



Two new species and an additional faunistic record of *Crenitis* Bedel, 1881 from China (Coleoptera: Hydrophilidae: Chaetarthriinae)

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Abstract

Two new species of the genus *Crenitis* Bedel, 1881, *Crenitis lianghongbini* sp. nov. and *C. nezha* sp. nov., from the Xizang Autonomous Region and Yunnan Province, China, are described. *Crenitis nepalensis* Hebauer, 1994 is formally reported in China for the first time. The three species are diagnosed and illustrated, and the key to Chinese species of the subgenus *Crenitis* s. str. is updated.

Key words: Hydrophilidae, Anacaenini, new species, Southwest China, Oriental

Introduction

The hydrophilid genus *Crenitis* Bedel, 1881 is distributed worldwide except for the Australian region, and currently comprises 48 extant species and one fossil species, classified into two subgenera (Hebauer 1994; Short & Fikáček 2011; Fikáček et al. 2015; Fikáček & Watts 2015; Jia et al. 2016; Bilton 2017; Arriaga-Varela et al. 2021). The subgenus *Acrenitis* Matsui & Nakane, 1985 includes seven species, all occurring in East Asia (Hansen 1999), while the remaining 41 species belong to the subgenus *Crenitis* (s. str.).

Crenitis closely related to New Zealand endemic genus *Horelophus* d'Orchymont, 1913 and the New World genus *Crenitulus* Winters, 1926 (Short & Fikáček 2013; Fikáček & Vondráček 2014). Fossil evidence indicates that *Crenitis* has existed since at least the Eocene (Arriaga-Varela et al. 2021). Among extant species with known ecological data, most species inhabit springs or seepage habitats, a preference consistent with other members of the tribe Anacaenini (Hebauer 1994, Bilton 2017).

Taxonomic studies on *Crenitis* remains relatively limited. The first comprehensive revision of the genus, by Hebauer (1994), recorded 23 species from the Old World and 15 from the New World. Since then, additional studies have focused on Chinese and South African species (Jia 1996; Ji & Komarek 2003; Jia et al. 2016; Bilton 2013, 2017). To date, 11 valid species of *Crenitis* have been recorded from China, seven of which belong to the subgenus *Crenitis* (s. str.), and are mainly distributed in the northeastern, northwestern, and southwestern parts of the country. Recent fieldwork in Xizang and Yunnan has revealed the presence of two new species and a newly recorded species in China.

Material and methods

Representative specimens were dissected. After 10 min in 10% KOH at 80°C, dissected male genitalia were transferred to a drop of distilled water, and the cleaned genitalia were subsequently mounted in a drop of soluble resin (fish glue after transparent treatment) on a piece of paper card attached below the respective specimen. For taking photographs, the cleaned and relaxed male genitalia were placed in a drop of glycerine. Photographs of genitalia

were taken using a Zeiss AxioCam HRc camera mounted on a Zeiss AX10 microscope with the Axio Vision SE64 software. These images were then stacked in Helicon focus (v7.0.2). Habitus photographs were taken using a Nikon DS-Ri2 mounted on a Nikon SMZ25; layers were captured and stacked in the NIS-Elements software. Specimens are deposited in the following collections:

NACRC National Animal Collection Resource Center, Chinese Academy of Sciences, Institute of Zoology, Beijing, China (J. Chen);

NMP National Museum, Prague, Czech Republic (M. Fikáček, J. Hájek, L. Sekerka);

NMW Naturhistorisches Museum Wien, Vienna, Austria (M. Jäch, M. Seidel);

SYSU Sun Yat-sen University, Guangzhou, China (F.-L. Jia, W.-C. Xie).

Taxonomy

Crenitis lianghongbini sp. nov.

(Figs 1A–D, 4A)

Type material. HOLOTYPE: CHINA: ♂ (SYSU), Xizang, Mêdog County, Zha-Mo road (西藏墨脱县扎墨公路), 3073 m, 29°43'4"N, 95°37'9"E, 2018.VI.21, Shi-Shuai Wang & Zu-Long Liang leg. **PARATYPES:** CHINA: **Xizang:** 1♂, 17 exx. (SYSU), same data as holotype; 2♂♂, 2♀♀, 4 exx. (NACRC), Mêdog County, 62 k of Mêdog road (西藏墨脱县墨脱公路62k), 2731 m, 29.70572°N, 95.57284°E, 2021.VI.17, Hong-Bin Liang & Yuan Xu (梁红斌、徐源) leg.; 1♂, 7 exx. (NACRC), Mêdog County, 62 k Zha-Mo road (西藏墨脱县扎墨公路 62k), 2885 m, 29.70753°N 95.57735°E, 2017.VII.6D2, Run Zhou (周润) leg.; **Yunnan:** 1♂ (SYSU), Lushui County, Yaojiaping (云南泸水姚家坪), 2424 m, 26.01N 98.71E, 2027.VI.1, Living (李韵) leg.; 6 exx. (SYSU, NMP), Lushui County, Pianma Town (片马镇), Fengxue Yakou (风雪垭口), 26.0091°N, 98.6269°E, 2950 m, 2021.V.16, Zu-Qi Mai leg.

