are noted at relevant places.

Specimens were measured to the nearest 0.05 mm. The length of 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 anterior margin (base) and the tip of elytra. The length of aedeagus was measured as 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;

HNHM Hungarian Natural History Museum, Budapest, Hungary;

JMSC collection of Jaroslav Marek, Sýkořice, Czech Republic (it will be deposited in NMPC);

MNCN Museo Nacional de Ciencias Naturales, Madrid, Spain;

NMPC National Museum, Praha, Czech Republic.

RESULTS

DESCRIPTIONS OF NEW SPECIES

Taphrocerus longus sp. nov.

(Figs. 1, 1a)

Type locality. Brazil, state Rio de Janeiro, Trindad near Parati.

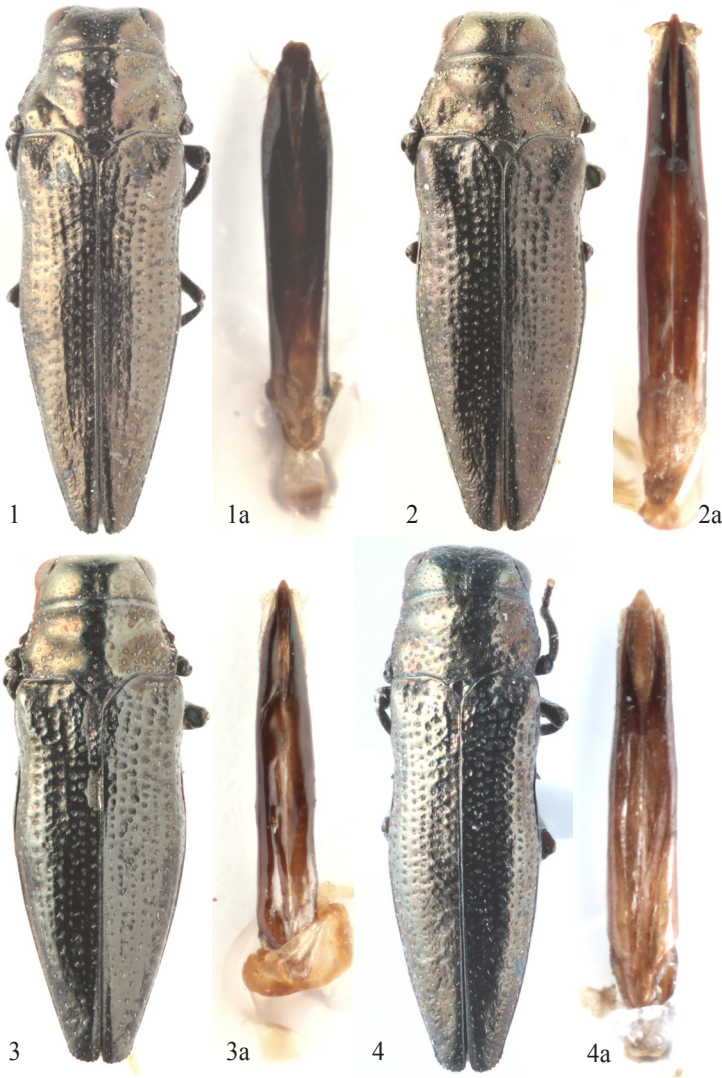
Type specimens. Holotype (♂): „South Brazil, state Rio de Janeiro, Trindad near Parati, 2.-10. xii. 2000 A. Kudrna jr. lgt.“ (JMSC, note: not Darwinian specimen). Paratype: „Rio 438 (h, number on reverse side) / 58.60. (h, light blue circle)“ (1 ♀, BMNH, note: Darwinian specimen).

Diagnosis. Medium-sized to large (3.80-4.00 mm), elongate, slender, about 3.2 times longer than wide, widest at the beginning of pronotal basal third and at humeri, rather strongly convex and very lustrous above; above coppery with golden lustre, pronotal disc with purple tinge; beneath black with slight coppery tinge including legs and antennae, abdomen with strong golden lustre; sparsely pubescent by extremely short, almost inconspicuous thin white setae; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head medium-sized, wide, moderately narrower than posterior pronotal margin; clypeus very widely „V-shaped“, strongly shagreened, separated from frons by well elevated carina, epistomal pores large, circular, separated less than their own diameter; frons feebly convex, widely and rather deeply depressed at middle, the depression becoming in short and fine sulcus towards vertex, surface rather strongly shagreened, sparsely punctate by fine punctures, with a few short white setae above clypeus only; vertex strongly convex, slightly depressed anteriorly at middle, strongly shagreened at anterior half, finely shagreened posteriorly, with a fine groove at middle longitudinally, sparsely punctate by simple punctures, each puncture with medium-sized thin white seta; eyes medium-sized, almost regularly circular, slightly projecting beyond outline of head, rather well visible from above; antennae rather short, antennomeres 6-11 widened.

Pronotum rather strongly convex at anterior half, somewhat flattened at posterior one, 1.86 times as wide as long, widest at the beginning of basal third; rather widely and shallowly transversely depressed along anterior margin, largely and rather deeply so lateroposteriorly, with a vague shallow depression on the disc longitudinally and small shallow depression in front of scutellum; with rather well elevated bump at lateroposterior angles; anterior margin widely regularly rounded, posterior margin strongly biemarginate, very slightly narrower than base of elytra, rather widely emarginate in front of scutellum, sides shortly subparallel anteriorly, then almost straight dilated to the beginning of basal third, angulate and then straight, rather strongly constricted to the base; surface finely shagreened except for pronotal disc, which is almost smooth laterally, sparsely ocellate-punctate by very small punctures at the depressions, each puncture with short thin white seta; scutellum medium-sized, regularly cordiform, rather strongly rounded anteriorly, finely shagreened, moderately lustrous.

Elytra moderately convex, 2.38 times as long as wide, widest at humeri, the same width at



Figs. 1-4a: 1- *T. longus* sp. nov., HT ♂, 4.00 mm, 1a- aedeagus, 0.95 mm; 2- *T. joukli* Obenberger, 1924, ST 1 ♂, 3.80 mm (NMPC), 2a- aedeagus, 1.25 mm; 3- *T. pauligenus* Obenberger, 1934, LT/ST 1 ♂, 4.00 mm (NMPC), 3a- aedeagus, 1.30 mm; 4- *T. obenbergeri* Apt, 1954, HT ♂, 3.60 mm (HNHM), 4a- aedeagus, 1.00 mm.

humeri as pronotum at the widest part; lateral margins slightly and rather widely emarginate behind humeri, slightly and narrowly rounded at middle, then very slowly, almost straight tapering towards narrowly, feebly separately rounded apices; apices sparsely serrate by sharp teeth; humeral swelling moderately developed, laterobasal depression medium-sized, rather deep and well distinct; surface rather strongly shagreened, punctures in rows longitudinally larger and deeper at basal third becoming fine posteriorly, disappearing at apical fifth, which is somewhat corrugate; sparsely covered by very short, almost inconspicuous thin white setae; posthumeral elytral carina absent, poorly distinct fold presents shortly at apical sixth laterally.

Ventral surface strongly shagreened, abdomen very lustrous, sparsely punctate by very small ocellate punctures opening posteriorly on first visible sternite, pubescent by very short white setae laterally and apically; anal ventrite narrowly, elongately rounded, with a small, shallow emargination on apical margin, preapical groove following outline of margin regularly semicircular, wide; antennal grooves very wide and shallow; prosternal process rather shortly elongate, strongly shagreened, feebly lustrous, sides regularly dilated behind, apex rhomboidal, surface asetose, impunctate, with rather shallow but well distinct wide sulcus at middle longitudinally.

Aedeagus (Fig. 1a).

Sexual dimorphism. The emargination on apical margin of anal ventrite is distinctly deeper in female.

Measurements. Length 3.80-4.00 mm (holotype 4.00 mm); width 1.20-1.25 mm (holotype 1.25 mm).

Variability. Except for the size, the paratype female is distinctly darker in colouration, with the vertex moderately convex only (FVV) and the pronotal disc is without purple tinge.

Differential diagnosis. *T. longus* sp. nov. is distinctive by very slender body shape, although not so slender like somewhat similar *T. obenbergeri* Apt, 1954 (Figs. 4, 4a) with the similar distribution also (described from Brazil, Sao Paulo). *T. longus* sp. nov. is most similar to *T. joukli* Obenberger, 1924 (Figs. 2, 2a) (described from Argentina, Resistencia and known to me from Brazil, Sao Paulo also) and to *T. pauligenus* Obenberger, 1934 (Figs. 3, 3a) (described from Brazil, Sao Paulo) and it can be distinguished by the characters given in Table A below.

Table A. Diagnostic characters of *T. longus* sp. nov., *T. joukli* Obenberger, 1924 and *T. pauligenus* Obenberger, 1934.

	<i>T. longus</i>	<i>T. joukli</i>	<i>T. pauligenus</i>
Colouration	less strong bicoloured (head + pronotum : elytra)	stronger bicoloured (head + pronotum : elytra)	stronger bicoloured (head + pronotum : elytra)
Head (DV)	sides subparallel	sides attenuate anteriorly	sides subparallel
Eyes (DV)	larger, more visible from above	smaller, less visible from above	larger, more visible from above
Elytral apices	more narrowly rounded	more broadly rounded	more broadly rounded
Aedeagus	parameres slowly dilated proximally, apical semimembranous part absent; apex of phallus (median lobe) very broadly rounded (Fig. 1a)	parameres subparallel at basal half, constricted at apical half, apical semimembranous part present; apex of phallus (median lobe) narrowly pointed (Fig. 2a)	parameres slowly constricted proximally, apical semimembranous part present; apex of phallus (median lobe) narrowly pointed (Fig. 3a)

Etymology. The specific epithet is the Latin adjective *longus* (long) to stress the body shape of this species.

