

Contributions to the Knowledge of the Quediina  
(Coleoptera, Staphylinidae, Staphylinini) of China  
Part 28. Genera *Strouhalium* SCHEERPELTZ, 1962 (section 5) and  
*Quedius* STEPHENS, 1829 (subgenus *Microsaurus* DEJEAN, 1833,  
section 16 and *Raphirus* STEPHENS, 1829, section 5)

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**Abstract** *Quedius* (*Microsaurus*) *longmen* is described as new from specimens collected in Longmen cave in Sichuan, the secondary male characters and the aedoeagus of *Q.* (*Raphirus*) *pluvialis* are described and illustrated. The genus *Strouhalium* SCHEERPELTZ, 1962 with the type species *S. gracilicorne* SCHEERPELTZ, 1962, is transferred to the subtribe Philonthina, the four subsequently added species *S. brezinai* SMETANA, 1995, *S. sichuanense* SMETANA, 1995, *S. farkaci* SMETANA, 1995 and *S. calculosum* SMETANA, 1995 are transferred to the genus *Heinzia* KORGE, 1971 (comb. nov.); *Heinzia* remains a member of the subtribe Quediina.

This is the twenty-eighth of a series of papers dealing with the Quediina of the People's Republic of China. It deals with the material collected recently by Dr. Shun-Ichi UENO and Shinzaburo SONE, mostly in two caves in Sichuan. *Quedius* (*Microsaurus*) *longmen* is described as new from specimens collected in Longmen cave in Sichuan, the secondary male characters and the aedoeagus of *Q.* (*Raphirus*) *pluvialis* are described and illustrated. The status of the genus *Strouhalium* SCHEERPELTZ, 1962 with the type species *S. gracilicorne* SCHEERPELTZ, 1962, and that of the four subsequently added species *S. brezinai* SMETANA, 1995, *S. sichuanense* SMETANA, 1995, *S. farkaci* SMETANA, 1995 and *S. calculosum* SMETANA, 1995 is discussed. The genus *Strouhalium*, with the type species *S. gracilicorne*, is transferred to the subtribe Philonthina and the four species *S. brezinai*, *S. sichuanense*, *S. farkaci*, and *S. calculosum* are transferred to the genus *Heinzia* KORGE, 1971, which remains in the subtribe Quediina.

*Strouhalium gracilicorne* SCHEERPELTZ

*Strouhalium gracilicorne* SCHEERPELTZ, 1962, 268.

*Strouhalium gracilicorne*: SMETANA, 1999, 519.

*New record.* China: [Sichuan]: “Beichuan Xian NE. SICHUAN 5–6–2007 S. Uéno leg.” / “Yuanwang Dong 1050 m alt. Yongcheng Cun Guixi Xiang”, 1 ♂, 2 ♀♀ (ASC, NSMT); same data, but S. SONE leg., 2 ♀♀ (NSMT)

