

A taxonomic revision of *Deronectes* SHARP, 1882 (Insecta: Coleoptera: Dytiscidae) (part II)

H. Fery* & Sh. Hosseinie**

Abstract

The second part of the revision of *Deronectes* SHARP, 1882, provides synonymy, a key for determination, and descriptions and distributional data for the species of the *D. parvicollis*-group. This group is divided into the *D. parvicollis*-, *D. afghanicus*-, *D. longipes*- and *D. jaechi*-subgroups. Fourteen species are described as new: *Deronectes balkei* sp.n., *Deronectes biltoni* sp.n., *Deronectes brancuccii* sp.n., *Deronectes elmii* sp.n., *Deronectes hendrichi* sp.n., and *Deronectes youngi* sp.n. from Iran, *Deronectes danielssoni* sp.n. and *Deronectes roberti* sp.n. from Afghanistan, *Deronectes evelynae* sp.n. and *Deronectes hebaueri* sp.n. from Turkey, *Deronectes riberai* sp.n. from Turkey and Iraq, *Deronectes kinzelbachi* sp.n. from Turkey and Syria, *Deronectes palaestinus* sp.n. from Syria, and *Deronectes bameuli* sp.n. from Pakistan. Therefore genus *Deronectes* now contains 53 species in total. *Deronectes parvicollis* (SCHAUM, 1864) is newly recorded from Macedonia, Armenia, Georgia and Iran, and *Deronectes abnormicollis* SEMENOW, 1900, is recorded from China for the first time (see also FERY & BRANCUCCI 1997: 220). The females of *Deronectes jaechi* WEWALKA, 1989, *Deronectes persicus* PESCHET, 1914, and *Deronectes vestitus* (GEBLER, 1848) are described for the first time.

Key words: Coleoptera, Dytiscidae, *Deronectes*, revision, new species, description, new records.

Zusammenfassung

Im vorliegenden zweiten Teil der Revision der Gattung *Deronectes* SHARP, 1882, wird die zehnte und damit letzte, aber auch umfangreichste Artengruppe untersucht. Von den Vertretern dieser *D. parvicollis*-Gruppe waren bisher lediglich elf Arten bekannt, deren Verbreitungsgebiet vom Balkan über Kleinasien, den Nahen und Mittleren Osten bis nach Pakistan, Südwest-Sibirien und dem Westen Chinas reicht. Von diesen Arten waren teilweise nur der Holotypus oder wenige Einzelexemplare bekannt, so daß ihre systematische Einordnung äußerst problematisch war. Die Untersuchung neuen Materials insbesondere aus dem Iran macht es nun erstmals möglich, die Stellung der Arten eindeutiger festzulegen, woraus zusätzlich die Beschreibung von insgesamt vierzehn neuen Arten resultiert: *Deronectes balkei* sp.n., *Deronectes biltoni* sp.n., *Deronectes brancuccii* sp.n., *Deronectes elmii* sp.n., *Deronectes hendrichi* sp.n. und *Deronectes youngi* sp.n. aus dem Iran, *Deronectes danielssoni* sp.n. und *Deronectes roberti* sp.n. aus Afghanistan, *Deronectes evelynae* sp.n. und *Deronectes hebaueri* sp.n. aus der Türkei, *Deronectes riberai* sp.n. aus der Türkei und dem Irak, *Deronectes kinzelbachi* sp.n. aus der Türkei und Syrien, *Deronectes palaestinus* sp.n. aus Syrien sowie *Deronectes bameuli* sp.n. aus Pakistan. Damit umfaßt die Gattung *Deronectes* nun insgesamt 53 Arten. *Deronectes parvicollis* (SCHAUM, 1864) kann zum ersten Mal aus Mazedonien, Armenien, Georgien und aus dem Iran, *Deronectes abnormicollis* SEMENOW, 1900, erstmalig aus China gemeldet werden (siehe auch FERY & BRANCUCCI 1997: 220). Weibliche Exemplare von *Deronectes jaechi* WEWALKA, 1989, *Deronectes persicus* PESCHET, 1914 und *Deronectes vestitus* (GEBLER, 1848) werden zum ersten Mal beschrieben.

Die *D. parvicollis*-Gruppe wird in vier Untergruppen gegliedert (*D. parvicollis*-, *D. longipes*-, *D. afghanicus*- und *D. jaechi*-Untergruppen), wobei die Arten der *D. parvicollis*-Untergruppe überraschenderweise mehrere gemeinsame Merkmale mit den Arten der *D. latus*-Gruppe (Teil I) aufweisen. Auf die sich hieraus ergebenden Konsequenzen soll allerdings hier nicht näher eingegangen werden, sie bleiben einer weiteren Arbeit zur Phylogenie der Gattung vorbehalten.

* Dr. Hans Fery, Räuschstr. 73, D - 13509 Berlin, Germany.

** Dr. Shidokht O. Hosseinie, Department of Biology, College of Sciences, Shiraz University, Shiraz, 71454, Iran.

Introduction

The first part of this revision of *Deronectes* (FERY & BRANCUCCI 1997) revised those species which have a longitudinal impression parallel to each side of the pronotum, and the species of the *D. latus*-group, which have a non-cordiform pronotum without such impressions. These species are distributed in Europe, northern Africa, Turkey and the Caucasus. The species investigated in the present work share a cordiform pronotum without an impression parallel to each side. They are distributed in large parts of Asia, from Asia minor, Palestine, Syria and the Caucasus through Iran, Uzbekistan, Turkmenistan, Kazakhstan, Tajikistan, and Kirghizia as far as Afghanistan, Pakistan, western China and southern Siberia. *Deronectes parvicollis* (SCHAUM, 1864) is the only species of this group which has a distribution extending into Europe (the Balkans).

Material and Acknowledgements

We have studied roughly 1100 specimens, a small number compared with the 8000 specimens studied in the first part of this revision. These specimens, however, largely originate from regions which have not been thoroughly investigated entomologically, and from which collections of water beetles are relatively few.

The following acronyms for collections from which we have studied material are used in the text:

Acronyms:

BML	British Museum, London, Great Britain (S. Hine)	MCGE	Museo Civico di Storia Naturale "G. Doria", Genova, Italy (Dr. R. Poggi)
CCB	coll. C. Brandstetter, Bürs, Austria	MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland (Dr. I. Löbl)
CDB	coll. Dr. D. Bilton, Plymouth, Great Britain	MNB	Museum für Naturkunde, Humboldt-Universität, Berlin, Germany (Dr. F. Hieke, Dr. M. Uhlig, B. Jaeger)
CFA	coll. F. Angelini, Francavilla Fontana, Italy	MNHN	Muséum National d'Histoire Naturelle, Paris, France (Dr. H. Perrin)
CGW	coll. Prof. Dr. G. Wewalka, Vienna, Austria	MRTO	Museo Regionale di Scienze Naturali, Torino, Italy (Dr. P. Giachino, Dr. M. Daccordi)
CHF	coll. Dr. H. Fery, Berlin, Germany; in part deposited in the NMW	MZL	Museum of Zoology Lund University, Lund, Sweden (R. Danielsson)
CHH	coll. H. Hebauer, Rain, Germany	NMB	coll. Dr. M. Brancucci, deposited in the Naturhistorisches Museum Basel, Switzerland
CJS	coll. J. Stastny, Liberec, Czech Republic	NMW	Naturhistorisches Museum Wien, Austria (Dr. M. Jäch)
CLH	coll. L. Hendrich, Berlin, Germany	ZMH	Zoological Museum Helsinki, Finland (Dr. O. Biström)
CMB	coll. M. Balke, Berlin, Germany	ZMM	Zoological Museum Moscow, Russia (Dr. N. Nikitsky)
CMT	coll. M. Toledo, Brescia, Italy	ZMSP	Zoological Museum St. Petersburg, Russia (Dr. B. Katajev)
CPM	coll. Dr. P. Mazzoldi, Brescia, Italy	ZSM	Zoologische Staatssammlung, München, Germany (Dr. M. Baehr)
CSR	coll. S. Rocchi, Firenze, Italy		
DBSU	Department of Biology, Shiraz University, Iran (Dr. Sh. Hosseinie)		
DEI	Deutsches Entomologisches Institut, Eberswalde, Germany (Dr. L. Zerche)		
HNHM	Hungarian Natural History Museum, Budapest, Hungary (Dr. Gy. Szél)		
IRSN	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (Dr. K. Desender)		

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In the listings of studied material the number of specimens is given first, followed by the label texts, which are given in quotation marks, and the museum where the specimen is kept. In some cases the handwriting is noted after the label text. Where this is not specified the author was either unknown, considered unimportant, or the text was printed. Simple museum labels are cited exceptionally. Comments in square brackets are those of the present authors.

The following abbreviations are used in the text: hw (handwriting), TL (total length), MW (maximum width), LWH (length without head), PMW (maximum width of pronotum), PBW (width of pronotum at base), and PL (length of pronotum, measured from the anterior margin to a fictitious line connecting the posterior angles).

For all species of the *D. parvicollis*-group we have measured the parameters listed and conducted simple statistical analyses. Some of these results are presented in the Tables 1 - 4. Table 1 summarises these values; Tables 2 - 4 present comparisons of the standard deviation ranges and the maximal and minimal values: PMW/PBW ratio as an indication of the degree of cordiformity of the pronotum (Tab. 2); LWH/MW ratio as an indication of the general shape of the habitus (elongate - less elongate) (Tab. 3); PMW/MW ratio as an indication of the degree to which the habitus is parallel-sided (Tab. 4). It should be emphasised, however, that the use of these results - because of the small number of specimens available for study and the variability within populations - can provide an initial orientation only, and is of little use when studying single specimens. Nevertheless these investigations have been very useful in delineating species, particularly in the *D. longipes*-subgroup.

The habitus of all species is figured and the male and female genitalia, when available. These have been drawn wet, because particularly in immature specimens the shape of the median lobe of aedeagus can be considerably altered during drying (see Figs. 60 - 61 for *Deronectes longipes* SHARP, 1882). In a few species other important characteristics are figured also.

Note: After we have submitted the manuscript additional material became available. Mr. K. Elmi (Shiraz) collected one new species (*D. elmii* sp.n.) and large series of *D. hendrichi* sp.n. and *D. brancuccii* sp.n. and colleague H. Hebauer sent us a male and a female of *D. hebaueri* sp.n. Thanks to the outstanding co-operation of Dr. S. Gaal (NMW), we have been able to change some parts of the text, particularly the determination keys, but it has proved to be impossible to change the figure tables. Therefore the habitus and the genitalia of *D. elmii* sp.n., the gonocoxosternum of *D. hendrichi* sp.n., as well as the male genitalia of *D. hebaueri* sp.n. must be presented at the end of the figures section, the last ones being provided with a different numeration (Figs. 108A, 108B).

Systematics

To obtain a clear picture of the intrageneric systematics of *Deronectes* the reader should also examine the key to species groups from part I of the revision (FERY & BRANCUCCI 1997: 223).

Description of the species

As already mentioned in the first part of this revision (FERY & BRANCUCCI 1997: 224) the description of each species is kept complete, but as short as possible. "Thus characters which are used in the keys and those which are common for the genus or respective

group are not repeated in the descriptions unless very prominent". Nevertheless we present comprehensively the common characteristics of members of the *D. parvicollis*-group, and thus repeat some which have been provided in the first part of the revision.

X. The *Deronectes parvicollis*-group

The 25 species of the *D. parvicollis*-group are characterised by a cordiform pronotum, which has its greatest width in or before the middle, and the sides straightly or concavely narrowed to the base, which is narrower than the elytra between the shoulders. The sides of the pronotum lack a distinct longitudinal impression parallel to their margin, and do not strongly protrude upwards, being at most a little depressed near the sides or weakly bulged near the posterior angles. The representatives of the *D. latus*-group (part I) also have a pronotum without such longitudinal impressions, but their pronotum is non-cordiform.

The habitus of all species is oblong oval to elongate or parallel. The head is microreticulated and usually has a double puncturation, which consists of smaller and coarser punctures, the last ones rather sparse anteriorly and increasingly dense towards the frons (with the exception of *D. jaechi*).

The pronotum is usually weakly microreticulated, with a fine and dense primary puncturation (see FERY & BRANCUCCI 1997: 222), which is, however, less dense than on the elytra; the centre of the disc has a few larger punctures and a more or less well developed scratch or elongate larger puncture, which may be entirely absent in some individuals; on each side of the centre the coarser punctures are often absent. The areas behind the anterior margin and before the base have coarser punctures, which are centrally somewhat obsolete, being more distinct to the sides; the areas near the posterior angles often have a depression in which the larger punctures are even coarser and denser. The areas close to the side margins contain some mostly indistinct larger punctures also.

Elytra without carinae or strong longitudinal swellings, their maximum width being situated before or close to the middle. Inner puncture lines more distinct than the external ones and somewhat deepened, in some species the area inside these is somewhat vaulted, giving the appearance of a weak longitudinal swelling; external puncture lines often distinct near the base only; sutural line variable, mostly indistinct or even absent. Some species in addition to the fine, dense and almost evenly distributed primary puncturation have a coarser and more unevenly distributed secondary puncturation, which is, however, less dense than in most species of the first nine groups (e.g. *Deronectes hispanicus* (ROSENHAUER, 1856), see Fig. 43 in FERY & BRANCUCCI 1997: 270). The elytra have grey or yellow setae, which in many species are rather indistinct and restricted to the sides and the apex, sometimes extending to the sides of the pronotum also. Only a few species have the whole elytra and larger parts of the pronotum covered with a distinct and longer setation. Despite this the setae cannot be used as a feature for distinguishing species, because they are variable even within one population or can be rubbed off during the insect's lifetime or as a result of specimen preparation.

The majority of the ventral surface is black in most species, the epipleura often being dark brown. The posterior margin of the last visible abdominal segment has a notch

which often is very distinct. Prosternal apophysis without a highly elevated longitudinal carina (as e.g. in the species of the *D. bicostatus*-group, see Figs. 23 - 26 in FERY & BRANCUCCI 1997: 250), in contrast to the statement of SHARP (1882: 419) this is often flat or flat roof-like, being slightly more elevated posteriorly, sides mostly with small transverse carinae (Figs. 113 - 118), and supplied with setae in all species. Metacoxal plates and metasternum lacking coarse punctures, except in *D. abnormicollis* and some exceptional specimens of *D. parvicollis* and *D. afghanicus* WEWALKA. Usually the legs are reddish brown in colour, as well as the antennae, which in most species have the articles darkened distally beginning with the fourth or fifth.

♂♂: Protarsal claws with the exceptions of *D. parvicollis*, *D. palaestinus* sp.n. and *D. hebaueri* sp.n. not strongly modified, at most a little straightened. The males of some species (and sometimes the females also) have the fifth to seventh articles of the antennae slightly broadened and flattened, but this characteristic is only conspicuous in *D. abnormicollis* (Fig. 17). In some species the protibiae are distinctly broadened and curved outwards distally (Figs. 3, 5), in *D. jaechi* the mesotibiae are also somewhat modified (Fig. 9).

♀♀: Females typically have the pronotum a little more cordiform than the males, but distinct differences are seen in *D. abnormicollis* only. The notch of the last abdominal segment is slightly larger than in the males, and additionally in some species this segment has the sides concavely sinuate before the apex, a feature which - if present at all - is less distinct in the males.

Note: The determination of many species of the *D. parvicollis*-group - particularly those of the *D. longipes*- and *D. afghanicus*-subgroups - is problematic without examination of the male genitalia.

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

- 1 Metacoxal lines carinate, with an elevation in the anterior half in males (Fig. 120), or at least sharply falling down inside these lines, with the area between them less elevated (*D. abnormicollis*, Figs. 121 - 123). Habitus oblong oval, not depressed, with elytra rounded laterally; larger species (TL 4.60- 5.90 mm), with a pronotum which is less cordiform (PMW/PBW 1.03 - 1.13). **X.1 *D. parvicollis*-subgroup**
- Males with metacoxal lines simple, grooves only (Fig. 124). Habitus and elytra more parallel-sided, slightly to strongly depressed; most species smaller (TL 3.50 - 5.20 mm), with pronotum weakly to strongly cordiform (PMW/PBW 1.04 - 1.33). 2
- 2 Species with a small, but sharply delimited notch on the last abdominal segment (Figs. 131 - 134); smaller species (TL 3.50 - 4.60 mm) from Iran, Turkmenistan, Afghanistan and Pakistan. **X.2 *D. afghanicus*-subgroup**
- Species with a larger or indistinct, but in any case not sharply delimited notch on the last abdominal segment (Fig. 129); larger species (TL 3.60 - 5.20 mm) from Syria, Turkey and Iran. 3
- 3 Pronotum before base very strongly and concavely narrowed (PMW/PBW 1.28 - 1.33); elytra broad, but only weakly rounded, more parallel. Males with a unique structure to the median lobe of aedeagus and parameres (Figs. 76, 81); females with the last abdominal segment strongly modified (Fig. 130). **X.4 *D. jaechi*-subgroup**

- Pronotum less cordiform (PMW/PBW 1.04 - 1.24); median lobe of aedeagus of the males and last abdominal segment of the females not strongly modified. **X.3 *D. longipes*-subgroup**

X.1 The *Deronectes parvicollis*-subgroup

The five species of this subgroup are relatively large (TL 4.50 - 5.80 mm), and well characterised by the structure of the metacoxal lines. The habitus is oblong oval, not depressed, the elytra rounded laterally, and the pronotum weakly cordiform (PMW/PBW 1.03 - 1.13).

Note: The representatives of the *D. parvicollis*-subgroup have some characteristics common with those of the *D. latus*-group (FERY & BRANCUCCI 1997: 224):

- absence of a longitudinal impression parallel to the sides of the pronotum;
- metacoxal lines carinate (see Figs. 119 - 120), except *D. abnormicollis* (Figs. 121 - 123);
- median lobe of aedeagus modified: with sides ventro-laterally margined in *Deronectes latus* (STEPHENS, 1829), carinate in *D. vestitus* and *D. persicus* (see Figs. 109 - 110); not carinate in *D. parvicollis*, *D. palaestinus* sp.n. and *D. abnormicollis*, at most with longitudinal keels; additionally with a pair of distinct excavations near the base in the species of the *D. latus*-group, *D. vestitus*, *D. persicus*, and some specimens of *D. parvicollis* (see Figs. 109 - 112);
- last abdominal segment with a large notch (see Figs. 125 - 128, and in addition Figs. 4 - 5 in part I), at least in the females;
- the species of the *D. latus*-group have a non-cordiform pronotum, but several females have the posterior angles of the pronotum truncate, which could be interpreted as an approximation to cordiformity.

Additionally it should be noted that *D. latus* has recently been recorded from north-eastern Turkey (FERY & BRANCUCCI 1997: 228). These observations, however, shall not be discussed in the present work, but instead are left for a future phylogenetic analysis of the entire genus.

Key to the species of the *Deronectes parvicollis*-subgroup

- 1 Anterior protarsal claw of males distinctly enlarged (Fig. 146); large species (TL 4.80 - 5.80 mm). 2
- Anterior protarsal claw of males simple; species of large or medium size (TL 4.50 - 5.60 mm). 3
- 2 Species from the Balkans, Turkey, Caucasia and north-western Iran; males with median lobe of aedeagus in lateral view almost straight in the central part; anterior part of the keel of the prosternal apophysis less prominent (Figs. 7, 113); TL 4.80 - 5.40 mm. **29. *parvicollis***
- Species from Syria; males with median lobe of aedeagus in lateral view almost evenly curved in the central part; anterior part of the keel of the prosternal apophysis very prominent (Fig. 8); TL 5.30 - 5.80 mm. **30. *palaestinus* sp.n.**

- 3 Habitus in lateral and frontal view more vaulted (Fig. 10); pronotum narrow, in the females often extremely narrow (PMW/MW 0.615 - 0.727); large species (TL 4.90 - 5.60 mm) from Uzbekistan, Tajikistan, Kazakhstan, Afghanistan and western China (Turkmenistan?); females with apex of elytra strongly impressed and twisted (Figs. 143 - 145); males with tip of median lobe of aedeagus in lateral view not enlarged. **31. *abnormicollis***
- Habitus in lateral and frontal view less vaulted (more or less as in *D. parvicollis*, Fig. 11); pronotum broader (PMW/MW 0.714 - 0.787); smaller species (TL 4.50 - 5.30 mm); tip of median lobe of aedeagus in lateral view often enlarged (Fig. 40a). 4
- 4 Species from Russia (SW Siberia), Uzbekistan, Kazakhstan and Tajikistan (Turkmenistan?); habitus less parallel (LWH/MW 1.80 - 1.94); females with apex of elytra strongly impressed and twisted, more or less as in *D. abnormicollis* (Figs. 143 - 145). **32. *vestitus***
- Species from Iran; habitus a little more parallel (LWH/MW 1.82 - 1.99); females with apex of elytra less strongly modified. **33. *persicus***

29. *Deronectes parvicollis* (SCHAUM, 1864)

Hydroporus parvicollis SCHAUM, 1864: 112. - SHARP 1882: 420.

Deronectes planicollis SHARP, 1882: 420. - ZIMMERMANN 1920: 120.

Deronectes parvicollis (SCHAUM): ZIMMERMANN 1920: 120. - ZIMMERMANN 1932: 109. -

ZAITZEV 1953: 190. - IENISTEA 1962: 423. - WEWALKA 1970: 135. - WEWALKA 1989: 97.

Type material:

Hydroporus parvicollis: **Holotype** (♀): "Hydroporus parvicollis Schaum. Ind. auth. Type mihi, D.S., Natolia (Schaum), 1141" [text on glue card with an additional male sex symbol [sic!], hw Sharp], "parvicollis m., Natolia" [yellow, hw Schaum], "Sharp Coll. 1905-313", "Holotype, Hydroporus parvicollis Schaum, Fery 1993" [red] (BML). **Type locality**: Turkey, Anatolia ("Natolia").

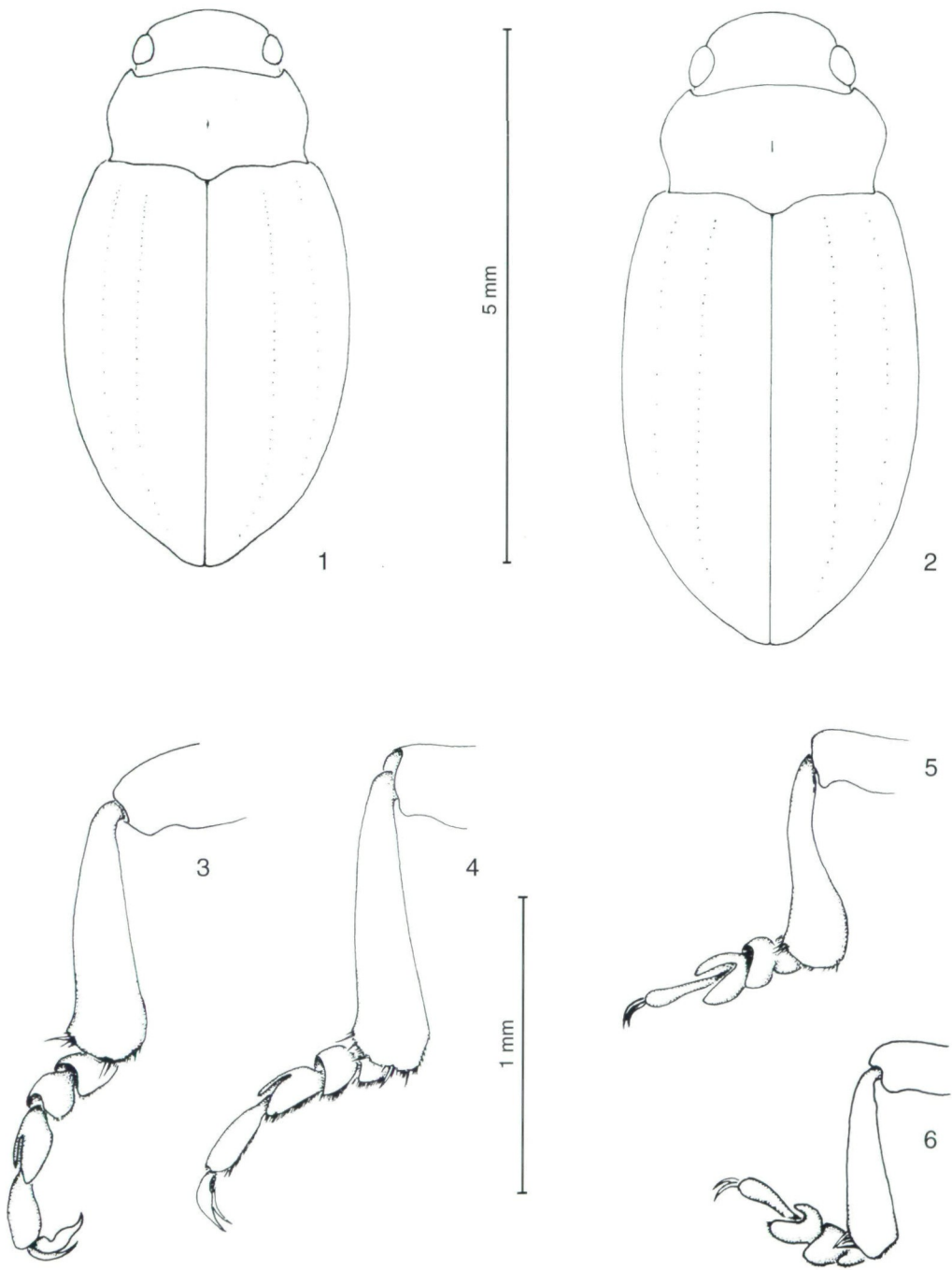
Note: SHARP (1882: 420) stated that he had received one of Schaum's types, whereas SCHAUM (1864: 113) noted, that he had seen one individual only. The specimen from the BML fits exactly Schaum's description, see for instance "die rothen Flecken auf dem Halsschild" [= "the red spots on the pronotum"]. We assume, that Sharp had seen the holotype from Schaum for his studies without being informed that this was Schaum's single specimen. Furthermore we assume that Sharp - probably after the death of Schaum - had forgotten to return the holotype. The holotype had originally been pinned and must have been mounted on card by Sharp.

Deronectes planicollis: **Holotype** (♂): "Riedel" [?, difficult to identify, hw Wehncke], "Asia minor" [yellow, hw Wehncke], "ex Wehncke, Museum Paris, ex coll. R. Oberthur", "Holotype, Hydroporus planicollis Schaum, Fery 1996" [red] (MNH). **Type locality**: Turkey ("Asia minor").

Additional material studied: **Turkey**: 1 ex., "Asia minor, Karakeuy, v. Bodemeyer" [Karakeuy = Karaköy, between Bilecik and Eskişehir, ca. 150 km SE Istanbul, see BODEMEYER 1900: 24], "Coll. Reitter", "Guignot det. 1956, *Deronectes parvicollis* Schaum" [hw Guignot] (HNHM). 1 ♂, "Asia minor, Karakeuy, v. Bodemeyer", "*Deronectes parvicollis* Schaum", "*parvicollis* Sch" (ZMSP). 1 ex., "Asia minor", "Alte Sammlung" (ZSM). 4 exs., "Erzurum, Tortum/Narman, 9.6.[19]89, Schödl leg." (NMW). 1 ex., "Ankara, Isikdagi [mountain range, ca. 150 km NNE Ankara], 12.6.[19]89, Schödl. leg." (NMW). 13 exs., "TR 5.6.1987, Van - Baskale 2600 m, Güzeldere P. [= pass, ca. 100 km SE Van], leg. Jäch (61)", five specimens with additional "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW, CGW). 9 exs., "TR - Gümüşhane [ca. 150 km WNW Erzurum] 29.9., Kösedagi Paß [= pass] (29), leg. S. Schödl 1989", eight specimens with additional "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW). 3 exs., "TR - Erzurum 9.6., Tortum - Narman, lg. Jäch [19]89 (72)", two specimens with additional "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW). 2 exs., "TR - Artvin [Kars province] 6.6., Cam Paß [= pass] 2000 m, Jäch 1989 (56)" (NMW). 1 ex., "TR - Kastamonu [ca. 200 km NNE Ankara] 24.6., 30 km S

Kastamonu, leg. Jäch [19]89 (3)", "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW). 1 ex., "TR - Kastamonu 25.6., Oyrak Paß [= pass] 1000 m, leg. Jäch [19]89 (4)", "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW). 1 ex., "TR 3.6.1987, ö. [= E] Yüsekova [ca. 50 km E Hakkari, near the Iranian frontier], leg. Jäch (53)" (NMW). 3 exs., "TR - Kars 8.6., Sarikamis [ca. 150 km ENE Erzurum] (70), leg. M. Jäch 1989", two specimens with additional "*Deronectes parvicollis* Sch., det. G. Wewalka 1987" (NMW). 14 exs., "TR-Mugla, 22.V.1991, NW Karaçulha [ca. 70 km NE Fethiye], 1300 m, leg. Jäch (22)", some of the specimens with "leg. Schödl" (NMW). 5 exs., "TR-Antalya, 26.V.1991, Gömbe 1250 m, 35 km SW Elmali [ca. 80 km W Antalya], leg. Schödl (40)", some of the specimens with "leg. Jäch" (NMW). 2 ♀♀, "prope Sarykamisch [= Sarikamis, ca. 150 km ENE Erzurum], prov. Kars, VI.[19]10" (ZMSP). 1 ♂, 3 ♀♀, "Turkey, Gümüsane [ca. 150 km WNW Erzurum], Brooks 11 km NNW Köse, 2.6.1969, Nyholm & Hallin" (MRTO). 1 ♂, 2 ♀♀, "Yozgat [ca. 150 km E Ankara] Turque 1400 m, 4.9.1971, Kor. Tscheschma, P. Beron" [recorded in GUÉORGUEV 1981: 409 sub *D. abnormicollis*] (MRTO). 1 ♂, 1 ♀, "Emir-Dagh-Gbg. [= mountain range, ca. 100 km ENE Afyon], Asm. [= Asia minor] c., Galatien, Phrygien, Weirather, Innsbruck" (NMB). 1 ♂, 2 ♀♀, "Erzurum, road Erzurum to Tortum, 1800 - 1900 m, 19.7.1992, Mazzoldi and Toledo leg." (CPM, CMT). 1 ♂, "TR-Kayseri, Pinarbasi [ca. 80 km E Kayseri], 9.6.[19]89, leg. H. Hebauer" (CHH). 4 ♂♂, 4 ♀♀, "TR-Korkuteli [ca. 100 km WNW Antalya], 16.9.1989, leg. H. Hebauer" (CHH, CJS, CHF). 4 ♂♂, 1 ♀, "TR-Ankara, Haymana [ca. 70 km SSW Ankara], 8.6.1989, leg. H. Hebauer" (CHH, CHF). 1 ex., "Türkei (Erzurum), Askale 16.7.[19]73, leg. Wewalka" (CGW). 1 ex., "Türkei, 30 km W Kizilcahamam [ca. 100 km N Ankara] 7.7.[19]73, leg. Wewalka" (CGW). 2 exs., "Türkei, 16.7.1973, Gümüşhane, leg. Wewalka" (CGW). 1 ♂, 1 ♀, "TR-Erzurum, Askale [ca. 40 km W Erzurum], 14.6.1989, leg. H. Hebauer" (CHH, CHF). 6 exs., "TR (Afyon), 30 km S Afyon, leg. Wewalka 2.8.1983" (CGW, CHF). **Greece:** 1 ex., "Parnass", "*parvicollis* Schm" [hw Régimbart], coll. Régimbart (MNHN). 1 ex., "Parnass", "Ex Museo Gambey, 1892", coll. Wehncke (MNHN). 2 exs., "Parnass, Griechenland [= Greece]" [hw Zimmermann] (ZSM). 3 exs., "Parnass" (IRSN). 1 ex., "Parnass, Kruper", "Coll. Severin, Determin., Regimb. 1891", "Regimbart det. 1891, *Deronectes parvicollis* Schaum" (IRSN). 1 ex., "Coll. R.I.Sc.N.B., Grèce: Mt Parnasse N., Gravia alt. 350 m., 12-V-1957, Em. Janssens", "E. Janssens det. 1957, *Deronectes parvicollis* Schaum" (IRSN). 1 ex., "Parnass.", "Coll. Plason", "Coll. R. Mouchamps", "R. Mouchamps det., *Deronectes parvicollis* Schaum" (IRSN). 5 exs., "Graecia, Parnass" (NMW). 1 ex., "Graecia, Hlisnikowski det." (CKD). 1 ♂, 4 ♀♀, "Griechenl. [= Greece], 10.5.[19]71, Umg. [= near] Elasson [S Mount Olympus], leg. Wewalka" (CSR, CFA, CGW). 1 ex., "Graecia, Parnass", "Collect. Hauser", "*Deronectes parvicollis* Schaum, det. Wewalka [19]70" (CGW). **Macedonia:** 1 ♂, "Macedonia, 10 km N of Struga [ca. 25 km NW Ohrid], 6.6.1992, Zbazi, P. Zarradnik lgt." (CJS). 1 ♀, "Lazaropole [= Lazarpole, ca. 70 km N Ohrid], Makedonija", "13.VI.1962, Goyala leg." (CHF) (**first records from Macedonia**). **Serbia:** 1 ♂, "Frusca Gora [mountain range in Wojwodina, S Novi Sad], Paragovo, Pretner, 4.1930" (CMT). **Romania:** 2 exs., "7.X.1959, Ogasul Vladcului, bei [= near] Borloveni Vecbi, (Banat)", "Der. parvicollis, det. M. Al. Ienistea" (CGW). **Bulgaria:** 2 exs., "Bulgarie, U. [= near] Nessebar, 20.6.-6.7.65, K. Ermisch leg." (MNB). 1 ♂, "24.VI.1955, Dimitroffgrad [ca. 100 km E Plovdiv], B. Rusew", "F. Guignot det. 1956, *Deronectes parvicollis* Schaum" (MRTO). 1 ♀, "Bulgarie, Vakarel [ca. 50 km SE Sofiya], 3.VII.1962, V. Guéorguiev leg.", "*Deronectes parvicollis* Schaum ♀, Guéorguiev det. 1962" (BML). **Armenia:** 1 ♀, "Daracigag & vic, distr. Erivan, 24.VIII.[19]12" (ZMSP). 1 ♂, 2 ♀♀, "Daracigag [crossed out!] & vic, distr. Erivan, VI.[19]12" (ZMSP) (**first records from Armenia**). **Georgia:** 1 ♀, "Tiflis [= Tblisi], 29.04.1907" [Cyrillic] (ZMSP). 1 ♀, "Karajasi [ca. 50 km SE Tblisi], 22.X.[19]38, Sadowski" [Cyrillic, hw Zaitzev] (ZMSP). 1 ♀, "Manglis [ca. 30 km W Tblisi], VII.[19]47, F. Zaitzev" [Cyrillic, hw Zaitzev] (ZMSP). 1 ♀, "Manglis, 7.[19]25" [hw Zaitzev] (ZMSP). 2 ♀♀, "Manglis, 1880" (ZMSP). 1 ♀, "Bakuriani [ca. 100 km W Tblisi], 21.5.[19]39, Sadowski" [Cyrillic, hw Zaitzev] (ZMSP). 1 ♂, "Bakuriani, dist. Gori, 5500, VII.[19]14" (ZMSP) (**first records from Georgia**). **Iran:** 15 ♂♂, 15 ♀♀, "29.9.1996, Iran, Ardebil, Khalkhal to Assalem, 12 km E Khalkhal, stream, 1900 m, Elmi/Hosseinie (1852)" (DBSU, CHF). 4 ♀♀, "17.7.1996, Iran, prov. Zanjan, 15 km S Zanjan, stream, 1960 m, Elmi/Hosseinie (1794)" (DBSU, CHF) (**first records from Iran**).

