

**Contributions to the knowledge of the Quediina of China
(Coleoptera, Staphylinidae, Staphylinini).
Part 41. Genus *Quedius* Stephens, 1829.
Subgenus *Raphirus* Stephens, 1829. Section 9**

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Abstract. The paper deals with additional brachypterous species of the *Quedius muscicola*-group of the subgenus *Raphirus* Stephens, 1829 of the genus *Quedius* Stephens, 1829. *Quedius nujiang* sp. nov. and *Q. angustiarum* sp. nov. (both from Gaoligong Shan in Yunnan), *Q. oros* sp. nov. (Sichuan) and *Q. chion* sp. nov. (Yunnan) are described as new. New distributional data are given for *Q. io* and *Q. li*. A key to the brachypterous species of the *Q. muscicola*-group known at present from mainland China is attached.

Key words. Coleoptera, Staphylinidae, Staphylinini, Quediina, *Quedius*, taxonomy, new species, description, geographical distribution, mainland China, Palaearctic Region

Introduction

This is the forty-first of a series of papers dealing with the Quediina of People's Republic of China. It deals with further brachypterous species of the *Q. muscicola*-group (see SMETANA 1988: 243) of the subgenus *Raphirus* Stephens, 1829, and is a continuation of the paper published previously (SMETANA 2008). Prior to that paper only two species of the *Q. muscicola*-group were known from the mainland China, both fully winged: *Q. maculiventris* Bernhauer, 1934 and *Q. optabilis* Bernhauer, 1934, documenting how little collecting of these staphylinids was done back there. It was not until the late years of 20th century, when intensive collecting, using modern collecting methods, was established by foreign and Chinese coleopterists, that the number of the known species started to rise dramatically. It is expected that the number of species, particularly of the brachypterous species from high mountain elevations, where highly developed endemism is common, will keep rising.

Materials and methods

The acronyms used in the text when referring to the deposition of the specimens are as follows:

ASC Aleš Smetana collection, Ottawa, Canada;
 MSC Michael Schülke collection, Berlin.

The measurement ratios given in the descriptions are average values when more than one specimen was available. Label data for holotypes and allotypes are quoted exactly as they appear on the label.

Taxonomy

Quedius (Raphirus) io Smetana, 2008

Quedius io Smetana, 2008, 186.

New records. CHINA: SHAANXI: 18 spec. (ASC, MSC): '(S-Shaanxi) Qinling Shan mount. range W pass on road X'ian- Shagoujie, 45km SSW X'ian 33°52'N 108°46'E 2675m (N-slope/Abies, Betula, Larix) / subalp. meadows/ along road) 25.VII.2001 Wrase, 20 [= sample number]'; 16 spec. (ASC, MSC): same data, 'N-slope /Abies, Betula, Larix, Rhododendron / subalpine meadows (sifted), C01-20 [sample ID], leg. M. Schülke'; 12 spec. (ASC, MSC): same data, '26.VII. 2001, C0-20A [sample ID], leg. M. Schülke'.

Comment. These are additional specimens from the type locality. *Quedius io* is the dominant *Quedius* species in the habitat. *Quedius (Microsaurus) duh* Smetana, 2001 is another species living in the same habitat.

Quedius (Raphirus) li Smetana, 2008

Quedius li Smetana, 2008, 187.

New records. CHINA: YUNNAN: 2 spec. (MSC): '(Yunnan) Dali Bai Aut. Pref., Diancang Shan E pass, 43 km NW Dali, 2700m (secondary pine forest, litter, moss sifted) 25°59'50"N / 100°00'30"E 23.VIII.2009, D.W. Wrase, 02 [sample no.]'; 4 spec. (ASC, MSC): same data, 'litter, moss and mushrooms sifted, leg. M. Schülke, CH09-02 [= sample ID]'; 2 spec. (MSC): same data, '25°59'33.5"N 99°52'12.5"E 3104 m, pasture & shrubs, litter, moss and mushrooms sifted, 23.VIII.2009, leg. M. Schülke, CH09-01 [sample ID]'.

Comment. This is the second record of this species from Diancang Shan. *Quedius li* is at present known only from the Diancang Shan.

Quedius (Raphirus) nujiang sp. nov.