Diagnosis. Length 2.6–3.1 mm. Body elongate oval (Fig. 1A). Dorsum black, with greenish luster; head, pronotum and scutellum dull; elytra shiny (Fig. 1A). Posterolateral corners of pronotum and posterior apex of elytra yellowish brown; legs dark brown (Fig. 1C). Anterior margin of labrum slightly deflexed and broadly concave medially, bearing a transverse row of setae behind anterior margin (Fig. 4A). Maxillary palpomere 2 strongly swollen in apical half. Mentum clearly shagreened with fine punctures. Dorsal surface of head, pronotum and scutellum with very dense and distinct microsculpture throughout. Pronotum with a pair of large and distinct paramedian impressions (Fig. 4A). Elytral serial punctures not depressed into striae, ground punctures rather coarse, difficult to distinguish from serial punctures. Mesoventrite with a transverse ridge. Pro- and mesofemora densely pubescent on basal half; metafemora uniformly punctate and bare, trochanter pubescent. **Aedeagus** (Fig. 1D). Median lobe gradually narrowed towards apex, obtusely pointed apically. Parameres slightly longer than median lobe, outer face broadly convex, almost straight at inner face, moderately rounded apically.

Description. Form and Colour (Fig. 1A–C). Total length 2.6–3.1 mm; maximum width 1.5–1.6 mm. Body elongate oval, moderately convex. Dorsum black, with greenish luster; head, pronotum and scutellum dull; elytra shiny. Posterolateral corners of pronotum and posterior apex of elytra yellowish brown. Antennae yellow with club black; maxillary palpomeres 2 and 3 black to dark reddish brown, maxillary palpomere 4 black. Ventral surface black, legs dark brown.

Head. Dorsal surface with dense and coarse punctures, punctures on frons coarser and denser than those on clypeus and labrum; interstices between punctures with very dense and distinct microsculpture throughout (Fig. 4A). Labrum densely punctate; anterior margin slightly deflexed and broadly concave medially, bearing a transverse row of setae behind anterior margin. Anterior margin of clypeus curved inwards. Frontoclypeal suture distinct. Eyes of moderate size, slightly protruding. Mentum transverse, almost rectangular, ca 2× as wide as long, without impression, surface clearly shagreened with fine punctures. Labial palpomere 3 asymmetrical, as long as penultimate. Maxillary palpomere 4 robust, ca 2× as long as palpomere 3, truncate apically, palpomere 2 strongly swollen in apical half. Antennae with 9 antennomeres; antennal club (antennomeres 7–9) almost as long as antennomeres 2–6 combined. Gula narrow, gular suture slightly curved medially.

Thorax. Pronotum with punctation as those on head, with dense and distinct microsculpture throughout; with a pair of large and distinct paramedian impressions. Lateral and anterior margins of pronotum finely rimmed, anterior margin slightly protruding forwards; posterior margin clearly bisinuate, lateral margin almost straight

