

Contributions to the Knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China

Part 15. Genus *Strouhalium* SCHEERPELTZ, 1962. Section 3.

Genus *Quedius* STEPHENS, 1829. Subgenus *Microsaurus* DEJEAN, 1833. Section 9

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Abstract Taxonomic and faunistic data on the species of the genera *Strouhalium* and *Quedius*, subgenus *Microsaurus*, from the People's Republic of China are provided. Three cave-dwelling species are described as new: *Q. krali* (from Sichuan), *Q. kishimotoi* (from Guizhou) and *Q. feihuensis* (from Hunan). *Quedius przewalskii* REITTER, 1887 is discussed and *Q. lamus* SMETANA, 1995 is placed in synonymy with it (new synonymy). The distributional range and details about the habitat requirements of *Strouhalium gracilicorne* are presented and discussed.

This paper deals mainly with the species of the genera *Strouhalium* and *Quedius*, subgenus *Microsaurus*, that were recently collected in caves in Sichuan, Guizhou and Hunan, and with the species related to *Quedius przewalskii*. Species of the latter group apparently require specialized, talus related habitats and may also occur in rodent burrows (see below). Recently, I was able to study the holotype of *Q. przewalskii*, which was until now the only type of the species previously described from the territory of the People's Republic of China I have not seen (see SMETANA, 1997, 451). In a paper that unfortunately escaped my attention, BOHÁČ (1988, 554) redescribed the holotype of *Q. przewalskii*, deposited in the collection of the Institute of Zoology, Russian Academy of Sciences, St. Petersburg. As I suspected (SMETANA, 1997, 451), one of the species of this group (*Q. lamus*) I recently described as new (SMETANA, 1995) turned out to be conspecific with *Q. przewalskii* and is therefore considered a junior synonym of it (see below).

***Strouhalium gracilicorne* SCHEERPELTZ**

Strouhalium gracilicorne SCHEERPELTZ, 1962, 268.

New records. China: [Sichuan]: Chengkou Xian, Beiping, Shentian (1,690 m), 27–IX–1997, S.-I. UÉNO, 1 ♀; Chengkou Xian, Gaonan Xiang, Mojiawan, 1,250 m, 26–IX–1997, Y. NISHIKAWA, 1 ♀; Baoxing Xian, Yaoqi, Mahuanggou, 2,370–2,420 m, 2–X–

1997, T. KISHIMOTO, 1 ♂, in the SMETANA collection; Daofu Xian, Zheduo Mountains, Geda Liangzu, 3,500 m, 8–IX–1998, S.-I. UÉNO, 1 ♀; Jiuzhaigou Xian, Jiuzhaigou, Changhai, 3,100 m, 28–VIII–1998, Y. NISHIKAWA, 1 ♀. [Guizhou]: Shuicheng Xian, Shega, Anjia Yan Cave, 2,050 m, 17–IX–1998, T. KISHIMOTO or Y. NISHIKAWA, 5 ♂♂, 4 ♀♀, 1 ♂ and 2 ♀♀ in the SMETANA collection.

Comments. The specimens studied agree well with those from Pakistan, Nepal and those reported previously from Sichuan (SMETANA, 1998, 97); but there are again slight differences in several characters, which confirms the statement (SMETANA, *l.c.*) that *S. gracilicorne* is indeed a variable species, with separate populations showing a tendency to differ from each other. This is in fact consistent with the habitat requirements of the species, presented below.

Strouhalium gracilicorne is a species with remarkably wide distribution in the mountains of eastern Asia, being at present known from Pakistan in the west and eastward through the Himalaya to Sichuan and Guizhou in China (the actual distribution in the mountains of China will undoubtedly be much wider than what is known at present). This is even more remarkable considering that the species seems to be rather selective (stenoek) as far as the habitat requirements are concerned.

The specimens from Pakistan were collected by sifting rotten *Abies*-wood, under the bark of a dead *Abies*, and under rocks along a stream near snow; the specimen from Nepal was taken by sifting wet debris and vegetation on a talus slope with a small seepage (SMETANA, 1993, 89). It was speculated (SMETANA, *l.c.*) that the specimens associated with the dead *Abies* trees may have been taken either from their hibernation sites, or from habitats used by the larvae for pupation.

The first specimens from China (Sichuan) (SMETANA, 1998, 97) were taken either from under larger rocks near streams, or walking on open ground. The free living specimens from Sichuan, reported in this paper, were collected from under a large rotten log partly embedded in the ground at the side of a narrow stream in a deciduous broadleaved forest just below the *Abies* zone (Shentian), from a small colluvium deposited at the side of a narrow stream shaded by a secondary deciduous broadleaved forest (Mojawan), from piles of slabs and fist-sized stones partly submerged in the water of Chang Hai Lake, and those from the Geda Liangzu pass were sifted from dead leaves accumulated under *Salix* and *Quercus* trees growing along a source of the valley on the northeastern side of the pass. The specimens from Guizhou, collected in Anjia Yan Cave, were taken, together with *Quedius kishimotoi*, from muddy spaces among large rocks in the boulder chamber of the cave, mostly from under plant debris.

All biological data, available so far, indicate that *Strouhalium gracilicorne* is a species living in the habitats that are characteristic of many trechine ground beetles. The rather flat body shape, the long macrosetae of the body, and the long appendages, are clearly adaptations to underground life. The occurrence of *S. gracilicorne* in Anjia Yan Cave is therefore quite consistent with these findings and not surprising. The specimens from this cave represent the most numerous collection of this species made so far.

Quedius (Microsaurus) przewalskii REITTER

(Figs. 1–7)

Quedius przewalskii REITTER, 1887, 211; BOHÁČ, 1988, 554.*Quedius lamus* SMETANA, 1995, 239 (syn. nov.).

