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***Mycetochara kazdagiica* sp. nov. from Turkey**
(Coleoptera: Tenebrionidae: Alleculinae: Mycetocharini)

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Taxonomy, new species, *Quercus*, hollow tree, Alleculinae, Alleculini, Mycetocharina, Mycetochara, Turkey

Abstract. The saproxylic beetle fauna on old hollow oaks was studied in Kazdağı National Park near Edremit, Balıkesir in Turkey in 2011. In the material, a new species of comb-clawed beetles (Tenebrionidae: Alleculinae) was found. This species, *Mycetochara kazdagiica* Novák sp. nov., is described, illustrated and compared with the similar species *Mycetochara axillaris* (Paykull, 1799).

INTRODUCTION

Old oaks (*Quercus* spp.) are very rich in associated species in Europe and Turkey (Palm, 1959; Jansson & Coskun, 2008; Atay et al. 2012), but the habitat has declined substantially and many oak species are threatened (Hannah et al., 1995; McLean & Speight 1993; Nieto & Alexander, 2010). The reason is a lack of suitable trees due to inappropriate management or habitat conversion (Nilsson, 1997; Kirby & Watkins, 1998). This study is part of a larger project aiming to describe the saproxylic beetle fauna on old oaks in Turkey (Růžička et al. 2006, Schillhammer et al. 2007, Novák et al. 2011, 2012, Platia et al. 2011, Sama et al. 2011, Schülke et al. 2013, Mazur et al. 2013) and then to compare the results with neighboring countries.

One group of beetles often found in these studies is species from the subfamily Alleculinae, including the genus *Mycetochara*. This genus was described by Berthold (1827), with *Cistela linearis* Illiger, 1794 as a type species belonging to the subtribe Mycetocharina Gistel, 1848. Representatives of this genus are widely distributed in Europe, Asia, North Africa and North America. Borchmann (1910) identified 55 species worldwide; Mader (1928) listed 41 species and Novák and Pettersson (2008) 52 species from the Palaearctic region. Thirty nine species belong to the subgenus *Ernocharis* C. G. Thompson, 1859, ten species to the subgenus *Mycetochara* Berthold, 1827 and two species to subgenus *Pterna* Seidlitz, 1896. Species of *Ernocharis* and *Pterna* have anterior coxae separated by a distinct apophysis of the prosternum, while species of the subgenus *Mycetochara* s. str. have not anterior coxae separated by apophysis of the prosternum, inconspicuous, just close to each other.

Nearly 20 species of the genus *Mycetochara* are distributed across the territory of Turkey and adjacent regions. All but one species belong to the subgenus *Ernocharis*. Only a single species of the subgenus *Mycetochara*, *M. grandicollis* (Fairmaire, 1792) is known from Turkey (resp. environs of Akbes) *Mycetochara axillaris* (Paykull, 1799) and *Mycetochara flavipes* (Fabricius, 1792) are distributed in adjacent regions (Caucasus, Georgia, Greece, Russia). While *M. flavipes* and *M. grandicollis* are small species (4-6.5 mm) with yellow or reddish-brown

antenna and *M. flavipes* with yellow or orange-yellow spots on the elytra, *Mycetochara kazdagiica* Novák sp. nov. is a relatively large species (length from 7.4 to 9.8 mm) and has antennomeres 3 or 4-11 dark.

This paper presents a description of the new species *Mycetochara kazdagiica* Novák sp. nov. from Turkey, which is also illustrated and compared with the other large species - *Mycetochara axillaris* known from adjacent regions.

MATERIAL AND METHODS

Sampling

One oak stand with old hollow individuals was examined in Kazdağı National Park (Edremit, Balıkesir, Fig. 1). In total 11 hollow oaks were surveyed. All the oaks surveyed belong to the species *Quercus frainetto* (Tenore 1813). The trees were studied by using two different trap types for sampling saproxylic beetles: window traps and pit fall traps. The window traps (W-trap) consisted of a 30 x 60 cm wide transparent plastic plate with a tray underneath (Jansson & Lundberg 2000). They were placed near the trunk (<1 m), beside or in front of the cavity entrance.



Fig 1: Old hollow oak with window trap – Ida mountain 2011.

