Studies and Reports
Taxonomical Series 16 (2): 417-435, 2020

New species of the genus *Taphrocerus* Solier, 1833 (Coleoptera: Buprestidae: Agrilinae)

Jaroslav MAREK

Sýkořice 29, CZ-270 24 Zbečno, Czech Republic

Taxonomy, new species, Coleoptera, Buprestidae, *Taphrocerus*, Neotropical Region

Abstract. Five species and one subspecies of the genus *Taphrocerus* are newly described and illustrated as follows: *Taphrocerus anthracinus* sp. nov. (Brazil), *T. chrudimskyi* sp. nov. (Brazil), *T. cuprescens howdenorum* ssp. nov. (Venezuela), *T. davidi* sp. nov. (Brazil), *T. ovatus* sp. nov. (Argentina) and *T. svihliki* sp. nov. (Brazil). The new species are compared to the most related taxa.

INTRODUCTION

The present paper belongs to a series of works based on studying the type material of the genus *Taphrocerus* Solier, 1833 and examining numerous specimens from various institutions and private collections all over the world. The studies serve as a basis for a revision of the genus.

MATERIALS AND METHODS

Designation of holotype specimens are provided by printed red label with black margin. Data from locality labels are cited „verbatim".

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.

A Canon D-550 digital camera with the Canon MP-65 mm f/2.8 1-5x macro lens was used to captured 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 Natural History Museum, London, United Kingdom;

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

TAXONOMY

Taphrocerus davidi sp. nov.
(Fig. 1)

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).

Diagnosis. Medium-sized (3.65 mm), broadly elongate, cuneiform, about 2.75 times longer than wide, widest at humeri and just before the elytral midlength, moderately convex above, strongly lustrous; dorsal surface brown with strong golden lustre, vertex and pronotum at posterior angles with strong bright golden-coppery tinge; beneath black with slight purple-coppery tinge including legs and antennae; above very sparsely pubescent by extremely short, almost inconspicuous, thin, white setae; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head medium-sized, distinctly narrower than posterior pronotal margin; clypeus almost „T-shaped“, strongly shagreened, separated from frons by well elevated carina, lateral branches very narrow, epistomal pores large, slightly elongate transversely, separated by their own diameter; frons rather strongly convex, strongly shagreened, deeply and rather narrowly depressed at middle, the depression merging into sulcus tovards vertex, unpunctate anteriorly, with a few, fine punctures at posterior half, asetose; vertex moderately convex, very slightly depressed at middle anteriorly, with very fine groove at middle anteriorly, the groove becoming in short but rather well elevated carina posteriorly towards anterior pronotal margin, surface strongly shagreened, sparsely ocellate-punctate by very small punctures, each puncture with a thin, white seta, the setae are markedly longer at anterior half and almost inconspicuous posteriorly along anterior pronotal margin; eyes rather large, broadly oval, slightly projecting beyond outline of head, rather well visible from above; antennae short and rather narrow, antennomeres 6-11 moderately widened.

Pronotum moderately convex, 1.99 times as wide as long, widest at the middle(!); rather narrowly and shallowly transversely depressed along anterior margin, the depression is markedly deeper laterally and almost interrupted at middle, largely and rather shallowly depressed lateroposteriorly, very weakly so on the disc at middle and in front of scutellum; with very vague prominence lateroposteriorly; anterior margin nearly straight, very slightly protruding anteriorly at middle, posterior margin strongly biemarginate, widely emarginate in front of scutellum, slightly but distinctly narrower than base of elytra, sides shortly subparallel anteriorly, then almost straight dilated to the middle, then rather strongly

angulate, then distinctly emarginately constricted and than shortly subparallel to the base; surface strongly shagreened, very sparsely ocellate-punctate by small punctures at the depressions, each puncture with extremely short, almost inconspicuous, thin, white seta; scutellum medium-sized, rather widely cordiform, very weakly rounded anteriorly, strongly shagreened.

Elytra moderately convex, 2.11 times as long as wide, widest at humeri and just before the middle, slightly but distinctly wider at humeri than pronotum at the widest part; lateral margins very slightly emarginate behind humeri, regularly rounded at middle, then very slowly arcuately tapering towards narrowly and separately rounded apices; apices serrate by a few but rather large, sharp teeth; humeral swelling moderately developed, laterobasal depression medium-sized, rather deep, well marked; surface shagreened at basal sixth and at apical fourth laterally only, punctures in rows longitudinally deeper and larger at basal third becoming fine posteriorly, disappearing at apical third, which is somewhat corrugate; rather densely pubescent by extremely short, almost inconspicuous, thin, white setae, somewhat more distincly at apical half; posthumeral elytral carina absent.

Ventral surface strongly shagreened, abdomen moderately lustrous, punctate by small, „U-turned up-shaped“ punctures on first visible sternite, unpunctate on the next ones posteriorly, pubescent by extremely short, almost inconspicuous, white setae laterally and apically; anal ventrite rather narrowly rounded, somewhat protruding apically, with wide, shallow, semicircular emargination on apical margin, preapical groove following outline of margin wide, semicircular, somewhat truncate apically; antennal grooves rather shallow and very wide on prosternum; prosternal process rather broadly elongate, strongly shagreened, sides moderately, regularly dilated behind, apex rhomboidal, asetose, with row of large, simple punctures along the sides.

Measurements. Length 3.65 mm; width 1.35 mm.

Differential diagnosis. *T. davidi* sp. nov. belongs to a number of species of the *T. wagneri* species-group (definition of species-group in prep.) (see also Differential diagnosis under *T. jaroslavi* Marek, 2019 and *T. trinidadensis* Marek, 2019 in Marek 2019b). The species are characterized namely by broadly oval body shape, absence both pronotal prehumeral and elytral posthumeral carinae, almost inconspicuous pubescence of dorsal side and by uniformly black colouration with more or less intensive brown tinge. *T. davidi* sp. nov. can be distinguished from the most similar species by colouration (*T. subglaber* Fisher, 1925 (Fig. 2) and *T. helferi* Obenberger, 1924 (Fig. 3) and by the same aerea of occurence (*T. winteri* Obenberger, 1924 (Fig. 4), *T. vimmeri* Obenberger, 1924 (Fig. 5) and *T. wygodzinskyi* Marek, 2019 (Fig. 6) first of all by rather strongly angulate pronotal sides at the widest part, by the posterior pronotal margin being slightly but distinctly narrower than base of elytra and by more attenuate elytra at apical half posteriorly as well as many other details of its morphology.