(Figs. 1–7)

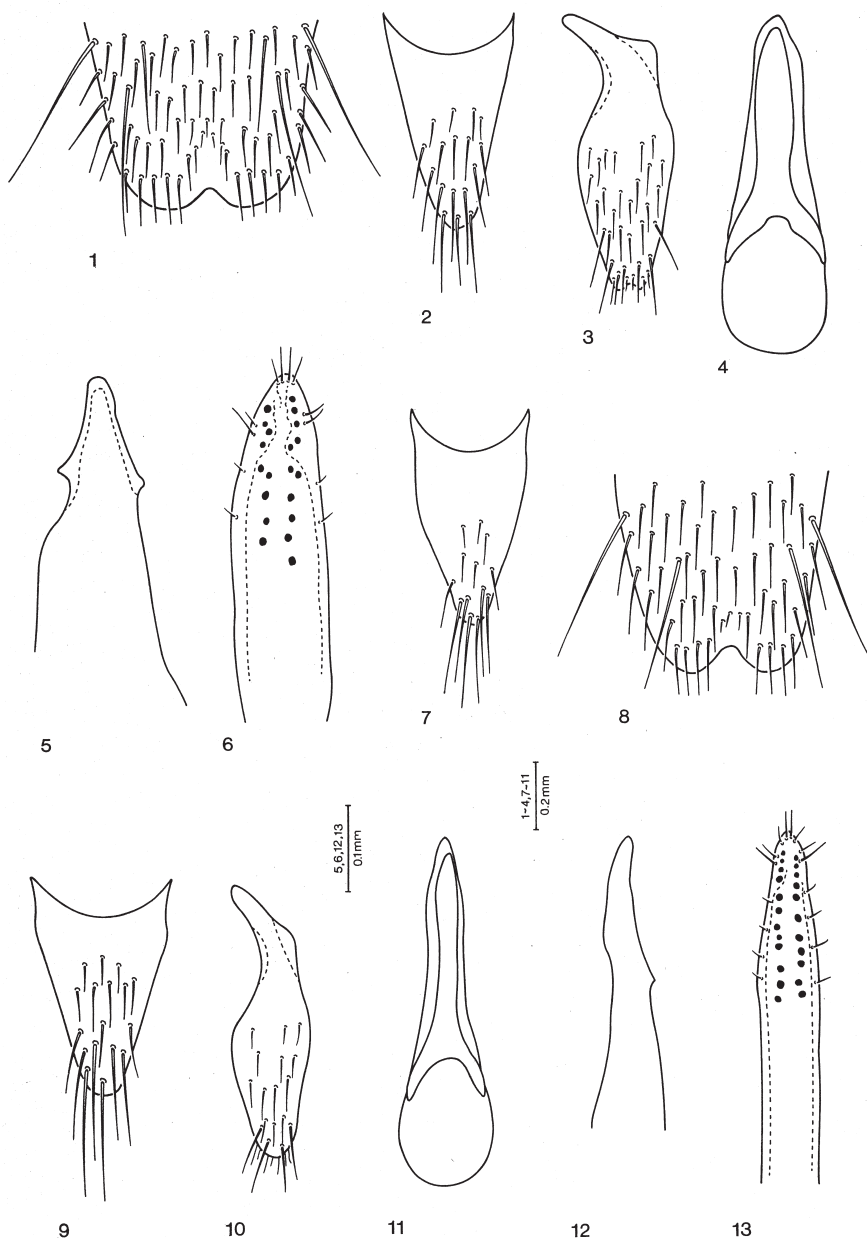
Type locality. People's Republic of China, Yunnan, Nujiang Lieu Pref., Gaoligong Shan, W 'Cloud Pass' 24 km NW Liuku, 25°59'02"N 98°39'56.5"E, 2940 m a.s.l.

Type material. HOLOTYPE: ♂ (MSC, to be deposited in Naturhistorisches Museum in Berlin), 'CHINA: Yunnan Nujiang Lieu Pref., Gaoligong Shan, W "Cloud Pass" 24 km NW Liuku, 25°59'02"N 98°39'56.5"E, 2940 m, small cleft, wet moss & litter sifted, 3.IX. 2009, leg. M. Schülke [CH09-24]'. ALLOTYPE: ♀ (ASC), same data as holotype. PARATYPES: 8 ♂♂ 2 ♀♀ (ASC, MSC), same data as holotype.

Description. Head piceous-black, pronotum piceous, somewhat paler laterally, elytra brunneous to brunneopiceous; head and pronotum with faint metallic bronze lustre, abdomen

