

Updating the eastern Mediterranean *Deronectes* (Coleoptera: Dytiscidae) with the description of two new species from Turkey

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Abstract. *Deronectes adanensis* sp. nov. and *D. ermani* sp. nov., both from Adana province, Turkey, are described and illustrated. The former belongs to the *D. longipes* subgroup of the *D. parvicollis* species group and can be recognised by its testaceous colouration and by the median lobe of aedeagus in lateral view with the apical part almost evenly curved. *Deronectes ermani* sp. nov. possesses the following unique character combination: oblong habitus, pronotum widest in midlength with longitudinal impressions parallel to each side, prosternal apophysis with carina absent or only indistinctly indicated in part, last abdominal ventrite with a distinct notch, and median lobe with very sharply pointed apex. The species cannot be placed in any of the known species groups, and thus the new *D. ermani* species group is introduced. An updated key to the species groups is presented. In addition, new records of *Deronectes* Sharp, 1882 from Turkey and Iran are presented. *Deronectes doriae* Sharp, 1882 is recorded from Iran for the first time. The type locality of *D. biltoni* Fery & Hosseinie, 1999 is corrected to Ziarat-Khaseh Rud in Golestan province, Iran.

Key words. Dytiscidae, Hydroporinae, *Deronectes*, new species, new records, Iran, Turkey, Palaearctic Region

Introduction

The chiefly Western Palaearctic genus *Deronectes* Sharp, 1882 so far contained 55 species, four of which are polytypical. The members of the genus occur predominantly in mountainous areas from Morocco in the west, over large parts of Europe and central Asia, to

Xinjiang in western China. All species usually inhabit running water and only exceptionally are found in ponds. Although several species appear to be fully winged, the beetles most probably cannot fly. Reduced flight muscles have been found at least in *Deronectes latus* (Stephens, 1829) and *D. platynotus* (Germar, 1834) (KEHL & DETTNER 2007). All species are poor swimmers and usually only crawl on the bottom of water and between the gravel, or they are passively flushed when disturbed. Due to their limited possibilities of spreading, many species have only small area of distribution, sometimes confined to a single mountain range. There are two main *Deronectes* centres of endemism: Iberian Peninsula and Asia Minor + Iran. The genus was recently revised by FERY & BRANCUCCI (1997) and FERY & HOSSEINIE (1998). Additional information, descriptions of two new species, and several new records were subsequently published by FERY & HOSSEINIE (1999), FERY et al. (2001) and FERY (2003).

The extensive study of running water habitats in Turkey in the last years produced discoveries of several new Dytiscidae, not only from *Deronectes*, but predominantly from the genus *Hydroporus* Clairville, 1806 (see, e.g., FERY 2009, FERY & ERMAN 2009, HÁJEK & FIKÁČEK 2010). All these *Hydroporus* and *Deronectes* are most probably highly endemic mountainous species and inhabit almost exclusively small springs, streams, and rivers. In this work, we present results of study of recently collected *Deronectes* material from Turkey which revealed another two so far unknown species. We describe them below along with new distributional data from Turkey and Iran for other species of the genus. The number of the known species of the genus *Deronectes* increases to 57.

Material and methods

The material studied was examined with an Olympus SZX12 stereoscopic microscope. Photographs of specimens were taken with a Canon EOS 550D digital camera with a Canon MP-E 65 mm objective. Images of the same specimen at different focal planes were combined using the Helicon Focus 5.1.19 software. The genitalia were studied in wet condition. Exact label data are cited and given in quotation marks for all the material. Authors' additional remarks are found in square brackets. The following abbreviations were used in the descriptions: TL – total length (a single measurement of length from front of head to apex of elytra); TL-h – total length minus head length (length of body from anterior margin of pronotum to apex of elytra); MW – maximum width of body measured at right angles to TL.

The specimens included in this study are deposited in the following institutional and private collections:

- CHF Hans Fery collection, Berlin, Germany (property of NHMW);
- CJS Jaroslav Šťastný collection, Liberec, Czech Republic;
- CKE Ö. Koksal Erman collection, Erzurum, Turkey;
- CMB Milan Boukal collection, Pardubice, Czech Republic;
- ZMHB Museum für Naturkunde, Berlin, Germany (Johannes Frisch);
- NHMW Naturhistorisches Museum Wien, Vienna, Austria (Manfred A. Jäch);
- NMPC Národní muzeum, Prague, Czech Republic (Jiří Hájek);
- ZSMC Zoologische Staatssammlung, Munich, Germany (Michael Balke).