Quedius przewalskii was redescribed by BOHÁČ (1988, 554), who also briefly described and illustrated the aedeagus. To make the description of *Q. przewalskii* comparable to those of Chinese species of *Quedius*, available now, I am adding a few comments, and a full description and illustration of the male sexual characters of the holotype, as well as a description and illustration of tergite 10 of the female genital segment of a recently collected female specimen (Qinghai, pass 55 km N Nanqên [see below for details]), believed to be conspecific with the holotype.

In general, the holotype of *Q. przewalskii* matches well the description of *Q. lamus* SMETANA, 1995, 239. However, it is somewhat larger (11.0 mm) (see *Comments*) and is of a uniformly brownish-red color (this is perhaps due to the “age” of the specimen); the temporal puncture on the head is situated distinctly closer to the posterior margin of the head than to the posterior margin of the eye; each of the dorsal rows of punctures on the pronotum has three punctures, and the postero-lateral portions of the pronotum are more appreciably explanate.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 as wide as apex of tibia; segment 4 narrower than preceding segments. Sternite 8 with two larger setae on left side (one seta broken off) and with three larger setae on right side; with shallow and narrow, inconspicuous medio-apical emargination, small triangular area before emargination vaguely flattened and smooth (Fig. 1). Genital segment with tergite 10 similar to that described for *Q. lamus*, but somewhat narrower (Fig. 2); sternite 9 similar to that described for *Q. lamus*, but somewhat longer, with apical margin subtruncate (Fig. 3). Aedeagus (Figs. 4, 5) similar to that described for *Q. lamus*, but paramere of slightly different shape, more distinctly asymmetrical and more distinctly shifted toward left side of median lobe, with apex minutely notched; sensory peg setae on underside of paramere arranged in a similar way (Fig. 5).

Female. First four segments of front tarsus similar to those of male, but appreciably less dilated; segment 2 somewhat narrower than apex of tibia (ratio 0.88). Genital segment with tergite 10 similar to that of *Q. moeris* SMETANA, 1995, with markedly differentiated, pigmented apical portion which is distinctly larger than that of *Q. moeris* (Figs. 6, 7, 9).

Type material. REITTER (1887, 211) described the species from a single male from “Quellgebiet des Gelben Flusses”. The holotype, deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, is labelled as follows: “Prj 84” [green label]/“VII. Huangho [next word illegible] 13 1/2–14 000 p.”/“*Quedius (Ediquus) Przewalskyi* m.n.sp. Unicum”/“TYPUS” [red label]. It was received dissected, with the aedeagus glued to the plate with the beetle. The specimen

is intact; the abdominal tergite and sternite 8, the genital segment, and the aedeagus were mounted into Canada balsam on two transparent plates, attached to the pin with the beetle. — The type locality (the source of the river Huang He [Yellow River]) is in the province of Qinghai.

Additional material. China: [Qinghai]: pass 55 km N Nanqen, 32.25N 96.32E, alpine meadow 3,700 m, 9–VII–95, J. TURNA, 1 ♀, in the SMETANA collection, Ottawa; pass 30 km N Nanqen, 32.20N 96.33E, alpine meadow 4,200 m, 7–VII–95, J. TURNA, 1 ♂, in the Naturhistorisches Museum, Wien, Austria. [Tibet]: “Chola Shan”, road Yanjing–Markam, 50 km S Markam, mixed forest ca. 4,400 m, 29.16N 98.38E, M. TRÝZNA and O. ŠAFRÁNEK, 1 ♂, in the SMETANA collection; “Lao Shan” pass, road Markam–Zogang, 10 km W Markam, 29.42N 98.32E, alpine meadow 4,300 m, 27–28–VI–97, J. TURNA, 1 ♂, in the SCHÜLKE collection, Berlin. [Yunnan]: Xue Shan nr. Zhongdian, 4,000 m, 27.49N 99.34E, 24–26–VI–96, A. SMETANA, [C42], 1 ♀, in the SMETANA collection.

