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Description of a new species of the *C. syriacus* group of *Cardiophorus* ESCHSCHOLTZ, 1829 (Coleoptera: Elateridae: Cardiophorinae)

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Abstract

Cardiophorus syriacoides sp. n., up to the present confused with *C. syriacus* (Linnaeus, 1758), is described upon specimens from Iran, Georgia, Armenia, Azerbaijan, Turkmenistan and Tadjikistan. A key to the species of the *C. syriacus* group is from the region given.

Key words: Coleoptera, Elateridae, *Cardiophorus*, new species, Iran, Georgia, Armenia, Azerbaijan, Turkmenistan, Tadjikistan.

Zusammenfassung

Cardiophorus syriacoides sp. n., bisher mit *C. syriacus* (Linnaeus, 1758) vermengt, wird nach Exemplaren aus Iran, Georgien, Armenien, Azerbaijan, Turkmenistan und Tadjikistan beschrieben. Ein angeschlossener Bestimmungsschlüssel dient der Determination von Arten der *C. syriacus* Gruppe dieses Gebietes.

Introduction

During studies on click-beetle species from Iran our attention was attracted to specimens determined as *Cardiophorus syriacus* (Linnaeus, 1758), which proved upon closer examination of the morphological features to differ markedly from specimens standing under this name from Syria, the type locality, and Turkey. The examination of specimens from Iran, Georgia, Armenia, Azerbaijan, Turkmenistan and Tadjikistan show that many also belong to the new species. *C. syriacoides* sp. n. can be recognized by the longer antennae in male and female, by the sparser punctuation of pronotum and by a different structure of male and female genitalia.

The *Cardiophorus syriacus* group contains four species in the region under study. *C. hinkei* Frivaldsky, 1837, is reported from Bulgaria, Greece and western Turkey (PLATIA & GUDENZI, 2000a). *C. syriacus* was originally described from Syria and is also reported from Turkey, Armenia, Azerbaijan, Iran and Turkmenistan (CANDEZE, 1860; JAKOBSON, 1913; SCHENKLING, 1925; GURJEVA, 1966; MARDJANIAN, 1977, 1987; AGAEV, 1988; DOLIN & ATAMURADOV, 1994; PLATIA & GUDENZI, 2000b). Specimens from Turkey and probably also those from Armenia (according to drawings of the female genital in MARDJANIAN (1977, 1987)) belong to *C. syriacus*, whereas those mentioned in GURJEVA (1966) and DOLIN & ATAMURADOV (1994) from Turkmenistan as well as former records from Iran are very probably *C. syriacoides* sp. n. AGAEV (1985) described *C. ordubadensis* from Azerbaijan, which he distinguishes from *C. syriacus* by a uniform body colour, longer

antennae and the male and female genitalia. We have examined 5 specimens of this species, four from Azerbaijan and one from Erivan, Armenia (new country record).

As the new species is also known from Georgia, Armenia and Azerbaijan, the ranges of *C. syriacus* and *C. syriacoides* could very well overlap in the Caucasus region. Furthermore, as we have seen a specimen of *C. hinkei* labelled Elisabethpol (Azerbaijan, new country record), the ranges of *C. hinkei* and *C. syriacoides* apparently do overlap. Only further studies on specimens from this area can elucidate the distribution of all four species.

***Cardiophorus syriacoides* sp. n.** (Photos 1, 2, 3)

Material examined: holotype ♀, **Iran**: Ala-Dagh, Budschmurd, 1033m, vi.1902, ex. Hauser coll. (Natural History Museum, Vienna); 31 paratypes (4 ♀♀, 10 ♂♂; 17 not sexed), Astrabad, v.1899, ex Hauser coll.; **Azerbaijan**: Elisabethpol, ex Kolenati coll.; Talysch, Larik distr., env. Gosmaljan, leg. S. Kasantsev, 6.vi.1988; **Armenia**: Megri, Armenia, Viktorov & Dlusskij, 17.iv.1959; Armenia, Megri, 30.iv.1964; **GEORGIA**: GSSR, Vaschlavan conservation area, 15.v.1981, V. G. Dolin (ex larva); **Turkmenistan**: Transkaspia, Saramsakli, vi.1907, ex Hauser coll.; Kov-Ata, Ibachardenli, 110 km NW Ashabad, 10.v.1989, leg. Wrase; Firjuza/Kopet Dag, 22.iv.1981, leg. J. Strnad; Firjuza, 26.v.1983, Kh. Atamuradov; Kara-Kale, Ak-Dere gorge, 1500m, 25.v.1977, leg. W. Dolin; Transcaspi, Tschandyl, AK, 29.iv.1933; Transcaspi, Tschandyl, Kara-K., 25.iv.1933; Transcaspi, Kara-Kala, 20.iv.1933, Ut.; Turkmenistan, Z. Kopetdag, 720m, m. Taldychashma, 24.iv.1989, D.W.; Turkmenistan, slopes nr. Kizil-Arbat, 15.iv.1975; hills and slopes of Kopet-Dagh, 12 km W Kizil-Arbat, 12.iv.1953; Turkmenistan, Tschuli gorge, slopes, on Crataegus, 3.v.1975; Turkmenistan, Kara-Kala reg., Tschendyr gorge, 20.v.1975, leg. V. Dolin; Turkmenistan, Umg. Aschgabat, Kalininsk, 15.iv.1976, V. G. Dolin; **Tadzhikistan**: Bulbulcasma, 18.iv.1980, leg. J. Strnad; **Unknown locality**: 2 km S Megrenjank(?), 18.iv.1987. (Natural History Museum, Vienna; coll. Cate, Vienna; coll. Platia, Gatteo; Schmalhausen Institute of Zoology, Kiev).

