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Zabrus (*Pelor*) *mahmuzensis* sp. nov. (Coleoptera: Carabidae) from northern Turkey

Zabrus (*Pelor*) *mahmuzensis* sp. nov. (Coleoptera: Carabidae) ze severního Turecka

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Abstract. *Zabrus* (*Pelor*) *mahmuzensis* sp. nov. from northern Turkey is described, figured, and compared with similar Turkish species of the subgenus *Pelor* Bonelli, 1810. The new species occurs at low altitude (ca. 500 m a.s.l.) in the Samsun province.

INTRODUCTION

Zabrus Clairville, 1806 is a species-rich ground beetle genus in Turkey. So far 38 species, divided into 3 subgenera (*Eutroctes* C. Zimmermann, 1831 – 3 species, *Pelor* Bonelli, 1810 – 33 species, *Zabrus* s. str. – 2 species) are known from the Asian part of Turkey (Serrano & Andújar 2017). Eighteen *Zabrus* taxa, all belonging to the subgenus *Pelor,* are endemic to the Asian part of Turkey: *Zabrus* (*P.*) *blaptoides* (Creutzer, 1799), *Z.* (*P.*) *bodemeyeri* Ganglbauer, 1915, *Z.* (*P.*) *foveipennis* Heyden, 1883, *Z.* (*P.*) *iconiensis* Ganglbauer, 1905, *Z.* (*P.*) *idaeus* Schweiger, 1968, *Z.* (*P.*) *kraatzi* A. Andújar & Serrano, 2000, *Z.* (*P.*) *kurdistanicus* Freude, 1989, *Z.* (*P.*) *melancholicus heinzi* Jedlička, 1965, *Z.* (*P.*) *m. occidentalis* Freude, 1989, *Z.* (*P.*) *pentheri* Ganglbauer, 1905, *Z.* (*P.*) *politus* Gautier des Cottes, 1869, *Z.* (*P.*) *punctifrons* Fairmaire, 1866, *Z.* (*P.*) *segnis* Schaum, 1864, *Z.* (*P.*) *seriatus* Ganglbauer, 1915, *Z.* (*P.*) *socialis socialis* Schaum, 1864, *Z.* (*P.*) *s. werneri* Ganglbauer, 1915, *Z.* (*P.*) *sublaevis* Ménétriés, 1836, and *Z.* (*P.*) *toelgi* Breit, 1926 (Serrano & Andújar 2017). However, the status and distribution of many taxa are unclear. An additional species of the subgenus *Pelor* from the area is described below.

MATERIAL AND METHODS

In total, 7 specimens of the new species were studied. The specimens are deposited in the following collections:
NMP = Department of Entomology, National Museum, Prague, Czech Republic;
cJH = collection of J. Hejkal, Kraslice, Czech Republic;
cVS = collection of V. Skoupý, Žilina, Czech Republic.

Measurements of body parts and body ratios used in the text were taken as follows: total length = length measured from the anterior margin of the labrum to the apex of the elytra; length of median lobe = length of the whole median lobe in dorsal view; length of apical lamella of median lobe = length of the apical lamella measured from the apical edge of the ostium to the tip of the median lobe; width of median lobe = maximum width of the whole median lobe in dorsal view; width of apical lamella of median lobe = maximum width of apical lamella in dorsal view; ratio of length/width of apical lamella of median lobe = ratio of length of apical lamella measured from the apical edge of the ostium to the tip of the median lobe/maximum width of apical lamella in dorsal view.

The following technical equipment was used:

Measurements were made with a MBS-10 stereo microscope at magnifications of 8× to 98× with an ocular micrometer.

Images of habitus were taken using a Canon EOS 5D mark II in combination with a Canon MP-E65 1-5× macro lens. Images of genitalia were taken with a Canon EOS 5D mark II in combination with a Canon 200 mm f/2.8 L USM and microscope objective Nikon MPlan 10×. Resulting images were focus stacked using Zerene Stacker and then postprocessed in Adobe Photoshop CC 2020.

Forward slash in "Type material" indicates separate labels.

RESULTS

Zabrus (*Pelor*) *mahmuzensis* sp. nov.

(Figs 1–5)

Type locality. Turkey, Mahmuz Geçidi pass, pasture between Samsun and Kavak, 41°12′56″N 36°07′32″E, ca. 500 m a.s.l.