Systematics

Deronectes adanensis sp. nov.

(Figs. 1, 3–5)

Type locality. Turkey, Adana province, near Boztahta village, ca. 37°23'N, 35°15'E, 460 m a.s.l.

Type material. HOLOTYPE, ♂ (NMPC): 'TURKEY 13.-14.VI.2003, Adana vil. [= prov.] (ca. 45 km N), BOZTAHTA env. (stream), (37°23'N, 35°15'E; 460 m), Jiří Hájek & Josef Hotový leg.' [printed], 'HOLOTYPE, DERONECTES adanensis sp. nov., J. Hájek et al. det. 2011' [red label, printed]. PARATYPES: 10 ♂♂ 8 ♀♀, same label data as the holotype (CHF, NHMW, NMPC, ZSMC); 10 ♂♂ 10 ♀♀, and 151 unsexed specimens, 'Turkey, Adana prov., 36°56.430'N 35°39.638'E, Yakapinar, Kizildere env., stepní rokle s potůčkem [= steppe gorge with streamlet], 90 m a.s.l., 30.III.2010, M. Boukal leg.' [printed] (CHF, CJS, CKE, CMB, NHMW, NMPC, ZSMC); 7 ♂♂ 7 ♀♀, and 57 unsexed specimens, same label data, but '6.IV.2010' (CHF, CJS, CMB, NHMW, NMPC, ZSMC). Each paratype is provided with the respective red printed label.

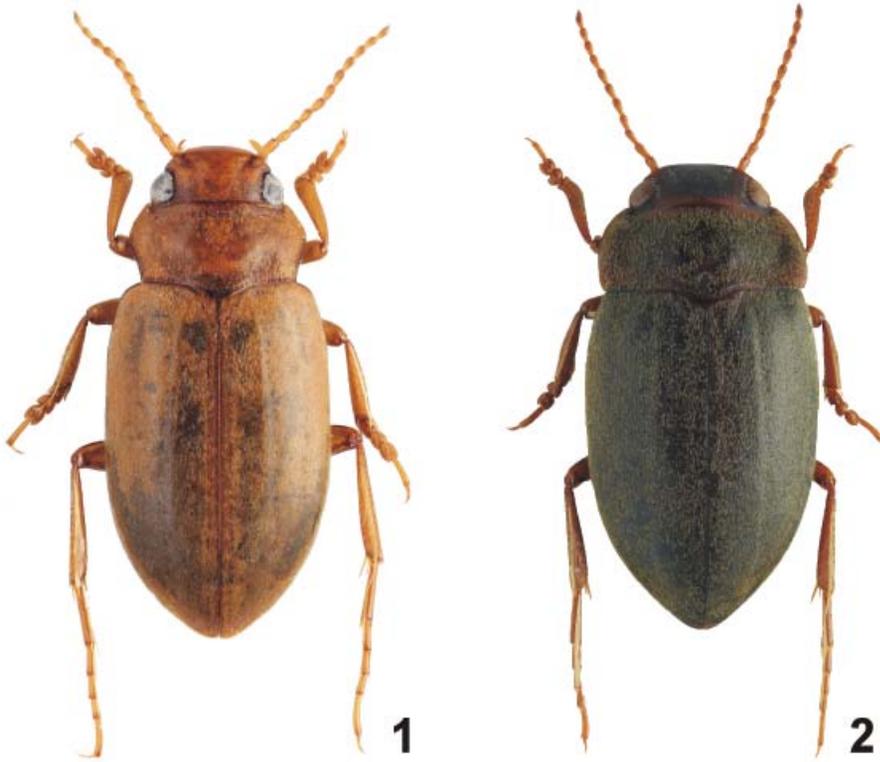
Description. Body elongate, appearing almost parallel-sided, rather flat in lateral view, broadest near midlength of elytra. Clypeus anteriorly slightly emarginate. Pronotum broadest in anterior third; sides slightly concavely sinuate before base (pronotum cordiform), posterior angles obtuse. Sides of pronotum without distinct longitudinal impression parallel to lateral margins. Base of elytra much broader than pronotal base; sides of elytra widely rounded (Fig. 1). In perpendicular view on dorsal surface, lateral margin of elytra only visible near shoulders.