Remarks. According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the paratype female (Darwinian specimen) had to be collected 5. iv.-5. vii. 1832.

***Taphrocerus darwini* sp. nov.**
(Figs. 5, 5a)

Type locality. Brazil, Bahia (San Salvador).

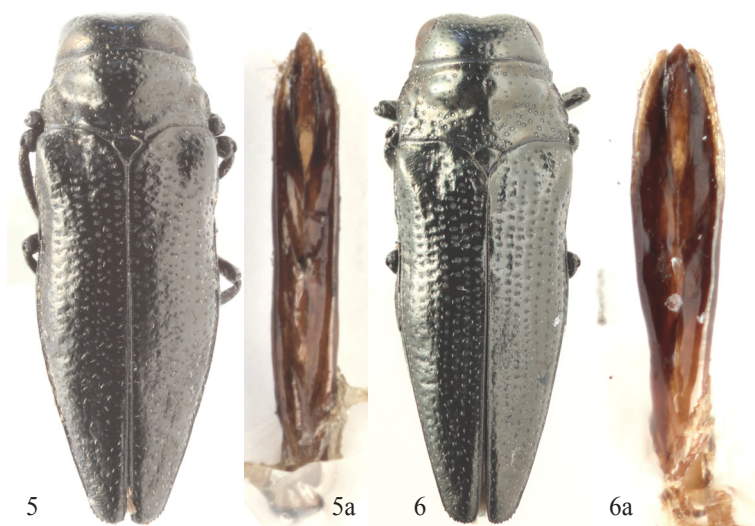
Type specimens. Holotype (♂): „Bahia (h) / 58.60. (h, light blue circle)“ (BMNH, note: Darwinian specimen).

Diagnosis. Medium-sized (3.75 mm), cuneiform, very robust, about 2.8 times as long as wide, widest at humeri and just before the middle of elytra, rather strongly lustrous; above black, head with strong golden-coppery tinge; beneath black with slight coppery tinge including legs, antennae black with strong purple tinge; sparsely pubescent by very short, almost inconspicuous thin white setae, somewhat more distinct on elytra along suture; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head rather large, wide, moderately narrower than posterior pronotal margin; clypeus very widely „V-shaped“, strongly shagreened, separated from frons by well elevated carina, epistomal pores large, slightly elongate transversely, separated less than their own diameter; frons moderately convex, strongly shagreened, rather feebly depressed at middle, sparsely punctate by fine simple punctures, very sparsely pubescent by short thin white setae; vertex moderately convex, strongly shagreened, slightly and widely depressed anteriorly, with a fine groove at middle longitudinally, sparsely punctate by very fine simple punctures, each puncture at anterior half with a short thin white seta; eyes rather large, broadly oval, not projecting beyond outline of head, poorly visible from above; antennae short and rather wide.

Pronotum rather strongly convex, 1.95 times as wide as long, widest at the beginning of basal fourth; shallowly transversely depressed along anterior margin, almost interruptly at middle, largely and moderately so lateroposteriorly, very shallowly so on the disc at middle and in front of scutellum; with rather well elevated bump lateroposteriorly; anterior margin widely rounded, pronotal lobe somewhat protruding anteriorly, posterior margin rather feebly biemarginate, distinctly narrower than elytra at base, widely emarginate in front of scutellum, sides shortly subparallel anteriorly, then shortly but rather strongly dilated to the middle, angulate, then very slightly straight dilated to the beginning of basal fourth, then strongly, narrowly emarginately constricted and then shortly and feebly dilated to the base; surface strongly shagreened, sparsely ocellate-punctate by very small punctures at the depressions, each puncture with a short thin white seta; scutellum medium-sized, almost regularly triangular, very widely rounded, almost straight anteriorly, strongly shagreened, lustrous.

Elytra moderately convex, 2.16 times as long as wide, widest at humeri and just before the middle, distinctly wider at humeri than pronotum at the widest part; lateral margins



Figs. 5-6a: 5- *T. darwini* sp. nov., HT ♂, 3.75 mm, 5a- aedeagus, 1.00 mm; 6- *T. obscurellus* Obenberger, 1934, LT ♂, 4.00 mm (NMPC), 6a- aedeagus, 1.35 mm.

slightly and rather narrowly emarginate behind humeri, rather widely rounded at middle, then very slowly, almost straight tapering towards broadly and separately rounded apices; apices finely serrate by sharp teeth; humeral swelling rather well developed, laterobasal depression rather large and deep, well distinct; surface strongly shagreened, punctures in rows longitudinally fine, well marked at first two-thirds, almost indistinct at apical third, which is somewhat corrugate; very sparsely pubescent by short thin white setae, somewhat more distinct at apical third only; posthumeral elytral carina absent.

Ventral surface lustrous, strongly shagreened, abdomen very lustrous, punctate by small „U-turned-up-shaped“ punctures on basal two visible sternites, sparsely pubescent by very short thin white setae laterally and apically; anal ventrite broadly rounded, truncate apically, with a wide emargination on apical margin, preapical groove following outline of margin widely rounded, truncate apically, wide; antennal grooves rather long and wide; prosternal process very shortly elongate, wide, strongly shagreened, feebly lustrous, sides regularly dilated behind, apex rhomboidal, with a few short white setae and fine punctures only.

Aedeagus (Fig. 5a).

Sexual dimorphism. Female unknown.

Measurements. Length 3.75 mm; width 1.45 mm.

Differential diagnosis. *T. darwini* sp. nov. is striking by very robust body and almost rectangular body shape generally (DV). It is the most similar to *T. obscurellus* Obenberger, 1934 (Figs. 6, 6a) (described from French Guiana, Cayenne), which is one of the most abundant and widespread species of the genus in the Amazonia by my observations. For distinguishing of these two species see Table B below.

Table B. Diagnostic characters of *T. darwini* sp. nov. and *T. obscurellus* Obenberger, 1934.

	<i>T. darwini</i>	<i>T. obscurellus</i>
Body shape	robust, less than 2.8 times longer than wide	slender, more than 2.9 times longer than wide
Frons (DV)	very slightly depressed at middle	distinctly depressed at middle
Eyes (DV)	feebly visible from above	well visible from above
Pronotum	anterior margin more strongly rounded; sides markedly strongly dilated behind at anterior half	anterior margin very widely rounded; sides less strongly dilated behind at anterior half
Pronotal base	distinctly narrower than base of elytra	very slightly narrower, almost of the same width as base of elytra
Aedeagus	slender, about 6.4 times longer than wide; parameres subparallel, apical semimembranous part feebly developed (Fig. 5a)	stouter, about 4.7 times longer than wide; parameres distinctly dilated proximally (distinctly dilated proximally at basal two-thirds), apical semimembranous part well developed (Fig. 6a)

Etymology. Named in honour of Charles Darwin, who collected the holotype in Bahia (Brazil) during his voyage around the world on the H.M.S. Beagle in 1832 (or 1836, see Remarks below); patronymic.

Remarks. According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the holotype had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

***Taphrocerus barclayi* sp. nov.**

(Figs. 7, 7a)

Type locality. Brazil, Bahia (San Salvador).

Type specimens. Holotype (♂): „Bahia (h) / 58.60. (h, light blue circle)“ (BMNH, note: Darwinian specimen).

Diagnosis. Small (2.60 mm), elongate, broadly oval, about 2.6 times as long as wide, widest before the pronotal base, moderately convex above, rather strongly lustrous; head and pronotum black with very slight golden-coppery tinge, elytra black with feeble golden-coppery reflections, scutellum black; beneath black with slight coppery tinge including legs, antennae black with golden-green tinge; sparsely covered by medium-sized thin white setae on head, pronotum and apical half of elytra; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head rather large, wide, distinctly narrower than posterior pronotal margin, sides rather strongly attenuate anteriorly (DV); clypeus very widely „V-shaped“, strongly shagreened, separated from frons by a fine carina, epistomal pores medium-sized, circular, separated more than their own diameter; frons strongly convex, rather finely shagreened, with a wide and rather deep sulcus at middle longitudinally reaching from clypeus to vertex, with sparse and thin but long relatively white setae above clypeus and at

anterior part of the sulcus, impunctate; vertex strongly convex, slightly depressed at middle anteriorly, with a fine groove at middle longitudinally, very finely shagreened, ocellate-punctate by small punctures, more denser at middle, sparsely pubescent by medium-sized thin white setae; eyes rather large, broadly oval, not projecting beyond outline of head, very feebly visible from above; antennae rather long, antennomeres 6-11 widened.

Pronotum moderately convex, 1.88 times as wide as long, widest before the base; rather widely and shallowly transversely depressed along anterior margin, almost interruptly at middle, largely and rather deeply so lateroposteriorly, very shallowly so on the disc at middle, narrowly and deeply so along the sides; with well developed bump lateroposteriorly; anterior margin widely rounded, straight at middle, posterior margin strongly biemarginate, rather deeply emarginate in front of scutellum, slightly wider than base of elytra, sides shortly subparallel anteriorly, then almost straight dilated to basal sixth, bluntly angulate and then slightly constricted to the base; surface finely shagreened, ocellate-punctate by small punctures at the depressions, the punctures at lateroposterior depressions are distinctly larger than at anterior transverse depression, each puncture with medium-sized thin white seta; scutellum rather small, triangular, rather strongly rounded anteriorly, finely shagreened, moderately lustrous.