Type material. Holotype: ♂, teneral specimen, labelled: "TR. bor., Mahmuz-Pass, 7.6.1991, Skoupý leg." / "HOLOTYPE, *Zabrus* (*Pelor*) *mahmuzensis* sp. n. J. Hejkal & V. Skoupý des. 2022" (red printed label), deposited in cVS. Paratypes (5 ♂♂, 1 ♀), labelled: "PARATYPE No 1 to No 6, *Zabrus* (*Pelor*) *mahmuzensis* sp. n. J. Hejkal & V. Skoupý des. 2022" (red printed labels): 5 ♂♂, teneral specimens, labelled: "Anatolia bor., Mahmuz gecidi, 7.6.91, Jan Hron leg.", deposited in cJH (No 1, 5), cVS (No 2, 4) and NMP (No 3); 1 ♀, with same data as the holotype, deposited in cVS (No 6).

Description. Body medium-sized, broad and slightly to strongly convex, dorsal side pale red-brown (in some teneral specimens) to dark red-brown, labrum pale red-brown (in some teneral specimens) to red-brown, mandibles red-brown to dark red-brown, antennae, legs, maxillary and labial palpi pale brown-red to red-brown, dorsal side shining in males and with slight lustre in female; ventral side pale red-brown (in some teneral specimens) to dark red-brown; wingless (Figs 1–2). Total length 13.8–14.7 mm, males: 13.8–14.4 mm (holotype 14.1 mm, average 14.1 mm, $n = 6$), female: 14.7 mm.

Head strongly broadened, almost smooth, eyes slightly to strongly convex. One supraorbital seta, anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short, wide to narrow and shallow or almost absent. Antennae relatively long, surpassing hind margin of pronotum (in males), in females length unknown. Antennomere 1 relatively narrow.

Pronotum large and transverse, slightly to strongly convex, widest at its base, markedly narrowed toward anterior angles, mostly slightly broadened toward posterior angles, lateral margins very slightly sinuate (in holotype) to straight before posterior angles. Anterior margin of pronotum shallowly to deeply emarginate, anterior angles protruding, rounded. Posterior angles acute, with rounded apex. Pronotal base arcuately, shallowly to deeply emarginate. Inner basal impression shallow and wide (in holotype) or absent. Outer basal impression absent. Anterior part of pronotum sparsely to densely and finely punctate. Lateral margin of pronotum narrowly flattened (flattening considerably widened posteriad), sparsely to densely and mostly finely punctate, without setae. Pronotal base densely and coarsely to finely punctate, narrower than base of elytra. Lateral bead of pronotum narrow, slightly widened posteriad, not thickened. Epipleuron of pronotum smooth.



Figs 1–2. *Zabrus* (*Pelor*) *mahmuzensis* sp. nov. Habitus in dorsal view. 1: holotype, male, body length 14.1 mm; 2: paratype No 6, female, body length 14.7 mm. Photographs by P. Krásenský.
Obr. 1–2. *Zabrus* (*Pelor*) *mahmuzensis* sp. nov. Vzhled ze hřbetní strany. 1: holotypus, samec, délka těla 14,1 mm; 2: paratypus č. 6, samice, délka těla 14,7 mm. Fotografie P. Krásenský.

Elytra broad, slightly to strongly convex, declivity of elytra steep before apex in lateral view. Intervals flat or very slightly convex. Striae distinct, moderately deepened, finely (in holotype) to very finely punctate. Row of umbilicate setiferous punctures in stria 8 mostly considerably (only briefly in paratype No 2) interrupted. Parascutellar stria continuous, joining elytral stria 1. Parascutellar setiferous puncture absent. Base of elytra slightly to moderately sinuate, basal bead broad, slightly to moderately sinuate. Elytral humeri angulate, slightly obtuse to almost rectangular, humeral tooth absent. Lateral groove moderately broad. Microsculpture consisting of isodiametric meshes, coarser in female. Epipleuron of elytron smooth.



Figs 3–5. *Zabrus* (*Pelor*) *mahmuzensis* sp. nov. 3–4: holotype, male; 5: paratype No 6, female. 3: apex of median lobe in dorsal view; 4: aedeagus, apex of right paramere; 5: stylus in ventral view. Scale: 1 mm for Fig. 3, 0.5 mm for Figs 4 and 5. Photographs by P. Krásenský.
Obr. 3–5. *Zabrus* (*Pelor*) *mahmuzensis* sp. nov. 3–4: holotypus, samec; 5: paratypus č. 6, samice. 3: špice penisu v dorsálním pohledu; 4: aedeagus, špice pravé paramery; 5: stylus ve ventrálním pohledu. Měřítko: 1 mm pro obr. 3, 0,5 mm pro obr. 4 a 5. Fotografie P. Krásenský.