iridescent, dark brunneous to brunneopiceous with apical margins of tergites more or less paler; both maxillary and labial palpi pale testaceous, antennae testaceous, vaguely darkened toward apex, legs uniformly testaceous. Head rounded, wider than long (ratio 1.22); eyes very large and convex, tempora very short, considerably shorter than length of eyes seen from above (ratio 0.15); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture touching posteriomedian margin of eye, one puncture between it and posterior margin of head; temporal puncture small, touching posterior margin of eye; surface of head with fine, dense microsculpture of transverse and oblique waves gradually changing into meshes on middle of clypeus. Antenna moderately long, segments 2 and 3 subequal in length, segments 4–7 longer than wide, gradually becoming shorter, segments 8–10 about as long as wide, segment 11 as long as two preceding segments combined. Pronotum as long as wide, to vaguely wider than long (ratio 1.08), widely rounded basally, slightly narrowed anteriorly, evenly transversely convex; dorsal rows each with three punctures; sublateral rows variable, each usually with three punctures with posterior puncture situated slightly after level of large lateral puncture, or with only two punctures with posterior puncture situated slightly before level of large lateral puncture; surface of pronotum with microsculpture of transverse waves similar to those on head. Scutellum with 5–9 punctures, surface with microsculpture of rudimentary striae. Elytra short, at suture markedly shorter (ratio 0.71), at sides shorter (ratio 0.81) than pronotum at midline; punctation moderately dense, rather coarse, asperate; transverse interspaces between punctures about as large as diameters of punctures; pubescence golden-yellowish; surface between punctures with microscopic irregularities. Wings each reduced to non-functional, narrow stump. Abdomen with tergite 7 (fifth visible) without whitish apical seam of palisade setae; tergite 2 (in front of first fully visible tergite) with a few fine punctures; punctation of tergites markedly finer than that on elytra, dense, rather evenly covering each tergite, becoming in general sparser toward apex of abdomen; pubescence golden-yellowish; surface between punctures with excessively fine microsculpture of transverse striae.

Male. First four segments of front tarsus dilated, subbilobed, each with tenent setae ventrally, segment two narrower than apex of tibia; segment 4 narrower than preceding segments. Sternite 8 with two or three long setae on each side, apical margin with moderately wide and deep, obtusely triangular medioapical emargination, small triangular area before emargination flattened and smooth (Fig. 1). Genital segment with tergite 10 narrow, evenly narrowed toward arcuate apex, setose as in Fig. 2; sternite 9 with narrow basal portion, apical portion emarginate apically, with a pair of differentiated apical and subapical setae, otherwise moderately densely setose (Fig. 3). Aedeagus (Figs. 4–6) small, median lobe subparallel sided in middle portion, anteriorly narrowed into slightly asymmetrical apical portion with narrowly arcuate apex, on face adjacent to paramere, when paramere removed, with rather long median carina forming a fine hook in lateral view (Fig. 5). Apical portion of median lobe quite characteristic in lateral view (Fig. 5). Paramere (Figs. 4, 6) moderately long, slightly fusiform, with narrowly arcuate apex not reaching apex of median lobe; four fine setae at apical margin, median setae somewhat longer than lateral ones, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere numerous, forming two irregular, fairly long rows (Fig. 6).



Figs. 1–13. 1–7. *Quedius nujiang* sp. nov. 1 – apical portion of male sternite 8; 2 – tergite 10 of male genital segment; 3 – sternite 9 of male genital segment; 4 – aedeagus, ventral view; 5 – apical portion of median lobe, lateral view; 6 – apical portion of underside of paramere with sensory peg setae; 7 – tergite 10 of female genital segment. 8–13. *Quedius angustiarum* sp. nov. 8 – apical portion of male sternite 8; 9 – tergite 10 of male genital segment; 10 – sternite 9 of male genital segment; 11 – aedeagus, ventral view; 12 – apical portion of median lobe, lateral view; 13 – apical portion of underside of paramere with sensory peg setae.

Female. First four segments of front tarsus simple, not dilated, without tenent setae ventrally. Tergite 10 of genital segment small, narrow, evenly narrowed toward arcuate apex, with several long setae at and near apex, otherwise only with a few fine setae (Fig. 7).

Length 4.8–5.5 mm.

Etymology. The specific epithet is partial name of the prefecture the species occurs in, a noun in apposition.

Bionomics. The specimens of the original series were taken by sifting wet moss and litter at an elevation just below 3000 m.

Geographical distribution. *Quedius nujiang* sp. nov. is at present known only from the type locality in Gaoligong Shan, west of Salween river, in westernmost Yunnan.

Recognition and comments. *Quedius nujiang* sp. nov. is well characterized among the brachypterous species of the *muscolina*-group, in addition to the shape of the aedeagus, by the relatively large size, the uniformly testaceous legs, the rather coarse punctation of elytra, and by the golden-yellow pubescence of the elytra and the abdomen. It only may be confused with *Q. angustiarum* sp. nov., but the latter differs by the entirely different shape of the aedeagus, and by a few subtle external differences (see under *Q. angustiarum* sp. nov.).

Quedius (Raphirus) angustiarum sp. nov.

(Figs. 8–14)

Type locality. People's Republic of China, Yunnan, Nujiang Lisu Pref., Gaoligong Shan, 'Cloud Pass' 21 km NW Liuku, 25°58'21"N 98°41'01"E, 3150 m a.s.l.

