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

Part 13. Genus *Quedius* STEPHENS, 1829. Subgenus *Microsaurus* DEJEAN, 1833. Section 8

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Abstract Taxonomic and faunistic data on the species of the genus *Quedius*, subgenus *Microsaurus*, from the People's Republic of China are provided. Seven species are described as new: *Q. holzschuhi* (from Sichuan), *Q. turnai* (from Sichuan), *Q. wrasei* (from Sichuan), *Q. liau* (from Shaanxi), *Q. hailuogou* (from Sichuan), *Q. zheduo* (from Sichuan), *Q. tronqueti* (from Sichuan). The male sexual characters of *Q. echion* SMETANA, 1997 a are described and illustrated for the first time, the characters of the male genital segment of *Q. kubani* SMETANA, 1996 b are described and illustrated for the first time, and the variability of *Q. ephialtes* SMETANA, 1997 a is briefly discussed. *Quedius adjacens* CAMERON, 1926 is recorded for the first time from Shaanxi, *Q. bito* SMETANA, 1996 a from Tibet, *Q. chremes* SMETANA, 1996 a from Gansu and Shaanxi, *Q. acco* SMETANA, 1996 a from Yunnan, *Q. erythras* SMETANA, 1997 a from Sichuan, and *Q. klapperichi* SMETANA, 1996 b from Hebei.

Key words: Coleoptera, Staphylinidae, *Quedius*, China, new species, new distribution records.

This is the thirteenth of the series of papers dealing with the Quediina of the People's Republic of China. It deals with the species of the subgenus *Microsaurus* DEJEAN, 1833 and offers both additional taxonomic, bionomic and faunistic information on many recently described species, and descriptions of further new species. In Section 7 of *Microsaurus* (SMETANA, 1997 b, 451), I announced that a preliminary key to the Chinese species of *Microsaurus* will be published in the next part dealing with this subgenus. However, due to the constant flow of additional new species, I decided to postpone the publication of this key, to avoid the key to become obsolete too fast. During the course of the study it became naturally apparent that the Chinese species of *Microsaurus* may be assigned to numerous species-groups, a few of which were already established (see SMETANA, 1996 a for details). However, for the same reasons as above, I prefer to postpone the establishment of these species-groups until a larger segment of the Chinese fauna is known.

This paper also contains information based on the material that was sent to me for study by Mr. ZHENG Fa-Ke, Sichuan Teachers College, Nanchong, Sichuan. I was

much pleased to be able to include this information and I hope that this is just the beginning of a mutually beneficial cooperation that is in general so much needed, as far as the Chinese coleopterologists are concerned.

Quedius (*Microsaurus*) *inquietus* (CHAMPION)

Velleius inquietus CHAMPION, 1925, 107.
Quedius inquietus: SMETANA, 1997 c, 129.

New record. China: [Yunnan]: Yulongshan Mts., Baishui, 27.08 N 100.14 E, 2900–3500 m, 7.–12. VII. 90, V. KUBÁŇ, 1 ♀, in the SMETANA collection, Ottawa.

Comments. Only two records of this species from China were known previously: one from Sichuan (SMETANA, 1995 a, 235), and one from Yunnan (SMETANA, 1997, 129).

Quedius (*Microsaurus*) *adjacens* CAMERON

Quedius adjacens CAMERON, 1926, 368.

New records. China: [Sichuan]: "Mt. Jin fo", 10. V. 87, ZHENG Fa-Ke, 1 ♂, 1 ♀, in the collection of the Sichuan Teachers College, Nanchong, Sichuan. [Shaanxi]: Nanwutai, 17. IX. 95, R. DE ROUGEMONT, 2 ♀♀, in the ROUGEMONT collection, London, and in the SMETANA collection, Ottawa.

Comment. This is the first record of this species from Shaanxi; the Sichuan record is the southernmost record of this species in China. It was previously known only from Mt. Emei (see SMETANA, 1996 a, 1).

Quedius (*Microsaurus*) *beesoni* CAMERON

Quedius beesoni CAMERON, 1932, 285; SMETANA, 1996 a, 2.

New records. China: [Sichuan]: Daxue Shan, Hailuogou Glacier Park, Camp 2, 2500–2700 m, 29.35.16 N, 102.01.53 E, 30.–31. V. 97, M. SCHÜLKE, 1 ♂, in the SCHÜLKE collection, Berlin; Qincheng Shan, NW Chengdu, 650–700 m, 30.54 N, 103.33 E, 18. V. 97, A. WRASE, 1 ♂, 1 ♀, in the SMETANA (Ottawa) and SCHÜLKE (Berlin) collections; same, date 3.–4. VI. 97, M. SCHÜLKE, 1 ♂, in the SCHÜLKE collection; "Mt. Jinfo", 10. V. 87, ZHENG Fa-Ke, 2 ♂♂, 1 ♀, in the collection of the Sichuan Teachers College, Nanchong. [Guangxi]: Mt. Miao'er Shan, Tieshan Ping, Xing'an Xian, 2000 m, 23. V. 96, S. UÉNO, 1 ♀, in the National Science Museum, Tokyo, Japan; [Shaanxi]: "Chin-ling Mts., Shensi, E. B. Apr.–May, 1904" (=Qin Ling Shan Mts.), 1 ♀, in the SMETANA collection.

Comments. Important additional records of this species from China (first records for Guangxi and Shaanxi), that indicate that *Q. beesoni* is apparently widely distributed at lower mountain elevations. For additional information see SMETANA 1996 a, 2.

Quedius (*Microsaurus*) *bito* SMETANA

Quedius bito SMETANA, 1996 a, 12.

New records. China: [Sichuan]: Kangding, 2800 m, 21. VII. 98 [C88], A. SMETANA, 10 ♂♂, 7 ♀♀, in the SMETANA collection; Mts. 70 km NNW Barkam, 3000–4000 m, 22. VII. 95, J. KALÁB, 1 ♀, in the SMETANA collection. [Yunnan]: Yulong Mts., 27.10 N 100.13 E, 16.–19. VI. 95, BOLM leg., 1 ♀, in the Naturhistorisches Museum, Basel, Switzerland. [Tibet]: (Nyingtri) Serkyim-la (SW-Seite), 3800–3900 m, 27.–28. VI. 95, W. HEINZ, 1 ♂, in the SMETANA collection.

Comments. This is the first record of this species from Tibet, and second record from Yunnan.

The long series of specimens from Kangding was collected in a secondary coniferous forest by sifting moist debris and needles under a pile of branches left behind from a cut down *Picea* tree. This habitat seems to be one of the preferred habitats of this species (see SMETANA, 1996 a, 9).

Quedius (*Microsaurus*) *chremes* SMETANA

Quedius chremes SMETANA, 1996 a, 10.

New records. China: [Gansu]: southern Gansu, Wenxian, 900 m, VI. 96, M. HÄCKEL, 1 ♀, in the SMETANA collection, Ottawa; [Sichuan]: Kangding, VII. 1992, 1 ♀, in the Naturhistorisches Museum, Wien, Austria; Jiu Ding Shan, 3300–3500 m, 31. VII.–1. VIII. 94, M. TRONQUET, 1 ♂, in the SMETANA collection; Daxue Shan, E Tsheto-La Pass W Kangding, 30.01 N 101.52 E, 3500 m, 25. V. 97, WRASE, SCHÜLKE, 2 ♀♀, in the SCHÜLKE collection, Berlin, Germany. [Shaanxi]: Qin Ling Shan, mountain W pass on autoroute km 70, 47 km S Xian, 33.51 N 108.47 E, 2300–2500 m, 26.–30. VIII. 95, M. SCHÜLKE, 1 ♀, in the SCHÜLKE collection, Berlin.

Comments. These are the first records of this species from both Gansu and Shaanxi.

Quedius (*Microsaurus*) *decius* SMETANA

Quedius decius SMETANA, 1996 a, 12.

New record. China: [Sichuan]: Gongga Shan, Hailuogou, in front of Glacier 1, 29.35 N 102.00 E, 2850 m, 7. VII. 98, [C76], A. SMETANA, 1 ♀, in the SMETANA collection.

Comments. This is the first specimen of this species with the apex of the abdomen uniformly black like the rest of the abdomen (not reddish-yellow).

The specimen was taken by sifting debris and humus among the rocks of a talus slope overgrown by a secondary deciduous forest.

Quedius (*Microsaurus*) *acco* SMETANA

Quedius acco SMETANA, 1996 a, 4.

New record. China: [Yunnan]: Baishui, 27°N 100°12′E, 10–17. VI. 98, E. KUČERA, 1 ♂, in the SMETANA collection.

Comments. This is the third record of this species from Yunnan.

Quedius (*Microsaurus*) *otho* SMETANA

Quedius otho SMETANA, 1995 b, 243.

New record. China: [Sichuan]: 20 km N Sabdé, 3200 m, 29°35N 102°23E, 15. VII. 98 [C83], A. SMETANA, 1 ♀, in the SMETANA collection.

Comments. The specimen was taken by sifting a pile of old rotting mushrooms. This is the second record of this species from Sichuan (it was previously known only from Gongga Shan massive, see SMETANA, 1995 b, 244).

Quedius (*Microsaurus*) *becvari* SMETANA

Quedius becvari SMETANA, 1996 b, 119.

New record. China: [Sichuan]: Daxue Shan, Gongga Shan Mts., Hailuogou Glacier Park, 29.36 N 102.04 E, river valley 1 km above Camp 1, 2100 m, 28.–31. V. 97, A. PÜTZ, 1 ♀, in the SMETANA collection.

Comment. This is the second record of this species from Sichuan (see SMETANA, 1997 b, 455).

Quedius (*Microsaurus*) *erythras* SMETANA

Quedius erythras SMETANA, 1997 a, 58.

New records. China: [Sichuan]: Pass Zheduo Shankou W Kangding, E slope, 3850 m, 29 58′N 101°23′E, 18. VII. 98 [C85], A. SMETANA, 3 ♂♂, 5 ♀♀, in the SMETANA collection; (Ganzi pref.), Daxue Shan, 5 km E Kangding, river valley, cca 3000 m 30.03 N 102.00 E, 20.–23. V. 97, 1 ♂, A. PÜTZ, in the SMETANA collection; same, 5 km E Kangding, creek valley, 2500–2800 m, 30.03.28 N 102.00.15 E, 23. V. 97, M. SCHÜLKE, 1 ♂, in the SCHÜLKE collection.

