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A new genus of trechine beetles, *Puertrechus* gen. n., with two new species and a new species of *Dactylotrechus* Belousov et Kabak, 2003 from Southern China (Coleoptera: Carabidae: Trechinae)

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Abstract

Puertrechus **gen. n.**, related to both *Dactylotrechus* and *Quiennectrechus* Deuve, 1992 is established to accommodate two new trechine species: *P. mengsaensis* **sp. n.** (type species of the genus, type locality: Mountains East of Mengsa City, Lincang Prefecture, Yunnan, China) and *P. daxueshanicus* **sp. n.** (type locality: Daxueshan Mount, the same prefecture). Likewise, the second species of the genus *Dactylotrechus* Belousov & Kabak, 2003, *D. yalongensis* **sp. n.**, is described from the right bank of the Yalong River, SW of Mianing, southern Sichuan, China. This species differs from the only known species of the genus in some important characters including the elytral chaetotaxy and the male genitalia structure. Some adjustments of the genus diagnosis are made to embrace the new species. Keys to species of *Dactylotrechus* and *Puertrechus* **gen. n**. are included and their distribution is mapped. A key is provided to differentiate *Puertrechus* , *Dactylotrechus* and *Quiennectrechus*.

Key words: *Quiennectrechus*, *Puertrechus*, taxonomy, carabids, Trechini, Sichuan, Yunnan, China

Introduction

In 1992, Thierry Deuve described a new genus and a new species of trechine beetles, *Queinnectrechus excentricus* Deuve, 1992, which was unique among all Chinese Trechini in having the hind angles of the pronotum modified in digitiform processes (Deuve, 1992 a) resembling those of *Gipsyella patagonica* Schweiger, 1959 from Tierra del Fuego (Deuve, 1992 b). Later, Uéno Shun-Ichi described a second member of the genus, *Queinnectrechus smetanai* S. Uéno, 1995. Among other characters, this species differs from *Q. excentricus* in the increased number of elytral setiferous discal pores (four or five vs. three in *Q. excentricus*). This character state, rather unusual for most Trechini, made it much easier to determine the taxonomic position of *Queinnectrechus*, which was placed by Uéno in the *Kozlovites* lineage of the *Agonotrechus* phyletic series (Uéno, 1995). According to this author, this lineage includes apart from *Kozlovites caviceps* Jeannel, 1935 and *Queinnectrechus*, one more genus, *Deuveotrechus* S. Uéno, 1995 established by him (Uéno, 1995) for *Kozlovites yuae* Deuve, 1992 and *Stevensius gregoryi* Jeannel, 1937 (Jeannel, 1937; Deuve, 1992). Despite the obvious heterogeneity of the *Agonotrechus* series (Belousov & Kabak, 2014), the *Kozlovites* lineage of its own seems to be a well defined natural group of trechines. Despite unusual shape of the pronotal hind angles, *Queinnectrechus* demonstrate clear affinities with its members in some important characters, including: elongate ovate body, rather long tempora, strong constriction of the pronotal base, lateral border of the pronotum more or less reduced posteriorly, and increased number of the discal setiferous pores on the elytra typical of most members of the genus (Belousov & Kabak, 2003).

In 2003, the authors of the present paper described a new genus and a new species, *Dactylotrechus setosus* Belousov & Kabak, 2003. This genus shares with *Queinnectrechus* a similar structure of the pronotal hind angles. Eight years later, a second member of *Dactylotrechus* was found in the basin of the Yalong Jiang. This species is described in the current paper and the diagnosis of the genus is modified to encorporate it.

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In 2010, two closely related trechine species with digitiform pronotal hind angles were found in two adjacent mountain massifs in Lincang Prefecture, southern Yunnan, China, not far from the boundary with Myanmar. These species, though related to *Dactylotrechus* and *Queinnectrechus*, show some important differences, which are considered as enough to erect a new genus described below.

Material and Methods

All the holotypes and a part of the paratypes of new species are kept in the collection of the Zoological Museum of the Russian Academy of Sciences (ZISP, St. Petersburg, Boris Kataev). Other paratypes are shared with the following institutions and private collections:

CAG Private collection of Arthur Gitzen, Neuhofen, Germany
CAK Private collection of Alexander Koval, St. Petersburg, Russia
CBK Private collection of Igor Belousov and Ilya Kabak, St. Petersburg, Russia
CDW Private collection of David W. Wrase, Berlin, Germany
CMJ Private collection of Miroslav Janata, Praha, Check Republic
CPM Private collection of Pavel Moravec, Litoměřice, Check Republic
CVZ Private collection of Vladimir Zieris, Pardubice, Check Republic
MPU Moscow State Pedagogical University, Moscow, Kirill Makarov
ZSM Zoologische Staatssammlung, Munich, Michael Balke.