Diagnosis: Habitus oblong oval (Figs. 1, 147), sides of elytra rounded. Surface dark brown. Elytra vaulted in lateral and frontal view (Fig. 11), but less so than in *D. abnormicollis* (Fig. 10). Most specimens with the sides of the pronotum distinctly concavely sinuate before the posterior angles, resulting in rather acute posterior angles (about 75° - 80°). We have also seen a few specimens from various localities with the margin less sinuate and thus with posterior angles which are more or less rectangular or even slightly obtuse



Figs. 1 - 6: Habitus of (1) *Deronectes parvicollis*, (2) *D. palaestinus* sp.n.; Anterior leg of (3) *D. parvicollis* (♂), (4) *D. palaestinus* sp.n. (♂), (5) *D. afghanicus* (♂), (6) *D. roberti* sp.n. (♀).

(about 100°). The border in most specimens is not prominent, slightly shining, and often totally absent. The coarser punctures behind the anterior margin of the pronotum reach some way backwards; sides of the pronotum behind the middle to the posterior angles somewhat depressed and supplied with coarser punctures, thus appearing as if they have a longitudinal impression parallel to the sides. Elytra with distinct secondary punctures, which are not very dense, punctures smaller than in *D. abnormicollis*. Inner puncture lines of elytra distinct and deepened, external ones distinct near the base only. Inside the inner puncture lines the elytra are somewhat vaulted, thus appearing to have weak longitudinal swellings. Elytra before apex often slightly depressed, with an elevation at the border, but this is mostly not very prominent.

Metacoxal plates and metasternum usually without punctures, in a few specimens, however, with some indistinct larger punctures. Prosternal apophysis with a flat but distinct longitudinal carina, which is prolonged forwards, forming a keel with a rounded edge near the posterior margin of the anterior coxae (Figs. 7, 113). Metacoxal lines carinate, in most specimens converging forwards, disappearing before the posterior margin of the metasternum; if not disappearing sometimes a little diverging in the anterior third. Last abdominal segment with a notch (Fig. 126), sometimes slightly less prominent, but always perceptible. Colour of femora and tibiae dark brown, trochanter, tarsi and knees a little paler. Antennae brown, articles not or only slightly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 37) in lateral view somewhat variable, but ventrally usually - in contrast to *D. palaestinus* sp.n. - with central part almost straight, more curved in apical third. Tip rounded in dorsal view, sometimes almost acute; narrow in apical quarter, more or less evenly tapering to the apex, sometimes nearly parallel; behind sinuate and almost parallel in basal half. Central part of median lobe almost triangular in cross-section, distinctly roof-like, laterally without or with very weak keels which are restricted to the basal quarter, and areas between these keels and the dorsal sides not parallel (cf. *D. palaestinus* sp.n.), more or less evenly sloping to the middle, surface scarcely reticulated; basal part often with two excavations (Fig. 111), but many specimens - for instance the holotype of *D. planicollis* - without these excavations (Fig. 112). Paramere (Fig. 42) much broader than in *D. palaestinus* sp.n., paramere tip broader also. Metacoxal lines elevated in the middle of the anterior half, not very high, but relatively sharp (Fig. 120). Protibiae curved outwards distally (Fig. 3). Protarsal claws elongate, anterior one broadened and somewhat twisted (Figs. 3, 146), but form of the anterior claw variable.

♀♀: Protarsal claws simple. Elevation at the border of the elytral apex more distinct, particularly in the specimens from Iran. Last abdominal segment with margin beside the notch not sinuate, at most straight and not curved. Protibiae a little narrower, but curved outwards distally as in the males. Metacoxal lines carinate, but without elevation. Gonocoxosternum (Fig. 82) with a slightly truncate tip which lacks bristles.

Measurements: Specimens from Greece and Turkey: TL 4.90 - 5.50 mm, MW 2.40 - 2.75 mm (PMW/MW about 0.73); for further details see Tables. 1 - 4. Specimens from the Caucasus and Iran are slightly smaller and more vaulted (TL 4.70 - 5.40 mm, MW 2.40 - 2.70 mm), on average they have a more oval shape in dorsal view, because the pronotum is a little narrower (PMW/MW about 0.71).

Distribution: Greece, Romania, Bulgaria, Turkey, Serbia, Macedonia, Georgia, Armenia, Iran (first records from the last four countries) (Fig. 148). GUÉORGUIEV gives records from Romania (1981: 408), APFELBECK (1904: 370) - most probably cited by GUÉORGUIEV (1971: 14) - for Serbia ("Bela Palanka" ca. 40 km E Nis; we have used this record in Figure 148).

30. *Deronectes palaestinus* sp.n.

Deronectes parvicollis (SCHAUM): WEWALKA 1989: 97.

Holotype (♂): "20.4.[19]81, Golan heights, N. Gilbon, Kafr Naffakh, leg. Wewalka I 45", "Deronectes parvicollis Schaum [sic!], det. Wewalka [19]81", "Holotype, *Deronectes palaestinus* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes:** 1 ♀, same data as the holotype (CGW). 2 ♀♀, "IES 4294, N. Orvim, leg. Her. [= Herbst] 4.3.[19]85" [hw Wewalka], "Deronectes parvicollis Schaum [sic!], det. Wewalka [19]81" (CGW). All paratypes with the respective red label. **Note:** The holotype lacks the left fore leg.

Type locality: Syria, Golan heights, Gilbon.

Diagnosis: Habitus oblong oval (Fig. 2), a little more elongate than *D. parvicollis*. Surface dark brown, with short setae on the sides of the elytra and pronotum, which are extended over larger parts of the elytra in one of the specimens examined. Head microreticulated, but shining, with coarser punctures, which become denser and coarser towards the frons. Sides of pronotum distinctly concavely sinuate before the posterior angles, resulting in rather acute posterior angles (about 80°). Border very narrow, disappearing in the posterior half. Disc of pronotum without microreticulation, with some coarser punctures near the centre, sides of disc without larger punctures; coarser punctures behind the anterior margin not as dense, nor extending as far backwards as in *D. parvicollis*; area immediately before the base with some coarser, sparse punctures. Sides of the pronotum - as in *D. parvicollis* - somewhat depressed and supplied with coarser punctures behind the middle until the posterior angles, giving the appearance of a longitudinal impression parallel to the sides. Elytra in lateral and frontal views a little less vaulted than in *D. parvicollis* (Fig. 11), almost depressed between the inner puncture lines. Puncture lines perceptible, but consisting of small punctures only, which are somewhat deepened, with the external ones less distinct; external punctures a little more prominent near the shoulders, where they are also somewhat deepened. Inside the inner lines the elytra are slightly vaulted. Secondary punctures very small and sparse. Apex of elytra in both sexes without depression, elevation at the border very indistinct.

Metacoxal plates and metasternum in the few specimens studied lack larger punctures. Metacoxal lines carinate, parallel or slightly converging forwards, disappearing before the posterior margin of the metasternum. Prosternal apophysis narrower than in *D. parvicollis*; central longitudinal carina prolonged forwards, but in contrast to *D. parvicollis* the edge of the keel near the posterior margin of the anterior coxae is very distinct (Fig. 8). Last abdominal segment with a small notch. Legs brown, femora and tibiae less darkened than in *D. parvicollis*. Antennae brown, articles largely darkened distally beginning with the third.

♂♂: Median lobe of aedeagus (Fig. 38) in ventro-lateral view almost evenly curved in central part, not straight as in *D. parvicollis*; tip rounded in dorsal view, apical quarter absolutely parallel, broader than in *D. parvicollis*; scarcely sinuate behind, almost evenly

widening to basal part. Slightly excavated ventrally near the base as in some specimens of *D. parvicollis* (Fig. 111). Lobe in the central part in cross-section almost rectangular, with lateral keels distinct and reaching forwards to the apical third, scarcely approaching the middle keel; these lateral keels, however, distinctly less prominent than in *D. vestitus* or in *D. persicus* (Fig. 115); areas between the lateral keels and the dorsal sides more or less parallel, strongly reticulated; ventrally between these lateral keels roof-like, but very flat. Paramere, including the tip (Fig. 43) narrower than in *D. parvicollis*. Metacoxal lines carinate, elevated in the middle of the anterior half as in *D. parvicollis* (Fig. 120). Last abdominal segment with margin beside the notch not sinuate. The protibiae of the single male studied are indistinctly curved outwards distally (Fig. 4). Protarsal claws elongate, anterior one broadened and somewhat distorted as in *D. parvicollis* (Fig. 146).

♀♀: Protarsal claws simple. Protibiae curved outwards distally, as in females of *D. parvicollis*. Last abdominal segment with margin beside the notch a little sinuate. Metacoxal lines carinate, but without elevation. Gonocoxosternum (Fig. 83) with tip evenly rounded, not truncate in contrast to *D. parvicollis*, bristles not interrupted.

Measurements: TL 5.40 - 5.90 mm, MW 2.55 - 2.80 mm; for further details see Tabs. 1 - 4.

Distribution: So far known only from the Golan Heights, Syria (Fig. 148).

31. *Deronectes abnormicollis* SEMENOW, 1900

Deronectes abnormicollis SEMENOW, 1900: 682. - ZIMMERMANN 1920: 117. - ZAITZEV 1953: 191. - GUÉORGUIEV 1963: 217. - WEWALKA 1970: 135.

Deronectes microthorax SEMENOW, 1900: 683. - ZIMMERMANN 1920: 117.

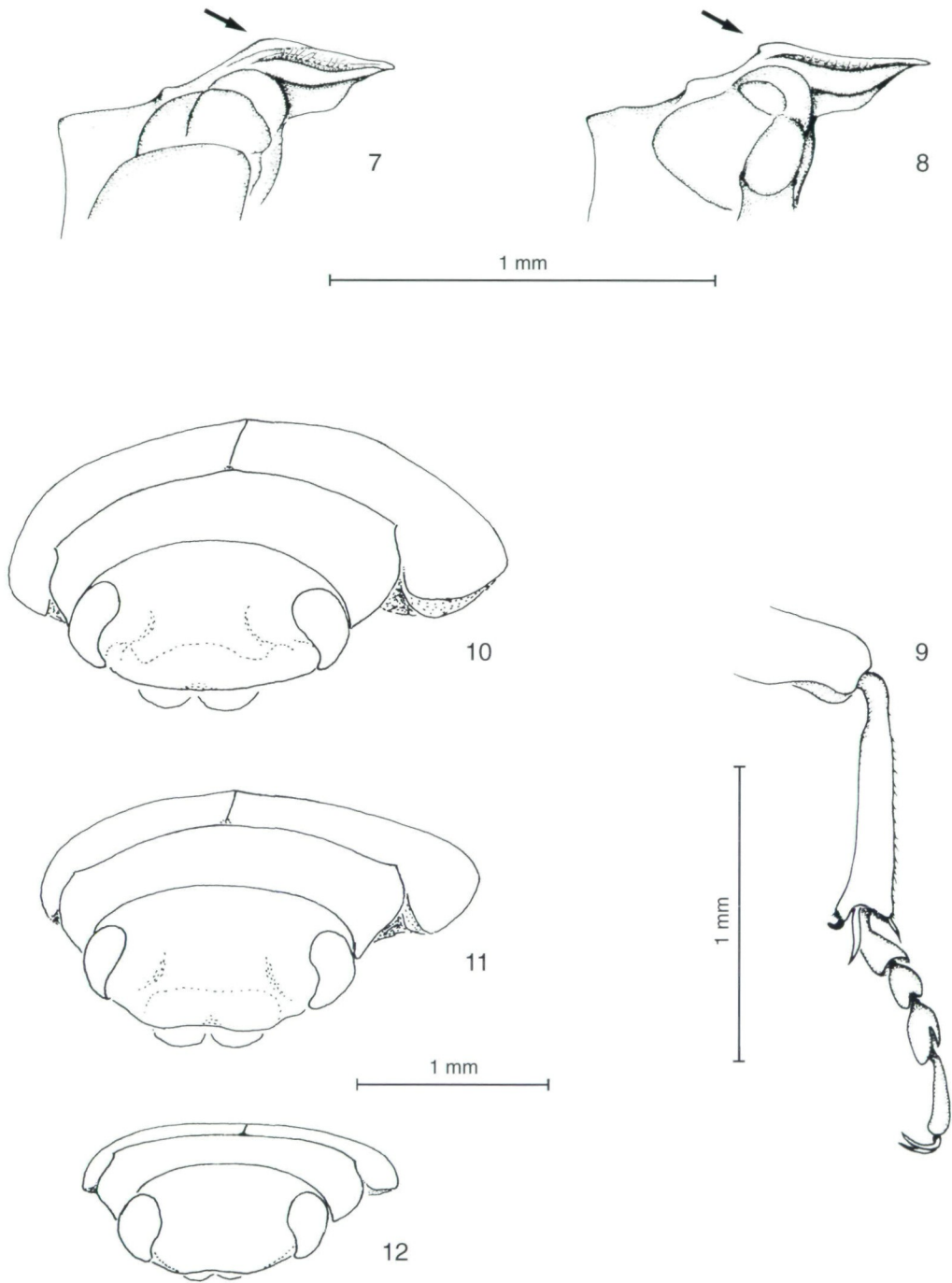
Type material:

Deronectes abnormicollis: **Holotype** (♂): "Bucharā... Karatag... 1898, ..., E. Willberg" [Cyrillic, mostly illegible], "Deronectes abnormicollis m., Type un. [= unique?] VII.[1]900, A. Semenow det." [hw Semenow], "St. Petersburg, Zool. Inst.", "Holotype, Deronectes abnormicollis Semenow, Fery 1997" [red] (ZMSP). **Type locality:** "Bucharā orientalis, prov. Hissar: curs super. fluvii Karatag [= upper course of river Karatag]"; this locality is situated west of Dushanbe, in the border region between Uzbekistan and Tajikistan. **Note:** The holotype lacks parts of most legs and of both antennae.

Deronectes microthorax: **Holotype** (♂): "Bucharā... Karatag... 1898, ..., E. Willberg" [Cyrillic, mostly illegible], "Deronectes microthorax m., ♂ Type un. [= unique?] VII.[1]900, A. Semenow det." [hw Semenow], "St. Petersburg, Zool. Inst.", "Holotype, Deronectes microthorax Semenow, Fery 1997" [red] (ZMSP). **Type locality:** same as for *D. abnormicollis*.

Note: The type of *D. abnormicollis* has the sides of elytra less rounded than in most other specimens of this taxon, with the middle part straight to slightly curved inward, whereas those of the type of *D. microthorax* are evenly rounded. So far normal specimens of *D. abnormicollis* are closer to the type of *D. microthorax*.

Additional material studied: **Afghanistan:** 2 ♂♂, 1 ♀, "Oizir, S. du col d'Unāi [ca. 100 km W Kabul], Prov. de Maïdan 14.VIII.[19]75", "Muséum Paris, 1983, coll. Cl. Legros", "Deronectes abnormicollis (Peyr.) [sic!], M. Balke det. 1990" (MNHN, CMB). 1 ex., "Sefir Kuh [most probably = Sefid Kuh, mountain range ca. 200 km E Herat], Kuschke", "Dr. v. Heyden", "H. dorsalis", "Coll. Hauser", "Deronectes abnormicollis, det. Wewalka [19]70" (NMW). 2 exs., "Afghanistan, Mazanah, 13.5.1959, Dr. K. Lindberg Leg." [hw Guéorguiev], on reverse "fossé 2080 m." [hw Guéorguiev], "A 783", "Deronectes abnormicollis Sem., ♂, V. Guéorguiev det. 1962" [hw Guéorguiev]; GUÉORGUIEV (1963: 217) specifies "Mazahan (sic!), vallée du Ghorband, NE de Kabul; Mazanah is situated in the Ghorband valley, ca. 50 km N-NW Kabul, in Parvan province (MZL). 8 exs., "A 726", "Afghanistan, Gazestan, 12.7.1959, Dr. K. Lindberg Leg." [hw Guéorguiev], on reverse "étang, 1690 m." [hw Guéorguiev], "Deronectes abnormicollis Sem., V. Guéorguiev



Figs. 7 - 12: Prosternal apophysis of (7) *Deronectes parvicollis*, (8) *D. palaestinus* sp.n.; (9) Mesotibia of *D. jaechi*; Frontal view of habitus of (10) *D. abnormicollis*, (11) *D. parvicollis*, (12) *D. youngi* sp.n.

det. 1962" [hw Guéorguiev]; GUÉORGUIEV (1963: 217) specifies "entre Talaqan et Kechm"; R. Danielsson (Lund) has informed us that Lindberg records the specimens from "Gazestan, entre Taliqan et Kischm", in his notes. "Taliqan et Kischm" seems us to be identical with Talachan-Kischm ("Stiehlers Handatlas"), ca. 150 km N Kabul (MZL). 1 ♂, "Afghanistan, Gazestan, 12.7.1959, Dr. K. Lindberg Leg." [hw Guéorguiev], on reverse "étang, 1690 m." [hw Guéorguiev], "A 726", "Deronectes abnormicollis Sem., ♂, V. Guéorguiev det. 1962" (MRTO). 1 ♀, "Afghanistan, Tang-Kharzar, 24.8.1957, Dr. K. Lindberg Leg." [hw Guéorguiev], on reverse "torrent, 1850 m" [hw Guéorguiev]; GUÉORGUIEV (1963: 217) specifies "Hézaradjat"; R. Danielsson (Lund) has informed us that Lindberg records the specimen from "Thang-Khazar ou Tang-Djebet Baz (Hezaradjat), entre Khvadjah Tschicht et Tang-Azao", in his notes. Khvadjah Tschicht seems us to be identical with Chwadscha-gischt ("Stiehlers Handatlas"), ca. 80 km E Herat (MRTO). 1 ♂, "Paghman-Geb. [= mountain range, W Kabul], 2800 m, 26.VIII.", "O. [= E] Afghan. 1953, J. Klapperich" (NMB). 1 ♂, "J. Klapperich, Pagmangebige, 2300 m, 25.6.[19]52, O. [= E] Afghanistan" (CJS). **Kazakhstan:** 2 exs., "Kendyktau", "J. Sahlb." [Kendyktau = Kandyktau = Gory Kindyktas = Kandyktas Mountains, ca. 150 km W Alma Ata], coll. Wehncke (MNHN). 3 exs., "Kendyktau", "J. Sahlb." (ZMH). 1 ex., "Kendyktau", "J. Sahlb." (ZMSP). 1 ex., "Kendyktau" [hw Zimmermann], "J. Sahlb." (ZSM). 2 exs., "Kendyktau", "J. Sahlb.", coll. Heyden (DEI). 2 ♀♀, "Tyschkan Tau, 10 km E Sarybeh" [most probably = Sarybel, ca. 40 km N Panfilov, 200 km ENE Alma Ata], "2250 - 2600 m, 12.VI.1990", "USSR, O [= E] Kasachstan, V. Dolin" (NMB). 1 ♂, "S. Kasachstan, Kingizskij Gebirge [= mountain range], 31.05.1992, R. Kadyrbekov leg." [Kirgizskij Alatau = Alexander mountain range, W lake Issyk-kul, parts are situated in Kirghizia also] (NMB). 1 ♂, 1 ♀, "URSS Kazakhstan, Dsungaria centrale, lago Alakol: vill. Koktuma [ca. 450 km NE Alma-Ata], m. 0., 30.5.[19]84, leg. M. Danilevskij" (CSR). **Uzbekistan:** 1 ex., "Samarkand" (CGW). 1 ♂, 1 ♀, "Samarkand, 25.V.[19]10" [Cyrillic, hw Zaitzev] (ZMSP). 2 exs., "Nanai, N. Namaigan [ca. 300 km E Tashkent], 1200 m, A. Medwedew 10/V 1961" [Cyrillic], "Adyry mountain brook" [Cyrillic], one specimen with additional "Deronectes abnormicollis Sem., det. G. Wewalka 1988", one with "Deronectes abnormicollis Sem., det. A. Nilsson" (ZMSP). 1 ♂, "Aman-Kutan [near Samarkand], 4-VII [19]32, W. Gussakowa" [Cyrillic] (ZMSP). 2 ♂♂, "Aman-Kutan, 4-VII [19]32, W. Kusakewski" [Cyrillic] one specimen with additional "Deronectes parvicollis Schaum, Zaitzev det." (ZMSP). 1 ♂, "Urotsch. [= forest?] Tschimgan [= Chimgan in Uzbekistan, ca. 100 km E Tashkent], ust. sch. [= gorge?] Benger-Seij [a brook], 13.7.1925, ..., I. Iwanow" [Cyrillic] (ZMSP). 2 ♂♂, "USSR, E Uzbekistan, Chimgan, 26. - 28.6., Chatkal ridge [ca. 100 km E Tashkent], K. Majer leg. 1989" (NMB). 1 ex., "USSR, Tashkent, Bolshoi Chimgan, leg. Majer 20.6.[19]81", "Deronectes abnormicollis Sem., det. Wewalka [19]88" (CGW). 1 ♀, "Samarkand Geb. [= mountain range], Aktasch [ca. 150 km N Tashkent] (Kara-Tau), 450 m, 13.V.1989", "Uzbekistan, V.G. Dolin" (NMB). 1 ♂, 1 ♀, "Uzbekistan 110208, Dzhizak südöstlich [= SE] Farisch [ca. 100 km N Samarkand], 630 m, 10.5.1993, leicht fließender Bacharm [= slowly flowing brook] u. Stein [= under stones], leg. Bernhard Maier" (found together with *D. vestitus*) (CHH). 1 ♂, "Uzbekistan 110210, Dzhizak südöstlich [SE] Farisch [ca. 100 km N Samarkand], 650 m, 10.5.1993, Quellflur [= spring region], leg. Bernhard Maier" (CHH). 3 ♂♂, "Uzbekistan, Kuraminsky-Mts. Kamtchik pass, h = 2300 m - 2500 m, 11./18.7.1997, leg. S. Vashchenko"; according to SCHÜTZE et al. (1997: 117) the Kuraminskij mountain range is situated SSE Angren, between 40°40'/41°20'N and 69°40'/70°45'E (CHH). 1 ♀, "Uzbekistan, Kuramiskij Mt. Range, Kamchik pass, 200 - 2500 m, S. Vatchenko 10.7.[19]97" (CJS). 4 exs., "Uzbekistan 110199, Dzhizak [ca. 100 km NE Samarkand], Nuratau NSG, oberes Khajat-Tal, rechtsufrig [= right river bank], 1160 m, 10.5.1993, Bewässerungsgraben [= watering ditch], leg. Bernhard Maier" (CHH, CCB). 2 ♂♂, 1 ♀, "IV. 1992, Usbekistan, Nuratau-Geb. [= mountain range] bei [= near] Farisch [ca. 100 km N Samarkand], 800-1300 m, K. Kiontke leg.", "Deronectes abnormicollis Sem., Fery det." (CHF). **Tajikistan:** 12 exs., "Prov. Kuliab. Ak-sou-Thal [ca. 100 km SE Dushanbe], F. Hauser 1898", "Coll. Hauser" (NMW). 1 ♂, "Ost-Buchara, Tschitschantan [in Varukh district, S Kokand, Kirghizia/Tajikistan], Nusswald F. Hauser 1898", "collect. Hauser", "D. parvicollis?", "Deronectes abnormicollis Sem., det. Wewalka" (NMW). 1 ex., "Prov. Kuliab. Ak-sou-Thal [ca. 100 km SE Dushanbe], F. Hauser 1898", "Coll. Hauser" (ZMSP). 2 exs., "Prov. Kuliab. Ak-sou-Thal [ca. 100 km SE Dushanbe], F. Hauser 1898", "R. Mouchamps det. [19]58" (IRSN). 1 ex., "Prov. Kuliab. Ak-sou-Thal, F. Hauser 1898" (ZMH). 1 ex., "Prov. Kuliab. Ak-sou-Thal, F. Hauser 1898" (CGW). 1 ♂, "Turkmenistan, Cac. Margusar [= Lac Marguzor, ca. 120 km NW Dushanbe] Glasunov 1892" (ZMSP). 1 ♀, "Zerawschan [ca. 200 km N Dushanbe], 3293. - 1" [Cyrillic] (ZMSP). 1 ♀, "S/Ch. [= Sovkhoz] Nurata [most probably in Uzbekistan, in the western part of the Nuratau mountain range, 40°33'N, 65°44'E], Temir Kowu Saj. [a brook] 3.IX.[19]42" [Cyrillic] (ZMSP). 1 ♀, "USSR Asia cent., Tadzhikistan, Pamir Alai, Hissar Mts.", "Adshuk-Cleft near Warsob [ca. 25 km N Dushanbe], 1200 m, 1.-3.VII.1990, leg. Schülke & Wrase" (CLH). 1 ♂, 1 ♀, "Umg. [= near] Pendzhikent [ca. 200 km NW Dushanbe], Berghänge und Flussufer [= mountain slopes and river banks], 24.-25.4.1990", "USSR,

Tadzhikistan, Serawschan, V. Dolin" (NMB). 1 ex., "Tadzikistan, Gissar Ht. [ca. 150 km NE Dushanbe], Varzeb 25.6.1932", "Deronectes abnormicollis Sem., det. Wewalka [19]88" (CGW). 3 ♀♀, "Tadzh. Gissarskij Chr. [ca. 150 km NE Dushanbe], Charangon, 1000 m, 27.6.[19]76, M. Josifov" (CHF). **Uzbekistan/Tajikistan:** 1 ♂, 1 ♀, "Ost-Buchara [= Eastern Bukhara], Karatag 916 m. [mountain range between Samarkand and Dushanbe], F. Hauser 1898", "Deronectes abnormicollis Sem, det. G. Wewalka 1989" (NMW). **Kirghizia:** 3 ♂♂, 10 ♀♀, "Kyrgystan, Central Tien Shan mts., Moldo-Too Valley [N Naryn, Issyk Kul], 1700 m, K-13/97, 16.7.1997, Dolin. leg." (NMW). 1 ♂, "Kirgisistan, Sumsar [ca. 40 km NW Namangan], 1600 m, 15.6.1993, M. Danilevsky leg." (CHF). **China:** 3 ♀♀, "China occ., 26.-31.7., Boro Horo Shan 1991, Jining, Ining-H-Sein, 44°06' SS, 81°56' VD, Lgt. Snížek" (CPM, CHF) (**first record from China**). **Doubtful or inexact localities:** 1 ♀, "Vallée d'Ajar, 23.VIII.[19]75" [not located on any map, but most probably in Afghanistan], "sources", "Muséum Paris, 1983, coll. Cl. Legros", "Deronectes abnormicollis (Peyr.) [sic!], M. Balke det. 1990" (MNHN). 4 ♂♂, "Turkest" (NMW). 1 ♀, "Turkestan" (NMW).

Diagnosis: Habitus oblong oval (Figs. 13 - 14), surface brown to dark brown. Elytra not depressed between the inner puncture lines, in frontal view (Fig. 10) more strongly vaulted than in *D. parvicollis*. Shoulders very distinct due to the exceptionally narrow pronotum. Coarser punctures on head relatively dense. Pronotum also strongly vaulted, border perceptible, but very small, not shining, and not enlarged near the posterior angles. Microreticulation very indistinct, coarser punctures behind the anterior margin often reaching far backwards. Elytra with distinct and relatively dense coarser punctures, in the females somewhat less coarse and dense than in males. Inner puncture lines distinct and deepened, external ones distinct also, but not deepened. Areas to the right and left of the inner puncture lines somewhat vaulted, but less prominently than in *D. parvicollis*.

Metacoxal plates and metasternum with some larger punctures (Figs. 121 - 123). Prosternal apophysis (Figs. 114 - 115) slightly keeled anteriorly near the posterior margin of the procoxae, but much less so than in *D. parvicollis* (Fig. 113). Metacoxal lines parallel or slightly converging forwards, a little divergent before the posterior margin of the metasternum. Last abdominal segment in both sexes with margin beside the notch slightly sinuate only or without sinuation. Colour of femora and tibiae dark brown, trochanter, tarsi and knees a little paler. Antennae light brown, articles in most specimens not darkened distally.

♂♂: Median lobe of aedeagus (Fig. 39) evenly curved in lateral view, a little more curved before the tip; in dorsal view evenly tapering to the tip. Ventrally variable, some specimens with a weak central keel and distinct lateral keels, therefore in cross-section almost like a rectangle and not roof-like, areas between the lateral keels and the dorsal sides almost parallel, strongly reticulated (Fig. 39); but other specimens with lateral keels less prominent, areas between these keels and the sides smaller, and in cross-section more roof-like. Median lobe without excavations near the base. Paramere Figure 44. Posterior angles of pronotum rectangular to obtuse (90° - 110°). Median articles of antennae flat, transversely broadened (Fig. 17). Apex of elytra less acute than in the females, and posterior margin less sinuate, but in most specimens studied the tendency is the same as in the females. Elevated area at the margin near the apex well developed and somewhat shining. Interior of metacoxal lines abruptly falling to the level of the flat area between them (Figs. 121 - 122); in the anterior half of the lines this step is more prominent, thus looking like an elevation of the metacoxal lines as in the other species of this subgroup, but we have found a true elevation in a few specimens only, falling abruptly to both sides, and if present, than very indistinct. Protarsal claws a little longer than those of the females, but simple. Protibiae distally curved outwards, a little curved in the central part. Last abdominal segment with a distinct, but small notch (Fig. 127).

♀♀: Pronotum often distinctly narrower than in the males (compare Figs. 13 and 14), (PMW/MW 0.615 - 0.692 and PMW/PL 1.74 - 2.00 instead of 0.667 - 0.727 and 1.81 - 2.11 respectively in the males), but this is not a feature which enables sexes to be distinguished with certainty, because some females have a pronotum with nearly the same width as in males. Posterior angle more acute than in the males (70° - 90°). Gonocoxosternum (Fig. 84) not pointed as in *D. vestitus* (Fig. 85). Metacoxal lines similar to those of the males, but with the step less elevated, nevertheless this step is more distinct in the anterior half than over the rest of the lines (Fig. 123). Apex of elytra very acute (Figs. 143 - 145), strongly elevated before the tip, depressed right and left of this elevation, resulting in a margin which looks wave-like and twisted; in addition near the tip margin often developed to a flat shining carina. Last abdominal segment with a very large and strongly incised notch (Fig. 128); in a very few of the studied females with an elevation right and left beside the notch, in one case even shining. Protibiae a little smaller than in the males. Median articles of antennae simple.

Measurements: ♂♂: TL 5.30 - 5.70 mm, MW 2.60 - 2.90 mm; ♀♀: TL 5.00 - 5.60 mm, MW 2.40 - 2.70 mm; for further details see Tables 1 - 4.

Distribution: Afghanistan, Uzbekistan, Kirghizia, Kazakhstan, Tajikistan (Turkmenistan?) and China (first record from China, see FERY & BRANCUCCI 1997: 220) (Fig. 148).

32. *Deronectes vestitus* (GEBLER, 1848)

Hydroporus vestitus GEBLER, 1848: 76. - LEPRIEUR 1876a: 120. - LEPRIEUR 1876b: 53. - LEPRIEUR 1876c: 568. - SHARP 1882: 814.

Deronectes vestitus (GEBLER): ZIMMERMANN 1920: 120. - ZIMMERMANN 1932: 107. - ZAITZEV 1953: 191. - FERY & WEWALKA 1992: 22 (designation of lectotype).