Their positions were 1.5-5 m from the ground, depending on where the cavity entrance was situated on the tree studied. The pitfall traps (P-trap) were plastic cups, which at the top had a diameter of 6.5 cm. They were placed in the wood humus at the bottom of the cavity, with their openings level with the surface of the wood humus. The traps were in the field from the end of March to the middle of September, 2011. The studied area is situated 12 km from the Aegean sea coast at an altitude of 560 m. Individual trees used for trapping were randomly selected from the pool of suitable oaks in the studied area.

Analysis

Two important morphometric characteristics are used to describe the species of the subfamily Alleculinae: the 'ocular index' (Campbell & Marshall 1964) and the 'pronotal index' (Campbell 1965) both in dorsal view. The 'ocular index' is calculated by measuring the minimum distance between the eyes and dividing this value by the maximum dorsal width across the eyes. The 'pronotal index' expresses the ratio between the pronotum length along the midline and the width at the basal angles. The quotients resulting from both divisions are converted into an index by multiplying by 100 for computational convenience.

Measurements were made using an Olympus SZ 40 stereoscopic microscope, with continuous magnification and Soft Imaging System analysis.

Measurements of body parts and corresponding abbreviations used in the text are as follows:

AL	total antennae length;
BL	maximum body length;
EL	maximum elytral length;
EW	maximum elytral width;
HL	maximum length of head (visible part);
HW	maximum width of head;
OI	ocular index dorsally;
PI	pronotal index dorsally;
PL	maximum pronotal length;
PW	pronotal width at base;
RLA	ratios of relative lengths of antennomeres 1-11 from base to apex (3=1.00);
RL/WA	ratios of length / maximum width of antennomeres 1-11 from base to apex;
RLT	ratios of relative lengths of tarsomeres 1-5 respectively 1-4 from base to apex (1=1.00).

A slash (/) separates data in different rows on locality labels.

Acronyms refer to the following depositories:

DBUBT	Department of Biology, University of Balıkesir, Turkey;
EMEUBT	Entomological Museum, Ege University, Bornova, Turkey;
NJLS	Collection of Nicklas Jansson, Linköping, Sweden;
VNPC	Collection of Vladimír Novák, Prague, Czech Republic.

TAXONOMY

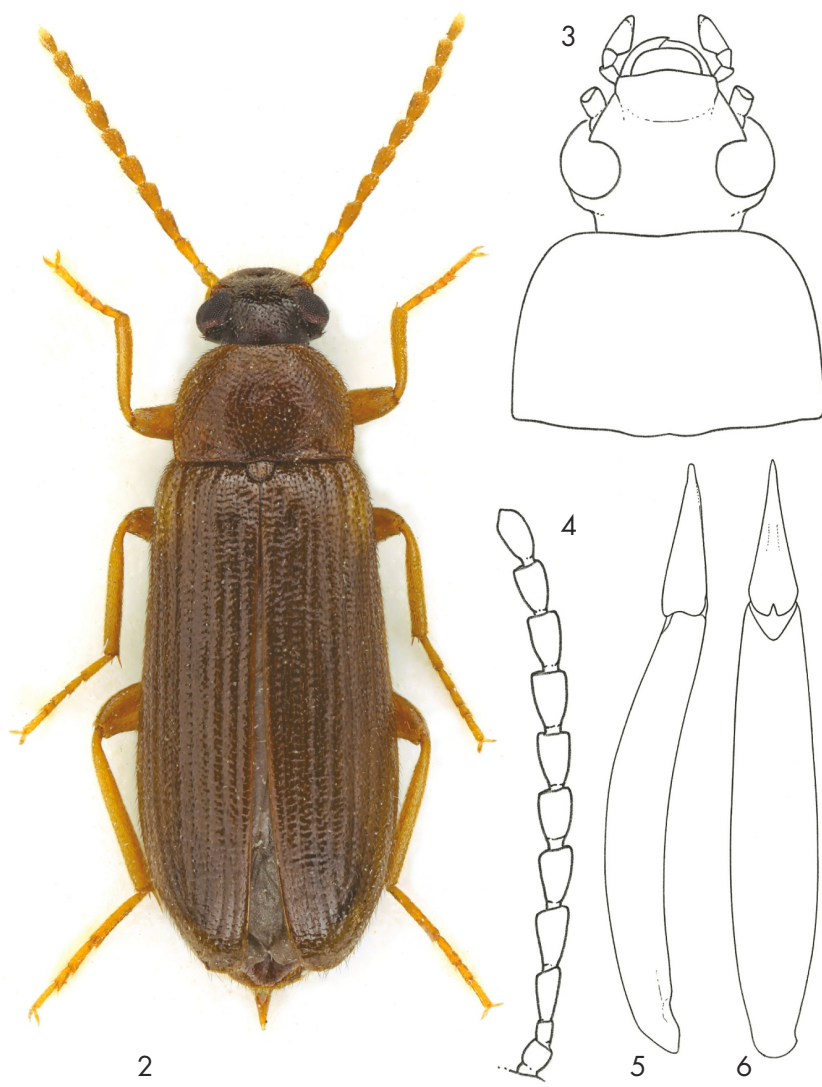
***Myctochara axillaris* (Paykull, 1799)**