Comments. These are the first records of this species from Sichuan. It was previously known only from southwestern Gansu (see SMETANA, 1997 a, 59).

Quedius (*Microsaurus*) *ephialtes* SMETANA

(Figs. 1, 2)

Quedius ephialtes SMETANA, 1997 a, 60.

New records. China: [Sichuan]: Gongga Shan, Hailuogou, Lake above Camp 2,

2750 m, 29°35 N 102°00 E, 4. VII. 98, A. SMETANA, 4 ♂♂, in the SMETANA collection; Daxue Shan, Hailuogou Glacier Park, Camp 1, 2100 m, 29.36.00 N 102.03.35 E, 27.–31. V. 97, SCHÜLKE and WRASE collectors, 11 ♂♂, in the SCHÜLKE and SMETANA collections; same, river valley ca. 1 km above Camp 1, 2100 m, 28.–31. V. 97, A. PÜTZ, 7 ♂♂, in the SMETANA and SCHÜLKE collections; same, Camp 2, 2500–2800 m, 29.35 N 101.02 E, 30.–31. V. 97, WRASE, 2 ♂♂, in the SCHÜLKE collection; (Ganzi Pref.), Daxue Shan, 5 km E Kangding, river valley, ca. 3000 m, 30.03 N 102.00 E, A. PÜTZ, 2 ♂♂, in the SMETANA collection; Daxue Shan, river valley 5 km E Kangding, 2500–2800 m, 30.03 N 102.00 E, 20.–23. V. 97, WRASE, in the SCHÜLKE collection; 15 km W Kangding, route 138, 3250 m, 29°57 N 102°54 E, 19. VII. 98 [C86], A. SMETANA, 2 ♂♂, 7 ♀♀, in the SMETANA collection.

Comments. Based on the amount of new material, *Q. ephialtes* seems to be fairly common in the mountain ranges of Daxue Shan; it is also somewhat variable in general body form (some specimens are smaller and more slender than those of the original series), in the shape of the head (it is often narrower), in the shape of the paramere of the aedoeagus, which is in some specimens markedly less dilated before the apical portion, and in the number of sensory peg setae, which may vary from three to six on each side of the medio-apical emargination (Figs. 1, 2).

Quedius (*Microsaurus*) *euander* SMETANA

Quedius euander SMETANA, 1997 a, 63.

New record. China: [Sichuan]: Gongga Shan, Hailuogou, Lake above Camp 2, 2750 m, 29.35 N 102.00 E, 4. VII. 98 [C74], A. SMETANA, 1 ♂, in the SMETANA collection.

Comments. The specimen was taken by sifting moist *Sphagnum* moss. At present, the species is known only from the Gongga Shan massive.

Quedius (*Microsaurus*) *echion* SMETANA

(Figs. 3–7)

Quedius echion SMETANA, 1997 a, 65.

New records. China: [Sichuan]: Songpan region, Erdao Lakes, 3250 m, 4. VIII. 94, M. TRONQUET, 1 ♂, 1 ♀, in the SMETANA collection; Songpan region, Zhaga Fall, 3050 m, 5. VIII. 94, M. TRONQUET, 1 ♀, in the SMETANA collection; Langmusi, 3500 m, 13. VII. 94 [C14], A. SMETANA, 1 ♂, 4 ♀♀, in the SMETANA collection.

Comment. Until now, the holotype of *Q. echion* was the only specimen known, taken at Langmusi in north-central Sichuan. There is a typographical error in the original description of *Q. echion* on page 66: the statement "Holotype (male)" has to be changed to "Holotype (female)".

Songpan is about 200 km SE of Langmusi. The additional specimens from the

type locality were previously accidentally overlooked and were therefore not included in the original description, which is hereby complemented with the male sexual characters:

Male. First four segments of front tarsus similar to those of female, but distinctly more dilated, segment two slightly wider than apex of tibia (ratio 1.18); segment four narrower than preceding three segments. Sternite 8 with three long setae on each side; with deep and very wide, obtusely triangular medio-apical emargination, narrow triangular area before emargination flattened and smooth; margin of emargination with numerous long setae, curved mediad, remaining setation of sternite very fine, short and sparse (Fig. 3). Genital segment with sternite 10 moderately wide, rather short, evenly narrowed toward obtusely arcuate apex, with two slightly differentiated apical setae and with numerous much shorter setae in front of them (Fig. 4); sternite 9 with relatively short basal portion, apical portion slightly emarginate medio-apically, only sparsely setose medio-apically, with two vaguely differentiated apical setae (Fig. 5). Aedoeagus (Figs. 6, 7) rather small, elongate; median lobe narrow, almost evenly narrowed into subacute apex with short medio-apical carina on face adjacent to paramere, appearing as small tooth in lateral view. Paramere relatively large, entirely covering median lobe and exceeding apex of median lobe, apex of paramere narrowly emarginate, almost appearing as bilobed; two fine setae at each side of emargination, two much smaller setae at each lateral margin far below apex; underside of paramere with nine sensory peg setae forming an irregular transverse group. Internal sac without larger sclerotized structures.

The body length of *Q. echion* varies between 5.8–6.8 mm.

***Quedius* (*Microsaurus*) *kubani* SMETANA

(Figs. 8, 9)

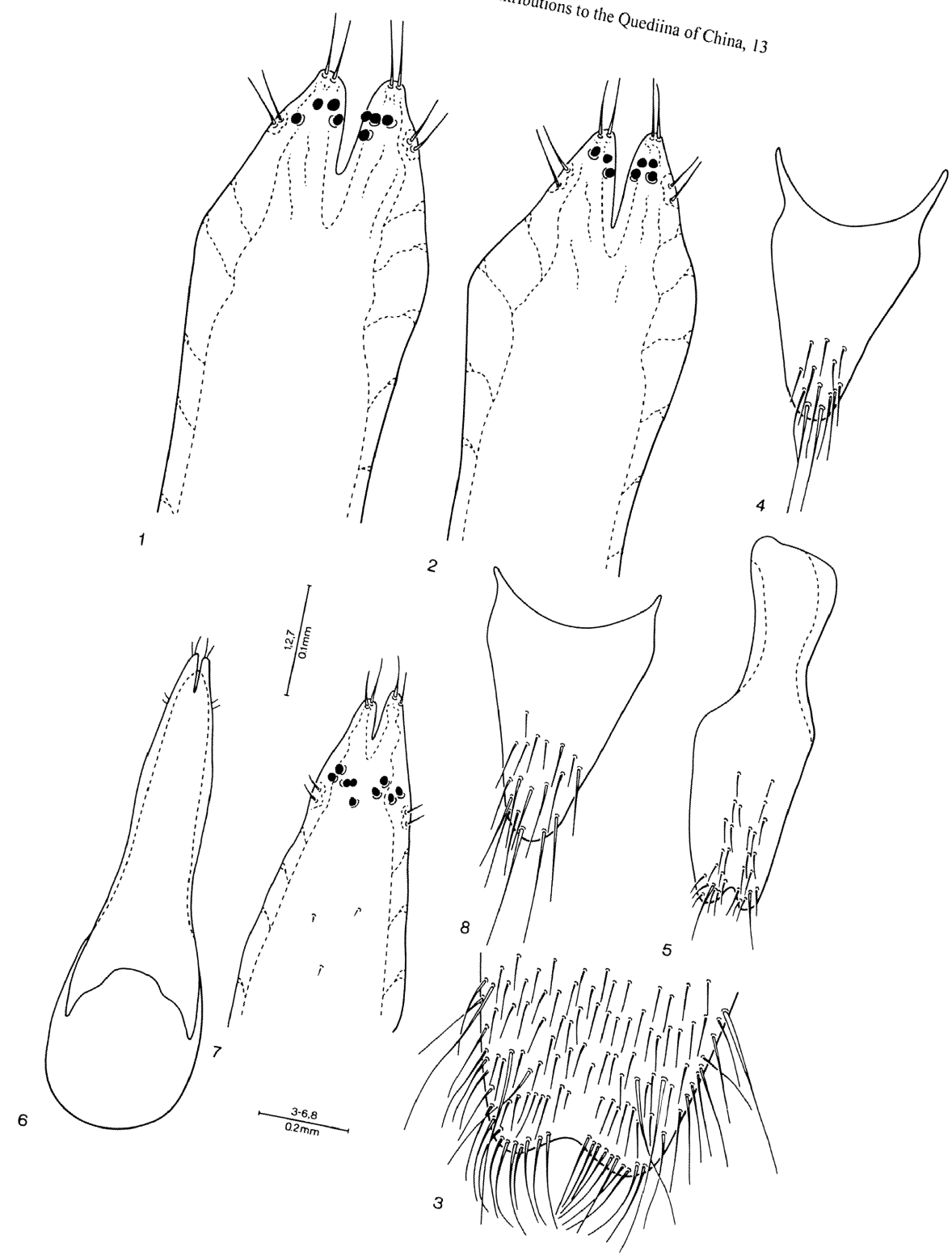
Quedius kubani SMETANA 1996 b, 121.

New record. China: [Yunnan]: Dali, above lake Erhai, 31. V. 95, S. BEČVÁŘ, 1 ♂, in the Naturhistorisches Museum, Wien, Austria.

Comments. The genital segments of all known specimens (males only) of this species were not available for study (see SMETANA, 1996 b, 123). The description of the characters of the male genital segment follows:

Male genital segment with tergite 10 moderately narrowed toward narrowly arcuate apex, with two feebly differentiated apical setae and with numerous shorter setae in front of them (Fig. 8); sternite 9 with long and narrow basal portion, apical portion subtruncate apically, without differentiated apical or subapical setae (Fig. 9).