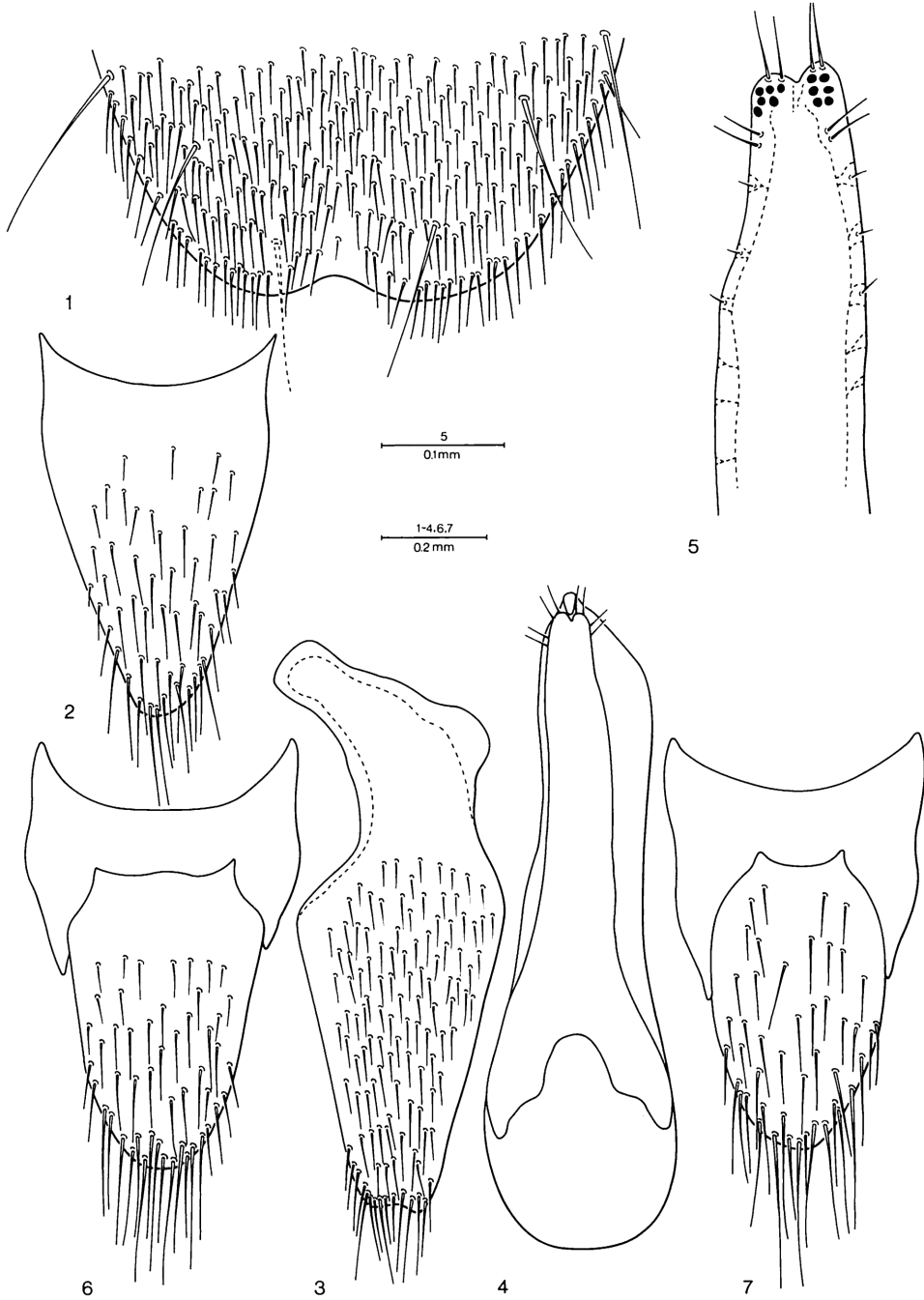
Comments. As it is apparent from the notes above, the holotypes of *Q. przewalskii* and *Q. lamus* differ in some details, including the chaetotaxy on the head. However, for reasons discussed below, I believe that they are conspecific and I am therefore considering *Q. lamus* as a junior synonym of *Q. przewalskii*.

Quedius przewalskii is a member of a group of species that I postulate to live in burrows of rodents, and/or in talus-type habitats (microcaverns) in high montane regions of China. This is based on a few available collecting data of some Chinese specimens, but a positive proof of its occurrence in rodent nests is not available at present.

Based on the larger amount of material now available, species of the group to which *Q. przewalskii* belongs, seem to be rather variable in a number of characters, such as the chaetotaxy on the head (mainly the position of the posterior frontal and temporal punctures, see also SMETANA, 1997, 455), the shape of both the head and pronotum, and the body form and size. This likely may be attributed to the fact that these flightless species live at high mountain elevations, resulting in separate populations tending to differ from each other.

Three species of this group are known at present. They are easily recognizable as follows: size large (9.7–12.0 mm); body color from pale reddish-brown to dark brownish-piceous; eyes very small, tempora therefore considerably longer than eyes seen from above, abdominal tergite 7 without whitish apical seam of palisade fringe. They may be determined using the following key:

1. Interspaces between elytral punctation with microsculpture of very fine irregularities, resulting in surface of elytra appearing dull. Tergite 10 of female genital segment with medio-apical portion pigmented, but not markedly differentiated from remainder of tergite (fig. 21 in SMETANA, 1995). [Male unknown]. Length 10.3 mm. Northern Sichuan. *Q. petilius* SMETANA
- Interspaces between elytral punctation without microsculpture, but sometimes with micropunctulation, surface of elytra not appearing dull. Tergite 10 of female geni-



Figs. 1-7. *Quedius przewalskii* (1-5=holotype): 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 underside of paramere; 6 and 7, tergite 10 of female genital segment.

- tal segment with distinctly differentiated, pigmented, elongate-hexagonal apical portion (Figs. 6, 7, 9)..... 2
2. Paramere of aedoeagus slightly curved toward left side of median lobe, in general narrower, appearing more or less asymmetrically located on median lobe (Fig. 4). Medio-apical emargination of male sternite 8 shallow, inconspicuous (Fig. 1). Differentiated apical portion of female tergite 10 large (Figs. 6, 7). Antenna more slender, outer segments usually about as long as wide. Length 9.7–12.8 mm. Tibet, Qinghai, northern Yunnan. *Q. przewalskii* REITTER
- Paramere of aedoeagus situated along midline of median lobe, in general wider and more robust, appearing symmetrically located on median lobe (fig. 8 and fig. 19 in SMETANA, 1995 a). Medio-apical emargination of male sternite 8 wider and deeper (fig. 16 in SMETANA, 1995 a). Differentiated apical portion of female tergite 10 small (Fig. 9). Antenna more robust, outer segments usually slightly wider than long. Length 10.4–12.0 mm. Qinghai, northern Sichuan. *Q. moeris* SMETANA

Quedius (Microsaurus) moeris SMETANA

(Figs. 8, 9)

Quedius moeris SMETANA, 1995 a, 241.