Etymology. Named in honour of my friend from childhood Jan David (Praha, Czech Republic), my schoolfellow from elementary school in 1972-1980; patronymic.

Figs. 1-6: 1- *T. davidi* sp. nov., HT, ♀, 3.65 mm; 2- *T. subglaber* Fisher, 1925, specimen ♂ from Tobago, 3.40 mm (JMSC); 3- *T. helferi* Obenberger, 1924, ♀ (ST 3 of *T. helferi* var. *chalceus* (= synonym of *T. helferi* according to article 45.6 (ICZN 1999), 3.80 mm (NMPC); 4- *T. winteri* Obenberger, 1924, specimen ♂ from Brazil, Rio de Janeiro, 3.70 mm (JMSC); 5- *T. vimmeri* Obenberger, 1924, ST, ♂, 3.80 mm (NMPC); 6- *T. wygodzinskyi* Marek, 2019, PT, ♀, 3.95 mm (NMPC).

Taphrocerus svihliki **sp. nov.**
(Fig. 7)

Type locality. Brazil, Sao Paulo State, Cipó, 23°49´S 46°47´W.

Type specimens. Holotype (♀): „Brasil: São Paulo St., Cipó, 23°49´S 46°47´W / 4. i. 1969, V. N. Alin", (JMSC).

Diagnosis. Large (4.20 mm), elongate, slender, about 3.15 times longer than wide, widest before the middle of elytra, pronotum moderately convex, elytra flattened, rather very lustrous above; dorsal surface metallic „dirty" light violet with golden lustre and narrow, bluish perisutural stripe at basal half; beneath black with strong brown-violet tinge including legs and antennae; sparsely pubescent by extremely short, almost inconspicuous, thin, white setae, in sparse, regular rows on elytra longitudinally; prehumeral pronotal and posthumeral elytral carinae absent.

Description of holotype. Head medium-sized, rather narrow, distinctly narrower than posterior pronotal margin; clypeus very widely „V-shapped, strongly shagreened, separated from frons by rather well elevated carina, epistomal pores large, elongate transversely, separated less than their own diameter; frons rather strongly convex, widely depressed at middle, the depression merging into rather short and shallow sulcus towards vertex, surface rather finely shagreened and finely punctate anteriorly and rather strongly shagreened and more coarsely punctate at posterior half, with a few short, white setae above clypeus and at the depression only; vertex rather strongly convex (FVV), very slightly depressed at middle longitudinally, somewhat more deeply anteriorly, with a fine groove at middle longitudinally, rather strongly shagreened, sparsely punctate by very fine, simple punctures, each puncture with a short, white seta, the setae are markedly longer anteriorly and almost inconspicuous posteriorly along anterior pronotal margin; eyes medium-sized, broadly oval, rather well projecting beyond outline of margin, well visible from above; antennae short and rather wide.

Pronotum moderately convex, unsculptured relatively, 1.74 times as wide as long, widest before the end of second-third; widely and rather shallowly transversely depressed along anterior margin, largely and rather shallowly so lateroposteriorly, flattened on the disc at middle and in front of scutellum; with a vague longitudinal bump lateroposteriorly; anterior margin very widely rounded (almost straight), posterior margin rather weakly biemarginate, very slightly narrower than base of elytra, widely and rather deeply emarginate in front of scutellum, sides very shortly subparallel anteriorly, then almost straight dilated to the end of second-third, then distinctly but obtusely angulate, then distinctly emarginate and then subparallel to the base; surface strongly shagreened, extremely sparsely ocellate-punctate by small punctures at the depressions and at middle longitudinally, each puncture with a short, thin, white seta; scutellum medium-sized, rather widely cordiform, strongly rounded anteriorly, strongly shagreened, moderately lustrous.

Elytra weakly convex, somewhat flattened at basal half, 2.42 times as long as wide, widest before the middle, distinctly wider at humeri than pronotum at the widest part; lateral

margins slightly emarginate behind humeri, rather narrowly rounded before the middle, then very slowly arcuately, almost straight tapering towards narrowly and feebly separately rounded apices; apices minutely serrate by sharp teeth; humeral swelling weakly developed, laterobasal depression small but rather deep, well distinct; surface strongly shagreened, punctures in rows longitudinally fine, more coarser at basal half along suture only, very fine laterally and at apical third, which is somewhat corrugate, sparsely pubescent by extremely short, almost inconspicuous, thin, white setae in sparse, regular rows longitudinally; posthumeral elytral carina absent.

Ventral side strongly shagreened, abdomen rather strongly lustrous, ocellate-punctate by very small punctures opened posteriorly on the first visible sternite and by very fine, simple punctures on the next ones posteriorly, sparsely pubescent by extremely short, white setae laterally and apically; anal ventrite rather narrowly rounded, distinctly protruding apically, with rather deep, semicircular emargination on apical margin, preapical groove following outline of margin regularly semicircular; antennal grooves rather shallow and wide on prosternum, short; prosternal process strongly shagreened, asetose, sides weakly constricted between procoxae, moderately dilated behind, apex narrowly rhomboidal, with very fine groove at middle longitudinally, somewhat corrugate.