Figs. 1–8. —— 1, 2. *Quedius ephialtes*: apical portions of underside of paramere. —— 3–7. *Quedius echion*: 3, apical portion of male sternite 8; 4, tergite 10 of male genital segment; 5, sternite 9 of male genital segment; 6, aedoeagus, ventral view; 7, apical portion of underside of paramere. —— 8. *Quedius kubani*: tergite 10 of male genital segment.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Quedius (*Microsaurus*) *klapperichi* SMETANA

Quedius klapperichi SMETANA, 1996 b, 123.

New record. China: [Hebei]: Yongnian, 36.47 N 114.30 E, VI–XI. 95, D-Vac & Barber traps, Shuiqiang LI coll., 1 ♀, in the SCHÜLKE collection.

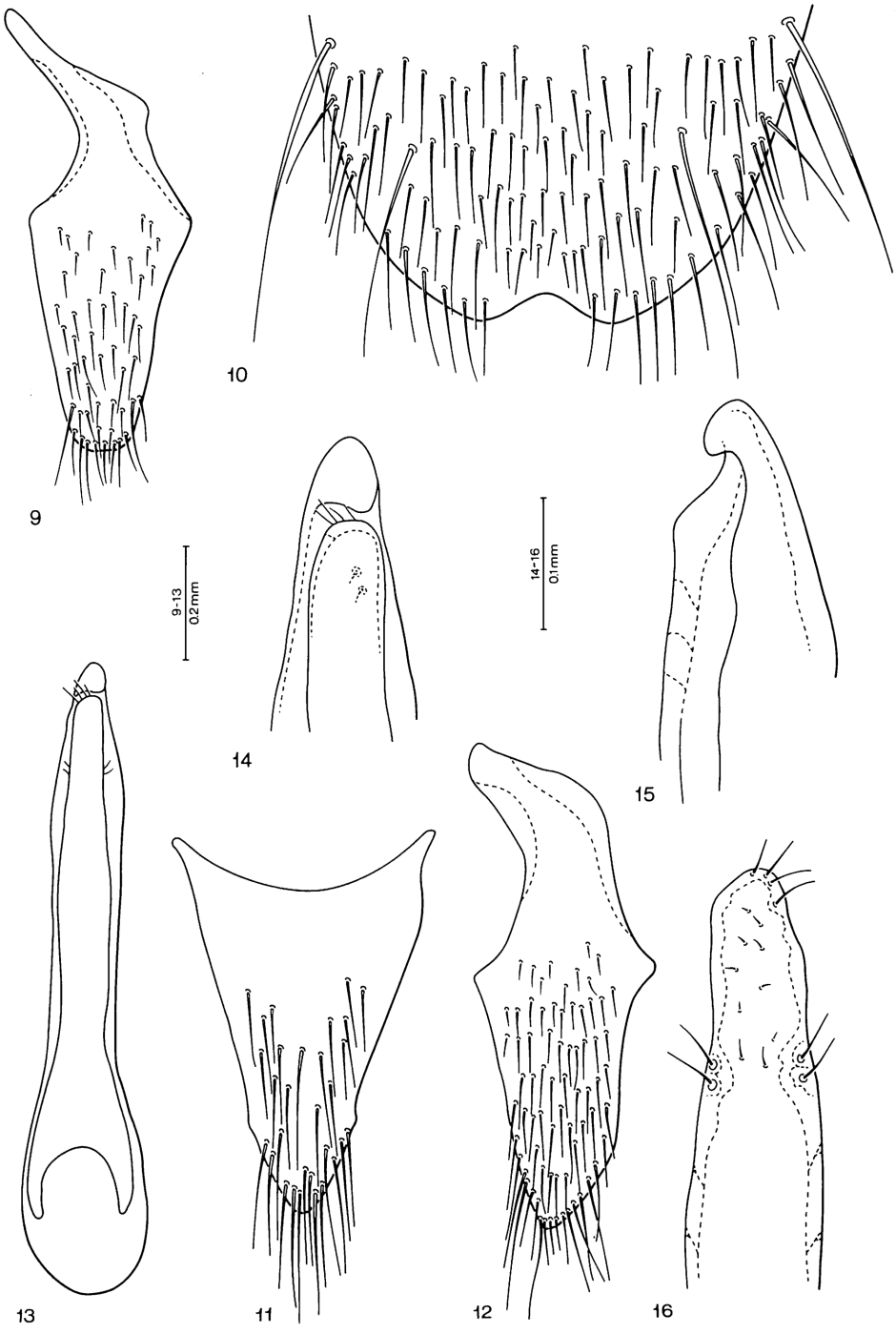
Comments. This is the first record of this species from Hebei. *Quedius klapperichi* was previously known only from Fujian (see SMETANA, 1996 b, 126).

Quedius (*Microsaurus*) *holzschuhi* sp. nov.

(Figs. 10–16)

Description. Entirely black, mouthparts brownish-testaceous, first two segments of maxillary palpus darkened, front tibiae paler along lateral edge, front tarsi brownish with last segment testaceous, last segment of middle and hind tarsi testaceous. Head of rounded quadrangular shape, wider than long (ratio 1.17), slightly, evenly rounded behind eyes, posterior angles obsolete; eyes moderately large, not protruding from lateral contours of head, tempora longer than eyes seen from above (ratio 1.17); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posterio-medial margin of eye, separated from it by about twice diameter of puncture, three punctures behind it at posterior margin of head; temporal puncture situated close to posterior margin of head, separated from it by distance about 2–3 times diameter of puncture; tempora with numerous fine punctures; surface of head with extremely fine, dense microsculpture of transverse waves, with distinct intermixed micropunctulation. Antenna short, incrassate anteriad, segment 3 longer than segment 2 (ratio 1.25), segment 4 slightly, segment 5 distinctly wider than long, following segments transverse, slightly subserrate, last segment as long as two preceding segments combined. Pronotum wider than long (ratio 1.19), widest at about posterior third, narrowed anteriad, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not explanate; dorsal rows each with three fine punctures, two posterior ones rather close to each other (see *Comments*); sublateral rows each with three punctures (one unilaterally missing in one specimen), posterior puncture situated at least slightly behind level of large lateral puncture; microsculpture similar to that on head, but still finer and denser, micropunctulation also finer and not readily visible. Scutellum large, impunctate, with very fine and dense microsculpture of transverse waves. Elytra relatively long, at suture feebly (ratio 1.11), at sides distinctly longer than pronotum at midline (ratio 1.31); punctation fine, superficial, moderately dense, transverse interspaces between punctures at least twice as large as diameters of punctures; pubescence piceous-black; surface between

Figs. 9–16. —— 9. *Quedius kubani*: sternite 9 of male genital segment. —— 10–16. *Quedius holzschuhi*: 10, apical portion of male sternite 8; 11, tergite 10 of male genital segment; 12, sternite 9 of male genital segment; 13, aedoeagus, ventral view; 14, apical portion of aedoeagus, ventral view; 15, apical portion of median lobe, lateral view; 16, apical portion of underside of paramere.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punctures without microsculpture. Wings fully developed. Abdomen with tergite 7 (fifth visible) bearing distinct whitish apical seam of palisade fringe; first three visible tergites distinctly, transversely impressed at base; punctation and pubescence of abdominal tergites similar to that on elytra but denser in transverse impressions, medio-apical portion of first visible tergite impunctate, punctation becoming sparser toward apex of each tergite, and in general toward apex of abdomen; pubescence piceous-black; surface between punctures with excessively fine and dense microsculpture of transverse striae.

Male. First four segments of front tarsus strongly dilated, sub-bilobed, each densely covered with modified, pale setae ventrally; segment two slightly wider than apex of tibia (1.11); segment four narrower than preceding segments. Sternite 8 with two long setae on each side; with moderately wide and rather shallow, almost arcuate medio-apical emargination, very small triangular area before emargination flattened and smooth (Fig. 10). Genital segment with tergite 10 elongate, almost conically narrowed toward subacute apex; with three or four apical setae and with numerous additional, shorter and finer setae (Fig. 11); sternite 9 with short basal portion, apical portion asymmetrical, with subacute apex, without appreciably differentiated apical or subapical setae (Fig. 12). Aedoeagus (Figs. 13–16) narrow and elongate; median lobe in general slightly asymmetrical, face adjacent to paramere with distinctly asymmetrical, somewhat excavated apical portion with its lateral margins produced, extended into large asymmetrical apical tooth bent toward apex of paramere. Paramere narrow and very elongate, in general slightly asymmetrical, reaching tip of apical tooth of median lobe, apical portion asymmetrical, with apex obliquely subtruncate, markedly bent toward median lobe; four asymmetrically located, fine setae at apex, two much longer setae at each lateral margin far below apex; underside of paramere without sensory peg setae but with several extremely small setae on apical portion. Internal sac without larger sclerotized structures.

Female. Unknown.

Length 9.4–10.1 mm.

Type material. Holotype (male) and paratype (male): "China: Sichuan Emeishan 160 km SSW Chengdu"/" 1700–1530–1700 m 22.6. 1994 (4c) leg. Holzschuh". Holotype in the Naturhistorisches Museum, Wien, Austria, paratype in the SMETANA collection, Ottawa.

Geographical distribution. *Quedius holzschuhi* is at present known only from the Emei Shan mountain range in central Sichuan.

Bionomics. Nothing is known about the collection circumstances and about habitat requirements of this species.

Recognition and comments. *Quedius holzschuhi* is a very distinctive species, due to the short, incrassate antenna with outer segments slightly subserrate, the extremely fine microsculpture on the head and pronotum, the chaetotaxy of the head (the position of the temporal puncture very far from the posterior margin of the eye), the fine and superficial punctation of the elytra, by the unique characters on the aedoeagus

(Figs. 13–15), and by the asymmetrical shape of sternite 9 of the male genital segment. It cannot be confused with any other species of the subgenus *Microsaurus*.

The second puncture of the left dorsal row on the pronotum is missing in the holotype, the first puncture of the left dorsal row on the pronotum is missing in the paratype.

Etymology. Patronymic, the species is named in honor of the collector, the renowned cerambycidologist, C. HOLZSCHUH, Wien, Austria.

Quedius* (*Microsaurus*) *turnai sp. nov.