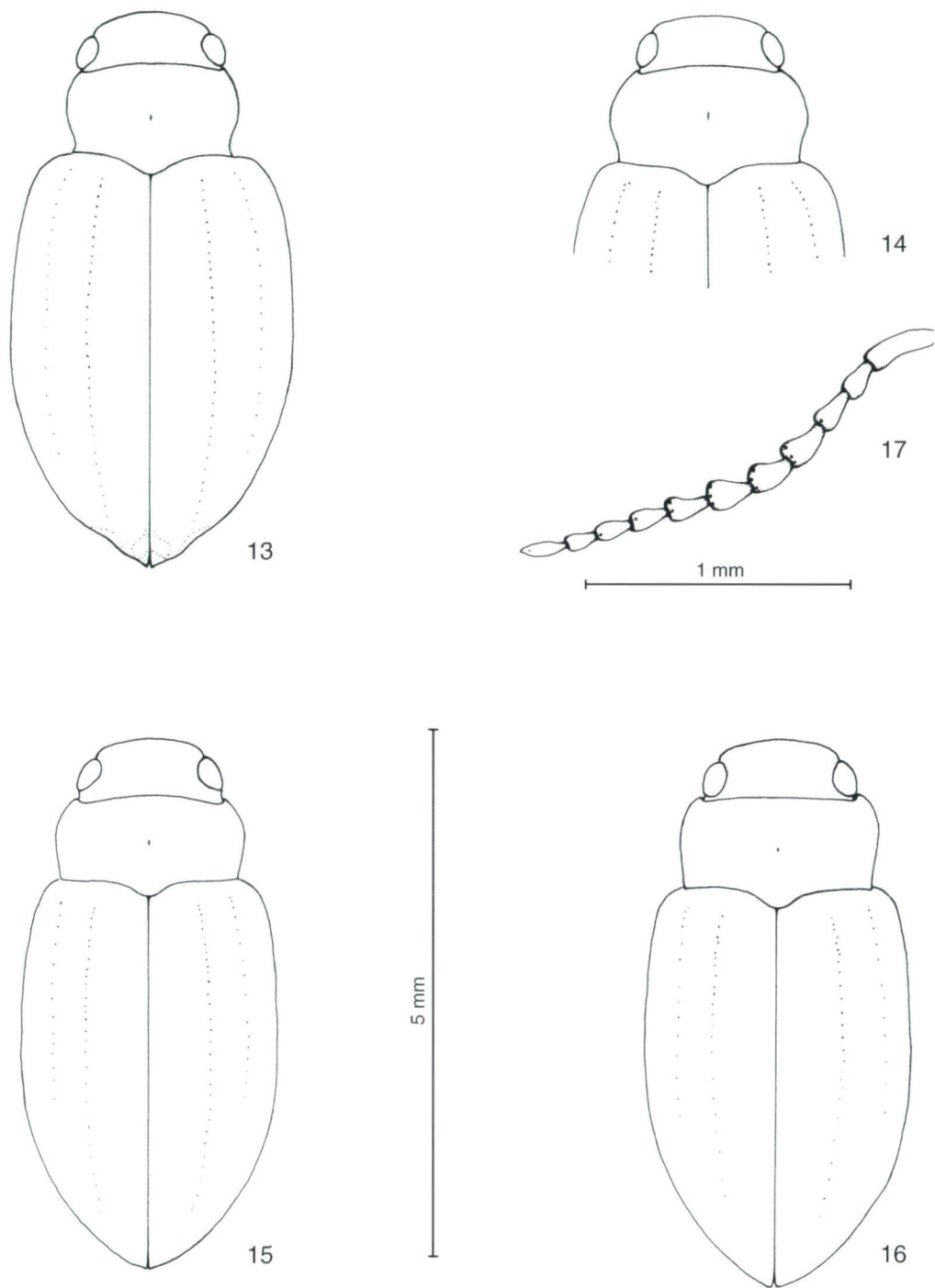
Deronectes persicus PESCHET: WEWALKA 1989: 98.

Lectotype (♂): male sex symbol, "Gebler", "Sibir. occ." [hw Mannerheim], "Syntypus, *Hydroporus vestitus* Gebler, 1848" [hw Nilsson], "Lectotype, *Hydroporus vestitus* Gebler, des. Fery & Wewalka [19]91" [red] (ZMH). **Paralectotype**: 1 ♂, "Mniszech, Sibirie" [round, hw Leprieur], "vestitus Gebler, type" [green, hw Leprieur], "Muséum Paris, ex Leprieur, Coll. M. Pic", "Paralectotype, *Hydroporus vestitus* Gebler, des. Fery & Wewalka [19]91" [red] (MNHN).

Additional material studied: **Kazakhstan:** 1 ♂, "Kendyktau" [Kendyktau = Kandyktau = Gory Kindyktas = Kendyktas Mountains, ca. 150 km W Alma Ata], "J. Sahlb." (ZMH). 1 ♂, "Kendyktau" (ZMSP). **Tajikistan:** 1 ♂, "Tatschikistan, Kurgan-Tube region [= Kurgan-Tjube, ca. 100 km SW Dushanbe], 5.7.1938, Luppova", "*Deronectes persicus* Peschet, det. G. Wewalka [19]88" (CGW). 1 ♀, "Javan centr. [= Yavan, ca. 40 km SE Dushanbe], Turkmenistan, Luppova, 5. VII. [1]938", "*Deronectes persicus* Peschet, det. G. Wewalka [19]88" (ZMSP). **Uzbekistan:** 2 ♂♂, "Usbekistan 110208, Dzhizak südöstlich [= SE] Farisch [ca. 100 km N Samarkand], 630 m, 10.5.1993, leicht fließender Bacharm [= slowly flowing brook] u. Stein [= under stones], leg. Bernhard Maier" (found together with *D. abnormicollis*) (CHH, CHF). 2 ♀♀, "Usbekistan 110209, Dzhizak südöstlich [= SE] Farisch [ca. 100 km N Samarkand], 650 m, 10.5.1993, Quelle [= spring], leg. Bernhard Maier" (CHH). **Inexact localities:** 1 ♂, 2 ♀♀, "Turkmenia, Kug [Cyrillic, illegible, possibly Kurgan-Tjube]" (ZMSP). 1 ♂, "Bucharra [= Bukhara]" (ZMSP).

Type locality: Russia, south-western Siberia, Loktewsk, near the border to Kazakhstan, ca. 200 km NE Semipalatinsk.

Diagnosis: Habitus oblong oval (Fig. 15), sides of elytra slightly rounded, less so than in *D. abnormicollis* but nevertheless this species approximates the males of *D. abnormicollis* on an initial glance. Surface dark brown to black, head paler, in some specimens disc of pronotum shining brown; most specimens covered by dense short setae. Elytra and pronotum



Figs. 13 - 17: Habitus of *Deronectes abnormicollis* (♀), (14) idem (♂), (15) *D. vestitus*, (16) *D. persicus*; (17) Antenna of *D. abnormicollis* (♂).

vaulted, but less so than in *D. abnormicollis*. Sides of pronotum straight or very weakly concavely sinuate before the posterior angles, resulting in obtuse angles (105° - 115°). Border of pronotum perceptible, but very narrow, sometimes a little shining near the posterior angles. Primary puncturation very dense on the disc, nearly as dense as on the elytra, microreticulation therefore almost invisible. Coarser punctures behind the anterior margin not reaching as far backwards as in *D. abnormicollis*. Elytra with a few very small secondary punctures only.

Metacoxal plates and metasternum without larger punctures. Metacoxal lines carinate, slightly converging forwards until the posterior margin of the metasternum. Protibiae slightly curved outwards distally, narrower than in *D. persicus*. Antennae brown, in some specimens very slightly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 40) with tip often a little enlarged in lateral view (Fig. 40a); with sides strongly reticulated, however these sides not parallel as in *D. persicus*, but sloping from the dorsal part to the margin, thus the reticulation is visible in dorsal view also; ventrally with a central keel and strong lateral keels; basally excavated as in *D. persicus* (Fig. 110). Paramere (Fig. 45), with a strong excavation. Metacoxal lines carinate and elevated in the anterior half as in *D. parvicollis* (Fig. 120). Protarsal claws a little elongate. Elytra depressed before apex, margin elevated near the tip. Last abdominal segment with a notch and sides sinuate, but less prominent than in the females.

♀♀: Apex of elytra resembles that of *D. abnormicollis* (Figs. 143 - 145), but structural modifications less prominent. Metacoxal lines carinate, without elevation anteriorly. Last abdominal segment with a broad and distinct notch, sides distinctly sinuate. Gonocoxosternum pointed, in some specimens stronger than shown in Figure 85.

Measurements: TL 4.60 - 5.35 mm, MW 2.30 - 2.55 mm; for further details see Tabs. 1 - 4.

Distribution: Russia (south-western Siberia), Kazakhstan, Uzbekistan and Tajikistan (Turkmenistan?) (Fig. 148).

33. *Deronectes persicus* PESCHET, 1914

Deronectes persicus PESCHET, 1914: 227. - ZIMMERMANN 1932: 105 (footnote). - WEWALKA 1970: 136.

? *Deronectes abnormicollis* SEMENOW: ZAITZEV 1953: 191.

Holotype (♂): "Muséum Paris, Perse, Chaîne bordière S.-O. de Suse à Ispahan, (alt. 60 à 4500 m.), J. de Morgan 1904", "Type" [red], "*Deronectes persicus* n.sp., R. Peschet" [hw Peschet], "Holotype, *Deronectes persicus* Peschet, Fery 1996" [red] (MNHN). **Note:** The holotype lacks parts of both antennae, the left mesotarsus and the right metatarsus.

Additional material studied: **Iran:** 8 ♂♂, 5 ♀♀, "23.6.1997 Iran, Kohkiluyeh & Boyer Ahmad, between Nourabad and Yasuj (1922)", "57 km N Nourabad, stream, 2100 m, Elmi/Hosseinie (1922)" (found together with *D. balkei* sp.n.); 2 ♂♂, "24.6.1997, Iran, Kohkiluyeh & Boyer Ahmad, between Sisakht and Samirom (1928)", "61 km N Sisakht, stream, 2000 m, Elmi/Hosseinie (1928)"; 2 ♂♂, 1 ♀, "3.9.1997 Iran, Fars, Chehel Cheshmeh (40 springs), 51 km W Shiraz, stream, 1940 m, Elmi/Hosseinie (1998)" 1 ♀, "14.8.1998, Kohkiluyeh & Boyer Ahmad, N Sisakht, ca. 1800 m, brook, Fery leg."; 1 ♂, 1 ♀, "17.9.1997, Iran, Fars, 51 km W Shiraz, 1940 m, stream, Elmi/Hosseinie (2029)"; 1 ♂, "22.9.1997, Iran, Fars, 73 km W Shiraz, 2000 m, Sarbast river, Elmi/Hosseinie (2041)"; 72 exs., "13./15.8.1998, Fars, Sepidan-Yasuj road, 18 km N Sepidan, river, Elmi & Fery leg."; 1 ♂, "24.3.1997, Iran, Kerman, between Baft and Kerman, 26 km N Baft, river, 2700 m, Elmi/Hosseinie (1885)"; 3 ♂♂, 1 ♀, "24.3.1998, Iran, Kerman, 87 km SE Baft, 2430 m, stream,

Elmi/Hosseinie (2056)" (found together with *D. brancuccii* sp.n. and *D. elmii* sp.n.); 1 ♀, "3.7.1997, Iran, Chahar-Mahal & Bakhtiari, between Shahr-e-Kord and Kuhrang (1984)", "58 km W Shahr-e-Kord, stream, 2440 m, Elmi/Hosseinie (1984)"; 1 ♀, "13.8.1995, Iran, Chahar-Mahal & Bakhtiari, stream, 29 km E Borujen, 2100 m, Elmi/Hosseinie (1687)"; all preceding specimens in DBSU or CHF. 1 ♂, "9/IX/1997 Iran, Yasuj District, streamlet ca. 13 km S of Yasuj, D. T. Bilton leg." (CDB). 4 ♂♂, 4 ♀♀, "3/IX/1997 Iran, Fars, Gharal river, Chehel Cheshmeh [ca. 50 km W Shiraz], gravel-bedded river, D. T. Bilton leg." (found together with *D. youngi* sp.n.) (CDB).

Type locality: Iran, "Chaîne bordière S.-O. [= SW?], de Suse à Ispahan". Suse is the ancient Susa and today's Shush, 20 km SW Dizful. We believe, that the locus typicus is situated in the mountainous region between "Suse" and Esfahan (= Isfahan = Ispahan).

Diagnosis: Habitus oblong oval, sides of elytra slightly rounded (Fig. 16). Surface dark brown to black, head paler, in some specimens disc of pronotum shining brown; many specimens covered with very short setae and thus with a grey and matt appearance, but others - e.g. the holotype - with setae restricted to the sides and therefore shining. Elytra and pronotum vaulted, but less than in *D. vestitus*. Sides of pronotum slightly narrowed to the base, scarcely concavely sinuate before base, often straight, resulting in rectangular or weakly obtuse posterior angles (90° - 95°); sides directly before the base strongly sinuate in a few specimens (in this respect resembling *D. parvicollis*), and therefore posterior angle acute (about 85°). Border of pronotum small but shining, elevated posteriorly. Disc of pronotum weakly microreticulated, with primary puncturation dense and with many coarser punctures. Elytra with small and sparse but distinct secondary punctures.

Metacoxal plates and metasternum without larger punctures. Metacoxal lines carinate, not close, parallel, in some specimens a little convergent anteriorly. Protibiae broader than in *D. vestitus*, slightly curved outwards distally. Antennae brown, articles not or only weakly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 41) in lateral view more abruptly angled between the second and distal third; apex narrower, more angled than in *D. vestitus*, with tip often a little enlarged as in *D. vestitus* (Fig. 40a); sides more or less parallel, strongly reticulated; in dorsal view broader near the middle and more sinuate; marginal parts shining, scarcely sloping to the margin and well delimited from the reticulated sides; ventrally with a central keel and strong lateral keels as in *D. vestitus*, but central keel in the apical third less distinct than in *D. vestitus*; area near the basal part excavated (Fig. 110). Paramere (Fig. 46) with excavation less distinct. Protarsal claws not developed, short, at most a little broader than in the females. Metacoxal lines carinate with an elevation in the anterior half. Last abdominal segment with a notch, which is smaller than in females, in some specimens only slightly truncate; sides with very slight or no sinuation. Elytra before apex very slightly depressed, border with a shining elevation before the tip.

♀♀: Gonocoxosternum on average more pointed than in *D. vestitus*, but not so strongly as shown in Figure 86 in all specimens. In contrast to *D. vestitus* apex of elytra not particularly developed, tip a little acute because of a slight sinuation of the margin before the tip; border near the tip with an elevation as in the males. Last abdominal segment with a notch, in some specimens very distinct in others less; sides more sinuate than in the males. Metacoxal lines carinate, but without elevation anteriorly.

Measurements: TL 4.70 - 5.40 mm, MW 2.30 - 2.60 mm; for further details see Tabs. 1 - 4.

Distribution: Iran, at present known from the south-western provinces Kohkiluyeh o Boyer Ahmad, Fars, Kerman and Chahar-Mahal o Bakhtiari (Fig. 148).

Note: *Deronectes persicus* and *D. vestitus* are undoubtedly two very closely related taxa, although at a first glance most specimens of *D. persicus* resemble *D. parvicollis* and most *D. vestitus* *D. abnormicollis*. We have been tempted to treat *D. persicus* as a subjective junior synonym of *D. vestitus*, or as subspecies, particularly because the differences in the male genitalia are small. On the other hand the constant differences in the form of the female elytral apex, and additionally the geographical distribution with its large disjunction due to the desert regions of eastern Iran have induced us to treat both taxa as strongly related, but separate allopatric species.

X.2 The *Deronectes afghanicus*-subgroup

Seven small species (TL 3.4 - 4.5 mm) from Iran, Turkmenistan, Afghanistan and Pakistan with a habitus, which is more flat and elongate than in the species of the *D. parvicollis*-subgroup. With the exception of *D. afghanicus* and *D. youngi* sp.n., only males can be determined with certainty through study of the median lobe of aedeagus. Pronotum (with the exception of *D. youngi* sp.n.) weakly cordiform (see Tab. 2). Elytra between the inner puncture lines very slightly vaulted or absolutely flat (best observed in frontal view); not or slightly depressed before the apex only, elevation at the posterior margin weak. Prosternal apophysis in most species with a flat longitudinal carina, with small transversal carinae and setae at the sides. Metacoxal plates and metasternum without coarse punctures, except in some specimens of *D. afghanicus*. Metacoxal lines simple impressed grooves. Except *D. afghanicus* (Fig. 5) the protibiae in both sexes are more or less simple, at most slightly curved outwards distally, those of the females are indistinctly narrower and less curved (see e.g. Fig. 6), but the shape in both sexes is a little variable. Last abdominal segment with a small, but sharply delimited notch (Figs. 131 - 134).

Notes: The grouping of *D. bameuli* sp.n. is provisional, because we have only studied the female holotype. *Deronectes youngi* sp.n. with its strongly cordiform pronotum shows affinities to the *D. longipes*-subgroup.

Key to the species of the *Deronectes afghanicus*-subgroup

- 1 Pronotum distinctly cordiform (PMW/PBW 1.12 - 1.24); smallest species of the genus (TL 3.50 - 4.25 mm); major parts of elytra and pronotum strongly depressed; a light brown species from south-western Iran. **35. *youngi* sp.n.**
- Pronotum less cordiform (PMW/PBW 1.04 - 1.15); elytra depressed, but less than in *D. youngi* sp.n.; larger species (TL 3.90 - 4.60 mm), with coloration darker brown or black, from north-eastern Iran, Turkmenistan, Afghanistan and Pakistan. 2
- 2 Pronotum near the posterior angles very coarsely punctured and strongly depressed in most specimens; males and females with protibiae strongly curved and broadened distally (Fig. 5). **34. *afghanicus***
- Pronotum near the posterior angles not strongly depressed; protibiae normal. 3

- 3 Species from Northern Pakistan and Afghanistan. 4
- Species from Turkmenistan and Iran. 6
- 4 Species from Pakistan; known at present from a single female, with a gonocoxosternum as in Figure 92. **38. bameuli sp.n.**
- Species from Afghanistan. 5
- 5 Males with median lobe of aedeagus as in Figure 50. **37. roberti sp.n.**
- Males with median lobe of aedeagus as in Figure 49. **36. danielssoni sp.n.**
- 6 Species known from Turkmenistan and one locality in north-eastern Iran; males with median lobe of aedeagus as in Figure 51. **39. nilssoni**
- Species known from the north of Khorissan province (Iran); males with median lobe of aedeagus as in Figure 52. **40. biltoni sp.n.**

34. *Deronectes afghanicus* WEWALKA, 1970

Deronectes afghanicus WEWALKA, 1970: 139. - WEWALKA 1989: 98.

Holotype (♂): "Nuristan, 1200 m, Bashgultal 10.IV.", "NO. [= NE] Afghan. 1953, J. Klapperich", male sex symbol, "Typus, *Deronectes afghanicus* n.sp., det Wewalka [19]70" [red, hw Wewalka] (NMB).
Paratypes: 1 ♂, same label as the holotype, but "Paratypus, *Deronectes afghanicus* n.sp., det Wewalka [19]70" [red, hw Wewalka] (CGW); according to WEWALKA (1970: 139) one further male paratype in HNHM.

Additional material studied: **Afghanistan**: 15 exs., "NO. [= NE] Afghan. 1953, J. Klapperich", "Nuristan 1200 m, Bashgultal 10.IV" (NMB, MRTO, CGW, CHF). 2 exs., same data, but 11.4.1953 (NMB). 1 ♂, "J. Klapperich, Bashgultal 1200 m, Nuristan 10.4.[19]53, Afghanistan" (CHF). **Pakistan**: 1 ♂, 1 ♀, "Pakistan: Dir Dir [ca. 250 km ENE Kabul] 1600 m, 22.V.1983, Besuchet - Löbl" (NMB). 3 ♂♂, 1 ♀, "Pakistan, Swat, SE Mingora [= Mongora, 34°47'N, 72°22'E], Karakar, 1100 m, 25.5.1978, leg. C. Holzschuh", "*Deronectes afghanicus* m., det. Wewalka 1978" (CGW, CHF).

Type locality: Afghanistan, Nuristan, Bashgultal (ca. 150 km ENE Kabul).

Diagnosis: Habitus elongate (Fig. 18), sides of elytra weakly rounded. Surface dark brown to black. Disc of pronotum with distinct coarse punctures, which are somewhat less dense right and left of the centre. Area before the base with many distinct and very coarse punctures, a little obsolete in the middle; the areas between the middle and the sides, are distinctly depressed in most specimens and have very coarse and dense punctures. Border of pronotum narrow and perceptible in anterior half only. Posterior angles rectangular to slightly obtuse (90° - 100°). Punctuation near the anterior margin and the sides very distinct and some punctures very coarse. Secondary punctuation of the elytra very distinct, but not dense.

Metacoxal plates and metasternum without or with very sparse and indistinct larger punctures only. Metacoxal lines parallel, not diverging forwards. Last abdominal segment with a sharply delimited notch (Figs. 131 - 132). Antennae light reddish brown, articles not or only slightly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 47) with apical third rather broad in lateral view; tip indistinctly enlarged; in dorsal view apical third parallel, tapering before the tip which is rounded. Paramere (Fig. 53) with apical part narrow. Protarsal claws simple. Protibia distinctly curved and conspicuously broadened distally (Fig. 5).

♀♀: Protibia broadened and curved distally, but less so than in the males. Gonocoxosternum Figure 87.

Measurements: TL 4.20 - 4.60 mm, MW 1.90 - 2.10 mm; for further details see Tabs. 1 - 4.

Distribution: North-eastern Afghanistan, northern Pakistan (Fig. 149).

35. *Deronectes youngi* sp.n.

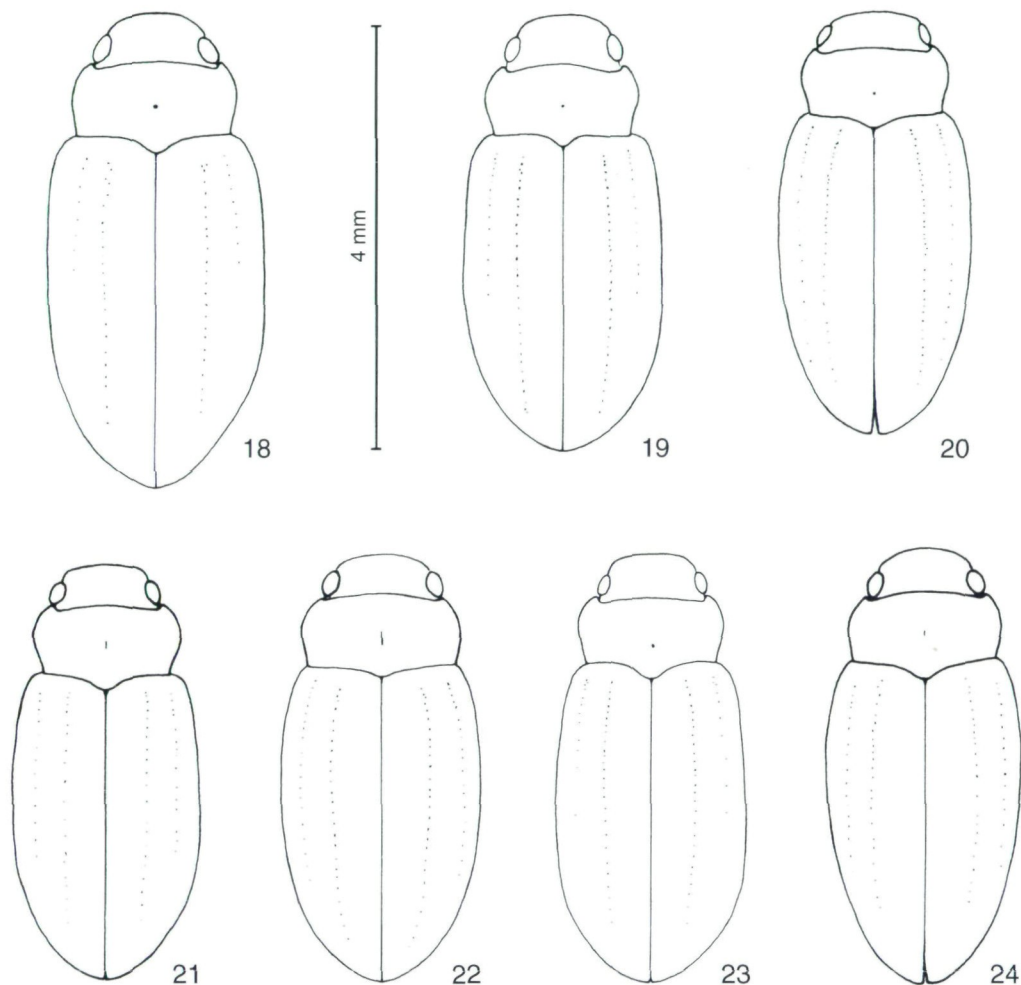
Holotype (♂): "6.1.1995 Iran, Khuzestan, 17 km N Ramhormoz, pool, 400 m, Elmi/Hosseinie (1431)", "Holotype, *Deronectes youngi* sp.n., Fery & Hosseinie det. 1998" [red] (found together with *D. longipes*) (NMW). **Paratypes:** 5 ♂♂, 15 ♀♀, same data as the holotype; 1 ♂, "23.3.1991 Iran, Khuzestan, 112 km E Mussian [in Ilam province], river, 210 m, Elmi/Hosseinie (1080)"; 8 ♂♂, 7 ♀♀, "28.3.1995 Iran, Khuzestan, 13 km N Masjed Soleiman, stream, 260 m, Elmi/Hosseinie (1484)" (found together with *D. longipes*); 10 ♂♂, 7 ♀♀, "18.3.1991 Iran, Khuzestan, 28 km E Kupal [ca. 80 km E Ahvaz], river, 260 m, Elmi/Hosseinie (1053)" (found together with *D. longipes*); 15 ♂♂, 14 ♀♀, "29.3.1995 Iran, Khuzestan, 51 km E Dezful, stream, 195 m, Elmi/Hosseinie (1493)"; 4 ♂♂, 3 ♀♀, "16.3.1991 Iran, Khuzestan, 69 km N Haftgel, pond, 370 m, Elmi/Hosseinie (1050)"; 1 ♀, "16.1.1995 Iran, Khuzestan, 33 km N Haftgel, pool, 180 m, Elmi/Hosseinie (1432)"; 1 ♀, "27.3.1995 Iran, Khuzestan, 14 km N Behbahan, pond, 360 m, Elmi/Hosseinie (1476)"; 4 ♂♂, 2 ♀♀, "18.3.1991 Iran, Khuzestan, 86 km S Shushtar, pool, 60 m, Elmi/Hosseinie (1062)"; 4 ♀♀, "23.3.1991 Iran, Ilam, 64 km N Bostan [36 km S Mussian], stream, 80 m, Elmi/Hosseinie (1076)" (found together with *D. longipes*); 1 ♂, 2 ♀♀, "16.4.1996 Iran, Bushehr, 35 km E Kangan, stream, 80 m, Elmi/Hosseinie (1706)"; 2 ♂♂, "28.3.1993 Iran, Fars, 17 km E Jahrom, stream, 1320 m, Elmi/Hosseinie (1190)" (found together with *D. longipes*); 1 ♂, "28.3.1993 Iran, Fars, Jahrom to Juyom, 28 km E Juyom, river, 1520 m, Elmi/Hosseinie (1191)" (found together with *D. longipes*); 5 ♂♂, 1 ♀, "28.3.1993 Iran, Fars, 42 km E Jahrom, stream, 1260 m, Elmi/Hosseinie (1192)" (found together with *D. longipes*); 1 ♀, "31.3.1993 Iran, Fars, 162 km W Lar, river, 660 m, Elmi/Hosseinie (1212)" (found together with *D. longipes*); 4 ♂♂, 5 ♀♀, "19.2.1998, Iran, Fars, 172 km S Shiraz, 45 km to Jahrom, 1210 m, stream, Elmi/Hosseinie (2049)" (found together with *D. longipes*); all preceding paratypes in DBSU or CHF. 1 ♂, "Iran: Fars, 17.9.1997, 51 km W Shiraz, 1940 m, leg. Schödl (15)" (NMW). 1 ♂, 2 ♀♀, "3/IX/1997 Iran, Fars, Gharal River, Chehel Cheshmeh [ca. 50 km W Shiraz], D. T. Bilton leg." (found together with *D. persicus*) (CDB). All paratypes with the respective red label.

Type locality: Iran, Khuzestan province, Ramhormoz (ca. 100 km E Ahvaz) (Zagros mountain range).

Diagnosis: Smallest species of the genus with a flat and parallel habitus (Figs. 12, 21). Surface light brown to brown, with short indistinct setae, mostly present on the apex and sides of the elytra and the sides of the pronotum. Elytra strongly depressed, totally flat between the inner puncture lines, without secondary punctures. A large, nearly triangular part of the pronotum before the base as strongly depressed as the elytra. Pronotum distinctly cordiform (Fig. 135) (PMW/PBW 1.12 - 1.24), with sides straight or slightly sinuate, forming obtuse posterior angles (100° - 110°). Border of pronotum narrow, but distinct and shining; disc microreticulated, without larger punctures, primary puncturation much less dense than on the elytra. Without punctures in the middle before the base, with some punctures towards the margin, and scarcely depressed near the posterior angles. Apex of elytra somewhat depressed, border with a small elevation before the posterior margin.

Most of the ventral surface brown, abdominal segments darker brown. Prosternal apophysis Figure 116. Metacoxal lines close, parallel, sometimes converging somewhat towards the posterior margin of the metasternum. Last abdominal segment with a sharply delimited notch (Fig. 133). Protibiae Figure 136. Antennae light brown, not darkened distally.

♂♂: Median lobe of aedeagus (Fig. 48) in dorsal view with apical third almost parallel, distinctly sinuate behind; Paramere Figure 54. Protarsal claws simple.



Figs. 18 - 24: Habitus of (18) *Deronectes afghanicus*, (19) *D. roberti* sp.n., (20) *D. bameuli* sp.n., (21) *D. youngi* sp.n., (22) *D. nilssoni*, (23) *D. biltoni* sp.n., (24), *D. danielssoni* sp.n.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 88.

Measurements: TL 3.50 - 4.25 mm, MW 1.60 - 1.90 mm; for further details see Tabs. 1 - 4.

Distribution: Mountain ranges of south-western Iran (Zagros mountain range) (Fig. 149).

Derivatio nominis: We name this species for Frank N. Young, Indiana, USA, in recognition of his great entomological works, particularly on water beetles. In addition the junior author wants to express her thanks for having had the honour of being his PhD student.

Note: For a possible intermediate species see the note at the end of the description of *D. hendrichi* sp.n.

36. *Deronectes danielssoni* sp.n.

Deronectes longipes SHARP: GUÉORGUIEV 1963: 217 (partim).

Holotype (♂): "A 306", "Afghanistan, Tang-Kharzar 24.8.1957, Dr. K. Lindberg Leg." [hw Guéorguiev], on reverse "torrent, 1850 m" [hw Guéorguiev], "*Deronectes longipes* Sharp ♂, V. Guéorguiev det. 1962" [hw Guéorguiev], "Holotype, *Deronectes danielssoni* sp.n., Fery & Hosseinie det. 1998" [red] (MZL). No paratypes. **Note:** The holotype lacks parts of the legs and some articles of the right antenna.

Note: GUÉORGUIEV (1963: 217) specifies "Hézaradjat"; R. Danielsson (Lund) has informed us that Lindberg records the specimen from "Thang-Khazar ou Tang-Djebet Baz (Hezaradjat), entre Khvadjah Tschicht et Tang-Azao", in his notes. Khvadjah Tschicht seems us to be identical with Chwadscha-gischt (see: "Stiehlers Handatlas"), ca. 80 km E Herat.

Type locality: Afghanistan, Thang-Kharzar, E Herat.

Diagnosis: Habitus elongate and flat (Fig. 24), but the sides of the elytra rounded and therefore less parallel. Surface dark brown. Pronotum microreticulated on disc and without coarser punctures; primary puncturation larger than on the elytra and less dense, coarser than in *D. biltoni* sp.n. Pronotum slightly cordiform with sides uniformly narrowed to the base, not sinuate and supplied with a narrow border. Posterior angles obtuse (110°). Elytra without secondary punctures.

Prosternal apophysis narrow, roof-like and vaulted, sides depressed, transversal carinae indistinct and with setae. Metacoxal lines close, almost parallel, very slightly converging forwards. Antennae light brown, articles, beginning with the third, distinctly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 49) in dorsal view very characteristic, like a slender wine bottle, slightly diverging before apex, tip truncate; in lateral view evenly tapering to the tip, between central and apical third a little broader and more angled than in *D. nilssoni*. Paramere (Fig. 55) larger and broader than in *D. roberti* sp.n., but tip narrower. **Note:** The median lobe is a little damaged, nevertheless its structure is clearly recognizable.

♀♀: So far unknown.

Measurements: TL 4.20 mm, MW 1.85 mm (holotype only); for further details see Tables 1 - 4.

Note: The last abdominal segment is unfortunately damaged, so that the notch could not be studied. Nevertheless we have little doubt that the new species is correctly placed in the *D. afghanicus*-subgroup.

Distribution: North-western Afghanistan (Fig. 149).

Derivatio nominis: We give this species the name of Roy Danielsson (Lund, Sweden), who made interesting material and important information available to us.

37. *Deronectes roberti* sp.n.

Deronectes longipes SHARP: GUÉORGUIEV 1963: 217 (partim).

Holotype (♂): "Afghanistan, Orozgan, 10.6.1960, Dr. K. Lindberg Leg." [hw Guéorguiev in part], on reverse "rivière, 2100 m" [hw Guéorguiev], "*Deronectes longipes* Sharp ♀ [sic!], V. Guéorguiev det. 1962" [hw Guéorguiev in part], "Holotype, *Deronectes roberti* sp.n., Fery & Hosseinie det. 1998" [red] (MZL).

Paratypes: 2 ♂♂, 2 ♀♀, same data as the holotype, originally two specimens together with the holotype on one pin, the other two on a single pin also; we have separated the specimens and provided them with new

labels with printed text (MZL). 1 ♀, same data as the holotype (CGW). 1 ♂, same first label as the holotype, but "*Deronectes longipes* Shp., det. V. Guéorguiev 1978" [hw Guéorguiev in part] (MRTO). All paratypes with the respective red label.

Type locality: Afghanistan, Oruzgan (province between Kandahar and Kabul; the town Oruzgan has the coordinates 32°58'N, 66°39'E); according to GUÉORGUIEV (1963: 217) "Orozgan" is situated about 175 km NNE of Kandahar.

Diagnosis: Habitus elongate, parallel, rather flat, sides of elytra slightly rounded (Fig. 19). Surface brown. Pronotum rather strongly microreticulated on disc, without coarser punctures, primary puncturation larger than on the elytra and much less dense. Sides of the pronotum with a thin border posteriorly. Posterior angles of the pronotum rectangular to slightly obtuse (90° - 110°). Elytra with very few small secondary punctures.

Prosternal apophysis without distinct transversal carinae. Metacoxal lines close, almost parallel, very slightly converging forwards. Last abdominal segment with a sharply delimited notch. Antennae light brown, articles barely darkened.

♂♂: Median lobe of aedeagus (Fig. 50) in dorsal view with apical third only slightly sinuate, then very slightly tapering to the tip, and stronger tapering before the tip, which is rounded; in lateral view apical third slightly curved. Paramere (Fig. 56) rather narrow, tip narrow also.

♀♀: Without conspicuous differences to the males. Protibia Figure 6. Gonocoxosternum Figure 89.