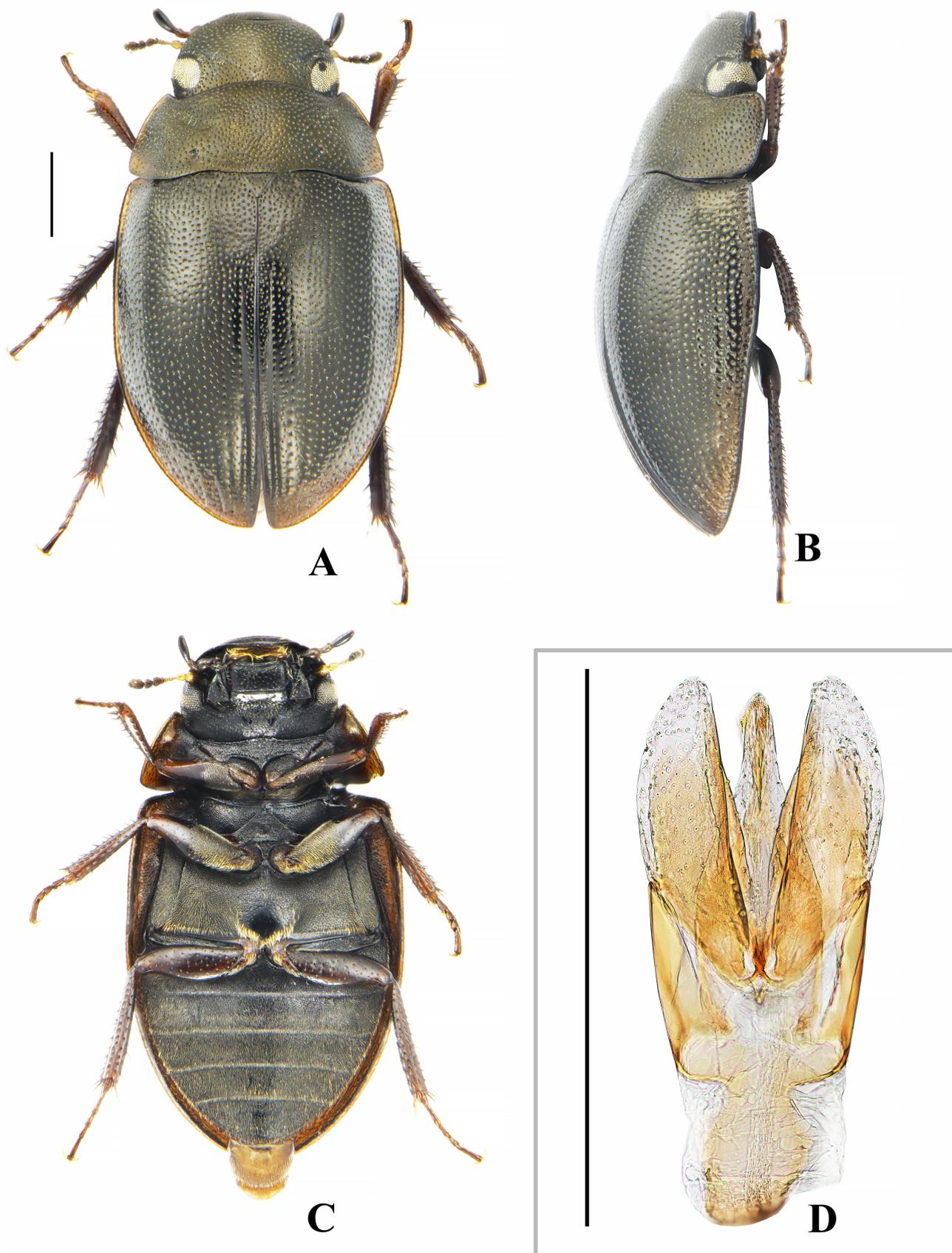


FIGURE 1. *Crenitis lianghongbini* sp. nov. (Paratype from Yunnan). A–C. Habitus. D. Aedeagus of male genitalia. A. Dorsal view. B. Lateral view. C. Ventral view. Scale bars: 0.5 mm.

except anterior corner. Scutellum with punctation and microsculpture as those on pronotum. Elytral serial punctures not depressed into striae, ground punctures rather coarse, difficult to distinguish from serial punctures. Sutural stria deeply impressed, almost reaching basal third of elytra. Prosternum slightly convex medially, anterior margin broadly protruding medially. Mesoventrite densely pubescent, with a transverse ridge. Metaventrite densely pubescent, bulging medially, with a small glabrous area. Pro- and mesofemora densely pubescent on basal half, apical half glabrous; metafemora glabrous throughout, with sparse coarse punctures in which each with a short seta, surface with oblique long sculptures between punctures, only lightly pubescent on anterior margin, trochanter pubescent. Meso- and metatarsomeres ca 3/4× as long as tibia, last tarsomere as long as 3rd and 4th combined.

Abdomen. Abdominal ventrites densely pubescent. First ventrite not carinate. Apical margin of fifth ventrite rounded.

Aedeagus (Fig. 1D). Median lobe widest basally, gradually narrowed towards apex, obtusely pointed apically; gonopore triangular, situated at top. Parameres slightly longer than median lobe, outer face broadly convex, almost straight on inner face, moderately rounded apically. Phallobase slightly longer than parameres, manubrium large and rounded.

Remarks. This species belongs to *Crenitis apicalis* species group based on habitus and the form of aedeagus. It is characterized by the dull lustre on head and pronotum due to the dense microsculpture throughout the surface. This species is most similar to *Crenitis cordula* Hebauer, 1994, which occurs in the adjacent areas. It can be distinguished from the latter by parameres of aedeagus rounded apically (Fig. 1D) (parameres truncate apically in *C. cordula* (Hebauer 1994: fig. 19)).

Etymology. This species is named after Dr. Hong-Bin Liang (梁红斌), a specialist to Carabidae who helps the senior author a lot during his study.

Biology. Occurs in the seepage rock wall or streams with an altitude of over 2,000 m.

Distribution. China (Xizang, Yunnan).

Crenitis nezha sp. nov.

(Figs 2A–D, 4B)

Type material. HOLOTYPE: CHINA: ♂ (SYSU), Yunnan Province, Lushui County, Yaojiaping, 26.01°N 98.71°E, 2424 m, 2017.VI.1, Living (李韵) leg. (云南省泸水县姚家坪). **PARATYPES: CHINA: Yunnan:** 1♂, 2 exx. (SYSU), same data as holotype; 2 exx. (SYSU), same locality as holotype, Yu-Dan Tang & Rui-Juan Zhang (唐余丹、张芮娟) leg.; 1♂ (SYSU), Baoshan, Baihualing, Jiujiezi (云南省保山百花岭九节子), 25°18'N 98°47'E, 2015 m, 2015.IV.19, Ren-Chao Lin & Yu-Dan Tang leg.; 10 exx. (SYSU, NMP), Lushui County, Pianma Town (片马镇), Fengxue Yakou (风雪垭口), 26.0091°N, 98.6269°E, 2950 m, 2021.V.16, Zu-Qi Mai leg.; **Xizang:** 1♀ (SYSU), Mêdog County, Nage (西藏墨脱县那格), 3000–3500 m, 2005.VIII.11, Tang Liang (汤亮) leg.