Elytra moderately convex, 1.99 times as long as wide, widest at humeri and before the middle, slightly but distinctly narrower at humeri than pronotum at the widest part; lateral margins feebly and rather narrowly emarginate behind humeri, widely rounded at middle, then very slowly arcuately tapering towards broadly and slightly separately rounded apices; apices with a few sharp teeth laterally; humeral swelling well developed, laterobasal depression small and rather deep; surface strongly shagreened, punctures in rows longitudinally larger and deeper at basal third becoming fine apically, apical fifth slightly corrugate; medium-sized thin white setae in rather irregular longitudinal rows at apical half only, at basal half a few short setae at middle of basal fourth of each elytron only; posthumeral elytral carina absent.

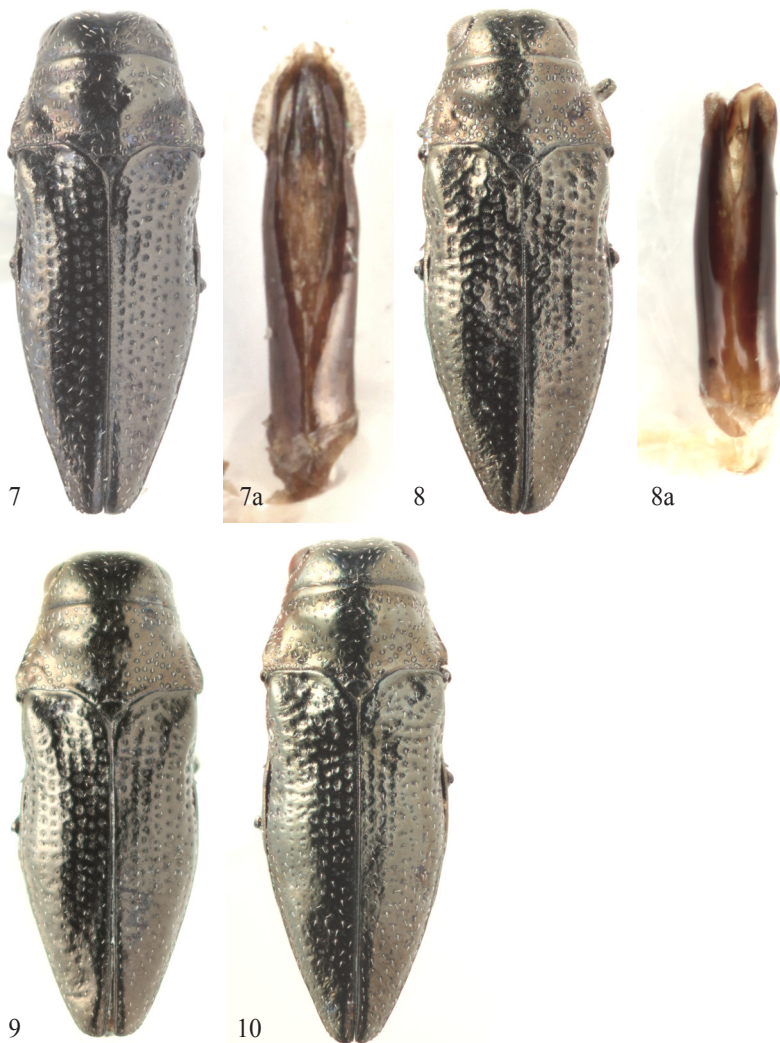
Ventral surface rather strongly shagreened, very lustrous, abdomen ocellate-punctate by circular punctures opening posteriorly, sparsely pubescent by thin, rather long white setae; anal ventrite rather broadly rounded, somewhat protruding posteriorly, preapical groove following outline of margin rather short, semicircular, wide; antennal grooves long, narrow; prosternal process elongate, with wide sulcus (not groove) at middle longitudinally, strongly shagreened, sides slightly constricted between procoxae, strongly dilated behind, apex rhomboidal, with a few thin white setae.

Aedeagus (Fig. 7a).

Sexual dimorphism. Female unknown.

Measurements. Length 2.60 mm; width 1.00 mm.

Differential diagnosis. *T. barclayi* sp. nov. belongs to *T. dudai* species-group (definition and revision of the species-group in prep.). The species-group is characterized by smaller size usually, absence of prehumeral pronotal and posthumeral elytral carinae, black or brown colouration and namely by pronotal base, which is distinctly wider than base of elytra (see also Marek 2016b: 407). The species-group contains about ten previously described species



Figs. 7-10: 7- *T. barclayi* sp. nov., HT ♂, 2.60 mm, 7a- aedeagus, 0.65 mm; 8- *T. dudai* Obenberger, 1924, ST ♂, 2.50 mm (NMPC), 8a- aedeagus, 0.60 mm; 9- *T. achardi* Obenberger, 1924, ST ♀, 2.70 mm (NMPC); 10- *T. riparius* Obenberger, 1934, LT/ST 1 ♀, 2.95 mm (NMPC).

and a number undescribed species known to me at present. The species are extremely similar habitually but with strongly different male genitalia mostly. *T. barclayi* sp. nov. is the most similar to *T. dudai* Obenberger, 1924 (Figs. 8, 8a) (described from Argentina, Corrientes), *T. achardi* Obenberger, 1924 (Fig. 9) (described from Argentina without the exact locality data) and *T. riparius* Obenberger, 1934 (Fig. 10) (described from Brazil, Paraná). *T. riparius* differs namely by narrowly rounded elytral apices, *T. dudai* and *T. achardi* can be distinguished by the characters given in Table C below.

Table C. Diagnostic characters of *T. barclayi* sp. nov., *T. achardi* Obenberger, 1924 and *T. dudai* Obenberger, 1924.

	<i>T. barclayi</i>	<i>T. achardi</i>	<i>T. dudai</i>
Head (DV)	sides attenuate anteriorly	sides subparallel	sides subparallel
Frons (DV)	moderately convex, slightly depressed at middle	strongly convex, without any depression at middle	moderately convex, slightly depressed at middle
Eyes (DV)	not projecting beyond outline of head; almost invisible from above	slightly projecting beyond outline of head; feebly visible from above	projecting beyond outline of head; well visible from above
Elytral apices	with a few distinct and sharp teeth	almost smooth, without distinct teeth	almost smooth, without distinct teeth
Pubescence of dorsal side	medium-sized thin white setae	extremely short thin white setae	extremely short thin white setae
Aedeagus	parameres emarginate at apical two-thirds on inner side; apical semimembranous part large, well visible (Fig. 7a)	unknown	parameres emarginate at apical third only on inner side; apical semimembranous part small, almost indistinct (Fig. 8a)

Etymology. Named in honour of Maxwell V. L. Barclay (London, United Kingdom), Senior Curator in Charge of Coleoptera in the Natural History Museum in London, who provided me with material for the present study; patronymic.

Remarks. According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the holotype had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

***Taphrocerus laticeps* sp. nov.**

(Fig. 11)

Type locality. French Guiana, Roura env.

Type specimens. Holotype (♀): „FR. GUYANE bor., ROURA env., 18. 11. 1995, lgt. M. Snižek“ (JMSC, note: not Batesian specimen). Paratypes (2): the same data as holotype (1 ♀, JMSC); „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♀, BMNH, note: Batesian specimen).

Diagnosis. Medium-sized (3.55-3.70 mm), elongate, broadly oval, about 2.8 times as long as wide, widest at the middle of elytra, moderately convex above, rather very lustrous above; above and beneath uniformly „deeply“ black including legs and antennae; sparsely covered by short thin white setae; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head large, wide, slightly narrower than posterior pronotal margin, sides moderately attenuate anteriorly (DV); clypeus almost „T-shaped“, strongly shagreened, separated from frons by obsolete carina, epistomal pores large, elongate transversely, separated less than their own diameter; frons moderately convex, deeply triangularly depressed at middle, the depression becoming in short sulcus and fine groove towards vertex, rather finely shagreened, very sparsely covered by extremely short, almost inconspicuous

white setae, impunctate; vertex widely and very strongly convex (FVV), finely grooved at middle longitudinally, rather strongly shagreened, sparsely ocellate-punctate by very small punctures, each puncture with a short thin white seta; eyes rather small, rather narrowly oval (almost circular) (FLV), not projecting beyond outline of head, almost invisible from above; antennae long, narrow.

Pronotum moderately convex, 1.96 times as wide as long, widest just before the base; shallowly and rather widely transversely depressed along anterior margin, more deeper laterally, largely and rather shallowly depressed lateroposteriorly, narrowly and deeply so along the sides, with very vague oval depression on the disc at middle; with very vague prominence lateroposteriorly; anterior margin very widely rounded, very slightly and rather widely emarginate at middle, posterior margin strongly biemarginate, distinctly wider than elytra at humeri, very widely and feebly emarginate in front of scutellum, sides shortly subparallel anteriorly, then widely arcuately (almost straight) dilated to the beginning of basal fourth, very slightly and narrowly emarginate, then very slightly dilated just before the base and then very shortly constricted to the base; surface rather finely shagreened, ocellate-punctate by small punctures at the depressions, each puncture with a short thin white seta; scutellum medium-sized, very widely triangular, almost straight anteriorly, very strongly shagreened, moderately lustrous.

Elytra moderately convex, 2.10 times as long as wide, widest at the middle, distinctly narrower at humeri than pronotum at the widest part; lateral margins feebly and narrowly emarginate behind humeri, widely regularly rounded at middle, then slowly arcuately tapering towards rather narrowly and slightly separately rounded apices; apices with a few shallow but sharp teeth; humeral swelling well developed, laterobasal depression small but rather deep; surface rather strongly shagreened, punctures in rows longitudinally larger and deeper at basal third becoming fine apically, apical fourth corrugate; sparsely covered by short thin white setae in rows longitudinally; posthumeral elytral carina absent.