Measurements. TL: 3.9–4.4 mm (holotype 4.2 mm), TL-h: 3.5–3.9 mm (holotype 3.8 mm), MW: 1.8–2.0 mm (holotype 1.9 mm).

Colouration. Dorsal surface, head appendages, and legs more or less uniformly testaceous; lateral bead of pronotum brownish, antennomeres indistinctly darkened apically. Ventral surface brownish black; head, lateral parts of prosternum, prosternal apophysis, and elytral epipleura testaceous.

Surface sculpture. Beetle submatt. Head microreticulated, reticulation composed of moderately deeply impressed irregular polygonal meshes. Punctuation double, small punctures with diameter smaller than that of meshes, irregularly dispersed by coarser, deeply impressed punctures with diameter about two times that of meshes. Distance between smaller punctures much bigger than their diameter, that of coarser puncture even much bigger. Head dorsally with row of very coarse setigerous punctures along inner margin of eyes and in two clypeal grooves. Foremargin of clypeus not bordered. Head at level of hind margin of eyes with indistinct depression. Antenna with antennomeres club-shaped, in cross section more or less elliptical.

Pronotum with slender, but distinct lateral beading; beading shiny, posteriorly elevated, at anterior angles obsolete. Microreticulation similar to that of head, but less impressed and thus in part badly perceptible, in particular near base. Punctuation simple, punctures similar to smaller ones on head, sparser on disc, becoming denser laterally; pronotum with band of coarse punctures along anterior margin, some indistinct coarse punctures along lateral and posterior margins; sublaterally before posterior margin with very rough wrinkles. Centre of pronotum with very coarse puncture. Pronotum with very indistinct, irregular depressions on disc and transverse depression before posterior margin. Surface covered with sparse yellowish setae.

