

## **Redescription of the Female and Variability of Cryptocephalus (Asionus) Pseudoreitteri Tomov, 1976 (Coleoptera, Chrysomelidae, Cryptocephalinae) in Turkey**

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## REDESCRIPTION OF THE FEMALE AND VARIABILITY OF *CRYPTOCEPHALUS (ASIONUS) PSEUDOREITTERI* TOMOV, 1976 (COLEOPTERA, CHRYSOMELIDAE, CRYPTOCEPHALINAE) IN TURKEY<sup>1</sup>

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**ABSTRACT:** *Cryptocephalus (Asionus) pseudoreitteri* Tomov, 1976 is a poorly known species. Recently, seven additional specimens of this rare species were collected out of the type locality. The little known female of this species is redescribed in detail and also males are redescribed on the basis of 7 specimens (4 males and 3 females) collected from Kayseri and Aksaray provinces of Central Anatolia. The male and female genital structures, abdomen, variations of the pronotal and elytral patterns are illustrated.

**KEY WORDS:** Cryptocephalinae, *Cryptocephalus (Asionus) pseudoreitteri*, female, redescription, taxonomy, Turkey

The Cryptocephalinae of Turkey have been revised based on their distribution and some ecological information (Sassi and Kısmalı, 2000). According to Sassi and Kısmalı (2000), the genus *Cryptocephalus* is represented by 67 species in Turkey; 5 of them belong to the subgenus *Asionus*. Among them, *C. pseudoreitteri* and *C. amasiensis* are endemic to Turkey. The subgenus *Asionus* comprises 22 species in Europe and the Mediterranean area (Warchalowski, 2003), 5 of which are distributed in Turkey (Sassi and Kısmalı, 2000): *Cryptocephalus (Asionus) amasiensis* Weise, *Cryptocephalus (Asionus) apicalis* Gebler, *Cryptocephalus (Asionus) curda* Jacobson, *Cryptocephalus (Asionus) pseudoreitteri* Tomov and *Cryptocephalus (Asionus) quatuordecimmaculatus* Schneider. *Cryptocephalus (Asionus) pseudoreitteri* Tomov, 1976 is a member of subgenus *Asionus* which is characterized by the combination of the following characters: Fourth tarsal segment slim, at least one half of its length projecting out of lobes of third segment, elytra at least on posterior parts with sparse erect hairs (Lopatin, 1984; Sassi and Kısmalı, 2000; Warchalowski, 2003). Within the subgenus *Asionus*, *C. pseudoreitteri* most closely resembles *C. reitteri* Weise, but it can be easily separated from *C. reitteri* mainly by having a single little sharp tooth at the basis of the last anal sternite of male, whereas *C. reitteri* has two toothlike convexities at basis of the anal sternite of male.

*Cryptocephalus pseudoreitteri* was originally described on the basis of a single male specimen collected from Beypazarı, Ankara, Turkey. Since then, no additional samples of the species have been reported for years, however, Özdikmen et al. (2007) reported six specimens (4 males, 2 females) of this species col-

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lected from Ayaş (Ankara) by Özdikmen and the species was reexamined by Özdikmen et al. (2007). During faunistic surveys of the phytophagous beetles conducted in Aksaray and Kayseri provinces of Central Anatolia during 2006, 7 additional specimens (4 males, 3 females) of *C. pseudoreitteri* were collected. This gave us the opportunity to reinvestigate the species. Herein, we redescribe the females and give additional descriptive data of males with several remarkable variations.

## METHODS

This study was based on seven specimens collected from Aksaray and Kayseri provinces (38° 24' N; 34° 01' E; 38° 24' N; 34° 02' E) of Central Anatolia, by the second author. Samples were collected from an afforested steppe-like terrain covered with young pine trees and herbal vegetation by using an aspirator and sweep net. Genitalia were photographed with a Camedia C-5060 digital camera attached to an Olympus SZX12 stereomicroscope. Seven specimens (4 males and 3 females), including the largest and smallest ones of each sex were used for measurements. Specimens are deposited at the Department of Biology, Faculty of Arts and Sciences, Gazi University, Ankara, Turkey.

## SYSTEMATIC ENTOMOLOGY

### *Cryptocephalus (Asionus) pseudoreitteri* Tomov, 1976 (Fig. 1 A-G)

**Material Examined.** Central Anatolia, Turkey, Aksaray-Kayseri (38° 24' N; 34° 01' E) 1084 m, 25.05.2006, 1 male, 2 females; same location and date (38° 24' N; 34° 02' E) 1112 m, 3 males, 1 female.