Diagnosis. Length 2.4–2.9 mm. Body elongate oval (Fig. 2A). Dorsum black and shiny, with strong greenish luster (Fig. 2A). Lateral margins of pronotum, lateral margin and posterior apex of elytra yellowish brown; legs reddish brown (Fig. 2C). Anterior margin of labrum slightly deflexed and broadly concave medially, bearing a transverse row of setae behind anterior margin (Fig. 4B). Maxillary palpomere 2 strongly swollen in apical half. Mentum clearly shagreened with fine punctures. Dorsal surface of head, pronotum and scutellum with very dense and distinct microsculpture except for middle portion of pronotum with rather sparse microsculpture. Pronotum with a pair of large and distinct paramedian impressions. Elytral serial punctures not depressed into striae, ground punctures slightly finer than serial punctures, difficult to distinguish from serial punctures. Mesoventrite with an arcuate ridge. Pro- and mesofemora densely pubescent on basal half; metafemora uniformly punctate and bare, trochanter pubescent. **Aedeagus** (Fig. 2D). Median lobe gradually narrowed towards apex, pointed apically. Parameres much longer than median lobe, outer face convex, straight medially, inner face slightly convex, moderately rounded apically.

Description. Form and Colour (Fig. 2A–C). Total length 2.4–2.9 mm; maximum width 1.4–1.5 mm. Body elongate oval, moderately convex. Dorsum black, with strong greenish luster; head, pronotum and scutellum not shiny as elytra. Lateral margins of pronotum and posterior apex of elytra yellowish brown. Antennae yellow with club black; maxillary palpomeres 2 and 3 yellowish brown, maxillary palpomere 4 black. Ventral surface black, legs reddish brown.

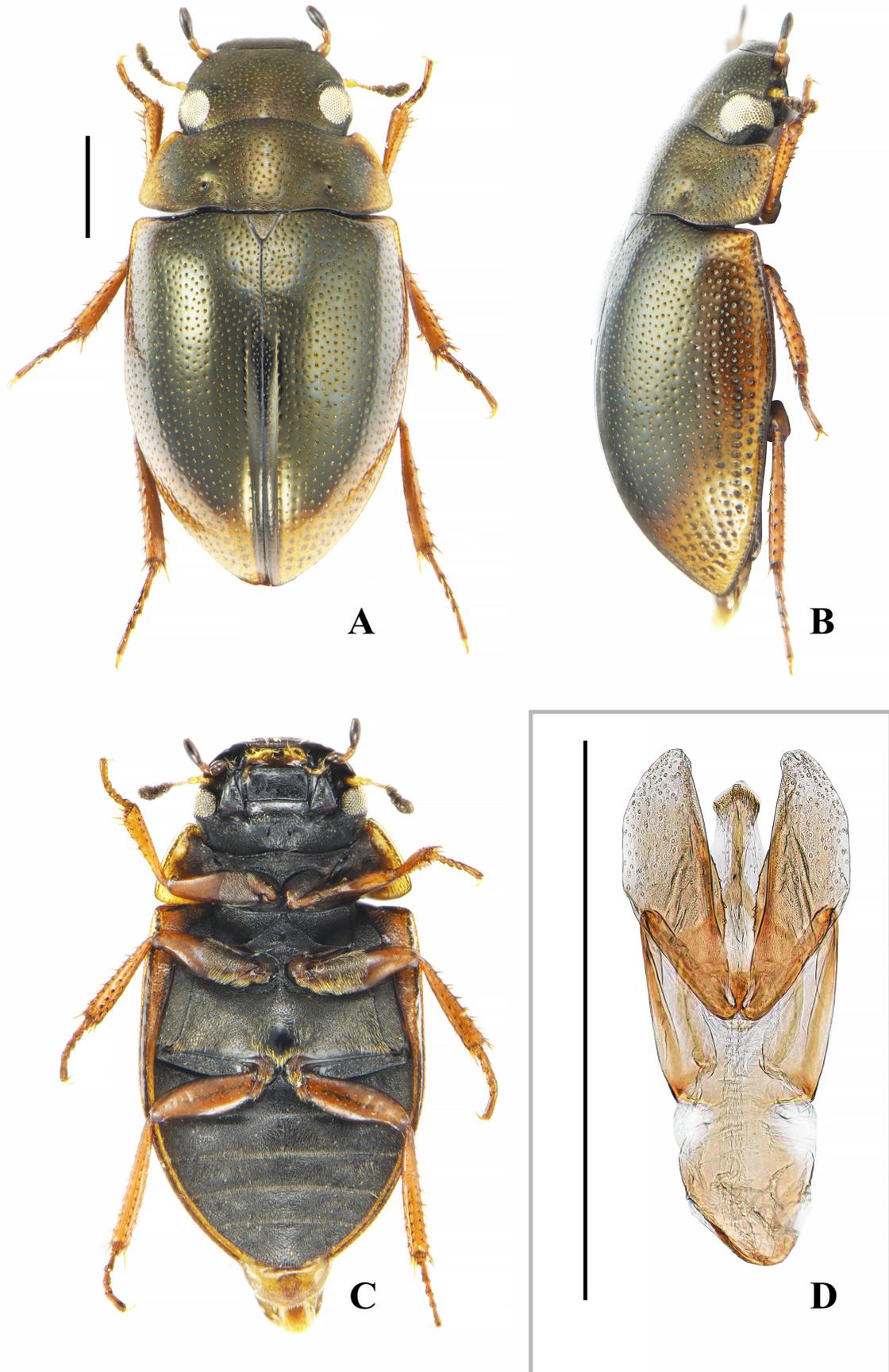


FIGURE 2. *Crenitis nezha* sp. nov. (Paratype from Yunnan). **A–C.** Habitus. **D.** Aedeagus of male genitalia. **A.** Dorsal view. **B.** Lateral view. **C.** Ventral view. Scale bars: 0.5 mm.

