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# On the taxonomy of some West Palaearctic *Quedius* species, with descriptions of new species and new synonymies (Coleoptera, Staphylinidae, Staphylininae)

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A b s t r a c t : Three species of *Quedius* STEPHENS, 1829 are described and illustrated, two of them new: *Quedius* (*Raphirus*) *iridicolor* QUEDENFELDT, 1882, *Q.* (*Microsaurus*) *morulus* nov.sp. (Iran), and *Q.* (*M.*) *limans* nov.sp. (Israel). Three synonymies are established: *Quedius umbrinus* ERICHSON, 1839 = *Q. kuboni* ŠTOURAČ, 1998, nov.syn.; *Q. cohaesus* EPPELSHEIM, 1888 = *Q. pseudonigriceps* REITTER, 1909, nov.syn.; *Q. cruentus* (OLIVIER, 1795) = *Q. xanthurus* IABLOKOFF-KHNZORIAN, 1961, nov.syn. Diagnoses distinguishing *Q. iridicolor* and *Q. nigriceps* KRAATZ, 1857, as well as *Q.* (*Microsaurus*) *invreae* GRIDELLI, 1925 and *Q.* (*M.*) *puncticollis* (THOMSON, 1867) are provided. Previous erroneous records of *Q. puncticollis* are rectified. *Quedius iridicolor* is re-assigned to the subgenus *Raphirus* STEPHENS, 1829. The currently known distribution of *Q. iridicolor* is mapped.

K e y w o r d s : Coleoptera, Staphylinidae, Staphylininae, Quediina, *Quedius*, West Palaearctic region, taxonomy, new species, new synonymies, subgeneric re-assignment, diagnoses, distribution map.

## Introduction

The taxonomy of the West Palaearctic *Quedius* STEPHENS, 1829 has already been addressed in several previous articles. For details on the taxonomic history, species, numbers, infra-generic systematics see ASSING (2017, 2018) and references cited therein.

Since the latest contribution, additional material of various species has been examined, including two undescribed species of the subgenus *Microsaurus* DEJEAN, 1833 from Iran and Israel, which are described below. Moreover, in the course of preparing a monograph of the Staphylinidae of Armenia and Nagorno-Karabakh (ASSING & SCHÜLKE in press), the validity of some names of species described and/or recorded from this region had to be assessed. Also, an evident synonymy not treated in ASSING (2018) is proposed. Finally, the previously doubtful status of *Quedius iridicolor* QUEDENFELDT, 1882 is addressed.

## Material and methods

The material treated in this study is deposited in the following collections:

MNB ..... Museum für Naturkunde, Berlin (J. Frisch, B. Jaeger)

cAss..... author´s private collection

cKhn..... Khnzorian collection (currently in private collection Mark Kalashian, Yerevan)

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss), a Discovery V12 microscope (Zeiss), and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a digital camera (Axiocam ERc 5s) and Picolay stacking software. The map was created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the mandibles (in resting position) to the posterior margin of the abdominal tergite VIII, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length (HL) from the anterior margin of the frons to the posterior constriction of the head, head width (HW) across and including eyes, maximal width of pronotum (PW), length of pronotum (PL) along midline, elytral length (EL) at the suture from the apex of the scutellum to the posterior margin of the elytra (at the suture), and the length of the aedeagus from the apex of the median lobe to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

## Results

### *Quedius* (*Raphirus*) *umbrinus* ERICHSON, 1839

*Quedius* (*Raphirus*) *kuboni* ŠTOURAČ, 1998: 15 ff.; **nov.syn.**

C o m m e n t : *Quedius umbrinus* previously already had ten junior synonyms, more than any other representative of the subgenus *Raphirus* STEPHENS, 1829 in the Palaearctic region. The species is widespread and at the same time subject to enormous intraspecific variation (ASSING 2018).

The original description of *Q. kuboni* is based on a male holotype and eleven paratypes collected in three mountain ranges (Rodopi, Rila, Pirin) in Bulgaria. Based on the illustrations of the aedeagus provided by ŠTOURAČ (1998), the type material is undoubtedly conspecific with *Q. umbrinus*.

### *Quedius* (*Raphirus*) *iridicolor* QUEDENFELDT, 1882 (Figs 1-7, Map 1)

*Quedius iridicolor* QUEDENFELDT, 1882: 181.
*Quedius duplex* FAUVEL, 1886: 68 f.
*Quedius* (*Sauridus*) *iridicolor*: COIFFAIT (1978).
*Quedius* (*Sauridus*) *iridicolor*: HERMAN (2001).
*Quedius* (*Microsaurus*) *iridicolor*: SMETANA (2004).
*Quedius* (*Microsaurus*) *iridicolor*: SCHÜLKE & SMETANA (2015).

T y p e m a t e r i a l e x a m i n e d : Holotype ♀: "Tetuan / *iridicolor* / Type / 67191 / *Quedius iridicolor* Quedf. / Hist.-Coll. (Coleoptera), Nr. 67191, *Quedius iridicolor* Quedf.*, Tetuan, Coll. Quedenfeldt, Coll. Richter, A. Bau V., Zool. Mus. Berlin / HOLOTYPE *Quedius iridicolor* Quedenfeldt, 1882, labelled by MFNB 2019 / *Quedius iridolor* Quedenfeldt, det. V. Assing 2019" (MNB).

