

A New Genus and Species of Aphodiini (Coleoptera: Aphodiidae) from Istanbul Turkey

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ABSTRACT

Bosphorus bariscercii n. gen. and n. sp. is described and illustrated in Turkey (type locality: İstanbul, Esenyurt). The newly discovered genus mostly resembles the genus *Bodilus* Mulsant and Rey, 1870.

Key words: Taxonomy, new genus, new species, Aphodiidae, *Bosphorus*, Turkey.

INTRODUCTION

Family Aphodiidae is part of superfamily Scarabaeoidea and comprises approximately 358 genera and 3395 species worldwide (Roskov *et al.*, 2016). There are 1084 species belonging to 155 genera from 6 tribes in the palaearctic region (Dellacasa *et al.*, 2016) and 151 species and 4 subspecies belonging to 44 genera in the fauna of Turkey (Carpaneto *et al.*, 2000; Dellacasa and Dellacasa (2006); Şenyüz, 2009; Rozner and Rozner, 2009). Some of researchers studied on this family thought that *Aphodius* has many subgenera (Schmidt, 1922; Balthasar, 1964). This matter was evaluated in the book of Dellacasa and Dellacasa (2006) edited by Löbl and Smetana. All the subgenus was accepted almost as genus in the revision on Dellacasa *et al.* (2001) and Dellacasa *et al.* (2016) edited by Löbl and Löbl. Taxon mentioned at the current literature should not be called subgenus but it can be named as genus.

The new genus includes tribe Aphodiini. Since it has have different characteristics than other genera in the Aphodinae, the sample was the sample was identified as a new genus and new species.

MATERIAL AND METHOD

The present work is based on a study of a specimen collected by Barış Çerçi and kept in the collection of the author in the Dumlupınar University Entomology Museum (DPUEM).

The new species was described based on external morphology, epipharynx and male genitalia as described in Dellacasa *et al.* (2001).

The samples were photographed by using Olympus SZX9 and Nikon AZ 100.

RESULTS

The main characteristics of the new genus are: Medium size species (length 9 mm), scutellum small, equilateral triangular with curved sides, blackish, aedeagus rather stout: paramera short, widened and membranous apically. Some of these characteristics are common in few genera of Aphodinae (*Lunaphodius*, *Bodilus*, *Phalacrothus*). However, some characteristics such as, totally blackish body, front legs more or less dark brownish, head with epistome rather convex at center with a tuberculiform curved transverse carina, irregularly punctured on disc, genae thinly bordered, there are points in 3 different sizes on the head (Fig. 1). Large punctures are scattered on the rear of the frontal suture (Fig. 2). Medium sized punctures predominant between frontal suture and epistome, the remaining gaps scattered with small punctures. Fore tibia distally tridentate and proximally not serrulate at outer margin; upper side smooth, apical spur truncate and obtusely inward hooked apically; First segment of hind tarsi as long as following two combined, shorter than superior apical spur. Pygidium with some discal and distal elongate setae. Aedeagus rather stout: paramera short, widened (Figs. 3, 4, 5). Epipharynx feebly sinuate at front margin, more or less widely at sides; epitorma, drop-shaped, glabrous and broadened towards base; pedia with sparse prophobae, mixed many stout equal size chaetae; corypha with two elongate, strongly prominent celtes; chaetopariae, short, densely and serially arranged; tormae rather short (Fig. 6), are specific for this new genus.

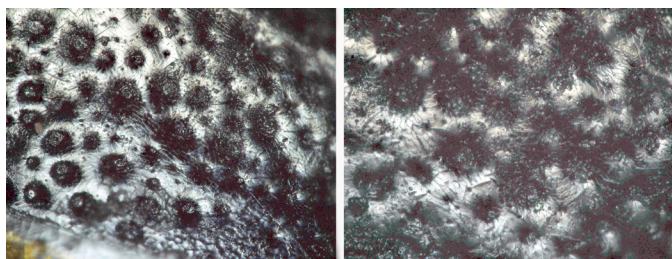


Fig. 1, 2. *Bosphorus bariscercii* n. gen., n. sp., 1. Three different sizes punctures on the head in same pictures. 2. Near of the front.



Figs. 3, 4, 5. *Bosphorus bariscercii* n. gen., n. sp., aedeagus: 3 dorsal view; 4 lateral view; 5 ventral view.



Fig. 6. *Bosphorus bariscercii* n. gen., n. sp., epipharynx.

***Bosphorus* gen. n.**

Type species: *Bosphorus bariscercii* sp. n.

Etymology: There is a longitudinal carina on the head, which resembles the genus *Bosphorus*. In addition the type specimen was collected near the Bosphorus in Istanbul, Turkey.