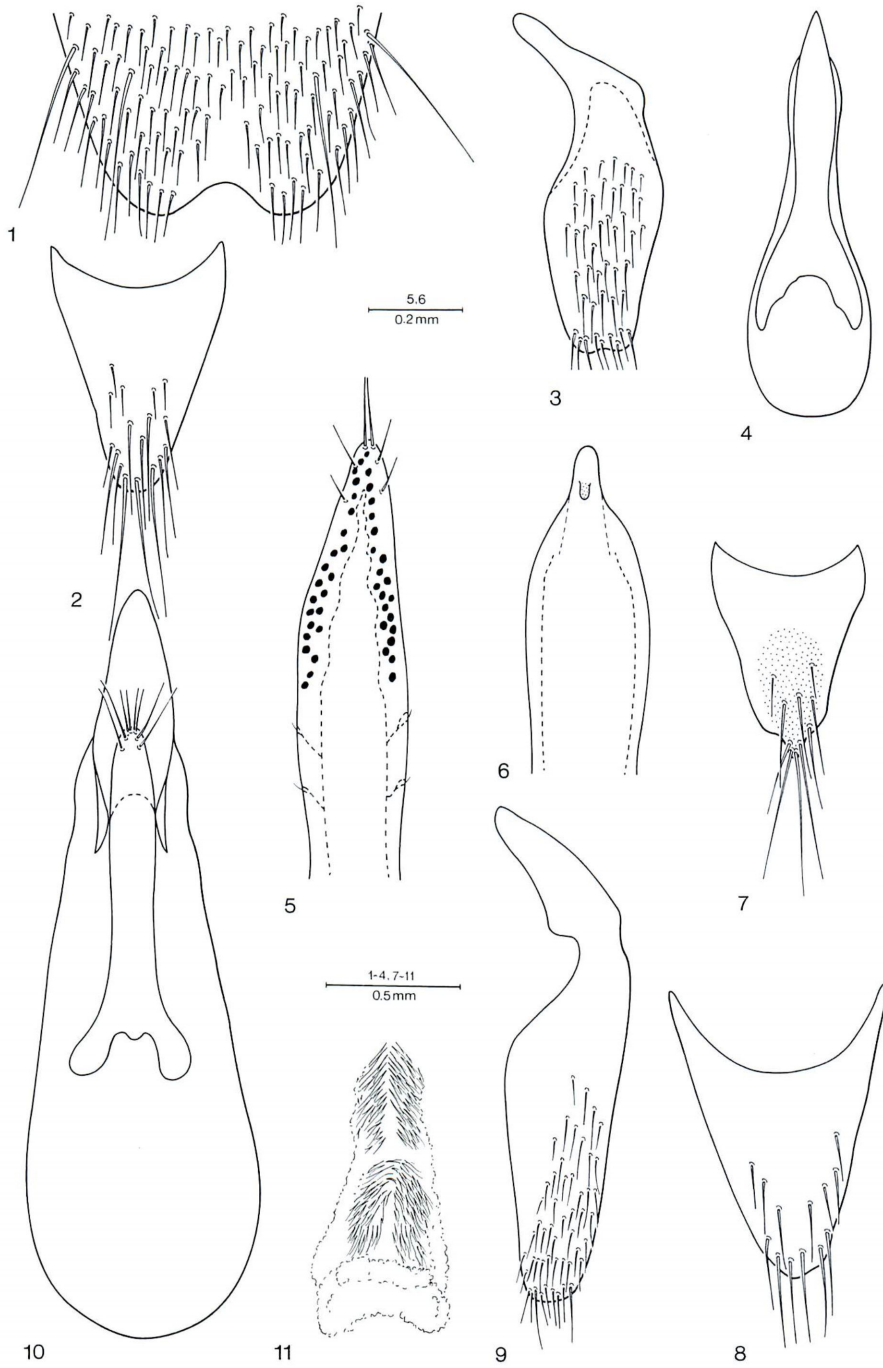
*Comments.* The geographical distribution and bionomics of *Strouhalium gracilicorne* were discussed by SMETANA (1999, 520), who reported the occurrence of this species in Anjia Yan Cave in Guizhou.

The specimens from Yuanwang Dong cave (well known show cave with mostly paved tourist trail) were taken near the innermost of the cave that was kept in natural condition, with wet clayey floor with small pools and fairly large, moist flowstones. The *Strouhalium* specimens were taken from under a decayed straw mat used for constructing or repairing paved tourist trail, and abandoned under an eaves-shaped flowstone about 30 cm high; the flowstone-covered floor under the straw mat was very wet.

*Strouhalium* remained for a long time a monotypic genus, until SMETANA (1995) added four additional species to the genus. The four species represented a separate lineage of the genus, different from the type species in that they in their habitus and chaetotaxy resembled the genus *Heinzia* KORGE, 1971. SCHEERPELTZ (*l.c.*) assigned his new genus *Strouhalium* to the tribe Quediini and this assignment was followed by all subsequent authors until now. However, some doubts about the correctness of this assignment arose recently, as well as about uniting the type species of the genus with the four species assigned to this genus subsequently by SMETANA (*l.c.*). Closer examination revealed that the type species *Strouhalium gracilicorne* lacks empodial setae between claws of all tarsi, a character state that separates the members of the subtribe Philonthina positively from members of any other subtribe of Staphylinini (SMETANA & DAVIES, 2000, 13). This character state alone forces the transfer of *Strouhalium gracilicorne* from the subtribe Quediina to the tribe Philonthina. The four species *S. brezinai* SMETANA, 1995, *S. sichuanense* SMETANA, 1995, *S. farkaci* SMETANA, 1995 and *S. calculosum* SMETANA, 1995 of the separate lineage mentioned above differ from *S. gracilicorne* not only by the different habitus mentioned above, but more importantly by the character state of the presence of empodial setae between the claws of all tarsi. Closer examination reveals that these species share most of the character states with the two members of the genus *Heinzia*, except for the difference in the setation of the second and third maxillary palpomeres (second palpomere with increased number of setae on apical portion and third palpomere entirely setose). This character state is shared with *Strouhalium gracilicorne* and was the main reason why I originally assigned them to the genus *Strouhalium*. As a result of these preliminary findings, the genus *Strouhalium* is hereby transferred to the subtribe Philonthina, although it is missing the dorsal basal