A d d i t i o n a l m a t e r i a l e x a m i n e d : Morocco: 1♂, 2♀♀, Ar Rif, road Chefchaouen - Ksal el Kebr, 35°05'N, 5°25'W, 680 m, 3-7.VI.2007, leg. Hlaváč (cAss); 1♂, Chefchaouen env., 35°12'N, 5°19'W, 270 m, 3.VI.2007, leg. Hlaváč (cAss); 1 ex. [apex of abdomen missing], W Tetuan, El Fendek, 350 m, pitfall trap, XI-XII.1985, leg. Heinz (MNB).

Spain: 1♂, Andalucía, Jaén, Hornos, Sima del Campamento, 11.VIII.2012, leg. G.E.V. (cAss); 1♂, Andalucía, Jaén, Hornos, Sima de la Tuberia, 23.X.2011, leg. G.E.V. (cAss). 1♂, 1♀, Andalucía, Cádiz, 15 km NE Ubrique, 36°45'N, 5°27'W, 770 m, calcareous oak forest, 28.XII.2009, leg. Assing (cAss); 1♀, Andalucía, Cádiz, Ronda env., Sierra de Ubrique, 1000 m, 25.III.1994, leg. Assing (cAss).

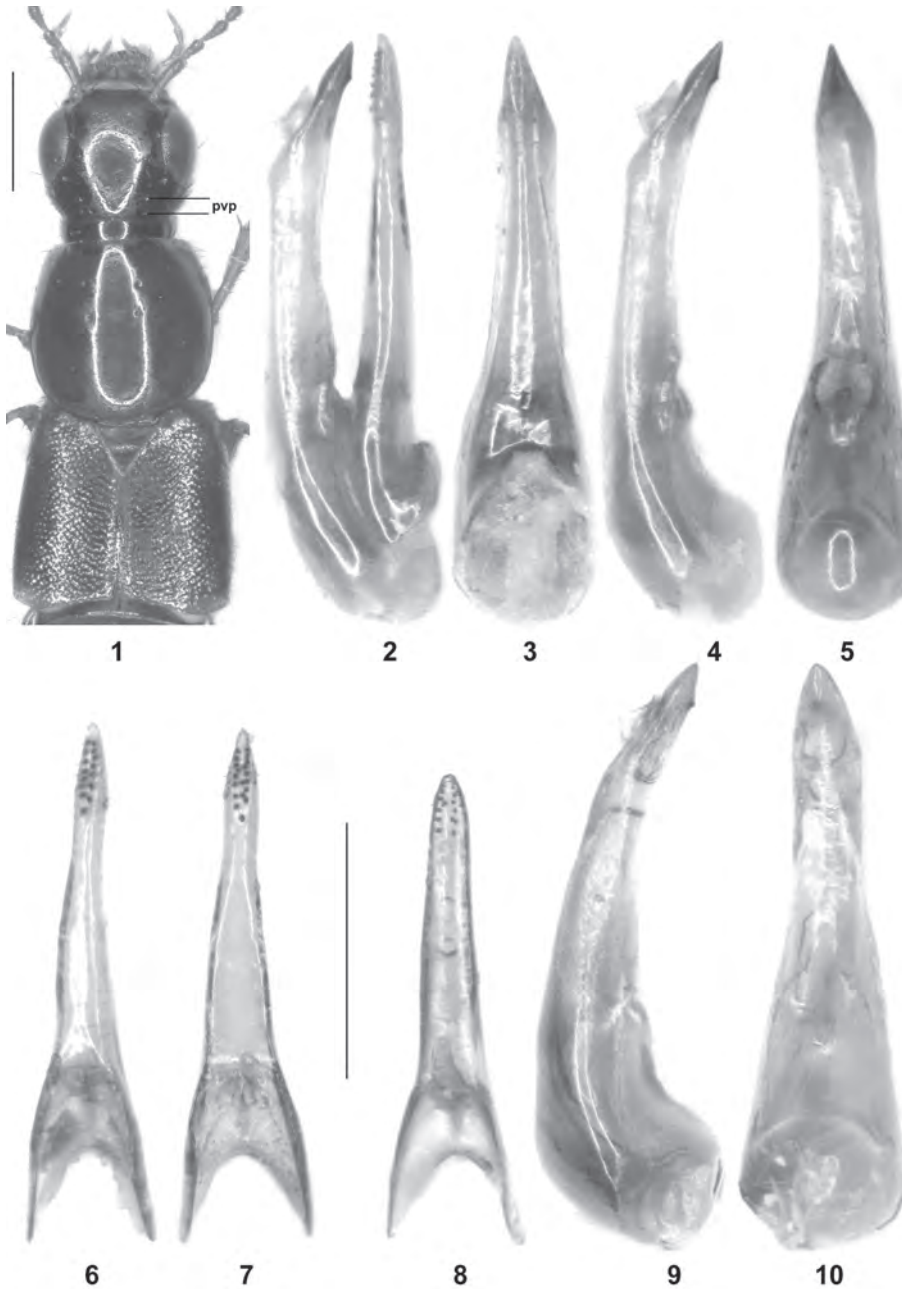
C o m m e n t : The original description of *Q. iridicolor* is based on "unum specimen" from "Marocco (Tetuan)" (QUEDENFELDT, 1882), that of *Q. duplex* on an unspecified number of syntypes from "O. Daya" and "A. Teniet-el-Had" in Algeria (FAUVEL 1886). FAUVEL (1902) provided additional records of *Q. duplex* from North Africa and did not rule out synonymy of this name with *Q. iridicolor*. The synonymy of *Q. duplex* with *Q. iridicolor* was eventually established by COIFFAIT (1978). Despite the previous assignment to the subgenus *Sauridus* MULSANT & REY, 1876 (COIFFAIT 1978, HERMAN 2001), currently a junior synonym of *Raphirus* STEPHENS, 1829, SMETANA (2004) and SCHÜLKE & SMETANA (2015) erroneously attribute the species to *Microsaurus* DEJEAN, 1833. *Quedius iridicolor* undoubtedly belongs to *Raphirus* and is most likely the adelphotaxon of *Q. nigriceps*.