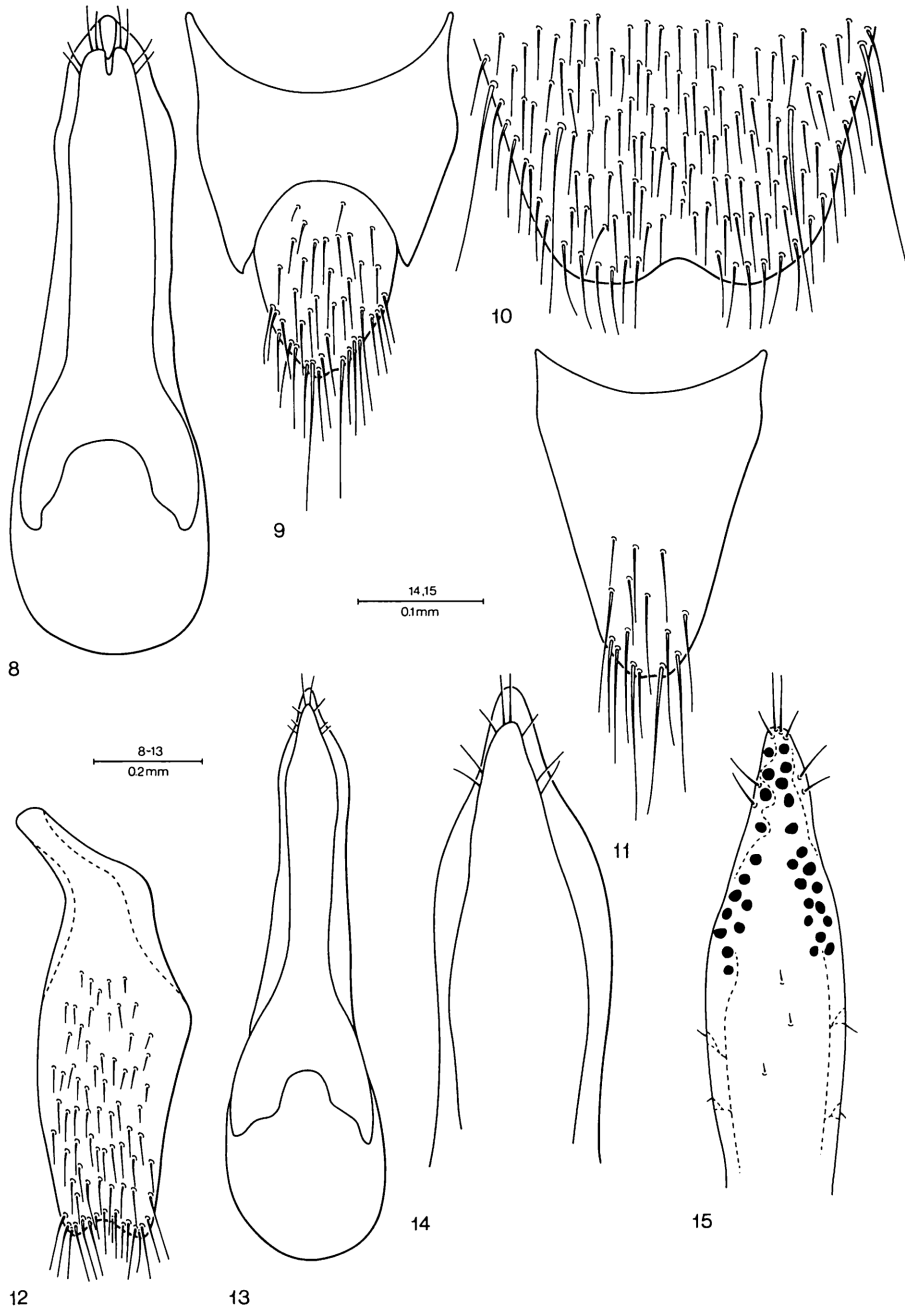
New records. China: [Sichuan]: Zheduo Shankou, Kanding (= Kangding), 1–X–96, M. SATÔ, 1 ♀, in the collection of the National Science Museum (Natural History), Tokyo, Japan; road Sêrtar–Darcang, 20 km SSE Darcang, VII–95, J. KALÁB, 1 ♂, in the SMETANA collection, Ottawa, Canada.

Comments. The specimen from near Kangding was found among the rocks of a large moraine on the east side of the Zheduo pass.

Quedius (Microsaurus) králi sp. nov.

(Figs. 10–15)

Description. Dark brownish-piceous, head black, abdomen somewhat darker than elytra, underside piceous to piceous-black, except ventral surface of head, deflected portions of pronotum, prosternum and front coxae brunneous; head and pronotum slightly, abdomen markedly iridescent; maxillary and labial palpi testaceous, antennae brunneopiceous, first two segments somewhat paler, rather dark rufobrunneous, legs dark brunneopiceous, front tarsi markedly paler, medial faces of tibiae, particularly of hind tibiae, blackened. Head of rounded quadrangular shape, about as long as wide (but appearing slightly longer than wide), rather parallel-sided behind eyes, posterior angles entirely rounded; eyes very small, flat, entirely blending with lateral contours of head, tempora considerably longer than eyes seen from above (ratio 1.96); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated slightly closer to posteriomedial margin of eye than to posterior mar-



Figs. 8-15. — 8, 9. *Quedius moeris*: 8, aedeagus, ventral view; 9, tergite 10 of female genital segment. — 10-15. *Quedius krali*: 10, apical portion of male sternite 8; 11, tergite 10 of male genital segment; 12, sternite 9 of male genital segment; 13, aedeagus, ventral view; 14, apical portion of aedeagus, ventral view; 15, apical portion of underside of paramere.

