Taxonomy and faunistics of some West Palearctic *Quedius* STEPHENS subgenus *Raphirus* STEPHENS (Coleoptera: Staphylinidae: Staphylininae)

A.Yu. SOLODOVNIKOV

Abstract


Key words: Coleoptera, Staphylinidae, Staphylininae, Quediina, *Quedius*, *Raphirus*, type revision, lectotype designation, new synonyms, diagnostic characters, distribution, bionomics.

Introduction

This paper continues my previous publications (SOLODOVNIKOV 2002a; SOLODOVNIKOV 2002b; SOLODOVNIKOV & ŠTOURAČ 2002) on the improvement of the alpha-taxonomy of West Palearctic *Quedius* STEPHENS. In this region, because of a relative abundance and diversity of taxonomic and faunistic literature, knowledge of *Quedius* is most detailed but, at the same time, most inconsistent. Many species of *Quedius* were reviewed multiple times, but, unfortunately, often without proper taxonomic care (for instance, without examination of types or without proper consideration of the importance of the type localities). Such inconsistency led to the accumulation of numerous misidentifications. Also, the typological approach formerly widespread in beetle taxonomy generated many "species" of ambiguous identity (e.g. many of those described by Coiffait) and increased the confusion. Finally, in the poorer studied regions of the West Palearctic remains a significant number of neglected taxa for which nothing or little was published since the time of their now outdated original descriptions.

This contribution focuses on a few species of *Quedius* subgenus *Raphirus* STEPHENS whose taxonomy strongly suffered from all of the outlined problems. Identity of some of the species treated here, *Q. pseudonigriceps* REITTER, *Q. balcanicus* BERNHAUER and *Q. gemellus* EPPELSHEIM, was already partly clarified in KORGE (1990). But this very useful paper by KORGE...

(1990) would have been more effective if it had also incorporated a study of relevant type material and was published in a journal of broader impact. For instance, due to the limited availability of that paper, new synonymies there established (and here confirmed) were not recorded in the recent catalogue of HERMAN (2001b).

Because of the lack of the modern comprehensive revision of West Palearctic *Quedius*, ideally all of the species treated here would need detailed redescriptions and illustrations of genitalia, more extensive comparisons and meaningful discussion of their affinities. However, these are not attempted here because the purpose of this paper is solely to reveal some misidentifications and inconsistencies and publish the respective taxonomic improvements. Thus, it is supplied with only the minimum amount of descriptive data (mostly comparative remarks and illustrations of the aedeagi), those which are necessary for the diagnoses of the poorly known species or for the illustration of the taxonomic changes proposed here. Redescriptions are provided only for the hitherto most poorly studied species: *Q. obliqueseriatus* EPPELSHEIM, *Q. Igockii* ROUBAL, and *Q. brachypterus* COIFFAULT.

**Acknowledgements**

I would like to thank all curators and colleagues listed in the "Material and methods" section, who made the material under their care available for this study. Visiting the collections in IRSN (Brussels), MHNG (Geneva), MNHN (Paris), NMW (Vienna) was made possible by the hospitality of D. Drugmand (IRSN), G. Cuccodoro (MHNG), N. Berti (MNHN) and H. Schillhammer (NMW), funds from MHNG and NMW, and INTAS Fellowship for Young Scientists (YSF 00-100, in cooperation with D. Drugmand). Special thanks are due to H. Schillhammer who facilitated my survey of the very representative *Quedius* collection in the NMW, which was especially useful for the project. The paper was finished in the Field Museum under support from the US National Science Foundation PEET grant DEB-0118749 to Margaret K. Thayer. I am very grateful to the Field Museum colleagues Margaret Thayer and Al Newton for permanent support of my *Quedius* studies and various help during the work, including the review of this manuscript, which led to its considerable improvement.

**Material and methods**

This paper is based on the examination of material from the following institutional and private collections:

<table>
<thead>
<tr>
<th>Institution/Collection</th>
<th>Location/Owner</th>
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<tbody>
<tr>
<td>FMNH</td>
<td>Field Museum of Natural History, Chicago</td>
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<tr>
<td>HMNH</td>
<td>Hungarian Museum of Natural History, Budapest (O. Merkl)</td>
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<tr>
<td>IRSN</td>
<td>Institut royal des Sciences naturelles de Belgique, Bruxelles (D. Drugmand)</td>
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<tr>
<td>IZK</td>
<td>Institute of Zoology, Ukrainian Academy of Sciences, Kiev (A. Petrenko)</td>
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<tr>
<td>MCSN</td>
<td>Museo Civico di Storia Naturale di Verona (A. Zanetti)</td>
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<td>MHNG</td>
<td>Muséum d'Histoire naturelle, Geneva (G. Cuccodoro)</td>
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<tr>
<td>MNHN</td>
<td>Muséum national d'Histoire naturelle, Paris (N. Berti)</td>
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<tr>
<td>MNHUB</td>
<td>Museum für Naturkunde der Humboldt-Universität, Berlin (M. Uhlig, J. Frisch)</td>
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<tr>
<td>NMW</td>
<td>Naturhistorisches Museum Wien (H. Schillhammer)</td>
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<tr>
<td>SNM</td>
<td>Slovenské Národné Múzeum, Bratislava (V. Jansky)</td>
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<tr>
<td>ZIN</td>
<td>Zoological Institute, Russian Academy of Sciences, St. Petersburg (G. Medvedev)</td>
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<td>ZMMU</td>
<td>Zoological Museum of the Moscow State University (N. Nikitsky)</td>
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<tr>
<td>cAss</td>
<td>Private collection of V. Assing, Hannover</td>
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<td>cGus</td>
<td>Private collection of V. Gusarov, St. Petersburg</td>
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<td>cKab</td>
<td>Private collection of O. Kabakov, St. Petersburg</td>
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<td>cKor</td>
<td>Private collection of H. Korge, Berlin</td>
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<td>cKra</td>
<td>Private collection of P. Krásenský, Prague</td>
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</table>
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cPop Private collection of M. Popović, Zemun/ Belgrade
cSch Private collection of M. Schülke, Berlin
cSol Private collection of A.Yu. Solodovnikov, Chicago

All labels of the examined type specimens are given in their original spelling under quotation marks. In cases of some old, ambiguous or inexact label data, this was also done for the labels of the non-type specimens. To all type specimens studied here my labels indicating the proposed taxonomic changes were added, but those labels are not cited. Clarifications or updates of geographic names are enclosed in square brackets [ ].

Minimum-maximum measurements (given in millimeters) were recorded using an ocular micrometer. They were taken and abbreviated as follows: HL – head length (from base of labrum to neck constriction along the head midline); HW – head width (maximum, including eyes); PL – pronotum length (along midline); PW – pronotum width (maximum); EL – length of elytra (from humerus to the most distal part of the posterior margin); EW – width of elytra (maximum, with elytra closed along suture). Overall body length was measured from apex of labrum to apex of abdomen.

Illustrations of the male genitalia were done from soft preparations of these structures in glycerin (after dissecting, maceration in 10% KOH, and rinsing in distilled water). Contours of the aedeagal parts of such preparations may differ slightly from somewhat shrunken dry preparations (when aedeagi are dissected and glued on the mounting card).

Results

*Quedius pseudonigriceps* REITTER, 1909

*Quedius humeralis* var. *pseudonigriceps* REITTER, 1909: 113.


*Quedius gemellus* ssp.n. ?: KORGE 1964: 122.

*Quedius gemellus bithynicus* FAGEL, 1968: 124; KORGE 1971: 52; COIFFAIT 1978: 257, KORGE 1990: 122 (syn. of *Q. pseudonigriceps* REITTER); HERMAN 2001b: 3163 (as valid subspecies) [synonymy established in KORGE (1990) here confirmed].

*Quedius hungaricus* COIFFAIT, 1963: 393, 404; COIFFAIT 1978: 250; KORGE 1990: 122 (syn. of *Q. pseudonigriceps* REITTER); HERMAN 2001b: 3170 (as valid species) [synonymy established in KORGE (1990) here confirmed].

*Quedius osellai* BORDONI, 1973: 37; COIFFAIT 1978: 245; syn.n.


*Quedius gemellus bithynicus*: Holotype: ♂, "Anatolie occid. Abant Dagh. 1400-1550 m, V. 1967 G. Fagel"; paratypes: 2 ♂♂, 1 ♀, same data as in holotype (IRSN) [TURKEY].

*Quedius osellai*: Holotype: ♂, "Soūmela 14.VI.69 (Trabzon): Turchia leg. Osella/ Holotypus/ Quedius (Sauridus) osellai n. sp. det. Bordoni 1972" (MCSN) [TURKEY].

In the original description of *Q. humeralis* var. *pseudonigriceps*, REITTER (1909) did not specify the number of syntypes and gave the type locality as "Herzegovina, Türkei, Kleinasiien". In the collection of Reitter in HMNH, there are four conspecific specimens of *Q. pseudonigriceps*. All of them match the indicated type locality, but only one of these specimens (female from "Alem Dagh") bears Reitter's identification label "v. pseudonigriceps m." However, as follows from the original description, Reitter probably studied more than one specimen when describing this taxon. Thus, all four listed specimens from his collection are considered here as syntypes. For
the time being, a lectotype designation is refrain from, because the specimen with Reitter's identification label is a female, and there is a possibility that more male syntypes of *Q. pseudonigriceps*, including some with Reitter's labels, could be found.