(Figs. 17–22)

Description. Entirely, including appendages, black; maxillary and labial palpi becoming slightly paler toward apices of last segments, front tarsus somewhat paler, rather dark brownish-piceous, last segments of both middle and hind tarsi slightly paler, dark brownish. Head of rounded quadrangular shape, vaguely wider than long (ratio 1.11), parallel-sided behind eyes, posterior angles obsolete; eyes small, hardly protruding from lateral contours of head, tempora markedly longer than eyes seen from above (ratio 1.56); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated away from posterio-medial margin of eye, but appreciably closer to it than to posterior margin of head, no additional puncture between it and posterio-medial margin of eye, two setiferous punctures between it and posterior margin of head; temporal puncture situated markedly closer to posterior margin of head than to posterior margin of eye; area of head posteriad of posterior margin of eye with numerous, fine additional punctures; tempora with some fine punctures; surface of head with dense, moderately fine microsculpture of transverse waves, with distinctive micropunctulation. Antenna rather short, moderately widened toward apex; segment 3 somewhat longer than segment 2 (ratio 1.20), segment 4 vaguely longer than wide, segment 5 as long as wide, segments 7–10 slightly wider than long, gradually becoming wider, last segment about as long as two preceding segments combined. Pronotum appreciably wider than long (ratio 1.18), widest at about posterior third, markedly narrowed anteriad, with lateral margins continuously arcuate with broadly arcuate base, transversely convex, lateral portions vaguely explanate posteriorly; dorsal rows each with three fine punctures; sublateral rows each with two punctures, posterior punctures situated before level of large lateral puncture; microsculpture distinctly finer and denser than that on head, composed of waves directed obliquely from midline anteriad. Scutellum impunctate, with very dense and fine microsculpture of transverse waves. Elytra relatively long, at base narrower than pronotum at widest point, scarcely widened posteriad, at suture slightly (ratio 1.12), at sides appreciably longer than pronotum at midline (ratio 1.24); 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 developed. Abdomen with tergite 7 (fifth visible) bearing fine whitish

apical seam of palisade fringe; punctation and pubescence of abdominal tergites finer and somewhat denser than that on elytra, in general evenly covering each tergite, not becoming appreciably sparser 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 8 with two long setae on each side; with rather shallow, almost arcuate medio-apical emargination, short triangular area before emargination flattened and smooth (Fig. 17). Genital segment with tergite 10 rather small and narrow, with many long setae near subtruncate apex, and with numerous much shorter and finer setae in front of them (Fig. 18); sternite 9 with narrow and fairly long basal portion, broadly arcuate apically, without appreciably differentiated apical or subapical setae (Fig. 19). Aedoeagus (Figs. 20–22) in general small and elongate, remarkably asymmetrical; median lobe asymmetrically curved toward right, with apex narrowly arcuate, with distinct, V-shaped carina on face adjacent to paramere; paramere narrow, elongate, with narrow and long, slightly curved middle portion, gradually widened into spoon-shaped apical portion, with arcuate apex hardly exceeding apex of median lobe; four minute setae at apex and two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere not numerous, forming a short longitudinal row of three or four setae along each lateral margin. Internal sac without larger sclerotized structures.

Female. Unknown.

Length 8.3 mm.

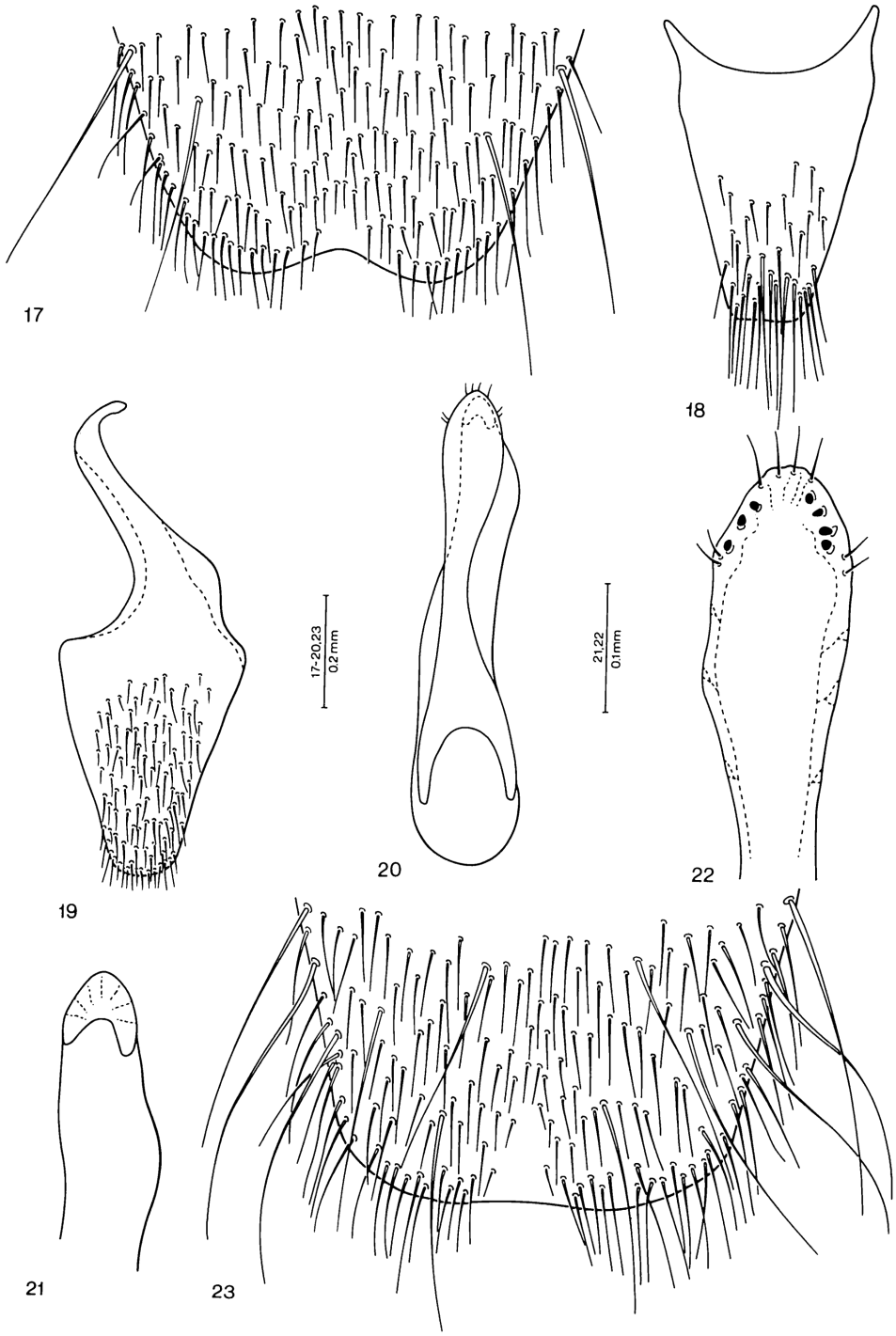
Type material. Holotype (male): China: "E Tibet, "Tuntala Shan" mts. Road Markam–Zogang 40 km E Zogang 4500 m 29°40′N, 98°08′E Picea forest, 29. VI.–3. VII. 1997 Jaroslav Turna leg."/"Sammlung M. SCHÜLKE Berlin". In the SMETANA collection, Ottawa, Canada.

Geographical distribution. *Quedius turnai* is at present known only from the type locality in eastern Tibet.

Bionomics. Nothing is known about the habitat requirements of this species.

Recognition and comments. *Quedius turnai* is unambiguously characterized by the distinctive, asymmetrical aedoeagus. Externally it resembles *Q. otho* SMETANA, 1995 b, but the latter species differs by several characters, mainly by the different shape of the head, which is markedly narrowed posteriad behind the eyes, by the markedly larger eyes, by the absence of the fine additional punctures on the head posteriad of each eye, by the male sternite 8 with three long setae on each side and with a markedly wider and deeper medio-apical emargination (SMETANA, 1995 b, 241, fig. 33).

Figs. 17–23. —— 17–22. *Quedius turnai*: 17, apical portion of male sternite 8; 18, tergite 10 of male genital segment; 19, sternite 9 of male genital segment; 20, aedoeagus, ventral view; 21, apex of median lobe, ventral view; 22, apical portion of underside of paramere. —— 23. *Quedius wrasei*, apical portion of male sternite 8.


17
18
19
17-20,23
0.2mm
20
21,22
0.1mm
22
21
23

To some extent the aedoeagus of *Q. turnai* resembles that of *Q. szechuanus* BERNHAUER, 1933, being similarly asymmetrical, but the aedoeagus of *Q. szechuanus* is different in many aspects (see SMETANA, 1996b, 117, fig. 5) and the two species are not related.