Measurements: TL 3.90 - 4.15 mm, MW 1.75 - 1.85 mm; for further details see Tabs. 1 - 4.

Distribution: Central Afghanistan (Fig. 149).

Derivatio nominis: This species is dedicated to the senior author's grandson Robert, who was able to distinguish a water beetle from a dog at the age of only twelve months, and - on the other hand - to our sincere colleague Robert Angus (Surrey, UK), who has supported this revision of *Deronectes* with a great deal of valuable information.

38. *Deronectes bameuli* sp.n.

Deronectes vestitus (GEBLER): GUIGNOT 1958: 28 (partim). - VAZIRANI 1970: 119 (partim).

Deronectes longipes SHARP: FERY & WEWALKA 1992: 22.

Holotype (♀): "Hte Vall. Yarkhun [= Yarkhun, near Mastny], Cachemire [= Cashmere], 24-VIII-1954" [hw Guignot], "F. Guignot det., *Deronectes vestitus* Gebler.", "Holotype, *Deronectes bameuli* sp.n., Fery & Hosseinie det. 1998" [red] (IRSN). No paratypes.

Type locality: Northern Pakistan, Dir province, Valley of the Yarkhun river, ca. 200 km NNE Peshawar; according to GUIGNOT (1958: 29) the type locality is situated in an altitude of 4101 m.

Diagnosis: Habitus elongate, sides of elytra rounded and therefore less parallel (Fig. 20). The single female holotype resembles *D. danielssoni* sp.n., but it is even flatter. Surface brown, pronotum a little paler (immature?). Pronotum on disc very slightly microreticulated, without coarser punctures; primary puncturation scarcely larger than on the elytra and much less dense, smaller than in *D. biltoni* sp.n.; right and left of the centre the puncturation is indistinctly coarser and denser; very few coarser punctures present in the middle before the base, the punctures beside the middle are larger, but not

as coarse as in *D. biltoni* sp.n., and here the surface is somewhat depressed. Sides of the pronotum with a distinct border, which nevertheless disappears before the posterior angles. Posterior angles of the pronotum rectangular, due to a slight sinuation directly before the base. Elytra without secondary punctures. Apex of elytra indistinctly depressed, with a very small elevation before the tip.

Metacoxal lines parallel, close, not diverging forwards. Prosternal apophysis without longitudinal carina, slightly vaulted only, and slightly elevated posteriorly; sides scarcely depressed, with setae and small but distinct transversal carinae. Last abdominal segment with a sharply delimited notch. Antennae scarcely darkened distally.

♂♂: So far unknown.

♀♀: Gonocoxosternum (Fig. 86) with inner side (= side without bristles) strongly sinuate. Protibiae distally a little more curved outwards than in the females of *D. roberti* sp.n. (Fig. 6).

Measurements: TL 4.00 mm, MW 1.80 mm (holotype only); for further details see Tables 1 - 4.

Distribution: Northern Pakistan, Dir province (Fig. 149).

Derivatio nominis: We name this species after the French water beetle specialist Franck Bameul (Bordeaux, France), who has supported the present work with important information.

Note: The type locality is situated about 600 km from that of *D. roberti* sp.n. and about 800 km from that of *D. danielssoni* sp.n. Considering in addition the characteristic shape of the inner side of the gonocoxosternum, we have decided to describe the single female as a new taxon. Nevertheless, the study of further material from this poorly investigated region is strongly required.

39. *Deronectes nilssoni* FERY & WEWALKA, 1992

Deronectes longipes SHARP: ZAITZEV 1953: 190 (partim).

Deronectes vestitus (GEBLER): ZAITZEV 1953: 191 (partim). - GUIGNOT 1958: 28 (partim). -

WEWALKA 1970: 140. - VAZIRANI 1970: 119 (partim).

Deronectes nilssoni FERY & WEWALKA, 1992: 22.

Holotype (♂): "Bucharu, Repetek 4. 1900., Coll. Hauser.", "Zool. Mus. Berlin", "Holotypus, *Deronectes nilssoni* n.sp., det. Fery & Wewalka [19]91" [red] (MNB). **Paratypes:** 14 ♂♂, 8 ♀♀, same data as the holotype, but "Paratypus, *Deronectes nilssoni* n.sp., det. Fery & Wewalka [19]91" [red] (MNB, NMW, CGW, BML, CHF).

Additional material studied: **Turkmenistan:** 1 ♀, female sex symbol, "Gr. Balachan [= Großer Balchan = Khr. Bol. Balkhan, mountain range E Krasnowodsk at the eastern border of the Caspian Sea], Dschebell, F. Hauser, 1898", "Hauser Coll, 1904-63", "*Deronectes vestitus* Gebler" (BML). 5 ♂♂, 4 ♀♀, "Gr. Balachan, Dschebell, F. Hauser, 1898", three females additionally with "Collect. Hauser", one female with "D. vestitus Gebler?", "*Deronectes vestitus* Gebler, det. Wewalka [19]70" (NMW). 2 ♂♂, "Gr. Balachan, Dschebell, F. Hauser, 1898", "Collect. Hauser", "*Deronectes vestitus* Gebler, det. Wewalka [19]70" (CGW). 4 ♂♂, "Turkmenien, Kopet Dag [mountain range NW Ashkhabat] 30 Werst von Ashkabat, 10.5.1925, V. Geptner" [Cyrillic], "*Deronectes vestitus* Gebler, det. G. Wewalka [19]88", one specimen additionally with "longipes?" (ZMM). 1 ♂, "Turkmenia, Do... [illegible], 9.IX.[19]47" [Cyrillic], "*Deronectes vestitus* Gebler, det. G. Wewalka [19]88" (ZMSP). 1 ♀, "Turkmenia" [Cyrillic], "*Deronectes vestitus* Gebler, det. G. Wewalka [19]88" (ZMSP). 1 ♂, 2 ♀♀, label text nearly illegible, maybe "B. Balchan..., 28.V.[19]48" [Cyrillic], "*Deronectes vestitus* Gebler, det. G. Wewalka [19]88" (ZMSP). 1 ♂, "Turkmenia ... [illegible], 8.VII.[19]40"

[Cyrillic], "*Deronectes vestitus* Gebl., det. G. Wewalka [19]88" (ZMSP). 1 ♂, label text nearly illegible, maybe "B. Balachan, Dschebell, Turkmenia" [Cyrillic], "*Deronectes vestitus* Gebl., det. G. Wewalka [19]88" (ZMSP). 1 ♀, "SW Turkmenistan, 2 - 6 km N Kara-Kala [ca. 250 km WNW Ashkhabad], 24.V.1952, Kryzhanovskij" [Cyrillic], "P. [sic!] longipes Sharp, 1959, Kryzhanovskij det." (ZMSP). 1 ♂, "GR Balachan, Dschebell, F. Hauser 1898", "*Deronectes vestitus*" (MRTO). 1 ♂, "Transcaspia, Kisil-Arwat [ca. 300 km NW Ashkhabad], F. Hauser, 1898", "O. Leonhard", "*Deronectes* ? *microthorax* Sem." [hw Leonhard] (DEI). 2 ♂♂, "Turkmenia, Chuli, 3.5.[19]86, Leg. O. Gorbunov" (CSR). 3 ♂♂, 2 ♀♀, "Turkmenistan, Firiuza [= Firusze = Firyuza, 25 km W Ashkhabad], 15.V.1991, R. Dunda leg." (CSR, CPM, CHF). **Iran:** 2 ♂♂, 1 ♀, "Iran, Bygiran, 3-VII-1956" [hw Guignot], "F. Guignot det., *Deronectes vestitus* Gebl." (IRSN). 1 ♂, 2 ♀♀, "Iran, Bygiran, 3-VII-1956", "*Deronectes vestitus* Gebler, det. Wewalka [19]70" (MNHN). **Note:** FERY & WEWALKA (1992: 24) could not locate Bygiran (= Bajgiran), but in the meantime it has been identified in the Khorasan province (Iran), about 35 km south of Ashkhabad, as a customs house directly at the frontier and opposite Gaudan, which is located in Turkmenistan. Probably "Bad Dschircha" is another name of this village. According to GUIGNOT (1958: 28) Bygiran is situated at an altitude of about 1500 m.

Type locality: Turkmenistan, Repetek, oasis in the Karakum desert, between Mary (Merw) and Bukhara.

Diagnosis: Habitus elongate, less parallel and depressed than in the other species of the subgroup (Fig. 22), with the sides of elytra weakly rounded. Surface blackish brown. Pronotum before base with puncturation obsolete in the middle, but between the middle and the sides with very coarse punctures, and depressed here, but not as strongly as in *D. afghanicus*. Border of pronotum narrow, in some specimens less distinct in the posterior half. Posterior angles obtuse (95° - 110°). Secondary punctures on the elytra very sparse, and very indistinct.

Metacoxal lines parallel, sometimes slightly diverging forwards. Last abdominal segment with a sharply delimited notch (Fig. 134). Antennae pale brown, articles weakly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 51) in lateral view with apical third broader than in *D. biltoni* sp.n.; in dorsal view with apical third more or less parallel, and slightly enlarged before the tip, which is rounded. Form somewhat variable (see Fig. 51a), even within a single population as has been noted by WEWALKA (1970: 141) and FERY & WEWALKA (1992: 24). Paramere (Fig. 57) slightly excavated only. Protarsal claws simple.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 90.

Measurements: TL 3.80 - 4.30 mm, MW 1.65 - 1.90 mm; for further details see Tabs. 1 - 4.

Distribution: Turkmenistan, extreme north-east of Iran (Fig. 149).

Note: The mountain ranges of the Kopet Dag in Turkmenistan and Golul Dagin in Iran seem to form a geographical border between *D. biltoni* sp.n. and *D. nilssoni*.

40. *Deronectes biltoni* sp.n.

Deronectes vestitus (GEBLER): GUIGNOT 1958: 28 (partim). - VAZIRANI 1970: 119 (partim). - WEWALKA 1970: 141.

Holotype (♂): "Iran, Ziarat, 3-V-1953" [hw Guignot], male sex symbol, "*Deronectes longipes* Sharp., det. Wewalka [19]70", "Holotype, *Deronectes biltoni* sp.n., Fery & Hosseinie det. 1998" [red], coll. Guignot (MNHN). **Paratypes:** 1 ♂, 2 ♀♀, same data as the holotype, but all with a female sex symbol [sic!]; one female with a female sex symbol which is crossed out and changed to a male sex symbol [sic!]; coll. Guignot. (MNHN). 1 ♀, female sex symbol, "Iran, Ziarat, 3-V-1953" [hw Guignot], label glued on a larger label with "Coll. R. I. Sc. N. B., Coll. R. Mouchamps", "F. Guignot det., *Deronectes vestitus* Gebl." [not hw Guignot!], "*Deronectes longipes* Sharp, Fery det. [19]91" (IRSN). All paratypes with the respective red label.

Type locality: Iran, Khorassan province, Ziarat. This locality is situated ca. 10 km NW Shirvan in the north-east of Iran, about 60 km south-west of Ashkhabad; according to GUIGNOT (1958: 28) Ziarat is located at an altitude of 665 m.

Diagnosis: Habitus elongate, parallel, sides of elytra very slightly rounded (Fig. 23); a rather flat species. Surface brown. Border of pronotum very narrow, and perceptible in the anterior half only. Posterior angles more or less rectangular. Elytra with very few very small secondary punctures only or without such punctures.

Metacoxal lines close, almost parallel or slightly converging forwards. The notch on the last visible abdominal segment is almost round, less elongate than in the other species of the subgroup. Antennae light brown, articles slightly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 52) in lateral view with a rather narrow apical third, in dorsal view more or less evenly tapering to the tip, but somewhat more strongly tapering before tip. Paramere Figure 58. Protibiae a little more curved outwards distally than in *D. nilssoni*.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 91.

Measurements: TL 3.95 - 4.30 mm, MW 1.75 - 1.90 mm; for further details see Tabs. 1 - 4.

Distribution: Iran, Khorassan province, so far known only from the Ziarat locality (Fig. 149).

Derivatio nominis: We name this species for our sincere friend and colleague David Bilton (Plymouth, UK), who has supported our work with many important suggestions.

X.3 The *Deronectes longipes*-subgroup

A difficult subgroup which contains twelve medium-sized species, which are distributed from north-western Syria over south-eastern Turkey and northern Iraq to southern Iran. Their habitus is more or less elongate and rather flat, but less so than in the species of the *D. afghanicus*-subgroup. Prosternal apophysis in most species with a flat longitudinal carina, small transversal carinae and setae alongside it. The notch of the last abdominal segment in some species is rather large and indistinct in others, but is never narrow and sharply delimited. Metacoxal lines not carinate, impressed only. Protibiae in both sexes distally curved outwards, but a little variable in shape. Within this subgroup the males of the last four species - in contrast to the first seven - have the median lobe of aedeagus in lateral view more angled ventrally between the central and apical third and less evenly curved in the centre. In addition these four species have the last abdominal segment lobed backwards beside the notch - distinctly in *D. syriacus* and *D. kinzelbachi* sp.n., less distinct in *D. schuberti* and *D. angulipennis* - suggesting a close relationship between these taxa. Nevertheless for the moment we do not intend to split the *D. longipes*-subgroup into two subgroups.

Notes: *Deronectes hendrichi* sp.n. and *D. elmii* sp.n. with their small size, flat habitus and the more sharply incised notch of the last abdominal segment show transitional tendencies to the *D. afghanicus*-subgroup.

Key to the species of the *Deronectes longipes*-subgroup

- 1 Species with notch on last abdominal segment narrow and sharply delimited; with a less cordiform pronotum (except *D. youngi* sp.n.); most species smaller (TL 3.50 - 4.60 mm). (see the *D. afghanicus*-subgroup)
- Species with notch on last abdominal segment more or less distinct, but not narrow and sharply delimited; most species larger (TL 3.60 - 5.20 mm). 2
- 2 Males with median lobe of aedeagus in lateral view less strongly angled ventrally between the central and apical third, more or less evenly curved in the centre; species from Iran, Turkey and Iraq. 3
- Males with median lobe of aedeagus in lateral view distinctly angled ventrally between the central and apical third, less evenly curved in the centre; species from Turkey and Syria. 10
- 3 Species from Iran. 4
- Species from Turkey and Iraq. 8
- 4 Males with median lobe of aedeagus in lateral view ventrally almost evenly curved (Figs. 59, 105); species from the southern and south-eastern provinces of Iran. 5
- Males with median lobe of aedeagus in lateral view ventrally less evenly curved, more angled between the central and apical third (Figs. 60 - 63); species from the central and south-western provinces of Iran. 6
- 5 Elytra and disc of pronotum without larger punctures. Males with median lobe of aedeagus as in Figure 59. **44. hendrichi sp.n.**
- Elytra and disc of pronotum with larger punctures. Males with median lobe of aedeagus as in Figure 105. **45. elmii sp.n.**
- 6 Elytra mostly without larger punctures. Males with median lobe of aedeagus smaller (Fig. 60); a very variable species. **41. longipes**
- Elytra with small but perceptible larger punctures. Males with median lobe of aedeagus larger. 7
- 7 Males with median lobe of aedeagus as in Figure 62; species from Esfahan and Kerman provinces in central Iran (Qohrud mountain range). **42. brancuccii sp.n.**
- Males with median lobe of aedeagus as in Figure 63; species from Buyer Ahmad o Kuhgiluye province in south-western Iran (Zagros mountain range). **43. balkei sp.n.**
- 8 Small species (TL 3.90 - 4.25 mm) from Gaziantep province, Turkey; males with anterior protarsal claw enlarged; median lobe of aedeagus as in Figure 108A. **48. hebaueri sp.n.**
- Larger species (TL 4.20 - 4.75 mm) from Diyarbakir and Siirt provinces, Turkey, and Dahuk province, northern Iraq; males with anterior protarsal claw simple. 9
- 9 Males with median lobe of aedeagus as in Figure 64; species from Diyarbakir province, Turkey. **46. evelynae sp.n.**
- Males with median lobe of aedeagus as in Figure 65; species from Siirt province, Turkey, and Dahuk province, Iraq. **47. riberai sp.n.**

- 10 Last abdominal segment distinctly lobed backwards beside a strong notch (Figs. 137 - 142). 11
- Last abdominal segment less distinctly lobed backwards beside a smaller notch. 12
- 11 Species from north-western Syria and Hatay province in Turkey; pronotum more cordiform (PMW/PBW 1.14 - 1.20); males with median lobe of aedeagus as in Figure 80. **52. kinzelbachi sp.n.**
- Species from south-eastern Turkey; pronotum less cordiform (PMW/PBW 1.05 - 1.13); males with median lobe of aedeagus as in Figure 79. **51. syriacus**
- 12 Species from southern central Turkey (Kahraman Maras province); pronotum less cordiform (PMW/PBW 1.07 - 1.14); males with median lobe of aedeagus as in Figure 77. **49. schuberti**
- Species from central southern Turkey (Icel province); pronotum more cordiform (PMW/PBW 1.12 - 1.23); males with median lobe of aedeagus as in Figure 78. ...
..... **50. angulipennis**

41. *Deronectes longipes* SHARP, 1882

Deronectes longipes SHARP, 1882: 420. - ZIMMERMANN 1920: 119. - ZIMMERMANN 1932: 105. - ZAITZEV 1953: 189 (partim). - GUÉORGUEV 1963: 217 (partim). - WEWALKA 1970: 140. - WEWALKA 1989: 99 (partim). - FERY & WEWALKA 1992: 25 (designation of lectotype).
? *Deronectes vestitus* (GEBLER): GUIGNOT 1958: 28 (partim).

Lectotype (♂): male sex symbol, "Type" [round, red margin, most probably mounted by J. Balfour-Browne], "Persia.", "Persia" [hw Sharp], "Type 297" [hw Sharp], "Sharp Coll. 1905-313", "*Deronectes longipes* n.sp." [hw Sharp], "Lectotype, *Deronectes longipes* Sharp, des. Fery 1991" [red], the glue-card with a male sex symbol (BML). **Paralectotype**: ♀, "Paratype" [round, yellow margin, most probably mounted by J. Balfour-Browne], "Persia.", "Persia" [hw Sharp], "297" [hw Sharp], "Sharp Coll. 1905-313", "*Deronectes longipes* Sharp, Paratype" [hw J. Balfour-Browne], "Paralectotype, *Deronectes longipes* Sharp, des. Fery 1991" [red], the glue-card with a female sex symbol (BML).

Note: Because of the high variability of *D. longipes* and the possibility that unknown forms or even species may be contained in the "additional material studied" listed below, we provide more comments than in the other species of the *parvicollis*-group, particularly we have noted separately those localities where females only have been found so far.

Additional material studied: **Iran:** 1 ♂, "1.4.1994 Iran, Fars, 22 km E Farrashband [ca. 100 km SSW Shiraz], pond, Elmi/Hosseinie (1391-5)"; 17 ♂♂, 11 ♀♀, "28.3.1993 Iran, Fars, Jahrom to Juyom, 28 km E Juyom, river, 1520 m, Elmi/Hosseinie (1191)" (one female dark brown; one male with median lobe of aedeagus in dorsal view narrow and evenly tapering to the tip when dry (Fig. 61), but more or less normal when in liquid); 1 ♂, "29.3.1993 Iran, Fars, S Juyom, river, 1080 m, Elmi/Hosseinie (1198)" (found together with *D. youngi* sp.n.); 1 ♂, 1 ♀, "28.3.1995 Iran, Fars, 83 km S Juyom, pool, 1140 m, Elmi/Hosseinie (1199)" (male very immature, female brown); 1 ♂, 2 ♀♀, "28.3.1993 Iran, Fars, 17 km E Jahrom, stream, 1320 m, Elmi/Hosseinie (1190)" (one female brown; found together with *D. youngi* sp.n.); 1 ♂, "31.3.1993 Iran, Fars, 162 km W Lar, river, 660 m, Elmi/Hosseinie (1212)" (found together with *D. youngi* sp.n.); 1 ♂, "1.4.1993 Iran, Fars, 49 km N Firuz Abad, stream, 1600 m, Elmi/Hosseinie (1217)" (specimen rather vaulted and sides of elytra rounded); 2 ♂♂, "11.6.1995 Iran, Fars, 213 km S Shiraz, Mahmood Abad, 32 km N Lar, stream, 1400 m, Elmi/Hosseinie (262)" (one male brown); 1 ♂, "22.7.1993 Iran, Fars, Bamoo, (nr. Shiraz Nat. Reserve Park), Cheshmeh-ye-Ab-e-Shirin, 15 km NE Shiraz, pond, 2020 m, Elmi/Hosseinie (1220)"; 1 ♂, "9.4.1998, Iran, Fars, Cheshmeh [= spring] Azimi, Bamoo National Park, 20 km NE Shiraz, 1070 m, spring, Elmi/Hosseinie"; 1 ♂, 3 ♀♀, "30.4.1998, Iran, Fars, Cheshmeh [= spring] Azimi, Bamoo National Park, 20 km NE Shiraz, 1070 m, spring, Elmi/Hosseinie"; 1 ♂, "28.3.1995 Iran, Khuzestan, 6 km N Haftgel, pool, 440 m, Elmi/Hosseinie (1482)" (immature specimen); 1 ♂, "18.3.1991 Iran, Khuzestan, 8 km N Haftgel, pool, 140 m, Elmi/Hosseinie (1054)"; 1 ♂, "18.3.1991 Iran, Khuzestan, 28 km E Kupal [ca. 80 km

E Ahvaz], river, 260 m, Elmi/Hosseinie (1053)" (brown specimen; found together with *D. youngi* sp.n.); 1 ♂, 1 ♀, "28.3.1995 Iran, Khuzestan, 13 km N Masjed Soleiman, stream, 260 m, Elmi/Hosseinie (1484)" (the male with median lobe of aedeagus in dorsal view as in Figure 61, see comments above; found together with *D. youngi* sp.n.); 7 ♂♂, 3 ♀♀, "23.3.1991 Iran, Ilam, 64 km N Bostan [36 km S Mussian], stream, 80 m, Elmi/Hosseinie (1076)" (females dark brown and rather broad; found together with *D. youngi* sp.n.); 1 ♂, "3.8.1995 Iran, Markazi, 33 km N Khomein, stream, 1880 m, Elmi/Hosseinie (1623)" (immature specimen); 2 ♂♂, 4 ♀♀, "25.4.1996 Iran, Kohkilouyeh & Boyer Ahmad, 10 km S Yasuj, small brook, Elmi/Hosseinie (1732)"; 2 ♂♂, 5 ♀♀, "5.8.1995 Iran, Kermanshah [= Bakhtaran], 54 km N Islam Abad, stream, 1450 m, Elmi/Hosseinie (1639)" (one male with median lobe of aedeagus in lateral view with apical third more curved, in lateral view narrower and more evenly tapering to the tip); all preceding specimens in DBSU or CHF. 1 ♂, "Iran, Shiras, Chesmeh Darrehbidi [15 km W Shiraz], Juni 1972, leg. Hosseinie", "*Deronectes longipes* Sharp, det. G. Wewalka [19]82" (CGW). 22 ♂♂, 19 ♀♀, "Iran, Buyer Ahmad o Kuhgiluye, 10 km S Sisakht, 21 km NW Yasug, rivulet, leg. Wewalka, 24.4.1996 (10)" (CGW, CHF). 1 ♂, 1 ♀, "Iran, Buyer Ahmad o Kuhgiluye, 10 km S Yasug, rivulet, leg. Wewalka, 25.4.1996 (11)" (found together with *D. balkei* sp.n.) (CGW). **Records of females only:** 2 ♀♀, "1.4.1993 Iran, Fars, 43 km W Ghir [= Qir, ca. 40 km W Jahrom], stream, 1260 m, Elmi/Hosseinie (1214)"; 1 ♀, "29.3.1993 Iran, Fars, Juyom to Lar, 47 km S Juyom, spring water, 1000 m, Elmi/Hosseinie (1197)"; 1 ♀, "28.3.1993 Iran, Fars, 42 km E Jahrom, stream, 1260 m, Elmi/Hosseinie (1192)" (specimen strongly immature; found together with *D. youngi* sp.n.); 2 ♀♀, "1.4.1993 Iran, Fars, 15 km W Ghir [= Qir, ca. 40 km W Jahrom], stream, 1100 m, Elmi/Hosseinie (1213)"; 2 ♀♀, "19.2.1998, Iran, Fars, 172 km S Shiraz, 45 km to Jahrom, 1210 m, stream, Elmi/Hosseinie (2049)" (found together with *D. youngi* sp.n.); 1 ♀, "6.1.1995 Iran, Khuzestan, 17 km N Ramhormoz, pool, 400 m, Elmi/Hosseinie (1431)" (found together with *D. youngi* sp.n.); 1 ♀, "16.3.1991 Iran, Khuzestan, 69 km N Haftgel, pond, 370 m, Elmi/Hosseinie (1050)" (a very broad female; found together with *D. youngi* sp.n.); 1 ♀, "23.3.1991 Iran, Ilam, 27 km E Mussian, pool, 210 m, Elmi/Hosseinie (1079)"; 1 ♀, 3.8.1995 Iran, Markazi, 16 km SW Mahallat, stream, 1610 m, Elmi/Hosseinie (1621)"; 3 ♀♀, "4.8.1995 Iran, Lorestan, 132 km W Khorram Abad, river, 1360 m, Elmi/Hosseinie (1633)" (very narrow specimens); all preceding specimens in DBSU or CHF. 1 ♀, "Iran, Fars, 20 km N Nurabad, rivulet, leg. Wewalka, 25.4.1966 (14)" (CGW). 1 ♀, "4/IX/1997 Iran, Fars, Bamoo region [ca. 15 km NE Shiraz], Cheshmeh Mehrab, streamlet, D.T.B. [= Bilton] leg." (CDB). **Inexact localities:** 1 ♀, "v. Bodemeyer, Persien, Luristan", "Zool. Mus. Berlin", "*Deronectes longipes* Sharp. unique [?]" (MNB).

Type locality: "Persia".

Diagnosis: Habitus elongate oval, sides of elytra slightly rounded (Fig. 25). Surface dark brown to black, in most specimens largely covered with short setae. Sides of the pronotum distinctly concavely sinuate before the base, resulting in rectangular to slightly obtuse posterior angles (85° - 110°). Border distinct and shining, elevated posteriorly. Elytra between inner puncture lines slightly vaulted. Secondary punctures mostly absent. Elytra a little depressed before the apex, only strongly depressed exceptionally, elevation weak.

Metacoxal lines not very close, parallel or converging forwards a little (Fig. 124). Prosternal apophysis Figures 117 - 118. Last abdominal segment with a notch, sometimes more distinct than in Figure 129. Legs brown. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 60) in lateral view rather strongly curved in the basal part, in apical third not exactly straight, but scarcely curved; in dorsal view with apical third slightly converging, more strongly tapering before the tip; shape of the median lobe a little variable in dorsal view, e.g. sometimes the tip is more rounded (Fig. 61), sinuation between median and apical third sometimes less distinct than in Figure 60, and in this case with a narrower overall shape, sometimes the sinuation is a little stronger, in which case the overall shape is broader. On the other hand we have observed that the shape of the median lobe in dorsal view depends on the specimen's maturity - immature specimens often having a narrower lobe than mature ones. Such a shape is detailed in Figure 61, drawn from a dry preparation, but when prepared in liquid the shape approaches

the usual form of Figure 60. Parameres (Fig. 66) more or less excavated over the whole length, but not very strongly, apical part distinctly vaulted.

♀♀: Without conspicuous differences to the males. Gonocoxosternum often as in Figure 93, but strongly variable.

Measurements: TL 4.00 - 4.95 mm, MW 1.85 - 2.30 mm; types: TL 4.20 - 4.30 mm, MW 1.95 - 2.05 mm; for further details see Tables 1 - 4.

Notes: All of the characteristics mentioned above are more or less variable. The two types for instance are rather small and are a lighter shade of brown than most other specimens studied, although they do not seem to be immature. Furthermore we have studied absolutely mature specimens with a brown surface, and some of them very shining due to an unusual reduction in the surface setae. The elytra and the pronotum of some specimens are more vaulted than usual, in others the sides of the elytra are less rounded and more parallel. The sides of the pronotum can be less concavely sinuate before the base, being almost straight. In the lectotype the posterior angle is rectangular, in the female paralectotype it is a little acute. The maximum width in the lectotype is situated before the middle of the elytra, in the paralectotype in the middle. The puncturation of the whole upper surface also varies considerably. The notch on the last visible segment is rather small in both types, whereas in most other specimens studied this is distinctly larger. Variations such as those mentioned above can be observed both between and within populations. The only constant characteristic of the species is the form of the median lobe of aedeagus in lateral view (Fig. 60). At the moment we do not know whether *D. longipes* constitutes a highly variable species, or a species complex.

Distribution: Mountain ranges in south-western Iran (Zagros mountain range) (Fig. 149).

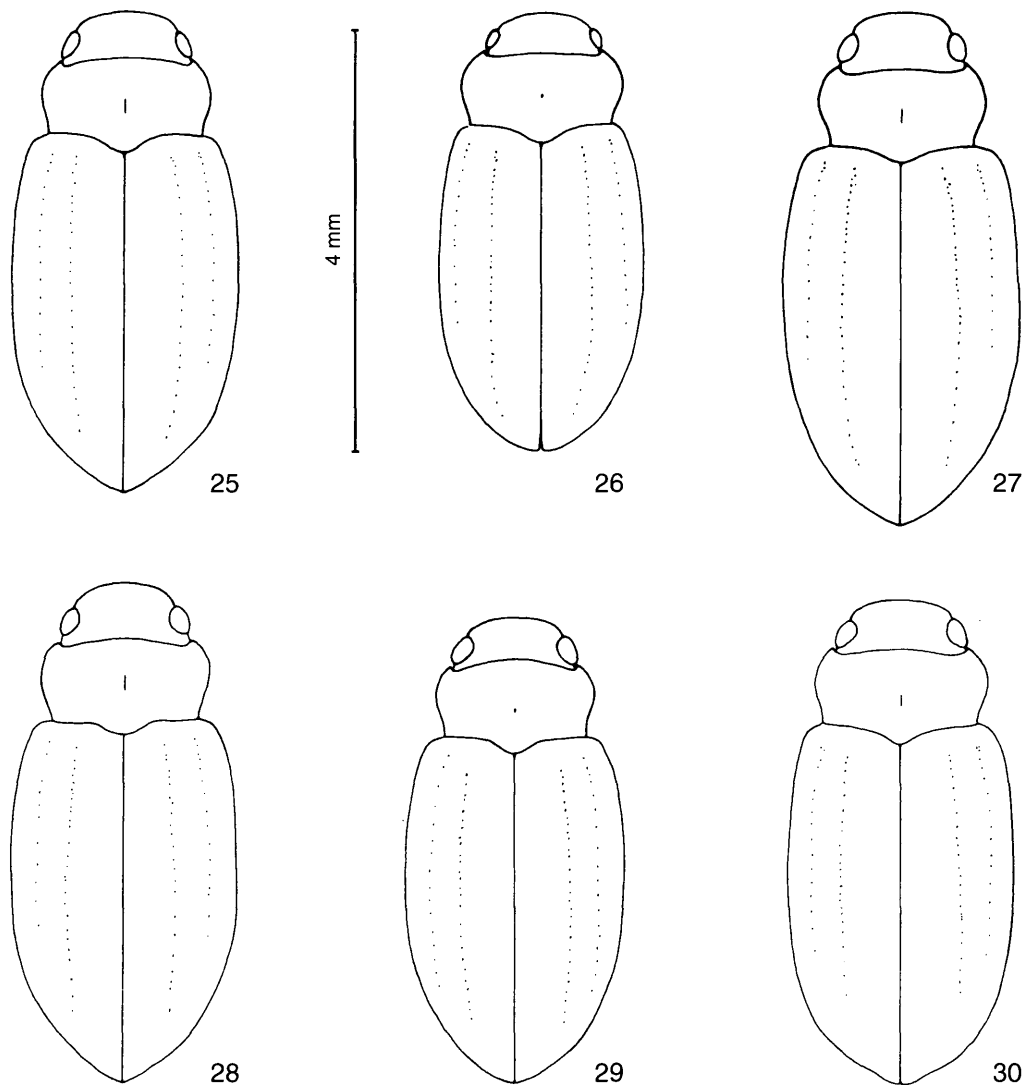
42. *Deronectes brancuccii* sp.n.

Holotype (♂): "24.3.1998, Iran, Kerman, 87 km SE Baft, 2430 m, stream, Elmi/Hosseinie (2056)" (found together with *D. persicus* and *D. elmii* sp.n.), "Holotype, *Deronectes brancuccii* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes:** 28 ♂♂, 19 ♀♀, same data as the holotype (DBSU, CHF). The paratypes with the respective red label.

Additional material studied: **Iran:** 1 ♂, 2 ♀♀, "Karkas Gebirge [= mountain range], nr. [= near] Tarq [ca. 100 km N Esfahan], 2400 m, 10.IV.1992", "Iran, Quellgebiet [= spring region], leg. Menrad" (NMB, CHF).

Type locality: Iran, Kerman province, 87 km SE Baft (Qohrud mountain range).

Diagnosis: Habitus elongate, more parallel than most *D. longipes*, sides of elytra less rounded (Figure 27 shows a more parallel sided specimen from Tarq). Body not very flat, slightly vaulted between the inner puncture lines of the elytra; surface black, some specimens densely covered with setae, others almost without setae. Shoulders prominent, because the pronotum is rather narrow at the base. Head microreticulated, puncturation normal, but larger punctures very coarse. Sides of pronotum distinctly concavely sinuate before the base, and posterior angles more or less rectangular (90° - 95°); border not prominent, elevated posteriorly, scarcely shining. Disc of pronotum very weakly microreticulated, with some rather large, coarse punctures; with small areas at each side of the centre free of larger punctures, and with coarser, larger, punctures before the base. Elytra with some secondary punctures, which are neither very coarse nor very dense, but perceptible. Apex of elytra with an indistinct depression, elevation weak.



Figs. 25 - 30: Habitus of (25) *Deronectes longipes*, (26) *D. hendrichi* sp.n., (27) *D. brancuccii* sp.n., (28) *D. balkei* sp.n., (29) *D. evelynae* sp.n., (30) *D. riberae* sp.n.