Figs. 11-12a: 11- *T. laticeps* sp. nov., HT ♀, 3.60 mm; 12- *T. latimentulae* Marek, 2016, HT ♂, 3.70 mm (JMSC), 12a- aedeagus, 0.95 mm.

Ventral surface strongly shagreened, very lustrous, abdomen very sparsely punctate by small and fine „U-turned-up-shaped“ punctures, sparsely pubescent by short thin white setae laterally and apically; anal ventrite rather narrowly rounded, with wide and deep semicircular emargination on apical margin, preapical groove following outline of margin regularly semicircular, wide; antennal grooves long, widened on prosternum; prosternal process very elongate, slender, strongly shagreened, sides very feebly constricted between procoxae, very slightly dilated behind, apex rhomboidal, asetose, impunctate.

Sexual dimorphism. Male unknown.

Measurements. Length 3.55-3.70 mm (holotype 3.60 mm); width 1.25-1.30 mm (holotype 1.25 mm).

Differential diagnosis. *T. laticeps* sp. nov. belongs to the same species-group as *T. barclayi* sp. nov. described above (*T. dudai* species-group) and it is the most similar to *T. latimentulae* Marek, 2016 (Figs. 12, 12a) (described from Paraguay, Serrania San Luis). For distinguishing of these two species see Table D below.

Table D. Diagnostic characters of *T. laticeps* sp. nov. and *T. latimentulae* Marek, 2016.

	<i>T. laticeps</i>	<i>T. latimentulae</i>
Colouration of dorsal side	uniformly „deeply“ black	uniformly dark-brown with distinct purple lustre
Eyes (FLV)	smaller, almost circular	larger, broadly oval
Anterior pronotal margin	almost straight, slightly emarginate at middle	more arcuately rounded
Base of pronotum	strongly wider than base of elytra	very slightly wider than base of elytra
Scutellum	very widely triangular; strongly shagreened	widely cordiform; finely shagreened
Microstructure of dorsal side	rather strongly shagreened	finely shagreened
Prosternal process	apex flat, without any sulcus or groove	apex with wide groove at middle longitudinally

Etymology. The specific epithet is derived from the Latin adjective *latum* (wide) and *-ceps* (headed) to stress the wide head of this species; adjective.

***Taphrocerus subcyaneus* sp. nov.**

(Figs. 13, 13a)

Type locality. Brazil, Pará, Santarém.

Type specimens. Holotype (♂): „BRAZIL, Pará, Santarém, 19. viii. 1992, J. Marek lgt.“ (JMSC, note: not Batesian specimen). Paratype: „Santarem Bates (h, circle) / Saunders. 74.18. (p) / 24. (p, light blue label)“ (1 ♀, BMNH, note: Batesian specimen).

Diagnosis. Large (4.30 mm), elongate, rather stout, attenuate posteriorly, conical, about 2.8

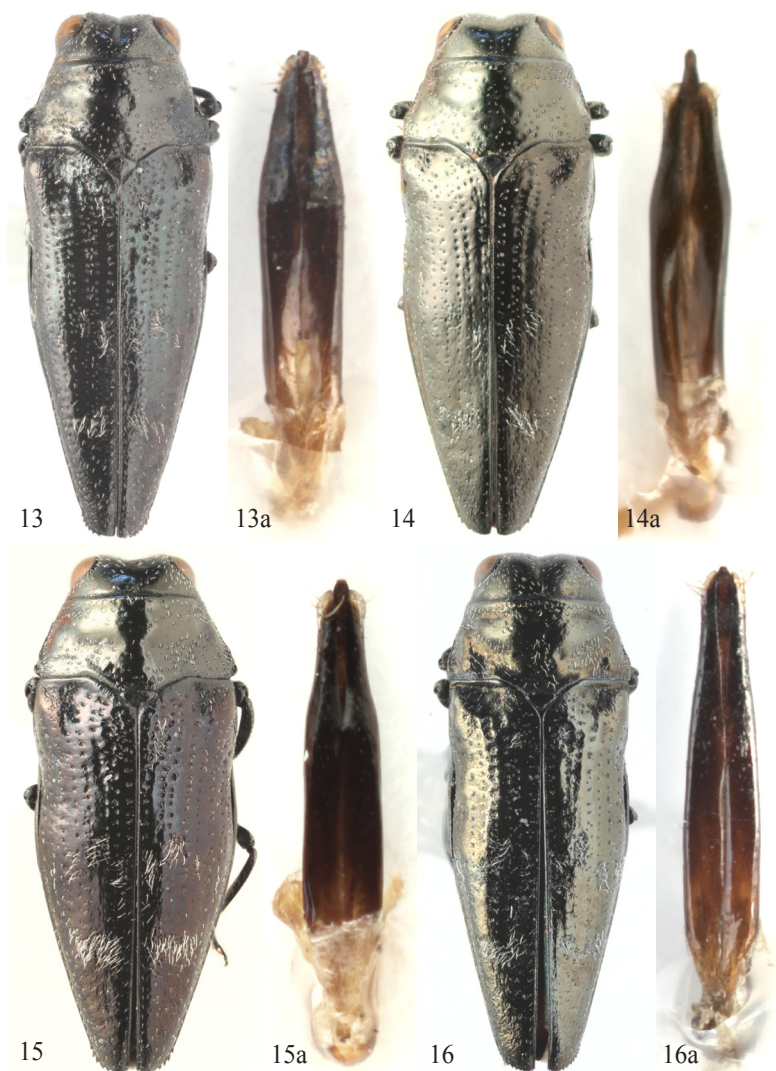
times longer than wide, widest at humeri, rather strongly convex above, very lustrous; above black with very strong dark blue tinge and with slight purple tinge on humeral swellings, beneath black with strong dark blue tinge including legs and antennae; sparsely pubescent by very short thin white setae, elytra with an ornamental pubescence of rather sparse medium-sized white setae; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head medium-sized, distinctly narrower than posterior pronotal margin; clypeus widely „V-shaped“, very strongly shagreened, separated from frons by a fine carina, epistomal pores rather small, circular, separated more than their own diameter; frons rather strongly convex, widely and deeply depressed at middle longitudinally, rather finely shagreened, impunctate, asetose; vertex moderately convex, distinctly depressed at middle, with a fine groove at middle longitudinally, rather finely shagreened, sparsely punctate by very small ocellate punctures, each puncture with a short thin white seta; eyes large, semicircular, strongly projecting beyond outline of head, well visible from above; antennae short relatively, antennomeres 6-11 widened*.

Pronotum moderately convex, relatively unsculptured, 1.82 times as wide as long, widest at base; rather widely and shallowly transversely depressed along anterior margin, almost interruptly at middle, largely and shallowly depressed lateroposteriorly, very shallowly depressed on the disc at middle and in front of scutellum; with almost indistinct prominence lateroposteriorly; anterior margin very widely regularly rounded, posterior margin strongly biemarginate, rather strongly emarginate in front of scutellum, very slightly narrower than base of elytra, sides straight dilated to the beginning of basal fourth, angulate and then very feebly, almost inconspicuously dilated to the base; surface strongly shagreened, sparsely ocellate-punctate by small punctures at the depressions, each puncture with a short thin white seta; scutellum medium-sized, triangular, very strongly, almost angularly rounded anteriorly, strongly shagreened, lustrous.

Elytra rather strongly convex, 2.08 times as long as wide, widest at humeri, slightly wider at humeri than pronotum at the widest part; margins very slightly and rather widely emarginate behind humeri, slightly and narrowly rounded at middle, then very slowly, almost straight tapering towards narrowly, conjointly rounded apices; apices strongly, sharply serrate; humeral swelling moderately developed, laterobasal depression small but rather deep; surface rather strongly shagreened, punctures in rows longitudinally rather fine, more deeper at basal third becoming more finer posteriorly, apical fifth somewhat corrugate; with an ornamental pubescence of medium-sized thin white setae as follows: very obsolete semisutural stripe at basal fifth, rather wide but sparse irregular (zic-zag) transverse stripe at middle, consisting of six (3+3) smaller stripes longitudinally, apical fourth regularly covered by sparse short white setae; posthumeral elytral carina absent.

Ventral surface strongly shagreened, very lustrous, abdomen punctate by large „U-turned-up-shaped“ punctures becoming more smaller apically, with very short thin white setae laterally and apically; anal ventrite rather narrowly rounded, slightly protruding apically, with a shallow semicircular emargination on apical margin, preapical groove following outline of margin regularly semicircular, wide; antennal grooves long and narrow; prosternal



Figs. 13-16a: 13- *T. subcyaneus* sp. nov., HT ♂, 4.30 mm, 13a- aedeagus, 1.10 mm; 14- *T. cayennensis* Obenberger, 1934, LT ♂, 4.60 mm (= *T. gentilis* (Gory, 1841), synonymy in prep.) (NMPC), 14a- aedeagus, 1.20 mm; 15- *T. affinis* Marek, 2017, HT ♂, 4.00 mm (JMSC), 15a- aedeagus, 0.95 mm; 16- *T. parallelus* Kerremans, 1896, LT ♂, 4.70 mm (BMNH), 16a- aedeagus, 1.20 mm.

process shortly elongate, strongly shagreened, sides slightly constricted between procoxae, moderately dilated behind, apex cordiform (!), asetose, with a few coarse punctures at base only.

Aedeagus (Fig. 13a).