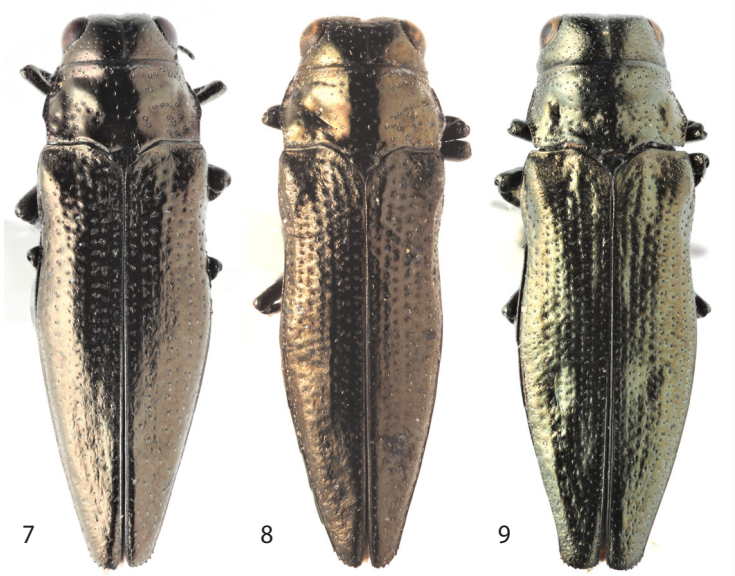
Sexual dimorphism. Male unknown.

Measurements. Length 4.20 mm; width 1.30 mm.

Differential diagnosis. *T. svihliki* sp. nov. is distinctive by large size, colouration and flattened body among *Taphrocerus* species without prehumeral pronotal and posthumeral elytral carinae and sparsely pubescent by extremely short, almost inconspicuous, thin, white setae that occur in South-Eastern Brazil (Matta Atlantica). It is the most similar to *T. longus* Marek, 2019 (Fig. 8) (desribed from Brazil, Rio de Janeiro) and it can be distinguished by the characters given in Table A below. *T. svihliki* sp. nov. resembles species of *T. kheili* species-group also by its metallic colouration and body shape but it differs strongly in absence of elytral ornamental pubescence (pattern). It is also somewhat similar to *T. elongatus* (Gory, 1841) (Fig. 9) (known from North Argentina and Uruguay) by large size and elongate body shape and it differs from it by narrower head relatively with eyes more projecting beyond outline of head, small but distinctly larger ocellate punctures on pronotum, larger scutellum relatively and first of all by apices of elytra (not spathulate and narrowly, feebly separately rounded in *T. svihliki* sp. nov., markedly spathulate, widely and distinctly separately rounded in *T. elongatus*).

Table A. Diagnostic characters of *T. svihliki* sp. nov. and *T. longus* Marek, 2019.

	T. svihliki	*T. longus*
Colouration of dorsal side	metallic „dirty“ light violet with golden lustre and narrow, bluish perisutural stripe at basal half	coppery with golden lustre, pronotal disc with purple tinge
Body shape (♀♀)	distinctly more flattened, especially elytra; widest before the middle of elytra; elytra at humeri markedly wider than pronotum at the widest part	distinctly more convex, almost cylindrical; widest at the beginning of pronotal basal third and at humeri; elytra at humeri the same width as pronotum at the widest part
Head (♀♀)	narrower relatively, the maximal width of head is about 0.65 of width of elytra at the widest part (about the middle)	wider relatively, the maximal width of head is about 0.80 of width of elytra at the widest part (about the middle)
Eyes	larger (LV), broadly oval	smaller (LV), almost regularly circular
Frons (DV) (♀♀)	narrower relatively; more finely shagreened and finely punctate	wider relatively; more strongly shagreened and coarsely punctate
Vertex	very finely shagreened both anterior and posterior half; very finely and sparsely punctate	strongly shagreened at anterior half, finely so posteriorly; densely and coarsely punctate
Pronotal sculpture	unsculptured relatively - pronotal depressions distinctly shallower; surface more strongly shagreened	pronotal depressions distinctly deeper; surface more finely shagreened, almost smooth on the disc laterally
Prosternal process	more slender; sides very feebly dilated behind procoxae	more robust; sides more strongly dilated behind procoxae



Figs. 7-9: 7- *T. svihliki* sp. nov., HT, ♀, 4.20 mm; 8- *T. longus* Marek, 2019, PT, ♀, 3.80 mm (BMNH); 9- *T. elongatus* (Gory, 1841), specimen ♂ from Argentina, Buenos Aires, 4.50 mm (JMSC).

Etymology. Named in honour of my friend from childhood Petr Švihlík (Praha, Czech Republic), my schoolfellow from elementary school in 1972-1980; patronymic.

Taphrocerus ovatus sp. nov.
(Fig. 10)

Type locality. Argentina, Misiones, Puerto Iguazu.

Type specimens. Holotype (♀): „ARGENTINE, Misiones, Puerto Iguazu, XI.1991- II.1992, R. Foerster", (JMSC).

Diagnosis. Medium-sized (3.65), elongate, rather broadly oval, about 2.95 times longer than wide, widest at humeri and before the middle of elytra, moderately convex above, lustrous; dorsal surface slightly bicoloured: head and elytra brown-coppery with golden lustre, pronotum brown-coppery with strong purple-violet tinge; beneath black with strong purple-violet tinge and golden lustre including legs and antennae; head and pronotum sparsely pubescent by very short, thin, white setae, elytra with extremely short, almost inconspicuous, thin, white setae, somewhat more distinct at apical fourth only; prehumeral pronotal carina absent, posthumeral elytral carina absent but very obsolete fold, with blunt edge, present at fifth-sixth laterally.

Description of holotype. Head large, wide, very slightly narrower than posterior pronotal margin; clypeus very widely „V-shaped", very strongly shagreened, separated from frons by well elevated carina, lateral branches narrow, epistomal pores large, slightly elongate transversely, separated more than their own diameter; frons moderately convex, strongly shagreened, shallowly and rather narrowly, triangularly depressed at middle, the depression merging into short and shallow sulcus towards vertex, impunctate at anterior half, rather densely ocellate-puntate by very small punctures at posterior half, very sparsely pubescent by extremely short, almost inconspicuous, white setae; vertex rather strongly convex, rather strongly shagreened, very slightly and narrowly depressed at middle longitudinally, with a fine groove at middle longitudinally, sparsely ocellate-punctate by very small punctures, each puncture with extremely short, almost inconspicuous, thin, white seta; eyes medium-sized, broadly oval, very slightly projecting beyond outline of head, poorly visible from above; antennae short, antennomeres 6-11 moderately widened.