Metacoxal lines parallel, disappearing forwards. Last abdominal segment with a distinct notch. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 62) larger than in *D. longipes*, in lateral view slightly more strongly angled between the central and apical third; with apical third almost parallel in dorsal view, tip rounded, not pointed. Paramere (Fig. 68) not excavated over the whole length, but excavation stronger than in *D. longipes*.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 94.

Measurements: TL 4.35 - 5.10 mm, MW 2.05 - 2.30 mm; for further details see Tabs. 1 - 4.

Note: The three specimens from Tarq (Esfahan province) have a more elongate habitus and the sides of the elytra less rounded than the specimens from Kerman; the whole surface is rather matt and not shining. The antennae are less darkened distally. The protarsal claws of the single male are rather short. Nevertheless we have not been able to find differences in the genitalia with specimens from Kerman province.

Distribution: Iran, Kuhha Qohrud (mountain range; = Kuh Rud in "Stiehlers Hand-atlas"); at present known from Esfahan and Kerman provinces.

Derivatio nominis: We name this species for our sincere colleague Michel Brancucci (Basel, Switzerland), who made some of the specimens available to us.

43. *Deronectes balkei* sp.n.

Holotype (♂): "Iran, Buyer Ahmad o Kuhgiluye, 10 km S Yasug, rivulet, leg. Wewalka, 25.4.1996 (11)" (found together with *D. longipes*), "Holotype, *Deronectes balkei* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes:** 3 ♂♂, 5 ♀♀, same data as the holotype (DBSU, CGW, CHF). 2 ♂♂, 2 ♀♀, "24.4.1996 Iran, Kohkilouyeh & Boyer Ahmad, 30 km S Yasuj, brook, Elmi/Hosseinie (1733)" (DBSU, CHF). 2 ♂♂, 2 ♀♀, "23.6.1997 Iran, Kohkiluyeh-o-Boyer Ahmad province, between Nourabad and Yasuj (1922)", "57 km N Nourabad, stream, 2100 m, Elmi/Hosseinie (1922)" (found together with *D. persicus*) (DBSU). 5 ♂♂, 7 ♀♀, "15.8.1998, Fars, Shesh Pir, ca. 20 km ESE Sepidan [=Ardakan], ca. 20 km NE Dalin, ditch with flowing water, Fery & Elmi leg. # 2108" All paratypes with the respective red label.

Type locality: Iran, Kohkilouyeh o Boyer Ahmad province in south-western Iran, S Yasuj (Zagros mountain range).

Diagnosis: Habitus elongate, more parallel, sides of elytra only slightly rounded (Fig. 28). Surface black, with short setae, which become denser towards the sides. Setae also present on the pronotum. Sides and anterior angles of the pronotum shining through brown. Sides of pronotum distinctly concavely sinuate before the base, forming more or less rectangular posterior angles (90° - 95°). Border of pronotum perceptible in the anterior half, mostly disappearing behind. Pronotal disc not microreticulated, with a few coarser punctures near the centre; without larger punctures towards the sides. Elytra depressed, flat between the inner puncture lines, with very few, very small secondary punctures. Apex of elytra without depression, elevation weak.

Metacoxal lines not very close, parallel, slightly diverging before the posterior margin of the metasternum. Last abdominal segment with a notch and a more or less triangular, brownish coloured depression before the apex, which in most specimens is supplied with a small longitudinal scratch. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus large (Fig. 63), in lateral view with apical third longer and more sinuate than in *D. longipes*; in dorsal view parallel before tapering to the tip. Paramere Fig. 69. Protarsal claws elongate, straight, curved distally, more distinctly different to the females than in *D. longipes*.

♀♀: Protarsal claws shorter. Gonocoxosternum Figure 95.

Measurements: TL 4.55 - 4.80 mm, MW 2.05 - 2.25 mm; for further details see Tabs. 1 - 4.

Distribution: Iran, known only from the Kohkilouyeh o Boyer Ahmad province (Fig. 149).

Derivatio nominis: We name this species for our friend and colleague Michael Balke (Berlin, Germany), who has supported our work with interesting material and enabled us to present the many scanning electron microscope figures.

44. *Deronectes hendrichi* sp.n.

Holotype (♂): "26.3.1998, Iran, Sistan & Baluchestan, 103 km S Iranshahr, 700 m, river, Elmi/Hosseinie (2067)", "Holotype, *Deronectes hendrichi* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes**: 32 ♂♂, 27 ♀♀, same data as the holotype; 1 ♀, "26.3.1998, Iran, Sistan-o-Baluchestan province, 82 km S Iranshahr, 960 m, stagnant water, Elmi/Hosseinie (2066)"; 2 ♂♂, 2 ♀♀, "23.3.1998, Iran, Kerman, 65 km E Sirjan, 2040 m, spring, Elmi/Hosseinie (2052)"; 45 ♂♂, 51 ♀♀, "29.3.1998, Iran, Kerman, 133 km S Jiroft [ca. 150 km SE Baft], 460 m, streamlet, Elmi/Hosseinie (2079)"; 7 ♂♂, "20.3.1996 Iran, Hormozgan, 86 km NE Bandar-e-Khamir, stream, 80 m, Elmi/Hosseinie (1715)". All preceding paratypes in DBSU or CHF, provided with the respective red label.

Additional material studied: **Iran**: 2 ♀♀, "19.3.1996 Iran, Hormozgan, 80 km E Gavbandi, stream, 220 m, Elmi/Hosseinie (1711)" (DBSU). 2 ♂♂, 1 ♀, "2.4.1998, Iran, Hormozgan, W Kahkom, 600 m, stream, Elmi/Hosseinie (2089)" (Kahkom = Gahkom, ca. 22 km S Hajjiabad and ca. 135 km N Bandar e Abbas; the locality is situated close to Fars province) (DBSU) (c.f. the note at the end of the species' description).

Type locality: Iran, Sistan o Baluchestan province, 103 km S Iranshahr.

Diagnosis: A small species, with an elongate, parallel habitus (Fig. 26). Elytra flat between the inner puncture lines. Surface dark brown to black, with short, but distinct setae, in some specimens these covering the whole elytra and large parts of the pronotum. Sides of the pronotum before the base distinctly concavely sinuate, posterior angles rectangular to obtuse (90° - 115°); border very narrow to imperceptible, in some specimens a little elevated and shining posteriorly. Disc of pronotum without larger punctures. Elytra without secondary punctures, a little depressed before the apex, elevation distinct.

Prosternal apophysis without distinct transversal carinae. Metacoxal lines parallel, not very close, disappearing forwards or very slightly diverging. Last abdominal segment with a rather sharply incised triangular notch. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus small (Fig. 59), almost evenly curved in lateral view, but in some specimens apical third a little more angled as shown in Figure 59. Paramere (Fig. 67) with apex rather long, excavated over the whole length.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Fig. 108.

Measurements: TL 3.95 - 4.30 mm, MW 1.85 - 2.00 mm; for further details see Tabs. 1 - 4.

Distribution: Southern and south-eastern Iran, Sistan o Baluchestan, Kerman and Hormozgan provinces (Fig. 149).

Derivatio nominis: We name this species for our sincere colleague and friend Lars Hendrich (Berlin, Germany).

Note: We have studied two specimens from Gavbandi (western part of Hormozgan province) and three specimens from Kahkom (northern part of Hormozgan province, close to Fars province) which have a more parallel and flatter habitus, they are smaller in size, and the surface is of a lighter brown, and therefore strongly resembling *D. youngi* sp.n. The two males are immature and the shape of their median lobes is not completely recognizable, but nevertheless seems to be close to that of *D. hendrichi* sp.n. Until further material is available we can neither assign these specimens undoubtedly to one of the species mentioned above, nor exclude the possibility that they belong to an intermediate species. The localities of the respective records are given with question marks in Figure 149.

45. *Deronectes elmii* sp.n.

Holotype (♂): "24.3.1998, Iran, Kerman, 87 km SE Baft, 2430 m, stream, Elmi/Hosseinie (2056)" (found together with *D. persicus* and *D. brancuccii* sp.n.), "Holotype, *Deronectes elmii* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes**: 7 ♂♂, 20 ♀♀, same data as the holotype (DBSU, CHF). The paratypes with the respective red label.

Type locality: Iran, Kerman province, 87 km SE Baft (Qohrud mountain range).

Diagnosis: Habitus (Fig. 104) and size close to *D. hendrichi* sp.n. Elytra flat between the inner puncture lines. Surface black, with short setae, in some specimens these covering the whole elytra and parts of the pronotum. Sides of the pronotum before the base indistinctly concavely sinuate, almost straight, posterior angles obtuse (105° - 115°); border almost imperceptible, not shining. Disc of pronotum with some larger punctures. Elytra with a few small secondary punctures; a little depressed before the apex, elevation weak.

Prosternal apophysis without distinct transversal carinae. Metacoxal lines parallel, not very close, disappearing forwards. Last abdominal segment with a rather sharply incised triangular notch. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus small (Fig. 105), in dorsal view resembling that of *D. danielssoni* sp.n., between the central and apical third a little narrowed, a feature which becomes more distinct when the lobe is dry; in lateral view ventrally almost evenly curved. Paramere Figure 106.

♀♀: Without conspicuous differences to the males. Gonocoxosternum with a sharply delimited transparent area, which contrasts distinctly with the dark area around it (Fig. 107). This feature is very characteristic, and for this reason is shown in Figure 107. In all other species transparent and dark areas exist also, but with distinctly less sharp transitions between them.

Measurements: TL 4.00 - 4.40 mm, MW 1.80 - 2.00 mm; for further details see Tabs. 1 - 4.

Distribution: Southern Iran, Kerman province, Kuhha Qohrud (mountain range; = Kuh Rud in "Stiehlers Handatlas"); at present only known from the locus typicus (Fig. 149).

Derivatio nominis: We name this species for Mr. Karim Elmi, technician of the DBSU, and collector of most of the Iranian material studied in this work.

46. *Deronectes evelynae* sp.n.

Deronectes longipes SHARP: WEWALKA 1989: 99.

Holotype (♂): "TR 29.5.1987 (37), Silvan 100 km ö. [= E] Diyarbakir, Jäch", "*Deronectes longipes* Sharp, det. G. Wewalka [19]88", "Holotype, *Deronectes evelynae* sp.n. Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes**: 3 ♂♂, 5 ♀♀, same data as the holotype (NMW, CGW, CHF). All paratypes with the respective red label.

Additional material studied: **Turkey**: 2 ♂♂, "TR 30.5.1987, Mardin Geb. [= mountain range], leg. Jäch (40)" (NMW). Both specimens are immature, and therefore the determination is somewhat doubtful. According to WEWALKA (1989: 100) this locality is situated E Savur, ca. 80 km SE Diyarbakir, in Mardin province.

Type locality: Turkey, Diyarbakir province, near Silvan.

Diagnosis: Habitus elongate, but with the sides of the elytra slightly rounded (Fig. 29). Surface dark brown to black, with short setae, in some specimens on the whole elytra

and the pronotum, in others sparse and near the sides only. Head microreticulated, larger punctures rather dense. Pronotum a little depressed before the base, more strongly so near the posterior angles; border distinct, shining, and a little elevated near the base. The whole disc lacks larger punctures, males indistinctly, females more distinctly microreticulated. Posterior angles rectangular to slightly obtuse (95° - 100°). Elytra slightly vaulted between the inner puncture lines, without secondary punctures. Apex of elytra a little depressed, elevation distinct.

Metacoxal lines more or less parallel. Last abdominal segment with a distinct notch. Antennae brown with articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 64) in dorsal view broad, strongly sinuate between the central and apical parts, apical part rather short, evenly tapering; tip pointed, scarcely rounded. In lateral view angled near the base as in *D. riberae* sp.n., but apical part shorter, and more evenly tapering to the tip. Paramere (Fig. 70) close to that of *D. riberae* sp.n.

♀♀: Without conspicuous differences to the males. Gonocoxosternum (Fig. 96) with tip less pointed than in *D. riberae* sp.n.

Measurements: TL 4.20 - 4.45 mm, MW 1.90 - 2.00 mm; for further details see Tabs. 1 - 4.

Distribution: Turkey, so far known only from Silvan, Diyarbakir province (Fig. 149).

Derivatio nominis: We give this species the first name of Evelyn Lunschien-Fery, the senior author's wife. She has accompanied the labour on his publications with extreme patience and has been very helpful in collecting water-beetles during many excursions.

47. *Deronectes riberae* sp.n.

Deronectes longipes SHARP: WEWALKA 1989: 99.

Holotype (♂): "SO-TR [= SE Turkey] 31.5., 20 km w. [= W] Uludere [ca. 40 km ESE Sirnak], leg. Jäch 1987 (45)", "*Deronectes longipes* Sharp, det. G. Wewalka [19]88", "Holotype, *Deronectes riberae* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes:** 4 ♂♂, 3 ♀♀, same data as holotype (NMW, CGW, CHF). All paratypes with the respective red label.

Additional material studied: Iraq: 1 ♂, "Iraq Dahuk, Shayk Addi, 11.5.1981, R. Linnavuori" (ZMH). A very immature specimen; nevertheless, the median lobe of aedeagus and the parameres equal those of the type series. Dahuk province is situated in the extreme north of Iraq, close to the Turkish frontier. We have not been able to find Shayk Addi on any map, but the province capital Dahuk is roughly 80 km from Uludere (**first record of a *Deronectes* from Iraq**).

Type locality: Turkey, Siirt province, Uludere.

Diagnosis: This species is very close to *D. longipes*, but on the average more parallel (see Tabs. 3, 4) and different in the form of the male genitalia. Size on the average larger than in *D. evelynae* sp.n. Habitus elongate, sides of elytra weakly rounded, more parallel than in *D. evelynae* sp.n. (Fig. 30). Surface black, with short setae on the whole of the elytra and pronotum. Puncturation of head normal, larger punctures on clypeus less dense and smaller than in *D. evelynae* sp.n. Pronotum with sides distinctly narrowed and concavely sinuate before the base; base a little depressed, but less than in *D. evelynae* sp.n.; posterior angles rectangular to slightly obtuse (95° - 100°). Border of pronotum narrow, but distinct, immediately before the base even narrower, shining. Elytra between inner puncture lines slightly vaulted, but a little more depressed than in *D. evelynae*

sp.n.; without secondary punctures. Apex of elytra in most specimens more depressed than in *D. evelynae* sp.n., elevation distinct.

Metacoxal lines close, converging forwards slightly. Last abdominal segment with a notch, which is more distinct than in *D. evelynae* sp.n. Antennae brown, with articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 65) close to that of *D. longipes*, but in lateral view more angled in the basal part and apical third almost completely straight, not curved; this part is shorter and less narrow than in *D. longipes* and slightly sinuate before the tip; between central and apical third a little more strongly angled. In dorsal view broader, between central and apical third scarcely sinuate, almost evenly tapering to the tip, which is distinctly rounded. Paramere (Fig. 71) with apical part narrower and distinctly less vaulted than in *D. longipes*; excavation even flatter.

♀♀: Without conspicuous differences to the males. Gonocoxosternum (Fig. 97) with tip more pointed than in *D. evelynae* sp.n.

Measurements: TL 4.40 - 4.75 mm, MW 2.05 - 2.15 mm; for further details see Tabs. 1 - 4.

Distribution: South-eastern Turkey and northern Iraq (Fig. 149).

Derivatio nominis: Named after the Spanish water beetle specialist Ignacio Ribera Galán (Barcelona, Spain), who has supported the studies for the first part of the revision in an exceptional manner.

48. *Deronectes hebaueri* sp.n.

Deronectes longipes SHARP: WEWALKA 1989: 99.

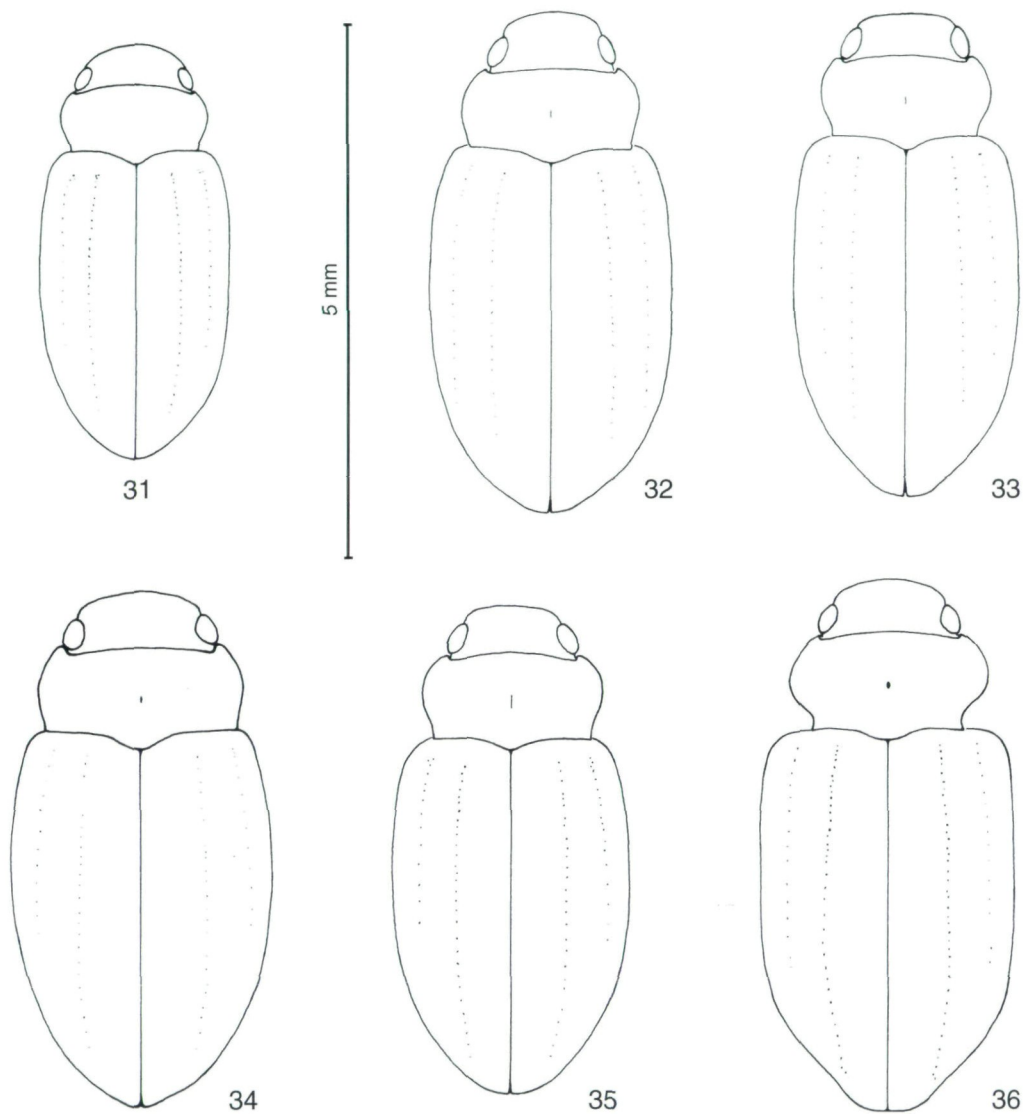
Holotype (♂): "TR Gaziantep, Kilis, 3.5.[19]90, Leg. H. Hebauer", male sex symbol, "Holotype, *Deronectes hebaueri* sp.n., Fery & Hosseinie det. 1998" [red] (CHH). **Paratypes:** 1 ♀, same data as holotype (CHH); 1 ♀ "TR 26.5.1987, w.[= W] Kilis, leg. Jäch (28)", "*Deronectes longipes* Sharp, det. G. Wewalka [19]88" (NMW). Both paratypes with the respective red label.

Type locality: Turkey, Gaziantep province, Kilis, ca. 60 km SSW Gaziantep.

Diagnosis: The species resembles *D. evelynae* sp.n. and *D. riberae* sp.n., but it is distinctly smaller. Its habitus (Fig. 31) is a little more parallel than in both these species; the body surface is black. Elytra and sides of pronotum covered with setae. Pronotum with centre of disc - around the scratch - distinctly microreticulated, but the rest of the disc without a perceptible reticulation. Sides of pronotum distinctly narrowed, but scarcely concavely sinuate before base, posterior angles obtuse (110°). Border of pronotum distinct and shining.

Prosternal apophysis without distinct transversal carinae. Metacoxal lines rather close, almost parallel, disappearing shortly before the posterior margin of the metasternum. Last abdominal segment rounded, with a broad, but weak notch, more or less truncate only. Legs brown. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 108A) in lateral view with tip distinctly curved, in dorsal view between the central and apical third a little narrowed, before the excavation with some larger punctures, tip rounded. Paramere (Fig. 108B) with tip rather long, strongly sclerotised and twisted, without longer hairs, but instead with some extremely short bristles. Protarsal claws prolonged, the anterior one in dorsal view broadened, in lateral view straight in the median part and with an excavation near the base.



Figs. 31 - 36: Habitus of (31) *Deronectes hebaueri* sp.n., (32) *D. schuberti*, (33) *D. angulipennis*, (34) *D. syriacus*, (35) *D. kinzelbachi* sp.n., (36) *D. jaechi*.

♀♀: Protarsal claws simple. Gonocoxosternum (Fig. 98) with inner side (= side without bristles) more or less evenly rounded.

Measurements: TL 3.90 - 4.25 mm, MW 1.75 - 1.90 mm ; for further details see Tabs. 1 - 4.

Distribution: Turkey. Gaziantep province, so far known only from Kilis (Fig. 149).

Derivatio nominis: We name this species for Hans Hebauer (Rain, Germany), the collector of the holotype, and Franz Hebauer (Gleichen, Germany). Both have supported this work with important material and information.

Note: One paratype has been assigned by WEWALKA (1989: 100) to "*D. longipes* mit breiterem Penis" [= with broader penis], specimens which we have described as *D. evelynae* sp.n. in the present work.

49. *Deronectes schuberti* WEWALKA, 1970

Deronectes schuberti WEWALKA, 1970: 138. - WEWALKA 1989: 98.

Holotype (♂): "Elbistan [ca. 80 km NNE Kahraman Maras], Asm. [= Asia minor], 26.5.-6.6.[19]65, leg. F. Schubert", "*Deronectes schuberti* n.sp., det Wewalka, Type" [hw Wewalka], "Holotypus, *Deronectes schuberti* WGW." [red, hw Wewalka] (NMW). **Paratypes:** 1 ♂, 3 ♀♀, same data as holotype, "*Deronectes schuberti* n.sp., det Wewalka [19]69" [red, hw Wewalka], "Paratypus, *Deronectes schuberti* n.sp., det. Wewalka [19]70" [red, hw Wewalka] (NMW, CGW); according to WEWALKA (1970: 138) one further paratype in coll. Schubert (now in the NMW).

Additional material studied: **Turkey:** 1 ♂, 2 ♀♀, "Elbistan, Asm., 26.5.-6.6.65, leg. F. Schubert", "*Deronectes schuberti* n.sp., det Wewalka [19]69", "Paratypus" [red] (NMW). These specimens seem to belong to the same series as the type specimens, but have not been studied by WEWALKA (1970) when preparing his publication.

Type locality: Southern central Turkey, Kahraman Maras province, Elbistan, N Kahraman Maras.

Diagnosis: At first it must be stated that all the specimens studied are slightly immature, and therefore some details given below may change in some respects when further material becomes available. Habitus oblong oval (Fig. 32), less parallel, sides of elytra rounded. Surface dark brown to black, with rather long setae on the whole elytra and large parts of the pronotum, which in some specimens are a little rubbed off. WEWALKA (1970: 139) features the strongly projecting shoulders of *D. schuberti* (and of *Deronectes angulipennis* (PEYRON, 1858)), but this characteristic is not particularly striking (see Fig. 32). Head microreticulated, with coarser punctures less dense. Sides of pronotum less strongly narrowed and only slightly concavely sinuate before the base; posterior angles rectangular to slightly obtuse (90° - 100°). Border of pronotum not very distinct, somewhat shining, and disappearing posteriorly. Disc of pronotum without punctures, distinctly microreticulated. Elytra without secondary punctures, slightly vaulted between the inner puncture lines. Apex of elytra depressed, elevation distinct.

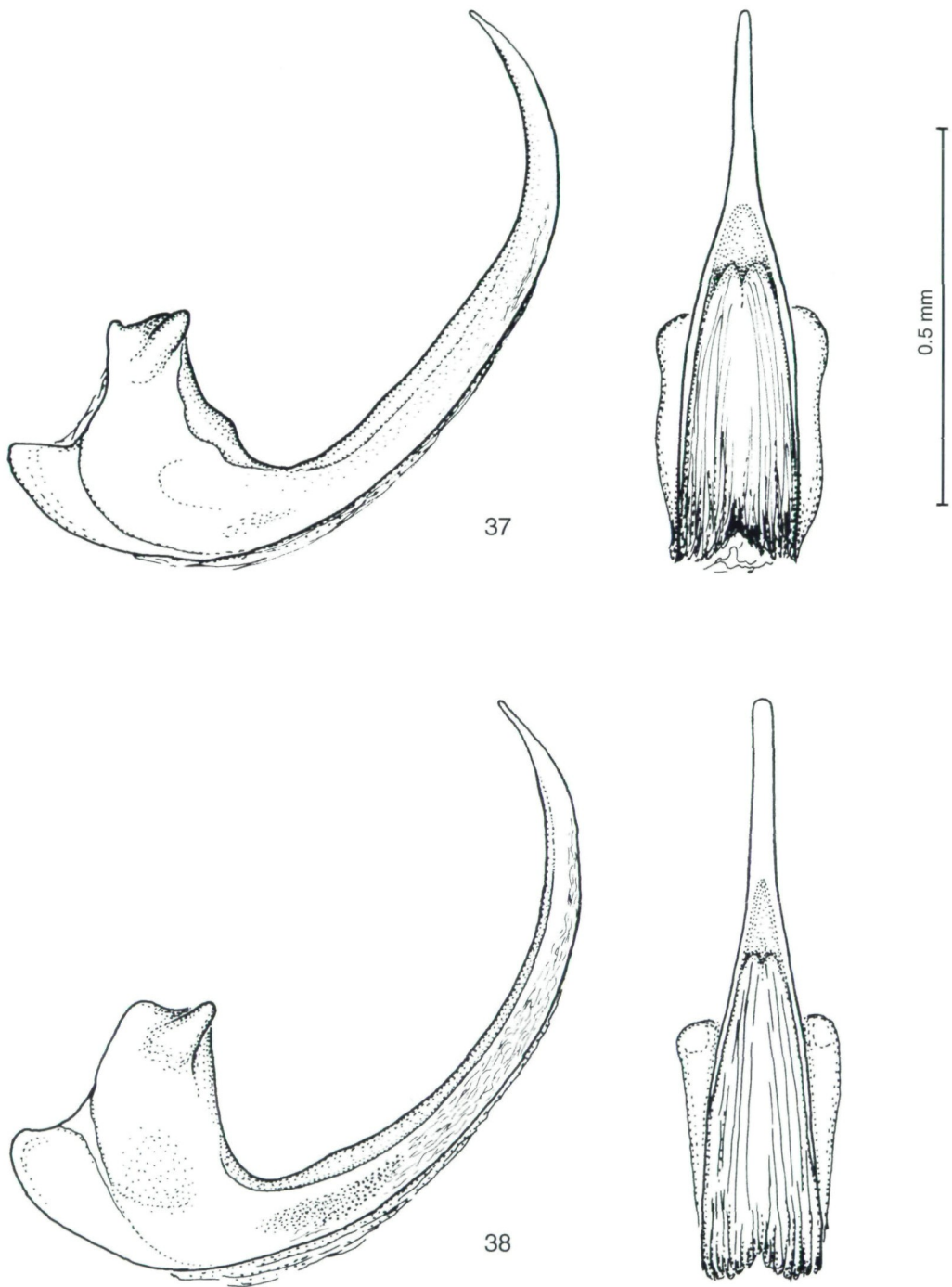
Most of the ventral surface dark brown (mature specimens probably black). Prosternal apophysis with transversal carinae indistinct. Metacoxal lines close, distinctly converging forwards. Last abdominal segment with a distinct notch, and in most specimens a little lobed backwards to the sides. Legs brown. Antennae brown, articles distinctly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 77) in dorsal view with apical third extremely narrow, in lateral view distinctly sinuate before the tip. Paramere Figure 72. Protarsal claws little prolonged.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 99.

Measurements: TL 4.45 - 4.80 mm, MW 2.05 - 2.30 mm; for further details see Tabs. 1 - 4.

Distribution: Turkey, Kahraman Maras province, Elbistan, so far known only from the locus typicus, which is situated about 300 km NNE of Antakya (Fig. 149).



Figs. 37 - 38: Median lobe of aedeagus in dorsal and lateral view of (37) *Deronectes parvicollis*, (38) *D. palaestinus* sp.n.

50. *Deronectes angulipennis* (PEYRON, 1858)

Hydroporus angulipennis PEYRON, 1858: 398.

Deronectes angulipennis (PEYRON): ZIMMERMANN 1920: 117. - ZIMMERMANN 1932: 100. -

WEWALKA 1970: 135 (designation of lectotype). - WEWALKA 1989: 97.

[*Deronectes tauricus* is a nomen in litteris (WEWALKA 1970: 137).]

Lectotype (♀): "Taurus", kept in the American University of Beirut, Lebanon; studied by WEWALKA (1970: 137); most probably lost during the subsequent war (Dr. A.S. Talhouk and Dr. K. Knio, Beirut, personal communication).

Additional material studied: Turkey: 1 ex., "Tekir [ca. 40 km N Tarsus], 20./21.5.1969", "kil. [= kiliki-scher] Taurus, leg. Wewalka", "Paratypus, *Deronectes tauricus* n.sp., det. Wewalka 1969" [red, hw Wewalka] (MRT0). 15 exs., "Tarsus-Tekir [ca. 40 km N Tarsus], 20./21.5.1969", "*Deronectes angulipennis* Peyr., det. Wewalka 82" (NMW, NMB, CSR, CGW, CFA, CHF). 1 ex., "kil. Taurus, As. m., Namrun [= Namrunkale, ca. 50 km N Tarsus], 8.6.[19]68", "leg. G. Wewalka" (CGW).

Type locality: Central southern Turkey, Icel (= Mersin) province, "Taurus, près du Kuleg. Boghaz [= Gülek Bogazi, ca. 50 km N Tarsus]" (PEYRON 1858: 399), south of the "Pylae Ciliciae" [= "kilikische Pforte" in German] (WEWALKA 1970: 137).

Diagnosis: Habitus elongate, almost parallel, sides of elytra scarcely rounded (Fig. 33). Surface dark brown. Pronotum with microreticulation on the disc not prominent because the primary puncturation is rather dense. Sides of pronotum distinctly narrowed and concavely sinuate or straight before the base; posterior angles slightly acute to rectangular (85° - 90°); border narrow, but shining and thus perceptible, in some specimens less prominent posteriorly. Pronotum a little depressed before the base. Elytra between inner puncture lines very slightly vaulted, with very few and almost imperceptible secondary punctures. Apex of elytra at most slightly depressed, elevation very weak.

Metacoxal lines parallel and mostly disappearing before the posterior margin of the metasternum, if still evident then slightly diverging. Last abdominal segment with a distinct deep notch, and a little lobed backwards to the sides. Legs more or less pale brown. Protibiae only very slightly curved outwards distally. Antennae pale brown, articles slightly darkened distally.

♂♂: Median lobe of aedeagus (Fig. 78) in dorsal view with apical third rather narrow, evenly tapering to the tip; in lateral view rather strongly angled, a little sinuate before the tip, which is very narrow. Paramere (Fig. 73) with distal part and hairs rather long. Protarsal claws simple.

♀♀: Without conspicuous differences to the males. Gonocoxosternum Figure 100.

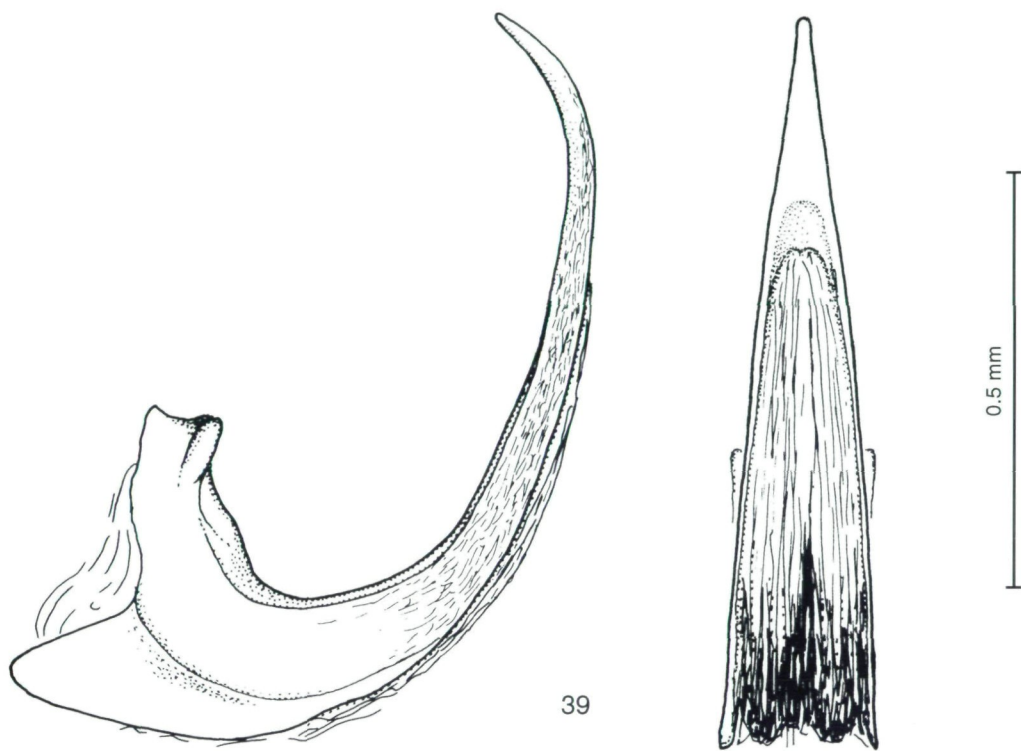
Measurements: TL 4.10 - 4.80 mm, MW 1.90 - 2.25 mm; for further details see Tabs. 1 - 4.