*Antennomeres 3-11 missing in the left antenna

Sexual dimorphism. Observed in: female is somewhat more robust; the elytra are distinctly more attenuate at apical half in male; the semicircular emargination on apical margin of anal ventrite is markedly wider and deeper in female.

Measurements. Length 4.30 mm; width 1.50-1.55 mm (holotype 1.50 mm).

Variability. Not apparent.

Differential diagnosis. *T. subcyaneus* sp. nov. belongs in a large species complex around *T. gentilis* and it is the most similar to *T. gentilis* (Gory, 1841) (Figs. 14, 14a) (described from French Guiana and known from Brazil, Manaus also (Marek 2018a), *T. affinis* Marek, 2017 (Figs. 15, 15a) (described from Brazilian states Pará and Pernambuco) and to *T. parallelus* Kerremans, 1896 (Figs. 16, 16a) (described from Brazil without precise locality data and so far known from lectotype-specimen only). *T. affinis* is similar mainly by colouration but differs by oval body shape, more wide body (less than 2.6 times longer than wide), very wide scutellum, by slightly separately rounded apex of elytra and by male genitalia. *T. gentilis* differs by colouration, oval body shape, less projecting eyes beyond outline of head and less visible from above, not so strongly attenuate elytra at apical half and by male genitalia. *T. parallelus* differs by colouration, subparallel body shape, smaller eyes and very strongly by male genitalia.

Etymology. The specific epithet is derived from the Latin adverb *sub-* (under) and adjective *cyaneus* (deep or dark blue) to stress the colouration of this species („dirty“ deep blue); adjective.

***Taphrocerus bellus* sp. nov.**

(Figs. 17, 17a, 17b)

Type locality. Peru, Loreto, Amazon Safari Camp, Rio Mamón.

Type specimens. Holotype (♀): „PERU: Loreto Prov., Amazon Safari Camp, Rio Mamón NNW Iquitos, ca. 3°42' S 73°14' W / 24. vi. 1978, H. A. Hespenehede“ (JMSc, note: not Batesian specimen). Paratype: „Para (now Belém) Bates (h, circle) / 25. (p, light blue label) / Saunders. 74.18. (p)“ (1 ♂, BMNH, note: Batesian specimen).

Diagnosis. Medium-sized to large (3.70-4.40 mm), elongate, oval, about 2.9 times longer than wide, widest just before the middle of elytra, head and pronotum rather strongly convex above, strongly lustrous, elytra flattened, moderately lustrous; above bicoloured: head, pronotum and scutellum black, elytra black with strong violet tinge and with strong blue lustre around scutellum; beneath uniformly black including legs and antennae; elytra with an ornamental pubescence of rather long white setae; pronotal prehumeral carina present obsoletely, with blunt edge, feebly elevated but distinct lateroposteriorly; posthumeral elytral carina present, well elevated, entire, with sharp edge.

Description of holotype. Head large, wide, slightly narrower than posterior pronotal margin; clypeus very widely „V-shaped“, strongly shagreened, feebly lustrous, separated from frons by well elevated carina; epistomal pores large, elongate transversely, separated less than their own diameter; frons rather strongly convex, rather narrowly and deeply depressed at

middle longitudinally, with longitudinal sulcus at middle of the depression, somewhat more deeper towards vertex, almost smooth at anterior half, finely shagreened at the posterior one, impunctate, with a few short thin white setae above clypeus laterally only; vertex strongly convex, widely protruding between the eyes (FVV), rather strongly shagreened, very feebly depressed at middle anteriorly, with a fine groove at middle longitudinally, irregularly punctate by small ocellate punctures, with rather long thin cream-white setae anteriorly; eyes rather large, ovoid, slightly projecting beyond outline of head, well visible from above; antennae long and narrow.

Pronotum rather strongly convex, 1.71 times as wide as long, widest at the beginning of basal third; narrowly transversely depressed along anterior margin, somewhat more deeper laterally, largely and deeply depressed lateroposteriorly, very narrowly depressed along the sides, with small and shallow longitudinal depression on the disc at middle; with feebly elevated but well distinct short carina with blunt edge lateroposteriorly; anterior margin widely regularly rounded, posterior margin strongly biemarginate, very widely and feebly emarginate in front of scutellum, slightly narrower than base of elytra, sides very shortly subparallel anteriorly, then very slightly arcuately dilated to the beginning of basal third, then obtusely angulate, narrowly but distinctly emarginate and then subparallel to the base; surface strongly shagreened, ocellate-punctate by large punctures at the depressions and in front of scutellum, each puncture with rather long thin white seta; scutellum medium-sized, widely triangular, very widely rounded anteriorly, strongly shagreened, slightly depressed at middle anteriorly, moderately lustrous.

Elytra feebly convex, distinctly wider at humeri than pronotum at the widest part, 2.10 times as long as wide, widest just before the middle; elytral margins moderately and narrowly emarginate behind humeri, rather narrowly rounded at middle, then very slowly, almost straight tapering towards broadly, very slightly separately rounded apices; apices very feebly serrate laterally; humeral swelling moderately developed, laterobasal depression rather small and shallow; surface strongly shagreened at anterior half, finely so at posterior half, punctures in rows longitudinally obsolete, larger and deeper at basal two-fifths, disappearing at apical half; with an ornamental pubescence as follows: very sparse thin medium-sized white setae irregularly at basal two-fifths, transverse stripe of longer and denser white setae just before the middle consisting of six (3+3) spots, the spot nearest to the suture is distinctly larger than the two external, semisutural stripe at three-fourth of very sparse long thin cream-white setae, two (1+1) large spots at the beginning of apical fourth of dense, long and more wider white setae, sparse thin cream-white setae at apical fifth; posthumeral elytral carina present, with sharp edge, well elevated, entire.

Ventral surface strongly shagreened, moderately lustrous, abdomen punctate by medium-sized „U-turned-up-shaped“ punctures on first visible sternite, the punctures becoming more finer and smaller apically, with very short thin white setae laterally and apically; anal ventrite broadly rounded, with a short emargination on apical margin, preapical groove following outline of margin truncate apically, wide; antennal grooves long and rather narrow; prosternal process elongate, sides rather strongly constricted between procoxae, very strongly dilated behind, apex rhomboidal, surface strongly shagreened, impunctate, asetose, with long and deep sulcus at middle longitudinally.

Sexual dimorphism. Male with sparse „fronto-clypeal pubescent stripe“ of white setae; frons with distinct green tinge in male, uniformly black in female; two (1+1) small but distinct gibbosities on the frons laterally present in male (FVV), absent in female. Aedeagus as in Fig. 17b.

Measurements. Length 3.70-4.40 mm (holotype 3.70 mm); width 1.30-1.60 mm (holotype 1.30 mm).

Variability. Except for the size the male paratype is somewhat slender, with pronotal sides distinctly more angulate at the widest part and constricted to the base at basal third, with pronotal prehumeral carina more stronger elevated, with sharp edge almost, the elytral ornamental pubescence consists of distinctly more denser white setae and elytral apices are distinctly more stronger sharply serrate.

Differential diagnosis. *T. bellus* sp. nov. is unique among known species of the genus by combination of size, body shape, colouration, presence of pronotal prehumeral and elytral posthumeral carinae and by elytral ornamental pubescence (pattern). Nevertheless it is somewhat similar to *T. alboplagiatus* Kerremans, 1896 habitually (Fig. 19) but it can be easily distinguished by presence of elytral posthumeral carina (completely without elytral posthumeral carina in *T. alboplagiatus*), and to *T. susterai* Obenberger, 1941 (Fig. 20) by colouration and presence of elytral posthumeral carina from which it can be distinguished by strongly different body shape (especially shape of pronotum and elytra) and by presence of pronotal prehumeral carina (completely without pronotal prehumeral carina in *T. susterai*).

Etymology. The specific epithet is the Latin adjective *bellus* (pretty) to stress the elegant colouration of dorsal side of this species.

Remarks. The male paratype was collected in 1848 probably, during the first year of Bates' voyage in a villa near the city „Pará“ (now Belém). The specimen was pinned originally and it is damaged largely on the right side of body including male genitalia. For this reason, I choose the female specimen as the holotype.

Taphrocerus batesi sp. nov.

(Fig. 18)

Type locality. Brazil, Amazonas, Tefé*.

Type specimens. Holotype (♀): „Ega* Bates (h, circle) / Saunders 74.18. (p) / 26. (p, light blue label)“ (BMNH, note: Batesian specimen). Paratype the same data as holotype without the label with number („26.“) (1 ♂, BMNH, note: Batesian specimen).

*Tefé is the present name of Ega

Diagnosis. Large (4.00-4.25 mm), oval, about 2.7 times longer than wide, widest just before the middle of elytra, rather stout, moderately lustrous above, pronotum moderately convex, elytra flattened; above bicoloured: head, pronotum and scutellum black with very slight purple-orange reflections, elytra dark blue with violet tinge; beneath black with very slight bluish lustre including legs and antennae; almost asetose above except for two (1+1) spots of dense and rather long white setae at the beginning of elytral apical fourth; prehumeral

pronotal carina absent; posthumeral elytral carina present, well elevated, entire, with sharp edge.

Description of holotype. Head medium-sized, distinctly narrower than posterior pronotal margin; clypeus very widely „V-shaped“, strongly shagreened, separated from frons by well elevated carina, epistomal pores large, elongate transversely, separated by their own diameter; frons moderately convex, widely and rather shallowly depressed at middle, finely shagreened, aetose, sparsely punctate by fine simple punctures; vertex strongly convex, rather widely protruding between the eyes (FVV), very finely shagreened, with very fine groove at middle longitudinally, very sparsely punctate by very fine simple punctures, the punctures at anterior half with extremely short, almost inconspicuous thin white setae; eyes medium-sized, widely ovoid, rather strongly projecting beyond outline of head, well visible from above; antennae long, narrow**.