Pronotum moderately convex, 1.88 times as wide as long, widest at the beginning of basal third; narrowly transversely depressed along anterior margin, more deeply laterally, largely and rather deeply depressed lateroposteriorly, with shallow and rather large depression on the disc anteriorly; with moderately elevated bump lateroposteriorly; anterior margin stright, posterior margin rather strongly biemarginate, widely emarginate in front of scutellum, the same width as base of elytra, sides shortly subparallel anteriorly, then slightly arcuately dilated to the beginning of basal third, then very weakly angulate and then stright constricted to the base; surface strongly shagreened except for finely shagreened anterior part of the disc, ocellate-punctate by small punctures at the anterior depression and on the disc and by somewhat larger punctures at the lateroposterior depressions and in front of scutellum, each puncture with a short, thin, white seta; scutellum rather small, cordiform, very weakly rounded anteriorly, shagreened.

Elytra moderately convex, 2.17 times as long as wide, widest before the middle; lateral margins weakly and rather narrowly emarginate behind humeri, regularly and rather narrowly rounded at middle, then slowly arcuately tapering towards widely and very slightly separately rounded apices; apices serrate by a few only but rather large and sharp teeth; humeral swelling rather well developed, laterobasal depression small but deep, well marked; surface strongly shagreened at basal fifth becoming more finely, almost inconspicuously shagrened posteriorly, punctures in rows longitudinally more deeper and larger at basal half becoming fine and almost inconspicuous posteriorly, almost disappearing at apical fourth, which is somewhat corrugate; pubescent by extremely short, almost inconspicuous, thin, white setae, somewhat more distinct at apical fourth only; posthumeral elytral carina absent but very obsolete fold, with blunt edge, present at fifth-sixth laterally.

Ventral surface strongly shagreened, abdomen rather strongly lustrous, rather densely ocellate-punctate by small punctures opened posteriorly, sparsely, almost regularly pubescent by short, thin, white setae; anal ventrite narrowly and regularly rounded, without any emargination on apical margin, preapical groove following outline of margin narrowly and regularly rounded, wide; antennal grooves rather shallow, very widened on prosternum; prosternal process rather shortly elongate, strongly shagreened, sides straight dilated behind, apex rhomboidal, unpunctate, with a few extremely short, thin, white setae, somewhat elevated at middle longitudinally.

Sexual dimorphism. Male unknown.

Measurements. Length 3.65 mm; width 1.25 mm.

Differential diagnosis. *T. ovatus* sp. nov. belongs among a number of very similar species that occur in North Argentina (Corrientes, Misiones, Entre Ríos), South-East Brazil (Santa Catharina, Paraná, Rio Grande do Sul) and South Paraguay. The species are charcterized by body shape (oval), absence of pronotal prehumeral and elytral posthumeral carinae, by the same width of posterior pronotal margin as the base of elytra (the character distinguishing these species from another, very similar species-groups), by extremely short, almost inconspicuous elytral pubescence as well as another characters of its morphology. For distinguishing the most similar species *T. punctuliceps* Obenberger, 1934 (Fig. 11) and *T. compactus* Obenberger, 1934 (Fig. 12) see Table B below. Another similar species *T. subviolaceus* Marek, 2020 (Fig. 13) can be distinguished by larger size, distinctly narrower head relatively, more attenuate elytra posteriorly at apical half, more narrowly rounded elytral apices as well as many other details of morphology.

Table B. Diagnostic characters of *T. ovatus* sp. nov., *T. punctuliceps* Obenberger, 1934 and *T. compactus* Obenberger, 1934.

	T. ovatus	*T. punctuliceps*	*T. compactus*
Size	larger species (3.65 mm)	smaller species (about 3.00 mm)	smaller species (about 3.00 mm)
Body shape	more slender, about 2.95 times longer than wide	more robust, about 2.85 times longer than wide	more slender, about 2.95 times longer than wide
Colouration of dorsal side	slightly bicoloured: head and elytra brown-coppery with golden lustre, pronotum brown-coppery with strong purple-violet tinge	unicoloured: black	slightly bicoloured: head and pronotum black with strong golden tinge, elytra black
Maximal width of pronotum	at the beginning of basal third	at the beginning of basal third	near the base
Pronotal sculpture	laterobasal depressions deep, well distinct, with moderately developed bump lateroposteriorly	unsculptured relatively, laterobasal depressions very shallow, poorly distinct, without any bump or prominence lateroposteriorly	unsculptured relatively, laterobasal depressions very shallow, poorly distinct, with very vague prominence lateroposteriorly
Pronotal punctation	smaller ocellate punctures, denser	smaller ocellate punctures, denser	larger ocellate punctures, sparser
Pronotal sides	very weakly angulate at the widest part	distinctly angulate at the widest part	rounded at the widest part
Apices of elytra	very shallowly but distinctly serrate; less separately rounded	very shallowly but distinctly serrate; less separately rounded	without distinct serration; more separately rounded

Figs. 10-13: 10- *T. ovatus* sp. nov., HT, ♀, 3.65 mm; 11- *T. punctuliceps* Obenberger, 1934, ST 3, ♂, 2.95 mm (NMPC); 12- *T. compactus* Obenberger, ST 2, ♀, 2.75 mm (NMPC); 13- *T. subviolaceus* Marek, 2020, HT, ♀, 3.95 mm (JMSC).

Etymology. The specific epithet is the Latin adjective *ovatus* (ovate, egg-shaped); named in reference to the body shape.

Taphrocerus chrudimskyi sp. nov.
(Figs. 14, 14a)

Type locality. Brazil, Sao Paulo State, Sao Paulo.