Head. Dorsal surface with moderate dense and coarse punctures, punctures on frons coarser and denser than those on clypeus and labrum; interstices between punctures with dense and distinct microsculpture throughout (Fig. 4B). Labrum densely punctate; anterior margin slightly deflexed and broadly concave medially, bearing a transverse row of setae behind anterior margin. Anterior margin of clypeus curved inwards. Frontoclypeal suture distinct. Eyes of moderate size, slightly protruding. Mentum transverse, almost rectangular, ca 2× as wide as long, without impression, surface clearly shagreened with fine punctures. Labial palpomere 3 asymmetrical, as long as penultimate. Maxillary palpomere 4 robust, ca 2× as long as palpomere 3, truncate apically, palpomere 2 strongly swollen in apical half. Antennae with 9 antennomeres; antennal club (antennomeres 7–9) almost as long as antennomeres 2–6 combined. Gula narrow, gular suture slightly curved medially.

Thorax. Pronotum with punctation as those on head, with dense and distinct microsculpture, becoming sparser at middle portion (Fig. 4B); with a pair of large and distinct paramedian impressions. Lateral and anterior margins of pronotum finely rimmed, anterior margin slightly protruding forwards; posterior margin clearly bisinuate, lateral margin almost straight except anterior corner. Scutellum with punctation and microsculpture as those on pronotum. Elytral serial punctures not depressed into striae, ground punctures rather coarse, difficult to distinguish from serial punctures. Sutural stria deeply impressed, almost reaching basal third of elytra. Prosternum slightly convex medially, anterior margin broadly protruding medially. Mesoventrite densely pubescent, with an arcuate ridge. Metaventricle densely pubescent, bulging medially, with a small glabrous area. Pro- and mesofemora densely pubescent on basal half, apical half glabrous; metafemora glabrous throughout, with sparse coarse punctures in which each with a short seta, surface with oblique long sculptures between punctures, only lightly pubescent on anterior margin, trochanter pubescent. Meso- and metatarsomeres ca 3/4× as long as tibia, last tarsomere as long as 3rd and 4th combined.

Abdomen. Abdominal ventrites densely pubescent. First ventrite not carinate. Apical margin of fifth ventrite rounded.

Aedeagus (Fig. 2D). Median lobe widest basally, gradually narrowed towards apex, apex triangular; gonopore triangular, situated at top. Parameres much longer than median lobe, outer face convex, straight medially, inner face slightly convex, moderately rounded apically. Phallobase ca 1.5× as long as parameres, manubrium large and rounded.

Remarks. This species also belongs to *Crenitis apicalis* species group. It is similar to *Crenitis nepalensis* Hebauer, 1994 in morphology, especially in aedeagus. It can be distinguished from the latter by the larger body size, about 2.4–2.9 mm in length (length less than 2.4 mm in *C. nepalensis*); dorsum black, with strong greenish luster (Figs 2A, 4B) (dorsum dark yellowish brown to black, without distinct greenish luster in *C. nepalensis* (Figs 3A, 4C)); pronotum with a pair of large and distinct paramedian impressions (Fig. 4B) (pronotum with a pair of fine and shallow paramedian impressions in *C. nepalensis* (Fig. 4C)); pronotum with dense and distinct microsculpture (Fig. 4B), becoming sparser at the middle portion (microsculpture only visible at the lateral portion and posterior margin of pronotum in *C. nepalensis* (Fig. 4C)); anterior margin of labrum slightly deflexed and broadly concave medially (labrum hardly deflexed and slightly convex medially in *C. nepalensis*).

Etymology. This species is named after “Nezha (哪吒)”, a mythological Chinese archer.

Biology. Occurs in the seepage rock wall or streams with an altitude of over 2,000 m, sometimes co-occurs with *Crenitis lianghongbini* sp. nov.

Distribution. China (Xizang, Yunnan).

***Crenitis nepalensis* Hebauer, 1994**

(Figs 3A, B, 4C)

Crenitis nepalensis Hebauer, 1994: 25. Type locality: Nepal, Bagmati prov., Pokhara NE Barahbise.

Type material examined. PARATYPES: 2♂♂ (NMP, NMW), NEPAL (Prov. Bagmati) Pokhara NE Barahbise, 2800 m, 2.V.81, Löbl & Smetana. With red label “Paratypus *Crenitis nepalensis* n. sp. det. F. Hebauer, 93”.

Additional material examined: 1♀ (NACRC), Xizang, Mêdog, Nage (西藏墨脱那格), 3050 m, 1998.X.30, Jian Yao (姚健), IOZ(E)2002561.

Diagnosis. Length 2.2–2.4 mm. Body elongate oval. Dorsum dark yellowish brown to black, shiny, lateral margins somewhat paler, without distinct greenish luster (Fig. 3A). Legs reddish brown. Anterior margin of labrum

hardly deflexed and slightly convex medially, bearing a transverse row of setae behind anterior margin. Maxillary palpomere 2 moderately swollen in apical half. Mentum clearly shagreened with fine punctures. Dorsal surface of head, lateral portion and posterior margin of pronotum, scutellum with fine microsculpture. Pronotum with a pair of shallow paramedian impressions. Elytral serial punctures not depressed into striae, ground punctures almost same size as serial punctures, difficult to distinguish from serial punctures. Mesoventricle with an indistinct transverse ridge. Pro- and mesofemora densely pubescent on basal half; metafemora uniformly punctate and bare, trochanter pubescent. **Aedeagus** (Fig. 3B). Median lobe gradually narrowed towards apex, pointed apically. Parameres longer than median lobe, outer face broadly convex, almost straight on inner face, moderately rounded apically.