Pronotum moderately convex, 1.84 times as wide as long, widest at the beginning of basal third; narrowly transversely depressed along anterior margin, somewhat more deeper laterally and almost interruptly at middle, very widely triangularly and shallowly depressed on the disc anteriorly, with small longitudinally elongate depression on the disc posteriorly, largely and rather shallowly depressed lateroposteriorly, with rather deep but very narrow depressions along the sides; with a very vague prominence laterally at middle; anterior margin very widely rounded, almost straight at middle, posterior margin strongly biemarginate, the same width as base of elytra, very feebly emarginate in front of scutellum, sides shortly subparallel anteriorly, then feebly arcuately dilated to the beginning of basal third, angulate and then slightly straight constricted to the base; surface finely shagreened, somewhat more stronger shagreened anteriorly and laterally, very sparsely ocellate-punctate by small punctures at the depressions, a few punctures at lateroposterior depressions only with very short, almost inconspicuous white setae; scutellum medium-sized, widely triangular, almost straight anteriorly, strongly shagreened, feebly lustrous.

Elytra feebly convex, 2.00 times as long as wide, widest just before the middle, moderately wider at humeri than pronotum at the widest part; margins feebly and rather widely emarginate behind humeri, rather strongly and narrowly rounded at middle, then very slowly, slightly arcuately tapering towards narrowly, almost conjointly rounded apices; apices rather strongly, sharply serrate laterally; humeral swelling moderately developed, laterobasal depression very small and shallow; surface rather strongly shagreened at basal and apical fourths, distinctly more finer shagreened between them, with two (1+1) small and shallow circular depression at the middle, punctures in rows longitudinally fine, apical fifth somewhat corrugate; very sparsely covered by almost inconspicuous, extremely short white setae and with a few longer white setae above the depressions at the middle and with two (1+1) circular spots of dense and rather long white setae at the beginning of apical fourth; posthumeral elytral carina present, well elevated, entire, with sharp edge.

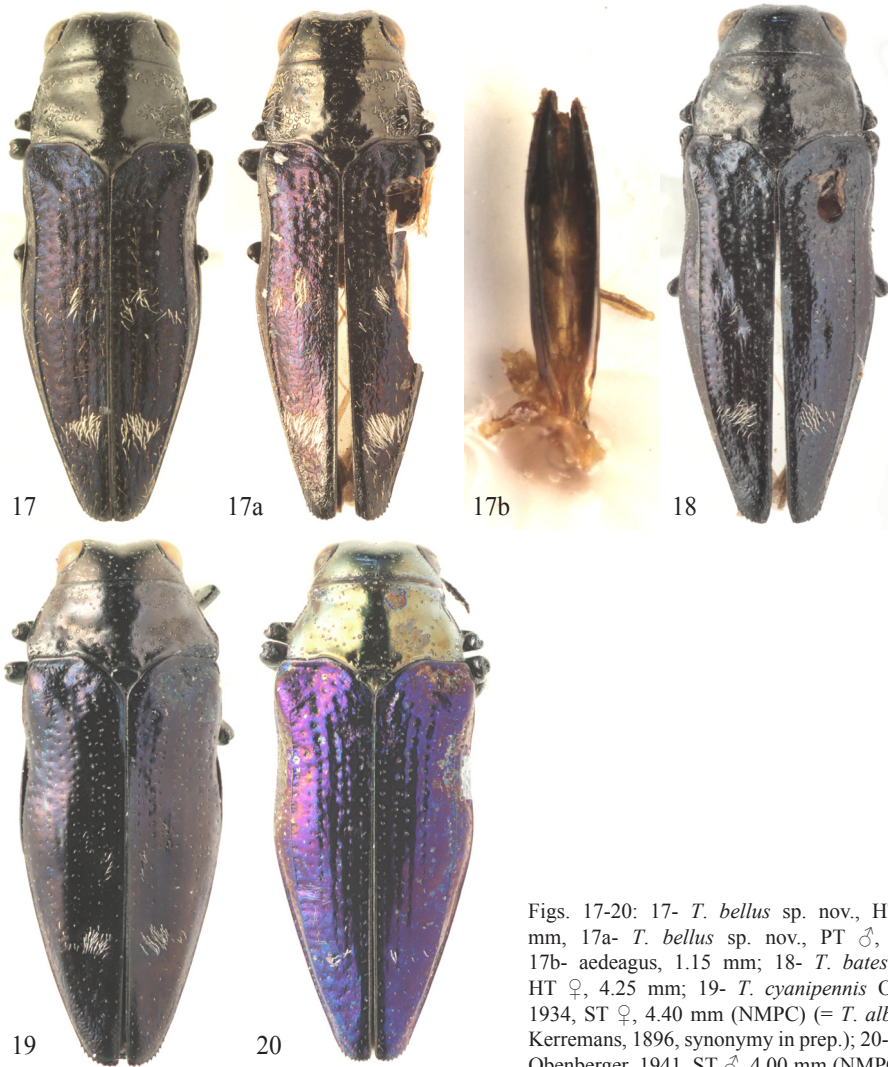
Ventral surface moderately lustrous, strongly shagreened, abdomen feebly lustrous, aetose, rather densely punctate by very small „U-turned-up-shaped“ punctures on the first visible sternite; anal ventrite rather widely rounded, with shallow wide emargination on apical margin, preapical groove following outline of margin regularly semicircular,

narrow; antennal grooves long and narrow; prosternal process elongate, strongly shagreened, asetose impunctate, sides constricted between procoxae, rather strongly dilated behind, apex rhomboidal, with groove at middle longitudinally.

**Antennomeres 3-11 missing in the left antenna

Sexual dimorphism. Not apparent.

Measurements. Length 4.00-4.25 mm (holotype 4.25 mm); width 1.40-1.55 mm (holotype 1.55 mm).



Figs. 17-20: 17- *T. bellus* sp. nov., HT ♀, 3.70 mm, 17a- *T. bellus* sp. nov., PT ♂, 4.40 mm, 17b- aedeagus, 1.15 mm; 18- *T. batesi* sp. nov., HT ♀, 4.25 mm; 19- *T. cyanipennis* Obenberger, 1934, ST ♀, 4.40 mm (NMPC) (= *T. alboplagiatus* Kerremans, 1896, synonymy in prep.); 20- *T. susterai* Obenberger, 1941, ST ♂, 4.00 mm (NMPC).

Variability. Except for the size observed in density of setae in elytral pubescent spots (distinctly sparser in the male paratype) and the first visible sternite of paratype is punctate by simple punctures (punctate by very small „U-turned-up-shaped“ punctures in the holotype).

Differential diagnosis. *T. batesi* sp. nov. is very similar to *T. alboplagiatus* Kerremans, 1896 (Fig. 19), namely by larger size, body shape, colouration (black head and pronotum, dark blue-violet elytra) and elytral pubescence (two (1+1) circular spots of white setae at the beginning of apical fourth), but it differs strongly by presence of posthumeral elytral carina (well elevated, entire, sharp). From somewhat similar *T. bellus* sp. nov. described above (Figs. 17-17b) it differs namely by absence of prehumeral pronotal carina, by more robust body (2.7 times longer than wide in *T. batesi* sp. nov., 2.9 times in *T. bellus* sp. nov.) as well as many other details of morphology.

Etymology. Named in honour of Henry Walter Bates (1825-1892), „Explorer, Scientist and Darwinian“, who collected the type-specimens of this species in his „fabulous“ expedition to the rainforest of the Amazon in 1848-1859 (!!), the first two years together with Alfred Russel Wallace; patronymic.

Remarks. Both type specimens were pinned originally and later glued on labels. The male specimen was almost completely decomposed during humidification - preparation of aedeagus. For this reason, I choose the female-specimen as the holotype. Note: aedeagus slender, widest at the middle, parameres regularly, slightly arcuately rounded from base to apex, phallus (median lobe) wide, apex of phallus strongly protruding, the top widely rounded, length: 0.85 mm.

Taphrocerus santaremensis sp. nov.

(Figs. 21, 21a)

Type locality. Brazil, Pará, Santarém.

Type specimens. Holotype (♂): „BRAZIL, Pará, Santarém, 19.viii. 1992, J. Marek lgt.“ (JMSC, note: not Batesian specimen). Paratype: „Santarem Bates (h, circle) / Saunders 74.18. (p) / 28. (p, light blue label)“ (1 ♂, BMNH, note: Batesian specimen).

Diagnosis. Small (2.60-2.75 mm), elongate, broadly oval, about 2.5 times longer than wide, widest at pronotal base, pronotum rather strongly convex at anterior half, elytra moderately convex; above coppery with strong golden lustre, head and pronotum with brown tinge on vertex and on the disc, scutellum dark brown, elytra brown-violet in asetose parts, distinctly more intensive at apical half; beneath black including legs, very lustrous, antennae black with slight coppery tinge; with an elytral ornamental pubescence (pattern) of long white or white and yellowish setae; prehumeral pronotal carina absent; posthumeral elytral carina present, well elevated, entire, with sharp edge.

Description of holotype. Head rather large, wide, distinctly narrower than posterior pronotal margin; clypeus almost „T-shaped“, strongly shagreened, very lustrous, separated from frons by well elevated carina, epistomal pores large, transversely oval, separated less than their own diameter; frons almost flat, finely shagreened, with very wide and deep sulcus at

middle longitudinally, finely but densely punctate by simple punctures at anterior half, with wide but sparse „fronto-clypeal pubescent stripe“ (♂) of white setae; vertex convex, slightly depressed at middle longitudinally, somewhat more deeper anteriorly, with a fine carina (!) at middle longitudinally, very finely, almost inconspicuously shagreened, sparsely punctate by very fine simple punctures, with a few rather long thin white setae at middle only; eyes rather large, widely reniform, very feebly projecting beyond outline of head, moderately visible from above; antennae long and rather narrow.