gin of head, two punctures behind it at posterior margin of head; temporal puncture situated distinctly closer to posterior margin of head than to posterior margin of eye; tempora with a few fine punctures; surface of head with extremely fine, dense microsculpture of transverse waves, with sparse micropunctulation, surface therefore appearing rather shiny. Antenna relatively long, moderately incrassate toward apex, segment 3 longer than segment 2 (ratio 1.42), segments 4 and 5 somewhat longer than wide, following segments about as long as wide, segments 9 and 10 vaguely wider than long, last segment as long as two preceding segments combined. Pronotum about as long as wide, widest at about middle, about equally narrowed anteriorly and posteriorly, with lateral margins continuously arcuate with broadly rounded base, transversely convex, posterior-lateral portions narrowly, vaguely explanate; dorsal rows each with three punctures; sublateral rows each with two punctures, posterior puncture situated before level of large lateral puncture; microsculpture similar to that on head, but excessively fine and dense, surface of pronotum therefore appearing even slightly shinier than that of head. Scutellum distinctly punctate medio-apically, surface with extremely fine microsculpture of transverse striae. Elytra relatively long, at base narrower than pronotum at widest point, scarcely widened posteriorly, at suture as long as, at sides longer than pronotum at midline (ratio 1.17); punctation and pubescence moderately coarse, dense, transverse interspaces between punctures mostly vaguely smaller than diameters of punctures, punctation appearing slightly asperate; pubescence piceous-black, rather strong and rigid; surface between punctures without microsculpture. Wings each folded once under elytron, very likely non-functional. Abdomen with tergite 7 (fifth visible) with fine whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites finer and somewhat sparser than that on elytra, becoming slightly sparser toward apex of each tergite, and in general toward apex of abdomen; first visible tergite appreciably more sparsely punctate and pubescent than tergite 3 (second visible); pubescence piceous-black, strong and rather rigid; surface between punctures with exceedingly dense and fine microsculpture of transverse striae.

Male. First four segments of front tarsus markedly, but in general only moderately dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 about as wide as apex of tibia; segment 4 narrower than preceding segments. Sternite 8 with two long setae on each side, with moderately wide and deep, obtusely triangular medio-apical emargination, small triangular area before emargination flattened and smooth (Fig. 10). Genital segment with tergite 10 obtusely triangular, with two feebly differentiated apical setae and with several shorter setae in front of them (Fig. 11); sternite 9 with rather short and narrow basal portion, apical portion slightly asymmetrical, with apex markedly emarginate, without differentiated apical or subapical setae (Fig. 12). Aedoeagus (Figs. 13–15) small; median lobe with almost parallel-sided middle portion, slightly dilated before rather short subacute apex. Paramere narrow and elongate, with parallel-sided middle portion, apical portion elongate-lanceolate shaped, with acute apex about reaching apex of median lobe; four fine setae at apex (medial pair longer than lateral pair, four fine setae at each lateral margin below

apex); sensory peg setae on underside of paramere numerous, forming two irregular, longitudinal lateral groups that connect anteriorly. Internal sac without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but less dilated, segment two slightly narrower than apex of tibia. Tergite 10 of genital segment about same as that of *Q. kishimotoi*.

Length 8.0 mm.

Type material. Holotype (male): China: "CHINA: SE Sichuan Jinfo Shan, 29°01'N 107°14'E 2,240 m, 26. VI. 1998 D. Král"/"1998 China Expedition J. Farkač, D. Král, J. Schneider & A. Smetana". In the SMETANA collection, Ottawa, Canada.

Allotype (female): China [Sichuan]: Nanchuan Shi, Mt. Jinfo Shan, Gufo Dong Cave, 1,950 m, 26–VIII–1999, F. WANG leg. In the collection of the National Science Museum (Natural History), Tokyo, Japan.

Paratypes: China: [Sichuan]: same data as allotype, but T. KISHIMOTO leg., 1 ♂, in the SMETANA collection; Nanchuan Shi, Mt. Jinfo Shan, Heifeng Dong Cave, 1,900 m, 26–VIII–1999, 1 ♀, S.-I. UENO leg. and 1 ♂, 1 ♀, T. KISHIMOTO leg. In the collection of the National Science Museum (Natural History), Tokyo, Japan (1 ♂, 1 ♀) and in the SMETANA collection (1 ♀).

Geographical distribution. *Quedius krali* is known only from Gufo Dong Cave, one of the Jinfo Dong cave system, and Heifeng Dong Cave in the top portion of the main peak of Jinfo Shan in southern Sichuan.

Bionomics. The holotype was taken in the dark part of the cave (about 50 m down from the entrance) from fine gravel substrate under a dried out human excrement. The other specimens from Gufo Dong Cave were taken from under stones on only slightly moist ground just below the narrow entrance section of the cave. The specimens from Heifeng Dong Cave (air temperature 12°C) were taken from under heaps of dead bamboo leaves washed in by previous floods, at three spots (one close to water and wet, the other two away from water in rather dry places) on the left bank of the subterranean stream flowing through the cave.

Recognition and comments. *Quedius krali* may be easily recognized among the species with the scutellum punctate, in addition to the characters on the aedeagus, by several external characters, namely by the very small, flat eyes, in combination with the position of both the posterior frontal and temporal punctures, by the extremely fine microsculpture on both the head and pronotum, and by the relatively long elytra with moderately coarse, dense punctation appearing slightly asperate, and the rather strong and rigid elytral pubescence. The only species that resembles *Q. krali* is another new, cave-dwelling species from Guizhou, *Q. kishimotoi* (see below).

Etymology. Patronymic, the species was named in honor of the collector, Dr. David KRÁL, Department of Zoology, Charles University, Prague, Czech Republic, my good friend, who keeps carrying the "coleopterological torch" received from his late father, Josef KRÁL, a renowned halticid specialist, who also was my good friend.

Quedius (Microsaurus) kishimotoi sp. nov.