Type material. HOLOTYPE: ♂ (MSC, to be deposited in Naturhistorisches Museum in Berlin), 'CHINA (Yunnan) Nujiang Lisu Pref., Gaoligong Shan, "Cloud Pass" 3150 m, 21km NW Liuku (shrubs, *Vaccinium*, bamboo, litter sifted) 25°58'21"N/ 98°41'01"E 2.IX.2009 D.W. Wrase [22A]'. ALLOTYPE: ♀ (ASC), same data as holotype. PARATYPES: 1 ♂, 2 ♀♀ (ASC, MSC), same data as holotype; 1 ♂ 2 ♀♀ (ASC, MSC), same data as holotype but 'shrubs & bamboo, litter sifted, leg. M. Schülke [CH09-22].'

Description. In all characters quite similar to *Q. nujiang* sp. nov., but different by a few subtle external characters, and by the entirely differently shaped aedeagus. Average size smaller, body shape slenderer. Antenna slenderer and slightly shorter. Metallic bronze lustre on head and pronotum markedly more pronounced. Microsculpture on head and pronotum somewhat less dense and coarser. Punctation of elytra similar, but finer and denser, transverse interspaces between punctures slightly smaller than diameters of punctures, surface between punctures without microscopic irregularities, elytra therefore appearing shinier. Punctation of abdominal tergites similar, but denser.

Male. First four segments of front tarsus similar to those of *Q. nujiang* sp. nov., but slightly less dilated. Sternite 8 with two long setae on each side, medioapical emargination similar to that of *Q. nujiang* sp. nov., but deeper (Fig. 8). Genital segment with tergite 10 wider, with more numerous long setae on apical portion (Fig. 9); sternite 9 with basal portion narrower and longer, apical portion narrowly arcuate at apex, with a pair of apical and subapical long setae, otherwise only sparingly setose (Fig. 10). Aedeagus (Figs. 11–13) narrow, elongate, median lobe subparallel-sided in middle portion, anteriorly slightly dilated and then narrowed into rather long apical portion with narrowly arcuate apex, on face adjacent to paramere, when paramere removed, with minute median carina situated far below apex of median lobe, forming a minute hook in lateral view (Fig. 12). Apical portion of median lobe in lateral view

quite different from that of *Q. nujiang* sp. nov. (Fig. 12). Paramere very long, parallel-sided in middle portion, with narrowly arcuate apex not reaching apex of median lobe; four very fine setae at apical margin, median setae somewhat longer than lateral ones, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere numerous, forming two fairly regular, rather long rows (Fig. 13).

Female. First four segments of front tarsus simple, not dilated. Tergite 10 of genital segment of different shape than that of *Q. nujiang* sp. nov., and with different setation (Fig. 14).

Length 4.7–5.0 mm.

Etymology. The specific epithet is the genitive form of the Latin noun *angustiae*, -arum, (mountain pass), as noun in apposition. It refers to the occurrence of this species in 'Cloud Pass' of the Gaoligong Shan.

Bionomics. The specimens of the type series were taken by sifting litter under shrubs, *Vaccinium* and bamboo growths at an elevation 3150 m. *Quedius angustiarum* sp. nov. occurs in the same area of the Gaoligong Shan as *Q. nujiang* sp. nov., but in a different habitat at higher elevation.

Geographical distribution. *Quedius angustiarum* sp. nov. is at present known only from the type locality in Gaoligong Shan, west of Salween river, in westernmost Yunnan.

Recognition and comments. *Quedius angustiarum* sp. nov. may only be confused with *Q. nujiang* sp. nov., but it may be distinguished by the characters outlined above, particularly by the entirely different shape of the aedoeagus.

The aedoeagus of *Quedius angustiarum* sp. nov. is similar to that of *Q. microsaurioides* Smetana, 2008 from Tian Shan range in Xinjiang, but the latter differs by several external characters (e.g., impunctate scutellum, markedly smaller eyes, short antennae, etc.).