D i a g n o s i s : According to COIFFAIT (1978), *Q. iridicolor* is distinguished from the similar *Q. nigriceps* KRAATZ, 1857 by shorter, more slender, and less convex elytra, by a shorter head with more convex eyes, by coarser and sparser punctation of the anterior tergites, denser punctation of the posterior tergites, an apically dilated median lobe of the aedeagus, and a more slender paramere with parallel lateral margins. An examination of the holotype and the additional material listed above revealed, however, that these characters are partly incorrect or unsuitable for a reliable identification of *Q. iridicolor* and separation from *Q. nigriceps*. This applies to the punctation of the abdomen, the shape and length of the elytra (see ratio EL/PL below), and some aedeagal characters mentioned. Moreover, the coloration of both species is highly variable. The only external differences found are that the head tends to be relatively more transverse (see ratio HW/HL), the pronotum narrower in relation to head (ratio PW/HW; but note the considerable overlap) with the lateral margins of the pronotum mostly less convex in dorsal view, and the pair of posterior punctures on the vertex (the two punctures close to the posterior constriction of the head on either side) are arranged differently (pvp in Fig. 1). The anterior one of these punctures is situated more or less directly in front of the posterior one, whereas in *Q. nigriceps* it is situated obliquely antero-mediad or both punctures are arranged in a transverse line (i.e., at the same distance from the posterior constriction).

Measurements (in mm) and ratios (range): *Quedius iridicolor*: HL: 0.97-1.09; HW: 1.16-1.32; PW: 1.35-1.53; EL: 0.88-1.02; HW/HL: 1.14-1.21; PW/HW: 1.12-1.24; EL/PL: 0.62-0.69.

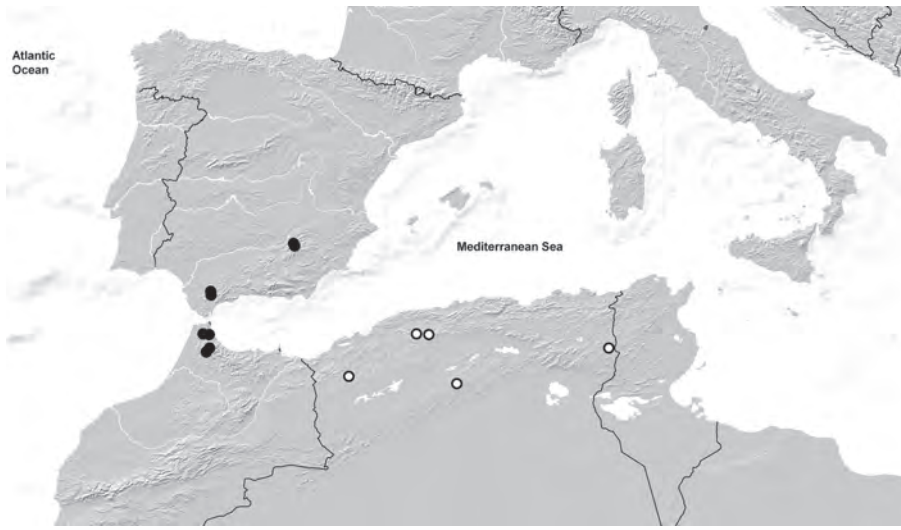
*Quedius nigriceps* (exclusively material from the south of the Iberian Peninsula): HL: 0.95-1.11; HW: 1.04-1.23; PW: 1.25-1.55; PL: 1.25-1.58; EL: 0.86-1.11; HW/HL: 1.10-1.14; PW/HW: 1.20-1.27; EL/PL: 0.67-0.73.

The aedeagus (Figs 2-7) of *Q. iridicolor* is distinguished from that of *Q. nigriceps* as follows: the apex of the median lobe is more acute in ventral view and the subapical tooth is connected to the apex by a distinct keel; the paramere is usually more slender and characterized by shorter, more irregular, and closer series of peg-setae. For illustrations of the aedeagus of *Q. nigriceps* see Figs 8-10.




**Figs 1-10**: *Quedius iridicolor* from Morocco (**1-7**) and *Q. nigriceps* from Germany (**8-10**): (**1**) forebody (**pvp**: posterior punctures of vertex); (**2-3**) aedeagus in lateral and in ventral view; (**4-5, 9-10**) median lobe of aedeagus in lateral and in ventral view; (**6-8**) paramere. Scale bars: 1: 1.0 mm; 2-10: 0.5 mm.

