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DYTISCIDAE: IV. The Central Asian and Chinese species of *Deronectes* SHARP

(Coleoptera)

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Abstract

The Central Asian and Chinese species of *Deronectes* SHARP, 1882 (Coleoptera: Dytiscidae) are reviewed. The possible occurrence of some of these species in western China is discussed. *Deronectes abnormicollis* SEMENOW, 1900 is the only species so far recorded from China and is therefore treated more in detail.

Key words: Coleoptera, Dytiscidae, *Deronectes,* China, distribution.

Introduction

The genus *Deronectes* SHARP, 1882 is distributed widely in the western and central Palearctic extending east to Pakistan, and the extreme west of China. At present the genus contains 55 species, four of which are divided into two subspecies. FERY & HOSSEINIE (1998: 270) described three main centres of distribution. These are given in modified form below, together with the number of species in each as follows:

1. Iberian Peninsula (including the Balearics and the French Pyrenees) with 16 species, ten of them endemic.
2. A region including Turkey, Syria, northern Iraq, Caucasia, and northwestern, southwestern and southeastern Iran with 23 species, 22 of them endemic.
3. A region including northeastern Iran, southwestern Turkmenistan, eastern Uzbekistan, southeastern Kazakhstan, Tajikistan, Kyrgyzstan, Afghanistan, adjacent regions of Siberia, Pakistan, and western China with eight species, all endemic.

Deronectes elburs FERY, KÖKSAL ERMAN & HOSSEINIE (2001: 346), has been found in central northern Iran (Elburs mountain range, near Tehran), a region which until now has been seen as transitional between the two Asian centers of distribution.

The single species which has been recorded from China is *Deronectes abnormicollis* SEMENOW, 1900 (FERY & BRANCUCCI 1997: 220). Nevertheless, it seems likely that further species will be found at least in the mountain ranges of western China. This region still must be denoted as weakly explored entomologically although several specialists have collected there in the past. If in the future, further species are found there they are expected to belong either to the *D. parvicollis*-subgroup or to the *D. afghanicus*-subgroup, both falling within the *D. parvicollis*-group. Of the first subgroup *Deronectes vestitus* (GEBLER, 1848) - known from Russia (southwestern Siberia), Kazakhstan, Uzbekistan and Tajikistan - is a likely candidate as a possible Chinese species. Of the *D. afghanicus*-subgroup the following species should be taken

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into consideration: *Deronectes afghanicus* WEWALKA, 1970 from northeastern Afghanistan and northern Pakistan, and *Deronectes bameuli* FERY & HOSSEINIE, 1998 from northern Pakistan.

The figures in the present work originate from FERY & HOSSEINIE (1998). The key to the species subgroups and the descriptions of the species also originate from this work, but they are adapted to the problems under consideration and shortened in part. For detailed keys and descriptions the reader is referred to FERY & HOSSEINIE (1998).

Material and acronyms

During the course of the recent studies of *Deronectes* (see above) roughly 10,000 specimens have been examined, most of them, however, originating from the western Palearctic, which has been much more thoroughly investigated entomologically than Central Asia.

CHF coll. Dr. H. Fery, Berlin, Germany, property of the NMW
CPM coll. Dr. P. Mazzoldi, Brescia, Italy
NMW Naturhistorisches Museum Wien

MW maximum width
TL total length

Key to the eastern Palearctic species subgroups of the *Deronectes parvicollis*-group

- TL: 4.60 - 5.90 mm. Metacoxal lines carinate, with an elevation in anterior half in males, or at least sharply falling down inside these lines (Figs. 121, 122 in FERY & HOSSEINIE 1998: 279). Last abdominal segment usually with larger and not sharply delimited notch. Habitus oblong oval, not depressed, with elytra rounded laterally. Pronotum less cordiform ..... ***parvicollis*-subgroup**
- TL: 3.50 - 4.60 mm. Metacoxal lines simple, grooves only (Fig. 124 in FERY & HOSSEINIE 1998: 279). Last abdominal segment with small, but sharply delimited notch. Habitus more parallel-sided, slightly to strongly depressed. Pronotum weakly to strongly cordiform ..... ***afghanicus*-subgroup**

Deronectes parvicollis-subgroup

The *Deronectes parvicollis*-subgroup contains five species: *D. abnormicollis* SEMENOW, 1900, *D. palaestinensis* FERY & HOSSEINIE (1999: 271), *D. parvicollis* (SCHAUM, 1864), *D. persicus* PESCHET, 1914, and *D. vestitus* (GEBLER, 1848). *Deronectes abnormicollis* has been recorded from China by FERY & BRANCUCCI (1997: 220). The known area of distribution of *D. vestitus* borders western China, thus it appears possible that this species also may live in China. The distributional areas of the other members of the *D. parvicollis*-subgroup are situated far to the west of China.