Distribution: Turkey, Icel (= Mersin) province, Taurus mountain range, so far only known only from a small area around the locus typicus (Fig. 149).

51. *Deronectes syriacus* WEWALKA, 1970

Deronectes syriacus WEWALKA, 1970: 141. - WEWALKA 1989: 98 (partim).

Holotype (♂): "Syrie, Akbes, C.D. 1891", "Typus, *Deronectes syriacus* n.sp., det. Wewalka" [red, hw Wewalka] (MNH). **Paratypes:** 1 ♂, with same data as holotype (CGW). 1 ♂, "Türkei/Antakya, 16.5.1966, leg. A. Richter", male sex symbol (ZSM); both paratypes with "Paratypus, *Deronectes syriacus* n.sp., det. Wewalka" [red, hw Wewalka]. **Note:** All three types are strongly immature, and only parts of their median



Figs. 39: Median lobe of aedeagus in dorsal and lateral view of *Deronectes abnormicollis*.

lobes are present; thus the fact that they belong to *D. syriacus* as it is defined here is somewhat unclear. Nevertheless we believe that the two specimens from Akbes are "true" *D. syriacus* because we have studied many other specimens from Islahiye, which is situated very close to Akbes. The identity of the second paratype ("Antakya") however seems to be more doubtful.

Additional material studied: **Turkey:** 27 exs., "TR 26.6.1987, S Islahiye [ca. 50 km E Osmaniye] (26), 100 km N Antakya, leg. M. Jäch", some specimens with additional "*Deronectes syriacus* Wew., det. G. Wewalka 1988" (NMW, CGW, CLH, CHF). 1 ♂, "S-Türkei 26.5., 90 n [= 90 km N] Antakya, Yenioba [near Islahiye]", "Türkei - 1987, leg. Schönmann et Schillhammer" (NMW). 2 ♂♂, "TR 30.5.1987, W Cizre [ca. 180 km ESE Diyarbakir], leg. Jäch (41)", "*Deronectes syriacus* Wew., det. G. Wewalka 1988" (NMW, CGW). 10 exs., "TR 28.5.1987, Karaçadag [ca. 50 km W Diyarbakir], bei [= near] Diyarbakir, Jäch", two specimens with additional "*Deronectes syriacus* Wew., det. G. Wewalka 1988" (NMW, CHF). 36 exs., "TR Kurdistan, Cizre 5.5.[19]90, leg. H. Hebauer" (CHH, CJS, CLH, CHF).

Type locality: Turkey, Akbes, most probably identical with Akboz in Hatay province, SE Osmaniye, ca. 80 km N Antakya, 10 km N Hassa (in Hatay province), and 25 km SSW Islahiye (in Gaziantep province); Akbes = Akbez = Ekbes in "The World Atlas" (Russian) and "Stiehlers Handatlas" (German) respectively.

Diagnosis: Habitus oblong oval, not parallel, not depressed, sides of elytra distinctly rounded (Fig. 34). Surface dark brown to black, with a grey appearance because of the relatively long setae, which extend in most specimens over the whole elytra, and large parts of the pronotum; anterior angles and sides of the pronotum often shining through

brown. Head microreticulated, matt, larger punctures not much coarser than the smaller ones, mostly rather dense, even anteriorly, therefore not much denser towards the frons. Pronotum relatively broad and short (PMW/PL 2.10 - 2.47). Shoulders not prominent, because the pronotum is relatively large at the base and less cordiform, with sides not strongly and more or less straightly narrowed to the base, only exceptionally somewhat concavely sinuate before the base. Posterior angles slightly obtuse (95° - 110°). Border of pronotum narrow, not prominent, but shining, a little elevated posteriorly. Disc of pronotum slightly vaulted, sides flat, particularly near the posterior angles, giving a slight appearance of an impression parallel to the sides. Disc of the pronotum with the centre microreticulated, but areas towards the sides without microreticulation. Elytra not depressed between the inner puncture lines, more or less as in *D. parvicollis* (Fig. 11). Punctuation of the elytra usually not recognizable due to the dense setae; if the setae are removed, a dense primary punctuation can be seen, with very few, small secondary punctures, which however, are often absent. Elytra before apex with a broad but flat depression, but only exceptionally deeper, in any case more prominent than in *D. kinzelbachi* sp.n., elevation perceptible.

Most of the ventral surface dark brown to black, metacoxal process and the centre of the metasternum often brownish. Metacoxal lines not very close, parallel, or very slightly converging forwards. Legs brown. Antennae brown, last articles darkened distally.

Note: Specimens from Cizre on average have a habitus which is slightly more elongate than in those from other localities.

♂♂: Median lobe of aedeagus (Fig. 79) distinctly angled in lateral view between the central and apical parts, but less so than in *D. kinzelbachi* sp.n.; apical part longer and less narrow, more or less distinctly separated from the median part by a lighter coloured area; central part less straight, more curved near the base than in *D. kinzelbachi* sp.n.; in dorsal view with apical part narrower, before tip and a little tapering. Lobe in lateral view somewhat variable, particularly in some specimens more angled between the central and apical parts, and this part often longer than shown in Figure 79. Paramere (Fig. 74) scarcely excavated. Protarsal claws simple. Last abdominal segment with a distinct notch, sometimes as large as in the females and lobed backwards at the sides.

♀♀: Last abdominal segment in most of the females studied with a very large triangular notch, and strongly lobed backwards at the sides (Figs. 137 - 140), less distinct in some specimens, however. Gonocoxosternum Figure 101.

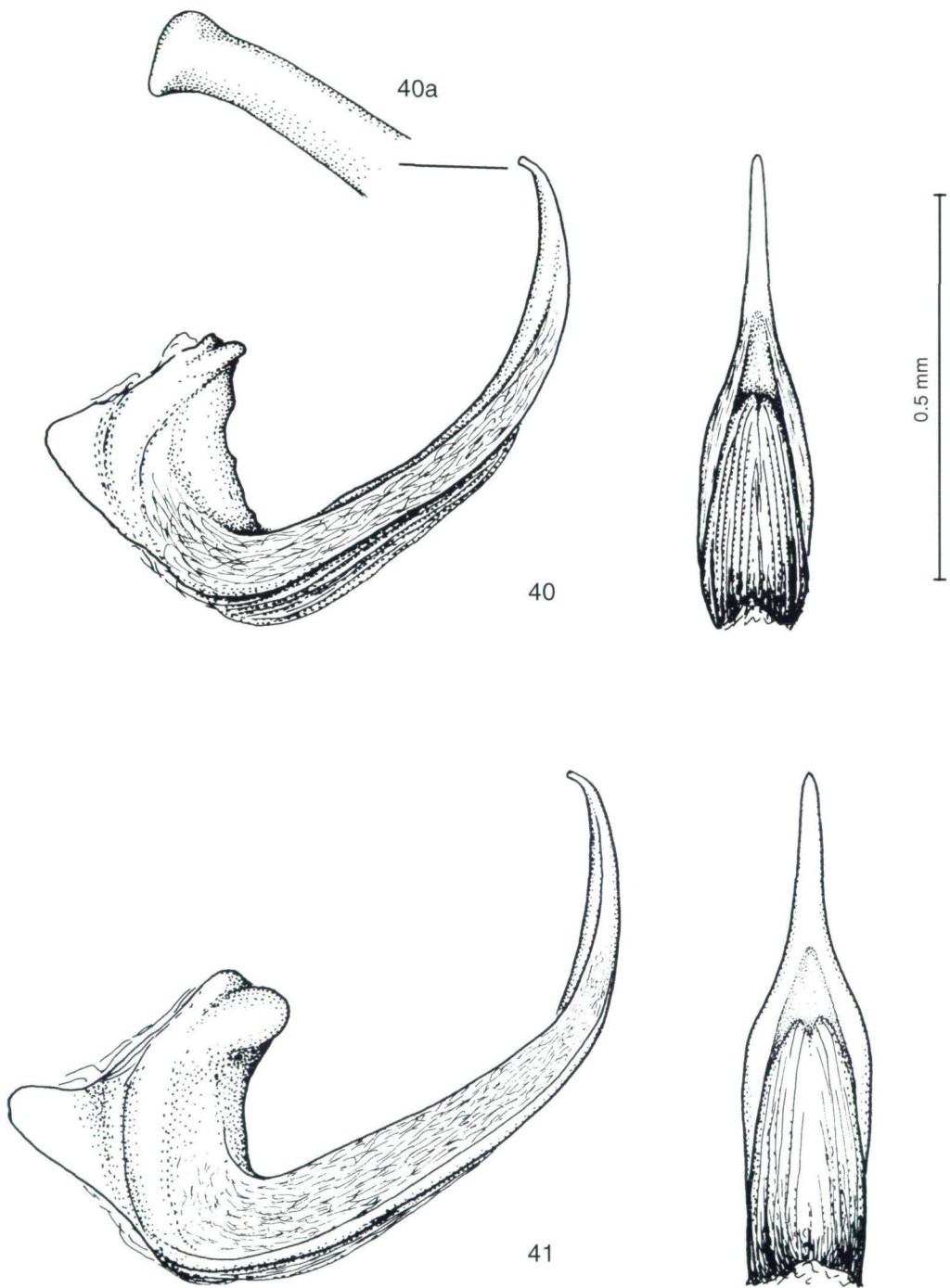
Measurements: TL 4.55 - 5.20 mm, MW 2.25 - 2.55 mm; for further details see Tabs. 1 - 4.

Distribution: Turkey, south-eastern provinces (Fig. 149), but most probably not in Hatay province.

52. *Deronectes kinzelbachi* sp.n.

Deronectes syriacus WEWALKA: WEWALKA 1989: 98 (partim).

Holotype (♂): "Syrien 47/80, Nahr al Tarsus [= Tartus], S Tarsus [= Tartus] 23.3.[19]80, leg. Kinzelbach", "Holotype, *Deronectes kinzelbachi* sp.n., Fery & Hosseinie det. 1998" [red] (NMW). **Paratypes:** Syria: 2 ♂♂, 2 ♀♀, with same data as the holotype, one specimen with additional "*Deronectes syriacus* Wew. det. Wewalka [19]85" (CGW, CHF). 3 ♂♂, 2 ♀♀, "Syrien 13/80, Nebenfluß [= affluent] d. Nahr al Abyad, Lataki -



Figs. 40 - 41: Median lobe of aedeagus in dorsal and lateral view of (40) *Deronectes vestitus*, (40a) idem, tip enlarged, (41) *D. persicus*.

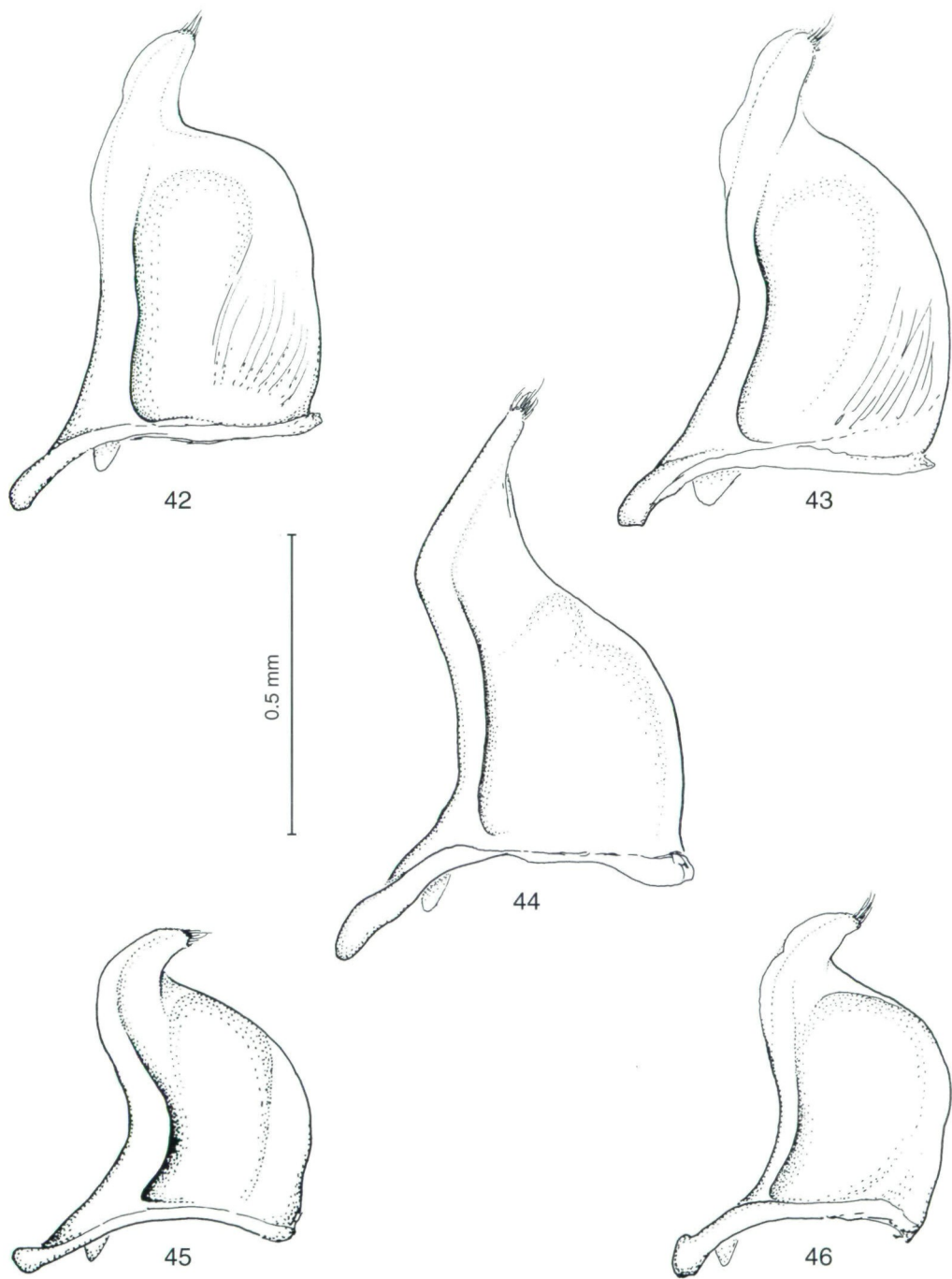
Cisr as Sugur [=Al Ladhqiyyah and Jisr ash Shughur], leg. Kinzelbach 7.3.[19]80", two specimens with additional "Deronectes syriacus Wew. det. G. Wewalka [19]82" (CSR, CGW, CHF). 3 ♂♂, 1 ♀, "Syrien, 71/80, Nahr al Abrache, Brücke [= bridge], 25 km S Tarsus [= Tartus], leg. Kinzelb. 29.3.[19]80", two specimens with additional "Deronectes syriacus Wew. det. G. Wewalka [19]82", one specimen with additional "Deronectes syriacus Wew. det. G. Wewalka [19]80" (CGW, CHF). 2 ♂♂, "Syrien 70/80, 33 km NW Holms [= Homs = Hims], Orontes, Nebenfl. [= affluent], Brücke [= bridge] SE Aqrab, leg. Kinzelbach 28.3.[19]80", one specimen with additional "Deronectes syriacus Wew. det. G. Wewalka [19]85" (CGW). 1 ♀, "SY.: 33 km NW Homs [= Hims]: Orontes-Nebenfluß [= affluent], Brücke [= bridge] SE Aqrab, R. Kinzelbach leg. 28.III.1980", "1980/70", "Deronectes syriacus Wew. det. G. Wewalka [19]82" (CGW). 1 ♂, 1 ♀, "Syrien 43/80, 26 km W Holms [= Homs = Hims], 1. Nebenfl. [= affluent] d. Nahr al Kabir, leg. Kinzelbach 22.3.[19]80", one specimen with additional "Deronectes syriacus Wew. det. G. Wewalka [19]85" (CGW, CHF). **Turkey:** 4 ♂♂, "Turquie Antakya, Kislak-Senköy [ca. 30 km S Antakya], 800 - 850 m, 2.V.[19]78, Besuchet - Löbl" (MHNG). 1 ♂, "TR 23.5.1987, Yayladagi, leg. Jäch (17)" [Yayladagi = Ordu, ca. 40 km S Antakya; according to JÄCH (1988: 741) found ca. 4 km W Yayladagi, near Yeditepe], "Deronectes syriacus Wew., det. G. Wewalka 1988" (NMW). 1 ♂, "TR 23.5.1987, Amanos Geb. [= Amanus mountain range = Nur Daglari], leg. Jäch (19)", "Deronectes syriacus Wew., det. G. Wewalka 1988"; according to JÄCH (1988: 741) found in the Karacay river near Teknepinar, ca. 20 km WSW Antakya (NMW). All paratypes with the respective red label.

Type locality: North-western Syria, Nahr al Tartus, S Tartus.

Diagnosis: Habitus elongate, almost parallel, sides of elytra only slightly rounded (Fig. 35), in any case less rounded than in *D. syriacus*. Surface dark brown to black, with rather long setae on the whole of the elytra and large parts of the pronotum, giving the specimens a grey appearance; but some specimens with setae reduced between the inner lines of elytra, and a few totally without setae (rubbed off?). Shoulders distinct, more prominent than in *D. syriacus*, because the sides of elytra are less rounded and the pronotum narrower at the base. Head microreticulated, most specimens with coarser punctures not very large, but relatively dense, also anteriorly, only slightly denser towards the frons. Pronotum relatively longer (PMW/PL 1.99 - 2.25) than in *D. syriacus*; pronotum slightly vaulted, but sides not depressed near the posterior angles as in *D. syriacus*. Sides of pronotum distinctly narrowed and concavely sinuate before the base, posterior angles slightly obtuse (100° - 105°). Border narrow, but in most specimens shining, a little broader posteriorly. Elytra between the inner puncture lines rather flat, without or with very few small secondary punctures only. Apex of elytra scarcely depressed, less so than in *D. syriacus*, elevation weak.

Metacoxal lines rather close, converging forwards, disappearing before posterior margin of metasternum, if not, then slightly diverging. Last abdominal segment with a distinct deep notch, lobed backwards at the sides (Figs. 141 - 142, in these figures the notch is slightly hidden by the long setae), but only exceptionally as strongly as in *D. syriacus* (Figs. 137 - 140). Legs brown. Antennae brown, articles darkened distally.

♂♂: Median lobe of aedeagus (Fig. 80) in lateral view more strongly angled between the central and apical parts, the apical part being narrower and a little shorter than in *D. syriacus*; in dorsal view with apical part a little broader, tip rounded. Somewhat vaulted ventrally near the centre; without a central keel. Shape of the median lobe in lateral view variable, in some specimens apical part a little longer and less angled, resembling that of *D. syriacus*, but in any case in lateral view ventrally the region between the base and the apical part is almost straight, in contrast to *D. syriacus*, in which this section is distinctly curved before the base. Paramere (Fig. 75) with tip a little longer, more excavated than in *D. syriacus*.



Figs. 42 - 46: Paramere of (42) *Deronectes parvicollis*, (43) *D. palaestinus* sp.n., (44) *D. abnormi-collis*, (45) *D. vestitus*, (46) *D. persicus*.

♀♀: Last abdominal segment with the notch more distinct than in the males. Gonocoxosternum Figure 102.

Measurements: TL 4.30 - 4.95 mm, MW 2.05 - 2.30 mm; for further details see Tabs. 1 - 4.

Distribution: North-western Syria and the southern Hatay province in Turkey (Fig. 149).

Derivatio nominis: We name this species for its collector Ragnar Kinzelbach (Greifswald, Germany).

Note: *Deronectes kinzelbachi* sp.n. and *D. syriacus* have not been found together so far, but both have been taken in the region around Antakya, the first one south of Antakya, close to the border to Syria, the second one about 80 km N Antakya. Although the shape of the apical part of the median lobe of aedeagus in both taxa is somewhat variable, they can be distinguished by the form of the inner surface of the lobe's median part in lateral view - straight in *D. kinzelbachi* sp.n., more curved in *D. syriacus* (Figs. 80 and 79 respectively) - and by the other characteristics presented above. Thus for the moment we treat both as different species. If, however, intermediate specimens are found in this region in the future the possibility of subspecific status must be considered.

X.4 The *Deronectes jaechi*-subgroup

This subgroup currently contains a single species from Turkey. It is isolated from all other representatives of the *D. parvicollis*-group by the striking form of the pronotum, which is extremely and abruptly narrowed before the base (Fig. 36) (PMW/PBW 1.28 - 1.33), by the shape of the median lobe of aedeagus (Fig. 81) and of the parameres (Fig. 76), by the form of the male mesotibiae (Fig. 9), and by the strongly modified last abdominal segment of the female (Fig. 130).

53. *Deronectes jaechi* WEWALKA, 1989

Deronectes jaechi WEWALKA, 1989: 94.

Holotype (♂): "SO-Türkei [= SE Turkey] 31.5., Uludere Paß [= pass] (46), leg Jäch 1987", "Holotypus, *Deronectes jaechi* n.sp., Wewalka [19]88" [red, hw Wewalka]; according to JÄCH (1988: 742) found at the Danin-danin pass (NMW). **Paratypes:** 2 ♂♂, same data as the holotype, but "Paratypus, *Deronectes jaechi* n.sp., Wewalka [19]88" [red, hw Wewalka] (NMW, CGW); found together with *Deronectes hakkariensis* WEWALKA (see WEWALKA 1989: 95; FERY & BRANCUCCI 1997: 245).

Additional material studied: **Turkey:** 1 ♂, 1 ♀, "TR - Prov. Hakkari, Tanintanin-Pass, 14.6.1988, leg. Barries & Cate" (CGW, CHF).

Type locality: South-eastern Turkey, Hakkari province, E Uludere, Danin-danin-pass, 2000 m.

Diagnosis: Habitus elongate, parallel, depressed (Fig. 36). Surface black, head and sides of pronotum dark brown; setae absent or very short and present on the sides of the elytra only. Shoulders very prominent, because of the scarcely rounded sides of the elytra and the narrow base of the pronotum. Head microreticulated, puncturation simple, denser towards the frons, but without coarser punctures. Sides of pronotum very strongly narrowed and concavely sinuate before the base; posterior angles rectangular or slightly acute (85° - 90°). Border of pronotum indistinct. Disc of pronotum with primary puncturation dense



Figs. 47 - 52: Median lobe of aedeagus in dorsal and lateral view of (47) *Deronectes afghanicus*, (48) *D. youngi* sp.n., (49) *D. danielssoni* sp.n., (50) *D. roberti* sp.n., (51) *D. nilssoni*, (51a) idem, tip of median lobe of additional specimen showing the variation, (52) *D. biltoni* sp.n.

and with a few larger punctures in the middle, areas to the right and left without larger punctures. Before the base, near the anterior margin and near the margin of the sides are depressed areas with distinct coarser punctures, this giving the disc a vaulted appearance;

these depressions are very distinct before the base and in the posterior half of the sides, and in this respect the pronotum resembles that of species with an impression parallel to each side of the pronotum (groups II to IX, see part I). Elytra slightly vaulted between the inner puncture lines, secondary puncturation distinct. Apex of elytra a little truncate, distinctly depressed before the posterior margin, elevation at the margin distinct and shining.

Prosternal apophysis flat vaulted, without longitudinal carina, only slightly roof-like behind, with strong transversal carinae, which cover the whole apophysis, sides with distinct setae. Metacoxal lines not close, parallel to slightly divergent forwards. Legs dark brown. Antennae brown, articles - if at all - only very indistinctly darkened.

♂♂: Median lobe of aedeagus (Fig. 81) in dorsal view with apex broadly rounded, slightly excavated; in lateral view rather compact; ventral surface with a roof-like keel, a weak external keel on each side present in the basal third. Paramere (Fig. 76) in contrast to all other species of the genus with two large tufts of rather thick hairs, the distal one distinctly longer. Protarsal claws simple. Protibiae broadened and curved apically. Inner side of the mesotibiae somewhat enlarged apically (Fig. 9), but not curved inwards on the whole as in *Deronectes wittmeri* WEWALKA (see Fig. 49, part I), and provided with a small curved spur. Last abdominal segment depressed before the apex, without a real notch, but truncate, slightly curved inwards only, with a small elevation at the sides.

♀♀: Last abdominal segment extremely and uniquely modified, without notch, but strongly vaulted, resembling the snout of a pig (Fig. 130). Gonocoxosternum rather compact, rounded distally, tip without bristles (Fig. 103). Mesotibiae not enlarged apically.

Measurements: TL 4.90 - 5.15 mm, MW 2.25 - 2.45 mm; for further details see Tabs. 1 - 4.

Distribution: Turkey, Hakkari province (Fig. 148).

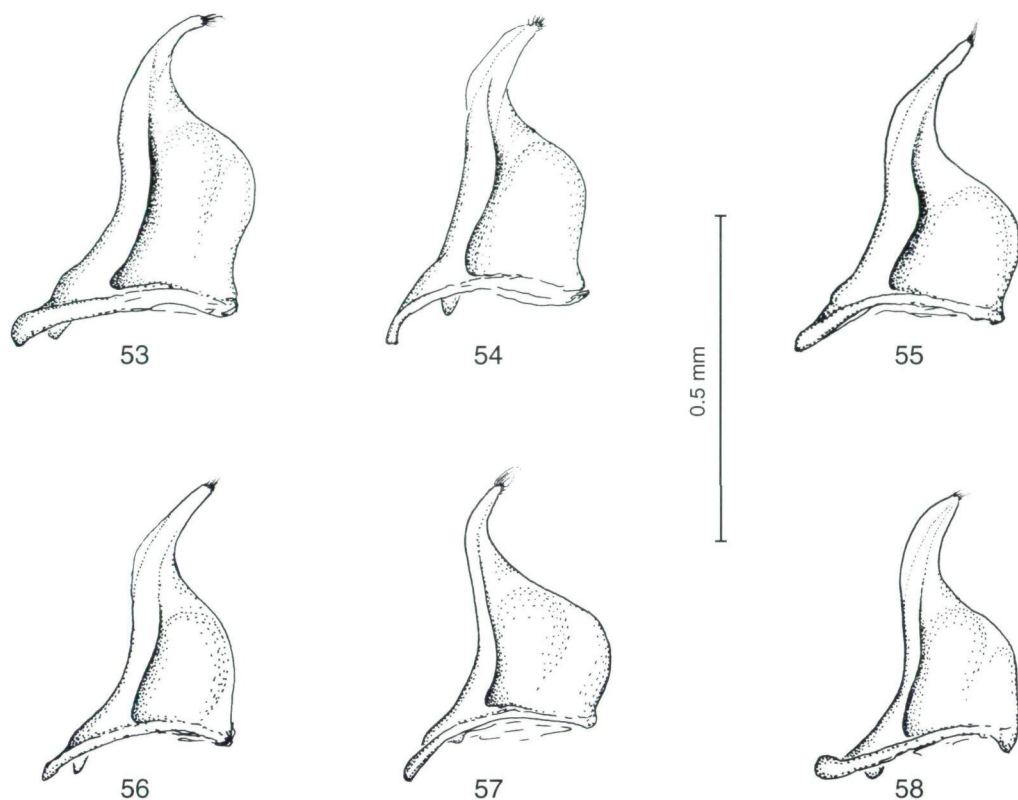
Additional notes

After the publication of the first part of this revision, Dr. R. Poggi (Genova) kindly informed us that the second syntype of *Deronectes doriae* SHARP - which we have recorded as untraceable - is kept in the MCGE. In the meantime we have been able to study this specimen and are able to present the relevant data. According to article 73 and 74 of the International Code of Zoological Nomenclature (1985) this syntype has to be regarded as paralectotype.

Paralectotype (♂): "Caucaso, Doria [18]62." [hw same as in the lectotype], "Typus" [red letters and margin], "Doriae Sharp", "Deronectes Doriae, Sharp, 2787 typus!", "Der. Doriae Sharp, teste D. Sharp", "Museo Civico di Genova", "Paralectotype, Deronectes doriae Sharp, Fery det. 1998" [red] (MCGE). **Note:** The paralectotype is mounted on a glue-card typical of those used by Sharp.

Note: The types were said to have been found by "Marquis Jacques Doria" (SHARP 1882: 421), but SHARP did not explicitly dedicate the new taxon to this person. This is why WEWALKA (1989: 97) and FERY & BRANCUCCI (1997: 275) have kept the original spelling, and did not emend it to *D. doriai* as was preferred by GUIGNOT (1949: 13).

Note: The "check-list" of ÁDÁM (1996) became available to us after the manuscript of the present work had been sent to the editor. ÁDÁM (1996: 18) proposes to use *Bartheus* HOULBERT, 1934, instead of *Deronectes* SHARP, 1882 (see FERY & BRANCUCCI 1997:



Figs. 53 - 58: Paramere of (53) *Deronectes afghanicus*, (54) *D. youngi* sp.n., (55) *D. danielssoni* sp.n., (56) *D. roberti* sp.n., (57) *D. nilssoni*, (58) *D. biltoni* sp.n.

221), because BEDEL (1881), when dividing the genus *Hydroporus* CLAIRVILLE into nine groups added the remark "*Deronectes* Sharp, in litt." to his fourth group (l.c. p. 263). This group contained four species, which today are known as *Nebrioporus depressus* (FABRICIUS, 1775), *Nebrioporus canaliculatus* (LACORDAIRE, 1835), *Stictotarsus duodecimpustulatus* (FABRICIUS, 1792), and *Oreodytes sanmarkii* (C.R. SAHLBERG, 1826). Today's *Deronectes latus* (STEPHENS) being the single species in BEDEL's group V (without additional remarks; l.c. p. 262). The present authors reject the use of *Bartheus* instead of *Deronectes* and refer to the critical discussion of ÁDÁM's work by A.N. NILSSON (1998, *Latissimus* 10: 1).

Résumé

In the two parts of the revision of *Deronectes* 53 species have been studied in total. Seventeen species and two subspecies have been described as new, which in alphabetic order are: *Deronectes angelinii* sp.n., *Deronectes aubei sanfilippoi*, *D. balkei* sp.n., *D. bameuli* sp.n., *D. biltoni* sp.n., *D. brancuccii* sp.n., *D. danielssoni* sp.n., *D. elmii* sp.n., *D.*

evelynae sp.n., *D. hebaueri* sp.n., *D. hendrichi* sp.n., *D. kinzelbachi* sp.n., *D. palaestinus* sp.n., *Deronectes perrinae*, *Deronectes platynotus mazzoldii*, *D. riberai* sp.n., *D. roberti* sp.n., *Deronectes witzgalli*, and *D. youngi* sp.n. *Deronectes brannanii* and *Deronectes semirufus* have been recognized as valid species. *Stictotarsus bertrandi* (LEGROS, 1971) - originally described as *Deronectes* - has also been treated in a short note.

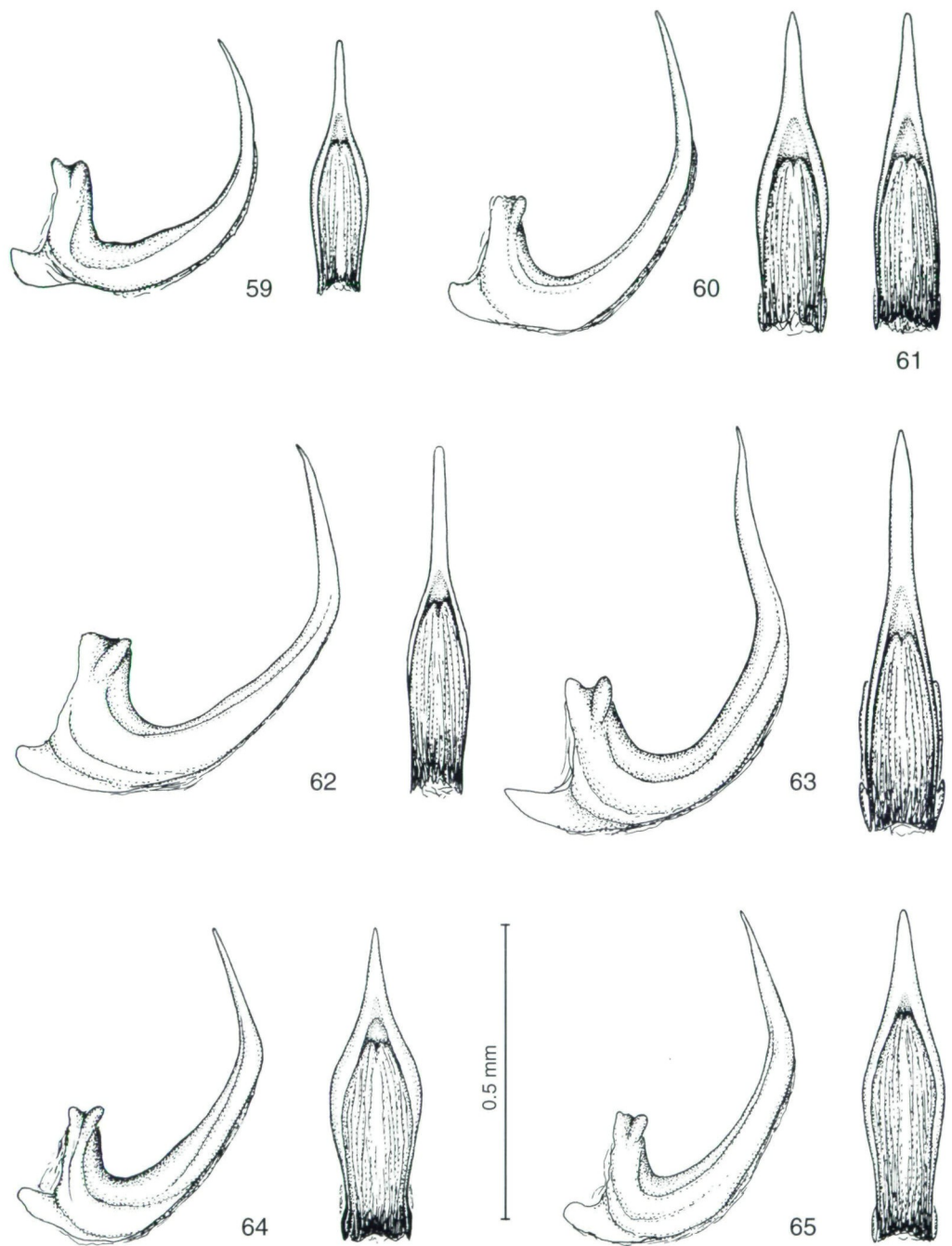
Lectotypes have been designated for the following taxa: *Hydroporus aubei* MULSANT, 1843, *Hydroporus bicostatus* SCHAUM, 1864, *Hydroporus bombycinus* FAIRMAIRE, 1876, *Hydroporus brannanii* SCHAUFUSS, 1869, *Hydroporus castaneus* HEER, 1837, *Hydroporus delarouzei* JACQUELIN DU VAL, 1857, *Deronectes doriae* SHARP, 1882, *Hydroporus inconspicuous* LEPRIEUR, 1876, *Hydroporus lareynii* FAIRMAIRE, 1858, *Hydroporus latus* STEPHENS, 1829, *Hydroporus moestus* FAIRMAIRE, 1858, *Hydroporus opatrinus* GERMAR, 1824, *Hydroporus peyerimhoffi* RÉGIMBART, 1906, *Hydroporus latus pyrenaeus* SCHAEFER, 1930, *Hydroporus semirufus* GERMAR, 1845, and *Hydroporus vestitus* FAIRMAIRE, 1859.