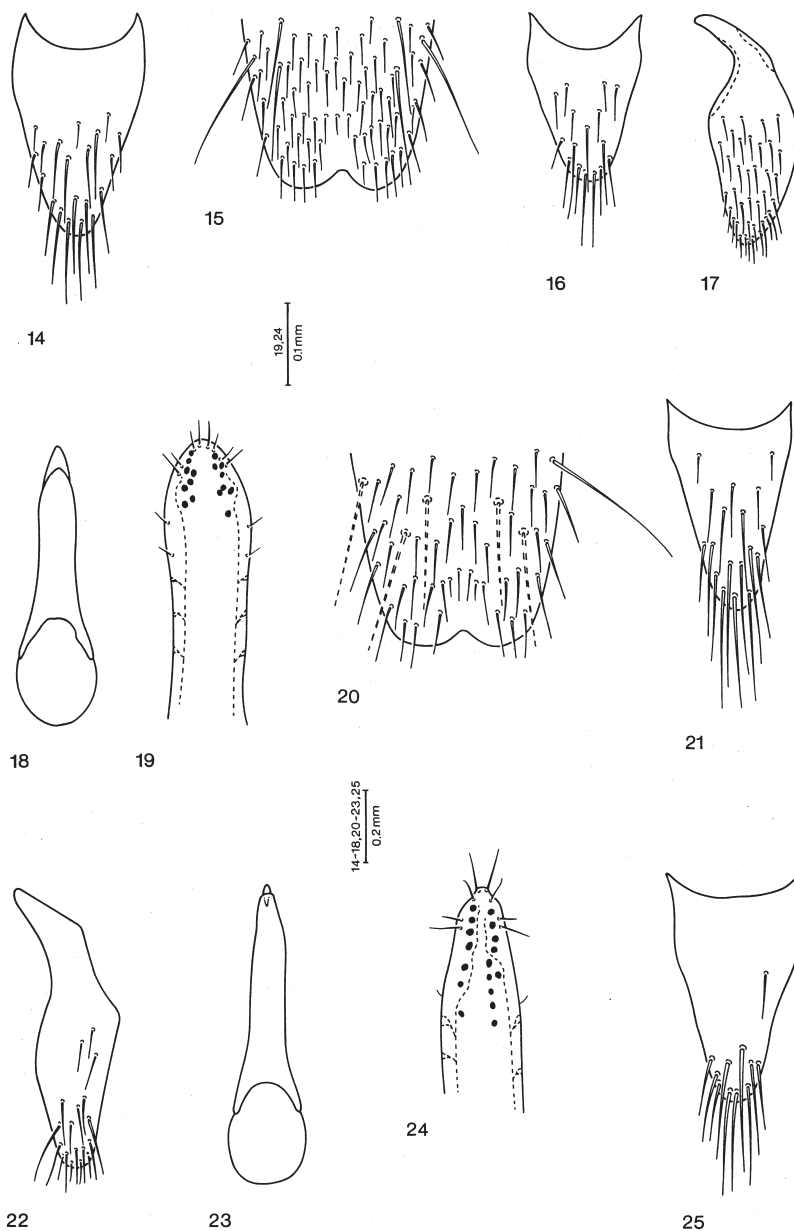
Quedius (Raphirus) oros sp. nov.

(Figs. 15–19)

Type locality. People's Republic of China, W Sichuan, pass SE Barkam, between Zhuokeji-Lianghekou, 4100 m.

Type material. HOLOTYPE: ♂ (ASC, to be deposited in Muséum d'Histoire Naturelle, Genève), 'CHINA-W Sichuan Barkam, pass SE Barkam, pass between Zhuokeji-Lianghekou 4100 m, alpine zone 10-30.VI.2004, leg. R. Fabbri'.

Description. Head black, pronotum, elytra and abdomen piceous-black; head, pronotum and elytra with metallic bronze lustre, abdomen iridescent; both maxillary and labial palpi, antennae and legs testaceous, middle and hind tibiae markedly blackened. Head rounded, wider than long (ratio 1.15); eyes very large and convex, tempora very short, considerably shorter than length of eyes seen from above (ratio 0.12); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture touching posteriomedian margin of eye, one puncture between it and posterior margin of head; temporal puncture small, touching posterior margin of eye; surface of head with fine, moderately dense microsculpture of transverse and oblique waves. Antenna moderately long, segments 2 and 3 subequal in length, segments 4-7 longer than wide, gradually becoming shorter, segments 8–10 about as long as wide, segment 11 as long as two preceding segments combined. Pronotum about as long as wide, widely rounded basally, slightly narrowed anteriorly, evenly transversely convex; dorsal rows left with four, right one with three punctures; sublateral rows each with three



Figs 14-25. 14. *Quedius angustiarum* sp. nov., tergite 10 of female genital segment. 15-19 – *Quedius oros* sp. nov. 15 – apical portion of male sternite 8; 16 – tergite 10 of male genital segment; 17 – sternite 9 of male genital segment; 18 – aedeagus, ventral view; 19 – apical portion of underside of paramere with sensory peg setae. 20-25 – *Quedius chion* sp. nov. 20 – apical portion of male sternite 8; 21 – tergite 10 of male genital segment; 22 – sternite 9 of male genital segment; 23 – aedeagus, ventral view; 24 – apical portion of underside of paramere with sensory peg setae; 25 – tergite 10 of female genital segment.