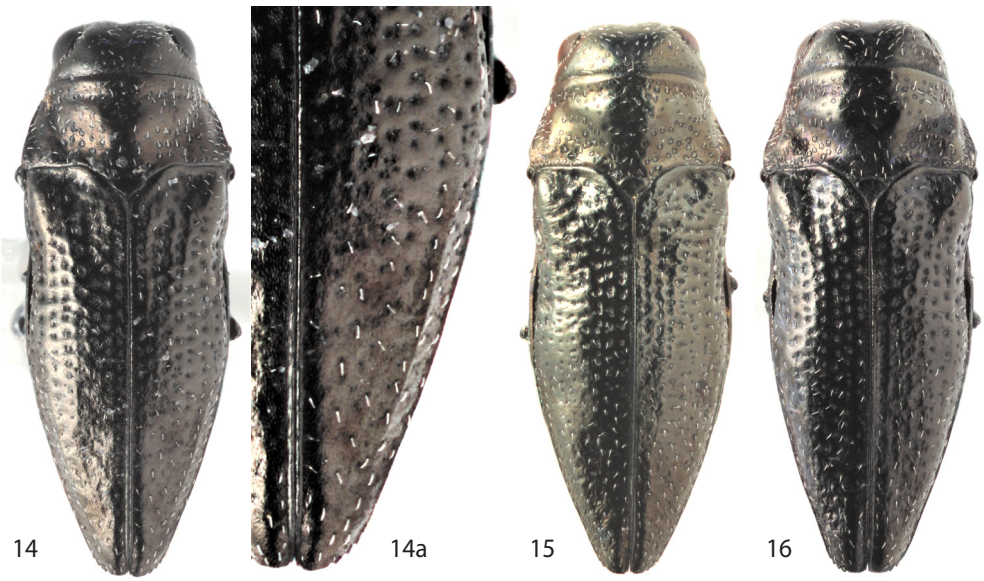
Type specimens. Holotype (♀): „Brasil: São Paulo, São Paulo St., 3. XII. 1966, V. N. Alin", (JMSC).

Diagnosis. Small (2.90 mm), elongate, broadly oval, about 2.7 times longer than wide, widest just before the pronotal base, moderately convex above, rather strongly lustrous; head and pronotum black with very slight purple-coppery tinge, elytra black with very feeble purple reflections, scutellum black; beneath black including legs, antennae black with slight purple-violet lustre; sparsely covered by short, thin, white setae; prehumeral pronotal carina absent; posthumeral elytral carina present, well elevated, with sharp edge at apical third-fourth only.

Description of holotype. Head rather large, wide, distinctly narrower than posterior pronotal margin, sides weakly attenuate anteriorly (DV); clypeus very widely „V-shaped", strongly shagreened, separated from frons by rather well elevated carina, epistomal pores large, circular, separated less than their own diameter; frons moderately convex, strongly shagreened, with rather deep, longitudinally triangular depression at middle, the depression merging into shallow sulcus at middle towards vertex, with a few thin, white setae above clypeus and sparsely at posterior half, unpunctate; vertex strongly convex, rather strongly and widely protruding up (FVV), slightly depressed at middle anteriorly, with a fine groove at middle longitudinally, strongly shagreened, sparsely ocellate-punctate by small punctures, sparsely pubescent by short, thin, white setae at anterior half; eyes medium-sized, oval, slightly projecting beyond outline of head, rather well visible from above; antennae rather short, narrow.

Pronotum moderately convex, 2.03 times as wide as long, widest just before the base; narrowly and rather deeply transversely depressed along anterior margin, largely and rather deeply so lateroposteriorly, very shallowly so on the disc anteriorly; with rather well elevated bump lateroposteriorly; anterior margin widely regularly rounded, posterior margin strongly biemarginate, widely and rather deeply emarginate in front of scutellum, slightly but distinctly wider than base of elytra, sides shortly subparallel anteriorly, then arcuately dilated to the middle, then shortly undulate, then dilated to just before the base and then constricted to the base; surface rather strongly shagreened, ocellate-punctate by small punctures at the depressions, the punctures at lateroposterior depressions are somewhat larger than at anterior transverse depression, each puncture with a short, thin, white seta; scutellum rather small, widely cordiform, rather strongly rounded anteriorly, shagreened, moderately lustrous.

Elytra moderately convex, 2.04 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



Figs. 14-16: 14- *T. chrudimskyi* sp. nov., HT, ♀, 2.90 mm, 14a- detail of posthumeral elytral carina at elytral apical third-fourth (the right elytron); 15- *T. riparius* Obenberger, 1934, LT, ♀, 2.95 mm (NMPC); 16- *T. barclayi* Marek, 2019, HT, ♂, 2.60 mm (BMNH).

margins feebly and rather widely emarginate behind humeri, widely rounded at middle, then very slowly arcuately tapering towards narrowly and separately rounded apices; apices with a few sharp but shallow 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, disappearing at apical fourth, apical third slightly corrugate; sparsely pubescent by short, thin, white setae; posthumeral elytral carina present, well elevated, with sharp edge at apical third-fourth only.

Ventral surface strongly shagreened, abdomen weakly lustrous, punctate by „U-turned up-shaped" punctures, rather densely pubescent by thin, white setae laterally and apically; anal ventrite rather narrowly rounded, with a shallow, semicircular emargination on apical margin, preapical groove following outline of margin widely semicircular, wide; antennal grooves rather long, narrow; prosternal process elongate, strongly shagreened, sides strongly constricted between procoxae, weakly dilated behind, apex rhomboidal, unpunctate, asetose.

Measurements. Length 2.90 mm; width 1.10 mm.

Differential diagnosis. Although the posthumeral elytral carina is present partly (well elevated, with sharp edge at apical third-fourth) in *T. chrudimskyi* sp. nov., it belongs to *T. dudai* species-group (definition and revision of the species-group in prep.). The species of this group are characterized in smaller size usually, absence of prehumeral pronotal and posthumeral elytral carinae (except for *T. chrudimskyi* sp. nov.), black or brown colouration and namely by pronotal base, which is distinctly wider than base of elytra (see also Marek

2016: 407 and Marek 2019a: 107-108). The species-group contains about ten previously described species and a number undescribed species known to me at present. The species are extremely similar externally but with strongly different male genitalia mostly. *T. chrudimskyi* sp. nov. is the most similar to *T. riparius* Obenberger, 1934 (Fig. 15) (described from Brazil, Paraná) and *T. barclayi* Marek, 2019 (Fig. 16) (described from Brazil, Bahia) and it can be distinguished easily from all species of the species-group by mentioned presence of the posthumeral elytral carina (well elevated, with sharp edge at apical third-fourth, see Fig. 14a) as well as many other details of morphology.