D i s t r i b u t i o n : *Quedius iridicolor* evidently represents a Mauretanian faunal element and is currently known only from Northwest Africa (Morocco, Algeria) and South Spain. COIFFAIT (1978) erroneously states that *Q. iridicolor* replaces *Q. nigriceps* in the southern Iberian Peninsula. I have examined *Q. nigriceps* from South Portugal across Andalucía to Alicante. In one cave in Jaén, both species were even found syntopically.




**Map 1**: Distribution of *Quedius iridicolor* based on revised (black circles) and literature records in FAUVEL (1902) (white circles).

### *Quedius* (*Raphirus*) *cohaesus* EPPELSHEIM, 1888

*Quedius cohaesus* EPPELSHEIM, 1888: 60 f.
*Quedius pseudonigriceps* REITTER, 1909: 113; **nov.syn.**

C o m m e n t : The original description of *Q. cohaesus* is based on three syntypes from "Turcmenien" (EPPELSHEIM 1888), of which SOLODOVNIKOV (2004) designated the lectotype, that of *Q. pseudonigriceps* on an unspecified number of syntypes from "Herzegowina, Türkei, Kleinasien" (REITTER 1909). *Quedius cohaesus* has three junior synonyms, *Q. pseudonigriceps* five (SCHÜLKE & SMETANA 2015, SALNITSKA & SOLODOVNIKOV 2018). According to the latest edition of the Palaearctic catalogue, the distribution of *Q. cohaesus* ranges from Bulgaria across Turkey and the Caucasus region to Iran and Turkmenistan, whereas SALNITSKA & SOLODOVNIKOV (2018) state that the distribution of this species includes Iran, Turkmenistan, Tajikistan, and Afghanistan. There is no reference to the records from other regions in the latter study, probably because it focuses on Middle Asia. The distributions given for *Q. pseudonigriceps* are Southeast Europe northwards to Austria, Turkey, and the Caucasus region (Georgia) (SCHÜLKE & SMETANA 2015), and South Europe, West Asia eastwards to Middle Asia (Kyrgyzstan, Kazakhstan) (SALNITSKA & SOLODOVNIKOV 2018). SALNITSKA & SOLODOVNIKOV (2018) regard *Q. cohaesus* and *Q. pseudonigriceps* as distinct species, provide redescriptions and illustrations of the aedeagi based on material from Middle Asia, and state that *Q. cohaesus* is most similar to *Q. pseudonigriceps*, but "easily

distinguished by the presence of an apical seam of palisade fringe VII and normally developed elytra, as well as by the characters of the aedeagus" (p. 143).

Although I have not studied material from Middle Asia personally, the argumentation and conclusions laid out by SALNITSKA & SOLODOVNIKOV (2018) are difficult to follow and *Q. pseudonigriceps* is considered a junior synonym of *Q. cohaesus* for two main reasons:

1. Based on personal observations and abundant material, the species previously identified as *Quedius pseudonigriceps* is one of the most widespread and most common representatives of the genus in the Balkans, Turkey, and the Caucasus region (Georgia, Armenia). In this region, the species always has normally developed elytra and a palisade fringe at the posterior margin of tergite VII. This would mean that, according to SALNITSKA & SOLODOVNIKOV (2018), there is an abrupt character displacement in the range of the species somewhere in North Iran. True, there are several examples of wing di- or polymorphic *Quedius* species, sometimes even with clinal variation. It does not seem plausible, however, that there should be another, highly similar macropterous species (*Q. cohaesus*) replacing the macropterous morph of *Q. pseudonigriceps* in this region.

2. The aedeagus of *Quedius* species is subject to - sometimes considerable - interspecific variation. This particularly applies to widespread species (ASSING 2018). SALNITSKA & SOLODOVNIKOV (2018) may state that there are differences between *Q. cohaesus* and *Q. pseudonigriceps* in aedeagal characters, but no such discrete differences are visible in the illustrations they provide. Instead, they illustrate a continuum of aedeagal variation.

In consequence, the available evidence suggests that a) *Q. cohaesus* is distributed on both sides of the Caspian Sea and that b) this species is wing-dimorphic in Middle Asia and monomorphic elsewhere.

### *Quedius* (*Microsaurus*) *invreae* GRIDELLI, 1924 and *Q.* (*M.*) *puncticollis* (THOMSON, 1867)

C o m m e n t : According to the latest edition of the Palaearctic catalogue (SCHÜLKE & SMETANA 2015), the distribution of *Q. invreae* ranges from France, Great Britain and Scandinavia across Central Europe southeastwards to the Russian South European territory and that of *Q. puncticollis* from France, the British Isles (including Ireland), and Scandinavia across Central Europe southwards to Italy and eastwards to the Caucasus region and West Siberia. Recently, *Q. puncticollis* was recorded also from Greece and Middle Asia (ASSING 2017, SALNITSKA & SOLODOVNIKOV 2018). In his key to the Central European Quediina, SOLODOVNIKOV (2012) doubted the taxonomic status of *Q. invreae* and suspected synonymy of these names.