Description: Medium size species (length 9 mm), Blackish. Head with epistome rather convex at center with a tuberculiform curved transverse carina; frontal suture trituberculate, there is longitudinal carina between median tubercle of frontal suture and tuberculiform of the epistome. Fore tibia distally tridentate and proximally not serrulate at outer margin; upper side smooth, apical spur truncate and obtusely inward hooked apically; Middle and hind tibiae normally widened toward apex and with strong transverse carinae on outer face, apically fimbriate with spinules unequal and irregularly elongated. Pronotum convex, transverse, shiny; Scutellum small, equilateral triangular with curved sides. Elytra elongated, convex, striated. Aedeagus rather stout, paramera short, widened.

Distribution: Turkey

***Bosphorus bariscercii* sp. n. (Figs. 1-15)**

Type locality: Turkey, İstanbul, Esenyurt.

Type series: Holotype 1 ♂. Turkey, İstanbul, Esenyurt., 50 m, 02.02.2015, leg. B. Çerçi (DPUEM).

Type depository. Holotype: in Dumlupınar University Entomology Museum (DPUEM).

Type labelling. Holotype with two labels: 1st, on the white paper, printed in black: "İstanbul; Esenyurt 50 mt.; 01.02.2015; leg. Çerçi, B. 2nd, on the red label, printed in black: "Holotype; *Bosphorus*; *bariscercii*; Y. Şenyüz, 2015".

Etymology: The species is dedicated to Barış Çerçi, who collected the holotype.

Description: Length 9 mm: rather stout, nearly glabrous, elongated, convex, shiny (Figs. 7, 8); Blackish. Front legs more or less dark brownish. Head with epistome rather convex at center with a tuberculiform curved transverse carina, irregularly punctured on disc, punctuation more superciliar distally; clypeus feebly sinuate at middle, widely rounded at sides, margins shortly and sparsely bristled, genae thinly bordered, obtusely

rounded, ciliate, protruding from the eyes; latter medium sized (Fig. 9); frontal suture trituberculate, there is longitudinal carina between median tubercle of frontal suture and tuberculiform epistome (Figs. 9, 10); There are points in 3 different sizes on the head (Fig. 1). The smallest of them are like tiny holes. Medium-sized ones are twice as large as small ones. The biggest ones are 5 times bigger than the small ones and 2.5 times bigger than the medium ones. Large punctures are scattered on the rear of the frontal suture (Fig. 2). Medium sized punctures predominant between frontal suture and epistome, the remaining gaps scattered with small punctures. Pronotum convex, transverse, shiny with doubly punctured (Fig. 11), throughout scattered small punctures, larger punctures sparse on disc and more dense at sides, sides quite bordered, hind angles obtusely rounded, visible from above, not reflexed downwards; base bisinuate, quite bordered, middle very shortly bristled. Scutellum small, its long average 1/13 length of elytra at suture (Fig. 7), equilateral triangular with curved sides (Fig. 12), with few punctures on basal half. Elytra distinctly pubescent on sides and apically (x50), elongated, convex, striated, shiny, fine and deep; interstices nearly flat, rather dull, usually strongly microreticulate and distinctly punctured. Elytra with 10 striae, (Fig. 13). Fourth and sixth elytral interstices joined preapically (Fig. 13). Metasternal plate sunk, shiny, microreticulate, longitudinally with distinctly grooved, glabrous, marginal punctures with longer, backwards seta. Abdominal sternites, Fore tibia distally tridentate and proximally not serrulate at outer margin (Fig. 14); upper side smooth, apical spur truncate and obtusely inward hooked apically; Middle and hind tibiae normally widened toward apex and with strong transverse carinae on outer face, apically fimbriate with spinules unequal and irregularly elongated (Fig. 15). First segment of hind tarsi as long as following two combined, shorter than superior apical spur. Pygidium with some discal and distal elongate setae. Aedeagus rather stout: paramera short, widened (Figs. 3, 4, 5). Epipharynx feebly sinuate at front margin, more or less widely at sides; epitorma, drop-shaped, glabrous and broadened towards base; pedia with sparse prophobae, mixed many stout equal size chaetae; corypha with two elongate, strongly prominent celtes; chaetopariae, short, densely and serially arranged; tormae rather short (Fig. 6).



Fig. 7, 8. *Bosphorus bariscercii* n. gen., n. sp. 7. dorsal view 8. ventral view.

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Distribution: The new species is known only from the type locality.

Female: Unknown



Fig. 9. *Bosphorus bariscercii* n. gen., n. sp., dorsal view of head.