Standard type labels (holotype and paratypes) attached to three of the four mentioned syntypes of *Q. pseudonigriceps* by curatorial staff of HMNH are incorrect.

Examination of the holotype of *Q. osellai* confirmed its identity with *Q. pseudonigriceps*.

The synonymy of *Quedius pseudonigriceps* and *Q. hungaricus* was established by KORGE (1990) based on the examination of relevant but non-type material. Although I also have not seen the type material of *Q. hungaricus* COIFFAIT, based on the description of this species together with faunistic data, there is no doubt that this synonymy is correct. *Quedius hungaricus* is listed in the catalogue of HERMAN (2001b) as a valid species because KORGE (1990) was overlooked there.

ADDITIONAL MATERIAL EXAMINED:

R O M A N I A: 1 δ, "R Turm P Liepel" [Roter Turm Pass: the pass south of Brasov (north of Azuga)] (FMNH).


G R E E C E: 1 δ, Peloponnisos, northern Taygetos, W Perivolia, 1450 m 37°18'51"N 22°31'10"E, 22.III.1997, leg. V. Assing (FMNH); 1 γ, Peloponnisos, northern Taygetos, W Perivolia, 1450 m 37°08'44"N 22°16'03"E, 22.III.1997, leg. V. Assing (FMNH); 2 δ σ, 3 ρ γ, Makedonia, No 15, Pieria Ori, 1450 m, Katafygi, *Pimus* wood, 40°16'20"N, 22°09'00"E, 9.IV.1998, leg. V. Assing (cAss, FMNH); 1 γ, Evritania, Nr. 2, 10 km S Karpensiai, 1230 m, *Abies* wood, 38°50'00"N, 21°47'16"E, 14.IV.2000, leg. V. Assing (FMNH); 1 δ, Fthiotis, No. 7, Parassos Oros, 1760 m, ski resort, *Abies* wood, 38°33'17"N, 22°34'35"E, 15.IV.2000, leg. V. Assing (FMNH); 2 δ σ, 1 γ, Floina, No. 30, 15 km S Flórina, Oros Vitsi, 1850 m, 40°39'N, 21°23'35"E, 25.IV.2000, leg. V. Assing (cAss, FMNH); 1 δ, Ipiros Ioanina, Notia Pindos Metsovo, 1400 m, forest, 24.VI.1997, leg. Bayer (cSch); 1 δ, Katarapass, 1500 m, 13.V.1997, leg. Wolf (cSch); 5 δ σ, 1 γ, Greece, Mt. Ossa, 1000 m, 18.V.1997, leg. Wolf (cSch, FMNH).

T U R K E Y: 1 δ, 1 γ, "Turcia" (NMW); 1 δ, 4 ρ γ, Bolu, Bolu-Yeniçağa, 24.V.1967 1000 m, leg. Besuchet (HMNH); 1 γ, Bolu, Abant 22.V.1976, 1500-1600 m, leg. Besuchet & Löbl (MHNG); 1 δ, 1 γ, Bolu, Ömerler near Bolu, 800 m, 21.V.1976, leg. Besuchet & Löbl (MHNG); 2 δ σ, Adana, Tekir, 1200 m, 4.V.1967, leg. Besuchet (MHNG); 1 δ, 3 ρ γ, Maras, S/Tekir, 5.V.1978, 900 - 1400 m, leg. Besuchet & Löbl (MHNG); 1 δ, Tunceli, Tunceli-Ovacik, 1100 m, 5.VI.1986 (MHNG); 2 ρ γ, Kirklareli, Yeniceköy-Demirköy, 31.VII.1969, leg. Besuchet (MHNG); 1 δ, 3 ρ γ, Kastamonu, Ilgazdağ, 1300 - 1800 m, 17.V.1976, leg. Besuchet & Löbl (MHNG); 1 δ, 1 γ, Konya, 18 km SE of Beyşehir, 1200 m, 7.V.1978, leg. Besuchet & Löbl (MHNG); 2 δ σ, 5 ρ γ, Bursa, S of Bursa, 22.VII.1969, leg. Besuchet (MHNG); 3 δ σ, 4 ρ γ, Bursa, Uludağ, 22.VII.1969, leg. Besuchet (MHNG); 1 δ, Bursa, 22.VII.1969, leg. Besuchet & Löbl (MHNG); 1 δ, Antakya, Harbiye, 3.V.1978, Besuchet & Löbl (MHNG).

G E R M A N Y: 1 δ, Zschenti near Tbilisi, 900 m, 1 - 10.VI.1987, leg. Wrase & Schülke (MNHUB); 1 δ, "Caucasus, Abastumani [Abastumani], Leder (Reitter)" (NMW).

A Z E R B A I J A N: 1 δ, Caucasus, Helendorf [Khanlar], Reitter" (NMW).

Diagnosis of this species, comparison, illustrations of the aedegus, data on distribution and bionomics were recently published in KORGE (1990). The additional material examined here mostly fits the already known outline of the species range but also provides the easternmost records of this species from eastern Transcaucasia.

COMPARATIVE REMARKS: *Quedius pseudonigriceps* is most similar to *Q. kirkclarensis* KORGE [species from northern Turkey with recently established synonym *Q. drannazensis* COIFFAIT, see SOLODOVNIKOV & ŠTOLJAR (2002)] from which it can be reliably distinguished only by the presence of a palisade fringe on abdominal tergite 7. Now, after the additional material of *Q. pseudonigriceps* was examined, it seems likely that *Q. kirkclarensis* may be a brachypterous form of *Q. pseudonigriceps* and could be eventually synonymized with the latter.
However, the phenomenon of possible wing polymorphism in *Q. pseudonigriceps* requires careful examination. *Quedius pseudonigriceps* is also similar to *Q. cohaesus* EPPELSHEIM from which it can be distinguished by relatively shorter rows of peg setae on the apical portion of the paramere and more distinct tooth on the aedeagal apex (in lateral view; cf. Figs. 1 - 3 and 4 - 6). Illustrations of the aedeagus of *Q. turkmenicus* COIFFAIT (1969) suggest that this species also may be very similar to *Q. pseudonigriceps* and *Q. cohaesus* (or even conspecific with either). However, before additional material from that poorly known region, or at least the type material of *Quedius turkmenicus*, is examined, its status remains unclear.

**Quedius gemellus** EPPELSHEIM, 1889


**TYPE MATERIAL EXAMINED:** *Quedius gemellus:* Lectotype (here designated): ♂, "Caucas occ. Circassien Leder. Reitter./ c. Eppelsh. Steind. d." (NMW); paratype: 2 ♀♂, same data as lectotype (NMW) [RUSSIA; for discussion of the borders of "Circassia" see Solodovnikov (2001)].
*Quedius ghilarovi:* Holotype: ♂, "N 853 Région de Maykop 10. 6. 63 Montagnes (Paireire Hêtre + Epicéa)/ Holotype/ Q. (Sauridus) ghilarovi Coiff. H. Coiffait det. 1967" (MNHN); paratypes: 1 ♀, "1087, Région de Maykop Montagnes Litière + épicéa/ Allotype" (MNHN); 1 ♂, "917, 19-20.6.63, Région de Maykop. Montagnes Broussailles de rhododendron/ Paratype" (MNHN); 1 ♀, "N 855 Région de Maykop 8.06.63 Montagnes forêt Hêtre + Epicéa/ Quedius ghilarovi Coiff." (ZMMU); 1 ♀, "N 858 Région de Maykop Montagnes Hêtre et epicea clairière/ type/ Quedius ghilarovi Coiff. H. Coiffait det. 1966/ Quedius paramerus Coiff. V. Gusarov det. 1997" (ZMMU) [RUSSIA: Republic of Adygeja].

In the original description of *Quedius gemellus*, Eppelsheim (1889) did not specify the number of syntypes, but indicated the type locality "Circassien" (for discussion about the borders of "Circassien" see Solodovnikov 2001). Among numerous specimens of *Q. gemellus* from "Circassien", scattered in the few museums of the world (and some of them incorrectly labeled by the museums' staff as "types" or "syntypes"), only those which were most likely studied by Eppelsheim (kept in his collection in NMW) are considered here to be syntypes. Of them, one male syntype is here designated as lectotype. The lectotype is designated in order to fix the identity of the name. There are many specimens scattered in different collections which may not be conspecific but which could be interpreted as syntypes of *Q. gemellus*.