Ventral. Mentum with simple (i.e. not bifid), rounded and broad median tooth. Prosternum smooth medially, with shallow irregular impressions in some specimens. Prosternal process not or very shallowly (in holotype) to shallowly beaded (bead interrupted apically), with 5–7 (mostly 6) setae anteriorly. Proepisternum smooth. Mesepisternum densely and coarsely punctate. Metepisternum smooth or very sparsely and coarsely punctate, shorter than wide. Sides of abdominal ventrites 1 to 3 densely to sparsely and coarsely to finely punctate, sides of abdominal ventrite 4 sparsely to very sparsely and finely to coarsely punctate, sides of abdominal ventrites 5 and 6 wrinkled or almost smooth, with fine punctures in some specimens. Abdominal ventrites 3 to 5 with 2–7 (mostly 4 or 5) setiferous punctures. Males with two (three in paratypes No 1, 3), female with four setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Femora of front legs behind anterior margin with 4–6 setiferous punctures ventrally. Femora of middle legs before posterior margin with 4–6 setiferous punctures ventrally. Femora of hind legs before posterior margin with 3–4 setiferous punctures ventrally.

Aedeagus (HT, teneral specimen). Median lobe medium-sized and narrow in dorsal view (length 3.50 mm, width 0.71 mm). Apical lamella of median lobe relatively narrow in dorsal view (ratio of length/width = 1.16) (Fig. 3). Right paramere with long hook (Fig. 4).

Styli relatively narrow, last stylomere tongue-shaped (Fig. 5).



Figs 6–7. *Zabrus* (*Pelor*) spp. Habitus in dorsal view. 6: *Z. politus* Gautier des Cottes, 1869, male, body length 13.9 mm, southern Turkey, Pozantı, coll. J. Hejkal; 7: *Zabrus graecus orientalis* Apfelbeck, 1904, female, body length 14.5 mm, western Turkey, Halitpaşa near Manisa, coll. J. Hejkal. Photographs by P. Krásenský.
Obr. 6–7. *Zabrus* (*Pelor*) spp. Vzhled ze hřbetní strany. 6: *Z. politus* Gautier des Cottes, 1869, samec, délka těla 13,9 mm, jižní Turecko, Pozantı, coll. J. Hejkal; 7: *Zabrus graecus orientalis* Apfelbeck, 1904, samice, délka těla 14,5 mm, západní Turecko, Halitpaşa u Manisy, coll. J. Hejkal. Fotografie P. Krásenský.

Note. All collected males are teneral specimens, of which only the holotype has the aedeagus of unaltered shape. For that reason (i.e. the risk of destruction) we did not try to inflate the internal sac of the aedeagus.

Differential diagnosis. *Zabrus* (*P.*) *mahmuzensis* sp. nov. is an unmistakable species with broad body, distinct elytral striae, large and transverse pronotum, which is widest on its base. Some specimens including the holotype are characterized by very slightly sinuate (concave) lateral margins of pronotum before its posterior angles. Other species of *Pelor* from northern

Turkey differ either in having at most superficial elytral striae or in having very different shape of body (pronotum widest near middle or/and narrower body). The most similar species occur in western or southern Turkey (see below). *Zabrus* (*P.*) *politus* (Fig. 6; southern Turkey: Freude 1989) differs in having more convex body, longer pronotum, deeper and coarsely punctate striae, abdominal ventrites 3 to 5 with two setiferous punctures, anterior angles of pronotum not protruding, and apex of right paramere with short hook. *Zabrus* (*P.*) *graecus orientalis* Apfelbeck, 1904 (Fig. 7; western Turkey and western Syria: Apfelbeck 1904; western and southwestern Turkey and eastern Greece including the Aegean islands: Freude 1989) differs in having more convex body, deeper and coarsely punctate striae, abdominal ventrites 3 to 5 with two setiferous punctures, and anterior angles of pronotum not protruding. *Zabrus* (*P.*) *lycius* Ganglbauer, 1915 (Lycia in southwestern Turkey: Ganglbauer 1915; southwestern Turkey and surrounding Greek islands: Freude 1989) differs in having more convex body, pronotal base broader than base of elytra, distinct humeral tooth, deeper and coarsely punctate striae, abdominal ventrites 3 to 5 with two setiferous punctures, and anterior angles of pronotum not protruding.

