Second Record Of Rare Cave-Dwelling Beetle, *Choleva (Cholevopsis) bertiae* Giachino & Vailati, 2000 (Coleoptera: Leiodidae), from Tütüncüini and Sarikaya Caves in Eskişehir

Eskişehir Tütüncüini ve Sarıkaya Mağaralarından Nadir Mağara Leş Böceği *Choleva* (*Cholevopsis*) *bertiae Giachino & Vailati*, 2000 (Coleoptera: Leiodidae)'nin İkinci Kaydi

Research Article

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ABSTRACT

Choleva (Cholevopsis) bertiae was described by Giachino and Vailati in 2000 based on 34 specimens collected in different dates, the latest 1990, from four different caves on Taurus mountain systems in south-western part of Turkey. We here reported this species identifying 10 specimens collected from two different caves in Eskişehir which is far from type locality about 500-800 km and after 14 years as second record for Turkey. Redescription of the species are given with the photograps of both gender habitus and male genitalia.

Key Words
Coleoptera, Leiodidae, Small Carrion Beetle

ÖZET

Choleva (Cholevopsis) bertiae 2000 yılında Giachino and Vailati tarafından 34 örnek ile tanımlanmıştır. Örnekler Türkiye'nin güney batısındaki Toros dağlarının 4 farklı mağarasından, en son 1990 olmak üzere, farklı tarihlerde toplanmıştır. Bu çalışmada ilk kayıttan 14 yıl sonra, tip lokalitesinden 500 ila 800 km uzaklıkta, Eskişehir'deki 2 farklı mağaradan elde edilmiş 10 birey bildirilmiştir. Türün yeniden tanımı yapılmış, dişi ve erkeğin habitusu ve erkek genitalyası fotoğraflanmıştır.

Anahtar Kelimeler
Kınkanatlı, Leiodidae, Küçük leş böceği

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INTRODUCTION

Small carrion beetles (Leiodidae: Cholevinae) are important members of carrion beetle assemblages [1]. Cholevinae are numerous in the subterranean environment, representing 30% of all known underground beetles. They populate caves, as well as the fissure network and even the layers of the soil [2]. Besides carrion, they feed on decaying fungi, decaying forest litter and organic material in vertebrate nests [1].

The genus Choleva Latreille, 1796 with nearly sixty known species is distributed mainly in the western Palearctic region, with only 23 species known from Turkey. This 23 species belong to 2 subgenus; Cholevopsis and Choleva. 20 species; *Choleva (Choleva) casalei* Giachino and Vailati, 2000 *C. (Choleva) anatina* Szymczakowski, 1962, *C. (Choleva) dorsigera* (Marseul, 1864), *C. (Choleva) agilis* (Illiger, 1798), *C. (Choleva) bedeli* Jeannel, 1923, *C. (Choleva) etontii,* Giachino and Vailati, 2000*, C. (Choleva) cavazutti,* Giachino, 1990, *C. (Choleva) emgei* Reitter, 1884, *C. (Choleva) oblonga oblonga* Latreille, 1807, *C. (Choleva) nivalis* (Kraatz, 1856), *C. (Choleva) reitteri* Petri, 1915*, C. (Choleva) mertliki* Vavra, 1998*, C. (Choleva) cisteloides* (Frölich, 1799)*, C. (Choleva) fencli* Ruzicka,1993*, C. (Choleva) safranboluensis* Vavra, 1998, *C. (Choleva) kostali* Vavra, 1998, *C. (Choleva) elongata* (Paykull, 1798), *C. (Choleva) pilifera,* Reitter, 1884 *C. (Choleva) taurica,* Giachino and Vailati, 2000 *C. (Choleva) uludagica* Giachino and Vailati, 2000 are belong to Choleva subgenus and 3 species; *Choleva (Cholevopsis) major turcica,* Coiffait, 1959, *C. (Cholevopsis) bertiae* Giachino & Vailati, 2000 and *C. (Cholevopsis) paskoviensis* Reitter, 1913 are belong to Cholevopsis subgenus [3]; [4]; [5]; [6]; [7].