(Figs. 2-6)

Cistela axillaris Paykull, 1799: 123.

Material examined. (♂): Bohemia - centr. / Horoměřice u Prahy / 13.6.1990 / M. Kovařík lgt., (VNPC).

Distribution. Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, The Netherlands, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, Ukraine and Siberia. Adapted from the work of Novák & Pettersson (2008).



Figs. 2-6: *Mycetochara axillaris* (Paykull, 1799): 2- Habitus of male; 3- Head and pronotum of male; 4- Antenna of male; 5- Aedeagus, lateral view; 6- Aedeagus, dorsal view.

***Mycetochara kazdagiica* Novák sp. nov.**

(Figs. 7–10)

Type locality. Turkey, Kazdağı National Park, Edremit, Balıkesir, 10 km N, Edremit, N 39°41'; E 26°56'15. Habitat: Old hollow oaks (*Quercus frainetto*).

Type material. Holotype labeled: (♂): white label (printed black): Turkey, Balıkesir, 10 km N, Edremit, Kazdağı National Park / N 39°41'; E 26°56'15 / Ida mountain, Ayı stream, W-trap 6 / Hollow Quercus 2011-07-20 / T Oncul/S Varlı/N Jansson (DBUBT). Paratypes labeled: (3 ♂♂): same data as holotype, (DBUBT, VNPC); (12 ♂♂): same data as holotype, but W-trap 4, (DBUBT, NJLS, VNPC); (2 ♂♂): same data as holotype, but W-trap 8, (DBUBT); (1 ♂): same data as holotype, but W-trap 2, (DBUBT); (1 ♂): same data as holotype, but W-trap 10, (EMEUBT). The types are provided with a printed red label: *Mycetochara kazdagiica* sp. nov. / HOLOTYPUS [resp. PARATYPUS] / V. Novák det. 2013.

Description of holotype. Habitus as in Fig. 7, body elongate, parallel, from pale brown to black, dorsal surface shiny, with dense dark setation, BL 9.56 mm. Widest near middle of elytra length; BL/EW 3.31.

Head (Fig. 8). Black, clypeus pale brown, shiny, with microgranulation and dense punctuation, dense pale brown setation, setation behind eyes black. Punctures medium-sized, relatively coarse. Space between antennae with large, transverse, oval impression. HW 1.63 mm; HW/PW 0.75. HL 1.28 mm (visible part). Head through eyes broader than anterior margin of pronotum, narrower than base of pronotum. Eyes large, transverse, deeply excised, space between eyes distinctly broader than length of antennomere 3 or diameter of one eye; OI equal to 43.50.

Antennae (Figs. 7, 8). Short, with punctuation and microgranulation, antennomeres 1 and 2 pale brown, with short, pale brown setation, antennomeres 3-11 distinctly darker, dark brown, with brown setation. AL 4.21 mm, AL/BL 0.44. Antennomere 2 shortest, antennomere 3 more than 2.5 longer than antennomere 2. Antennomere 4 almost as long as antennomeres 3. RLA (1-11) equal to: 0.40 : 0.39 : 1.00 : 1.02 : 1.10 : 1.13 : 1.03 : 1.08 : 0.97 : 1.01 : 1.04. RL/WA (1-11) equal to: 0.79 : 0.94 : 2.10 : 1.95 : 1.90 : 1.97 : 2.08 : 2.34 : 2.41 : 2.45 : 2.86.