Inspired by records of specimens preliminarily identified as *Q. invreae* from Armenia, material of *Q. puncticollis* and *Q. invreae* in the author´s collection was revised. This study revealed that both names undoubtedly represent distinct taxa and that both species are easily distinguished. The aedeagi of both species may be rather similar, but the paramere of *Q. invreae* is broader and usually weakly concave apically, more rarely truncate or weakly convex, whereas in *Q. puncticollis* it is more slender and apically distinctly convex. The best characters for the separation of both species, however, are the colour, shape, and especially the chaetotaxy of sternite VIII, especially in the male, as

already stated by LOHSE (1964). In *Q. invreae*, sternite VIII is darker, often completely black or at least black in anterior three-fourths with the posterior fourth sometimes slightly paler, whereas in *Q. puncticollis* tergite VIII is paler with at least the anterior and posterior portions pale-brownish and the median portion usually blackish-brown. More importantly, however, the posterior margin of the male sternite VIII is broadly concave and furnished with extremely long black setae (especially laterally), the longest of them longer than antennomere I in *Q. invreae*. In *Q. puncticollis*, on the other hand, the posterior margin is shallowly concave only in the middle and furnished with short brown setae, the longest of them barely half as long as antennomere I. The posterior margin of the female sternite VIII is furnished with relatively short setae in both species, but these setae are black in *Q. invreae* and brown in *Q. puncticollis*. The illustrations of the aedeagus of *Q. puncticollis* provided by SOLODOVNIKOV (2012: figures 191t-v) clearly refer to *Q. invreae*.

According to LOHSE (1964), *Q. puncticollis* is the most common representative of the genus in mole nests. This may be true of the environs of Hamburg, G.A. Lohse´s hometown, but certainly not of regions farther south. Based on personal observations (studies of mole nests, extensive pitfall trap studies), *Q. puncticollis* is rare, much more so than *Q. invreae*, and the southernmost record examined is from South Germany (München). While most of the few specimens of *Q. puncticollis* in cAss were extracted from mole nests (some also collected with pitfall traps), material of *Quedius invreae* was exclusively collected with pitfall and flight interception traps (especially in warmer habitats; never from mole nests). A re-examination of a specimen from Greece, which the record of *Q. puncticollis* in ASSING (2017) is based on, revealed that it was misidentified and in fact belongs to *Q. invreae* (first record from Greece). The same most likely applies to records of *Q. puncticollis* from Middle Asia (SALNITSKA & SOLODOVNIKOV 2018).

### *Quedius* (*Microsaurus*) *cruentus* (OLIVIER, 1795)

*Quedius xanthurus* IABLOKOFF-KHNZORIAN, 1961: 147 f.; **nov.syn.**
T y p e m a t e r i a l e x a m i n e d : Holotype ♀ [antennae missing]: "Kafan, N. Gand, ASSR. 27.7.52 / Holotypus *Quedius cruentus* Iablokoff-Khnzorian, rev. V. Assing 2019 / *Quedius cruentus* (Olivier), det. V. Assing 2019" (cKhn).

C o m m e n t : The original description of *Q. xanthurus* is based on a unique holotype from "Nerkin Hand (Armenie orientale)" collected "dans un vieux creux, 27.7.1952" (IABLOKOFF-KHNZORIAN 1961). The species was attributed to the subgenus *Sauridus* MULSANT & REY, 1876, now a junior synonym of *Raphirus* STEPHENS, 1829, by COIFFAIT (1978). An examination of the holotype, however, revealed that it is conspecific with *Q. cruentus*. Hence the synonymy proposed above.

### *Quedius* (*Microsaurus*) *transcaucasicus* IABLOKOFF-KHNZORIAN, 1961

*Quedius transcaucasicus* IABLOKOFF-KHNZORIAN, 1961: 146 f.
*Quedius iablokofi* COIFFAIT, 1967: 396; unnecessary replacent name.

M a t e r i a l e x a m i n e d : 1♀: "Idhsewan, Kiranu, ASSR - 17-5-51" (cKhn).

C o m m e n t : The original description of *Q. transcaucasicus* is based on a unique holotype from "Schischkert (Arménie orientale) dans un chène creux à la lisière

supérieure de la forêt (env. 1900 m), 31.7.1959" (IABLOKOFF-KHNZORIAN 1961). The examined female is the sole specimen found in the Khnzorian collection, but apparently not the holotype, as the locality and date indicated on the label do not agree with those given in the description. Nevertheless, the specimen is in good agreement with the characters mentioned by IABLOKOFF-KHNZORIAN (1961). *Quedius transcaucasicus* is characterized particularly by its conspicuous coloration (head and pronotum black; elytra and abdomen reddish).

*Quedius transcaucasicus* was subsequently replaced with the nomen novum *Q. iablokofi* by COIFFAIT (1967), who believed the name was preoccupied by *Q. transcaucasicus* GEMMINGER & HAROLD, 1968. The latter, however, is a nomen nudum and consequently unavailable (HERMAN 2001).