Deronectes abnormicollis SEMENOW, 1900

Deronectes abnormicollis SEMENOW 1900: 682. - ZIMMERMANN 1932: 109. - ZAITZEV 1953: 191. - FERY & BRANCUCCI 1997: 220. - FERY & HOSSEINIE 1998: 230.
Deronectes microthorax SEMENOW 1900: 683.

About 100 specimens of *D. abnormicollis* have been studied by FERY & HOSSEINIE (1998: 230), most of these from Afghanistan, Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan, and in addition three ♀♀ (CPM, CHF) from China, labelled as follows: "China occ., 26.-31.7., Boro Horo Shan 1991, Jining, Ining-H-Sein, 44°06' SS [= N], 81°56' VD [= E], Lgt. Snízek".

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Diagnosis: Habitus oblong oval (Figs. 1, 2), surface brown to dark brown. Elytra not depressed between inner puncture lines. Shoulders very distinct due to exceptionally narrow pronotum. Pronotum strongly vaulted, border perceptible, but very small. Elytra with distinct and relatively dense, coarser punctures, in females somewhat less coarse and dense than in males.

Metacoxal lines parallel or slightly converging forwards, slightly divergent before posterior margin of metaventrite. Colour of femora and tibiae dark brown, trochanter, tarsi and knees slightly paler.

♂♂: Median lobe of aedeagus as in Fig. 8, paramere as in Fig. 11. Median articles of antennae flat, transversely broadened (Fig. 6). Posterior angle of pronotum rectangular to obtuse (90° - 110°). Apex of elytra less acute than in females, and posterior margin less sinuate. Interior of metacoxal lines abruptly falling to level of flat area between them (Figs. 121, 122 in FERY & HOSSEINIE 1998: 279); in anterior half of lines this step more prominent. Protarsal claws a little longer than those of females, but simple.

♀♀: Most females with pronotum distinctly narrower than in males (Fig. 1); posterior angle more acute than in males (70° - 90°); gonocoxosternum as in Fig. 14. Metacoxal lines similar to those of males, but with step less elevated, nevertheless step more distinct in anterior half than over rest of lines. Apex of elytra very acute (Figs. 143 - 145 in FERY & HOSSEINIE 1998: 283), strongly elevated before tip, depressed right and left of this elevation, resulting in margin looking wave-like and twisted; in addition margin often developed to a flat shining carina near tip. Last abdominal segment with very large and strongly incised notch (Fig. 128 in FERY & HOSSEINIE 1998: 280). Protibiae slightly smaller than in males. Median articles of antennae simple.

Measurements: TL 5.00 - 5.70 mm, MW 2.40 - 2.90 mm; in the three Chinese females the TL is 5.10 - 5.30 mm and the MW is 2.55 - 2.70 mm.

Deronectes vestitus (GEBLER, 1848)

Hydroporus vestitus GEBLER 1848: 76. - SHARP 1882: 814.
Deronectes vestitus (GEBLER); ZIMMERMANN 1932: 107. - ZAITZEV 1953: 191. - FERY & WEWALKA 1992: 22 (designation of lectotype). - FERY & HOSSEINIE 1998: 234.
Deronectes persicus PESCHET; WEWALKA 1989: 98 (misidentification).

In addition to the lectotype and the single paralectotype from southwestern Siberia (Loktewsk, near the border to Kazakhstan, ca. 200 km NE Semipalatinsk) eleven additional specimens from Kazakhstan, Tajikistan, and Uzbekistan have been studied by FERY & HOSSEINIE (1998: 234).

The habitus of this species (Fig. 3) approximates that of males of *D. abnormicollis* on an initial glance. The sides of the elytra, however, are less rounded and these as well as the pronotum are less vaulted than in *D. abnormicollis*. The sides of the pronotum are straight or very weakly concave before the posterior angles, resulting in obtuse angles (105° - 115°).

♂♂: Median lobe of aedeagus (Fig. 9) with tip often slightly enlarged in lateral view (Fig. 9a); paramere as in Fig. 12. Protarsal claws slightly elongate.