Maxillary palpus pale brown with pale brown setation, slightly shiny. Palpomeres 2, 3 narrowest at base, broadest at apex, with a few long dark setae at apex, penultimate palpomere shortest. Ultimate palpomeres broadly triangular, axe-shaped.

Pronotum (Fig. 8). Black, transverse, with dense, short and dark setation, microgranulation and punctuation, punctures medium-sized. PL 1.52 mm; PW 2.17 mm. PI equal to 69.88. Marginal lines not clearly distinct. Base nearly straight. Posterior angles obtuse, anterior angles rounded, indistinct. Lateral sides rounded. Disc with distinct oval impression in ante scutellar area near base.

Ventral side of body. Dark, blackish brown, with short and sparse, pale brown setation and punctuation. Abdomen dark brown with dense, pale brown setation, punctuation and microgranulation.

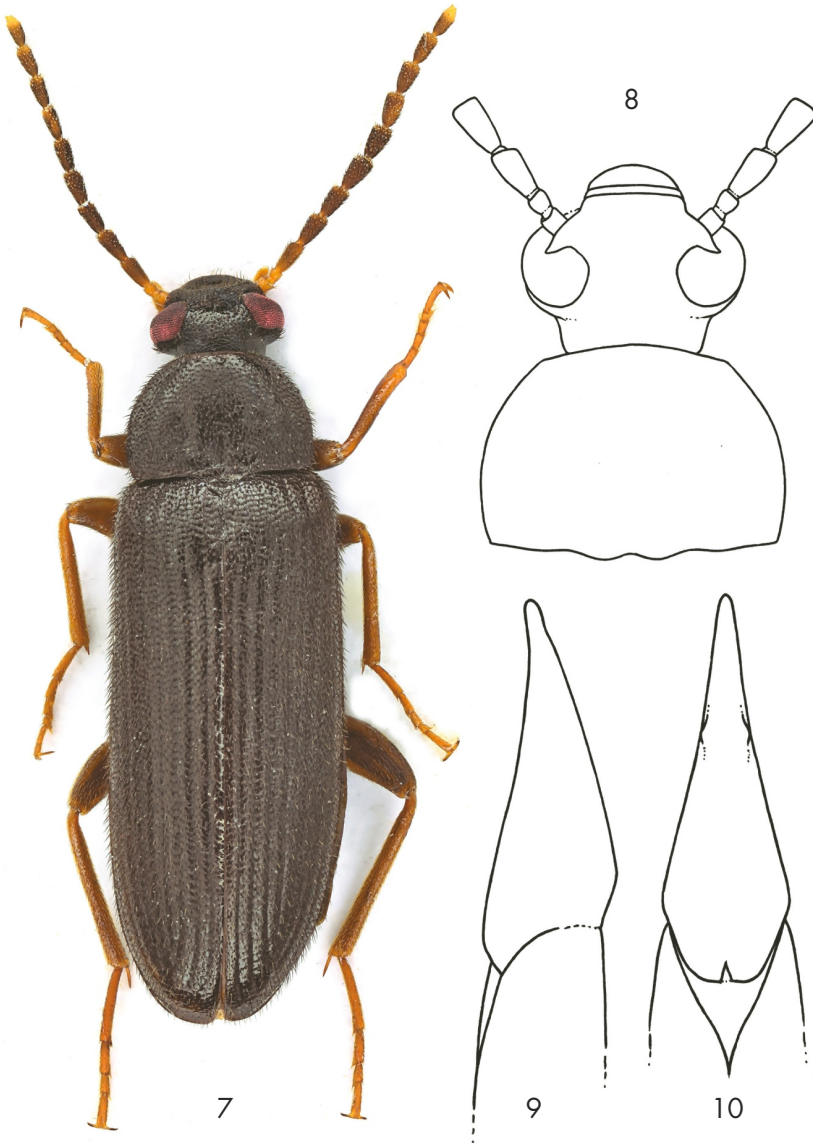
Elytron. Long, elongate, parallel, relatively narrow, unicoloured black, with short, dark setation, microgranulation and punctuation, shiny. EL 6.76 mm. Broadest near elytral half, EW 2.89 mm. EL/EW 2.34. Elytral striae with rows of relatively large, coarse and deep punctures, interspaces between punctures in rows very narrow, less than diameter of punctures. Elytral intervals slightly rounded, shiny, with microgranulation and punctuation, punctures small and medium-sized.

