

## ***Hister arboricavus* sp. n., a new denrophilous species from Turkey (Coleoptera: Histeridae)**

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In a study of the saproxylic beetle fauna of old hollow oaks (*Quercus frainetto* Tenore 1813) in western Turkey (Edremit, Balıkesir) a new species from the Histeridae family was found. *Hister arboricavus* is described and illustrated. Additionally, its systematic position and ecological specialization is discussed.

Key words: taxonomy, new species, Coleoptera, Histeridae, *Hister arboricavus*, Turkey

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### **INTRODUCTION**

The hollows of old oaks (*Quercus* spp) are a very specific habitat in Europe and Turkey (Jansson & Coskun, 2008) which possesses a unique and rich fauna. This habitat, however, has declined substantially and many species are threatened. The reason of such a situation is the lack of

suitable trees caused by an intensive forest exploitation or environmental conversion (Nilsson, 1997; Kirby & Watkins, 1998).

This study is a part of a larger project with the aim of describing the saproxylic beetle fauna of old oaks in Turkey (Ruzicka et al. 2006, Schillhammer et al. 2007, Novak et al. 2011, Platia

et al. 2011, Sama et al. 2011) and later to compare the results with neighbouring countries.

One of the group of beetles being often found in our studies are the histerids, especially those of the genus *Hister* Linnaeus, 1758. The species of this genus are widely distributed in the world, 191 in number (Mazur, 2011), 55 of which are known from the Palearctic (Mazur 2004). In the territory of Turkey and adjacent regions 11 species are known to occur. The members of the genus are both in larval and adult phase predators in various decomposing organic material, mainly living of larvae of dipterans.

## MATERIAL AND METHODS

One stand with old hollow oaks was studied in Kazdagi National Park (Edremit, Balikesir, Fig. 1). In total 11 hollow oaks have been surveyed. The studied oaks belong to the species *Quercus frainetto* (Tenore 1813). The trees were examined by using two different trap types for sampling saproxylic beetles: window traps on the tree trunk and pit fall traps in the wood mould inside the trunk cavities. The traps were in field from end of March to mid September over the season 2011. The studied area are situated 12 km (air distance) 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 found. 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. Their positions were 1.5-5 m from the ground, depending on where the cavity entrance was situated on the studied tree. The pitfall traps (P-trap) were plastic cups with a top diameter of 6.5 cm. They were placed in the wood mould at the bottom of the cavity, with their openings on level with the wood mould surface.

Abbreviations used:

DBUBT – Department of Biology, Faculty of Arts and Science, University of Balikesir, Turkey

DFPE - Department of Forest Protection and Ecology, Warsaw University of Life Science, Poland

PE – length from the anterior pronotal margin to the elytral apex

(0.1 – 1.0) – distance between punctures measured by their diameters

### *Hister arboricavus* sp. n. (Figs. 2 - 7)

Body (Fig. 2) oval, convex, black and shiny. Forehead flat, finely punctulate. Frontal stria complete, subcariniform, feebly arcuate medially. Supraorbital stria present along eyes only. Labrum long and narrow, twice as long as wide. Mandibles long, rusty brown, feebly convex and finely punctulate. Scapus and funiculus pitch-brown, antennal club tomentose, with two transverse sutures.

Pronotum rounded laterally, the pronotal disc distinctly and moderately densely (1 – 3) covered with elongate punctures. Marginal pronotal stria thin, complete at sides, interrupted behind the head. Both lateral striae complete, a little incised and crenate. Hypomeron concave, impunctate.

Elytral epipleural fossete feebly concave, rarely covered with coarse punctures. Marginal elytral stria thin but complete. Oblique humeral stria incised, reaching the 1<sup>st</sup> dorsal stria. Outer subhumeral stria incised, present on basal half. Inner subhumeral stria absent. Dorsal striae incised, 1 – 4 complete, the 5<sup>th</sup> and sutural stria complete, united by an arc at base.

Pygidial segments a little convex. Propygidium covered with large, ocellate punctures (0.5 – 3.0). Interspaces among the coarse punctures intermingled with ground punctulation. Pygidium as punctured as the pygidium, the punctures becoming finer apically.

Prosternal lobe (Fig. 3) triangular, rounded at apex, finely and rarely punctulate at disc, more coarsely and densely at sides. Marginal stria complete, gradually distant from margins towards the base.

Prosternal disc finely and sparsely punctulate. Mesosternum widely emarginate anteriorly, its marginal stria complete, laying close to margin. Antero-lateral angles with additional hamate stria. Mesosternal disc very rarely and sparsely punc-

tured. Metasternum more coarsely but as densely as mesosternum punctulate. Lateral metasternal stria subcariniform, extending obliquely and posteriorly, united perpendicularly with oblique stria which extends inwards from metasternal-

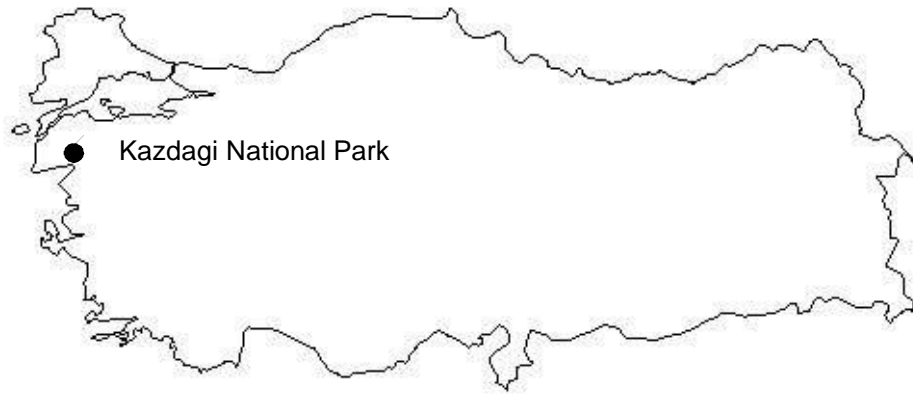


Fig. 1. Locus typicus for *Hister arboricavus*.