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Figs. 1–11. — 1–7. *Quedius longmen*: 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, apical portion of median lobe, ventral view, paramere removed; 7, tergite 10 of female genital segment. — 8–11. *Quedius pluvialis*: 8, tergite 10 of male genital segment; 9, sternite 9 of male genital segment; 10, aedeagus, ventral view; 11, internal sac.



ridge on the neck (see below), and the four species *S. brezinai*, *S. sichuanense*, *S. farkaci* and *S. calulosum* are transferred to the genus *Heinzia* (comb. nov.). Phylogenetic relationships of *Strouhalium* within the subtribe Philonthina remain to be established but it seems to be close to the genus *Philonthus* STEPHENS, 1829. The genus *Heinzia* is missing the dorsal basal ridge on the neck, which is one of the main character states of the subtribe Quediina shared only with Tachyporinae and a couple of genera of Philonthina: *Erichsonius* FAUVEL, 1874 and *Gabronthus* TOTTENHAM 1995 (SMETANA & DAVIES, 2000, 14), and now *Strouhalium*. Since the pronotal character states of the species of *Heinzia* fit well within the states considered typical for Quediina (SMETANA & DAVIES, 2000, 14), and since all species have well developed empodial setae between claws of all tarsi, the genus *Heinzia* remains a member of the subtribe Quediina, as we understand it at present.

*Quedius (Microsaurus) longmen* sp. nov.

(Figs. 1–7)

*Description.* Black; abdomen slightly iridescent; maxillary and labial palpi testaceous-brunneous, mandibles rufobrunneous, antennae piceous to piceous-black, first segment or first two segments dark rufobrunneous, legs piceous-black with medial faces of front tibiae and tarsi paler. Head of rounded quadrangular shape, about as long as wide (but appearing slightly longer than wide in most specimens), parallel-sided behind eyes, posterior angles entirely rounded; eyes small and rather flat, tempora considerably longer than eyes seen from above (ratio 1.72); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated slightly closer to posteriomedial margin of eye than to posterior margin 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 fine punctures; surface of head with extremely fine, dense microsculpture of transverse waves, with sparse micropunctulation. Antenna moderately long, moderately widened toward apex, segment 3 markedly longer than segment 2 (ratio 1.77), segments 4 and 5 somewhat longer than wide, following segments becoming gradually shorter, outer segments slightly wider than long, last segment about as long as two preceding segments combined. Pronotum about as long as wide, widest at about posterior third, more narrowed anteriorly than posteriorly, with lateral margins continuously arcuate with broadly rounded base, transversely convex, posteriolateral 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 superficial. Scutellum finely punctate and setose, surface with rudiments of microsculpture. Elytra relatively long, at base narrower than pronotum at widest point, slightly widened posteriad, at suture as long as, at sides longer than pronotum at midline (ratio 1.16); punctation and pubescence fine and moderately dense, transverse interspaces between punctures mostly slightly larger than diameters of

punctures; pubescence piceous-black; surface between punctures without microsculpture. Wings each folded once under elytron, probably non-functional. Abdomen with tergite 7 (fifth visible) with fine whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites finer and slightly denser than that on elytra, becoming slightly sparser toward apex of each tergite, and in general toward apex of abdomen; pubescence black; 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 deep and wide, obtusely triangular medioapical emargination, small triangular area before emargination flattened and smooth (Fig. 1). Genital segment with tergite 10 rather narrow with obtusely rounded apex, setose as in Fig. 2; sternite 9 with long and narrow basal portion, apical portion submarginate apically, with one or two differentiated subapical setae at each side (Fig. 3). Aedoeagus (Figs. 4–6) small and rather narrow; median lobe widely constricted in middle portion, then gradually widened into narrowly spoon-shaped apical portion with narrow, rod-like apex; paramere narrow and elongate, apical portion elongate-lancet shaped, with acute apex almost to entirely reaching apex of median lobe; two fine setae at apex, two finer setae at each lateral margin below apex; sensory peg setae on underside of paramere numerous, forming two longitudinal lateral groups connected anteriorly; internal sac without larger sclerotized structures.

**Female.** First four segments of front tarsus similar to those of male, but less dilated, segment 2 slightly narrower than apex of tibia. Tergite 10 of genital segment pigmented medioapically, with markedly differentiated, narrow, subacute apical portion, with three long setae at apex and with several shorter setae in front of them (Fig. 7).

Length 7.0–10.2 mm.

**Type material.** Holotype (male) and allotype (female): China: “Longmen Dong 960 m alt. Longmen Cun Longmen Zhen” / “Lushan Xian C. SICHUAN 8–VI–2007 S. UÉNO leg.”. Allotype (female): same data as holotype, but date 22–X–2006. Holotype and allotype in the SMETANA collection, Ottawa, Canada (to be eventually deposited in the Muséum d’Histoire naturelle, Genève, Switzerland).