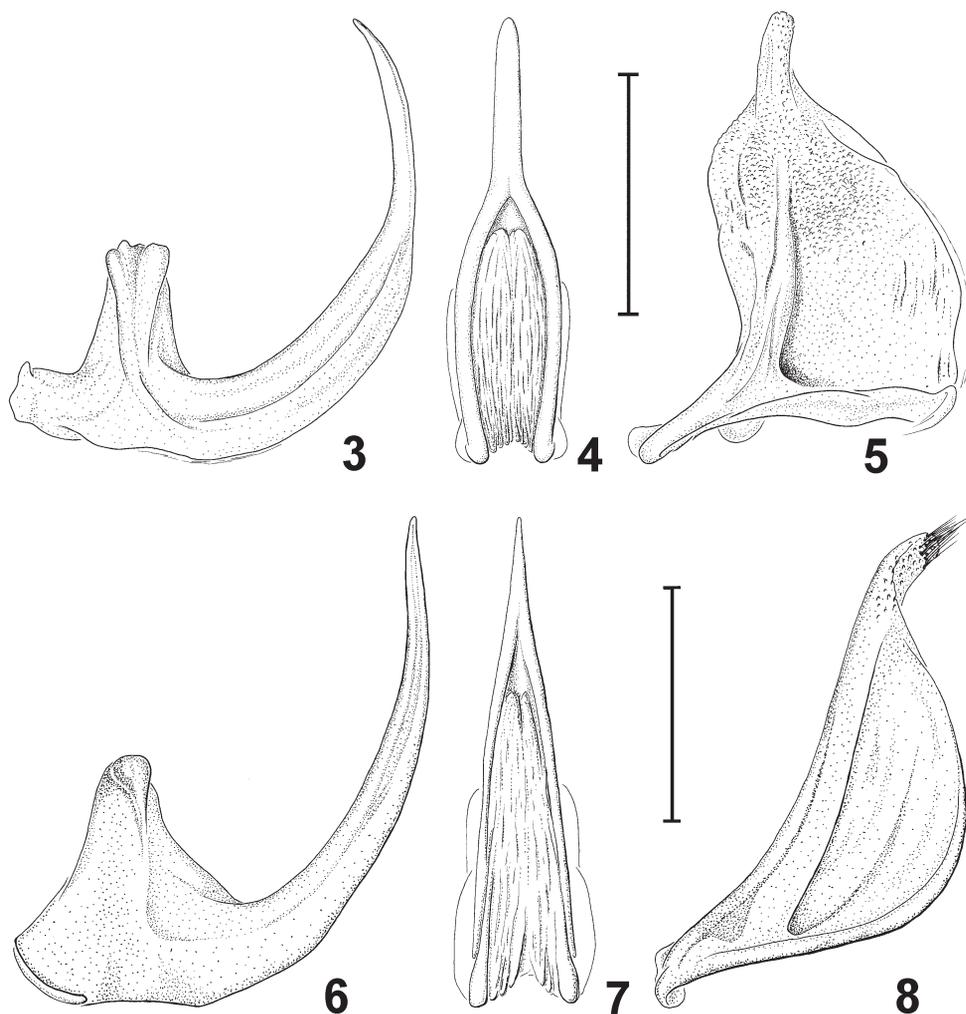


Figs. 1–2. Habitus, dorsal view. 1 – *Deronectes adanensis* sp. nov. (paratype); 2 – *D. ermani* sp. nov. (paratype).

Microreticulation of elytra practically imperceptible because small punctures very dense; distance between punctures approximately same as their diameter. Coarser punctures weaker impressed than on head and pronotum, only present in four indistinct longitudinal rows on each elytron, one near suture, two on disc, and one near lateral margin. Setation of elytra similar to that on pronotum.

Legs simple, slender. Tibiae almost straight. Protarsal claws slender, only weakly curved.

Ventral surface. Most parts of venter covered with dense small punctures, thus, surface appearing very matt. Punctures especially dense on abdominal ventrites IV–VI, and thus surface roughly sculptured. Only on centre of metaventrite and on posterior margins of abdominal ventrites II–IV punctures less dense; here weak reticulation perceptible and surface more shiny. Epipleura sculptured as metacoxal plates. Setation on venter sparse, similar to that on upper surface. Prosternal apophysis lanceolate, without distinct keel, but at least in posterior half with longitudinal swelling along midline, sides flattened and provided with setae. Metacoxal lines distinct, slightly convergent anteriorly. Apex of last abdominal ventrite with distinct notch.



Figs. 3–8. Male genitalia of *Deronectes* species. 3–5 – *D. adanensis* sp. nov.; 6–8 – *D. ermani* sp. nov. 3, 6 – median lobe in lateral view; 4, 7 – median lobe in ventral view; 5, 8 – left paramere in external view. Scale bar = 0.3 mm.

Male. Protarsomeres and mesotarsomeres 1–3 broadened, protarsal claws indistinctly thickened. Median lobe of aedeagus broader in basal half and slender in apical half; in lateral view median lobe almost evenly curved from base to pointed apex (Fig. 3); in ventral view attenuated near midlength, apical part slender, almost parallel-sided, apex broadly pointed (Fig. 4). Lateral lobe (paramere) as in Fig. 5.

Female. Similar to male in habitus. Pro- and mesotarsomeres less broadened, protarsal claws slightly thinner and a little more curved than in male.

Variability. Testaceous colour of dorsal surface somewhat darkened in some specimens. Depressions on pronotal disc absent in some specimens; centre of pronotum either with slight scratch or very coarse puncture. Depression before posterior margin of pronotum variable in size and shape, in some specimens almost along entire posterior margin (except sides), in others more or less only as two indistinct depressions sublaterally.

Differential diagnosis. Based on the cordiform pronotum and the lack of distinct longitudinal impression parallel to its sides, the new species belongs to the *Deronectes parvicollis* species group. Inside that group, the simple metacoxal lines in males and not sharply delimited notch on the last abdominal ventrite classify *D. adanensis* sp. nov. to the *D. longipes* subgroup. The new species is externally very similar to *Deronectes evelynae* Fery & Hosseinie, 1998, which has been described from Diyarbakır province in south-eastern Turkey (see also under that species below). In particular, both species have the upper surface rather lightly brownish coloured. However, a safe separation of at least the males is possible by studying the shape of the median lobe. Additionally, the punctuation of the upper surface is much less dense in *D. evelynae*.

Etymology. The new species is named after the Adana province where both known localities are situated. The specific epithet is an adjective.

Collection circumstances. At the type locality, *D. adanensis* sp. nov. was collected together with *Deronectes angulipennis* (Peyron, 1858) and *D. ermani* sp. nov. in a single stream, ca. 2–3 m wide, with rocky bottom and a few sandy deposits. In Kızıldere, the new species was collected together with *D. angulipennis*; the beetles were buried in the sand of the ground, predominantly in the still water parts of a drying up streamlet (Figs. 9–10).