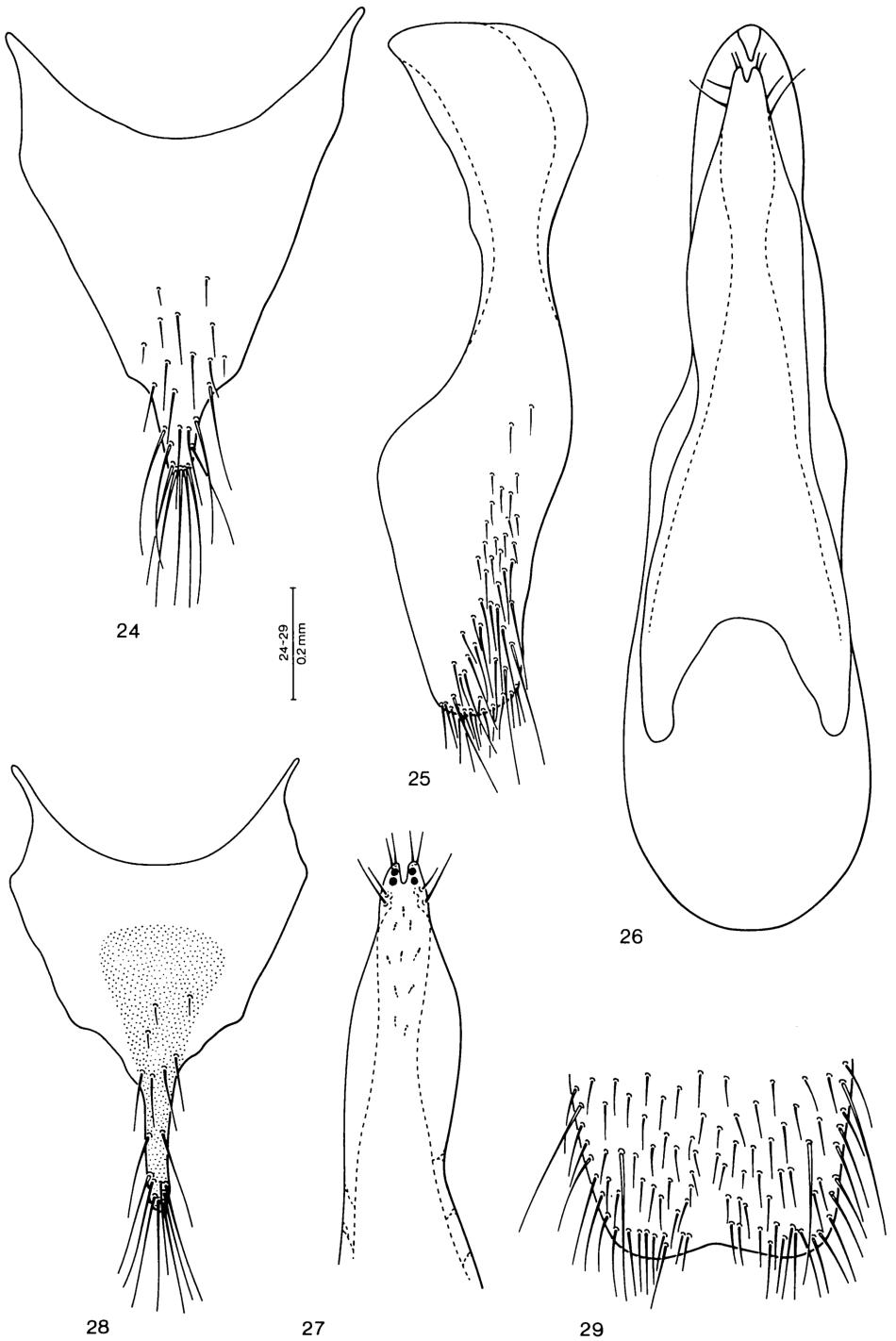
Etymology. Patronymic, the species is named in honor of the collector, Mr. J. TURNA, a coleopterist from Prague, Czech Republic.

Quedius (*Microsaurus*) *wrasei* sp. nov.

(Figs. 23–28)

Description. Entirely black; elytra with feeble, indistinct dark metallic hue; head and pronotum vaguely, abdomen distinctly iridescent; maxillary and labial palpi piceous, with apices of all segments more or less paler, antennae piceous-black, with base of segment 2 reddish-brown, legs piceous-black with more or less paler tarsi. Head rounded, indistinctly wider than long (ratio 1.1), posterior angles entirely rounded, obsolete; eyes moderately large, convex, protruding from lateral contours of head, tempora shorter than eyes seen from above (ratio 0.70); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posteriomedial margin of eye, separated from it by distance about equal to diameter of puncture, one puncture posteriomediad of it (see *Comments*), another puncture between it and temporal puncture, situated at posterior margin of eye; two punctures between posterior frontal puncture and posterior margin of head; temporal puncture situated about midway between posterior margin of eye and posterior margin of head; tempora distinctly punctate and pubescent; surface of head with very fine and dense microsculpture of mostly transverse waves, gradually becoming somewhat confused on clypeus, with intermixed micropunctulation. Antenna rather long, scarcely dilated toward apex, segment 3 distinctly longer than segment 2 (ratio 1.41), segments 4–8 longer than wide, gradually becoming shorter, segments 9 and 10 about as long as wide, last segment somewhat shorter than two preceding segments combined. Pronotum vaguely wider than long (ratio 1.1), distinctly, arcuately narrowed anteriad, widest at about posterior third, transversely convex, lateral portions not explanate, base broadly arcuate; dorsal rows each with three punctures; sublateral rows each with three punctures, posterior puncture situated distinctly behind level of large lateral puncture; microsculpture similar to that on head, but finer and denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Elytra relatively long, at base slightly narrower than pronotum at widest point, vaguely dilated posteriad; at suture about as long as, at sides somewhat longer than pronotum at midline (ratio 1.15); punctation and pubescence fine and dense, transverse interspaces between punctures

Figs. 24–29 —— 24–28. *Quedius wrasei*: 24, tergite 10 of male genital segment; 25, sternite 9 of male genital segment; 26, aedoeagus, ventral view; 27, apical portion of underside of paramere; 28, tergite 10 of female genital segment. —— 29. *Quedius liau*: apical portion of male sternite 8.


24
24-29
0.2 mm
25
26
28
27
29

mostly as wide as diameters of punctures; pubescence black; surface between punctures without microsculpture, but with intermixed microscopic irregularities, especially near apical margin. Wings fully developed. Abdomen with tergite 7 (fifth visible) bearing whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites slightly coarser and denser than that on elytra, becoming somewhat 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 dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment 2 wider than apex of tibia (ratio 1.21); segment 4 narrower than preceding segments. Sternite 8 with five or six long setae on each side; with very inconspicuous, gentle medio-apical sinuation, rather long and narrow triangular area before sinuation flattened and smooth (Fig. 23). Genital segment with tergite 10 markedly narrowed toward slightly differentiated, subacute apical portion, which bears numerous long setae, and with additional short setae in front of them (Fig. 24); sternite 9 with basal portion of quite distinctive shape, apical portion asymmetrical, with broadly rounded apex, with numerous short and fairly long setae apically and with much finer setae in front of them along right margin, without differentiated apical or subapical setae (Fig. 25). Aedoeagus (Figs. 26, 27) quite distinctive, with median lobe asymmetrical, as in Fig. 26; median lobe with apex narrowly arcuate, with strong medial carina on face adjacent to paramere. Paramere narrow, elongate, with medial portion differentiated, simulating narrow, apically lanceolate shape, lateral portions expanded and obliquely bent toward median lobe, apex of paramere narrowly emarginate, distinctly short of apex of median lobe; two closely approximate minute setae at apex at each side of emargination, and one similar and one longer seta at each lateral margin below apex; underside of paramere with two longitudinally arranged sensory setae at each side of medio-apical emargination. Internal sac without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but less dilated; segment two indistinctly wider than apex of tibia (ratio 1.1). Genital segment with tergite 10 wide, pigmented medially, markedly narrowed toward differentiated, very narrow and long, rod-like apical portion; apical portion with numerous long setae at and near apex, and with very fine, short setae on middle pigmented portion of wide basal portion of tergite (Fig. 28).

Length 9.1–10.0 mm.

Type material. Holotype (male): China: "CHINA W-Sichuan (13) Daxue Shan Hailuogou Glacier Park Camp 1, 2100 m 29.36.00 N, 102.03.35 E 27.–31.05 1997 M. SCHÜLKE"/"Sammlung M. SCHÜLKE Berlin". In the SCHÜLKE collection, Berlin, Germany (to be eventually incorporated into the collection of the Deutsches Entomologisches Institute, Eberswalde).

Allotype (female): China: "CHINA (W Sichuan) (13) Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 2 , 2500–2700 m/29.35 N/101.02 E 30/31. V. 1997

Wrase"/"Sammlung M. SCHÜLKE Berlin". In the SMETANA collection, Ottawa, Canada.

Paratypes: China: [Sichuan]: same data as allotype, 1 ♂, in the SMETANA collection; same data as holotype, but "29.36 N/102.04 E, 27./28./31. V. '97 WRASE", 1 ♂, in the SMETANA collection.

Geographical distribution. *Quedius wrasei* is at present known only from the Gongga Shan massive in western Sichuan.

Bionomics. Nothing is known about the habitat requirements of this species.

Recognition and comments. *Quedius wrasei* is a quite distinctive species, particularly due to the setation and the indistinct medio-apical emargination of the male sternite 8, the unusual shape of both the basal and apical portions of the male sternite 9, and the characteristic, unique shape of the aedoeagus (see above). Externally, it is characterized by the dark color of the body with faint, dark metallic hue on the elytra, by the chaetotaxy of the head (additional punctures around posterior frontal puncture), the rather long antennae, hardly dilated toward apex, and by the densely punctate and pubescent abdominal tergites.

The additional puncture, situated posterio-mediad of the posterior frontal puncture, is present in three specimens of the original series, but it is missing bilaterally in one paratype.

Etymology. Patronymic. The species is named in honor of one of its collectors, Mr. D. W. WRASE, Berlin, Germany, in recognition of his contributions to the knowledge of the beetle fauna of the People's Republic of China.

Quedius* (*Microsaurus*) *liau sp. nov.