punctures, with posterior puncture situated slightly after level of large lateral puncture; surface of pronotum with microsculpture of transverse waves similar to that on head. Scutellum with punctures, exact number impossible to establish among surface microsculpture. Elytra quite short, at suture markedly shorter (ratio 0.66), at sides shorter (ratio 0.76) than pronotum at midline; punctation moderately fine, dense; transverse interspaces between punctures about as large as diameters of punctures; pubescence black; surface between punctures with microscopic irregularities. Wings apparently each reduced to nonfunctional, narrow stump. Abdomen with tergite 7 (fifth visible) without whitish apical seam of palisade setae; tergite 2 (in front of first fully visible tergite) entirely punctate and pubescent; punctation of tergites markedly finer than that on elytra, dense, becoming sparser toward posterior margin of each tergite and in general toward apex of abdomen; pubescence black; surface between punctures with excessively fine microsculpture of striae.

Male. First four segments of front tarsus dilated, subbilobed, each with tenent setae ventrally, segment two somewhat narrower than apex of tibia (ratio 0.92); segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, apical margin with moderately wide and deep, obtusely triangular medioapical emargination, small area before emargination flattened and smooth (Fig. 15). Genital segment with tergite 10 evenly narrowed toward widely arcuate apex, sparingly setose, as in Fig. 16; sternite 9 with narrow basal portion, apical portion narrowly arcuate apically, without differentiated apical or subapical setae, setose as in Fig. 17. Aedoeagus (Figs. 18, 19) rather robust, median lobe subparallel-sided in middle portion, anteriorly narrowed into moderately long apical portion with subacute apex, on face adjacent to paramere, when paramere removed, with short carina far below apex of median lobe. Paramere rather large, widely subfusiform, in ventral view entirely covering median lobe except for very apex, with narrowly arcuate apex by far not reaching apex of median lobe; four minute setae at apical margin, median setae somewhat longer than lateral ones, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere situated as in Fig. 19.

Female. Unknown.

Length 4.0 mm.

Etymology. The specific epithet is the Greek noun ορος, -εος (a mountain) in apposition, referring to the occurrence of this species high up in the mountains.

Bionomics. No details are known about the collecting circumstances, except that it was taken in the alpine zone at 4100 m.

Geographical distribution. *Quedius oros* sp. nov. is at present known only from the type locality in Qiongilai Shan in western Sichuan.

Recognition and comments. *Quedius oros* sp. nov. is well characterized, in addition to the characteristic shape of the aedoeagus, by the markedly blackened middle and hind tibiae, combined with testaceous tarsi, and the uniformly black pubescence of the elytra and abdominal tergites.

***Quedius (Raphirus) chion* sp. nov.**

(Figs. 20–25)

Type locality. People's Republic of China, Yunnan, Heishui, 35 km N Lijiang, 27°13'N 100°19'E.

Type material. HOLOTYPE: ♂ (ASC, to be deposited in Naturhistorisches Museum, Wien, Austria), 'CHINA, Yunnan prov. 1.-19. 7. 1992; HEISHUI 35 km N Lijiang 27°13'N 100°19'E lgt. S. Becvar'. ALLOTYPE: ♀ (ASC), same data as holotype.

Description. Head black, pronotum and elytra dark brown in male, piceous-black in female, abdomen piceous-black, slightly iridescent; both maxillary and labial palpi, antennae and legs testaceous (somewhat darker in female), hind tibiae slightly darkened. Head rounded, wider than long (ratio 1.20); eyes very large and convex, tempora very short, considerably shorter than length of eyes seen from above (ratio 0.11); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture touching posteriomedian margin of eye, one puncture between it and posterior margin of head; temporal puncture absent; surface of head with fine, moderately dense microsculpture of transverse and oblique waves becoming submeshed on clypeus. Antenna moderately long, segments 2 and 3 subequal in length, segments 4–8 longer than wide, gradually becoming shorter, segments 9 and 10 about as long as wide, segment 11 as long as two preceding segments combined. Pronotum about as long as wide, widely rounded basally, slightly narrowed anteriorly, evenly transversely convex; dorsal rows with three punctures; sublateral rows each with two punctures, with posterior puncture situated slightly after level of large lateral puncture; surface of pronotum with microsculpture of transverse waves similar to those on head. Scutellum with six or seven punctures on apical portion, surface with very fine, dense microsculpture of transverse waves. Elytra short, at suture markedly shorter (ratio 0.71), at sides shorter (ratio 0.89) than pronotum at midline; punctuation fine, dense, transverse interspaces between punctures mostly smaller than diameters of punctures; pubescence piceous; surface between punctures without microsculpture. Wings apparently each reduced to nonfunctional stump. Abdomen with tergite 7 (fifth visible) without whitish apical seam of palisade setae; tergite 2 (in front of first fully visible tergite) entirely, finely punctate and pubescent; punctuation of tergites markedly finer than that on elytra, dense, becoming sparser toward posterior margin of each tergite and in general toward apex of abdomen; pubescence piceous; surface between punctures with excessively fine microsculpture of striae.