**Redescription of the Female.** Total body length: 6.2 – 6.4 mm. *Head.* Generally black, with exception of a little yellow spot under eyes, frontoclypeal suture, with obscure brownish-yellow tiny spots, mandibles reddish. Vertex distinctly convex; frons slightly depressed between eyes, covered with rough, dense, prominent dots and with long, dense white hairs; dorsal parts of the antennae bases distinctly raised, glabrous, rarely pubescence and punctated; frontoclypeal suture small, densely and deeply punctated and with scarce, long hairs; the first segments of antenna blackish brown, second, third and fourth segments yellowish brown, others completely black, the first segment as long as second and third together, third segment 1.8 times longer than second segment, fourth segment 1.3 times longer than third segment, antennal segment ratios: (17: 6: 11: 15: 15: 15: 15: 15: 15: 18).

*Pronotum.* Reddish-brown, with 4 black spots (2 larger spots near disc and 2 smaller spots laterally), basal margins with black stripe. Strongly convex in dorsal view, at base 1.4 times wider than its length and gradually narrowing towards anterior margin; lateral sides narrowly marginated, only visible at base dorsally; densely and deeply punctated, basal margin denticulated in a row.

*Scutellum.* Black, obtusely triangular, scarcely punctated, almost as long as wide, truncate at apex.

*Elytra.* Yellow with 3 black spots (2 in posthumeral + 1 on clivus); not covering the last sternite of abdomen; anterior margin and suture of elytra with black stripe, sutural stripe not reaching the apex; elytra 2.2 times longer than pronotum, about 1.3 times as long as shoulder width, almost parallel-sided and slightly narrowed toward apex. Elytra coarsely and densely punctuated, punctures of elytra larger than that of pronotum, clivus with distinct short silver hairs towards apex, humeral tubercles prominent, lengthened, margins of elytra narrow, slightly visible from above; epipleura, in lateral view, visible in anterior  $\frac{1}{2}$ , with scarce, deep punctures.

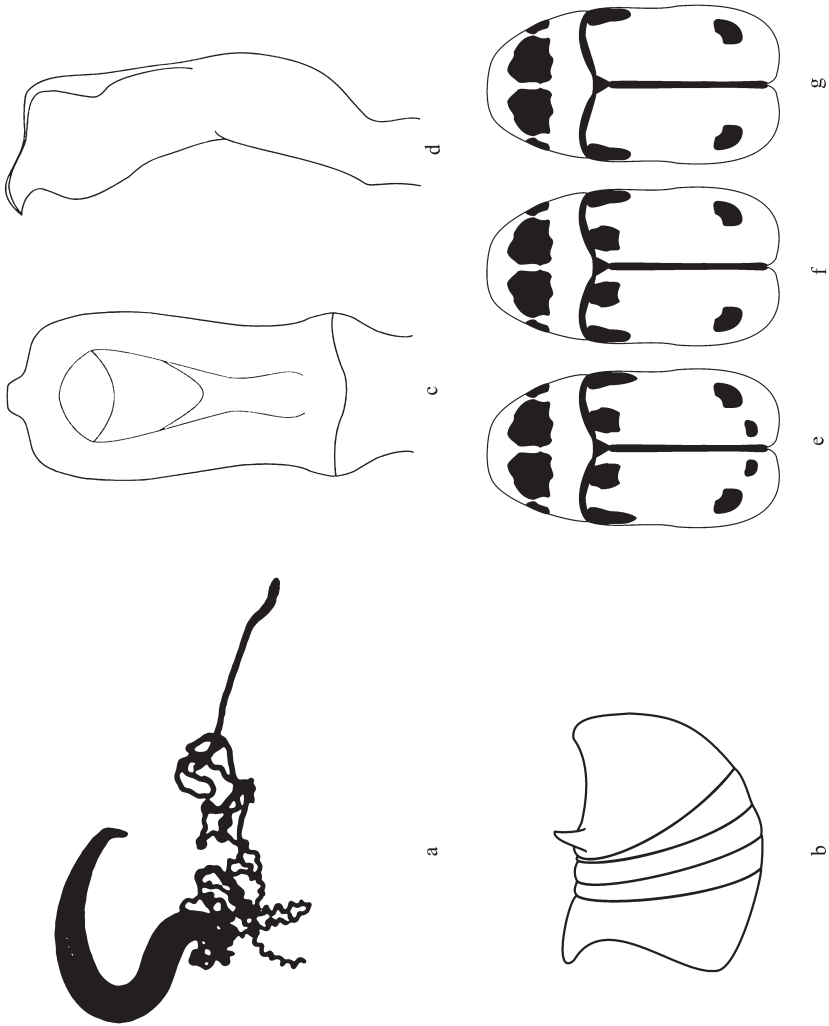
*Venter.* Ventral parts completely black, covered with long, dense and silver hairs, ventral part of fore tibia yellowish-brown, dorsal part black, ventral part of middle tibia yellowish-brown only basally, remaining parts completely black, hind tibia and the other parts of legs completely black, first tarsal segments 1.4 times longer than second, second tarsal segments 1.2 times longer than third. Anal sternite with a striking, large, oval pit. Inner side of the pit, glabrous, deeply punctuated.