(Figs. 29–34)

Description. Head black, pronotum and elytra brownish-piceous, pronotum with all margins paler, elytra each with vaguely paler humeral region and declivous lateral portion, apical margin narrowly paler, abdomen brownish-piceous, apical margins and apex of abdomen paler, rather testaceous; head and pronotum vaguely, abdomen appreciably iridescent; maxillary and labial palpi, legs and first three antennal segments yellowish-testaceous, remaining antennal segments vaguely darker, rather brownish-testaceous. Head rounded, about as long as wide, markedly narrowed posteriad behind eyes, posterior angles entirely obsolete; eyes moderately large and moderately convex, tempora shorter than eyes seen from above (ratio 0.61); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posterio-medial margin of eye, separated from it by distance equal to about two diameters of puncture, two punctures between it and posterior margin of head; temporal puncture situated about midway between posterior margin of eye and posterior margin of head; tempora with numerous fine punctures; surface of head with very fine and dense microsculpture of transverse waves. Antenna moderately long, only a little incrassate toward apex, segment 3 slightly longer than segment 2 (ratio 1.2), segments 4–6 longer than wide, gradually becoming shorter, segment 7 vaguely longer than wide, segments

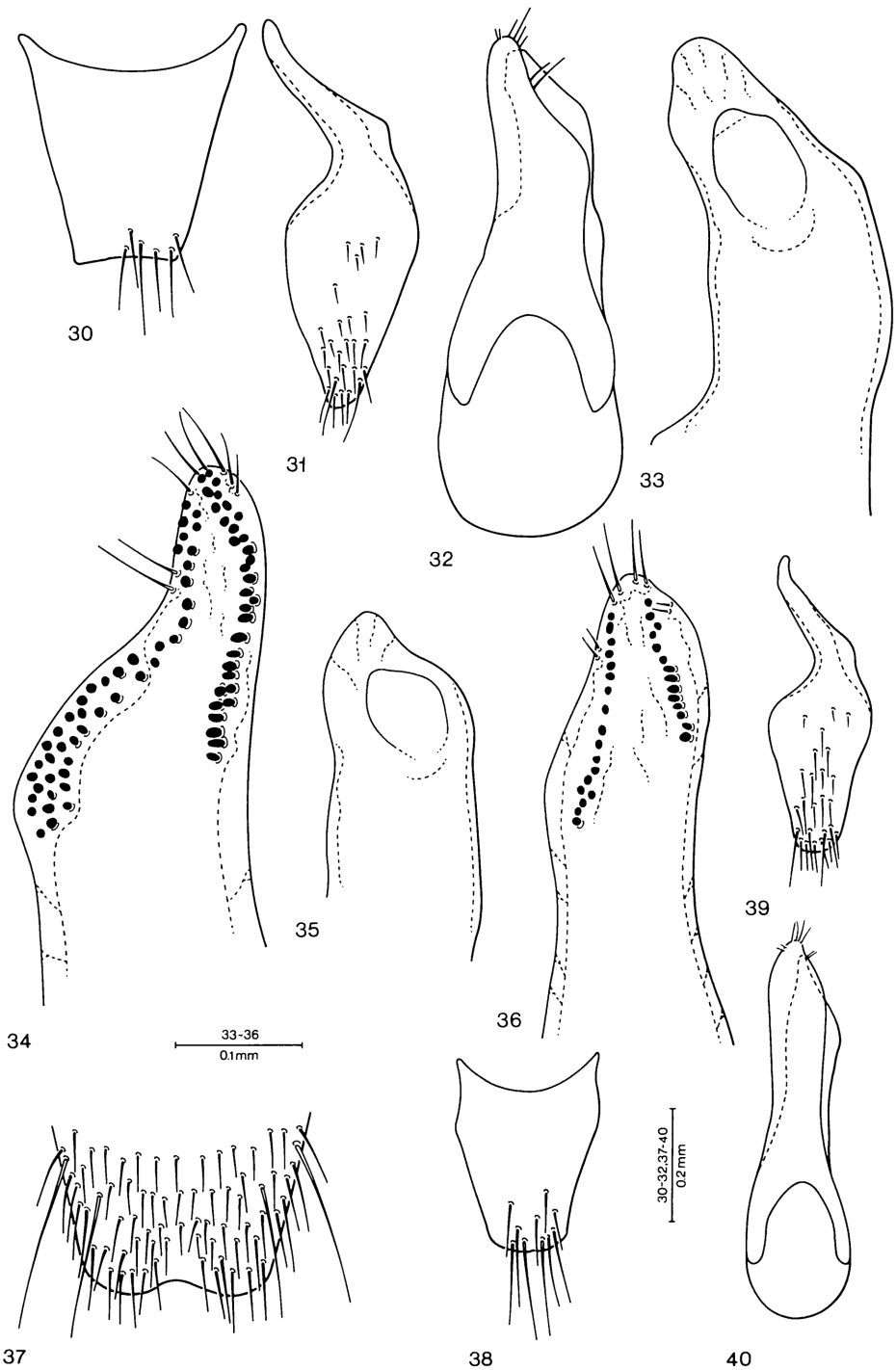
8–10 about as long as wide, last segment as long as two preceding segments combined. Pronotum vaguely wider than long (ratio 1.1), widest at about posterior third, slightly more narrowed anteriad than posteriad, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not 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 vaguely denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Elytra moderately long, at base slightly narrower than pronotum at widest point, scarcely widened posteriad, at suture about as long as, at sides appreciably longer than pronotum at midline (ratio 1.21); punctation and pubescence fine and moderately dense, transverse interspaces between punctures mostly almost twice as large as diameters of punctures; pubescence pale brownish. Wings somewhat reduced, possibly not functional. Abdomen with tergite 7 (fifth visible) with fine whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites finer and somewhat denser than that on elytra, becoming appreciably sparser toward apex of each tergite and in general toward apex of abdomen; pubescence pale brownish; 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 two about as wide as apex of tibia; segment four narrower than preceding segments. Sternite 8 with two long setae on each side, regular setation fine and sparse; with very wide, shallow, slightly angulate medio-apical emargination, short triangular area before emargination flattened and smooth (Fig. 29). Genital segment with tergite 10 with four longer setae at apical margin and with two similar setae slightly in front of them (Fig. 30); sternite 9 with basal portion markedly narrow and long, apical portion large and wide, arcuate apically, with two slightly differentiated subapical setae (Fig. 31). Aedoeagus (Figs. 32–34) with both median lobe and paramere markedly asymmetrical; median lobe with fairly long, slender, asymmetrical apical portion. Paramere large and wide, distinctly twisted and asymmetrical, curved toward left side of median lobe, with apex slightly exceeding apex of median lobe; four fine setae at apex, two long setae far below apex on right side of paramere, and two much shorter setae on left side close to apex; sensory peg setae on underside of paramere very numerous, forming two unequally long, longitudinal rows. Internal sac without larger sclerotized structures.

Female. Unknown.

Length 5.1 mm.

Figs. 30–40. —— 30–34. *Quedius liau*: 30, tergite 10 of male genital segment; 31, sternite 9 of male genital segment; 32, aedoeagus, ventral view; 33, apical portion of median lobe, ventral view; 34, apical portion of underside of paramere. —— 35, 36. *Quedius amicorum*: 35, apical portion of median lobe, ventral view; 36, apical portion of underside of paramere. —— 37–40. *Quedius hailuogou*: 37, apical portion of male sternite 8; 38, tergite 10 of male genital segment; 39, sternite 9 of male genital segment; 40, aedoeagus, ventral view.


30
31
32
33
34
35
36
39
33-36
0.1mm
37
38
30-32,37-40
0.2mm
40

Type material. Holotype (male): China: "China: Shaaxi, Qin Ling Shan 108.47 E, 33.51 N, Mountain W Pass at Autoroute km 70 47 km S Xian 2500–2600 m, sifted 26.–27.08. 1995, leg. A. PÜTZ". In the SMETANA collection, Ottawa, Canada.

Geographical distribution. *Quedius liau* is at present known only from the type locality in Qin Ling Shan in southern Shaanxi.

Bionomics. Nothing is known about the habitat requirements of this species.

Recognition. *Quedius liau* is in all characters very similar to *Q. amicorum* SMETANA, 1997 b, but it differs as follows: head slightly narrower, only about as long as wide (slightly wider than long in *Q. amicorum*), with somewhat less convex eyes; posterior frontal and temporal punctures situated slightly differently (see above and in SMETANA, 1997 b, 470); antenna more slender and less incrassate toward apex, with outer segments as long as wide (wider than long in *Q. amicorum*); punctation of elytra finer, punctation of abdominal tergites finer and denser, particularly on bases of tergites; medio-apical emargination of male sternite 8 wider and shallower (Fig. 29, and fig. 42 in SMETANA, 1997 b, 467). The sexual male characters on the genital segment of *Q. liau* are very similar to those of *Q. amicorum* (Figs. 30, 31, and figs. 43, 44 in SMETANA, 1997 b, 467), but the aedoeagus of *Q. liau* is markedly larger and robuster than that of *Q. amicorum* (Fig. 32, and fig. 45 in SMETANA, 1997 b, 467), and the apical portion of both the median lobe and the paramere of *Q. liau* differ in several details from those of *Q. amicorum*, particularly the sensory peg setae in the irregular longitudinal rows on the underside of the paramere of *Q. liau* are more numerous and the rows are therefore markedly longer than those of *Q. amicorum* (Figs. 33–36).

There is a small additional puncture on the left side on the head between the posterior frontal puncture and the temporal puncture in the holotype.

Etymology. The specific epithet is the Chinese verb "liau" , which in one of its meanings means "to excite". It refers to the exciting discovery of yet another Chinese species with a spectacularly asymmetrical aedoeagus.

Quedius* (*Microsaurus*) *hailuogou sp. nov.

(Figs. 37–42)

Description. In all external characters, including coloration, quite similar to *Q. amicorum* SMETANA, 1997 b (p. 470), but somewhat smaller and more slender than average specimens of *Q. amicorum*, with slightly narrower head and pronotum, and with both posterior frontal and temporal punctures on head situated closer to posterior margin of eye, separated from it by distance smaller than diameter of puncture.