Redescription. Form and Colour (Fig. 3A). Total length 2.2–2.4 mm; maximum width 1.4 mm. Body elongate oval, moderately convex. Dorsum dark yellowish brown to black, shiny, lateral margins somewhat paler, without distinct greenish luster. Antennae yellow with club black; maxillary palpi 4 yellowish brown. Ventral surface yellowish brown to black, legs reddish brown.

Head. Dorsal surface with moderate dense and coarse punctures, punctures on frons coarser and denser than those on clypeus and labrum; interstices between punctures with dense and fine microsculpture. Labrum densely punctate; anterior margin hardly deflexed and slight convex medially, bearing a transverse row of setae behind anterior margin. Anterior margin of clypeus curved inwards. Frontoclypeal suture distinct. Eyes of moderate size, slightly protruding. Mentum transverse, almost rectangular, ca 2× as wide as long, without impression, surface clearly shagreened with fine punctures. Labial palpomere 3 asymmetrical, as long as penultimate. Maxillary palpomere 4 robust, ca 2 × as long as palpomere 3, truncate apically, palpomere 2 moderately swollen in apical half. Antennae with 9 antennomeres; antennal club (antennomeres 7–9) almost as long as antennomeres 2–6 combined. Gula narrow, gular suture slightly curved medially.

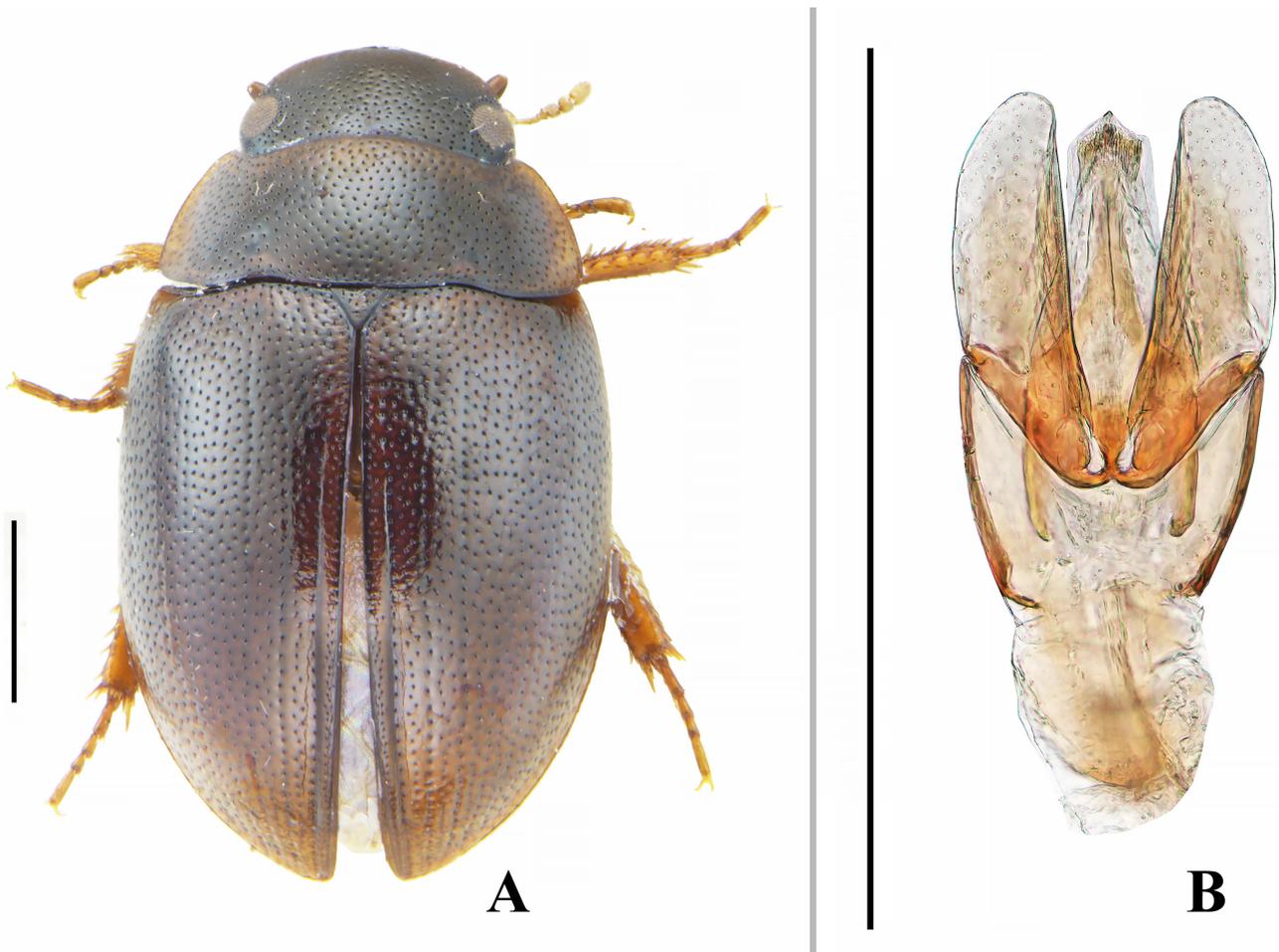


FIGURE 3. Paratype of *Crenitis napalensis* Hebauer, 1994. **A.** Dorsal view of habitus. **B.** Aedeagus of male genitalia. Scale bars: 0.5 mm.