♀♀: Apex of elytra resembles that of *D. abnormicollis*, but structural modifications less prominent. Gonocoxosternum pointed, in some specimens stronger than shown in Fig. 15.

Measurements: TL 4.60 - 5.35 mm, MW 2.30 - 2.55 mm.

Deronectes afghanicus-subgroup

The *Deronectes afghanicus*-subgroup contains eight species: *D. afghanicus* WEWALKA, 1970, *D. bameuli* FERY & HOSSEINIE, 1998, *D. biltoni* FERY & HOSSEINIE, 1998, *D. elburs* FERY, KÖKSAL

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ERMAN & HOSSEINIE, 2001, *D. danielssoni* FERY & HOSSEINIE, 1998, *D. nilssoni* FERY & WEWALKA, 1992, *D. roberti* FERY & HOSSEINIE, 1998, and *D. youngi* FERY & HOSSEINIE, 1998. The areas of distribution of *D. afghanicus* and *D. bameuli* border western China. Thus it appears not impossible that these species may be found in China. The other members of the *D. afghanicus*-subgroup are distributed in central and western Afghanistan and in Iran, and therefore are less likely to occur in China. All species of this subgroup are distinctly smaller than those of the *D. parvicollis*-subgroup and therefore are unlikely to be confused with them.

Deronectes afghanicus WEWALKA, 1970

Deronectes afghanicus WEWALKA 1970: 139. - WEWALKA 1989: 98. - FERY & HOSSEINIE 1998: 239.

In addition to the holotype and one paratype, 18 specimens from the type locality in northeastern Afghanistan (Nuristan, Bashgul Valley, ca. 150 km ENE Kabul) and six specimens from northern Pakistan (Dir in Dir province, ca. 200 km NNE Peshawar, and Mongora in Swat province) have been studied by FERY & HOSSEINIE (1998: 239).

Diagnosis: Habitus elongate (Fig. 4), sides of elytra weakly rounded. Surface dark brown to black. Pronotum posteriorly with many distinct and coarse punctures, slightly obsolete in middle; areas between middle and sides distinctly depressed in most specimens and with very coarse and dense punctures. Border of pronotum narrow and perceptible in anterior half only. Posterior angles rectangular to slightly obtuse (90° - 100°). Secondary punctation of elytra very distinct, but not dense.

Metacoxal lines parallel, not diverging forwards. Last abdominal segment with sharply delimited notch (Figs. 131, 132 in FERY & HOSSEINIE 1998: 281). Antennae light reddish brown, articles not or only slightly darkened distally.

♂♂: Median lobe of aedeagus as in Fig. 10, paramere as in Fig. 13. Protarsal claws simple. Protibia distinctly curved and conspicuously broadened distally (Fig. 7).

♀♀: Protibia broadened and curved distally, but less so than in males; gonocoxosternum as in Fig. 16.

Measurements: TL 4.20 - 4.60 mm, MW 1.90 - 2.10 mm.

Deronectes bameuli FERY & HOSSEINIE, 1998

Deronectes bameuli FERY & HOSSEINIE 1998: 243.
Deronectes vestitus (GEBLER); GUIGNOT 1958: 28 (partim). - VAZIRANI 1970: 119 (partim) (misidentification).
Deronectes longipes SHARP; FERY & WEWALKA 1992: 22 (misidentification).

The holotype of this species is a female, which has been found in northern Pakistan, Dir province, Valley of Yarkhun river, ca. 200 km NNE Peshawar, at an altitude of 4101 m. This was the single specimen studied by FERY & HOSSEINIE (1998: 243) and no additional specimens have been found since the description.

Diagnosis: Size smaller than in *D. afghanicus*, habitus elongate and flat (Fig. 5), sides of elytra slightly rounded and therefore not appearing very parallel. Surface brown, pronotum slightly paler. Pronotum posteriorly with punctures beside middle larger, and surface here somewhat depressed, but less so than in *D. afghanicus*. Sides of pronotum with a distinct border, which nevertheless disappears before posterior angles. Posterior angles of pronotum rectangular, due to a slight sinuation directly before base.

Metacoxal lines parallel, close, not diverging forwards. Last abdominal segment with sharply delimited notch. Antennae scarcely darkened distally.