*Spermatheca.* Entirely black, sickle shaped, with short recurved base, the proximal parts of ductus evidently coiled, distal parts straight and long (Fig. 1A).

**Redescription of the Male.** Male resembles females, except for following characters: total body length 5.2-6.1 mm, third segment of antennae 1.7 times longer than second, segment ratios: (16: 6: 10: 13: 18: 18: 18: 18: 18: 20); elytra with variable black patterns (generally 2 in posthumeral + 2 on clivus) (see Variation, below), twice as long as pronotum, about 1.2 times as long as shoulder width; anal sternite, in ventral view, evidently broadened in the middle and shallowly depressed, glabrous and deeply punctuated on depression; the last sternite in male with a single little sharp tooth at basis (Fig. 1B).

*Aedeagus.* Rather characteristic, in dorsal view gradually narrowing in the middle, apex obtusely truncated, with rounded lateroapical border, with rectangular median denticle (Fig. 1C); in lateral view median denticle barely bifurcated terminally, apex slightly curved downward and lateral margins covered with long hairs (Fig. 1D).

**Variation.** Because *C. pseudoreitteri* was initially described on the basis of only one male specimen, any notes on the variability of this species could not be given (Tomov, 1976). However, examination of the new specimens shows that this species is variable in the number of spots on elytra. Elytra generally with 4 black spots (2 in posthumeral area + 2 on clivus). However, in two male specimens, elytra with 3 black spots (2 in posthumeral area + 1 on clivus) and in one male, with 2 black spots (1 in posthumeral area + 1 on clivus) (Fig. 1E-G). Females have 3 black elytral spots (2 in posthumeral area + 1 on clivus) (as the male's variation shown in Fig 1F). Also, the body of females is slightly longer than that of males.



Figs. 1 A-G. *Cryptocephalus (Asionus) pseudoreitteri* Tomov. A. Spermatheca. B. Lateral view of a single sharp tooth at basis of the last abdominal segment in male. C. Aedeagus dorsal view. D. Aedeagus lateral view. E-G. Variation of the pronotal and elytral spots.

## DISCUSSION

*Cryptocephalus pseudoreitteri* was described by Tomov (1976) from a single male specimen collected from Bey pazarı, Ankara (Turkey) by K. M. Guichard in

1960 and deposited in Museum of Manchester University. After its original description, it was cited briefly in subsequent studies (Sassi and Kışmalı, 2000; Warchalowski, 2003). In the mentioned studies, it is emphasized that this species is known only from the holotype. However, recently, 6 samples (4 male and 2 female) of this species were collected from Ayas (Ankara) near its type locality (Bey pazarı, Ankara) by Özdikmen et al. (2007). They have given a fairly short description about the female of *C. pseudoreitteri*. However, they have improved the description of holotype by reporting variation among males. Rediscovery of the females and additional male specimens from current localities which are out of the type locality provide new taxonomical and geographical data that extend the knowledge about this poorly known species. In addition, to both the study of Özdikmen et al. (2007) and the original description of *C. pseudoreitteri* made by Tomov in 1976, some variability is observed on head and elytral spots of collected specimens (see variation section). It is known that there are remarkable variations in the pronotal and elytral markings in many species of *Cryptocephalus*. The slight variability of elytral colour patterns is not considered a reliable character in the diagnosis of species in the genus *Cryptocephalus* species. Instead, the structure of aedeagus should be used in diagnosis rather than colour patterns. The remaining morphological characters are similar to the first and second descriptions. Forthcoming surveys are needed to outline the colour variation and geographical distribution of this species, since the collection of this species in new localities suggest that its geographical distribution may be wider than originally thought.

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