Scutellum. Black, roundly triangular, with microgranulation, punctures and dark setae, slightly shiny.

Elytral epipleura. Well-developed, black, with punctuation and sparse and short setae, broadest

near base, regularly narrowed to ventrite 1, then very narrow, parallel.

Legs. Pale reddish brown, metafemora distinctly darker, with short pale brown setation. Femora and tibia with punctuation and microgranulation, tibia and tarsi narrow, tibia dilated anteriorly. RLT (1-5 or 1-4) equal to: 1.00 : 0.64 : 0.60 : 0.48 : 1.49 (protarsus), 1.00 : 0.50 : 0.33 : 0.28 : 0.76 (mesotarsus), and 1.00 : 0.43 : 0.25 : 0.45 (metatarsus). Anterior tarsal claws with 10 visible teeth.



Figs. 7-10: *Mycetochara kazdagiica* Novák sp. nov.: 7-Habitus of male holotype; 8-Head, pronotum and antennomeres 1-4 of male holotype; 9-Aedeagus, lateral view; 10-Aedeagus, dorsal view.

Aedeagus (Figs. 9 and 10). Relatively strong, pale brown, slightly shiny, with microgranulation. Basal piece only very slightly rounded laterally, dorsally regularly narrowing. Apical piece triangular dorsally and laterally. Ratio of length of apical piece to length of basal piece 1 : 2.93.

Female. Unknown.

Variation. Measurements: mean (minimum–maximum). Males (n=20): BL 8.73 mm (7.40–9.81 mm); HL 1.11 mm (0.91–1.37 mm); HW 1.52 mm (1.29–1.71 mm); OI 40.95 (37.12–46.61); PL 1.37 mm (1.14–1.54 mm); PW 2.09 mm (1.75–2.47 mm); PI 65.18 (56.41–71.47); EL 6.16 mm (5.29–6.91 mm); EW 2.61 mm (2.42–3.31 mm).

Differential diagnosis. *Mycetochara kazdagiica* Novák sp. nov. clearly differs from the similar species *Mycetochara axillaris* (Paykull, 1799) based on the following: dorsal surface completely black, surface of pronotum and elytral interspaces with distinct microgranulation, more matte, sides of pronotum and elytra with dark blackish brown setation, antennomeres 4-10 dark brown, antennomere 3 approximately as long as antennomere 4, anterior tarsal claws of male with 10 visible teeth and by elytra more parallel, narrow and large body (BL 7.4-9.8 mm; BL/EW approximately 3.35). *M. axillaris* has often two yellow or orange or red small spots on elytra near base, pronotum and elytral interspaces without microgranulation, more shiny, sides of pronotum and elytra with pale brown setation, antennomeres 4-10 pale brown, antennomere 3 distinctly shorter than antennomere 4, anterior tarsal claws of male with 7 visible teeth, elytra slightly widened anteriorly and smaller body (BL 6-9 mm; BL/EW less than 3.0).

Distribution. New species is known from one locality in Turkey: Kazdağı National Park, Balıkesir, 10 km N. Edremit, N 39°41'; E 26°56'15.

Etymology. Toponymic, named after the name of the National Park Kazdagi.

Ecological remarks. All the specimens were caught with window traps mounted on old hollow oaks (*Quercus frainetto*). Example of there saproxylic beetles caught in the same traps were the click beetles *Iscnodes sanguinicollis* (Panzer, 1793), *Lacon ladae* (Mertlik & Dusanek, 2006), *Pittonotus thesaeus* (Germar, 1917) and the scarabids *Propomacrus bimucronotus* (Pallas, 1781) and *Protaetia mirifica* (Mulsant, 1842)

ACKNOWLEDGEMENTS. Special thanks are due to Zuzana Čadová (Liberec, Czech Republic) for the excellent drawings, Stanislav Krejčík (Ruda near Rýmařov, Czech Republic) for photography, Vladimír Navrátil (Praha, Czech Republic) for completing tables of figures and Vikki Bengtsson for help with the English language.

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