Etymology. Named in honour of my friend Jan Chrudimský (Praha, Czech Republic) as my thanks for his help and fellowship; patronymic.

***Taphrocerus anthracinus* sp. nov.**
(Figs. 17, 17a)

Type locality. Brazil, Amazonas, Manaus.

Type specimens. Holotype (♂): „Brazil, Amazonas, Manaus, 25. vii. 1992, Marek & Seidl leg.“, (JMSC).

Diagnosis. Large (4.55 mm), broadly elongate, stout, about 2.6 times longer than wide, widest at humeri and just before the middle of elytra, moderately convex above, elytra somewhat flattened, very strongly lustrous; above black, clypeus with dark coppery tinge, frons with golden-green tinge above clypeus and dark coppery tinge posteriorly, vertex with feeble green tinge and golden reflections, pronotum with golden tinge along anterior margin and lateroposteriorly, elytra with slight golden lustre laterally; beneath black including legs and antennae, very lustrous; sparsely pubescent by short, thin, white setae, elytra with an ornamental pubescence (pattern) of wider, longer and denser, white setae; prehumeral pronotal carina absent; posthumeral elytral carina absent but well marked fold (with blunt edge) present at apical third laterally near the margin.

Description of holotype. Head rather large, wide, rather distinctly narrower than posterior pronotal margin, sides weakly attenuate anteriorly (DV); clypeus widely „V-shaped“, strongly shagreened, separated from frons by a fine carina, epistomal pores large, slightly elongate transversely, separated more than their own diameter; frons moderately convex, moderately and widely depressed at middle, the depression merging into rather shallow sulcus towards vertex, with large relatively but vague, simple punctures at anterior half, unpunctate at posterior one, with a few thin, white setae around epistomal pores only; vertex rather strongly convex, rather strongly shagreened, slightly and rather widely depressed anteriorly, with a fine groove at middle longitudinally, sparsely punctate by fine, simple punctures, with short, thin, white setae along the eyes only; eyes large, very broadly oval, slightly projecting beyond outline of head, moderately visible from above; antennae rather long, antennomeres 6-11 widened.

Pronotum moderately convex, 1.85 times as wide as long, widest near the base; shallowly and rather widely transversely depressed along anterior margin, almost interruptly at middle, largely and more deeply so lateroposteriorly, with shallow, circular depression on the disc and very weak depression in front of scutellum; with very vague prominence lateroposteriorly; anterior margin very widely rounded, posterior margin rather strongly biemarginate, the same width as elytra at base, very weakly emarginate in front of scutellum, sides shortly dilated anteriorly, then widely arcuately, more strongly dilated to the beginning of basal fourth, then very slightly but distinctly emarginate and then shortly constricted to the base; surface rather strongly shagreened at middle longitudinally, finely so laterally, rather densely ocellate-punctate by small punctures at the depressions and at middle longitudinally, each puncture, except for the punctures at the middle longitudinally, with a thin, white seta; scutellum rather small, regularly triangular, very widely rounded anteriorly, shagreened, feebly lustrous.

Elytra moderately convex, somewhat flattened along the suture, 1.96 times as long as wide, widest at humeri and just before the middle, slightly wider at humeri than pronotum at the widest part; lateral margins slightly and rather narrowly emarginate behind humeri, widely and regularly rounded at middle, then very slowly, widely arcuately tapering towards broadly and very slightly separately rounded apices; apices minutely serrate by almost inconspicuous, sharp teeth; humeral swelling well developed, laterobasal depression rather large and deep, well distinct; surface weakly shagreened, somewhat corrugate at apical fourth, punctures in rows longitudinally fine, distinct at basal half only, almost inconspicuous at third-fourth and disappearing at apical fourth; very sparsely pubescent by short, thin, white setae anterolaterally, along the sides and along the suture at apical fourth and with an ornamental pubescence of longer, denser and somewhat widened, white setae as follows: short and rather wide perisutural stripe behind scutellum, irregular, interrupted transverse stripe at middle and two (1+1) large, slightly transversely elongate spots at the beginning of apical fifth; posthumeral elytral carina absent but well marked fold (with blunt edge) present at apical third laterally near the margin.

Ventral side rather strongly shagreened and lustrous, abdomen punctate by „U-turned up-shaped“ punctures, larger on the first visible sternite and becoming smaller and finer apically, very sparsely pubecsent by thin, white setae laterally and apically only; anal ventrite rather narrowly rounded, with very wide but shallow emergination on apical margin, preapical groove following outline of margin widely rounded; antennal grooves rather wide, deep and long; prosternal process rather shortly elongate, moderately constricted between procoxae, rather strongly dilated behind, surface strongly shagreened, apex rhomboidal, asetose, rather coarsely punctate by large, irregular, simple punctures.

Aedeagus (Fig. 17a).

Sexual dimorphism. Female unknown.

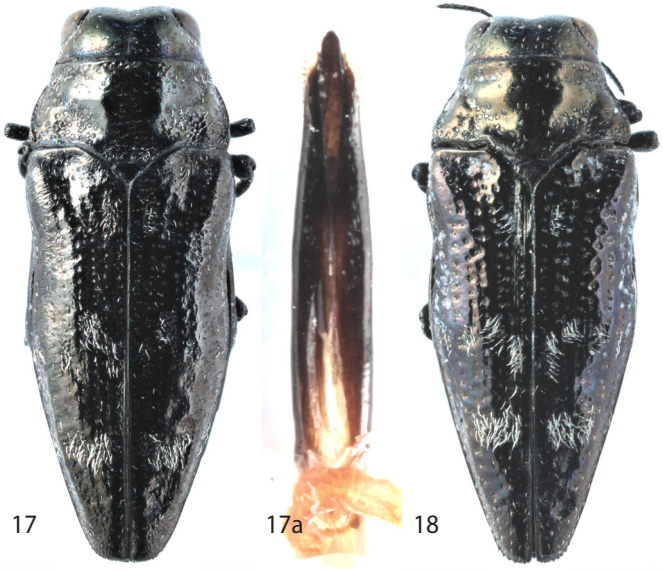
Measurements. Length 4.55 mm; width 1.75 mm.