Distribution. So far known only from two localities in Adana province, southern Turkey.

Deronectes ermani sp. nov.

(Figs. 2, 6–8)

Type locality. Turkey, Adana province, near Boztahta village, ca. 37°23'N, 35°15'E, 460 m a.s.l.

Type material. HOLOTYPE, ♂ (NMPC): 'TURKEY 13.-14.VI.2003, Adana vil. [= prov.] (ca. 45 km N), BOZTAHTA env. (stream), (37°23'N, 35°15'E; 460 m), Jiří Hájek & Josef Hotový leg.' [printed], 'HOLOTYPE, DERONECTES ermani sp. nov., J. Hájek et al. det. 2011' [red label, printed]. PARATYPES: 15 ♂♂ 13 ♀♀ and 31 unsexed specimens, same label data, as the holotype (CHF, CJS, CMB, NHMW, NMPC, ZSMC). Each paratype is provided with the respective red printed label.

Description. Body oblong-oval, rather flat in lateral view, broadest near midlength of elytra. Clypeus anteriorly emarginate. Pronotum broadest near midlength; sides rounded, however, less so in posterior half; posterior angles obtuse, shortly rounded.

Sides of pronotum with distinct longitudinal impression parallel to lateral margins and bulged between these impressions and lateral margins. Base of elytra of same width as pronotal base, in dorsal view discontinuity in outline between pronotum and elytra distinct. Sides of elytra more or less evenly rounded (Fig. 2).

Measurements. TL: 3.9–4.4 mm (holotype 4.1 mm), TL-h: 3.6–4.0 mm (holotype 3.9 mm), MW: 2.0–2.2 mm (holotype 2.1 mm).

Colouration. Dorsal surface brownish black; head ferruginous on clypeus, along eyes, and on vertex; pronotum ferruginous along margins; elytra indistinctly ferruginous along suture. Appendages and legs predominantly ferruginous; antennomeres very indistinctly darkened

apically beginning with antennomere IV, apical antennomere more distinctly darkened in apical half; femora medially darkened. Venter dark brownish black; prosternum including its apophysis, elytral epipleuron, intralinear space between metacoxal lines, posterior margin of abdominal ventrites III–V and apex of last abdominal ventrite ferruginous.

Surface sculpture. Beetle matt. Head microreticulated; reticulation composed of weakly impressed transverse meshes near anterior margin of clypeus, but strongly impressed irregularly shaped oval meshes on rest of surface. Punctuation simple, composed of deeply impressed small punctures spread densely on surface, diameter of punctures becoming larger towards frons; distance between them larger than their diameter on clypeus, smaller than their diameter on frons; here surface rather roughly sculptured. Foremargin of clypeus not bordered. Antenna with antennomeres club-shaped, in cross section more or less elliptical. Pronotum with narrow lateral beading, near posterior angles becoming obsolete. Microreticulation of pronotum consisting of small weakly impressed and thus badly perceptible polygonal meshes. Punctuation rather dense, on disc punctures smaller than small ones on head and less impressed; band of coarser punctures behind anterior margin, some coarse punctures also in sublateral depressions, before posterior margin and a very few also on disc. Surface covered with dense yellowish-greyish setae.

Microreticulation on elytra similar to that on pronotum, but still more imperceptible. Punctuation of elytra double, smaller punctures somewhat smaller than those on pronotum, distances between them approximately same as their diameter; coarser punctures dispersed over entire elytral surface, distance between them much bigger than their diameter, equalling two to three times the distance between smaller punctures. Coarse punctures form also an almost imperceptible longitudinal row on disc; here elytra weakly longitudinally impressed. Entire elytral surface covered with yellowish-greyish setae as in pronotum.

Legs simple, slender. Tibiae almost straight.

Ventral part. Entire venter covered with dense punctures of more or less equal size, somewhat larger than small punctures on elytra; surface rather roughly sculptured in large part and thus appearing matt. However, ground of punctures and narrow areas between punctures shiny. Microreticulation absent. Epipleura sculptured like rest of venter. Setae on venter short and very sparse.