Male. First four segments of front tarsus dilated, subbilobed, each with tenent setae ventrally, segment two about as wide as apex of tibia, segment 4 narrower than preceding segments. Sternite 8 with three long setae on each side, apical margin with moderately wide, not deep, obtusely triangular medioapical emargination, small area before emargination flattened and smooth (Fig. 20). Genital segment with tergite 10 narrow, evenly narrowed toward narrowly arcuate apex, setose as in Fig. 21; sternite 9 with rather long basal portion, apical portion arcuate apically, with two differentiated subapical setae, otherwise only sparingly setose (Fig. 22), but see Comments. Aedoeagus (Figs. 23, 24) narrow, elongate, medial lobe largely parallel-sided, except for apex entirely covered by paramere in ventral view, anteriorly narrowed into moderately long apical portion with subacute apex, on face adjacent to paramere with short medial carina below apex. Paramere narrow, elongate, largely parallel-sided, with narrowly arcuate apex not reaching apex of median lobe; four setae at apical margin, median setae markedly longer than lateral ones, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere numerous, forming two rather irregular longitudinal rows, as in Fig. 24.

Female. First four segments of front tarsus simple, not dilated, without tenent setae ventrally. Tergite 10 of genital segment similar to that of *Q. nujiang* sp. nov., but with more numerous setae on apical portion (Fig. 25).

Length 4.8- 5.0 mm.

Etymology. The specific epithet is the Greek noun χιών, -ονος (snow) in apposition, referring to the occurrence of this species in a very high mountain range.

Bionomics. No details are known about the collecting circumstances of this species.

Geographical distribution. *Quedius chion* sp. nov. is at present known only from the type locality in Yulong Xue Shan in Yunnan. It is likely endemic to that mountain range.

Recognition and comments. *Quedius chion* sp. nov. is characterized, in addition to the shape of the aedeagus, by the sexually dimorphic coloration of the pronotum and elytra (but this has to be confirmed on larger material), and by the entirely punctate and pubescent abdominal tergite 2.

The setation of sternite 9 of male genital segment and tergite 10 of female genital segment is largely missing, except for apical portions. Only present setae are shown in Figs. 22 and 25.

The holotype is missing segments 6 to 11 of left antenna and segments 5 to 11 of right antenna. The allotype is missing the last segment of right antenna.

Key to brachypterous species of the *Quedius muscicola* group of mainland China

To allow the determination of the brachypterous species of the *muscicola*-group described in this paper and in SMETANA (2008), a dichotomous key to these species is presented. In all the species included the wings are severely reduced and are present only as minute, nonfunctional stumps, each shorter than the elytron covering it. Also, all species, except *Q. doan* Smetana, 2008, lack the whitish apical seam of palisade setae on abdominal tergite 7. *Quedius doan* has a very fine apical seam in this location. The presence of this seam has not been mentioned in the original description of *Q. doan* (SMETANA 2008: 194).

It should be emphasized here that the species involved are mostly very small in size (small specimens of some species are among the smallest members of the genus *Quedius* known at present) and very similar to each other. Their identification is difficult and requires some experience in study of the group and/or reliably identified specimens for comparison. Since the specimens of the group are highly brachypterous and therefore incapable of flight, and since they all occur in habitats high up in the mountains, a highly developed endemism is assumed. The provenience of the specimens to be determined is therefore helpful for their identification.

1. Legs entirely testaceous. 2
- Medial faces of at least hind tibiae darkened. 4
2. Size large, exceeding 6.0 mm. Outer segments 8–10 of antenna slightly longer than wide. Male unknown. Length 6.3 mm. Yunnan: Diancang Shan. *Q. pian* Smetana, 2008
- Size smaller, 4.7- 5.5 mm, usually below 5.0 mm. Outer segments 8–10 of antenna as long as wide. 3