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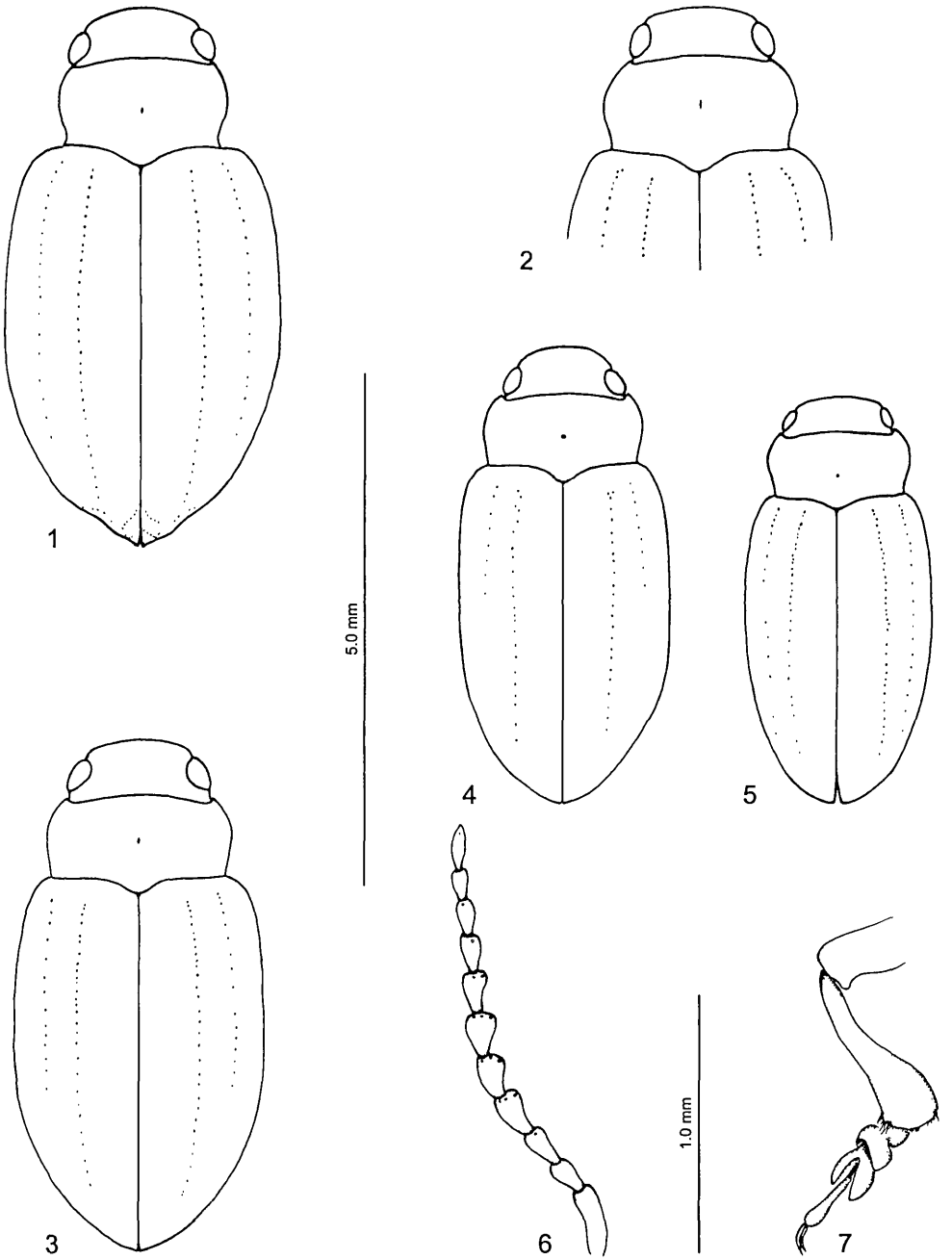

Figs. 1 - 5: Habitus of 1) *Deronectes abnormicollis* (♀), 2) same (♂), 3) *D. vestitus*, 4) *D. afghanicus*, 5) *D. bameuli*.
Fig. 6: Antenna of *Deronectes abnormicollis* (♂).
Fig. 7: Anterior leg of *Deronectes afghanicus*.