Male. First four segments of front tarsus similar to those of *Q. amicorum*, but

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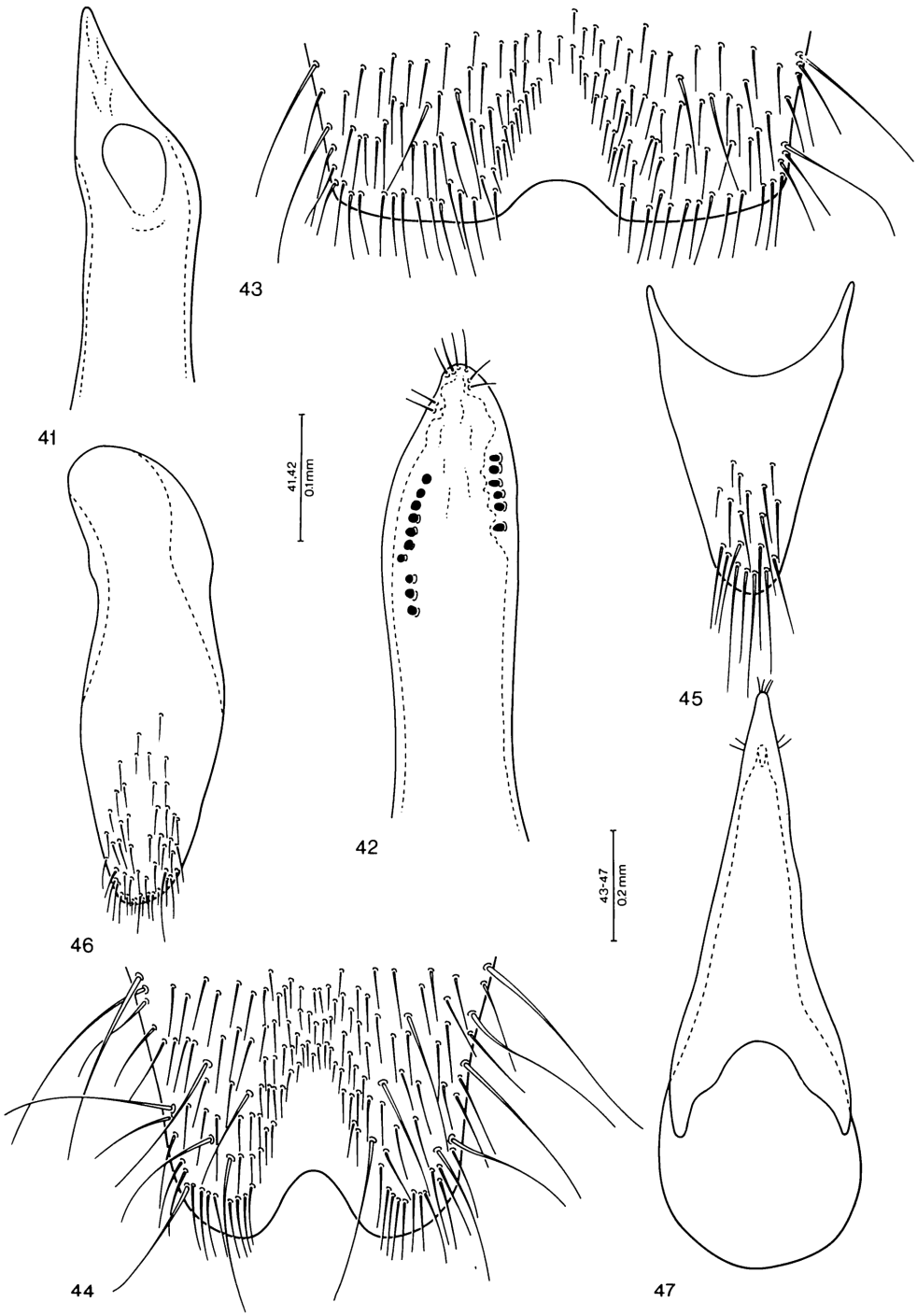
Figs. 41–47. —— 41, 42. *Quedius hailuogou*: 41, apical portion of median lobe, ventral view; 42, apical portion of underside of paramere. —— 43–47. *Quedius zheduo*: 43, apical portion of male sternite 7; 44, apical portion of male sternite 8; 45, tergite 10 of male genital segment; 46, sternite 9 of male genital segment; 47, aedoeagus, ventral view.


41
43
41,42
0.1mm
42
45
46
43-47
0.2mm
44
47

appreciably less dilated, segment two only vaguely wider than apex of tibia (ratio 1.1). Sternite 8 with two long setae on each side, with medio-apical emargination and flattened area in front of it not appreciably different from that of *Q. amicorum* (Fig. 37). Genital segment with tergite 10 and sternite 9 not appreciably different, but tergite 10 somewhat more narrowed toward apex and with less numerous setae apically (Figs. 38, 39). Aedoeagus (Figs. 40–42) similar to that of *Q. amicorum*, but in general narrower, particularly apical portions of both median lobe and paramere narrower, with median lobe extended into rather long and sharp apical portion. Paramere markedly exceeding apex of median lobe, sensory peg setae on underside of paramere arranged in rows similar to those of *Q. amicorum*, but less numerous (six in one row, eleven in other row).

Female. Unknown.

Length 4.4 mm.

Type material. Holotype (male): China: "CHINA, Sichuan, Gongga Shan, above Camp 3 3050 m, 22. VII. 1994 A. Smetana [C18]". In the SMETANA collection, Ottawa, Canada.

Geographical distribution. At present, *Q. hailuogou* is only from the type locality in the Gongga Shan massive in western Sichuan.

Bionomics. The holotype was taken in an original *Abies* forest by sifting old mushrooms growing on rotting wood of a fallen tree.

Recognition and comments. *Quedius hailuogou* is a member of a distinctive species-group that includes three species at present, *Q. amicorum*, *Q. liau* and *Q. hailuogou*. Members of this group are very similar to each other and are obviously closely related. They are characterized mainly by the small size, the distinctive coloration, and by the conspicuous, asymmetrical aedoeagus (both median lobe and paramere). Within this group, *Q. liau* seems to be most distinctive due to the more slender antenna with outer segments as long as wide (wider than long in other two species), by the relatively dense punctation on abdominal tergites, particularly on base of each tergite, and by the large (as well as quite characteristic) aedoeagus (Fig. 32). *Quedius hailuogou* is characterized mainly by the distinctive, rather long and sharp apical portion of the median lobe, as well as by the small number of the sensory peg setae on the underside of the paramere (Figs. 41, 42).

The species of the group seem to be rather rare and may prefer habitats associated with rotting wood and bark, including mushrooms growing on decaying wood, although the actual habitat of the holotype of *Q. liau* is not known.

Etymology. The specific epithet is the name of the valley of the Gongga Shan massive, in which the holotype was collected, in apposition.

Quedius (*Microsaurus*) *zheduo* sp. nov.

(Figs. 43–51)

Description. Black, elytra dark brownish-piceous to piceous-black; head and pronotum vaguely, abdomen markedly iridescent; maxillary and labial palpi dark brownish-piceous to piceous-black, antennae with first three segments black, base of segment 2 reddish, remaining segments piceous-black, legs dark brown to piceous, usually with somewhat paler tarsi, and with blackened medial faces of all tibiae (when legs are dark brown). Head rounded, moderately wider than long (ratio 1.20), posterior angles entirely obsolete; eyes large and convex, tempora considerably shorter than eyes seen from above (ratio 0.46); no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture situated close to posterio-medial margin of eye, separated from it by distance slightly larger than diameter of puncture, two punctures between it and posterior margin of head; temporal puncture situated closer to posterior margin of eye than to posterior margin of head, a small additional puncture at margin of eye between it and posterior frontal puncture; tempora with a few fine punctures; surface of head with fine and dense microsculpture of transverse waves. Antenna moderately short, slightly incrassate toward apex, segment 3 slightly longer than segment 2 (ratio 1.20), segments four and five slightly longer than wide, segment 6 as long as wide, outer segments slightly wider than long, last segment somewhat shorter than two preceding segments combined. Pronotum vaguely wider than long (ratio 1.11), widest at about posterior third, slightly narrowed anteriad, with lateral margins continuously arcuate with broadly rounded base, transversely convex, lateral portions not explanate; dorsal rows each with three punctures; sublateral rows each with three punctures, posterior puncture situated distinctly behind level of large lateral puncture; microsculpture similar to that on head, but somewhat denser. Scutellum impunctate, with very fine and dense microsculpture of transverse waves. Elytra short, at base narrower than pronotum at widest point, slightly widened posteriad, at suture about as long as, at sides vaguely longer than pronotum at midline (ratio 1.16); punctation and pubescence fine, moderately dense, transverse interspaces between punctures mostly almost twice as large as diameters of punctures; surface between punctures without microsculpture, but with some microscopical irregularities, particularly near posterior margin. Wings reduced and non-functional, each exceeding elytron by about half of its length, when extended. Abdomen with tergite 7 (fifth visible) with very fine whitish apical seam of palisade fringe; punctation and pubescence of abdominal tergites slightly finer and denser than that on elytra, becoming vaguely sparser toward apex of each tergite and in general toward apex of abdomen; pubescence piceous-black; 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 two markedly wider than apex of tibia (ratio 1.29); segment 4 narrower than preceding segments. Sternite 7 with

distinct, moderately wide and deep, almost semicircular medio-apical emargination, small area before emargination depressed and smooth (Fig. 43); sternite 8 with numerous (more than six) long setae on each side, with wide and very deep, obtusely triangular medio-apical emargination, triangular area before emargination flattened and smooth (Fig. 44). Genital segment with tergite 10 triangular, broadly arcuate apically, with numerous setae at and near apical margin (Fig. 45); sternite 9 with basal portion very wide, apical portion somewhat asymmetrically arcuate apically, with fine setae medio-apically, and with two slightly differentiated subapical setae (Fig. 46). Aedoeagus (Figs. 47–50) large, with voluminous basal bulbus; both median lobe and paramere conspicuously, almost conically narrowed anteriad; median lobe with subacute apex, with fine, short medial carina on face adjacent to paramere. Paramere large, almost entirely covering median lobe, with apex markedly exceeding apex of median lobe; four fine setae at apex, two shorter setae at each lateral margin far from apex; sensory peg setae on underside of paramere very few, forming two small lateral groups far below apex of paramere, each with two or three peg setae. Internal sac without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but less dilated; segment two about as wide as apex of tibia. Genital segment with tergite 10 extensively pigmented, narrowed toward slightly differentiated apical portion with subacute apex, with two slightly differentiated subapical setae, and with numerous shorter setae in front of them (Fig. 51).

Length 6.0–6.5 mm.

