

Notes on the host plant, habitat and distribution in Turkey of *Cryptocephalus (Burlinius) pusillus* Fabricius, 1777 (Coleoptera: Chrysomelidae)

Ali GÖK^{1,*}, Ali Nafiz EKİZ¹, Serdar BİLGİNTURAN¹ and İsmail ŞEN¹

1. Süleyman Demirel University, Faculty of Art and Science,
Department of Biology, Zoology Section, Tr 32260 Isparta-Turkey

* Corresponding author: A. Gök, E-mail: aligok@fef.sdu.edu.tr / aligok32@gmail.com

Abstract. *Cryptocephalus (Burlinius) pusillus* Fabricius, 1777 is a very poorly known species in Turkey, and up to now there is no data about the distributional pattern of this species in the country. Recently five specimens (four males, one female) of *C. pusillus* were collected from *Ulmus glabra* Huds. in the south-western parts of Turkey. Redescription of male and female is presented, and the genital structures are illustrated. Data about habitat, host plant and distribution of the species in Turkey is provided for the first time.

Key words: *Cryptocephalus (Burlinius) pusillus*, habitat, host plant, distribution, Turkey

Introduction

Cryptocephalus (Burlinius) pusillus Fabricius, 1777 is a member of the subgenus *Burlinius*. Species in the subgenus *Burlinius* are easily recognized by having two ventral and one dorsal median processes on the apex of the aedeagus. The subgenus comprises about 75 species distributed in the Western Palearctic region (Warchałowski 1999). Recently the total number of species of the subgenus in Turkey has reached 21 (Gök & Ayvaz 2000, Gök & Sassi 2002, Aslan & Gök 2007).

According to Warchałowski (2003), *C. pusillus* occurs in almost the whole of Europe, however, it has been known as a very rare species in Turkey for years.

During the faunistic surveys of the phytophagous beetles in south-western Turkey in 2007, we collected five interesting specimens belonging to the subgenus *Burlinius* (four males, one

female) having a red pronotum and black elytra. Examination of the specimens revealed that they belong to *C. pusillus*. Although Sassi & Kışmalı (2000) reported this species from Turkey, no geographical and ecological information about the species has been given in the country. In this study, we provide new information about host plant, habitat and distribution of *C. pusillus* in Turkey.

Material and Methods

The study is based on five specimens found in the vicinity of Kasnak Forest Natural Reserve (Isparta; 37°44'53" N, 30°48'83" E) in 2007. Samples were collected by sweepnetting the branches of *Ulmus glabra* Huds. The specimens were identified according to the figures and keys given by Warchałowski (1999, 2003). Photos were prepared by using Camedia C-5060 marked digital camera, attached to the Olympus SZX12 stereomicroscope. Measurements were taken with an ocular micrometer. Ecological notes were inferred from personal observations. The spe-

cimens are deposited in the Biology Department at the Süleyman Demirel University.

Results

Redescription of Male (Figs. 1A-D)

General appearance of the male as in fig. 1A. Total body length: 2.73 - 2.86 mm.

Head: Vertex dark brown, other parts of head light yellow, vertex with a distinct longitudinal median groove reaching to the interocular area; head almost smooth; interocular area sparsely and distinctly punctated up to antennal sockets; eyes reniform; clypeus and labrum sparsely covered with long hairs; basal part of mandibulae reddish brown, apex black; maxillary palpi light brown; first 5 antennomeres light yellow, antennomere 6 brown, the remaining segments black, antennomeres 6-10 with basiconic sensillae in circular pits, antennal ratio: 15:8:8:14:17:20:22:21:21:20:20.

Pronotum: Convex, transverse, 1.5 times as broad as its length; in dorsal view lateral margins precisely visible, posterior margin of pronotum with a row of teeth and a spanwise, thin, black stripe; other parts of pronotum reddish-brown; pronotum almost smooth or with a faintly visible minute punctation.

Scutellum: Triangular, yellow, all sides thin, black rimmed, glabrous, impunctate, flush with elytra.

Elytra: Basal margin of elytra with slightly thin, dark brown stripe; epipleura yellow towards apex; conspicuously yellow spotted at apex (Fig. 1A), remaining parts of the elytra with metallic black luster; surface of elytra punctated in regular rows; humeral callus raised, impunctate.

Venter: Prosternum yellow; intercoxal mesosternal process yellow, coxal area black, other parts of mesosternum yellow; metasternum and abdomen black; underside sparsely covered with thin, white hairs.

Legs: Light brown; in all legs; first tarsomeres as long as the sum of second and third ($1=2+3$); first tarsomeres of fore and middle legs markedly broader than first tarsomeres of hind legs (1.75 x) (Fig. 1A).

Abdomen: Black, distinctly and densely punctated, covered with long, white hairs, anal sternite not depressed medially.

Aedeagus: Trilobate at apex, dorsal lobe typically thinner than ventral lobes, thickened towards apex and almost equal to length of ventral lobes (Fig. 1B), in lateral view, ventral lobes deflected dorsal at apex (Fig. 1C).

Female: Total body length: 3.13 mm. Resembles the male except for the following characters: All tarsomeres equal in length, anal sternite distinctly depressed medially. Antennal ratio: 15: 8: 8:10:13:14:14:14:14:15:16.

Spermatheca: Sickle shaped, apex slightly ventral curved, ductus conspicuously coiled (Fig. 1D).