Figs. 2 – 3. *Hister arboricavus*, 2 – upper side, 3 – under side.

metepisternal suture. Meso-metasternal suture as well as the median line distinct, a little incised. Transverse line at metasternal apex present, more distinct laterally. Lateral disc of metasternum covered with large and oval punctures. Intercostal disc of 1<sup>st</sup> abdominal segment distinctly margined laterally, the marginal striae obliquely descending to the posterior margin.

Male genitalia as figured (Figs. 4 – 7).

Legs paler as body, rusty-red. Foretibia a little dilated, with 4 (+1) spiny dents at outer margin, deeply sinuous between the 1<sup>st</sup> and the 2<sup>nd</sup> dent. Profemoral stria absent.

Length: total 3.8–4.6 mm; PE 2.3–3.2 mm. Width: 2.1–2.8 mm.

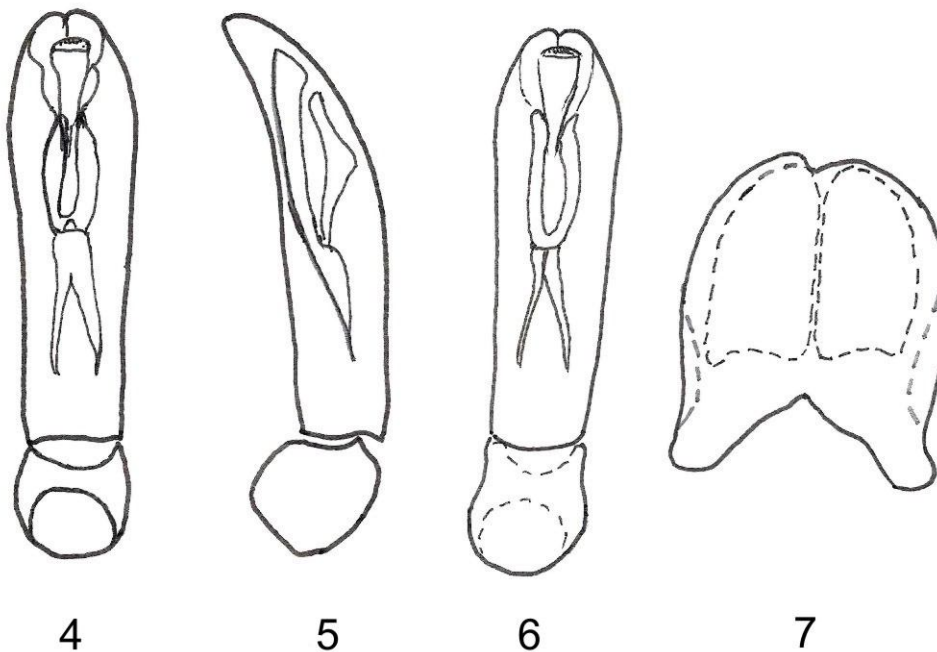
**Holotype:** a male, Turkey, Balikesir, 10 km E Edremit, N 39°41'17", E 26°56'15", Ida mountain, Ayz stream, P-trap 6, hollow Quercus, 2011-07-20, T. Abacigil/S. Varli/N. Jansson. [DBUBT].

**Paratypes:** 6 specimens of both sexes, same locality, pitfall trap and collectors, 2011-06-15 (3 specimens), 2011-07-20 (3 specimens), [DBUBT, DFPE].

**Differential diagnosis.** This species resembles any Palearctic *Hister*-species as yet known, sharing, in some respect, both *Eudiplister* (reduced profemoral stria) and *Atholus* (elytral striation). Distribution. The species is known only from the type locality as yet.

**Bionomics.** The species seems to be associated with old oaks. The oaks (*Quercus frainetto*) are growing in a shady place and all the specimens of *H. arboricavus* were collected in the pitfall trap placed in the wood mould in a trunk cavity located 0.2 m above the ground level.

*Helops coeruleus* (Linnaeus, 1758) and *Merohister ariasi* (Marseul, 1864) were also commonly collected by the same trap.



Figs. 4 – 7. Genital structure of *Hister arboricavus*, 4 – 6 – aedeagus, 4 – dorsal view, 5 – lateral view, 6 – ventral view, 7 – 8<sup>th</sup> segment.

**Derivatio nominis.** The species name refers to the habitat where it was found.

## DISCUSSION

*Hister arboricavus* occupies a very isolated position among the *Hister*-species and can not be assigned to any morphological or ecological group (Mazur, 2005). Further, a dendrophyly is a very unique way of living among the Histerini. Only the members of the genus *Merohister* Reitter, 1909 are known as the facultative inhabitants of tree holes (Kryzhanovskiy & Reichardt, 1976; Ohara, 1992; Kovarik & Caterino, 2001). Sometimes *Maragarinotus ruficornis* (Grimm, 1852) is being collected in rotten tree-stems. Thus, a discovery of *H. arboricavus* is the first example of a species of the genus *Hister* connected with tree holes.

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