*Quedius gemellus* from the north-western Caucasus was correctly interpreted by earlier authors (Gridelli 1925, Wüsthoff 1938). The matters became complicated after Coiffait (1963, 1967, 1978) illustrated the aedeagus for *Q. gemellus* inconsistently (1963, correctly; 1967, 1978, incorrectly) and described two species of ambiguous identity sympatric with *Q. gemellus*: *Q. ghilarovi* and *Q. paramerus*. Fagel (1968) described a subspecies, *Q. gemellus bithynicus* from northern Anatolia. The confusion was partly revealed by Korge (1990) who, though not seeing the types, correctly recognized the identity of *Q. gemellus bithynicus* with *Q. pseudonigriceps*. Examination of the respective types here confirms this non-type based conclusion of Korge. Examination of the type material of *Q. ghilarovi* and *Q. paramerus* (both species described from the same locality in the north-western Caucasus) reveals that these taxa are conspecific with *Q. gemellus*. 
ADDITIONAL MATERIAL EXAMINED:
RUSSIA: KRASNODAR TERRITORY: 1 $, 1 $, "Kuban, Caucas, Rost" (IRSN); 7 $, 5 $, "Caucasus occ., Circassien Leder Reitter" (FMNH, IRSN, IZK, SNM, ZIN); 1 $, near vill. Ubinskaya, foothills of Mt. Sober-Bash, 10.X.1992, in forest litter, leg. M. Savitsky (cSol); 6 $, 1 km S of vill. Ubinskaya, 11.IX.1992, in forest litter, leg. V. Savitsky (cSol); 1 $, near vill. Ubinskaya, 28.V.1992, leg. V. & M. Savitsky (cSol); 1 $, Goryachy Kluch, 18.X.1951, leg. K.Arnoldi (ZMMU); 3 $, vill. Defanovka near Goryachy Kluch, Quercus & Acer, litter & under stones, 29.X.1981, leg. S. Golovach (ZMMU); 1 $, distr. of Goryachy Kluch, 10 km S of vill. Fanagoriyskoe, mixed forest, under stones & in rotten logs, 30.X.1981, leg. S. Golovach (ZMMU); 1 $, W. Caucasus, Khosta, leg. B.V. Stark (ZMMU); 1 $, Sochi, upper course of river Agura, beech and hornbeam forest, 5.VIII.1992, leg. I. Solodovnikov (cSol); 1 $, 1 $, Sochi, Alek range, 920 m, in debris at the bank of forest creek, 21.VIII.1992, leg. I. Solodovnikov (cSol); 1 $, Sochi, near Babuk-Aul, 1000 m, 10.VIII.1992, leg. I. Solodovnikov (cSol); 2 $, 1 $, env. of vill. Mezmay, S of Maykop, VII.1998, leg. Kopecky & Švarc (cKr); 1 $, 3 $, Mt. Semashkho 30 km NE of Tuapse, 800 m, forest zone, pitfall traps, 10.V. - 4.VI.1992, leg. A. Miroshnikov & A. Solodovnikov (cSol); 1 $, Mt. Khuko near vill. Babuk-Aul, 1500 m, in forest litter, 24.VI.1994, leg. A. Solodovnikov (cSol); 1 $, 2 $, 25 km NE of vill. Lazarevskoe, 600 m, in forest litter, 30.V.1995, leg. A. Solodovnikov (cSol); 3 $, S slopes of Mt. Chugush, 1300 m, in forest litter, 10.VIII.1994, leg. A. Solodovnikov (cSol); 3 $, 10 km NEE of vill. Krasnaya Polyana, 900 m, in forest litter, 6.VIII.1994, leg. A. Solodovnikov (cSol); 2 $, 12 km E of vill. Krasnaya Polyana, 800 m, in moist forest litter, 15.VIII.1994, leg. A. Solodovnikov (cSol); 1 $, 2 $, Caucasus occ. Krasnaya Polyana, leg. Roubal, VII.1910 (SNM); 1 $, 1 $, Achishkho range, 1100 m, 16.VIII.1994, leg. A. Koval’ (cGus); 2 $, same data, but 29-31.VIII.1994; 1 $, Western part of Aibga range, 1000-1400 m, 23.VIII.1995, leg. M. Savitsky (cSol); 1 $, 4 $, Aibga range near vill. Krasnaya Polyana, 800-1000 m, in forest litter, 12-15.VIII.1994, leg. A. Solodovnikov (cSol); REPUBLIC OF ADYGEJA: 1 $, 2 $, env. of Belaya river, 15.VII.1998, leg. Kopecky & Švarc (cKr); 1 $, 10 km W of vill. Dakhovskaya, 1000 m, 4.VII.1993, leg. V. Savitsky (cSol); 5 $, 1 $, same locality, but 700 m, in forest litter, 26.VI.1994, leg. A. Solodovnikov (cSol); 1 $, same data, but 1000 m, 1.VII.1993; 1 $, near vill. Novoprokhladnoe, 700 m, 3.VI.1995, leg. V. Savitsky (cSol); 1 $, near vill. Guzeripl’, in forest litter, 11.VI.1992, leg. A. Solodovnikov (cSol).

COMPARATIVE REMARKS: Genitalia and terminalia of Q. gemellus in both sexes are practically identical with those of Q. pseudonigriceps. Very close affinity of both taxa was also recognized by KORGE (1990) who thought that Q. gemellus might be a subspecies of Q. pseudonigriceps. Quedius gemellus differs from Q. pseudonigriceps. Quedius gemellus differs only externally: in shorter pseudonigriceps. Quedius gemellus differs externally (in shorter Q. pseudonigriceps is allopatric. From the similar Q. cohaesus, Q. gemellus more pronounced dorsal tooth near the apex of median lobe).

DISTRIBUTION AND BIONOMICS: Quedius gemellus is endemic to the north-western Caucasus. It is rather common and abundant in montane forests from the foothills to elevations of 1300 - 1500 m, where it can be found in leaf litter. The larva is described in POTOTSKAYA.
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(1967) (as *Quedius ghilarovi*). According to Potoskaya, larvae were found in loose soil under fallen tree trunks.

**Quedius cohaesus** **EPPELSHEIM, 1888**


*Quedius meurgeusae*: Holotype: η, "Alam Kouch Elbourz/ 25-3500 m, 14.VIII.72/ I Iran G.M. et G.L./ type [red label]/ Quedius (Sauridus) meurguesae H. Coiffait 1977" (MNHN) [IRAN].

Until now the types of *Q. cohaesus* were only examined by GRIDELLI (1925), but this examination was done without dissection and study of the aedeagus. Later, this species was largely misinterpreted starting with COIFFAIT (1963), where the illustration of the aedeagus attributed to *Q. cohaesus* obviously belongs to *Q. pseudonigriceps*.

Three syntypes are specified in the original description of *Q. cohaesus* (EPPELSHEIM 1888). Two of them (male and female) are deposited in the NMW. Of these syntypes, the male is designated as a lectotype. The designation of the male specimen as lectotype is done for the better fixation of the identity of the name. Male primary and secondary sexual characters are very important for species diagnostics in *Quedius*.

*Quedius meurgeusae* was described based on a single male from the Elburz mountains in northern Iran (COIFFAIT 1977). Examination of the holotype of *Q. meurgeusae* leaves no doubt that it is conspecific with the types of *Q. cohaesus*, and thus leads to the new synonymy.

**ADDITIONAL MATERIAL EXAMINED:**

1 η [teneral], "Caucasus Araxesthal Leder. Reitter" (NMW) [? TURKEY, ARMENIA or AZERBAIJAN]; 1 η, "Transcaspia Kisil-Arwat F. Hauser 1898" (FMNH) [? COUNTRY].

**COMPARATIVE REMARKS:** Externally and in structure of the aedeagus, *Q. cohaesus* is very similar to *Q. pseudonigriceps*. For differences see above under the latter species. *Quedius cohaesus* also resembles *Q. limbatus* (HEER), from which it differs in shape of the apical portion of the aedeagus. Also, *Q. turkmenicus* COIFFAIT (1969) should be carefully compared with *Q. cohaesus* (about *Q. turkmenicus* see above under "Comparative remarks" for *Q. pseudonigriceps*).

**DISTRIBUTION:** The only locality from which *Q. cohaesus* is known exactly is Alam Kouch in the Elburz mountains in Iran. Other localities for this species (see above for details) are either inexacty recorded, or their identification is difficult. Records of this species in COIFFAIT (1963, 1978), KORGE (1964) and SMETANA (1967) from Turkey need confirmation. The record of *Q. meurgeusae* from Saudi Arabia (COIFFAIT 1981) is based on the examination of a single female specimen and, thus, is not reliable either.

**Quedius balcanicus** **BERNHAUER, 1908**


The number of syntypes was not specified in the original description of *Q. balcanicus*. Of six syntypes of this species available for study in the FMNH, there is one specimen (female) labeled by Bernhauer as "Type" and five specimens labeled by him as "Cotypes". One of the "cotype" males is designated as lectotype. The designation of the male specimen as lectotype is done for the better fixation of the identity of the name. Male primary and secondary sexual characters are very important for species diagnostics in *Quedius*.

Diagnosis of this species, comparison, illustrations of the aedeagus, data on distribution and bionomics were recently published in KORGE (1990). However, the types of this species were not examined since the time of the very brief original description. Revision of the types here verifies that previous authors correctly interpreted this species.