Pronotum rather strongly convex at anterior half, somewhat flattened at posterior one, 2.03 times as wide as long, widest at the base; rather widely and shallowly transversely depressed along anterior margin, largely and rather deeply so lateroposteriorly, narrowly and rather deeply so along the sides, with small shallow depressions on the disc and in front of scutellum; with rather well elevated prominence lateroposteriorly; anterior margin very widely rounded, very slightly emarginate at middle, posterior margin biemarginate, distinctly wider than base of elytra, widely emarginate in front of scutellum, sides very shortly subparallel anteriorly, then widely arcuately dilated to the base; surface very finely, almost inconspicuously shagreened, with medium-sized and a few large ocellate punctures at the depressions, each puncture with thin long white seta; scutellum small, cordiform, widely rounded anteriorly, finely shagreened, moderately lustrous.

Elytra moderately convex, 1.83 times as long as wide, widest at the beginning of second-third, narrower at humeri than pronotum at the widest part; lateral margins feebly and narrowly emarginate behind humeri, widely regularly rounded at middle, then very slowly, almost straight tapering towards rather broadly, slightly separately rounded apices; apices almost smooth, with a few shallow, almost inconspicuous teeth laterally only; humeral swelling moderately developed, laterobasal depression small but rather deep; surface strongly shagreened in areas covered by ornamental pubescence, in asetose parts almost smooth, punctures in rows longitudinally larger and deeper at basal third becoming fine apically, almost inconspicuous at apical fourth, which is somewhat corrugate; with an ornamental pubescence (pattern) of thin and long white setae as follows: a few setae anterolaterally, a few setae around scutellum, very obsolete and sparse transverse stripe at the beginning of second-fourth, somewhat more distinct and wider sparse pubescent stripe transversely at the middle, somewhat more distinct transverse stripe at the beginning of apical fourth, apical fifth with a few distinct setae (long); posthumeral elytral carina present, well elevated, entire, with sharp edge.

Ventral surface strongly shagreened, very lustrous, abdomen densely punctate by „U-turned-up-shaped“ punctures, large on first visible sternite and becoming smaller apically, pubescent by rather long thin white setae laterally and apically; anal ventrite widely rounded, with narrow long semicircular emargination on apical margin, preapical groove following outline of margin regularly semicircular, wide; antennal grooves long and narrow; prosternal process elongate, rather finely shagreened, sparsely punctate by simple fine punctures, asetose, with wide sulcus at middle longitudinally, very deep on apex, sides moderately constricted between procoxae, strongly dilated behind, apex rhomboidal.

Aedeagus (Fig. 21a).

Sexual dimorphism. Female unknown.



Figs. 21-22: 21- *T. santaremensis* sp. nov., HT ♂, 2.60 mm, 21a- aedeagus, 0.65 mm; 22- *T. scriptus* Obenberger, 1924, ST ♀, 3.70 mm (NMPC).

Measurements. Length 2.60-2.75 mm (holotype 2.60 mm); width 1.05-1.10 mm (holotype 1.05 mm).

Variability. Except for the size observed in the paratype (Batesian specimen (♂) collected around 1855!!): distinctly denser elytral ornamental pubescence; there are yellowish setae also in the pubescent pattern of dorsal side: sparsely at anterior half of vertex, sparse but wide relatively stripe at pronotal transverse depression along anterior margin, a few setae anterolaterally on elytra, sparse and narrow (one row of setae only) perisutural stripe reaching from beginning of second-fourth to the apex, a few setae at middle laterally and on apical fifth; anterior pronotal margin is more arcuately rounded without any emargination at middle.

Differential diagnosis. *T. santaremensis* sp. nov. is similar to *T. scriptus* Obenberger, 1924 (Fig. 22) (described from Brazil, Sao Paulo) by its colouration, ornamental pubescence (pattern) and presence of sharp entire posthumeral elytral carina. This two species can be distinguished by the characters given in Table E bellow.

Table E. Diagnostic characters of *T. santaremensis* sp. nov. and *T. scriptus* Obenberger,

	<i>T. santaremensis</i>	<i>T. scriptus</i>
Size	smaller, 2.60-2.75 mm	larger, 3.70 mm
Body shape	broadly oval, less than 2.5 times longer than wide; the maximal body width at the pronotal base	narrowly oval, more than 2.7 times longer than wide; the maximal body width at humeri and just before the middle of elytra
Colouration of dorsal side	darker	brighter
Vertex	slightly depressed at middle longitudinally	strongly and largely depressed at middle
Eyes	very feebly projecting beyond outline of head; moderately visible from above	rather strongly projecting beyond outline of head; well visible from above
Pronotal punctation	medium-sized and a few large ocellate punctures	very small ocellate punctures
Pronotal base	distinctly wider than base of elytra	the same width as base of elytra

Etymology. Named after locality of type specimens, Santarém in Brazilian state Pará; adjective.

ANOTHER SPECIES COLLECTED BY BATES AND DARWIN

Taphrocerus abscondus Marek, 2018

Specimens examined. BRAZIL: „Bahia (h) C. Darwin. 87-42. (p)“ (2 ♂♂, BMNH).

Distribution. French Guiana (Marek 2018c), new to Brazil.

Remarks. *T. abscondus* is very similar and probably closely related to *T. obscurellus* (see Figs. 6, 6a), one of the most abundant and very variable species in correlation between the body size and body shape among the Amazonian *Taphrocerus* by my observations. The two species can be distinguished mainly by size and shape of the eyes, structure of vertex, width of pronotum and by male genitalia (see also Table A in Marek 2018c).

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimens had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

Taphrocerus argentinus Bruch, 1909

(Fig. 23)

Specimens examined. URUGUAY: „Maldonado, Uruguay. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Maldonado 1321 (h, number on reverse side)“ (1 ♀, BMNH).

Distribution. Argentina (Bruch 1909), new to Uruguay.

Remarks. *T. argentinus* belongs in a species-group characterized by coppery colouration with very intensive blue or violet tinge and elytral ornamental pubescence (pattern). The species-group differs from similar *T. scriptus* species-group (see Figs. 21, 22 above)



Figs. 23-25: 23- *T. argentinus* Bruch, 1909, specimen ♀ from Darwin's material, 4.10 mm; 24- *T. paranaensis* Obenberger, 1924, LT ♂, 4.00 mm (NMPC); 25- *T. potamophilus* Obenberger, 1934, ST ♂, 3.80 mm (NMPC).

by absence of posthumeral elytral carina. From the most similar species *T. paranaensis* Obenberger, 1924 (Fig. 24) (described from Brazil, Paraná and known also from Argentina and Paraguay (Marek 2018a) and *T. potamophilus* Obenberger, 1934 (Fig. 25) (described from Brazil, Paraná) it can be distinguished by the characters given in Table F bellow.

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimen had to be collected 28. iv.-23. vii. 1833.

Table F. Diagnostic characters of *T. argentinus* Bruch, 1909, *T. paranaensis* Obenberger, 1924 and *T. potamophilus* Obenberger, 1934.

	<i>T. argentinus</i>	<i>T. paranaensis</i>	<i>T. potamophilus</i>
Body shape	slender, more than 3.0 times longer than wide	robust, less than 2.8 times longer than wide	slender, more than 3.0 times longer than wide
Head	narrower, body length more than 4.0 times as maximal width of head	wider, body length less than 3.9 times as maximal width of head	narrower, body length more than 4.0 times as maximal width of head
Eyes (DV)	very slightly projecting beyond outline of head, almost invisible from above	distinctly projecting beyond outline of head, well visible from above	distinctly projecting beyond outline of head, well visible from above
Anterior pronotal margin	very widely rounded (almost straight)	widely rounded (arcuately)	arcuately rounded, lobe somewhat protruding
Pronotal sides	not emarginate at basal fourth	not emarginate at basal fourth	emarginate at basal fourth
Pronotal ocellate punctures	small	very small	medium-sized
Pronotal sculpture	well elevated longitudinal bump lateroposteriorly	with a very vague prominence lateroposteriorly only	well elevated longitudinal bump lateroposteriorly
Elytral ornamental pubescence	consisting of denser and longer setae	consisting of sparser and shorter setae	consisting of denser and longer setae
Humerus	well elevated	moderately elevated	well elevated

Taphrocerus elongatus (Gory, 1841)

Specimens examined. URUGUAY: „Maldonado, Uruguay. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Maldonado 1310 (h, number on reverse side)“ (1 specimen sex not examined, BMNH).

Distribution. Argentina (Burmeister 1872), Uruguay (Gory 1841).

Remarks. *T. elongatus* is well distinctive species by large size, body shape (namely by wide head with rather small eyes but well visible from above and somewhat prolonged apex of elytra) and fine structure of dorsal side relatively (without pronotal prehumeral and elytral posthumeral carinae). According Bruch 1917 „... bupr stido es muy abundante (very abundant) ... R o Santiago (Argentina, La Plata) ... sobre *Scirpus giganteus*“ (species undoubtedly right determined according very well Bruch’s picture of habitus given in the same paper). All the specimens of this species that I revised were collected before 1950, I do not know the specimen collected recently.

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimen had to be collected 28. iv.-23. vii. 1833.