Choleva (Cholevopsis) bertiae was described by Giachino and Vilati (2000) [8] based on 34 specimen from different localities in south of Turkey (23 male and 11 female) [Narlika village, Antakya province 1.I.1946, 1 male; 8.X.1956, 7 males 4 females; Zindan Cave, Anamas, Isparta province, 1.V.1962, 1 females; 30.VII.1971 12 males 6 females; Zeybeyni cave, Kapakli far from 30 km Burdur province, 22.V.1987 1 male; Akseki 24 km far from Antalya province, 16.V.19902, 2 males] (localities has taken from original description).

In the present study, *Choleva (Cholevopsis) bertiae* is re-determined and the new distribution data in Turkey is given for this rare endemic species after 14 year from last record on Antalya province.

MATERIAL AND METHODS

This study based on the material collected from Tütüncü İni and Sarıkaya caves by Ümit Şirin and Hakan Çalışkan in 2004.

Tütüncü ini cave is placed on Mihallıççık village, total depth is 110 m. Cave has fossil feature, horizontally 3 layer, dry all seasons because there are no underground water on the base of cave. There is no obvious living being community but at some parts bats and cave butterflies can be seen. Sarıkaya cave is placed on Yalımkaya village, total depth is 591 m. Cave is multilayered fossil and horizontally developed; same as Tütüncü ini, dry all season but at spring season small ponds can be seen. A massive bat community is living at cave especially at upper fossil layers (Figure 1).

Specimens were collected from cave basin with forceps. For correct determination we had contact with Jiri Vavra from Ostravian Museum, Czech Republic. Identification, comparison with related specimens and dissection was made by him and the specimens identified as *Choleva (Cholevopsis) bertiae*. Species identification has confirmed by Piermauro Giachino from Settore Fitosanitario Regionale Environment Park, Torino, Italy.

Habitus and genital features were photographed with Leica DFC 490 camera, attached to a Leica MZ 16 microscope. Specimens are deposited in the Entomology collection, Department of Biology, Eskişehir Osmangazi University.

RESULTS

Choleva (Cholevopsis) bertiae Giachino & Vailati, 2000

Material examined; NW Turkey (Middle Anatolia Region): Eskişehir province: Mihallıççık; Otluk village, Tütüncüini cave (33° 55′ N, 39° 97′ E)

Figure 1. Previous and New localities of *C.bertiae*.

1150m, 26.VIII.2004, 3 females, 2 males, Eskişehir province: Mihallıççık; Yalımkaya village, Sarıkaya cave (39° 58′ N, 31° 17′ E) 1060 m, 26.VIII.2004, 2females, 3 males.

Redescription of the male

Total body lenght 7.5-7.7 mm, wing developed (Figure 2). Body elliptic and brown. Apical of elytra is dark brown. Antenna and mouthparts are dark brown. Body covered with short and light brown pubescent.

Head; surface finely punctuate, dull, with distinct isodiametric microsculpture. Eyes well developed. Antenna long and slender, apex of first antennomerre is two out of three times widener than its base. First six antennomeres light brown remaining segments completely brown, all segments longer than wide, after 6th antennomerre apex of antennomeres slightly widened. The proportions of antennomeres are 1: 1.2: 0.7: 0.9: 1.2: 0.9: 0.9: 0.9: 0.9: 1: 0.8.

Pronotum; completely brown 1.25 as wide as long, 1.5 times as wide as head. Sides curved regularly, hind angle slightly curved. Base of pronotum narrower and bisinuate. Surface vaulted regularly, laterally pronotum flattened before posterior angle. Surface punctuation and micro sculpture same as head.

Elytra; elyptic and convex, 1.8 times as long as wide, about 3.3 times as long as pronotum. Apex of elytra separately rounded. Bottom of elytra convex. Each elytra with stria, all surface with regular punctuation and pubescence. Humeral calli not well developed, slightly broadened toward apex.

Venter; the parts are dark, covered with short hair. Metatorax well developed. Apex of protibia slightly widened. Mesotibia strongly curved on male specimens. Metatibia slightly curved and first three tarsomeres are widened males.

Aedeagus; big, long, surface smooth, median lobe softly curved, apex narrower and elongated like beak. Apex of ligule acute. Parameres long but not longer than median lobe and slightly curved to tip of aedeagus.