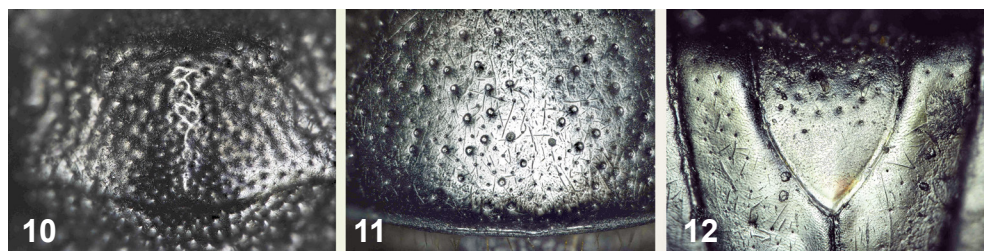


Fig. 10, 11, 12. *Bosphorus bariscercii* n. gen., n. sp. 10. The sunken longitudinal carina between median tubercle of frontal suture and tuberculiform epistome. 11. dorsal view of the base of pronotum with double punctation. 12. Scutellum.



Fig. 13. *Bosphorus bariscercii* n. gen., n. sp., the seventh and ninth elytral interstices joined preapically.

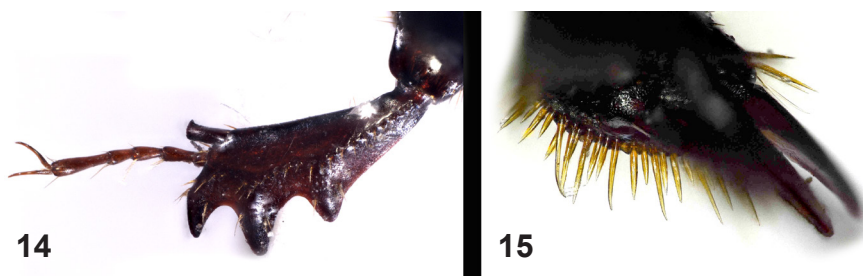


Fig. 14, 15. *Bosphorus bariscercii* n. gen., n. sp., 14. left front leg (dorsal view). 15. apex of hind tibia.

DISCUSSION

Some external morphological characteristics of this new genus such as the clypeus feebly sinuate at middle, rounded at sides; genae obtusely rounded, elongately bristled, protruding than eyes; latter medium size; frontal suture distinct, trituberculate; Scutellum small, triangular, microreticulate, usually punctured on basal half, at most as long as 1/7 of sutural margin of elytra or shorter; Pronotum not bordered at front margin, base of pronotum bordered; Hind tibiae apically fimbriate with more or less elongate and irregularly; Elytra more or less distinctly pubescent at least on sides or apically (x50); Aedeagus digitiform, is similar to *Bodilus* (partim; lugens group) Mulsant and Rey, 1870 genera.

In this instance the longitudinal carina between median tubercle of frontal suture and tuberculiform epistome of the species can be used as a fundamental characteristic of the new genus, since it has been observed that the sample does not match the determination key item 121 proposed by Dellacasa *et al.* (2001). At this stage, the mentioned two genera are *Lunaphodius* Balthasar, 1964, and *Bodilus* Mulsant and Rey, 1870. The basic morphological characteristic of holotype that does not comply with either genera with longitudinal carina between median tubercle of frontal suture and tuberculiform epistome. The color is the second important distinguishing character. The holotype is completely black while both of the mentioned genera have different colors.

Male genitalia resembles general structure of genus *Phalacrothous* Motschulsky, 1859. However, this genus is quite different in both character and its size varies between 2.5-4 mm.

Another important characteristic feature is the existence of punctures of three different sizes in different regions around the epistome and frontal suture.

The final difference is the aedeagus.

Supplement to the key in Dellacasa *et al.* (2001)

121 bis (120) - Rather stout, elongated, convex, shiny. Blackish. Head with epistome rather convex at center with a tuberculiform curved transverse carina, genae thinly bordered, frontal suture trituberculate, there is longitudinal carina between median tubercle of frontal suture and tuberculiform epistome. Length 9 mm, European part of the Turkey *Bosphorus*

121 bis' - Not all of the above characters simultaneously present 122

122 bis (121) - Genae quite rounded, feebly more protruding than eyes (figs 217, 219); sexual dimorphism accentuate: in males, clypeus more or less strongly sinuate at middle and apical spur of fore tibiae inserted at middle of inner margin (fig. 218). Blackish; elytra yellowish with brownish suture or blackish with wide humeral spot and apex reddish. Length 6-8 mm. Central Asia *Lunaphodius*

122 bis' - Genae obtusely angulate, distinctly more protruding than eyes (fig. 221); sexual dimorphism relatively feeble: in males, clypeus feebly sinuate at middle as in females, apical spur of fore tibiae inserted at inner margin at level of second outer distal tooth. Reddish testaceous or piceous; sides of pronotum and elytra testaceous or yellowish, sometimes latter with large cloudy discal spot brownish. Length 5-12 mm. Palearctic, Afrotropical, and Nearctic (?) region *Bodilus* (partim: *lugens* group)

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