Prosternal apophysis lanceolate, flat in large parts, longitudinal swelling or carina only indistinctly indicated in apical half; strong transverse wrinkles present on entire surface, sides with strong setae. Metacoxal lines slightly divergent anteriorly, disappearing short before posterior margin of metaventrite. Apex of last abdominal ventrite with distinct notch.

Male. Protarsomeres and mesotarsomeres 1–3 broadened. Protarsal claws slightly thickened, only weakly curved. Median lobe of aedeagus in lateral view evenly curved, apical fifth almost straight (Fig. 6); in ventral view, near base broad and only slightly converging, then more attenuating to apical fifth, then very slender, apex pointed (Fig. 7). Lateral lobe (paramere) as in Fig. 8.

Female. Similar to male in habitus. Pro- and mesotarsomeres less broadened, protarsal claws thinner and slightly shorter than in males.

Variability. Intensity of ferruginous parts varies among specimens, colour more extensive basally on head, pronotum, and on base and along suture of elytra; especially in not fully mature specimens. Longitudinal impressions on sides of pronotum slightly more impressed in several specimens. Curvature of sides of pronotum in some specimens stronger. Setation

on pronotum and elytra sparser dorsally in several specimens, possibly rubbed off. Longitudinal swelling on prosternal apophysis in some specimens more distinct and appears like more or less complete carina over entire length, but never sharp keel or distinctly elevated carina as in other species.

Differential diagnosis. Externally the new species reminds of a small *Deronectes moestus inconspicuosus* (Leprieur, 1876) of the *D. moestus* group at first glance, but it is also similar to *Deronectes hakkariensis* Wewalka, 1989 of the *D. platynotus* group. However, it can be easily separated from both of them by the shape of the prosternal apophysis: roof-like in *D. moestus*, provided with a strong longitudinal carina in *D. hakkariensis*, but almost totally flat in the new species. We have been tempted to group it together with the members of the *D. platynotus* group, but these lack the notch at the apex of the last abdominal ventrite and, additionally, have more stocky habitus. The shape of the prosternal apophysis does not allow to group *D. ermani* sp. nov. with members of the *D. moestus*, *D. fairmairei*, and *D. theryi* groups. Instead of changing the definitions of well-known species groups and putting the new species forcibly together with others, we prefer to create new *D. ermani* group which contains only a single member: *D. ermani* sp. nov. (see the updated key to species below).

Etymology. The new species is dedicated to our colleague Ö. Köksal Erman (Erzurum, Turkey), specialist on Turkish Dytiscidae. The specific epithet is a noun in the genitive case.

Collection circumstances. The new species was collected in several springs and small streams in a small forested area with predominant pines.

Distribution. So far known only from the type locality in Adana province, southern Turkey.

Updated key to the *Deronectes* species groups

Below we present an updated key to the species groups which is based on the key in FERY & BRANCUCCI (1997) and includes the new *D. ermani* species group.

- 1 Species with oval shape in dorsal view; pronotum not cordiform, without longitudinal impression parallel to each side; elytra without carinae; brown colour, sometimes with pale areas. ♂♂: median lobe with complicated structure. ***D. latus*-group**
- Species less oval in dorsal view; pronotum cordiform or not, with or without longitudinal impression parallel to each side; elytra with or without carinae; species uniformly black or brown. ♂♂: median lobe simple. 2
- 2 Habitus short, but parallel, almost stocky, with base of pronotum as wide as or even wider than base of elytra and sides of elytra less rounded. Last visible abdominal ventrite without notch at the posterior margin. 3
- Habitus more oblong, not stocky. Most species with a notch at the posterior margin of the last visible abdominal ventrite; species without distinct notch have a cordiform pronotum. 4
- 3 Elytra behind the shoulders with a distinct notch; habitus flat in lateral view. ***D. aubei*-group**
- Elytra without notch; habitus less flat in lateral view. ***D. platynotus*-group**