Paratypes: China: [Sichuan]: same data as holotype, 5 ♂♂, 1 ♀ (ASC, NSMT); same data as allotype, 2 ♂♂, 1 ♀ (ASC, NSMT).

**Geographical distribution.** *Quedius longmen* is known only from the Longmen Dong cave in Lushan Xian, central Sichuan.

**Bionomics.** All specimens were collected in the cave at the paved tourist rest station with dustbins containing leftovers of lunches, confectioneries and juice bottles, all being attractants for cavernicoles. The specimens were taken in, under, or around the dustbins, together with several specimens of *Jujiroa satoi* S. UÉNO (see UÉNO, 2007, 21 for more details).

**Recognition and comments.** *Quedius longmen* is similar to *Q. krali* SMETANA,

1999 and *Q. kishimotoi* SMETANA, 1999, the former occurring in two caves of the Jinfo Dong cave system, Jinfo Shan, southern Sichuan, and the latter in two caves in Shuicheng Xian in northwestern Guizhou. *Quedius longmen* differs from both of them by the darker coloration of the body and the appendages, the somewhat larger eyes, and by the differently shaped aedoeagus. The aedoeagus of *Q. kishimotoi* is actually shaped similarly, but it is markedly smaller and differs in some details, such as the number of sensory peg setae and the length of the two longitudinal groups they form, etc.

*Quedius longmen* varies in the body size, large males being markedly larger and more robust than the small males and females.

*Etymology.* The specific epithet is part of the name of the cave, meaning “dragon gate” in Chinese, the species occurs in, in apposition.

### *Quedius (Raphirus) pluvialis* SMETANA

(Figs. 8–11)

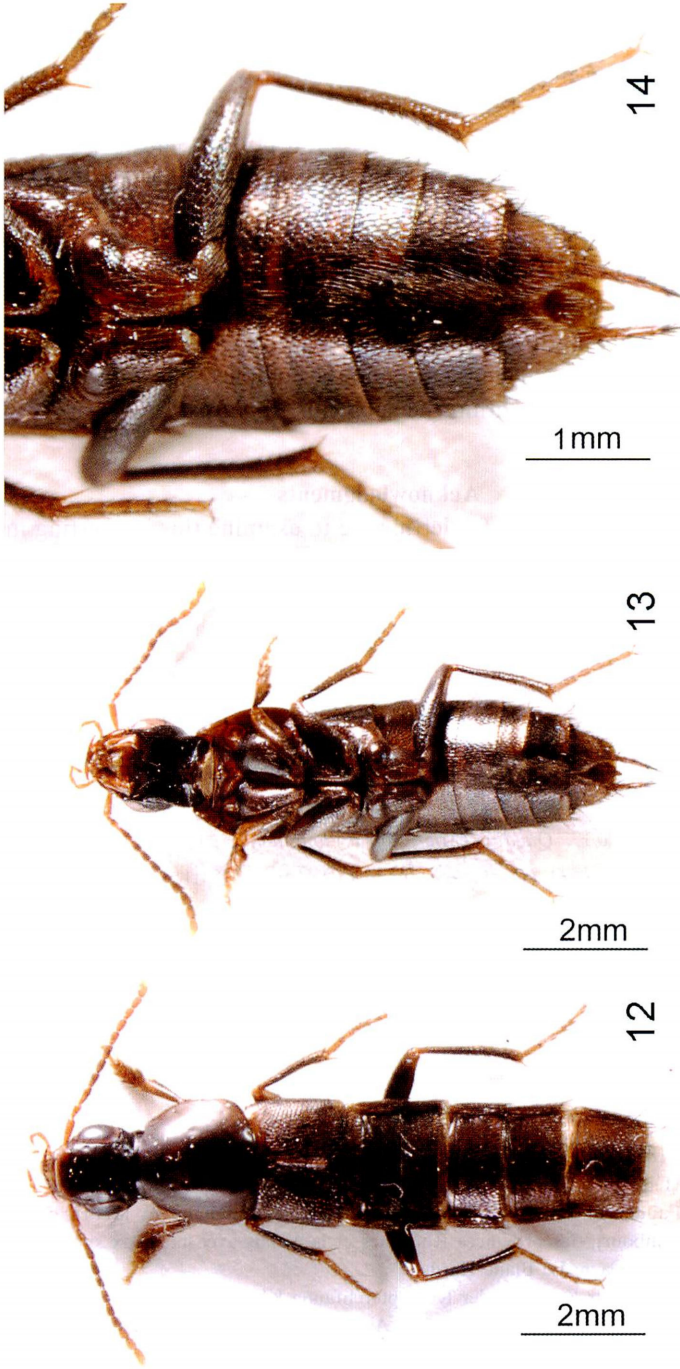
*Quedius pluvialis* SMETANA, 1998, 99.