Differential diagnosis. *T. anthracinus* sp. nov. belongs to a complex of species around *T. gentilis* (Gory, 1841) (described from French Guiana, Cayenne) difficult to distinguish. The complex comprises numerous species occurring in the Amazonia, Matta Atlantica and Chaco and the species can be distinguished by a comparison of specimens/species only (very subtle but relatively stable differences in body and pronotal shape, colouration, elytral sculpture, elytral ornamental pubescence (density and extension) and male genitalia). The complex can be divided into three „sections" by size of pronotal ocellate punctures (markedly very small or small to medium-sized or markedly large). *T. anthracinus* sp. nov. is the most similar to *T. muehlei* Marek, 2018 (Fig. 18) (described from Brazil, Paraná and Santa Catharina) and it can be distinguished by characters given in Table C below. All similar Amazonian species of the complex differ namely in having very small pronotal ocellate punctures (small but distinctly larger in *T. anthracinus* sp. nov.).

Table C. Diagnostic characters of *T. anthracinus* sp. nov. and *T. muehlei* Marek, 2018.

	T. anthracinus	*T. muehlei*
Colouration of dorsal side	unicoloured: black, pronotum with slight golden tinge along anterior margin and lateroposteriorly, elytra with slight golden lustre laterally	slightly bicoloured: head and pronotum black with strong golden-orange lustre, elytra black with very strong blue-violet tinge
Size	larger, 4.55 mm	smaller, 3.55-3.95 mm
Body shape	more broadly oval, elytra less attenuate apically at apical half (sides widely rounded)	less broadly oval, elytra more attenuate apically at apical half (sides almost straight)
Clypeus	widely „V-shaped", lateral branches very wide; carina between clypeus and frons present	almost „T-shaped", lateral branches narrow; carina between clypeus and frons absent
Pronotal sides	arcuately dilated posteriorly	straight dilated posteriorly
The posterior spots in elytral ornamental pubescence (pattern)	two (1+1) spots at the beginning of apical fifth (distinctly near of apex)	two (1+1) spots at the beginning of apical fourth (distinctly far from apex)
Elytral apices	more broadly rounded, minutely serrate by almost inconspicuous, sharp teeth	more narrowly rounded, minutely but distinctly serrate by sharp teeth
Elytral surface	punctures in rows longitudinally fine, distinct at basal half only, almost inconspicuous at third-fourth and disappearing at apical fourth	punctures in rows longitudinally well distinct at basal half, fine but conspicuous at apical half

Etymology. The specific epithet is derived from the ancient Greek *anthrakas* (coal) in reference of colouration of this species (coal black, „deeply" black and strongly lustrous); adjective.



Figs. 17-18: 17- *T. anthracinus* sp. nov., HT, ♂, 4.55 mm, 17a- aedeagus, 1.05 mm; 18- *T. muehlei* Marek, 2018, HT, ♀, 3.95 mm (JMSC).

***Taphrocerus cuprescens howdenorum* ssp. nov.**
(Fig. 19)

Type locality. Venezuela, Aragua, Choroni.

Type specimens. Holotype (♀): „1600 m. Cer. Choroni, Aragua, Venezuela, Feb. 26, 1971, H. & A. Howden", (JMSC).

Diagnosis. Medium-sized (3.85 mm), elongate, conical, rather robust, about 2.7 times longer than wide, widest before the pronotal base, at humeri and before the end of elytral basal third, moderately lustrous above, head and pronotum rather strongly convex above, elytra flattened; head and pronotum coppery with light violet tinge, pronotal disc with strong dark violet tinge, elytra dark coppery with strong dark violet tinge on asetose part and „dirty" golden-green tinge under elytral ornamental pubescence (pattern); beneath black with slight coppery tinge including legs and antennae; dorsal surface with ornamental pubescence (pattern) of trichromatic (white, yellowish and (dark) yellow) long, thin setae; prehumeral pronotal carina absent; posthumeral elytral carina present, well elevated, entire, with sharp edge.

Description of holotype. Head medium-sized, rather narrow, strongly narrower than posterior pronotal margin; clypeus very widely „V-shaped", strongly shagreened, separated from frons by very fine carina, epistomal pores large, circular, separated less than their own diameter; frons convex, finely shagreened, slightly, triangularly depressed at middle, the depression merging in short but deep sulcus towards vertex, with two transversely elongate bumps in border with vertex laterally, rather densely punctate at posterior half,

unpunctate at anterior one, sparsely pubescent by long, thin, yellowish setae except for the two bumps; vertex convex, slightly depressed at middle longitudinally, with a fine groove at middle longitudinally, very finely, almost inconspicuously shagreened, punctate by fine simple punctures, with rather dense and long, thin, yellow setae except for the border with pronotum; eyes medium-sized, ovoid, very slightly projecting beyond outline of head, moderately visible from above; antennae rather short and narrow.

Pronotum moderately convex, somewhat flattened along the base, 2.01 times as wide as long, widest before the base; narrowly transversely depressed along anterior margin, largely and rather deeply so lateroposteriorly, narrowly so along the sides, with very feeble depression on the disc anteriorly; with rather well elevated longitudinal bump at middle laterally; anterior margin widely, regularly rounded, posterior margin biemarginate, very slightly but distinctly wider than base of elytra, slightly and widely emarginate in front of scutellum, sides very shortly subparallel anteriorly, then rather widely arcuately dilated to before the base and then very shortly constricted to the base; surface very finely, almost inconspicuously shagreened, ocellate-punctate by rather small punctures lateroposteriorly, by distinctly smaller punctures above scutellum and by very small punctures at anterior transverse depression, each puncture with long, yellow seta at anterior two-thirds, the yellow setae becoming in cream-white setae at basal thirds and white setae above scutellum; scutellum rather small, widely cordiform, very widely rounded anteriorly, almost inconspicuously shagreened, moderately lustrous.