Description of female

Total body lenght 7.0-7.2 mm, body wider than in male (Figure 2). All body light brown to yellow. Antenna long and slender, first six antennomeres light brown remaining segments completely

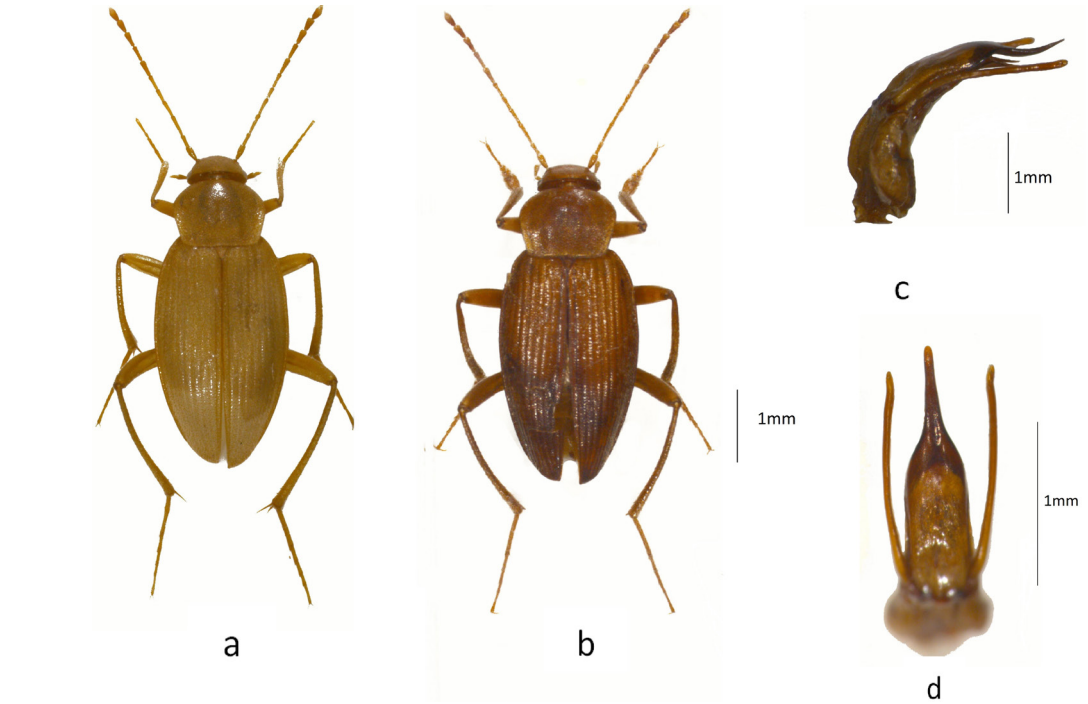

Figure 2. Photograps of both gender habitus and male genitalia. a) female specimen, b)male specimen c)lateral view of aedeagus d) dorsal view of aedeagus.

brown, all segments longer than wide. The proportions of antennomeres are 1: 1.3: 0.8: 1: 1.4: 1: 1: 1.1: 1.1: 1.2: 0.9.

Pronotum; completely light brown, 1.40 as wide as long, 1.6 times as wide as head. Sides curved regularly, hind angle slightly curved.

Elytra; slender and convex, 1.7 times as long as wide, about 3.5 times as long as pronotum.

DISCUSSION

Choleva (Cholevopsis) bertiae was firstly described by Giachino & Vailati at 2000. It's type locality was Narlika village, Antakya province. The holotype was recorded on 8.X.1956, at last, this species was recorded at Akseki, that 24 km far from Antalya province on 6.V.1990. Distribution area of *Choleva (Cholevopsis) bertiae* was known from Antakya, Isparta, Burdur, Antalya provinces. Recently 10 specimens has collected at two different caves in Eskişehir on 2004 which about 800 km far away from holotype locality (Antakya). Rediscovery of the species after 14 years enlarges the distribution of this species (Figure 2). This result proves that the species could pass the Taurus mountains which is one of the main barriers in Anatolia.

Cave-dwelling species have an important role on understanding the zoogeographic history of any terrestrial region in the world. It is known that about 40 000 caves in Turkey and the cave dwelling species are the main members of the biodiversity of the country. However, the knowledge of Turkish cavernicol fauna is still poor and further studies are need to reveal the species of caves in Turkey. We thought that our result contributes to the information about Turkish cavernicol fauna.

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