Taphrocerus exiguus Obenberger, 1934

Specimens examined. BRAZIL: „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♂, BMNH); „Santarem Bates (h, circle) / 27. (p, light blue label) / Saunders. 74.18. (p)“ (1 ♂, BMNH).

Distribution. Described from French Guiana, Cayenne and it is widely distributed in Central America and in the Amazonia (including South American continental shelf islands) (Marek 2017a).

Remarks. Another of the most abundant species of the Amazonian *Taphrocerus* (together with *T. obscurellus*, see above), but not so variable in body shape. Nevertheless it belongs to an extremely difficult species-group for determination (very similar habitus, colouration and details of morphology). The females are often undeterminable (for figs. see Marek 2017a).

Taphrocerus halfferi Cobos, 1978

Specimens examined. BRAZIL: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 specimen sex not examined, BMNH).

Distribution. Mexico (Cobos 1978), Venezuela (Marek 2017a), new to Brazil (state Par ).

Remarks. Species distinctive by body shape, many details of morphology and strongly by male genitalia. Known to me from Brazilian states Amazonas and Mato Grosso also. Variable in colouration from uniformly bright golden-coppery to dark brown with distinct golden lustre. It seems to be one of the most widely distributed species of the genus but rather rare by my observations.

Taphrocerus kubani Marek, 2017

Specimens examined. BRAZIL: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♂, BMNH).

Distribution. Brazil (Marek 2018a), French Guiana (Marek 2017b).

Taphrocerus nugator (Gory, 1841)

Specimens examined. BRAZIL: „Bahia (h) C. Darwin. 87-42. (p)“ (1 ♂, BMNH); „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♂, BMNH); „Bahia, Brazil. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Bahia. (h)“ (1 ♂, BMNH).

Distribution. French Guiana (Gory 1841), new to Brazil.

Remarks. *T. nugator* belongs to taxonomically very difficult species-group characterized mainly by a sculpture of dorsal side of body (namely by relatively unsculptured pronotum), very similar male genitalia and by rather strongly developed sexual dimorphism on anal ventrite.

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimens had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

Taphrocerus oliveirai Cobos, 1978

Specimens examined. BRAZIL: „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♀, BMNH).

Distribution. So far known from Brazilian states Minas Gerais (unique male (HT) stored in MNCN (Cobos 1978) and Bahia (female mentioned herein).

Remarks. *T. oliveirai* belongs to a small but very characteristic species-group by body shape and form of posthumeral elytral carina - *T. cupriceps* species-group. For definition of the species-group and a key to the species see Marek 2016a.

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimen had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

Taphrocerus seriatus Marek, 2017

Specimens examined. BRAZIL: „Bahia (h) C. Darwin. 87-42. (p)“ (1 ♂, BMNH).

Distribution. Brazil (Marek 2017b).

Remarks. According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimen had to be collected 28. ii.-18. iii. 1832 or 1.-6. viii. 1836 (second stop at San Salvador, Bahia, Brazil).

Taphrocerus szekessyi Apt, 1954

Specimens examined. BRAZIL: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♀).

Distribution. Brazil (Apt 1954) (described from Pernambuco and known to me from Brazilian states Bahia, Goias, Mato Grosso, Pará and Rio Grande do Norte).

Remarks. *T. szekessyi* belongs to a complex of very similar species habitually, by many details of morphology and by almost identical male genitalia mostly (*T. theryi* Obenberger, 1924, *T. shannoni* Fisher, 1933, *T. pygmaeus* Cobos, 1967, *T. inca* Marek, 2018 etc.). The species of this complex are widely distributed from Costa Rica through the Amazonia to South-Eastern Brazil.

Taphrocerus volitans (Gory, 1841)

Specimens examined. BRAZIL: „Rio 618. (h, number on reverse side) / 58.60. (h, light blue circle)“ (1 ♀, BMNH); the same data except for the number on reverse side of locality label: „445“ (1 ♀, BMNH).

Distribution. Brazil (Obenberger 1934), French Guiana (Gory 1841).

Remarks. For more details and figs. see Marek 2018a: 118-119.

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimens had to be collected 5. iv.-5. vii. 1832.

Taphrocerus winteri Obenberger, 1924

(Figs. 26, 26a)

Specimens examined. BRAZIL: „Rio Janeiro, Brazil. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Rio (h)“ (1 ♀, BMNH); „Rio 445 (h, number on reverse side) / Rio. C. Darwin. 87-42. (p)“ (1 ♀, BMNH).

Distribution. Brazil (Obenberger 1924).

Remarks. *T. winteri* is very similar to *T. vimmeri* Obenberger, 1924 habitually and by many details of morphology (Figs. 27, 27a), but with strongly different male genitalia. Both species belong among a number of very similar species that are known from Brazilian states Rio de Janeiro and Sao Paulo. The species are uniform in colouration, general body shape and in many details of morphology, but usually differ in male genitalia strongly. *T. vimmeri* is striking by relatively unsculptured pronotum, *T. winteri* belongs in larger species-group around *T. wagneri* Kerremans, 1913 (definition and revision of species-group in prep.).

According to the Itinerary of the voyage of H.M.S. Beagle from December 27. 1831 to October 2. 1836 (Smith 1987) the specimen had to be collected 5. iv.-5. vii. 1832.



Figs. 26-27a: 26- *T. winterei* Obenberger, 1924, specimen ♂ from Brazil, Rio de Janeiro, 3.75 mm, (JMSC), 26a- aedeagus, 0.80 mm; 27- *T. vimmeri* Obenberger, 1924, ST ♂, 3.80 mm (NMPC), 27a- aedeagus, 0.90 mm.

Taphroceroides curlettii Brûlé, 2012

Specimens examined. BRAZIL: „Para Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♂).

Distribution. French Guiana (Brûlé 2012), new to Brazil.

Remarks. The most abundant species among three described species of the genus by my observations. I have collected hundreds of specimens in 1992-1993 in Cayenne (French Guiana), all specimens by netting of extremely sharp grass (Cyperaceae) together with *Taphrocerus exiguus*. In the same period I have only found five specimens of *Taphroceroides guyanensis* Brûlé, 2012, the second species known from French Guiana. *T. curlettii* is known to me from Surinam and Guyana also.

Belém is the present name of Pará (see Specimens examined above).

THE LIST OF BATESIAN AND DARWINIAN *TAPHRO CERUS*

Species and specimens collected by Bates in 1848-1859.

Taphrocerus batesi sp. nov.: Holotype (♀): „Ega Bates (h, circle) / Saunders 14.18. (p) / 26. (p, light blue label)“.

Paratype the same data as holotype without the label with number (1 ♂).

T. bellus sp. nov.: Paratype (♂): „Para Bates (h, circle) / 25. (p, light blue label) / Saunders. 74.18. (p)“.

T. exiguus Obenberger, 1934: „Santarem Bates (h, circle) / 27. (p, light blue label) / Saunders. 74.18. (p)“ (1 ♂).

T. halffteri Cobos, 1978: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 specimen sex not examined). New to Brazil.

T. kubani Marek, 2017: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♂).

T. laticeps sp. nov.: Paratype (♀): „Santarem Bates (h, circle) / Saunders. 74.18. (p)“.

T. santaremensis sp. nov. Paratype (♂): „Santarem Bates (h, circle) / Saunders. 74.18. (p) / 28. (p, light blue label)“.

T. subcyaneus sp. nov.: Paratype (♀): „Santarem Bates (h, circle) / Saunders. 74.18. (p) / 24. (p, light blue label)“.
T. szekessyi Apt, 1954: „Santarem Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♀).
Taphroceroides curlettii Brúlé, 2012: „Para Bates (h, circle) / Saunders. 74.18. (p)“ (1 ♂). New to Brazil.

Species and specimens collected by Darwin in 1832-1836.

Taphrocerus abscondus Marek, 2018: „Bahia (h) C. Darwin. 87-42. (p)“ (2 ♂♂). New to Brazil.
T. argentinus Bruch, 1909: „Maldonado, Uruguay C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Maldonado 1321 (h, number on reverse side)“ (1 ♀). New to Uruguay.
T. barclayi sp. nov.: Holotype (♂): „Bahia (h) / 58.60. (h, light blue circle)“.
T. darwini sp. nov.: Holotype (♂): „Bahia (h) / 58.60. (h, light blue circle)“.
T. elongatus (Gory, 1841): „Maldonado, Uruguay. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Maldonado, 1310 (h, number on reverse side)“ (1 specimen sex not examined).
T. exiguus Obenberger, 1934 (♂): „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♂).
T. longus sp. nov.: Paratype (♀): „Rio 438 (h, number on reverse side) / 58.60. (h, light blue circle)“.
T. nugator (G., 1841): „Bahia (h) C. Darwin. 87-42. (p)“ (1 ♂); „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♂); „Bahia, Brazil. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Bahia. (h)“ (1 ♂). New to Brazil.
T. oliveirai Cobos, 1978: „Bahia (h) / 58.60. (h, light blue circle)“ (1 ♀).
T. seriatus Marek, 2017: „Bahia (h) C. Darwin. 87-42. (p)“ (1 ♂).
T. volitans (G., 1841): „Rio 618 (h, number on reverse side) / 58.60. (h, light blue circle)“ (1 ♀); the same data except for the number on reverse side of locality label: „445“ (1 ♀).
T. winteri Obenberger, 1924: „Rio Janeiro, Brazil. C. Darwin. (p) / Darwin Coll. 1885.- 119. (p) / Rio (h)“ (1 ♀); „Rio 445 (h, number on reverse side) / Rio. C. Darwin. 87-42. (p)“ (1 ♀).

All specimens listed are stored in BMNH.

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