Distribution and habitat. *Zabrus* (*P.*) *mahmuzensis* sp. nov. was found along a low road pass between Samsun city and Kavak village in the Samsun province in northern Turkey. The new species is so far known only from the type locality. The specimens were collected under stones in a pasture, together with *Brachinus alexandri* F. Battoni, 1984, *Chlaenius aeneocephalus aeneocephalus* Dejean, 1826 (Carabidae), and *Dorcadion piochardi* Kraatz, 1873 (Cerambycidae). The pasture was located in a partially forested area at an altitude of ca. 500 m a.s.l.

Etymology. The specific name is derived from the name of Mahmuz Geçidi pass, which corresponds to the type locality.

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REFERENCES

APFELBECK V. 1904: *Die Käferfauna der Balkanhalbinsel, mit Berücksichtigung Klein-Asiens und der Insel Kreta. Erster Band: Familienreihe Caraboidea*. R. Friedländer und Sohn, Berlin, ix + 422 pp.

FREUDE H. 1989: Revision der zur (?) Gattung "Zabrus" Clairville 1806 gehörenden Arten mit Bestimmungstabellen (Col. Carabidae). 3. Teil. *Atti dei Museo Civico di Storia Naturale di Trieste* **42**: 71–153.

GANGLBAUER L. 1915: Revision der Gattung Zabrus Clairv. *Münchener Koleopterologische Zeitschrift* **4**: 87–137.

SERRANO J. & ANDÚJAR A. 2017: subtribe Zabrina Bonelli, 1810. Pp. 828–835. In: LÖBL I. & LÖBL D. (eds): *Catalogue of Palaearctic Coleoptera. Volume 1. Revised and Updated Edition. Archostemata–Myxophaga–Adephaga*. Brill, Leiden, Boston, 1443 pp.

SOUHRN

Z asijské části Turecka je známo třicet osm druhů z rodu *Zabrus* Clairville, 1806 patřících do tří podrodů (*Eutroctes* C. Zimmermann, 1831 – 3 druhy, *Pelor* Bonelli, 1810 – 33 druhů, *Zabrus* s. str. – 2 druhy). Z uvedené oblasti je osmnáct taxonů endemických a všechny patří do podrodu *Pelor*: *Zabrus* (*P.*) *blaptoides* (Creutzer, 1799), *Z.* (*P.*) *bodemeyeri* Ganglbauer,

1915, *Z. (P.) foveipennis* Heyden, 1883, *Z.* (*P.*) *iconiensis* Ganglbauer, 1905, *Z.* (*P.*) *idaeus* Schweiger, 1968, *Z.* (*P.*) *kraatzi* A. Andújar & Serrano, 2000, *Z.* (*P.*) *kurdistanicus* Freude, 1989, *Z.* (*P.*) *melancholicus heinzi* Jedlička, 1965, *Z.* (*P.*) *m. occidentalis* Freude, 1989, *Z.* (*P.*) *pentheri* Ganglbauer, 1905, *Z.* (*P.*) *politus* Gautier des Cottes, 1869, *Z.* (*P.*) *punctifrons* Fairmaire, 1866, *Z.* (*P.*) *segnis* Schaum, 1864, *Z.* (*P.*) *seriatus* Ganglbauer, 1915, *Z.* (*P.*) *socialis socialis* Schaum, 1864, *Z.* (*P.*) *s. werneri* Ganglbauer, 1915, *Z.* (*P.*) *sublaevis* Ménétriés, 1836, a *Z.* (*P.*) *toelgi* Breit, 1926. Status a rozšíření mnoha druhů jsou však nejisté.

V práci je popsán nový druh ze severního Turecka z provincie Samsun: *Zabrus* (*P.*) *mahmuzensis* sp. nov. Byl nalezen na pastvině mezi městem Samsun a obcí Kavak v nízko položeném silničním průsmyku v nadmořské výšce okolo 500 m.

Zabrus (*P.*) *mahmuzensis* sp. nov. je nezaměnitelným druhem se širokým tělem, zřetelnými rýhami na krovkách a velkým příčným štítem, který je nejširší na své bázi. Někteří jedinci včetně holotypu se vyznačují velmi lehce vykrojenými (konkávními) stranami štítu před zadními rohy. Poněkud podobné druhy, které se však liší velkým množstvím znaků, se nejblíže vyskytují v západním a jižním Turecku.



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