Habitat and Host Plant

The specimens of *C. pusillus* were collected from *Ulmus glabra*, Huds., growing on xeric mountain slopes in close vicinity of Kasnak Forest Nature Reserve (Isparta) at an altitude of 1560 m. The habitat at this altitude can be characterized as semi-open mountain scrubland, consisting of mixed conifer species including *Pinus*, *Cedrus*, *Abies*, *Juniperus* and deciduous species such as *Quercus*, *Crataegus*, *Ulmus* and *Fraxinus*.

The sampling area has typical Mediterranean climate features. In July 2007, when the specimens of *C. pusillus* were collected, the temperature measured 38°C. It was observed that, under this relatively high temperature, the leaves of potential host plants had turned pale

yellow and lost their aesthetic appearance. This unfavorable condition may be one cause why only five specimens were collected. Another cause may be that many beetles, especially species living out in the open, withdraw during the day when the temperature is highest.

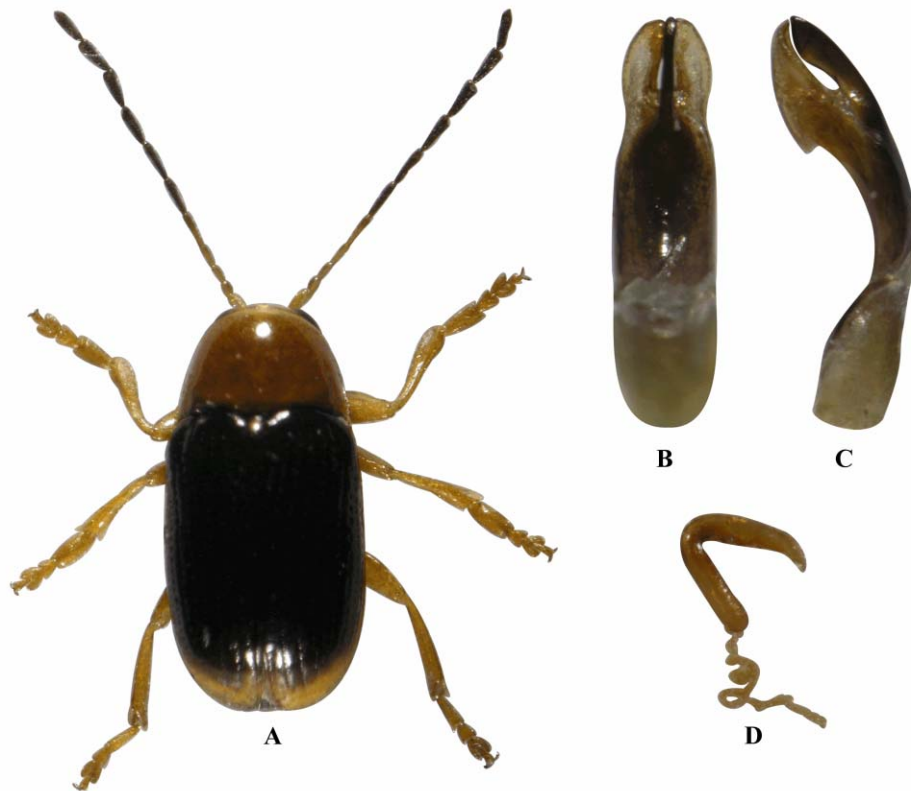


Figure 1A-D. *Cryptocephalus (Burlinius) pusillus* Fabricius, 1777: A.) General view of the male; B.) Dorsal view of aedeagus; C.) Lateral view of aedeagus; D.) Spermatheca

Discussion

The subgenus *Burlinius* of the Western Palearctic region was reviewed by Warchałowski (1999), mentioning 75

species. This study included keys and aedeagus figures and focused on important taxonomic characters and figures about variable pronotal and elytral colour patterns of some species. It

is known that there are remarkable variations in the pronotal and elytral markings in many species of the genus *Cryptocephalus*. *C. pusillus* has 17 colour and pattern variations in the Western Palearctic region (Warchalowski 1999, 2003). Pronotal and elytral colour in *C. pusillus* is variable from light to dark. The specimens collected in close vicinity of Kasnak Forest Nature Reserve resemble variational pattern character of *C. pusillus* ab. *marshami*, described in Warchalowski (1999, p. 617, fig. 227). There is no pattern variation between the individuals that we collected.

Ecologically *C. pusillus* is a mesophilous or hemihygrophilous species and is generally associated with tree vegetation belonging to Salicaceae, Betulaceae and Corylaceae (Sassi & Kismali 2000), namely species from the genera: *Salix*, *Populus*, *Corylus*, *Quercus*, *Betula* and *Alnus* (Burlini 1956, Mohr 1966). However, in this study, the specimens were found in a xeric habitat and their potential host plant is probably *Ulmus glabra* Huds. which grows over a calcareous stony terrain in the sampling area.

According to present knowledge, *C. pusillus* has a local distribution in Turkey which seems to be the country's south-western Mediterranean region. But it is quite probable that *C. pusillus* is distributed more widely and can be expected in the whole Mediterranean region of Turkey. However, further studies are needed for investigating the exact distributional area of this species.

In conclusion, the rich morphological variance and the range of numerous host

plants that *C. pusillus* is associated with should be considered seriously. Each new population which provides extra data on taxonomical characters, host associations, habitat and geographical distribution enriches our knowledge of the species.

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