This synonymy was suggested by KORGE (1990) based on the examination on the relevant but non-type material. I have not seen the types of *Q. subnigriceps* either, but, based on its description and distribution, there is no doubt about the identity of these two taxa. HERMAN (2001b) lists *Q. subnigriceps* as valid species because Korge's publication has been overlooked in that catalogue.

ADDITIONAL MATERIAL EXAMINED:

BOSNIA AND HERZEGOVINA: 1 ♀, Herzegovina, Duži, leg. Holdhaus (FMNH); 2 ♂♂, 3 ♀♀, Herzegovina, Duži, 1903, leg. Leonhard (FMNH); 1 ♂, 1 ♀, Herzegovina, Trebinje 1903, leg. Leonhard (FMNH); 1 ♂, 1 ♀, "Bosnia Zeleznici ca... [illegible], Buchenlb Brh [in beech leaf litter, leg. Bernhauer], 17.5.1902" (FMNH); 1 ♂, "Bosnja Jahorina" (FMNH); 1 ♂, "Ubl Herzegov. [Herzegovina]" (FMNH); 1 ♂, "Bosnien Bernhauer" (FMNH); 1 ♂, "Jablanica Paganetti" (FMNH); 1 ♂, "Herzegovina Th. V. Wanka" (FMNH); 1 ♂, "Kobinger Sarajevo" (FMNH).

SERBIA/MONTENEGRO: 7 ♂♂, 6 ♀♀, "Kameno Paganetti" (FMNH); 3 ♂♂, 3 ♀♀, "Topla Paganetti" (FMNH).

ITALY: 1 ♂, 1 ♀, "Castelnuovo Holdhaus" (FMNH).

COMPARATIVE REMARKS: *Quedius balcanicus* is very similar to *Q. pseudonigriceps*. Externally it differs from the latter species in 3-4 punctures of pronotal sublateral row (in contrast to 2-3 punctures in *Q. pseudonigriceps*), relatively shorter antennae, and relatively shorter tarsi (especially basal segments of posterior tarsi). Also it can be easily distinguished from *Q. pseudonigriceps* by the shape of the aedeagus (see COIFFAIT 1978; KORGE 1990).

DISTRIBUTION: *Quedius balcanicus* is known from the north of the Balkan Peninsula and adjacent parts of north-eastern Italy (see also records in GRIDELLI 1922 and CICERONI & ZANETTI 1995).

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**Quedius boluensis KORGE, 1971**


*Quedius deuvei* COIFFAIT, 1978a: 170; syn.n.

*Quedius deuvei* COIFFAIT, 1978b: 226 (nee *Quedius deuvei* COIFFAIT, 1983a)

TYPE MATERIAL EXAMINED: *Quedius boluensis*: Holotype: 1 ♂, "leg. H. Korge Anatolia bor./ Abant-Geb. 1100-1500 m" (cKor).

*Quedius deuvei*: Holotype: 1 ♂ [teneral] "Tr. Drannaz Dağ, 3 VII.1977 T. Deuve/ Holotype/ Quedius (Sauridus) deuvei H. Coiffait det. 1978" (MNHN); paratype: 1 ♀, same data as holotype, but with "Allotype" label instead (MNHN) [TURKEY].
The holotype and paratype of *Q. deuvei* COIFFAIT, 1978 are conspecific with *Q. boluensis* KORGE, and the former name is thus placed in synonymy to the latter. Note that *Quedius deuvei* COIFFAIT, 1983a is a junior homonym of *Quedius deuvei* COIFFAIT, 1978, with the replacement name *Q. deuveianus* COIFFAIT, 1983b. This species from the Himalayas is a junior synonym of *Q. kashmirensis* CAMERON (SMETANA 1988).

**ADDITIONAL MATERIAL EXAMINED:**

Additional material examined: T U R K E Y: 1 ♂, "Anatolia bor. W. Heinz leg./Dranaz-dagh b. Sinop, 1250 m, 27.VII.1970" (cKor); 1 ♂, "Südl. Abies-zone/ 25.VII.1970/ Anatolia bor. W. Heinz leg./ Westseite d. Yaraligöz südli. Catalzęyrit 1300-1700 m" (cKor); 1 ♂, "Anatolia bor. Heinz leg./ Pass nördl. Çanbaşi, 1700m" (cKor); 1 ♀, "Anat. b. Cangal Dagh, 7-15.VI.1960, leg. F. Schubert" (NMW); 2 ♀♂, same data, but 16. - 26.V.1957 (NMW); 3 ♂♂, 1 ♀, "südl. Ayancık, Asm. b., 6-12.VII.1973, leg. F. Schubert" (NMW); 1 ♀, "Borcka, Asm. NO, 1500 m, VII.1971, leg. F. Schubert" (NMW); 4 ♂♂, 2 ♀♀, Abant Dagh, 1400 - 1550 m, V.1967, leg. G. Fagel (IRSN); 1 ♂, Bolu, Abant, 22.V.1976, 1500 - 1600 m, leg. Besuchet & Löbl (MHNG); 2 ♂♂, 1 ♀, Sinop, Lala near Sinop, 20.V.1976, leg. Besuchet & Löbl (MHNG); 1 ♀, Bürnük 29 km N Boybat, 1250 m, 26.V.1976, leg. Besuchet & Löbl (MHNG); 1 ♀, Kastamonu S/Küre, 1200 m, 18.V.1976, leg. Besuchet & Löbl (MHNG); 1 ♂, Bolu, Düzce - Akçakoca, 26.V.1967, 400 m, leg. Besuchet (MHNG); 1 ♀, Zonguldak, 17 km N Safranbolu, 1000 m, 16.V.1976, Besuchet & Löbl (MHNG); 1 ♀, Ordu, env. Tekkiraz, 18.V.1967, 500 m, leg. Besuchet (MHNG); 1 ♀, Bolu, Elmalik Bakacak, 850 m, 26.V.1967, leg. Besuchet (MHNG); 1 ♂, Bolu, env. Tekkiraz in Zonguldak s/Zonguldak, 500 m, 23.V.1976, leg. Besuchet & Löbl (MHNG).

This species was described in KORGE (1971). To facilitate the separation of *Q. boluensis* from *Q. obliqueseriatus* and other similar species, more detailed illustrations of the aedeagus are provided here (Figs. 7 - 9). Median lobe of the aedeagus with slightly lanceolate (in dorsal view) apical portion (Fig. 8); with tooth on the dorsal side (adjacent to the paramere) far from apex. Apex of the paramere not reaching apex of median lobe, with two pairs of apical setae and two pairs of longer lateral setae below the apex; with about 35-40 peg setae arranged in irregular longitudinal groups (Fig. 9). Internal sac with minute weakly sclerotized structures.

**COMPARATIVE REMARKS:** *Quedius boluensis* is similar to *Q. coloratus* FAUVEL (distributed in Balkan Peninsula, Asia Minor, and western Middle East), and to *Q. obliqueseriatus* EPPELSHelm, endemic of western Caucasus. From *Q. coloratus* it can be distinguished by overall brighter coloration of the body (in *Q. boluensis* head and abdomen never black; pronotum at most reddish-brown, never dark-brown), and by difference in shape of the aedeagus (for illustration of the *Q. coloratus* aedeagus, see SMETANA 1978). For comparison with *Q. obliqueseriatus*, see that species below.

**DISTRIBUTION AND BIONOMICS:** *Quedius boluensis* is a forest litter inhabitant of the mountains of northern Turkey.

*Quedius obliqueseriatus* EPPELSHelm, 1889


In the original description of *Q. obliqueseriatus*, EPPELSHelm (1889) did not specify the number of syntypes, but indicated "Circassien" as a type locality. I was able to examine five specimens matching the original description of *Q. obliqueseriatus* and labelled as "Caucasus occ. Circassien Leder (Reitter)" (1 specimen from Eppelsheim's collection in NMW; 3 specimens from Reitter's collection in HMNH, and 1 specimen from Bernhauer's collection in the FMNH). However, only one of them (male), which most likely has been examined by Eppelsheim (now kept in his collection in NMW), is considered here to be a syntype and designated as lectotype. The lectotype is designated in order to fix the identity of the name, because there are many specimens
scattered in different collections which may not be conspecific but which could be interpreted as syntypes of *Q. obliqueseriatus*.

*Quedius obliqueseriatus* was misinterpreted by Gridelli (1924) who, as stated in this paper, had examined two similar specimens from Eppelsheim's collection (one from "Circassien", the other from "Swanetien"), but incorrectly considered the latter as a type. In fact, as follows from the original description of *Q. obliqueseriatus*, the only specimen from "Circassien" [Circassia – area in the north-western Caucasus: for reference see Solodovnikov (2001)] is a syntype. It matches the original description morphologically and is in agreement with the indicated type locality. The specimen from "Swanetien" [Svanetia - area of Svanetsky range in Georgia, east from "Circassia"] is not a type of *Q. obliqueseriatus*. Though being rather similar with true *Q. obliqueseriatus* externally, it has only two punctures (posterior frontal and vertical punctures) behind the eye and also some other differences, and in fact belongs to a different species being described elsewhere (Solodovnikov, in prep.). Coiffait (1978), although never having studied the types of *Q. obliqueseriatus* and also incorrectly stating "Swanetia" as the distribution for *Q. obliqueseriatus*, provided a correct illustration of the aedeagus of the species.