- 4 Pronotum not cordiform, largest width behind or in the middle; pronotal base almost as wide as elytra between shoulders. 5
- Pronotum cordiform, greatest width in the middle or before the middle, straight or concavely narrowed to base, which is smaller than elytra between shoulders. 9
- 5 Each elytron with a distinct costa and one or two additional weaker costae.
..... ***D. bicostatus*-group**
- Elytra without distinct costae, at most with longitudinal swellings. 6
- 6 Prosternal apophysis roof-like, without carina and distinct setae. ***D. moestus*-group**
- Prosternal apophysis not roof-like, with distinct setae. 7
- 7 Prosternal apophysis almost flat, without distinct carina, with several irregular transverse wrinkles. ***D. ermani*-group**
- Prosternal apophysis with a sharp carina, sides broadened, flat and sculptured. 8
- 8 Pronotum broadest behind or near the middle; sides of elytra more rounded, habitus not parallel. ♂♂: median lobe dorsally parallel before apex which is sharply truncate.
..... ***D. fairmairei*-group**
- Pronotum broadest in the middle; sides of elytra less rounded, habitus more parallel. ♂♂: median lobe dorsally not parallel before apex. ***D. theryi*-group**
- 9 Pronotum without distinct longitudinal impression parallel to each side; not bulged, at most a little depressed near the sides or weakly bulged near the posterior angles.
..... ***D. parvicollis*-group**
- Pronotum with a longitudinal impression parallel to each side, between impression and side broadly bulged. 10
- 10 Secondary punctures on elytra larger, puncture lines imperceptible. Last abdominal ventrite with a distinct notch. Larger species (4.6–5.8 mm) from the western Mediterranean.
..... ***D. opatrinus*-group**
- Secondary punctures on elytra smaller or almost invisible; puncture lines perceptible. Last abdominal ventrite without distinct notch. Smaller species (3.5–5.3 mm) from Greece, Asia Minor, and Caucasus. ***D. doriae*-group**

New records and notes on other species

Below, we present new records of several species in alphabetic order, and for a few of them information about their biology; in one case we have corrected the type locality. In order to keep these notes short, we give references of special importance only. For a more thorough reference lists, the reader is referred to FERY & BRANCUCCI (1997), FERY & HOSSEINE (1998), and FERY et al. (2001).

Deronectes angulipennis (Peyron, 1858)

Material studied. **TURKEY:** 5 specimens, 'TURKEY 13.-14.VI.2003, Adana vil. [= prov.] (ca. 45 km N), BOZ-TAHTA env. (stream), (37°23'N, 35°15'E; 460 m), Jiří Hájek & Josef Hotový leg.' (NMPC); 3 specimens, 'Turkey, Adana prov. 36°56.430'N 35°39.638'E, Yakapinar Kizildere env., stepní rokle s potůčkem [= steppe gorge with streamlet], 90 m a.s.l., 6.IV.2010, M. Boukal leg.' (CHF, CMB).

Deronectes angulipennis was so far known only from a small area in İçel province, southern Turkey (FERY & HOSSEINIE 1998). Here we provide additional record from Adana province and assume its distribution to be until the foothills of Bolkar Dağları Mts. and Ala Dağlar Mts., the eastern parts of the Taurus mountain range. It was collected together with *D. adanensis* sp. nov. and *D. ermani* sp. nov.

Deronectes biltoni Fery & Hosseinie, 1998

The description of *Deronectes biltoni* was based on a small series of specimens introduced already in GUIGNOT (1958) under the name *Deronectes vestitus* (Gebler, 1848). Specimens were collected in Ziarat, which was interpreted to be the village Ziarat in Khorasan Razvi province, ca. 10 km NW of Shirvan, by FERY & HOSSEINIE (1998: 246). However, GUIGNOT (1958: 28) mentioned that the locality was situated 'près de la mer Caspienne' [= close to the Caspian Sea], but Shirvan is situated about 350 km from the Caspian Sea. GUIGNOT (1958: 28) also referred that specimens were collected by the Swiss entomologist Ferdinand Schmid, a specialist on Trichoptera. SCHMID (1959: Fig. 1) marked the locality Ziarat south of Gorgan (Golestan province), only ca. 35 km from Caspian Sea. In fact, we have found a place called Ziarat-e Khaseh Rud (ca. 36°43'N, 54°29'E), which is situated ca. 14 km SSE from Gorgan. Therefore, we here correct the type locality of *D. biltoni* to Ziarat-e Khaseh Rud in Golestan province. We assume that the distribution of the species is eastern Elburs Mts., instead of western Kopet Dag where it is replaced by *D. nilssoni* Fery & Wewalka, 1992 (see also under that species).