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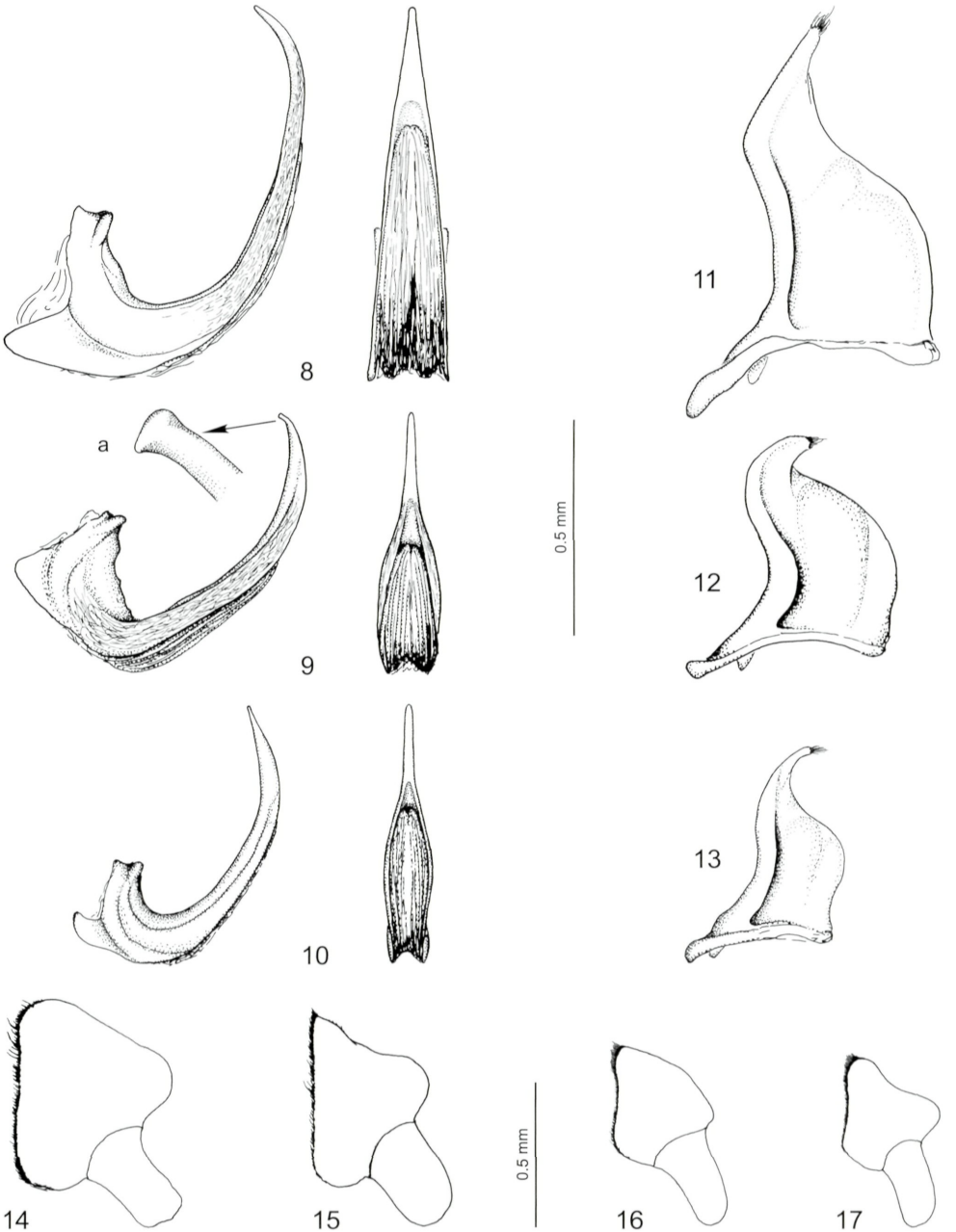

Figs. 8 - 10: Median lobe of aedeagus in dorsal and lateral view of 8) *Deronectes abnormicollis*, 9) *D. vestitus*, 9a) same, tip enlarged, 10) *D. afghanicus*.
Figs. 11 - 13: Paramere of 11) *Deronectes abnormicollis*, 12) *D. vestitus*, 13) *D. afghanicus*.
Figs. 14 - 17: Gonocoxosternum of 14) *Deronectes abnormicollis*, 15) *D. vestitus*, 16) *D. afghanicus*, 17) *D. bameuli*.

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Gonocoxosternum (Fig. 17) with inner side (= side without bristles) strongly sinuate. Males are unknown. In FERY & HOSSEINIE (1998: 244) "86" was given erroneously as the number of the figure of the gonocoxosternum, which is, however, presented in Fig. 92 of that work.

Measurements: TL 4.00 mm, MW 1.80 mm.

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