ADDITIONAL MATERIAL EXAMINED:

RUSSIA: KRASNODAR TERRITORY: 2♂♂, "Caucas occ. Circassien Leder. Reitter" (HMNH); 1♀, same data (FMNH); 1♂, village Ubinskaya, 16.VI.1953, leg. K. Arnoldi (ZMMU); 1♂, Mo. Sober-Bash near vill. Ubinskaya, 14.VI.1953, leg. K. Arnoldi (ZMMU); 1♂, village Eresvansky, 5.X.1950, leg. K. Arnoldi (ZMMU); 1♂, 2♀, Novomikhaylovskoe, 25.IX.1989, in forest litter, leg. E. Khachikov (cKh); 1♂, Kuban', Goryachy Kluch, 18.X.1951, leg. K. Arnoldi (ZMMU); 3♀♂, same data, but 8 and 14.IV.1952 (ZMMU); 1♂, same data, but 27.IX.1954 (ZMMU); 1♂, 1♀, Mt. Semashko, 20 km NE of Tuapse, 800 - 900 m, forest, pitfall traps 10.V. - 4.VI. 1992, leg. A. Solodovnikov & A. Miroshnikov (cSol); 1♂, Mt. Shessi, 29.V - 26.VI.1993, pitfall traps, leg. A. Zamotajlov & V. Shchurov (cSol); 1♀, 25 km NE of vill. Lazarevskoe, 1500 m, in forest litter, 31.V.1995, leg. A. Solodovnikov (cSol); 1♂, 2♀, Sochi, Lazarevskoe, 15.II.1988, leg. A.G. Kovat' (cGus); 1♂, Khosta, leg. B.V. Stark; 1♂, Khosta, leg. B.V. Stark (ZMMU); 1♂, Sochi, 27.VIII.1993, in wet forest litter, leg. I. Solodovnikov (cSol); 1♂, 2♀, S slopes of Mt. Chugush, 1300 m, forest zone, pitfall traps 21.VII. - 10.VIII.1994, leg. A. Solodovnikov (cSol); 2♂♂, same data, but in forest litter, 10.VIII.1994 (cSol); 1♂, 1♀, near vill. Krasnaya Polyan, 500 m, in forest litter, 6.IX.1995, leg. V. Savitsky (cSol); 1♀, same locality, 1000 m, 15.IX.1962 (ZMMU); 1♂, 12 km E of vill. Krasnaya Polyan, 800 m, in forest litter, 31.VII.1994, leg. A. Solodovnikov (cSol); 2♂♂, 1♀, same locality, 1600-1700 m, in forest litter, 1.VII.1994, leg. A. Solodovnikov (cSol); 1♀, Mt. Aibgha near vill. Krasnaya Polyan, 1000 m, in forest litter (cSol); 1♂, Mt. Atchischcho, leg. A. Zolotarev (ZIN) 1♀, same data (ZMMU); 1♀, Caucasus, Aibgo [Mt. Aibga], 1908; 1♂, Caucasus occ. Krasnaya Polyan Roubal VII.1910 (FMNH); 1♂, Adler, Pseashkho, 14.VII.1961 (MNHN); REPUBLIC OF ADYGEJA: 1♀, Lagonaki plateau, VI.1990, leg. V. Grebennikov; 1♂, 1♀, same locality, but VI.1991, leg. E. Khachikov (cKh); 2♀♂, Azish-Tau range, 1500 m, in forest litter, 27.VIII.1994, leg. A. Solodovnikov (cSol); 1♀, same locality, VI.1994, leg. V. Shchurov (cSol); 1♂, 10 km SW of vill. Dakhovskaya, 600 m, in forest litter, 26.VIII.1994, leg. A. Solodovnikov (cSol).

REDESCRIPTION: Measurements and ratios (range, arithmetic mean; n = 20): HL: 1.03 - 1.30 (1.18); HW: 1.38 - 1.68 (1.65); PL: 1.53 - 1.78 (1.75); PW: 1.57 - 2.01 (1.88); EL: 1.28 - 1.78 (1.50); EW: 1.60 - 2.00 (1.82); FB: 4.0 - 5.1 (4.7); TL: 8.0 - 10.5 (9.1); HL/HW: 0.72 - 0.84 (0.76); PL/PW: 0.85 - 1.04 (0.88); EL/EW: 0.75 - 0.92 (0.82).

Head dark: brownish-black with paler, brown front; pronotum and elytra reddish-brown, disc of pronotum often with two parallel, wide longitudinal pale bands; abdomen dark brown to brown, hind margins of abdominal tergites yellowish-brown; palpi, antennae and legs yellowish-brown, apical antennomeres often darker; body glossy, abdomen strongly iridescent.

Head slightly transverse [HL/HW: 0.72 - 0.84 (0.76)], temples slightly more than two times as short as longitudinal diameter of eye; posterior frontal puncture closer to posterior margin of head than to anterior frontal puncture; temporal puncture closer to posterior margin of eye than to posterior margin of head; two vertical punctures behind posterior frontal puncture arranged as oblique line between posterior margin of eye and dorsal part of neck; dorsal surface of head with
microsculpture of transverse (on disk) and isodiametric (on front and along inner margin of eye) cells. Antennae moderately long: antennal segments: 3rd longer than 2nd; 4th-10th of nearly equal length, widening towards apex of antenna.

Pronotum about as wide as long [0.85 - 1.04 (0.88)], widest in the middle, gradually narrowing anteriad and vaguely posteriad; hind angles rounded but distinct; dorsal row each with three punctures; sublateral rows each consisting of two punctures; waves of microsculpture dense and oblique; microsculpture on anterior angles of pronotum reticulate.

Scutellum impunctate, with transverse microsculpture as on pronotum.

Elytra short, parallel-sided, wider than long [EL/EW: 0.75 - 0.92 (0.82)], shorter than pronotum and much narrower than maximum width of pronotum; punctation dense; pubescence gray; interspaces very glossy, with vaguely distinct minute irregularities.

Wings vestigial.

Abdomen: tergite 7 without palisade fringe; punctation moderately coarse, gradually becoming sparser towards the apex of abdomen (punctuation of tergite 3 rather dense, but sparser than on elytra); interspaces with very superficial transverse irregularities.

Male. Protarsi with dilated tarsomeres 1 - 4. Sternite 8 with acute triangular medio-apical emargination; tergite 10 with rounded apical margin; sternite 9 elongate, gradually narrowed apically, with moderately wide and long basal portion and obtusely rounded apical margin. Aedeagus (Figs. 10 - 12): median lobe parallel-sided along most of its length with slightly lanceolate (from dorsal view, Fig. 11) and dorsally bent (from lateral view, Fig. 10) apical portion, which has a tooth located near apex. Paramere parallel-sided along most of its length, narrowing in apical portion; its apex almost reaching apex of median lobe, with two pairs of apical setae and two pairs of longer lateral setae below apex, with about 40 - 50 peg setae arranged in two longitudinal groups (Fig. 12). Internal sac with minute weakly sclerotised structures.

Female. Tarsomeres 1 - 4 of protarsi dilated, but slightly narrower than in males. Tergite 10 (Fig. 13) with very characteristic bilobed apical portion.

COMPARISON: Quedius obliqueseriatus is similar and apparently closely related to Q. boluensis from Turkey. Externally, it differs from Q. boluensis in its shorter elytra and lack of palisade fringe on abdominal tergite 7, two vertical punctures on each side of head (in contrast to one in Q. boluensis), and in absence of small punctures additional to posterior frontal puncture. Also the species can be easily separated by the structure of the aedeagus (relatively more slender median lobe, more slender and parallel-sided paramere, larger number of peg setae on the paramere in Q. obliqueseriatus). Apical margin of the female tergite 10 in Q. obliqueseriatus is characteristically bilobed (Fig. 13) whereas in Q. boluensis it is entire.

DISTRIBUTION AND BIONOMICS: Quedius obliqueseriatus is endemic to the north-western Caucasus. It inhabits forest litter in the mountains from the very foothills to the timber line (altitudes from 200-600 to 1600-1800 m).
In the original description of *Q. Igockii*, ROUBAL (1911) indicated two syntypes. I was able to examine both of them (one is kept in the FMNH, the other in SNM). The syntypes do not differ from each other in any significant feature and were collected in the same locality. They both serve equally for fixing the identity of the species. Therefore, no lectotype designation is provided here.

**ADDITIONAL MATERIAL EXAMINED:**

RUSSIA: KRASNODAR TERRITORY: 1 ♂, 2 ♀, SW slopes of Mt. Chugush, source of Berezovaja river, 2600-2700 m, alpine zone, under stones, 24.VII.1994, leg. A. Solodovnikov (cSol); 1 ♀, Achishkho range near Krasnaya Polyana, 20-11.VI.1975, leg. Dvorak (MNHN); REPUBLIC OF ADYGEJA: 1 ♀, Lagonaki plateau, 7-16.VIII.1992, leg. E. Khachikov (cKh); 6 ♂♂, 3 ♀♀, 5 slopes of Mt. Fisht near Cherkessky pass, 2000 m, subalpine zone, under stones, 25.VI.1994, leg. A. Solodovnikov (cSol); 1 ♂, 1 ♀, slope of Mt. Fisht, 3.VIII.1909 (ZIN); 2 ♀♂, Mt. Fisht, N slope, 1800 m, 7.VII.1999, leg. Putchkov (cSch).