Thanks to the excellent co-operation with numerous museums and private collectors the authors have been able to study the types of all taxa described to date, except *Hydroporus murinus* STURM, 1835, *Hydroporus ovatus* STURM, 1835, *Hydroporus coarcticollis* REICHE, 1862, and *Hydroporus angulipennis* PEYRON, 1858. The previously largely overlooked taxa *Hydroporus sublaevis* REY, 1878, *Deronectes latus pyrenaeus* (SCHAEFER, 1930), and *Deronectes opatrinus septensis* LAGAR, 1986, have been treated for the first time after their descriptions and their synonymy confirmed.

Some useful diagnostic characteristics have been employed for the first time; e.g. the shape of the notch on the last abdominal sternite and the shape of the metacoxal lines. Together with other characteristics this has enabled us to classify the species into ten groups. The tenth group, however, has proved to be the most difficult. We have divided this *D. parvicollis*-group into four subgroups, one of them including a single species only.

The description of fourteen new species from a region which reaches from Asia Minor as far as Western China and Pakistan supports the statement of FERY & BRANCUCCI (1997: 220), that - in addition to the Iberian Peninsula - this region has to be regarded as a centre of endemism in *Deronectes*. The results of the present work suggest that this region is itself divided into two parts by a line which runs from the south-east of the Caspian Sea to the border between Iran and Pakistan at the Arabian Sea. The Dasht-e-Lut (Dasht = desert) in central Iran in particular appears to represent a barrier to dispersal in the genus. From these results we can observe three main centres of distribution:

- the Iberian Peninsula (including the Balearics and the French Pyrenees) with fifteen species, ten of them endemic;
- a region including Turkey, Syria, northern Iraq, Caucasia and south-western to south-eastern Iran with twenty-three species (seventeen species of the *D. parvicollis*-group and six of the *D. latus*-, *D. platynotus*- and *D. doriae*-groups), twenty-one of them endemic;
- a region including north-eastern Iran, south-western Turkmenistan, eastern Uzbekistan, south-eastern Kazakhstan, Tajikistan, Kirghizia, Afghanistan, adjacent regions of Siberia, Pakistan and China with eight species, all endemic.



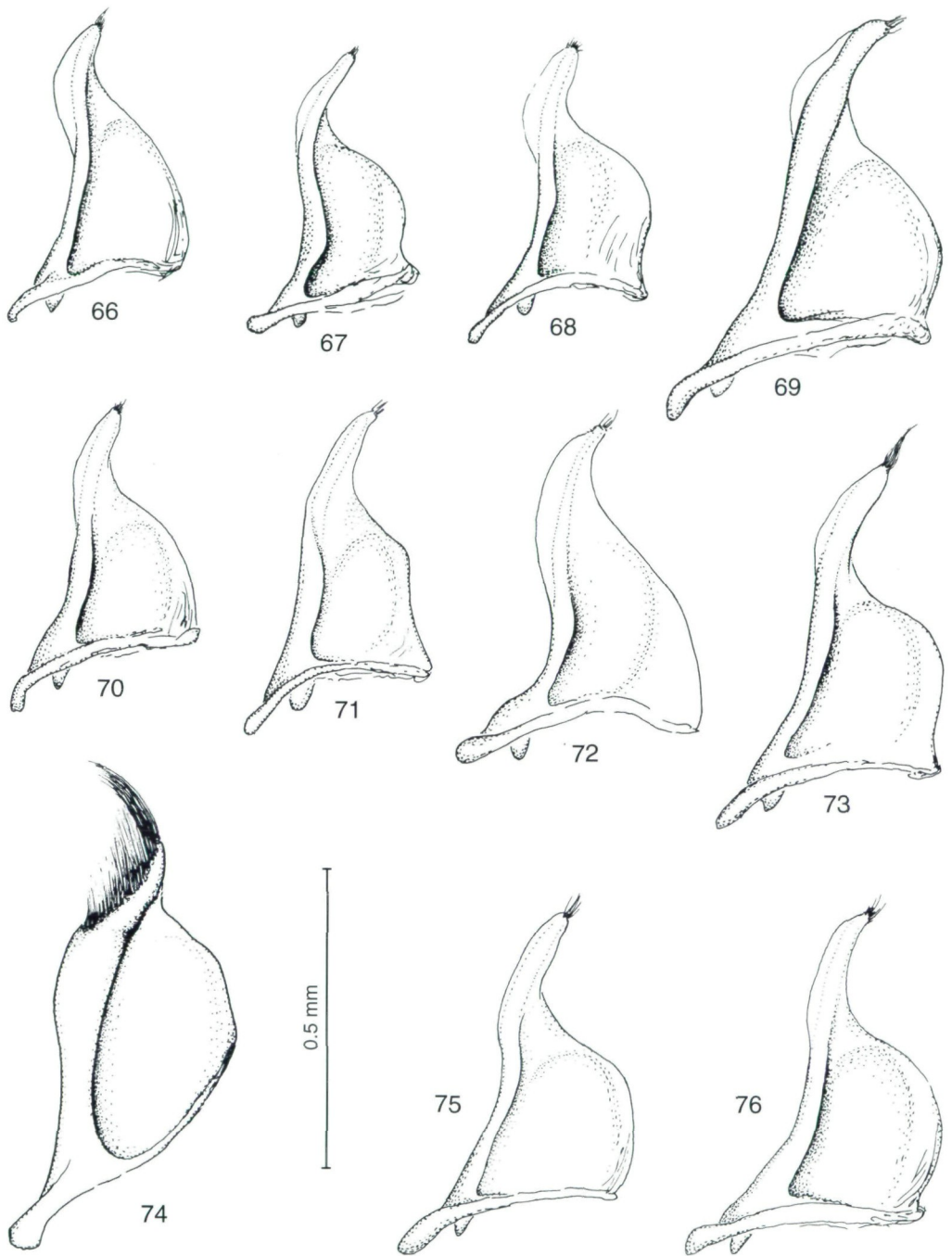
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As already stated in the first part of the revision (FERY & BRANCUCCI 1997: 220) geographical isolation and the probably limited capacity for flight of the species would account for the evolution of the many closely related species which are now known from each of the three regions. It is still very likely that additional taxa remain undescribed at least in Asia, and future researches will have to be made to confirm and expand on our preliminary results. The transition regions between the two Asian centres of distribution - the Alborz (Elburs) mountain range in northern Iran, the mountainous regions of Baluchistan in south-eastern Iran and those in eastern Iran close to Pakistan and Afghanistan - will probably prove most rewarding.

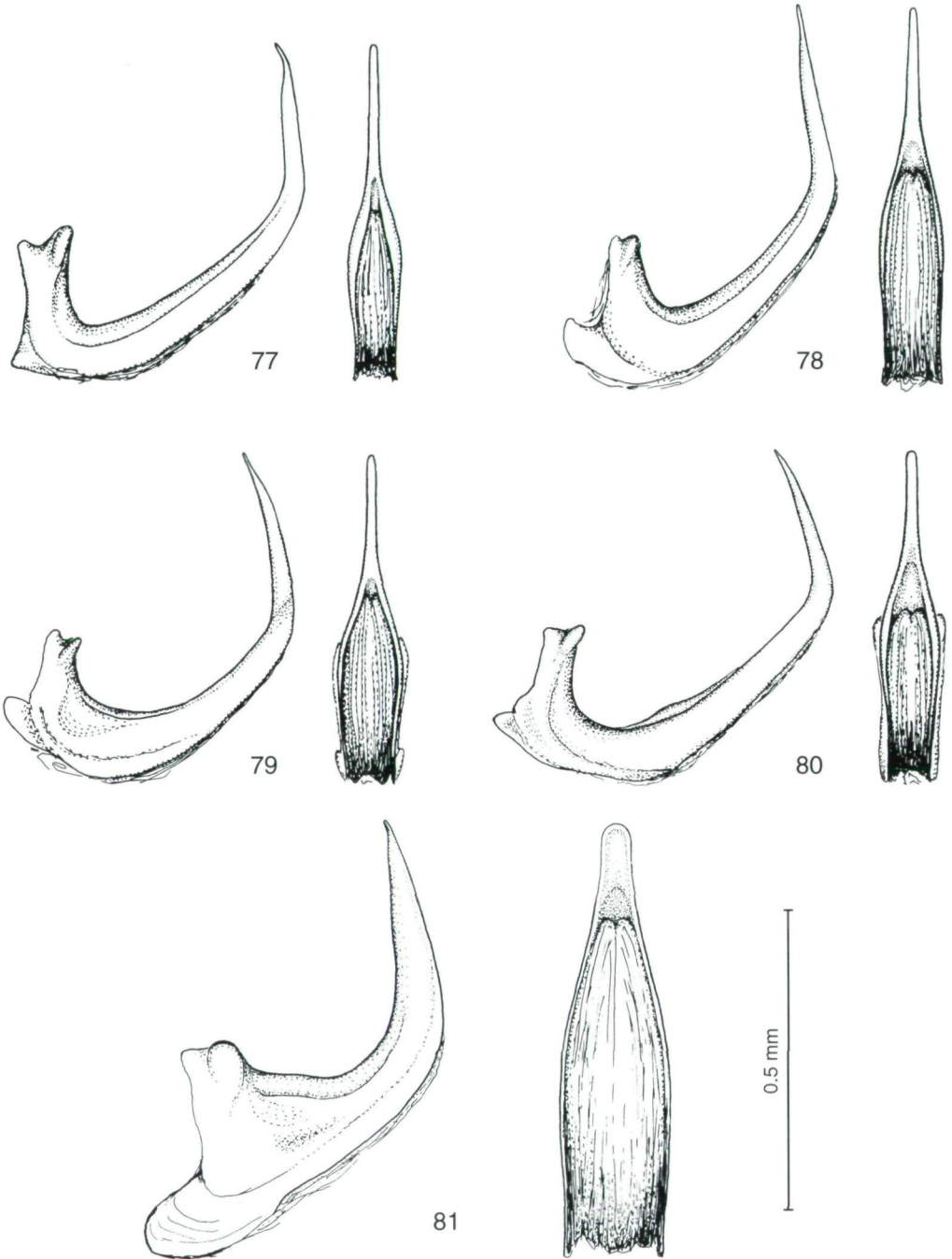
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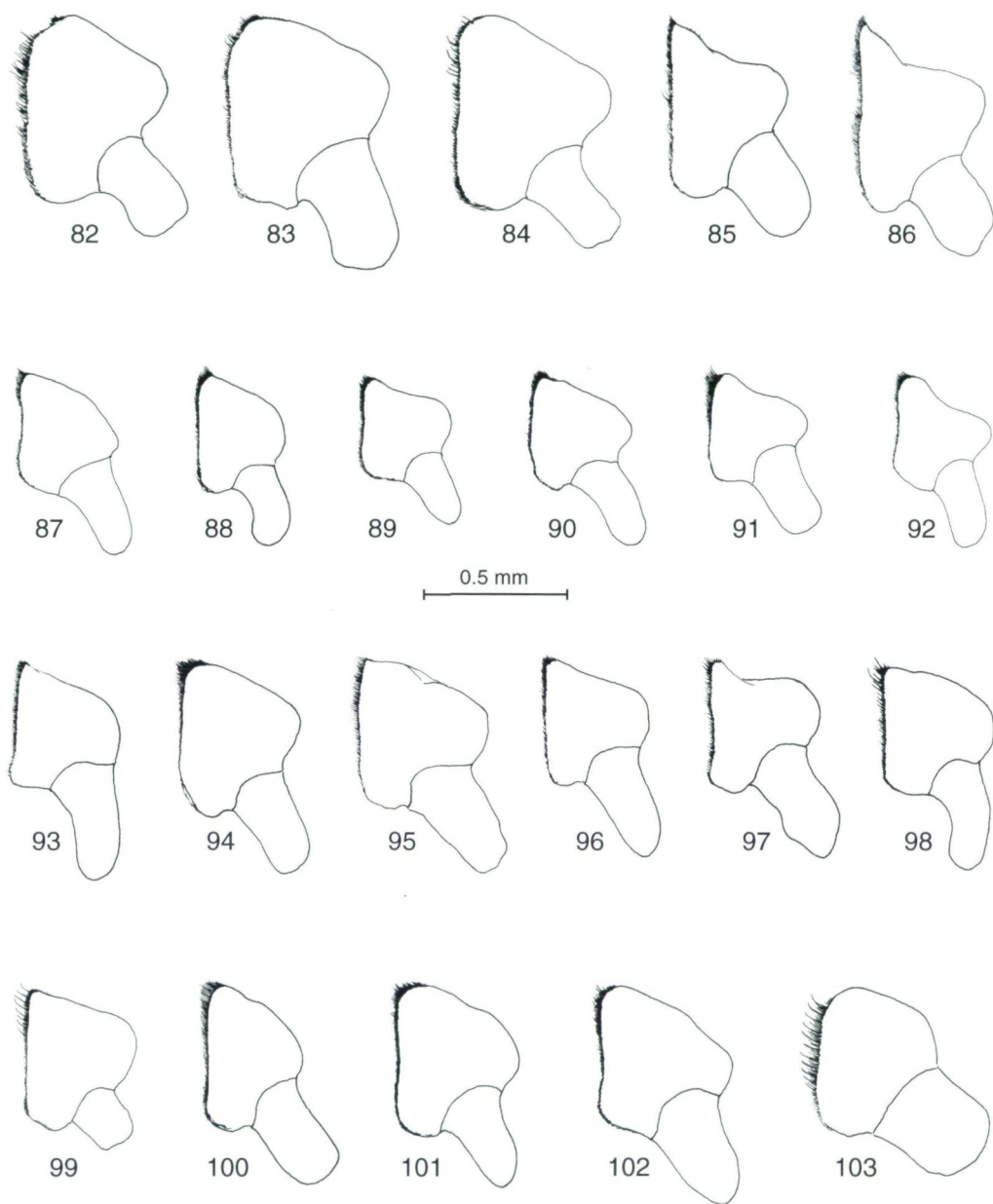
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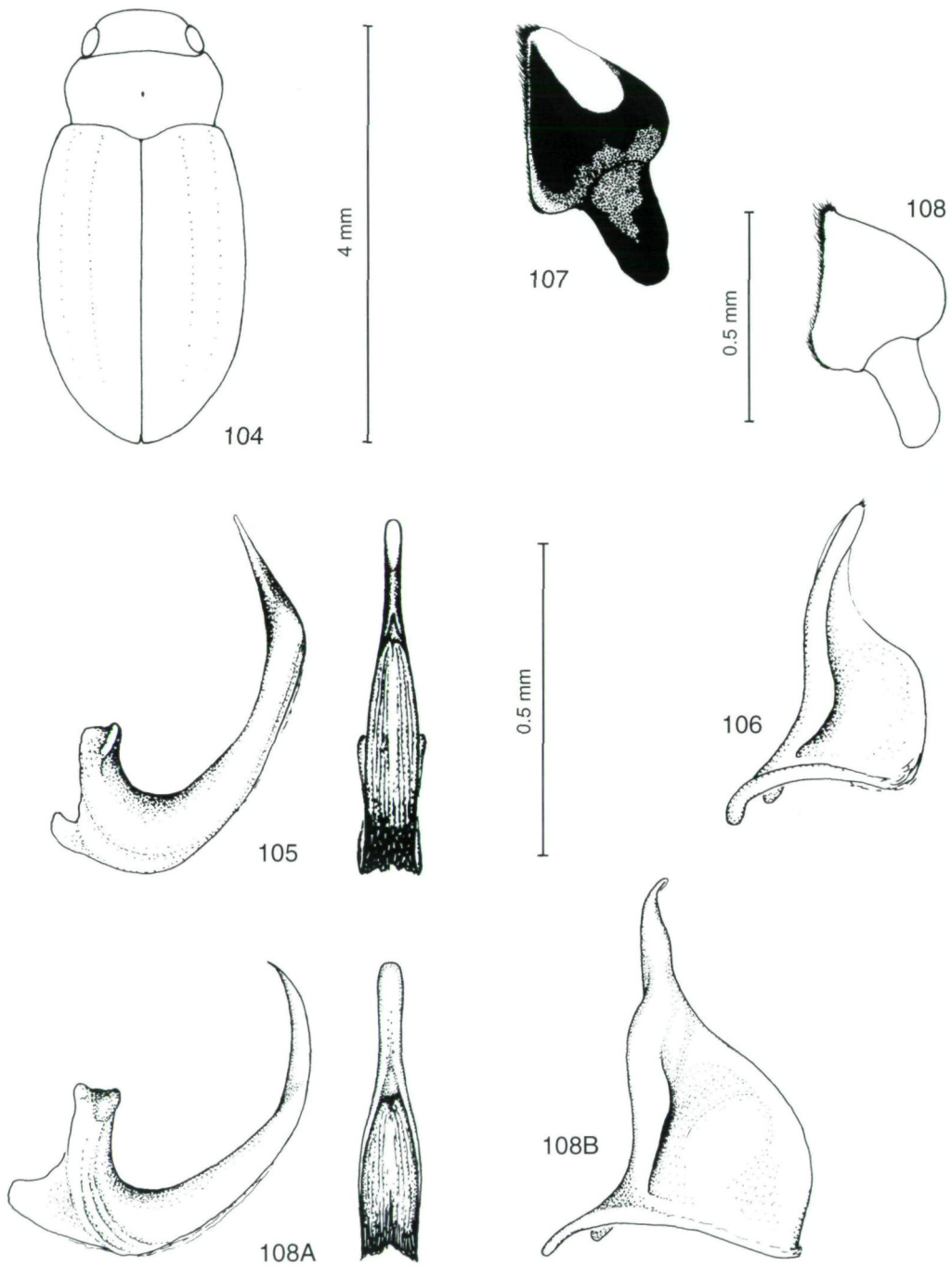
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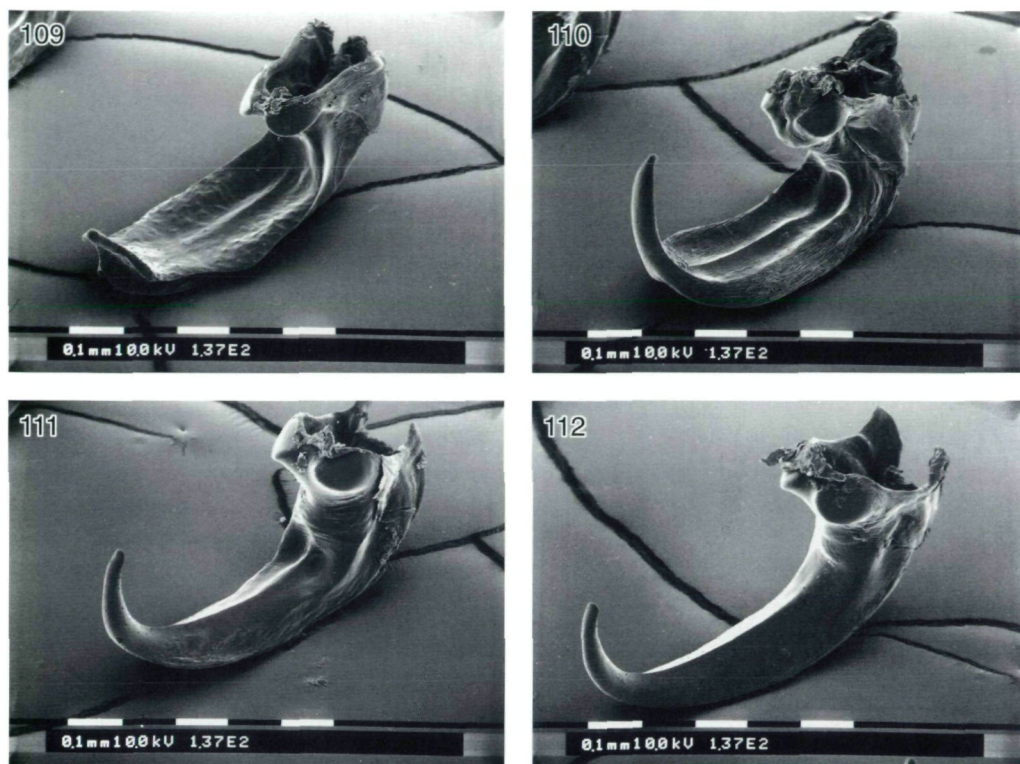
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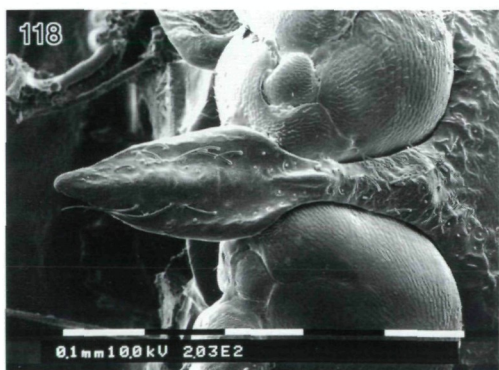
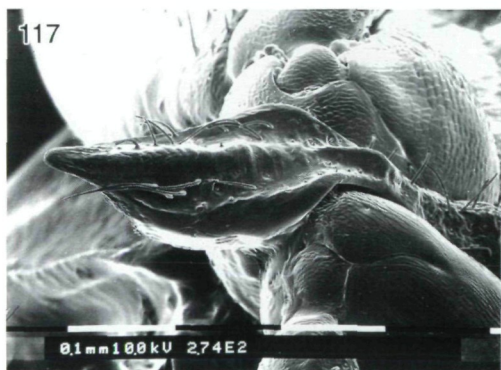
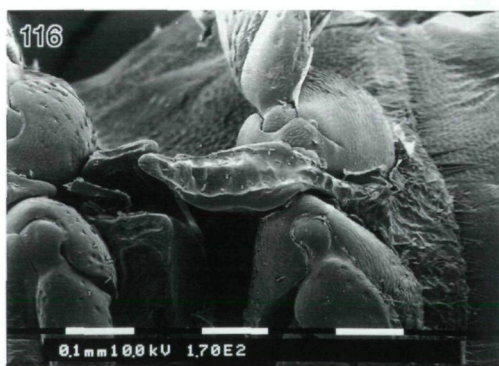
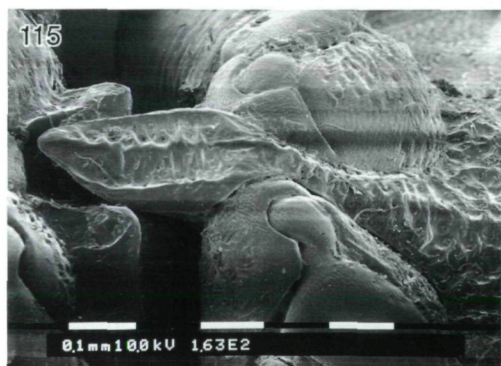
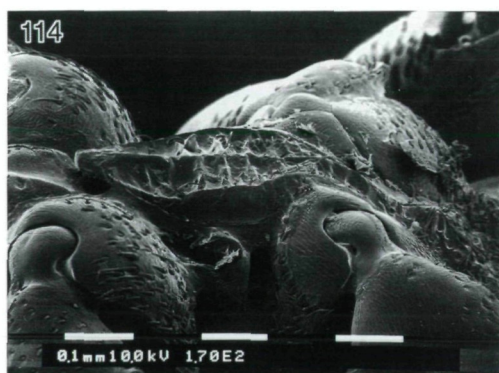
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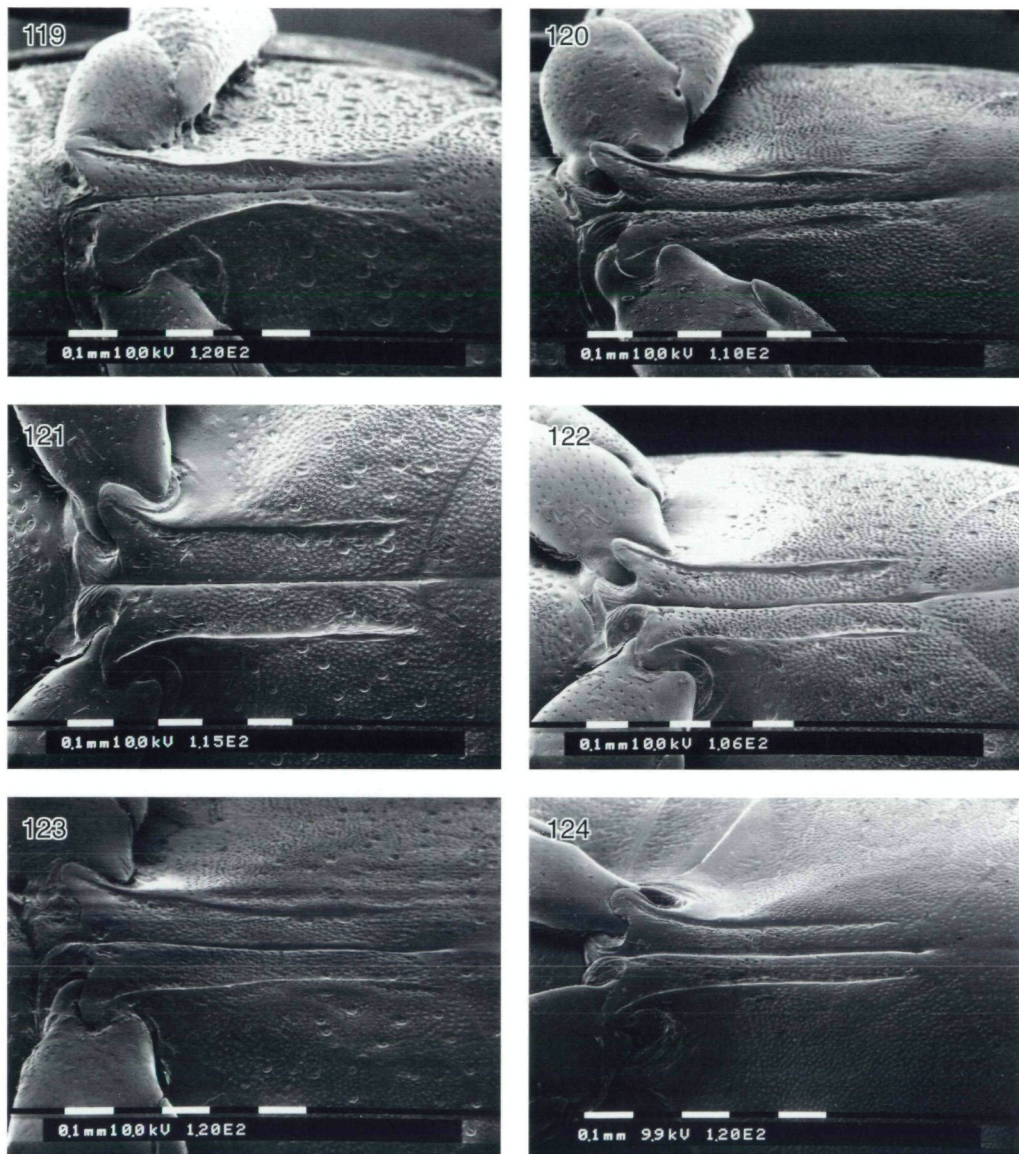
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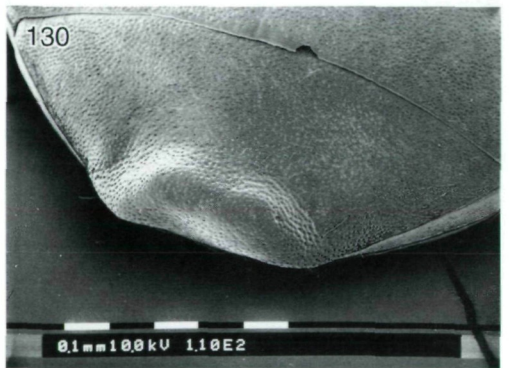
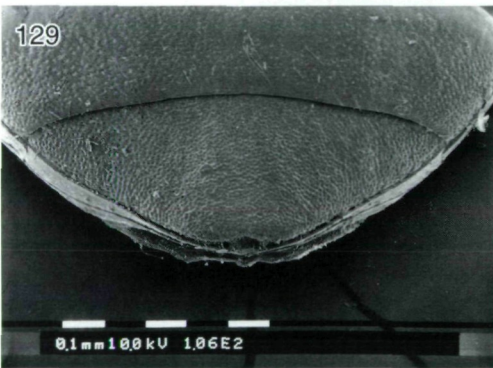
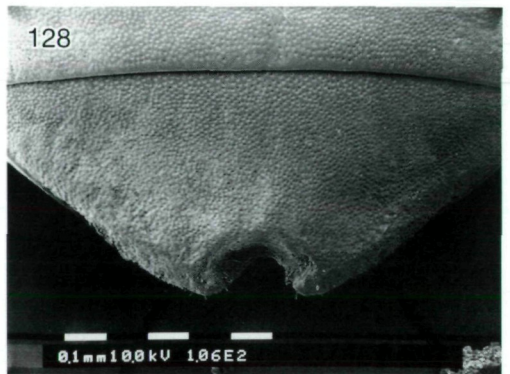
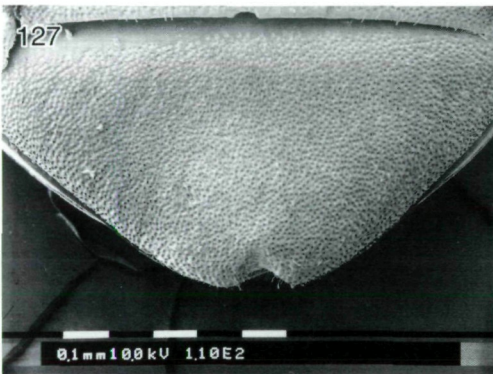
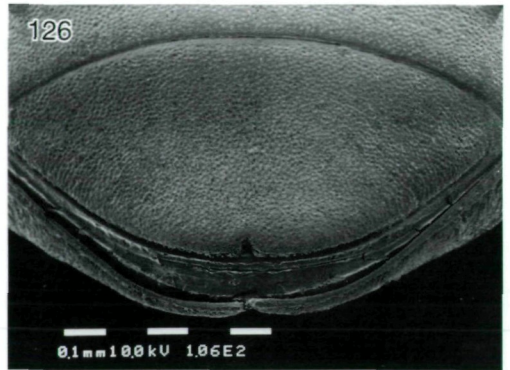
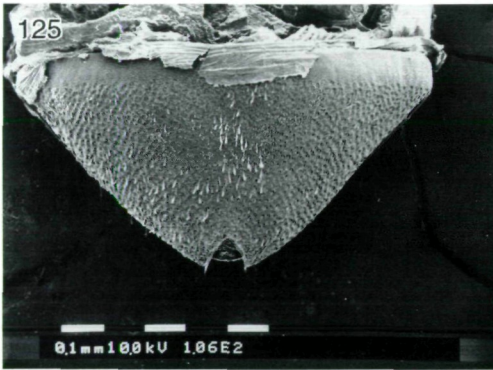
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Figs. 119 - 124: Metacoxal lines of (119) *Deronectes latus* (♂), oblique view, (120) *D. parvicollis* (♂), oblique view, (121) *D. abnormicollis* (♂), perpendicular view, (122) idem, oblique view, (123) idem (♀), oblique view, (124) *D. longipes* (♂), oblique view.

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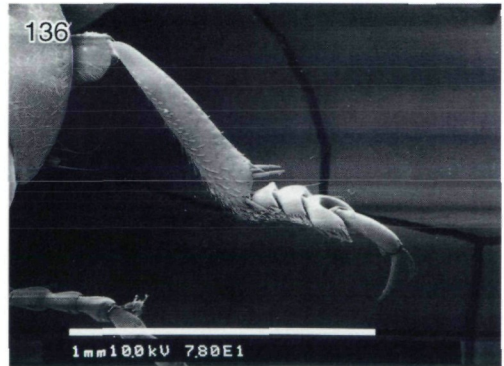
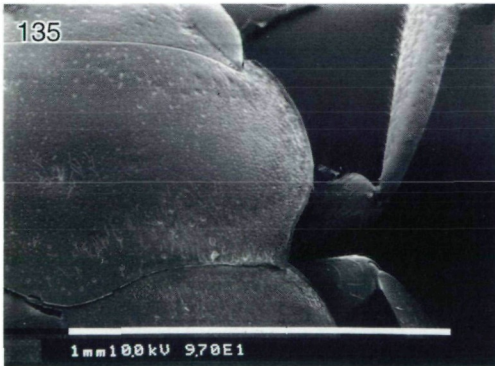
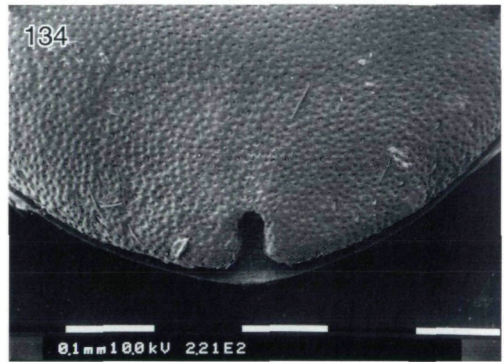
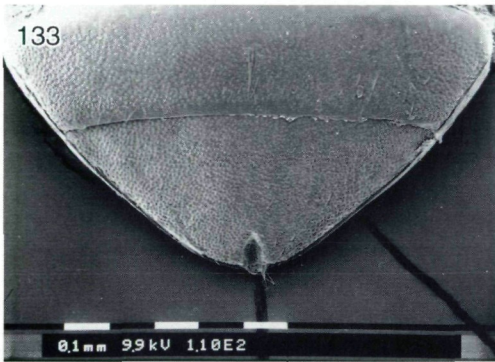
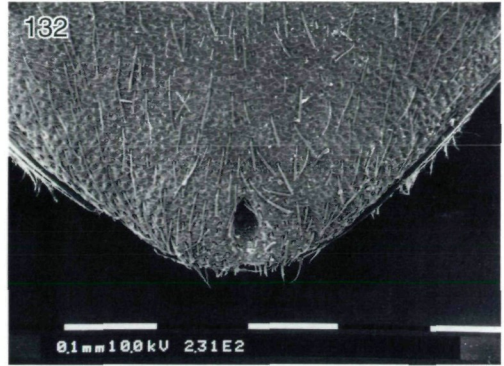
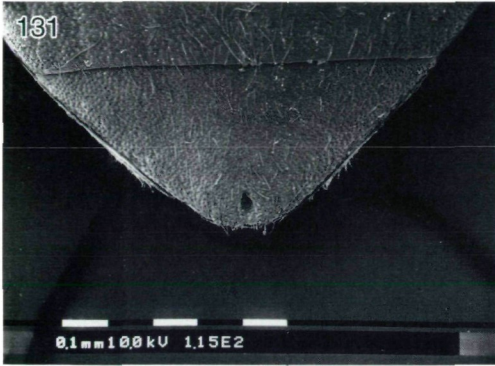


Figs. 125 - 130: Notch on abdominal segment of (125) *Deronectes latus* (♂), (126) *D. parvicollis* (♂), (127) *D. abnormicollis* (♂), (128), idem, (♀), (129) *D. longipes* (♂), (130) *D. jaechi* (♀).