Elytra flattened, 2.07 times as long as wide, widest at humeri and before the end of basal third, the same width at humeri as pronotum at the widest part; lateral margins slightly and narrowly emarginate behind humeri, widely and narrowly rounded in the end of basal third, then very slowly arcuately, almost straight tapering towards rather widely and conjointly rounded apices; apices smooth; humeral swelling moderately developed, laterobasal depression small and shallow; surface very finely shagreened (almost smooth), punctures in rows longitudinally very fine, more coarser along the base and at basal third laterally only, two (1+1) rather wide and shallow depressions at middle of each elytron longitudinally at basal second-third; with ornamental pubescence (pattern) of thin and rather long setae as follows: yellowish setae around the basal depressions, two (1+1) sparse, oblique stripes of white setae at basal third, very irregular and rather narrow transverse stripe at the middle consisting of white and yellowish setae (intermixed), eihgt (4+4) narrow stripes longitudinally at third-fourth of dark yellow setae, two (1+1) transversely elongate spots of somewhat denser, white setae at the beginning of apical fourth, entire apical fourth pubescent by dark yellow setae anteriorly becoming in yellowish setae posteriorly; posthumeral elytral carina present, strongly elevated, entire, with sharp edge.

Ventral surface very lustrous, abdomen rather strongly shagreened, ocellate-punctate by circular punctures opened posteriorly, rather densely pubescent by long, thin, white setae laterally and apically; anal ventrite rather narrowly rounded, with shallow but wide emargination on apical margin, preapical groove following outline of margin regularly semicircular, very wide; antennal grooves rather short, wide; prosternal process elongate, finely shagreened, sides constricted between procoxae, strongly dilated behind, apex rhomboidal, with a few thin, white setae, with deep groove at middle longitudinally.

Sexual dimorphism. Male unknown.

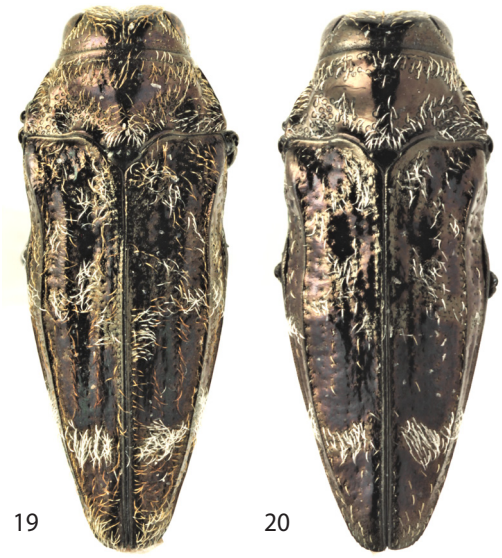
Measurements. Length 3.85 mm; width 1.40 mm.

Differential diagnosis. *T. cuprescens* Marek, 2020 (Fig. 20) was described from South-Eastern Brazil - Sao Paulo and compared to very similar and probably closely related *T. santaremensis* Marek, 2019 known from the Amazonia - Santarém in Brazilian state Pará. *T. cuprescens howdenorum* subsp. nov. is distinctive namely by markedly larger size and distinctly denser, longer and trichromatic pubescence (pattern). For another diagnostic characters see Table D below.

Table D. Diagnostic characters of *T. cuprescens howdenorum* ssp. nov. and *T. cuprescens cuprescens* Marek, 2020.

	T. cuprescens howdenorum	*T. cuprescens cuprescens*
Size	larger, 3.85 mm	smaller, 2.95-3.15 mm
Body shape	conical, about 2.7 times longer than wide, the maximal body width before the pronotal base, at humeri and before the end of elytral basal third	narrowly oval, about 2.6 times longer than wide, the maximal body width before the middle of elytra
Frons (♀)	more deeply depressed at middle (DV); with two transversely elongate bumps on border with vertex laterally; densely and coarsely punctate at posterior half; sparsely pubescent by long, thin, yellowish setae except for the two bumps	more shallowly depressed at middle (DV); without two transversely elongate bumps on border with vertex laterally; weakly punctate at posterior half (almost smooth); a few short, thin, white setae above clypeus only
Humeral swelling	distinctly less developed (LV)	distinctly more developed (LV)
Elytral lateral margins (at apical half in ♀)	very slowly arcuately, almost straight tapering towards apices	distinctly more arcuately tapering towards apices
Elytral ornamental pubescence (pattern)	trichromatic ((cream-)white, yellowish and (dark) yellow setae); longer, thin setae	unicoloured (white setae); shorter setae, markedly widened at base
Distribution	North Venezuela: Aragua	South-Eastern Brazil: Sao Paulo, Rio de Janeiro

Etymology. Named in honour and memory of collectors of the holotype, Henry F. and Anne E. Howden (Canada), well known entomologists and collectors of Neotropical Insects; patronymic.



Figs. 19-20: 19- *T. cuprescens howdenorum* subsp. nov., HT, ♀, 3.85 mm; 20- *T. cuprescens cuprescens* Marek, 2020, HT, ♂, 2.95 mm (JMSC).

ACKNOWLEDGEMENTS. I would like to thank the curators in National Museum in Prague, namely Jiří Hájek, Vítězslav Kubáň and Lukáš Sekerka for possibility of examining material in their care and for possibility to make photos of the specimens mentioned in the present paper. My thanks also go to the curators in Natural History Museum in London (England), namely to Maxwell V. L. Barclay, for loan and possibility of examining material in their care. Special thanks are due to Henry Hespenheide (Los Angeles, U.S.A.) who provided me with his very rich and important material of *Taphrocerus* comming from his collection and donated kindly the holotypes of newly described species in „collection *Taphrocerus* Obenberger/Marek“ stored in NMPC.

REFERENCES

Marek J. 2016: Studies on the genus *Taphrocerus* (Coleoptera: Buprestidae: Agrilinae) part IV. *Studies and Reports, Taxonomical Series* 12(2): 403-434.

Marek J. 2019a: Species of the genus *Taphrocerus* (Coleoptera: Buprestidae: Agrilinae) collected by Bates and Darwin during their fabulous voyages with description of eight new species. *Studies and Reports, Taxonomical Series* 15(1): 99-129.

Marek J. 2019b: Studies on the genus *Taphrocerus* (Coleoptera: Buprestidae: Agrilinae) part IX . *Studies and Reports, Taxonomical Series* 15(2): 399-433.

Received: 10.3.2020
Accepted: 20.4.2020
Printed: 5.10.2020