GEORGIA: 2 ♀♂, Western Abkhazia, valley of Psou river, 1800 m, 8.VII.1989, leg. A. Koval'; 1 ♂, Gagrašky range, Mt. Zontik, 2100 m, 27.VII.1988, leg. A. Koval'; 1 ♂, same data but 1.VIII.1988 (cKab).

**REDESCRIPTION:** Measurements and ratios (range, arithmetic mean; n = 9): HL: 1.28 - 1.43 (1.35); HW: 1.57 - 1.77 (1.66); PL: 1.74 - 1.94 (1.87); PW: 1.98 - 2.21 (2.14); EL: 1.61 - 1.86 (1.71); EW: 2.00 - 2.21 (2.13); FB: 5.0 - 5.6 (5.3); TL: 9.5 - 12 (10.4); HL/HW: 0.79 - 0.84 (0.81); PL/PW: 0.85 - 0.88 (0.87); EL/EW: 0.74 - 0.86 (0.80).

Body black; base of antennal segments 2-4, palpi and tarsi paler: brown to reddish-brown (sometimes antennal segments 3-11, apical margin of elytra, legs and posterior margin of abdominal tergites also brown); body glossy, abdomen and dark areas of tibiae iridescent. Forebody as in Fig. 20.

Head vaguely transverse [HL/HW: 0.79 - 0.84 (0.81)], temples about two times as short as longitudinal diameter of eye, posterior frontal puncture closer to posterior margin of head than to anterior frontal puncture; temporal puncture somewhat closer to posterior margin of eye than to posterior margin of head; vertical puncture closer to posterior margin of head than to posterior margin of eye; upper surface of head with microsculpture of transverse waves. Antennae moderately long; antennal segment 3 longer than segment 2, segments 4-10 gradually becoming shorter towards the apex of antenna, segments 8-10 obviously shorter than segments 4-6.

Pronotum slightly wider than long [PL/PW: 0.85 - 0.88 (0.87)], widest from its middle to hind quarter, narrowed anteriorly; hind angles broadly rounded; dorsal rows each with three punctures; sublateral rows each consisting of two punctures. Among the examined material, three specimens possess an additional (third) small posterior puncture in each sublateral row; one specimen has an additional puncture only in the right sublateral row; and yet another specimen has only one (anterior) puncture in sublateral row. Microsculpture of transverse oblique waves, except on anterior angles more or less reticulate.

Scutellum impunctate, with transverse microsculpture as on pronotum.

Elytra short, parallel-sided, wider than long [EL/EW: 0.74 - 0.86 (0.80)], vaguely shorter and narrower than pronotum; punctation very dense; pubescence brownish-gray; interspaces extremely glossy, with vague minute irregularities.

Wings vestigial.

Abdomen: tergite 7 without palisade fringe; punctuation moderately dense, gradually becoming sparser towards apex of abdomen; pubescence as on elytra; interspaces with transverse irregularities.

Male. Protarsi with dilated tarsomeres 1 - 4. Sternite 7 with very slight emargination on the posterior margin; sternite 8 with bow-shaped medio-apical emargination; tergite 10 with rounded, weakly sclerotized apical margin; sternite 9 moderately elongate, with wide basal
portion and vaguely bilobed apical margin. Aedeagus (Figs. 14 - 16): apical portion of median lobe curved dorsally (Fig. 14). Apex of paramere almost reaching apex of median lobe, with two pairs of apical setae and two pairs of lateral setae very close to apex; with about 20-30 peg setae arranged in two lines (Fig. 16); internal sac with minute, weakly sclerotised structures.

Female. Protarsi with dilated tarsomeres 1 - 4. Abdominal tergite 10 with rounded apical margin.

COMPARISON: Based on external and genitalic characters, Q. Igockii seems to be related to a complex of species near Q. ochroptems ERICHSON, 1840. Apparently, its sister species is Q. brachypterus COIFFAIT. For comparison of Q. Igockii and Q. brachypterus see the latter species below.

DISTRIBUTION AND BIONOMICS: Quedius Igockii is endemic to the north-western Caucasus. All specimens were collected at the high altitudes in subalpine and alpine zones (2000 - 2700 m); those collected by me were taken from under stones.

Quedius brachypterus COIFFAIT, 1967

As follows from the original description of Q. brachypterus (COIFFAIT 1967), it was described based on a single species from the collection of Eppelsheim in Vienna. According to the original description, the holotype should bear the identification label of Eppelsheim ("brachypterus, type": Eppelsheim named that species but never described it). The specimen of Q. brachypterus kept in Eppelsheim's collection in NMW was not, however, marked as holotype and had only the label "brachypterus", which is obviously in Coiffait's handwriting. There is no doubt that this specimen from Eppelsheim's collection is the holotype. First, its geographical label conforms to the one mentioned in the original description. Second, the beetle was already dissected (evidently by Coiffait) for study of the aedeagus before my examination, and subsequently labelled by Coiffait (at that time apparently the original Eppelsheim identification label was replaced). In the collection of Coiffait in MNHN, however, there is another specimen of Quedius also marked as the holotype of Q. brachypterus (labelled as: "Svanetia, Mestia, forest, 1700, 4.VII.1968/ Holotype/ Quedius brachypterus Coiff. H. Coiffait det. 1968"). Regardless of how this confusion could have arisen, this specimen is by no means the holotype of Q. brachypterus. In fact, it belongs to a very similar but distinct species which is being described by me elsewhere (SOLODOVNIKOV, in prep.).

REDESCRIPTION: Measurements and ratios (n = 1): HL: 1.28; HW: 1.53; PL: 1.83; PW: 2.06; EL: 1.50 (0.78) EW: 2.10; FB: 4.7; TL: 9.5; HL/HW: 0.84; PL/PW: 0.88; EL/EW: 0.71.

Externally, Q. brachypterus is similar to Q. Igockii, but differs distinctly in its shape of pronotum, stronger narrowing anteriad, and much shorter elytra (EL/EW: 0.74 - 0.86 (0.80) in Q. Igockii) (cf. Figs. 20, 21). The wings of Quedius brachypterus are also vestigial. Abdominal tergite 7 without palisade fringe.

Male. Protarsi with diluted tarsomeres 1 - 4. Sternite 7 without distinct apical emargination; sternite 8 and tergite 10 as in Q. Igockii; sternite 9 elongate, with wide and short basal portion and rounded apical margin. Aedeagus (Figs. 17 - 19): median lobe with apical 1/5 part somewhat curved dorsally, on dorsal side with tooth near apex. Apex of paramere slightly below apex of median lobe, apical portion of paramere with 4-5 apical setae and two pairs of lateral setae close to the apex with about 20 peg setae arranged in two lines (Fig. 17); internal sac with distinct areas of stronger sclerotization.
Female unknown.

COMPARISON: *Quedius brachypterus* is most similar to *Q. Igockii*. Externally it differs as described above. Although the aedeagi of both species share a similar plan, the aedeagus of *Q. brachypterus* is relatively larger, less curved dorsally, and has a more massive apical portion; the paramere has a relatively broader and obtuse apical portion. The male sternite 9 of *Q. brachypterus* is wider than in *Q. Igockii*.

DISTRIBUTION AND BIONOMICS: This species is known only from the holotype, for which there are no data about the exact locality (see above). Nothing is known of the habitat requirements of this species.

*Quedius korgeanus* FAGEL, 1968 stat.n.


*Quedius orophilus* DRUGMAND, 1988: 202; syn.n.

TYPE MATERIAL EXAMINED: *Quedius paradisianus korgeanus*: Holotype: d, "Anatolie occid. Abant Dagh. 1400-1550 m V.1967 G. Fagel/paradisianus korgeanus nov. G. Fagel det./Type" (IRSN); paratypes: 1 d, 3 q, same data as holotype (IRSN) [TURKEY].


FAGEL (1968) considered *Q. korgeanus* a subspecies of *Q. paradisianus* (HEER, 1839) only because of the slight degree of differences between these two forms. Although the morphological difference between *Q. korgeanus* and *Q. paradisianus* is slight, it is quite distinct and stable. Therefore, there are no reasons for considering them as subspecies, and *Q. korgeanus* is raised here to the species level. Besides, the distributions of both *Q. korgeanus* and *Q. paradisianus* are not yet known in detail, making the concept of subspecies here even more ambiguous. (Numerous literature records of *Q. paradisianus* must be revised).

Examination of the holotype of *Q. svanetianus* revealed that it is conspecific with *Q. korgeanus*.

Type material of *Q. orophilus* was unavailable for study. However, the detailed original description, illustration of the aedeagus, and the area of distribution of *Q. orophilus* (DRUGMAND 1988) leaves no doubt about the synonymy of this taxon with *Q. korgeanus*.