### *Quedius* (*Microsaurus*) *morulus* nov.sp. (Figs 11-12, 16-18)

Type material: Holotype ♂: "IRAN - Mazandaran, 36.297°N, 53.453°E, 1140 m, window trap, 5.IX.2017, Barimani / Holotypus ♂ *Quedius morulus* sp. n., det. V. Assing 2019" (cAss). Paratypes: 1♂ [aedeagus missing]: "IRAN - Mazandaran, 36.296°N, 53.447°E, 1230 m, window trap, 29.VII.2017, Barimani" (cAss); 1♀: "IRAN - Mazandaran, 36.292°N, 53.437°E, 1285 m, window trap, 22.V.2017, Barimani" (cAss); 1♂: "IRAN - Mazandaran, 6 km W Part Kola, 2050 m, 36.14°N, 53.41°E, *Fagus orientalis* trap, 3, V.2015, leg. Barimani" (cAss).

Etymology: The specific epithet (Latin, adjective: black) alludes to the uniformly blackish coloration of the body.

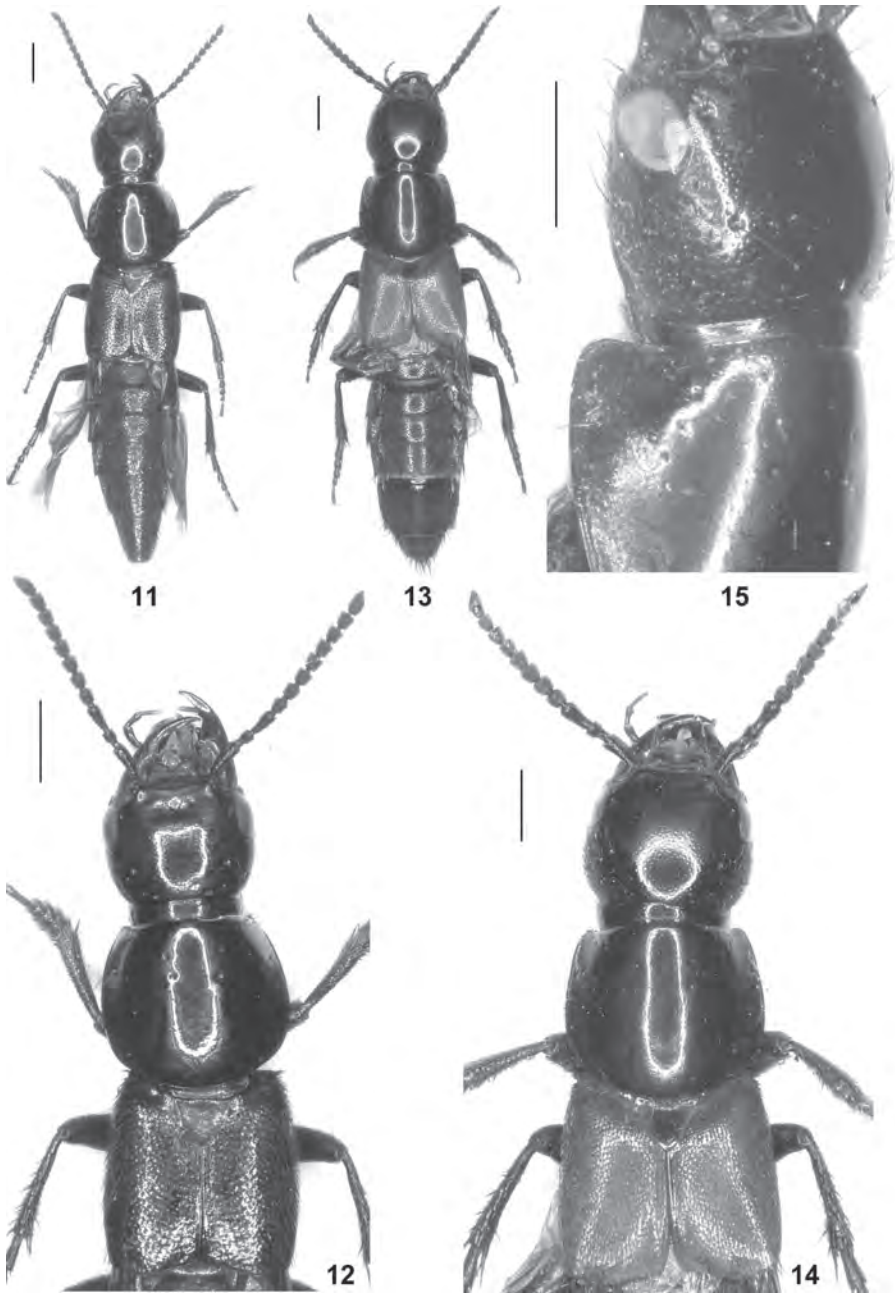
Description: Body length 11.5-13.5 mm; length of forebody 6.0-7.0 mm. Habitus as in Fig. 12. Coloration: body (including appendages) black, except for the reddish-brown tarsomeres V.

Head (Fig. 12) 1.16-1.28 times as broad as long, on average larger and more transverse in male than in female; punctation fine, shallow, and rather dense; one macropuncture near middle of dorsal margin of eye, one near posterior margin of eye, one approximately halfway between posterior margin of eye and posterior constriction of head, and two near posterior constriction of head; interstices with fine, very shallow to distinct transverse microreticulation; frons with shallow impression, this impression with vortex-like arrangement of microsculpture. Eyes approximately as long as postocular region. Antenna with antennomeres IV-V approximately as long as broad and VI-X very weakly transverse.