(Figs. 16–22)

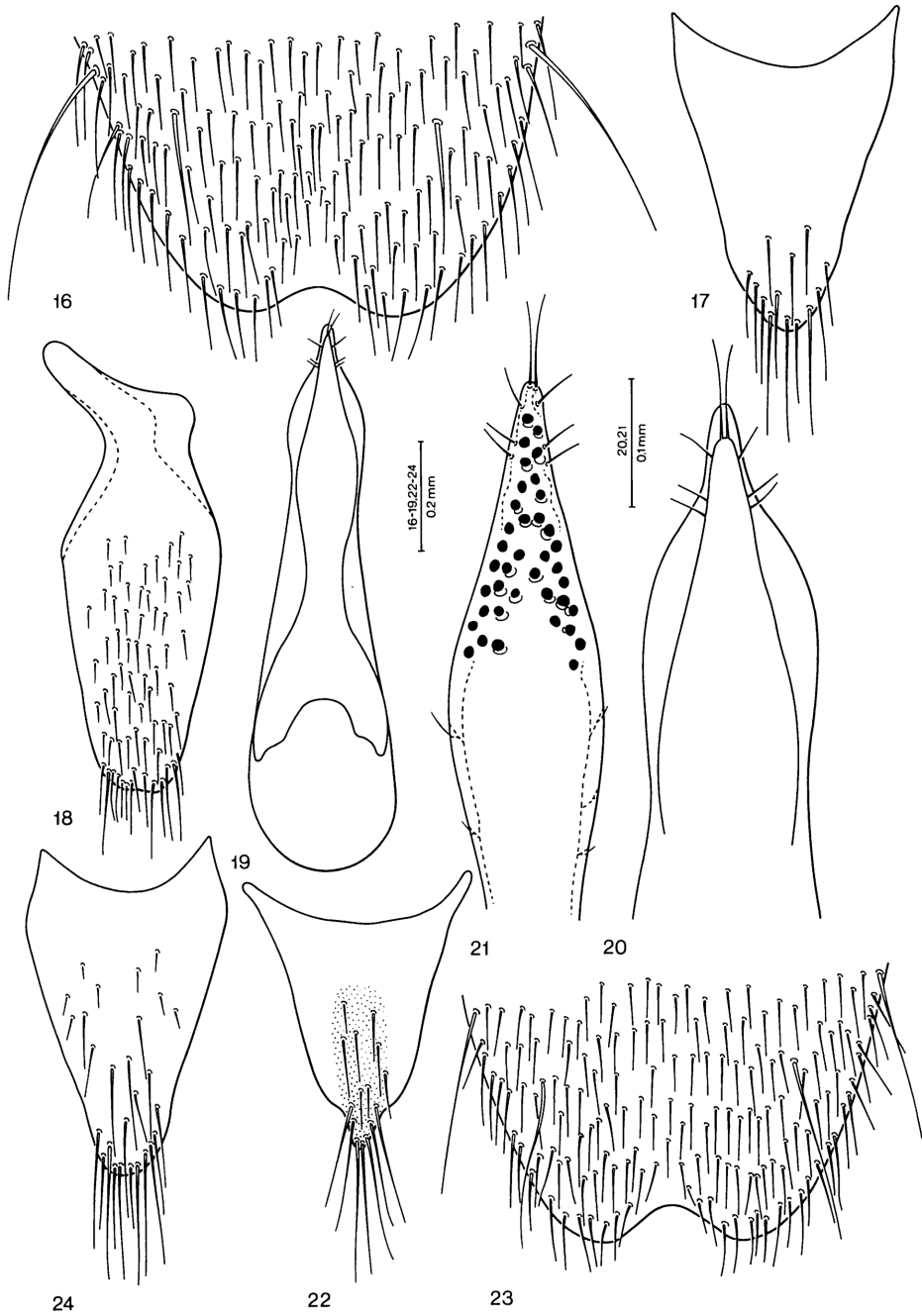
Description. In all characters, including chaetotaxy of head and pronotum, very similar to *Q. krali*, but different as follows: head black, pronotum piceous-black with margins narrowly, vaguely paler, elytra rufotestaceous, abdomen piceous, with lateral and apical portions of tergites somewhat paler, underside bicolored: ventral portion of head capsule partially, most of prosternum, front coxae, portions of metasternum and basal abdominal sternites testaceobrunneous to rufobrunneous, legs in general somewhat paler with paler tarsi (but otherwise with same color pattern); or head black, pronotum brunneopiceous with lateral portions indefinitely paler, elytra rufobrunneous, abdomen piceous with slightly paler apex, underside piceous-black, except deflected portions of pronotum and prosternum, and front and middle coxae brownish; legs more or less uniformly piceobrunneous (but with medial faces of middle and hind tibiae darkened). Head slightly wider than long (ratio 1.18), therefore appearing somewhat shorter and wider (but smaller and narrower in female, about as long as wide), eyes slightly larger and more convex, tempora somewhat less considerably longer than eyes seen from above (ratio 1.71); microsculpture on surface of head similar to that of *Q. krali*, but slightly more deeply engraved, surface therefore appearing less shiny. Antenna somewhat shorter, outer segments slightly shorter, appearing vaguely wider than long. Pronotum appearing wider, slightly wider than long (ratio 1.15), widest at about posterior third, slightly more narrowed anteriorly than posteriorly; surface with microsculpture similar to that of *Q. krali*, but somewhat more deeply engraved, surface therefore appearing less shiny.

Male. First four segments of front tarsus similar to those of *Q. krali*, but somewhat more dilated, segment 2 slightly wider than apex of tibia (ratio 1.12). Sternite 8 with medioapical emargination vaguely wider and deeper (Fig. 16). Genital segment with tergite 10 not appreciably different (Fig. 17); sternite similar, but with two vaguely differentiated apical setae, and with apex truncate, not emarginate (Fig. 18). Aedoeagus (Figs. 19–21) quite similar to that of *Q. krali*, but median lobe more distinctly widened apically and with attenuated apical portion slightly narrower, longer and sharper; paramere with lancet-shaped apical portion somewhat longer and more attenuate anteriorly, sensory peg setae on underside more numerous, almost entirely covering apical portion of paramere and extended into short, posterior lateral group on each side.