ADDITIONAL MATERIAL EXAMINED:

R US S I A: KRASNODAR TERRITORY: 7 d q, Mt. Shessi, 1400 m, 29.V. - 26.VI. 1993, pitfall traps, leg. V. Shchurov (cSol); 7 q q, 25 km NE of vill. Lazarevskoe, 1500 m, in forest litter, 31.05.1995, leg. A. Solodovnikov (cSol); 1 q, Mt. Bambak, 1900 m, timber line, 1.VI. - 1.IX. 1993, pitfall traps, leg. V. Shchurov (cSol); 2 q q, same locality, but pitfall traps 21.VI-1.IX.1993, leg. A. Zamotaylov & V. Shchurov (cSol); 2 q q, Mt. Mal'j TkhaP, S of vill. Bagovskaya, 1900-2000 m, 8.VI.1995, leg. A. Solodovnikov (cSol); 2 q q, NW slopes of Mt. Severny Pseashkha, 2300 - 2500 m, alpine zone, under stones, 5.VIII.1994, leg. A. Solodovnikov (cSol); 2 q q, W part of Aibgha range, S slopes, 1900 - 2400 m, subalpine zone, 27.VIII.1995, leg. V. Savitsky (cSol); 1 q, Krasnaya Polyana, leg. Roubal VII.1910 (SNM); REPUBLIC OF ADYGEJA: 2 q q, Lagonaki plateau, Azish-Tau range, 1500 m, 27.VII.1994, near forest creek, leg. A. Solodovnikov (cSol); 1 d, Lagonaki plateau, Kamennoe More range, 1900 m, timber line, in litter, 14.VI.1995, leg. A. Solodovnikov (cSol); 1 q, same data, but under stone near snowfield (cSol); 1 q, Lagonaki plateau, Nagots-Tschuk range, 1900 - 2400 m, 30.V.1994, leg. A. Zamotaylov (cSol); 1 q, Lagonaki plateau, N slopes of Mt. Oshten, 2000 - 2100 m, 8.VII.1993, leg. V. Savitsky (cSol); 1 d, Lagonaki plateau, 20.VII.1991, leg. E. Khachikov (cKh); 1 d, same data, but 18.VI.1992; 1 q, same data, but 10.VIII.1992 (cKh), 1 d, same data, but 28.VI.1996 (cKh); 2 q q, Mt. Fisht, 1900 m, alpine zone, 11.VIII.1992, leg. I. Solodovnikov (cSol); 1 q, Caucasian Nature Preserve, Polyana Stadnika, 1400 m, hornbeam forest, 12.VIII.1992, leg. I. Solodovnikov (cSol); 1 q, 8 - 10 km NW of vill. Guzeripl, 1400 - 1600 m, forest zone, 7.VII. 1993, leg. V. Savitsky (cSol); 2 d q, 10 km E of vill. Guzeripl, 1800 m, Fagus-Abies forest, 6-15.VIII.1993, pitfall traps, leg. I. Solodovnikov (cSol); 1 d, 4 q q, Mt. Fisht, N slope, 1800 m, 7.VII.1999, leg. Putchkov (cSch); 1 q, "Caucas. occid. Abago, Starch" (NMW);
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KARACHAEVO-CHERKESSIA: 3 ♂ ♀, upper course of Bolshaya Laba river near vill. Pkhiya, 1700 m, in moist forest litter, 8. - 9.VIII.1995, leg. A. Solodovnikov (cSol); 1 ♂, Urup river source near Mt. Urup, 2000 m, timber line, in litter, 10.VIII. 1995, leg. A. Solodovnikov (cSol); 1 ♂, same locality, but 1900 m, pine forest, under stone, 11. - 12.VIII.1995, leg. A. Solodovnikov (cSol); 1 ♀, W slopes of Arkasara range, 1900 - 2100 m, VIII.1992, leg. V. & M. Savitsky's (cSol); 1 ♂, 1 ♀, Arkasara ridge, 20. - 27.VI.1997, leg. A. Narkevich (cKh); 1 ♀, Marg. Syrty range, Chygardaly pass, 2400 m, 22.VI.1992, leg. V. Grebennikov (cSol).

GEORGIA: 2 ♀♂, Abkhazia, Avadkhara, 2000 - 2800 m, 8. - 13.VII.1982, leg. Wrase & Schiilke (cSch); 1 ♂, "Caucasus, Tbatani 79 Leder" (Reitter) (NMW); 1 ♂, 1 ♀, 129 km of Batumi across Goderdzi pass, bank of the creek, in wet moss, 9.VI.1977, leg. A. Petrenko (IZK); 1 ♂, Kasbek, 2.VI.1908, 7000 F [2100 m], leg. A. Zolotarev (ZIN); 1 ♀, "Kaukas Leder, östl. vom Kasbek" (NMW); 1 ♂, 3 ♀♂, Trialetsky Range, Bakuriani, 1800 - 2200 m, 3. - 7.VII.1986, leg. Wrase & Schiulke (cSch).

ARMENIA: 1 ♂, Kadzharan, 2300 m, subalpine meadow, under stones, 15.VI.1977, leg. A. Petrenko (IZK); 4 ♂♂, 2♀, same locality, but 16. VI.1977, bank of creek near snowfield, in wet moss (IZK).


Τ U R Κ E Y: 1 ♀, "Turcia" (NMW); 1 ♂, Lazian Range, 5 km E of Soganli Pass, 2000 - 2200 m, 15.VI.1996 leg. I. Belousov & G. Davidyan (cGus); 1 ♂, Kalkanli Mts., NW slopes, 8 km SE of Zigana Pass, 1900 - 2100 m, alpine zone, 9.VI.1998, leg. A. Solodovnikov (cSol); 11 ♂♀, Kalkanli Mts., 15 km SE of Zigana Pass, 2300 - 2500 m, alpine zone, in debris at the snowfield, 10.VI.1998, leg. A. Solodovnikov (ZIN, cSol).

COMPARATIVE COMMENTS: Externally, *Q. korgeanus* is practically identical with *Q. paradisianus*. Also, both species share the same plan of the aedeagus structure. However, unlike *Q. paradisianus*, the aedeagus of *Q. korgeanus* has thinner apical portion and longer and slenderer paramere (cf. Figs. 22-28). Based on my examination of the holotype of *Q. rodopianus* COIFFAIT, 1971 this species is identical with *Q. korgeanus* in all features but apical portion of the aedeagal median lobe, which is slightly shorter in *Q. rhodopianus*. It is possible that these species are in fact conspecific. However, more material of *Q. rhodopianus* should be examined in order to assess the variability and make a conclusion about its status.


*Quedius korgeanus* is a polytopic montane species inhabiting a wide range of landscapes on elevations from about 1400 - 2500 m: montane forests, subalpine and alpine meadows. In the forest, *Q. korgeanus* has been taken from leaf litter, under stones, often in wet habitats such as alpine zone. In open landscapes of the alpine and subalpine zones, *Q. korgeanus* is common in wet debris at the edges of snowfields, under stones, in debris and moss at stream-edges.

*Quedius nitipennis* STEPHENS, 1833

*(Quedius attenuatus (GYLENHAL) sensu auctorum)*


Examination of the holotype of *Q. acuminatus khinzoriani* (the holotype is a somewhat teneral specimen) confirmed the suspicion that this taxon is conspecific with *Q. nitipennis*.

**ADDITIONAL MATERIAL EXAMINED:**

RUSSIA: REPUBLIC OF ADYGEJA: 6 δ δ, 3 ♀ ♂, 8 - 10 km NWW of vill. Guzeripl' 1400 - 1600 m, forest zone, 7.VII.1993, leg. V. Savitsky (cSol); 2 δ ♂, 1 ♀, Lagonaki plateau, northern slopes of Mt. Oshten, 2000 - 2100 m, 8.VIII.1993, leg. V. Savitsky (cSol); 1 ♀, Lagonaki plateau, 18.VIII.1992, leg. E. Khachikov (cKh);

KARACHAEVO-CHERKESSIA: 1 ♂, SW slopes of Kryylbashy range, alpine zone, 2700 m, 25.VI.1993, leg. A. Solodovnikov (cSol); 1 ♂, 1 ♀, valley of river Dzenaitai 15 km SW of vill. Elbrussky, 2000 m, forest zone, 21.VI.1993, leg. A. Solodovnikov (cSol); 9 δ δ, 3 ♀ ♂, S slopes of Mt. Bermamyt, 2400 m, 27.VIII.1996, leg. V. Savitsky (cSol); 1 ♀, N-Kaukasus, Teberda, 17.VI.1968, leg. F. Hieke (MNHB); KABARDINO-BALKARIA: 4 δ δ, 1 ♀, Bezengi, pitfall traps 1992, leg. A. Zamotaylov & V. Shchurov (cSol); NORTH OSETIA: 2 δ δ, near pass Khizniaush, 2500 - 2600 m, 10.VI. - 31.VI.1993 pitfall traps, leg. A. Zamotaylov & V. Shchurov (cSol); 3 δ ♂, 1 ♀, valley of river Dzenaitai 15 km SW of vill. Elbrussky, 2000 m, forest zone, 21.VI.1993, leg. A. Solodovnikov (cSol); 1 ♀, S slopes of Mt. Bermamyt, 2400 m, 27.VIII.1996, leg. V. Savitsky (cSol); 1 ♀, KABARDINO-BALKARIA: 4 δ δ, 1 ♀, Bezengi, pitfall traps 1992, leg. A. Zamotaylov & V. Shchurov (cSol); 1 ♀, N-Kaukasus, Teberda, 17.VI.1968, leg. F. Hieke (MNHB); KABARDINO-BALKARIA: 4 δ δ, 1 ♀, Bezengi, pitfall traps 1992, leg. A. Zamotaylov & V. Shchurov (cSol); 1 ♀, N-Kaukasus, Teberda, 17.VI.1968, leg. F. Hieke (MNHB); KABARDINO-BALKARIA: 4 δ δ, 1 ♀, Bezengi, pitfall traps 1992, leg. A. Zamotaylov & V. Shchurov (cSol); 1 ♀, N-Kaukasus, Teberda, 17.VI.1968, leg. F. Hieke (MNHB); 8 ♀ ♂, 1 ♂, Trialetsky range, Bakuriani, 1800 - 2200 m, 15. - 20.VI.1987, leg. Wrase & Schülke (cSch).