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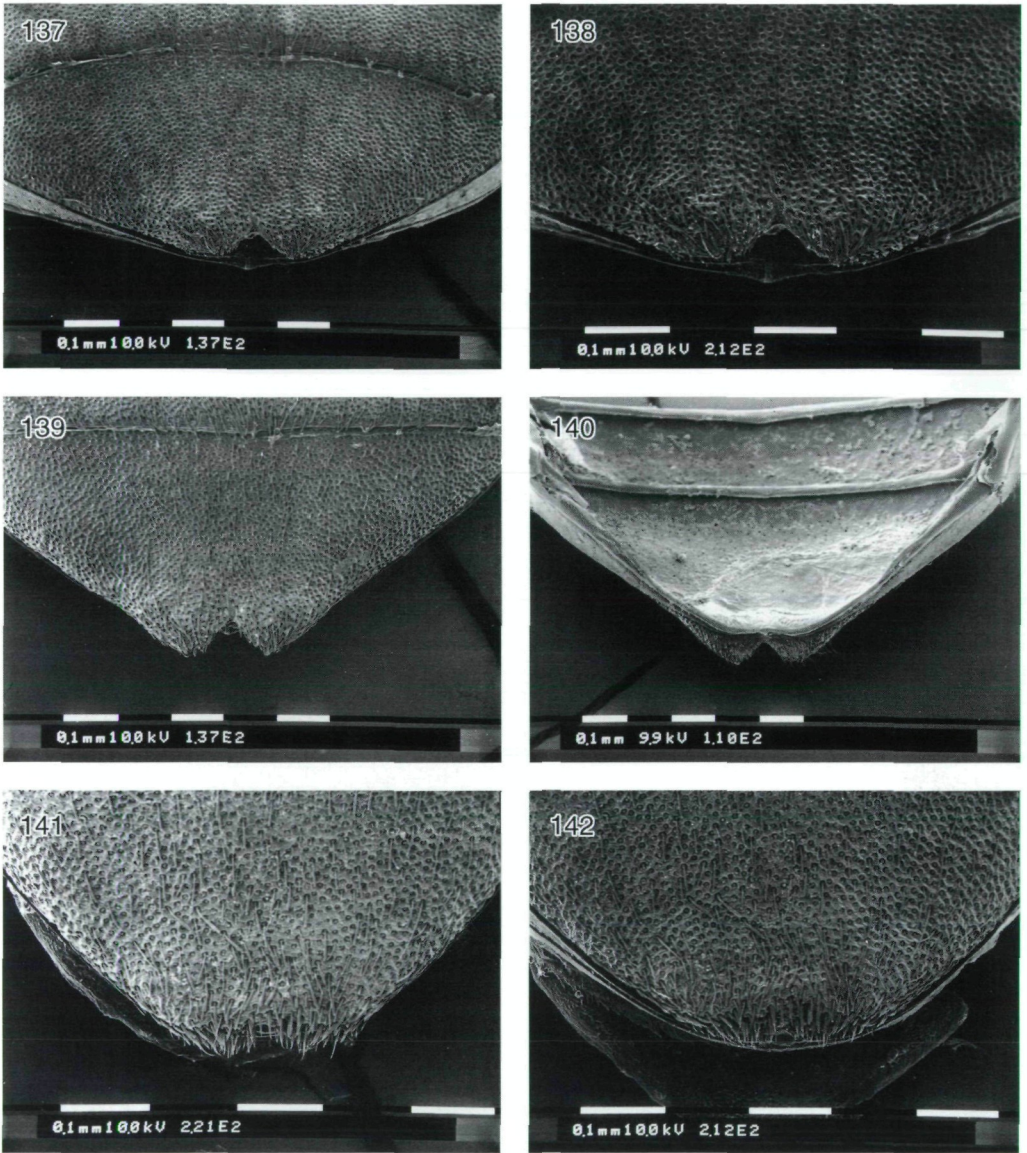
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Figs. 131 - 136: (131 - 134): Notch on abdominal segment of (131) *Deronectes afghanicus* (♂), (132) idem, enlarged, (133) *D. youngi* sp.n.(♂), (134) *D. nilssoni* (♀); (135) Pronotum of *D. youngi* sp.n.; (136) Protibia and claws of *D. youngi* sp.n. (♂).

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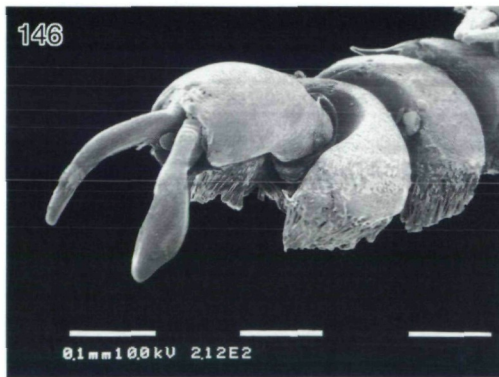
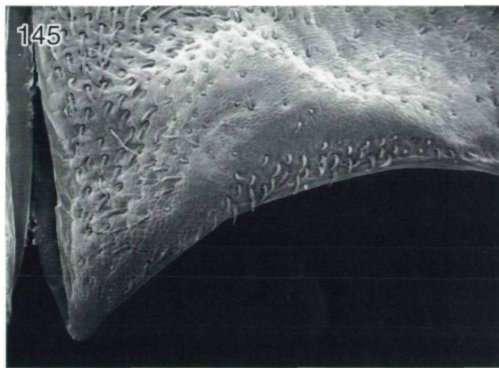
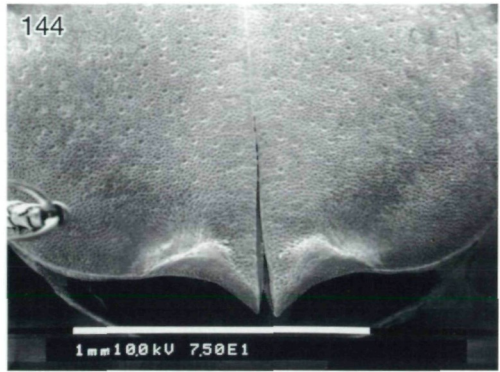
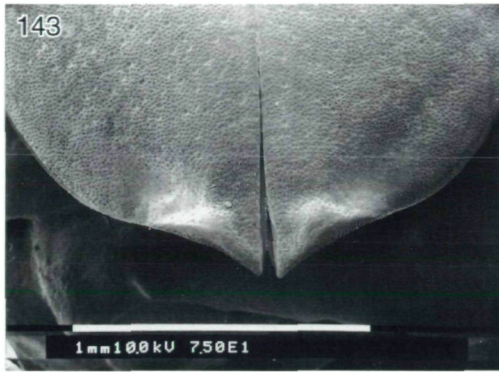


Figs. 137 - 142: Notch on abdominal segment of (137) *Deronectes syriacus* (♀), (138) idem, enlarged, (139) idem, oblique view, (140) idem, view from inside, tergites removed, (141) *D. kinzelbachi* sp.n. (♂), oblique view, (142) idem, perpendicular view.

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Figs. 143 - 147: Apex of elytra of (143) *Deronectes abnormicollis* (♀), (144) idem, enlarged, (145) idem, details of the tip; (146) Anterior claw of *D. parvicollis* (♂); (147) Habitus of *D. parvicollis* (♂).

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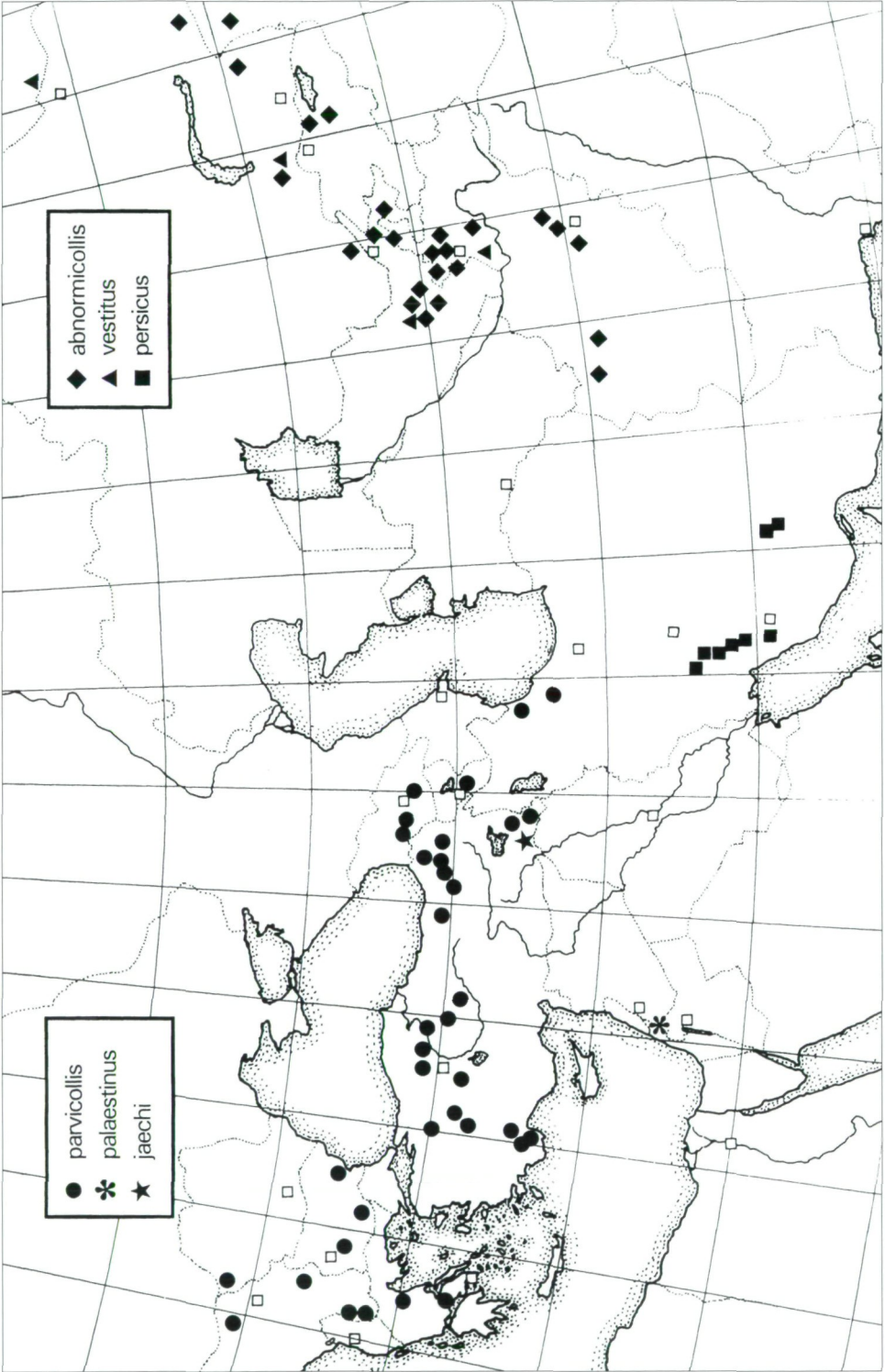


Fig. 148: Distribution of the species of the *D. parvicollis*- and *D. jaechi*-subgroups.

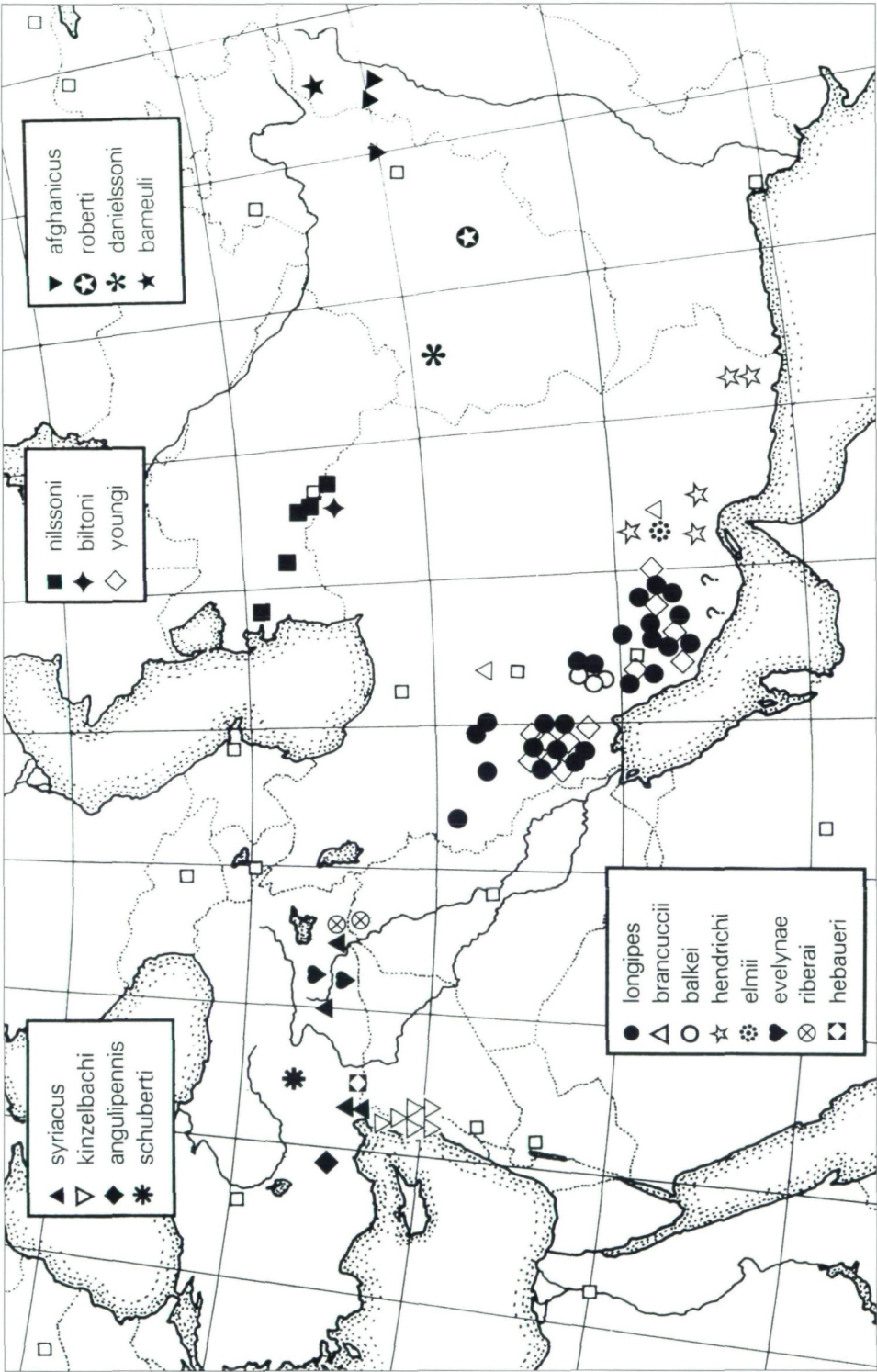


Fig. 149: Distribution of the species of the *D. afghanicus*- and *D. longipes*-subgroups (for the question marks see the description of *D. hendrichi* sp.n.).

Table 1: Comparison of selected characteristics of members of the *parvicollis*-group: mean \pm standard deviation, range brackets (TL: total-length, MW: maximum width, LWH: length without head, PMW: maximum width of pronotum, PBW: width of pronotum at base).

No.	Species	TL (mm)	MW (mm)	LWH (mm)	PMW (mm)	PBW (mm)	TL/MW	LWH/MW	PMW/MW	PMW/PBW
29	<i>parvicollis</i>	5.21 \pm 0.16 (4.90 - 5.50)	2.59 \pm 0.08 (2.40 - 2.75)	4.70 \pm 0.14 (4.40 - 5.05)	1.90 \pm 0.08 (1.75 - 2.12)	1.78 \pm 0.07 (1.65 - 1.95)	2.01 \pm 0.04 (1.91 - 2.12)	1.82 \pm 0.03 (1.74 - 1.88)	0.733 \pm 0.018 (0.692 - 0.769)	1.07 \pm 0.02 (1.03 - 1.12)
30	<i>palaestinus</i> sp. n.	5.64 \pm 0.22 (5.40 - 5.90)	2.72 \pm 0.09 (2.55 - 2.80)	5.18 \pm 0.17 (4.90 - 5.55)	2.03 \pm 0.12 (1.85 - 2.15)	1.89 \pm 0.08 (1.75 - 1.95)	2.08 \pm 0.04 (2.04 - 2.13)	1.91 \pm 0.01 (1.88 - 1.92)	0.745 \pm 0.024 (0.715 - 0.778)	1.07 \pm 0.03 (1.04 - 1.11)
31a	<i>abnormicollis</i> (♂)	5.49 \pm 0.12 (5.30 - 5.70)	2.72 \pm 0.08 (2.60 - 2.90)	5.00 \pm 0.11 (4.80 - 5.20)	1.91 \pm 0.06 (1.80 - 2.05)	1.72 \pm 0.07 (1.60 - 1.90)	2.02 \pm 0.04 (1.95 - 2.11)	1.84 \pm 0.04 (1.79 - 1.92)	0.702 \pm 0.020 (0.667 - 0.727)	1.11 \pm 0.02 (1.08 - 1.13)
31b	<i>abnormicollis</i> (♀)	5.26 \pm 0.15 (5.00 - 5.60)	2.60 \pm 0.08 (2.40 - 2.70)	4.76 \pm 0.13 (4.45 - 5.00)	1.72 \pm 0.08 (1.60 - 1.85)	1.59 \pm 0.08 (1.45 - 1.75)	2.02 \pm 0.04 (1.92 - 2.12)	1.83 \pm 0.03 (1.77 - 1.89)	0.662 \pm 0.021 (0.615 - 0.692)	1.09 \pm 0.02 (1.06 - 1.13)
32	<i>vestitus</i>	4.98 \pm 0.19 (4.60 - 5.35)	2.461 \pm 0.09 (2.30 - 2.55)	4.50 \pm 0.15 (4.20 - 4.80)	1.86 \pm 0.08 (1.75 - 1.95)	1.73 \pm 0.07 (1.60 - 1.85)	2.02 \pm 0.06 (1.94 - 2.13)	1.83 \pm 0.04 (1.76 - 1.94)	0.754 \pm 0.017 (0.720 - 0.787)	1.07 \pm 0.02 (1.03 - 1.12)
33	<i>persicus</i>	5.10 \pm 0.20 (4.70 - 5.40)	2.47 \pm 0.10 (2.30 - 2.60)	4.61 \pm 0.19 (4.20 - 4.90)	1.84 \pm 0.06 (1.70 - 1.95)	1.73 \pm 0.06 (1.55 - 1.85)	2.07 \pm 0.04 (2.00 - 2.17)	1.87 \pm 0.04 (1.81 - 1.99)	0.742 \pm 0.018 (0.714 - 0.783)	1.07 \pm 0.02 (1.03 - 1.11)
34	<i>afghanicus</i>	4.40 \pm 0.10 (4.20 - 4.60)	2.01 \pm 0.05 (1.90 - 2.10)	3.98 \pm 0.12 (3.80 - 4.20)	1.62 \pm 0.06 (1.55 - 1.75)	1.52 \pm 0.06 (1.45 - 1.65)	2.19 \pm 0.03 (2.15 - 2.23)	1.98 \pm 0.02 (1.95 - 2.02)	0.805 \pm 0.020 (0.750 - 0.828)	1.07 \pm 0.01 (1.04 - 1.08)
35	<i>youngi</i> sp. n.	3.88 \pm 0.15 (3.50 - 4.25)	1.75 \pm 0.07 (1.60 - 1.90)	3.50 \pm 0.14 (3.15 - 3.85)	1.39 \pm 0.05 (1.20 - 1.50)	1.19 \pm 0.06 (1.05 - 1.35)	2.22 \pm 0.04 (2.11 - 2.31)	2.00 \pm 0.04 (1.91 - 2.09)	0.96 \pm 0.021 (0.750 - 0.871)	1.17 \pm 0.03 (1.12 - 1.24)
36	<i>danielsoni</i> sp. n.	4.20	1.85	3.75	1.45	1.40	2.28	2.04	0.789	1.05
37	<i>roberti</i> sp. n.	4.06 \pm 0.07 (3.90 - 4.15)	1.82 \pm 0.04 (1.75 - 1.85)	3.56 \pm 0.09 (3.35 - 3.65)	1.41 \pm 0.05 (1.35 - 1.50)	1.27 \pm 0.03 (1.20 - 1.30)	2.23 \pm 0.03 (2.19 - 2.27)	1.96 \pm 0.03 (1.92 - 2.01)	0.776 \pm 0.026 (0.733 - 0.815)	1.11 \pm 0.02 (1.09 - 1.15)
38	<i>bameuli</i> sp. n.	4.00	1.80	3.60	1.35	1.20	2.22	2.03	0.754	1.10
39	<i>nilssoni</i>	4.02 \pm 0.16 (3.80 - 4.30)	1.80 \pm 0.08 (1.65 - 1.90)	3.61 \pm 0.17 (3.35 - 3.90)	1.39 \pm 0.07 (1.35 - 1.55)	1.31 \pm 0.06 (1.20 - 1.45)	2.24 \pm 0.04 (2.18 - 2.31)	2.01 \pm 0.04 (1.94 - 2.09)	0.774 \pm 0.024 (0.743 - 0.813)	1.06 \pm 0.18 (1.04 - 1.08)
40	<i>biltoni</i> sp. n.	4.05 \pm 0.13 (3.95 - 4.30)	1.80 \pm 0.06 (1.75 - 1.90)	3.67 \pm 0.11 (3.50 - 3.85)	1.40 \pm 0.05 (1.35 - 1.45)	1.26 \pm 0.04 (1.20 - 1.30)	2.25 \pm 0.01 (2.22 - 2.27)	2.04 \pm 0.03 (2.00 - 2.09)	0.779 \pm 0.017 (0.760 - 0.800)	1.11 \pm 0.02 (1.08 - 1.13)
41	<i>longipes</i>	4.49 \pm 0.22 (4.00 - 4.95)	2.12 \pm 0.12 (1.85 - 2.30)	4.10 \pm 0.20 (3.65 - 4.50)	1.58 \pm 0.09 (1.40 - 1.75)	1.43 \pm 0.09 (1.25 - 1.60)	2.13 \pm 0.05 (1.98 - 2.25)	1.94 \pm 0.05 (1.78 - 2.06)	0.748 \pm 0.018 (0.705 - 0.795)	1.11 \pm 0.03 (1.05 - 1.16)
42	<i>brancuccii</i> sp. n.	4.68 \pm 0.16 (4.35 - 5.10)	2.17 \pm 0.07 (2.05 - 2.30)	4.25 \pm 0.14 (4.00 - 4.55)	1.57 \pm 0.05 (1.45 - 1.65)	1.38 \pm 0.04 (1.30 - 1.45)	2.16 \pm 0.04 (2.10 - 2.23)	1.95 \pm 0.04 (1.89 - 2.01)	0.722 \pm 0.016 (0.686 - 0.755)	1.14 \pm 0.02 (1.09 - 1.17)
43	<i>balkei</i> sp. n.	4.74 \pm 0.08 (4.55 - 4.80)	2.15 \pm 0.06 (2.05 - 2.25)	4.26 \pm 0.13 (4.05 - 4.50)	1.62 \pm 0.05 (1.55 - 1.70)	1.39 \pm 0.06 (1.30 - 1.50)	2.20 \pm 0.04 (2.14 - 2.24)	1.98 \pm 0.04 (1.91 - 2.01)	0.753 \pm 0.010 (0.737 - 0.767)	1.16 \pm 0.04 (1.10 - 1.23)
44	<i>hendrichi</i> sp. n.	4.04 \pm 0.17 (3.60 - 4.40)	1.86 \pm 0.08 (1.70 - 2.05)	3.67 \pm 0.16 (3.30 - 4.00)	1.45 \pm 0.07 (1.30 - 1.65)	1.28 \pm 0.05 (1.20 - 1.45)	2.18 \pm 0.04 (2.07 - 2.28)	1.98 \pm 0.04 (1.91 - 2.07)	0.778 \pm 0.021 (0.731 - 0.839)	1.13 \pm 0.02 (1.06 - 1.19)
45	<i>elmii</i> sp. n.	4.18 \pm 0.10 (4.00 - 4.40)	1.91 \pm 0.04 (1.80 - 2.00)	3.80 \pm 0.10 (3.55 - 4.05)	1.49 \pm 0.04 (1.45 - 1.60)	1.35 \pm 0.03 (1.30 - 1.40)	2.19 \pm 0.03 (2.11 - 2.24)	1.99 \pm 0.03 (1.92 - 2.04)	0.781 \pm 0.014 (0.757 - 0.803)	1.11 \pm 0.02 (1.06 - 1.14)
46	<i>evelynae</i> sp. n.	4.30 \pm 0.09 (4.20 - 4.45)	1.93 \pm 0.03 (1.90 - 2.00)	3.81 \pm 0.07 (3.70 - 4.00)	1.44 \pm 0.03 (1.40 - 1.50)	1.27 \pm 0.02 (1.20 - 1.30)	2.23 \pm 0.02 (2.19 - 2.27)	1.98 \pm 0.02 (1.95 - 2.00)	0.746 \pm 0.013 (0.733 - 0.770)	1.13 \pm 0.02 (1.10 - 1.16)
47	<i>riberai</i> sp. n.	4.60 \pm 0.13 (4.40 - 4.75)	2.08 \pm 0.05 (2.05 - 2.15)	4.17 \pm 0.08 (4.10 - 4.30)	1.57 \pm 0.05 (1.50 - 1.65)	1.40 \pm 0.03 (1.35 - 1.45)	2.21 \pm 0.05 (2.09 - 2.27)	2.01 \pm 0.03 (1.93 - 2.05)	0.752 \pm 0.021 (0.705 - 0.775)	1.12 \pm 0.03 (1.04 - 1.16)
48	<i>hebaueri</i> sp. n.	4.11 \pm 0.16 (3.90 - 4.25)	1.83 \pm 0.05 (1.75 - 1.90)	3.62 \pm 0.08 (3.55 - 3.70)	1.43 \pm 0.05 (1.35 - 1.50)	1.26 \pm 0.07 (1.20 - 1.35)	2.24 \pm 0.07 (2.20 - 2.27)	1.98 \pm 0.02 (1.96 - 2.00)	0.781 \pm 0.010 (0.773 - 0.795)	1.14 \pm 0.02 (1.11 - 1.16)
49	<i>schuberti</i>	4.67 \pm 0.12 (4.45 - 4.80)	2.20 \pm 0.08 (2.05 - 2.30)	4.19 \pm 0.11 (4.00 - 4.40)	1.60 \pm 0.06 (1.50 - 1.70)	1.49 \pm 0.08 (1.35 - 1.60)	2.12 \pm 0.05 (2.04 - 2.17)	1.91 \pm 0.04 (1.84 - 1.96)	0.778 \pm 0.025 (0.677 - 0.756)	1.08 \pm 0.03 (1.07 - 1.14)
50	<i>angulipennis</i>	4.53 \pm 0.20 (4.10 - 4.80)	2.09 \pm 0.10 (1.90 - 2.25)	4.05 \pm 0.20 (3.65 - 4.35)	1.58 \pm 0.10 (1.45 - 1.75)	1.33 \pm 0.08 (1.20 - 1.50)	2.17 \pm 0.04 (2.09 - 2.23)	1.94 \pm 0.05 (1.84 - 2.05)	0.757 \pm 0.024 (0.721 - 0.795)	1.19 \pm 0.03 (1.12 - 1.24)
51	<i>syriacus</i>	4.86 \pm 0.14 (4.55 - 5.20)	2.30 \pm 0.06 (2.25 - 2.55)	4.39 \pm 0.13 (4.10 - 4.75)	1.80 \pm 0.06 (1.65 - 1.95)	1.67 \pm 0.06 (1.55 - 1.85)	2.02 \pm 0.04 (1.92 - 2.09)	1.83 \pm 0.04 (1.75 - 1.91)	0.750 \pm 0.019 (0.702 - 0.783)	1.08 \pm 0.02 (1.05 - 1.13)
52	<i>kinzelbachi</i> sp. n.	4.67 \pm 0.16 (4.30 - 4.95)	2.20 \pm 0.06 (2.05 - 2.30)	4.24 \pm 0.14 (3.95 - 4.50)	1.68 \pm 0.05 (1.55 - 1.75)	1.45 \pm 0.05 (1.35 - 1.55)	2.13 \pm 0.04 (2.06 - 2.24)	1.93 \pm 0.04 (1.88 - 2.05)	0.767 \pm 0.014 (0.740 - 0.792)	1.16 \pm 0.02 (1.14 - 1.20)
53	<i>jaechi</i>	5.02 \pm 0.10 (4.90 - 5.15)	2.35 \pm 0.08 (2.25 - 2.45)	4.49 \pm 0.08 (4.40 - 4.60)	1.85 \pm 0.02 (1.85 - 1.90)	1.43 \pm 0.04 (1.40 - 1.50)	2.14 \pm 0.03 (2.10 - 2.18)	1.91 \pm 0.03 (1.88 - 1.96)	0.791 \pm 0.020 (0.771 - 0.818)	1.30 \pm 0.03 (1.28 - 1.33)

Table 2: Comparison of standard deviation range (bold) and absolute (dotted) of PMW/PBW ratio of members of the *parvicollis*-group (conformity of the pronotum).

No.	Species	1.05	1.10	1.15	1.20	1.25	1.30
29	<i>parvicollis</i>	.....	.....		
30	<i>palaestinus</i> sp.n.	.....	.....		
31a	<i>abnormicollis</i> (♂)		.....			
31b	<i>abnormicollis</i> (♀)	.....	.....		
32	<i>vestitus</i>	.....	.....		
33	<i>persicus</i>	.....	.....		
34	<i>afghanicus</i>	.....	.....		
35	<i>youngi</i> sp.n.		.....	.....	.....
36	<i>danielssoni</i> sp.n.	.....				
37	<i>roberti</i> sp.n.		.....	.....	
38	<i>bameuli</i> sp.n.		.....			
39	<i>nilssoni</i>	.....	.....		
40	<i>biltoni</i> sp.n.	.....	.....		
41	<i>longipes</i>	.....	.....		
42	<i>brancuccii</i> sp.n.	.....	.....	.....
43	<i>balkei</i> sp.n.	.....	.....	.....	.....
44	<i>hendrichi</i> sp.n.	.....	.....	.....	.....
45	<i>elmii</i> sp.n.	.....	.....	.....
46	<i>evelynae</i> sp.n.	.....	.....	.....
47	<i>riberai</i> sp.n.	.....	.....	.....
48	<i>hebaueri</i> sp.n.	.....	.....	.....
49	<i>schuberti</i>	.....	.....	.....
50	<i>angulipennis</i>	.....	.....	.....	.....
51	<i>syriacus</i>	.....	.....	.....
52	<i>kinzelbachi</i> sp.n.	.....	.....	.....
53	<i>jaechi</i>		.....				.....

Table 4: Comparison of standard deviation range (bold) and absolute (dotted) of PMW/MW ratio of members of the *parvicollis*-group (degree to which the species is parallel-sided).

No.	Species	0.60	0.65	0.70	0.75	0.80	0.85
29	<i>parvicollis</i>			.....	.....
30	<i>palaestinus</i> sp.n.			.....	.....
31a	<i>abnormicollis</i> (♂)			.....		
31b	<i>abnormicollis</i> (♀)	.....				
32	<i>vestitus</i>			.....	.....
33	<i>persicus</i>			.....	.....
34	<i>afghanicus</i>			.....	.....	.....
35	<i>youngi</i> sp.n.			.....	.....	.....	.....
36	<i>danielssoni</i> sp.n.						
37	<i>roberti</i> sp.n.			.....	.....	.....
38	<i>bameuli</i> sp.n.						
39	<i>nilssoni</i>			.....	.....	.....
40	<i>biltoni</i> sp.n.				.....	.....
41	<i>longipes</i>			.....	.....	.....
42	<i>brancuccii</i> sp.n.			.....	.....
43	<i>bolkei</i> sp.n.			.....	.....
44	<i>hendrichi</i> sp.n.			.....	.....	.....
45	<i>elmii</i> sp.n.			.....	.....	.....
46	<i>evelynae</i> sp.n.			.....	.....
47	<i>riberai</i> sp.n.			.....	.....
48	<i>hebaueri</i> sp.n.				
49	<i>schuberti</i>				
50	<i>angulipennis</i>			
51	<i>syracus</i>				
52	<i>kinzelbachi</i> sp.n.				
53	<i>jaechi</i>				

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