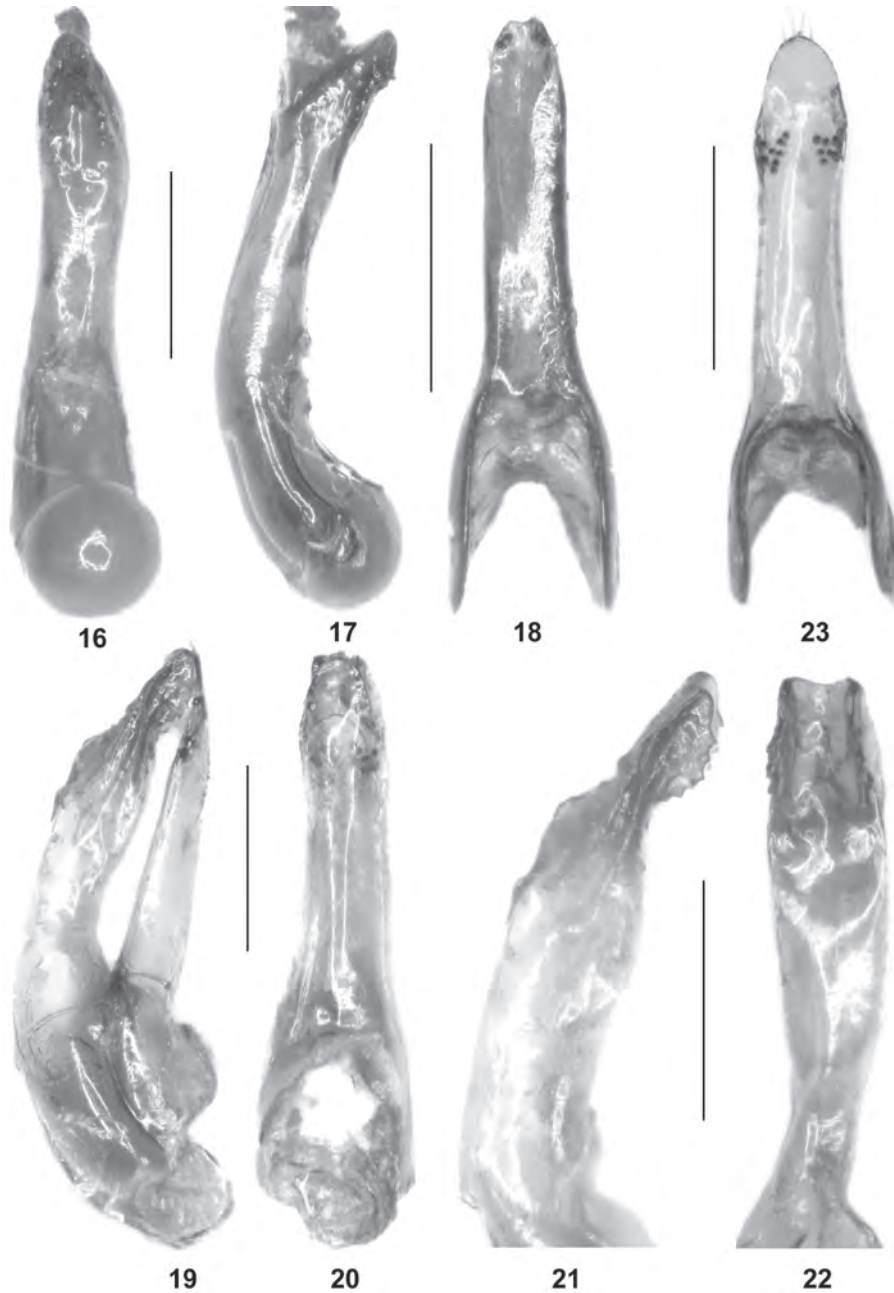
Pronotum (Fig. 12) 1.08-1.11 times as broad as long and 1.22-1.31 times as broad as head; dorsal series each composed of 1+2 macropunctures; usually with 1-3 smaller sublateral punctures behind level of posterior pair of dorsal punctures; disc with very fine and shallow microsculpture composed of transverse or oblique striae.

Elytra (Fig. 12) 0.67-0.71 times as long as pronotum; punctation dense and distinct; interstices on average slightly broader than diameter of punctures, without microreticulation. Scutellum with fine transverse microreticulation and fine non-setiferous micropunctation. Hind wings fully developed.

Abdomen with dense and distinct punctation, that of posterior tergites less dense than that of anterior tergites; pubescence long and suberect, greyish to blackish; interstices with extremely fine transverse microsculpture visible only at high magnification (100 x); posterior margin of tergite VII with palisade fringe.




**Figs 11-15**: *Quedius morulus* (**11-12**) and *Q. limans* (**13-15**): (**11, 13**) male habitus; (**12, 14**) male forebody; (**15**) head and pronotum in dorso-lateral view. Scale bars: 1.0 mm.




**Figs 16-23**: *Quedius morulus* (**16-18**) and *Q. limans* (**19-23**): (**16, 19-20**) aedeagus in lateral and in ventral view; (**17**) median lobe in lateral view; (**18, 23**) paramere; (**21-22**) apical portion of median lobe in lateral and in ventral view. Scale bars: 0.5 mm.

♂: sternite VIII with shallowly concave posterior excision; aedeagus 1.5-1.6 mm long and shaped as in Figs 16-18.