GEORGIA: 1 ♀, Akhieli, Khevsuretia, 27.VIII.1928, leg. Kirshenblat (ZIN); 2 δ δ, Bakuriani, Distr. of Borzhami, 27.VII.1947, leg. Bogachev (ZIN); 1 ♀ ♂, Trialetsky range, Bakuriani, 1800 - 2200 m, 15. - 20.VI.1987, leg. Wrase & Schülke (cSch).

ARMENIA: 1 ♂, Khosrov Nature Preserve, 1400 m, 6.VI.1982, leg. M. Nesterov (IZK); 2 δ ♂, 3 ♀, near pass Zgid, 2.VI1I.1993 pitfall traps, leg. A. Zamotaylov & V. Shchurov (cSol); 3 ♂ ♂, 1 ♀, Skalysty range, Mt. Kionhoh, 2900 m, 11.VI. - 1.VIII.1993 pitfall traps, leg. A. Zamotaylov & V. Shchurov (cSol); 1 ♂, Kazbegi, 1800 - 2500 m, 1. - 7.VII.1988 leg. Wrase (cSch).

Greece: 1 ♀, Akhieli, Khevsuretia, 27.VIII.1928, leg. Kirshenblat (ZIN); 2 δ δ, Bakuriani, Distr. of Borzhami, 27.VII.1947, leg. Bogachev (ZIN); 1 ♀ ♂, Trialetsky range, Bakuriani, 1800 - 2200 m, 15. - 20.VI.1987, leg. Wrase & Schülke (cSch).

Many references to this species were incorrectly cited as *Q. attenuatus* (GYLLENHAL), which is a nomen nudum (HERMAN 2001a). It was described, keyed and illustrated multiple times, e.g. TOTTENHAM (1948), LOHSE (1964), COIFFAIT (1978).

**DISTRIBUTION AND BIONOMICS:** Based on vast literature, *Q. nitipennis* has a wide distribution in the West Palearctic (practically all Europe, western and central Siberia, northern Africa, Asia Minor, Caucasus). Records from outside central Europe, however, are scanty. Although this species was recorded from the Caucasus, no exact data on its distribution within this area were ever published. The records provided here cover practically the whole territory of the Caucasus.

All specimens examined here were collected in mountainous, elevated sites (from 1400 to 2900 m). *Quedius nitipennis* is polytopic and inhabits mountainous forests, subalpine and alpine meadows. It occurs in moist biotopes: aggregations of wet litter in the forest, banks of rivers and creeks, moist edges of snowfields. Noteworthy, that the bionomics of *Q. nitipennis* in the Caucasian area fits a general pattern described for this species by HORION (1965), i.e. occurrence only in the mountainous, elevated habitats in the southern part of its range.

### Quedius semiobscurus (MARSHAM, 1802)

(Quedius rufipes (GRAVENHORST) sensu ERICHSON, 1840; "Quedius rufipes ERICHSON" sensu auctorum)

Staphylinus semiobscurus MARSHAM, 1802: 512.


Quedius rufipes ssp. lutzi REITTER, 1909: 115; syn.n.

Quedius velutinus MOTSCHULSKY, 1860: 571; BOHAČ 1988: 557 (syn. of Quedius semiobscurus) [here confirmed].

**TYPE MATERIAL EXAMINED:** *Quedius velutinus*: Lectotype (here designated): ♀, "Timirhan Schura Schirvan/Quedius velutinus mihi Schirvan Daghestan" (ZMMU); paralectotype: 1 ♀ (very damaged by pests), "Schirvan/velutinus" (ZMMU) [RUSSIA: Dagestan].
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Of two female specimens in the collection of Motschulsky which, according to the labels and original description (MOTSCHULSKY 1860), are syntypes, one specimen is severely destroyed by pests. In order to fix the identity of Q. velutinus, the remaining safe specimen is designated as lectotype. Both syntype specimens of Q. velutinus are conspecific with Q. semiobscurus (MARSHAM). Thus, the earlier established synonymy of Q. velutinus MOTSCHULSKY, 1860 and Q. semiobscurus (MARSHAM, 1802) (BOHAC 1988) is here confirmed. BOHAC (1988), however, indicated that he studied the holotype of Q. velutinus, which is not correct because no holotype was designated in the original description.

In the brief original description of Q. rufipes ssp. lutzi, REITTER (1909) did not specify the number of syntypes and indicated the type locality as "Transkaukasus, Lenkoran". In the collection of HMNH, there are four specimens of Q. rufipes ssp. lutzi collected by Leder in the Caucasus. All mentioned specimens belong to Q. rufipes ssp. lutzi REITTER. However, two of these specimens bear the geographical labels "Daghestan", which conflicts with the indicated type locality. Of the remaining two specimens, a male bears the locality label "Caspi.-M.-Gebiet Liryk" and the identification label of Reitter, whereas a female is labelled as "Lenkoran" and has no identification label by Reitter. Both latter specimens can be considered as syntypes; "Liryk" (Lerik) is about 30 km W of Lenkoran, whereas the locality "Lenkoran" in the original description means rather an area around well-known toponym Lenkoran, but not exactly a populated place Lenkoran. Of two syntypes, the male specimen is designated here as lectotype. The male lectotype is designated because of the importance of male sexual characters for species diagnostics in Quedius. It should be noted that all 4 mentioned specimens were incorrectly marked as holotype and paratypes by subsequent curators of the HMNH. Lectotype designation also is done to avoid this confusion.

Specimens of Q. rufipes ssp. lutzi from "Lenkoran", "Liryk" and "Daghestan" (from Reitter's collection) are in average somewhat paler (especially pronotum) than the rest of the sample of Q. semiobscurus examined here (including specimens from European and Turkish localities which are not listed in the "Material examined" section). REITTER (1909) described Q. rufipes ssp. lutzi based exclusively on this peculiarity of body colour. However, in structure of the aedeagus and all external characters except coloration, the subspecies lutzi does not differ from the nominate form of Q. semiobscurus. Colour of the body (head, pronotum, elytra, abdomen) of Q. semiobscurus is rather variable, pronotum often being relatively paler. Thus, Q. semiobscurus lutzi is placed in synonymy.

ADDITIONAL MATERIAL EXAMINED:


A Z E R B A I J A N: 1 ♂, 1 ♀, "Paleton 1200', Astar. r. Talysh", 17.VII.1932, leg. Znoyko (ZIN); 1 ♂, Mt. Nyudigalasi 1900', 22.VII.1932, leg. Znoyko; 1 ♀, Biysar, Talysh, 800-1000 m, 7.VI.1936, leg. Arnoldi (ZIN); 1 ♂, Mt. Nyudi-galasi, E slopes, Talysh, 1400 m, Arnoldi, 12.VI.1936 (ZIN); 1 ♂, Lyulyakeryan, Zuvant, 3.VIII.1932, leg. Znoyko (ZIN).

This species is also often cited as "Q. rufipes ERICHSON" in the literature. This is incorrect because, firstly, ERICHSON (1840) only redescribed the species described earlier by
GRAVENHORST (1802). Secondly, the Gravenhorst name Staphylinus rufipes for that species was preoccupied (HERMAN 2001b). Quedius semiobscurus has been described, keyed and illustrated multiple times, e.g. TOTTENHAM (1948), LOHSE (1964), COIFFAIT (1978).

DISTRIBUTION AND BIONOMICS: Quedius semiobscurus is distributed in Europe (except northern), in the Mediterranean region (including northern Africa), in the Caucasus and in the west of the Middle East. Records from outside Europe, however, are very scanty and the degree of reliability for all distributional data varies.

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Dr. Alexey Yu. SOLODOVNIKOV
Department of Zoology, Field Museum of Natural History. 1400 South Lake Shore Drive, Chicago IL 60605-2496, USA (asolodovnikov@fieldmuseum.org)