3. Aedoeagus small, relatively robust, with apical portion of median lobe slightly asymmetrical (Fig. 4). Apical portion of median lobe of quite characteristic shape in lateral view (Fig. 5). Paramere moderately long, slightly fusiform (Fig. 4), sensory peg setae on underside of paramere situated as in Fig. 6. Length 4.8–5.5 mm. Yunnan: Gaoligong Shan west of Salween river. *Q. nujiang* sp. nov.
- Aedoeagus larger, narrow and elongate, with apical portion of median lobe symmetrical (Fig. 11). Apical portion of median lobe of markedly different shape in lateral view (Fig. 12). Paramere very long, parallel-sided in middle portion (Fig. 11), sensory peg setae on underside of paramere more numerous, situated as in Fig. 13. Length 4.7–5.0 mm. Yunnan: Gaoligong Shan west of Salween river. *Q. angustiarum* sp. nov.
4. Scutellum impunctate. Aedoeagus as in Figs. 47–49 in SMETANA (2008). Length 4.0–5.1 mm. Xinjiang: Tian Shan range. *Q. microsaurioides* Smetana, 2008
- Scutellum with punctures. Aedoeagi different. Provenience different. 5
5. Abdominal tergite 2 (in front of first fully visible tergite) with no more than a few fine, scattered punctures. Pubescence of abdominal tergites pale, golden-yellowish with tendency to form denser basolateral patch on each side of tergite. Abdominal tergite 7 (fifth visible) with very fine whitish seam of palisade setae. Aedoeagus as in Figs. 39–42 in SMETANA (2008). Length 3.8–4.5 mm. Yunnan: Gaoligong Shan west of Salween river. *Q. doan* Smetana, 2008
- Abdominal tergite 2 (in front of first fully visible tergite) entirely punctate and pubescent. Pubescence of abdominal tergites uniformly dark. Abdominal tergite 7 (fifth visible) without whitish seam of palisade setae. Aedoeagi different. Provenience different. 6
6. Male abdominal sternite 8 with four long setae on each side. Aedoeagus and paramere markedly long and narrow (Figs. 4, 7 in SMETANA 2008). Length 4.0–4.8 mm. Gansu: Dalijia Shan W of Linxia. *Q. ruoh* Smetana, 2008
- Male abdominal sternite 8 usually with three, rarely with four or five long setae on each side. Aedoeagi and parameres of different shapes. Provenience different. 7
7. Middle and hind tibiae markedly blackened, hind ones almost entirely black. Aedoeagus rather robust (Fig. 18), paramere large, widely fusiform, in ventral view entirely covering median lobe except for very apex (Fig. 19). Length 4.0 mm. Sichuan: Qiongilai Shan. *Q. oros* sp. nov.
- Medial faces of middle and hind tibiae, or only of hind ones, more or less darkened, never markedly blackened. Aedoeagi different, provenience different. 8
8. Disc of head and pronotum without appreciable microsculpture. Middle and hind tarsi almost entirely black. Aedoeagus as in Figs. 31–34 in SMETANA (2000). Length 3.5–4.5 mm. Sichuan: Zheduo Shan, pass Zheduo Shankou west of Kanding. *Q. bann* Smetana, 2008
- Entire surface of head and pronotum with distinct microsculpture. Middle and hind tarsi not almost entirely black. Aedoeagi of different shapes. Provenience different 9
9. Medial faces of only hind tibiae darkened. Coloration of pronotum and elytra sexually dimorphic: dark brown in male, piceous-black in female (to be confirmed on larger material). Median lobe of aedoeagus in ventral view entirely covered by paramere except for very apex (Fig. 23). Length 4.8–5.0 mm. Yunnan: Yulongxue Shan. *Q. chion* sp. nov.

- Medial faces of middle and hind tibiae darkened. Coloration of pronotum and elytra not sexually dimorphic, concolorous in both sexes. Median lobe of aedeagus in ventral view not entirely covered by paramere (Figs. 11, 19 in SMETANA 2008). Provenience different. 10
- 10. First four segments of male front tarsus markedly dilated, segment 2 as wide as apex of tibia. Apex of apical portion of median lobe of aedeagus slightly knob-like dilated (Figs. 19, 20 in SMETANA 2008). Size larger: 5.6–5.8 mm. Yunnan: Diancang Shan. *Q. li* Smetana, 2008
- First four segments of male front tarsus slightly dilated, segment 2 narrower than apex of tibia (ratio 0.75). Apex of apical portion of median lobe of aedeagus, simple, acute (Figs. 11, 24 in SMETANA 2008). Size smaller: 3.8–5.00 mm. 11
- 11. Paramere of aedeagus long and narrow, with sensory peg setae more numerous, 8 or 9 in each row (Fig. 27 in SMETANA, 2008), apical portion of median lobe, when paramere removed, long (Fig. 25 in SMETANA, 2008). Length 3.8- 5.00 mm. Yunnan: Xue Shan. *Q. erl* Smetana, 2008
- Paramere of aedeagus shorter and less narrow, with sensory peg setae less numerous, 5 or 6 in each row (Fig. 14 in SMETANA 2008), apical portion of median lobe, when paramere removed, short (Fig. 12 in SMETANA 2008). Length 3.8–4.2 mm. Shaanxi: Qinling Shan. *Q. io* Smetana, 2008

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