Description of female: Bicoloured; pronotum including propleurae red-orange; head, scutellum, elytra, prosternum, thorax and abdomen (sometimes last two sternites reddish) black; antennae blackish with base of segments ferruginous; legs ferruginous, generally with darkened femora. Elytra with whitish pubescence forming two distinctive transversal bands at base and in posterior half.

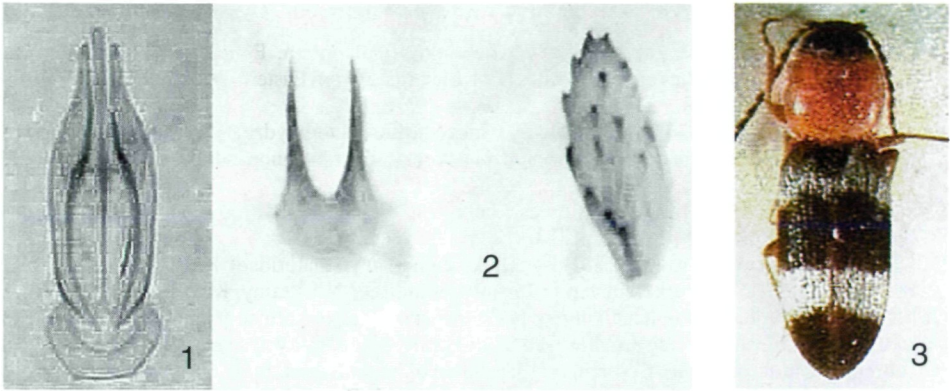
Frons flat to moderately convex, impressed only at anterior margin, the latter regularly arcuate and feebly thickened; punctures broad and contiguous. Antennae reaching tips of the posterior angles of pronotum; second article subconical, shorter than third; third to tenth subtriangular, approximately the same length; eleventh subellipsoidal, pointed at apex.

Pronotum as long as wide, strongly and regularly convex with a vestige of median longitudinal furrow in the basal declivity; sides strongly arcuate with the greatest width in the middle; posterior angles short, truncate, not divergent, briefly carinate; lateral suture complete; punctuation uniform, on the disk with punctures of approximately the same size, simple, with shiny and very small intervals.

Scutellum heart-shaped, as long as wide, slightly concave and emarginate in the middle of base, densely punctured. Elytra on average 2.3 times longer than pronotum and twice as long as wide; convex on the disk, suboval; striae well-marked and punctured; interstriae flat, very densely and finely punctured.

Claws simple.

Bursa copulatrix (photo 2) with two symmetrical sclerified plates and a median U-shaped sclerite.



Cardiophorus syriacoides sp. n.: Photo 1: Aedeagus in dorsal view (paratype) (length: 0.92 mm). Photo 2: Sclerifications in the bursa copulatrix (holotype) (length of plate: 0.47 mm; length of median piece: 0.4 mm). Photo 3: Adult male (paratype) (length: 5.1 mm).

Male (photo 3): Similar to female but generally with a more slender body and longer antennae exceeding the tips of posterior angles of pronotum by one to two segments.

Aedeagus (photo 1) with parameres simple at apex.

Length: 5.1-7.5 mm; width: 1.6-2.3 mm.

Key to species of the *Cardiophorus syriacus* group

1. First two antennomeres reddish.....2
 - First two antennomeres blackish.....*syriacus* (Linnaeus)
2. Antennae shorter, reaching (male) or not reaching (female) tips of posterior angles of pronotum; pronotal punctures denser, contiguous.....*hinkei* Frivaldszky
 - Antennae longer, exceeding (male) or reaching (female) tips of posterior angles of pronotum; pronotal punctures sparser, not contiguous.....3
3. Body black with red-orange pronotum and propleurae, antennae exceeding tips of posterior angles of pronotum by 1-2 articles (male).....*syriacoides* sp. n.
 - Body generally red-brown with pronotum and propleura of same colour as elytra or only slightly lighter (darker specimens also have darkened pronotum), antennae exceeding tips of posterior angles of pronotum by 2-3 articles (male).....*ordubadensis* Agaev

Besides the characters mentioned in the key, the examination of male and female genitalia are of great value in distinguishing the species.

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