Thorax. Pronotum with punctation as those on head, with dense and fine microsculpture at lateral portion and posterior margin; with a pair of fine and shallow paramedian impressions. Lateral and anterior margins of pronotum finely rimmed, anterior margin slightly protruding forwards; posterior margin clearly bisinuate, lateral margin almost straight except anterior corner. Scutellum with punctation and microsculpture as those on head. Elytral serial punctures not depressed into striae, ground punctures rather coarse, difficult to distinguish from serial punctures. Sutural stria deeply impressed, almost reaching basal third of elytra. Prosternum slightly convex medially, anterior margin broadly protruding medially. Mesoventrite densely pubescent, with an indistinct transverse ridge. Metaventrite densely pubescent, bulging medially, with a small glabrous area. Pro- and mesofemora densely pubescent on basal half, apical half glabrous; metafemora glabrous throughout, with sparse coarse punctures in which each with a short seta, surface with oblique long sculptures between punctures, only lightly pubescent on anterior margin, trochanter pubescent. Meso- and metatarsomeres ca $3/4\times$ as long as tibia, last tarsomere as long as 3rd and 4th combined.

Abdomen. Abdominal ventrites densely pubescent. First ventrite not carinate. Apical margin of fifth ventrite rounded.

Aedeagus (Fig. 3B). Median lobe widest basally, gradually narrowed towards apex, apex triangular; gonopore triangular, situated at top. Parameres longer than median lobe, outer face convex, inner face almost straight, moderately rounded apically. Phallobase ca $1.2\times$ as long as parameres, manubrium large and rounded.

Remark. We examined a female specimen collected in Mědog County, Xizang. Its head and pronotum with slightly finer microsculpture, and the dorsal surface is somewhat paler than that of the paratypes, but all other morphological characters are identical. Considering both the morphological features and the geographic provenance, we assign the specimen to *Crenitis nepalensis* Hebauer, 1994. This represents the first record of *C. nepalensis* from China.

Distribution: Nepal, China (Xizang).