Female. First four segments of front tarsus similar to those of male, but slightly less dilated, segment 2 about as wide as apex of tibia. Genital segment with tergite 10 narrowly pigmented medioapically, with appreciably differentiated, short subacute apical portion, with numerous setae at and near apex, and with several shorter setae in front of them on pigmented portion (Fig. 22).

Length 7.8–8.1 mm.

Type material. Holotype (male) and allotype (female): China: “[CHINA



Figs. 16–24. — 16–22. *Quedius kishimotoi*: 16, apical portion of male sternite 8; 17, tergite 10 of male genital segment; 18, sternite 9 of male genital segment; 19, aedeagus, ventral view; 20, apical portion of aedeagus, ventral view; 21, apical portion of underside of paramere; 22, tergite 10 of female genital segment. — 23, 24. *Quedius feihuensis*: 23, apical portion of male sternite 8; 24, tergite 10 of male genital segment.

Guizhou] Shuicheng Xian, Shega, Anjia Yan Cave (alt. 2,050 m), 17-IX-1998, Toshio KISHIMOTO leg.” In the collection of the National Science Museum (Natural History), Tokyo, Japan.

Paratypes: China: [Guizhou]: same data as holotype, 1 ♂, in the SMETANA collection, Ottawa, Canada; Shuicheng Xian, Muqiao-cun, Shen Dong Cave (alt. 1,860 m) 16-IX-1998, Y. NISHIKAWA leg., 1 ♂, in the collection of the National Science Museum (Natural History), Tokyo.

Geographical distribution. At present, *Q. kishimotoi* is known only from two caves in northwestern Guizhou.

Bionomics. The specimens from the limestone Anjia Yan Cave were taken, together with those of *Strouhalium gracilicorne*, from muddy spaces among large rocks in the boulder chamber of the cave, mostly from under plant debris. The specimen from Shen Dong Cave was found clinging to a rotten log at the bottom of one of the vertical drops near the entrance shaft of the cave. The cave itself is a subvertical ponor opening at the lowest corner of a large doline.

Recognition and comments. *Quedius kishimotoi* may only be confused with *Q. krali* from Sichuan (see above), but it differs by the characters given above.

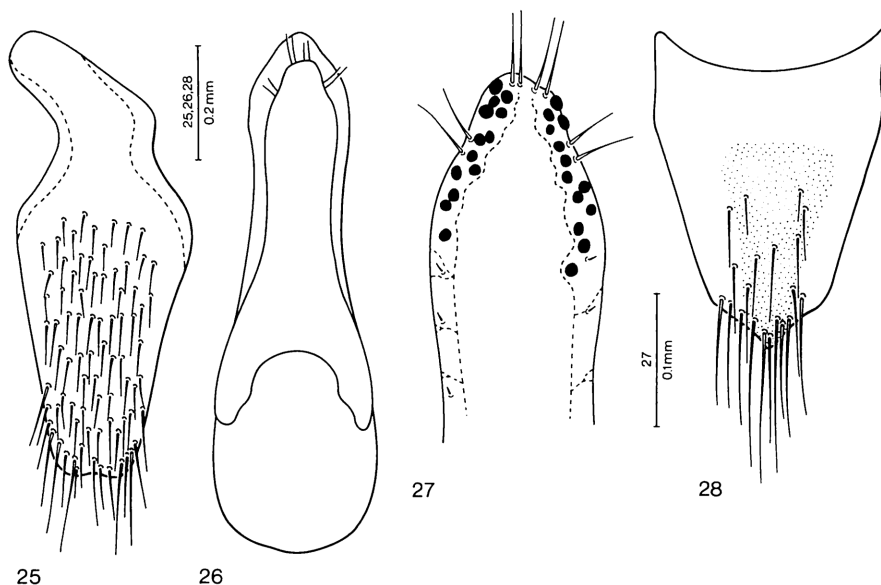
The two separate populations of *Q. kishimotoi* differ in coloration, but I am unable to detect any other characters that would justify a separation, even at subspecific level. However, since only very limited series of specimens is available at present, particularly of the population from Shen Dong Cave, the definite assessment of these populations must await the availability of further specimens for study. The population from Anjia Yan Cave is the one with the pale elytra and bicolored underside (see above). Both Anjia Yan and Shen Dong Caves harbour the cave-dwelling trechine genus *Guizhaphaenops* VIGNA TAGLIANTI, 1997, *G. zorzini* VIGNA TAGLIANTI, 1997 in the former, and a new species in the latter (UÉNO, personal communication).

Etymology. Patronymic, the species was named in honor of the collector, Dr. T. KISHIMOTO, Tokyo, Japan.

Quedius (Microsaurus) feihuensis sp. nov.

(Figs. 23–28)

Description. Piceous-black, elytral suture quite narrowly, apical margins of abdominal tergites and apex of abdomen slightly, inconspicuously paler; head and pronotum vaguely, abdomen more distinctly iridescent; maxillary and labial palpi testaceous-brunneous, antennae with first three segments piceous-black, base of second segment rufous, remaining segments brunneous, legs brunneous with paler tarsi, medial faces of front and particularly middle tibiae markedly darkened, hind femora and tibiae entirely piceous to piceous-black. Head of rounded quadrangular shape, indistinctly wider than long (ratio 1.1), slightly narrowed posteriad behind eyes, posterior angles obsolete; eyes moderately large and convex, slightly protruding from lateral contours of head, tempora slightly longer than eyes seen from above (ratio 1.14); no additional



Figs. 25–28. — 25–27. *Quedius feihuensis*: 25, sternite 9 of male genital segment; 26, aedeagus, ventral view; 27, apical portion of underside of paramere; 28, tergite 10 of female genital segment.