*New record.* China: [Sichuan]: “Xilingxue Shan Dujuanlin, 2180 m, Dayi Xian C. Sichuan” / “SW. CHINA 11–VI–2007 S. Uéno leg.”, 2 ♂♂ (ASC, NSMT).

*Comments.* Both specimens of *Q. pluvialis* were taken by sifting dead arrow-bamboo leaves, accumulated in a thicket of arrow-bamboo growing as undergrowth in a *Rhododendron* forest.

*Quedius pluvialis* was described from a single female taken at Emei Shan, Sichuan, and the holotype was until now the only known specimen of the species. The male specimens from Xilingxue Shan differ somewhat from the female holotype in being larger and more robust, with the antennae markedly longer and paler in color, and the pronotum more voluminous and more distinctly narrowed anteriorly (Fig. 11). The differences may or may not be considered as male secondary sexual characters, but I tentatively consider the specimens as conspecific with the holotype, unless different male(s) are found at Emei Shan. The distinctive male sexual characters and the equally distinctive aedoeagus of the species are described below.

*Male.* First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally: segment 2 slightly wider than apex of tibia (ratio 1.18); segment 4 narrower than preceding segments. Sternite 5 with punctuation and pubescence finer and denser along midline than elsewhere on sternite, gradually becoming denser and pubescence denser and longer toward posterior margin; sternite 6 with posterior margin slightly concave, middle portion of sternite with punctuation much finer and denser than elsewhere on sternite, gradually becoming even denser and pubescence denser and longer toward posterior margin; sternite 7 with posterior margin widely, inconspicuously, subarcuately emarginate at middle, with punctuation and pubescence of similar character as described for sternite 6; sternite 8 with deep, wide, almost semicircular medioapical emargination, large triangular area



Figs. 12–14. *Quedius ptuvialis*: 1, habitus, dorsal view; 2, habitus, ventral view; 3, male secondary sexual characters on abdominal sternites, detail.

before emargination flattened and smooth, flanked mediobasally by narrow field of denser punctation and pubescence extending toward base of sternite (Figs. 12, 13). Genital segment with tergite 10 narrow, evenly narrowed toward irregularly arcuate apex, with some stronger apical setae and with not numerous, finer setae around them (Fig. 8); sternite 9 large, elongate, with long basal portion, apical portion subarcuate apically, with two stronger subapical setae, setose as in Fig. 9. Aedoeagus (Figs. 10, 11) very large and voluminous, median lobe gradually narrowed anteriorly, bearing anteriorly a plate of quite characteristic shape; paramere narrow and very long, mostly parallel-sided, with narrowly arcuate apex not quite reaching middle of apical plate of median lobe; underside of paramere without sensory peg setae, apex of paramere with eight apical setae of unequal length; internal sac with two paired sclerites, as in Fig. 11.

The male secondary sexual characters and the complex shape of the aedoeagus of *Q. pluvialis* are at present unique within the subgenus *Raphirus*.

#### Acknowledgments

I thank Dr. Shun-Ichi UÉNO for letting me to examine this interesting material and for letting me to keep some specimens for my collection. I thank Mr. Go SATO, Agriculture and Agri-Food Canada, Ottawa, for carefully finishing the line drawings, and my colleague Vasily Grebennikov for producing the habitus illustrations.

#### 要 約

A. SMETANA: 中国産ツヤムネハネカクシ亜族に関する知見. 28. *Strouhalium* 属およびツヤムネハネカクシ属 (亜属 *Microsaurus* および *Raphirus*). — 中国四川省の礫岩洞からツヤムネハネカクシ属の1新種を記載し, *Quedius (Microsaurus) longmen* と命名した. また, これまでに雌1個体しか知られていなかった *Q. (Raphirus) pluvialis* の雄を西嶺雪山から記録し, 二次性徴と交尾器の特徴を初めて明らかにした. さらにこれまでツヤムネハネカクシ亜族に含まれていた *Strouhalium gracilicorne* を北川県の猿王洞から記録するとともに, その特徴的な体形や, とくに爪間毛を欠くことから, この属をコガシラハネカクシ亜族に移した. 同属のものとして1995年に記載された4種はツヤムネハネカクシ亜族に残し, *Heinzia* 属に移籍した.

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