♀: sternite VIII with weakly convex posterior margin, pubescence unmodified.

Comparative notes: Based on external (habitus, size, punctation pattern, etc.), *Q. morulus* is similar to the widespread *Q. truncicola* FAIRMAIRE & LABOULBÈNE, 1856. It is distinguished from this species by the black abdomen and by the morphology of the aedeagus (median lobe and paramere longer; median lobe apically of different morphology; paramere with subparallel lateral margins). For illustrations of the aedeagus of *Q. truncicola* see, e.g., COIFFAIT (1978) and SOLODOVNIKOV (2012).

Distribution and natural history: The type specimens were collected in four geographically close localities in Mazandaran province, North Iran, all of them with window traps in forest habitats at altitudes of 1140-2050 m.

***Quedius* (*Microsaurus*) *limans* nov.sp. (Figs 13-15, 19-23)**

Type material: Holotype ♂: "ISRAEL - Har Hermon, 2000 m, doline, pitfall, 33°18'17"N, 35°47'14"E, 3.VII.2010, C. Drees / Holotypus ♂ *Quedius limans* sp. n., det. V. Assing 2019" (cAss).

Etymology: The specific epithet is the present participle of the Latin verb limare (to rasp) and alludes to the rasper- or grater-shaped apex of the median lobe of the aedeagus.

Description: Large species; body length 14.5 mm; length of forebody 8.2 mm. Habitus as in Fig. 13. Coloration: body (including appendages) black with bright-reddish elytra and brown tarsomeres V.

Head (Fig. 14) large (sexual dimorphism?), 1.21 times as broad as long, broadest behind eyes; one macropuncture near middle of dorsal margin of eye, one approximately halfway between posterior margin of eye and posterior constriction of head, and one near posterior constriction of head; postero-lateral portion of head with dense macropunctation; dorsal surface with dense fine and distinct micropunctation; interstices with fine, but distinct transverse microsculpture. Eyes flat, approximately 0.7 times as long as postocular region in dorsal view. Antenna short, 3.5 mm long; antennomeres IV-X all distinctly transverse.

Pronotum (Fig. 14) 1.11 times as broad as long and 1.18 times as broad as head; dorsal series composed of 1+2 macropunctures; one smaller sublateral puncture situated behind level of posterior pair of dorsal punctures; disc with fine non-setiferous micropunctation and with fine microsculpture predominantly composed of striae directed antero-posteriad in lateral portion, oblique in median portion, and transverse in posterior portion.

Elytra (Fig. 14) 0.67 times as long as pronotum; punctation very dense and fine; pubescence blackish and depressed; interstices without microreticulation. Scutellum with fine transverse microreticulation and fine non-setiferous micropunctation. Hind wings fully developed.

Abdomen with dense and fine punctation, that of tergite VII as dense as that of tergite III; interstices with fine transverse microsculpture; pubescence depressed, greyish; posterior margin of tergite VII with palisade fringe.

♂: sternite VIII posteriorly with deep concavity and long brown marginal setae; aedeagus 1.6 mm long and shaped as in Figs 19-23.

♀: unknown.

C o m p a r a t i v e  n o t e s : In habitus, coloration, and the short antennae, *Q. limans* somewhat resembles *Q. brevicornis* THOMSON, 1860. It is distinguished from this species by even larger size, the pronotal punctation pattern, much finer and denser punctation of the elytra and the abdomen, a deeper posterior excision of the male sternite VIII, and by the different shape of the aedeagus. For illustrations of the aedeagus of *Q. brevicornis* see, e.g., COIFFAIT (1978) and SOLODOVNIKOV (2012).

D i s t r i b u t i o n  a n d  n a t u r a l  h i s t o r y : The type locality is situated in North Israel. The slightly teneral holotype was collected with a pitfall trap in a doline at an altitude of 2000 m.

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## Zusammenfassung

Drei Arten der Gattung *Quedius* STEPHENS, 1829 werden beschrieben und abgebildet, zwei davon neu: *Quedius* (*Raphirus*) *iridicolor* QUEDENFELDT, 1882, *Q.* (*Microsaurus*) *morulus* nov.sp. (Iran) und *Q.* (*M.*) *limans* nov.sp. (Israel). Drei Namen werden synonymisiert: *Quedius umbrinus* ERICHSON, 1839 = *Q. kuboni* ŠTOURAČ, 1998, nov.syn.; *Q. cohaesus* EPPELSHEIM, 1888 = *Q. pseudonigriceps* REITTER, 1909, nov.syn.; *Q. cruentus* (OLIVIER, 1795) = *Q. xanthurus* IABLOKOFF-KHNZORIAN, 1961, nov.syn. Differentialdiagnosen zur Unterscheidung von *Q. iridicolor* und *Q. nigriceps* KRAATZ, 1857 sowie von *Q.* (*Microsaurus*) *invreae* GRIDELLI, 1925 und *Q.* (*M.*) *puncticollis* (THOMSON, 1867) werden gegeben. Frühere irrtümliche Nachweise von *Q. puncticollis* werden korrigiert. *Quedius iridicolor* wird wieder in die Untergattung *Raphirus* STEPHENS, 1829 gestellt. Die derzeit bekannte Verbreitung von *Q. iridicolor* wird anhand einer Karte illustriert.

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