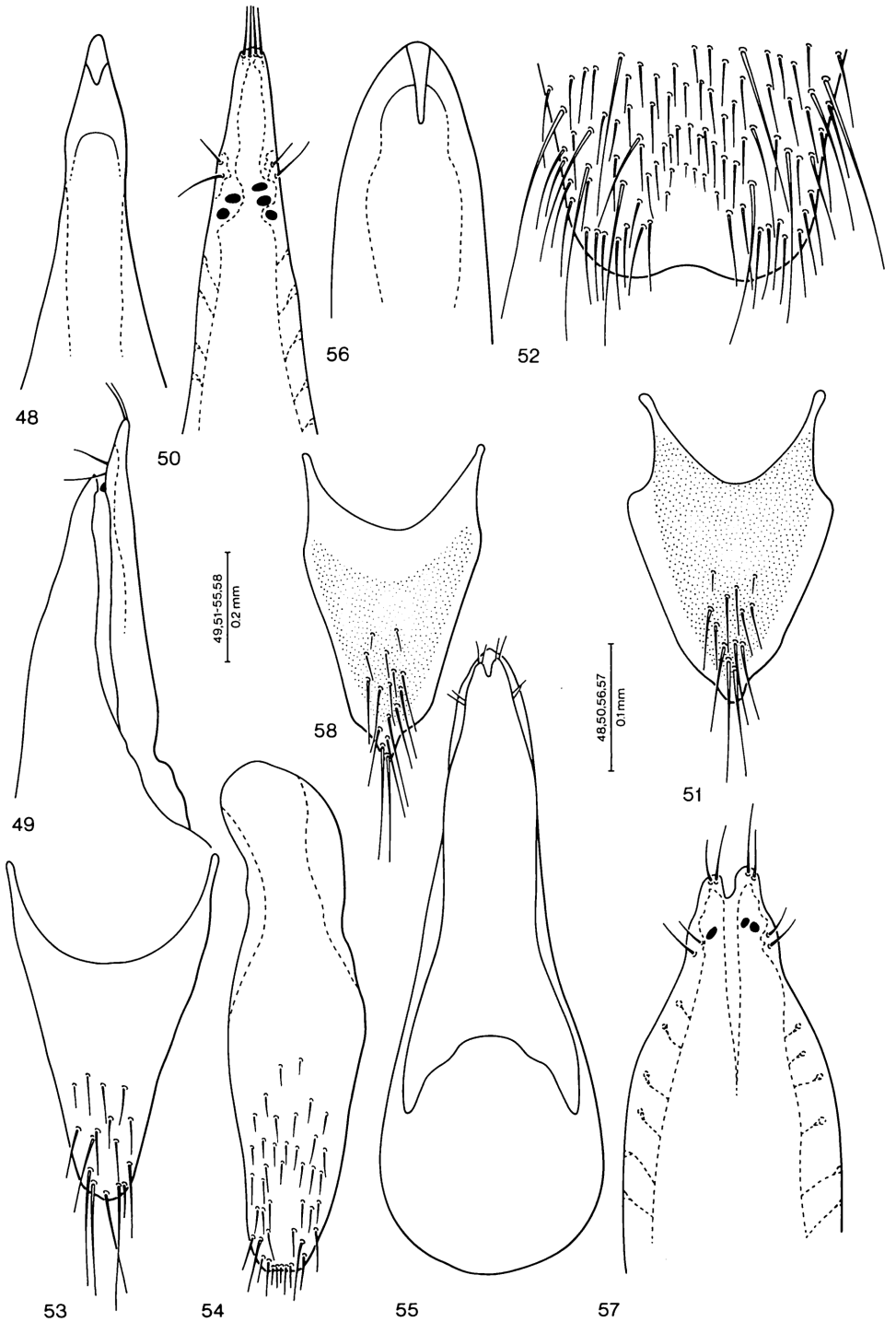
Type material. Holotype (male) and allotype (female): China: "CHINA W Sichuan, Pass Zheduo Shankou W Kangding, W slope, 4000 m 29°58 N 101°47 E, 17. VII. 1998, A. SMETANA [C84]"/"1998 China Expedition, J. FARKAČ, D. KRÁL, J. SCHNEIDER & A. SMETANA". In the SMETANA collection, Ottawa, Canada.

Paratypes: China: [Sichuan]: same data as holotype, 4 ♀♀, in the SMETANA collection and in the National Science Museum (Natural History), Tokyo, Japan; Ganzi pref., Daxue Shan, Pass 16 km W Kangding 30.05 N 101.48 E, 4290 m, 25. V. 1997, leg. A. PÜTZ, 3 ♂♂, 1 ♀, in the SMETANA, and PÜTZ collection, Eisenhüttenstadt, Germany.

Geographical distribution. *Quedius zheduo* is at present known only from the type locality, the Zheduo Shankou in the Daxue Shan, west of Kangding (the two different locality labels above refer to the same pass).

Bionomics. The specimens of the original series were taken by sifting moss and various debris under isolated groups of azaleas and junipers in an original alpine habitat.

Figs. 48–58. —— 48–51. *Quedius zheduo*: 48, apical portion of median lobe, ventral view; 49, apical portion of aedoeagus, lateral view; 50, apical portion of underside of paramere; 51, tergite 10 of female genital segment. —— 52–57. *Quedius tronqueti*: 52, apical portion of male sternite 8; 53, tergite 10 of male genital segment; 54, sternite 9 of male genital segment; 55, aedoeagus, ventral view; 56, apical portion of median lobe, ventral view; 57, apical portion of underside of paramere; 58, tergite 10 of female genital segment.


48
50
56
52
49
49,51-55,58
0.2 mm
58
48,50,56,57
0.1mm
51
53
54
55
57

Recognition and comments. *Quedius zheduo* belongs to a large group of species around *Q. euryalus* SMETANA, 1997 a. It is well characterized by the characters on the aedoeagus, and by the secondary male sexual characters on the abdominal sternites 7 and 8 (Figs. 43, 44), particularly by the distinct, characteristic medio-apical emargination on sternite 7. The aedoeagus of *Q. zheduo* resembles that of *Q. farkaci* SMETANA, 1997 b, but it differs in several details, particularly by the narrow, subacute apex of the paramere which markedly exceeds the apex of median lobe (Fig. 47).

Etymology. The specific epithet is one part of the Chinese name of the pass, the type locality of the species, in apposition.

Quedius (*Microsaurus*) *tronqueti* sp. nov.

(Figs. 52–58)

Description. In all characters, including chaetotaxy of head and pronotum, very similar to *Q. zheduo*, but different as follows: pronotum often piceous-black, elytra sometimes paler, piceo-brunneous; coloration of appendages paler, maxillary, labial palpi and antennae testaceo-brunneous, first antennal segment darkened, legs brunneous with somewhat paler tarsi, medial faces of all tibiae blackened. Head slightly more distinctly wider than long (ratio 1.25); eyes more convex, somewhat protruding from lateral contours of head, tempora more distinctly shorter than eyes seen from above (ratio 0.41). Elytra shorter, at suture shorter (ratio 0.77), at sides vaguely shorter (ratio 0.94) than pronotum at midline. Wings considerably reduced to short stumps, each shorter than length of elytron. Abdomen with tergite 7 (fifth visible) with very fine, indistinct, often partially interrupted, whitish apical seam of palisade fringe, seam entirely missing in some specimens.

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with modified pale setae ventrally; segment two wider than apex of tibia (ratio 1.23); segment four narrower than preceding segments. Sternite 8 with six long setae on each side (see *Comments*); with moderately wide and rather shallow, almost arcuate medio-apical emargination, small triangular area before emargination flattened and smooth (Fig. 52). Genital segment with tergite 10 narrowly triangular, with narrowly arcuate apex, with less numerous setae (Fig. 53); sternite 9 similar to that of *Q. zheduo*, but narrower and longer (Fig. 54). Aedoeagus (Figs. 55–57) rather large, with voluminous bulbus; median lobe markedly narrowed into narrowly subangulate apex, with fine short medial carina on face adjacent to paramere. Paramere subparallel-sided in middle portion, anteriorly narrowed into minutely, narrowly incised apex, apex not quite reaching apex of median lobe; two fine setae at each side of medial split, two similar setae at each lateral margin below apex; sensory peg setae on underside of paramere very few, forming two small lateral groups, each with one to three peg setae. Internal sac without larger sclerotized structures.

Female. First four segments of front tarsus similar to those of male, but markedly less dilated; segment two about as wide as apex of tibia. Genital segment

with tergite 10 similar to that of *Q. zheduo*, but somewhat narrower, with more distinctly differentiated apical portion (Fig. 58).

Length 5.8–6.4 mm.

Type material. Holotype (male) and allotype (female): China: "CHINE province du SINCHUAN [sic] Massif du JIU DING-SHAN 3300/3500 m M. TRONQUET 31/07/1/0894". In the SMETANA collection, Ottawa, Canada.

Paratypes: China: [Sichuan]: same data as holotype, 1 ♂, 2 ♀♀, in the SMETANA collection and in the National Science Museum (Natural History), Tokyo, Japan.

Geographical distribution. *Quedius tronqueti* is at present known only from the type locality in north-central Sichuan.

Bionomics. Nothing is known about the collection circumstances of the original series.

Recognition and comments. As *Q. zheduo*, *Q. tronqueti* is also a member of the large species-group around *Q. euryalus*. It may be separated easily from *Q. zheduo* by the characters mentioned in the description, particularly by the simple apical margin of the male sternite 7, and by the different aedoeagus (see Figs. 47–50, 55–57). The aedoeagus of *Q. tronqueti* is similar to that of *Q. emei* SMETANA, 1997 a, but it differs in several details (see figs. 39–41 in SMETANA, 1997 a, 66); in addition, *Q. emei* differs by many external characters, such as the distinctly larger and more convex eyes, the considerably longer elytra, the much less reduced wings, etc.

The long setae on the male abdominal sternite are largely missing in the two males available; they were reconstructed in Fig. 52, using their remaining sockets in both specimens.

Etymology. Patronymic, the species is named in honor of Monsieur Marc TRONQUET, a staphylinidologist from Molitg les Bains, France, who collected the original series and who graciously donated all the quediine specimens he collected in China for my collection.

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My colleagues D. E. BRIGHT and A. DAVIES, Agriculture and Agri-Food Canada, Research Branch, Ottawa, reviewed the original draft of the manuscript and their comments eventually led to its improvement. 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．13．ツヤムネハネカクシ属*Microsaurus*亜属の8．—— 中国の四川省および陝西省から，*Microsaurus*亜属ツヤムネハネカクシの7新種を記載し，それぞれに*Quedius holzschuhi*, *Q. turnai*, *Q. wrasei*, *Q. liau*, *Q. hailuogou*, *Q. zheduo*および*Q. tronqueti*の新名を与えた．また，ほかの9種について，雄交尾器の特徴や新産地などを補足的に記録した．

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