Deronectes doriae Sharp, 1882

Material studied. IRAN: 1 ♀, 'IRAN, Qazvin prov., 12.-13.V.2006, 10 km SW RAJAYI DASHT, (alpine meadow, stream), 36°23,9'N 50°13,1'E; 2170 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC). 2 ♂♂ 1 ♀, 'IRAN, Ardabil prov., 4.-5.VI.2006, 5 km NW KOLUR, Shahrud river valley, 37°26,1'N, 48°41,2'E; 1670 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC).

Deronectes doriae was described from 'Caucasus' without any precise data and subsequently recorded from several localities in Turkey, mostly from its northern part. The present findings extend its distribution easterly to Talesh Mts. and Elburs Mts. It was collected in mountain streams in the alpine area, as well as in a small river (Fig. 11). **First records from Iran.**

Deronectes evelynae Fery & Hosseinie, 1998

Material studied. TURKEY: 23 specimens, '20.4.2000 (TR) Adiyaman, 7 km NW Besni [ca. 37°45'N 37°51'E], ca. 40 km W Adiyaman, brook, Fery leg.' (CHF). 31 specimens, '20.4.2000 (TR) Gazi Antep, Yeşilce [ca. 37°10'N 37°12'E], ca. 20 km W Antep, water basin, Fery leg.' (CHF).

These two localities are distinctly more south-west than the type locality of the species and more or less in the middle between the type localities of *D. evelynae* and *D. adanensis* sp. nov.

Deronectes hakkariensis Wewalka, 1989

Material studied. TURKEY: 1 ♂, 'TURKEY 29.VI.-2.VII.2003, Bitlis vil. [= prov.] (ca. 20 km NE), TATVAN env. (stream), (38°28'N, 42°19'E; 1800 m), Jiří Hájek & Josef Hotový leg.' (NMPC).



Figs. 9–10. Kızıldere (Turkey). 9 – general view of the locality; 10 – habitat of *Deronectes adanensis* sp. nov. Photos M. Boukal.



Figs. 11–12. Habitats of *Deronectes* species in Iran. 11 – habitat of *Deronectes doriae* at the locality Kolor; 12 – habitat of *Deronectes nilssoni* at the locality Eshq Abad. Photos P. Chvojka.

Deronectes hakkariensis was described based on a single specimen from Uludere Pass in Hakkari province and subsequently recorded from several localities in Erzurum provinces (FERY et al. 2001, ERMAN et al. 2007). The additional record from Bitlis province indicates that the species is widely distributed in eastern part of Turkey. It was collected in a small stream, ca. 2 m wide, with gravel bottom.

Deronectes nilssoni Fery & Wewalka, 1992

Material studied. IRAN: 1 ♀, 'IRAN KOPPE DAG [= Kopet Dag Mts.], prov. Khorasan [Razni] 2200 m, Emamqoli [ca. 37°25'N, 58°31'E] env. Cheveli, lgt. Orszulik 22.5.2003' (NMPC). 8 specimens, 'IRAN, 21.-22.V.2006, Khorasan Razni prov., 5 km W AMIR ABAD, (river valley, garden; at light), 36°35,1'N, 60°00,9'E; 1030 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC). 52 specimens, 'IRAN, 23.-24.V.2006, Khorasan Razni prov., 2 km S DOR BADAM, (steppe, stream valley; at light), 37°28,7'N, 58°28,7'E; 1575 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC). 1 ♂, 'IRAN, 24.V.2006, Khorasan Razni prov., LOWJALLI env. (stream), 37°37,1'N 57°51,2'E; 1510 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC). 24 specimens, 'IRAN, 25.-26.V.2006, Khorasan Shamali prov., 15 km N ESHQ ABAD, (river valley; at light), 37°48,2'N 56°55,5'E; 800 m, Jiří Hájek & Pavel Chvojka leg.' (NMPC); 3 specimens, 'Iran, Razavi Khorassan Prov., Sa Jahan Mts: Mareshk, 1800 m (Koppe Dag), N 36°47'51" E 059°32'48"', 26.5.2006, lg. Frisch & Serri' (MNB, CHF).

Deronectes nilssoni was described from south-western Turkmenistan and subsequently recorded also from the most north-eastern Iran. The present findings extend its distribution to most parts of Kopet Dag mountain range. In fact, it represents so far the only known species of *Deronectes* occurring in Kopet Dag Mts. (compare the notes under *D. biltoni*). *Deronectes nilssoni* inhabits various types of running water, like springs, small streams, and rivers (Fig. 12).

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