setiferous punctures between anterior frontal punctures; posterior frontal puncture and temporal puncture both situated closer to posterior margin of head than to posterior margin of eye, two punctures behind posterior frontal puncture at posterior margin of head; tempora with a few very fine punctures; surface of head with very fine and dense microsculpture of transverse waves with intermixed micropunctulation. Antenna short, hardly reaching middle of pronotum when reclined, slightly incrassate toward apex, segment 3 slightly longer than segment 2 (ratio 1.22), segment 4 as long as wide, segment 5 slightly, segments 6–10 increasingly wider than long, last segment as long as preceding two segments combined. Pronotum slightly wider than long (ratio 1.12), widest at about posterior third, slightly more narrowed anteriorly than posteriorly, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not explanate; dorsal rows each with three very fine punctures (allotype with only two punctures in right dorsal row); sublateral punctures each with only two punctures, posterior punctures situated distinctly before level of large lateral puncture; microsculpture similar to that on head, but denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Wings fully developed. Elytra moderately long, at base narrower than pronotum at widest point, vaguely widened posteriorly, at suture about as long as, at sides somewhat longer than pronotum at midline (ratio 1.20); punctation and pubescence fine and moderately dense, transverse interspaces between punctures mostly about twice as large as diameters of punctures; pubescence piceous; surface between punctures without microsculpture. Wings fully de-

veloped. Abdomen with tergite 7 (fifth visible) with distinct whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites denser and slightly finer than those of elytra, almost evenly covering surface of each tergite, but in general becoming distinctly finer toward apex of abdomen; pubescence piceous; surface between punctures with exceedingly dense and fine microsculpture of transverse striae.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 about as wide as apex of tibia; segment 4 narrower than preceding segments. Sternite 6 with small patch of denser pubescence in middle; sternite 8 with two long setae on each side, regular setation fine, with moderately wide and deep, obtusely triangular medioapical emargination, very small triangular area before emargination flattened and smooth (Fig. 23). Genital segment with tergite 10 rather small, with arcuate apex, with numerous setae at and near apex, and with shorter setae in front of them (Fig. 24); sternite 9 with basal portion small, short and narrow, apical portion rather large and wide, with apex broadly truncate-subsinuate, without appreciably differentiated apical or subapical setae (Fig. 25). Aedoeagus (Figs. 26, 27) rather small, short and stout; median lobe moderately constricted in middle portion, anteriorly narrowed into short, subacute apex. Paramere markedly narrower than median lobe, parallel-sided in middle portion, with apex of apical portion narrowly subtruncate and not reaching apex of median lobe; four fine setae at apex, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere forming two irregular lateral rows; internal sac without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but indistinctly less dilated; segment 2 vaguely narrower than apex of tibia (ratio 0.92). Genital segment with tergite 10 slightly pigmented medially, anteriorly rather abruptly narrowed into subacute apex, with numerous setae at apex and with shorter setae in front of them (Fig. 28).

Length 7.8–8.0 mm.

Type material. Holotype (male) and allotype (female): China: “[China] Hunan Pv. Longshan X., Huoyan, Feihu Dong Cave (260 m) 22–IX–1997 T. KISHIMOTO leg.” Holotype in the collection of the National Science Museum (Natural History), Tokyo, Japan. Allotype in the SMETANA collection, Ottawa, Canada.

Geographical distribution. At present, *Q. feihuensis* is known only from Feihu Dong Cave near Longshan in northwestern Hunan.

Bionomics. The two specimens of the original series were taken from under stones lying on the muddy floor of a large chamber not far from the large entrance, still in a dim light. The cave-dwelling trechine *Cathaiaphaenops delprati* DEUVE, 1996 lives in the same habitat (UÉNO, personal communication).

Recognition and comments. *Quedius feihuensis* is in all characters, including the shape of the aedoeagus, and the presence of the small patch of denser pubescence in the middle of the male sternite 6, similar to *Q. mnemon* SMETANA, 1995, described from near Beijing (Xiaolongmen), but it differs from it by the larger eyes (ratio length

of tempora : length of eyes in *Q. mnemon* = 1.24), by the three basal segments of antenna dark and shorter, and by the in details different aedoeagus (Figs. 26, 27 and figs. 44, 45 in SMETANA, 1995).

The holotype of *Q. mnemon* has only two fine punctures in each of the dorsal rows on the pronotum; however, this may not be characteristic of the species, since some variability in this character seems to be present also in *Q. feihuensis* (see above); *Q. mnemon* may therefore normally have the usual three punctures in each of the dorsal rows.

Although both specimens of *Q. feihuensis* were collected from a cave, I have serious doubts that the species is a true cave-dweller. This is based mainly on the fact that the eyes are relatively large and convex, the appendages rather short (particularly the antennae), and that the species is similar, and obviously closely related, to a free-living species.

Etymology. The specific epithet has been derived from the name of the type locality: Feihu Dong Cave.

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My colleagues Y. BOUSQUET and A. DAVIES, Agriculture and Agri-Food Canada, Research Branch, Ottawa, reviewed the original draft and provided useful comments. Mr. Go SATO from the same establishment carefully finished the line drawings.

要 約

A. SMETANA : 中国産ツヤムネハネカクシ亜族に関する知見. 15. *Strouhalium* 属の3およびツヤムネハネカクシ亜属の9. —— 洞窟ないし洞窟に近い環境にすむ種類を中心にして, 異常に広い分布域をもつ *Strouhalium gracilicorne* と, ツヤムネハネカクシ亜属の5種について, 分類学的ならびに生態学的な記述を行った. REITTER の基準標本が発見された結果, *Quedius lamus* SMETANA は, *Q. przewalskii* REITTER の下位同物異名であることが明らかになった. また, 四川省南部, 贵州省北西部および湖南省北西部の石灰洞からそれぞれ1新種を記載し, これらに *Q. krali*, *Q. kishimotoi* および *Q. feihuensis* の新名を与えた.

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