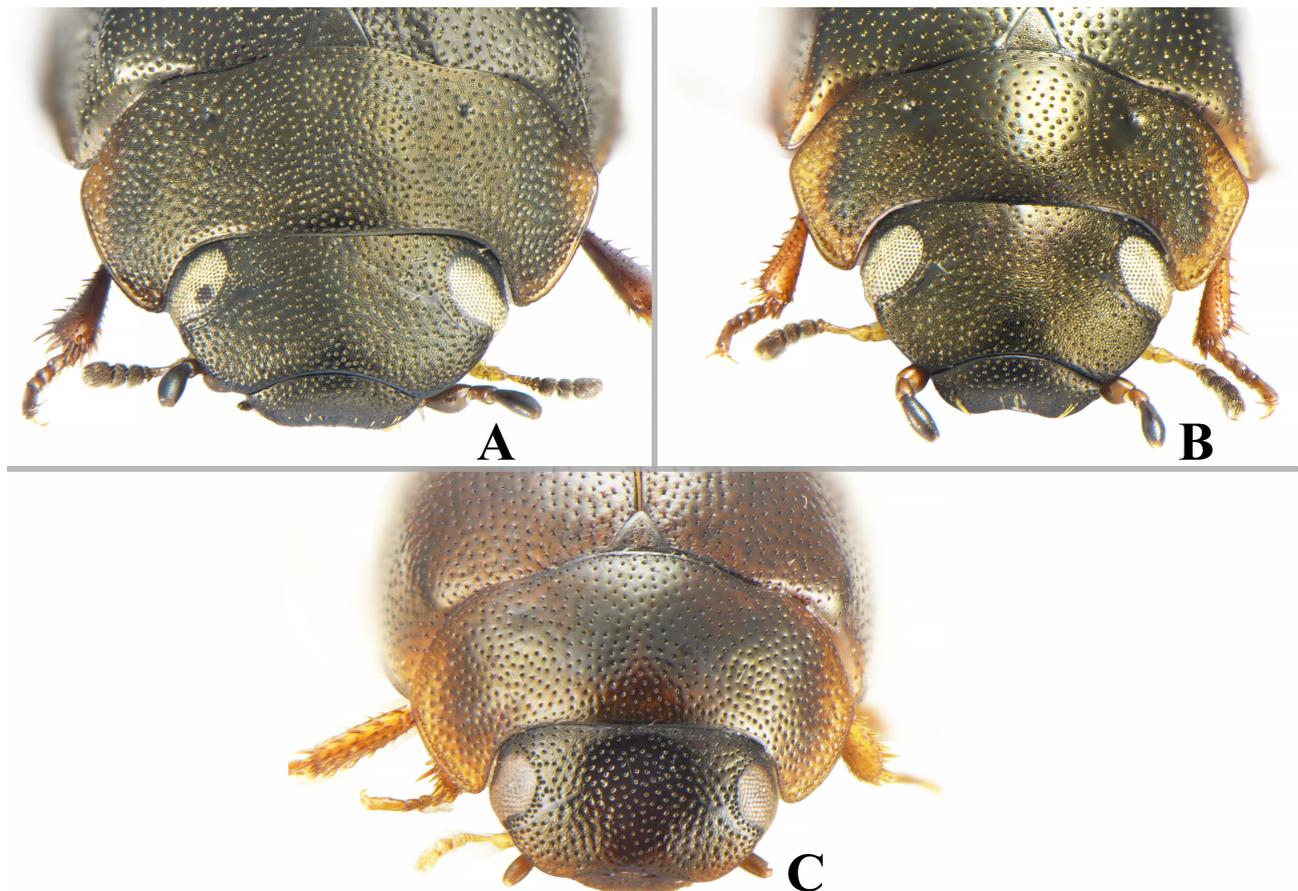


FIGURE 4. Frontal view of head and pronotum. **A.** *Crenitis lianghongbini* sp. nov. **B.** *C. nezha* sp. nov. **C.** *C. nepalensis* Hebauer, 1994.

Key to Chinese species of *Crenitis* s. str.

1. Pronotum with a pair of wide longitudinal paramedian impressions, punctures at lateral portion denser than those at middle portion. Elytral with 10 rows of serial punctures, depressed into striae, intervals convex (see Jia et al. 2016: 569, figs 33, 35) *C. convexa* Ji & Schödl, 1998
- Pronotum with or without paramedian impressions, uniformly punctate. Elytral with 10 rows of serial punctures but not depressed into striae (see Jia et al. 2016: 571, figs 24, 26; 571, figs 42, .44), at most with two lateral striae (see Jia et al. 2016: 563, fig. 3; 566, fig. 20), intervals flat 2
- 2 Head and pronotum with distinct microsculpture, at least at lateral portion. Metafemora glabrous, only with sparse hairs on anterior margin 3
- Head and pronotum without microsculpture. Metafemora densely pubescent at least on basal third of ventral face 6
- 3 Pronotum with dense microsculpture throughout 4
- Pronotum with dense microsculpture at lateral portion 5
- 4 Parameres of aedeagus rounded apically (Fig. 1D) *C. lianghongbini* sp. nov.
- Parameres of aedeagus truncate apically *C. cordula* Hebauer, 1994
- 5 Body 2.4–2.9 mm in length; dorsum black, with strong greenish luster; pronotum with a pair of large and distinct paramedian impressions, with dense and distinct microsculpture, becoming sparser at middle portion (Figs 2A, 4B); anterior margin of labrum slightly deflexed and broadly concave medially *C. nezha* sp. nov.
- Body 2.2–2.4 mm in length; dorsum dark yellowish brown to black, without distinct greenish luster; pronotum with a pair of fine and shallow paramedian impressions; microsculpture only visible at lateral portion and posterior margin of pronotum (Figs 3A, 4C); labrum hardly deflexed and slightly convex medially *C. nepalensis* Hebauer, 1994
- 6 Pronotum evenly convex, without paramedian impressions. Mesoventrite flat or with protuberance 7
- Pronotum with a pair of paramedian impressions. Mesoventrite with low and weak transverse carina *C. shaanxiensis* Ji & Komarek, 2003
- 7 Body 3.1–3.5 mm in length, not attenuate posteriorly. Pronotum uniformly punctate. Mesoventrite with a sharp protuberance medially. Metafemora pubescent on basal half. Parameres with outer margins not emarginate, rounded apically *C. apicalis* (Reitter, 1896)
- Body 3.5–3.4 mm in length, attenuate posteriorly. Pronotum more densely punctate laterally than medially. Mesoventrite flat, without carina and protuberance. Metafemora pubescent at least on basal three-fourths. Parameres with outer margins emarginate subbasally and subapically 8
- 8 Parameres strongly convex outside medially, strongly emarginate subapically to form a sharp tooth (see Jia et al. 2016: 572, fig. 50) *C. aduncata* Jia, Tang & Minoshima, 2016
- Parameres moderately convex outside medially, moderately emarginate subapically, not form a sharp tooth 9
- 9 Parameres with apical half broad, median lobe reaching apex of parameres (see Jia et al. 2016: 572, fig. 51) *C. lianggeqiu* Jia, Tang & Minoshima, 2016
- Parameres with apical half narrow median lobe reaching apical one-fourths of parameres (see Jia et al. 2016: 566, fig. 23) . . . *C. obovata* Jia, Tang & Minoshima, 2016

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中国平胸牙甲属 *Crenitis* 二新种及一新纪录种 (鞘翅目: 牙甲科: 凯牙甲亚科)

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摘要: 描述中国西南部平胸牙甲属二新种, 即红斌平胸牙甲 *Crenitis lianghongbini* sp. nov. (云南、西藏) 和哪吒平胸牙甲 *C. nezha* sp. nov. (云南、西藏); 尼泊尔平胸牙甲 *C. nepalensis* 为中国纪录种 (西藏); 提供了以上三种的鉴定特征和特征图。

关键词: 牙甲科, 毛腿牙甲族, 新种, 中国西南部, 东洋区