Measurements used here are the same as in our previous articles (e.g. Belousov & Kabak 2000, 2003). All measurements were taken using an MBS-10 stereomicroscope equipped with an ocular micrometer. Body length was measured without mandibles, from the anterior margin of the labrum to the apex of the longest elytron; the length of the elytra—from the apex of the scutellum to the elytral apex; the width of the pronotal base—at the narrowest point near level of the posterior lateral seta. The position of the discal and umbilicate pores is given as percentages of the elytral length. Similarly, the position of the anterior lateral seta of the pronotum is given as percentage of the length of the latter. Most of measurements and indices are given in separate tables to facilitate comparisons between species and searching for necessary information. Twenty specimens, if available, were measured for each geographical locality. The nonparametric Mann & Whitney *U*-test was applied to study sexual dimorphism.

The number of specimens studied is followed by the number of the genital preparations given in parentheses.

Photographs of the male genitalia were made using a Karl Zeiss Axio Imager M1 microscope equipped with an AxioCam MRc5 camera. Photographs of beetles were taken with a Canon 40D DSLR digital camera, using stacking and subsequently processed with Zerene stacker software version 1.04 (http://zerenesystems.com/stacker).

Abbreviations

AL—length of antennae; BH—height of body; EL—length of elytra; EW—width of elytra; HW—width of head; L2—length of antennomere 2; L3—length of antennomere 3; PA—width of pronotum at anterior margin; PB—width of pronotum at base; PL—length of pronotum; PW—width of pronotum; TaL—length of hind tarsus; TiL—length of hind tibia; TL—length of temple; YL—length of eye; W3—width of antennomere 3; PSa—distance from anterior margin of pronotum to anterior lateral seta of pronotum; D1—distance from scutellum apex to level of anterior discal setiferous pore of the left elytron; D2—distance from scutellum apex to level of posterior discal setiferous pore of the left elytron; DP—distance from scutellum apex to level of preapical setiferous pore of elytra; D5—distance from scutellum apex to level of discal setiferous pore on site of elytral stria 5; U1–8—distance from scutellum apex to level of the corresponding umbilicate pore of elytron as percentage of elytral length.

Average values are given in parentheses.

Genus *Dactylotrechus* Belousov & Kabak, 2003

Dactylotrechus Belousov & Kabak, 2003: 31, type species: *Dactylotrechus setosus* Belousov & Kabak, 2003.

Diagnosis. The genus can be readily diagnosed by the combination of the following characters: digitiform hind angles of the pronotum; at least, two anterior lateral setae on each side of the pronotum; presence of the true preapical pore and exterior series of the discal setiferous pores on the elytra.

Redescription. Medium-sized trechines with narrow cordiform pronotum and ovate elytra.

Mentum and submentum fused but mental suture partially perceptible. Submentum with normally six, more seldom seven or even still a few small median setae.

Pronotum with two to five anterior lateral setae and one posterior seta on each side.

Digital processes of pronotum of moderate length, posterior lateral setae clearly removed forward from basal margin of pronotum. Lateral groove rather wide in anterior half of pronotum, with distinct border which markedly shifted on dorsal surface of pronotum in its posterior half in a way that lateral portions of sternum visible from above as lateral parts of processes. Both lateral border and lateral groove, at least, partially reduced in posterior portion of pronotum.

Striae on elytra more or less reduced: at most, stria 1 well impressed, stria 2 partially perceptible, either all discal striae completely reduced. Elytral chaetotaxy consisting of 2–3 irregular longitudinal rows, with some pores of inner row located on the third or even second interspace, their total number ranging from 7 to over 20. Preapical pore present and located in apical cross.

Two dilated basal segments of protarsi in male.

Aedeagus slender, strongly curved at base, with attenuating and gradually narrowing apical portion and knobbed apex. Two plates of endophallus armature from vague and poorly sclerotized to well-defined and extending beyond apical orifice. Each parameres with 3–4 apical setae, left one with a distinct ventral apophysis.

Notes. The genus *Dactylotrechus* is the second known trechine genus in East Asia with digitiform hind angles of the pronotum. It is easily distinguishable from *Queinnectrechus* by the following characters: additional anterior lateral setae of the pronotum; presence of the exterior series of the setiferous pores on the elytra and presence of a true preapical pore. Apart from these characters, the two known species of *Dactylotrechus* have rather short and evenly convex tempora (rather than long and flat in anterior portion in all *Queinnectrechus*), as well as the endophallus armature without two stylus-like sclerites, typical of all members of *Queinnectrechus.*

Dactylotrechus yalongensis Belousov & Kabak, sp. n.

(Figs. 1–3)

Type material: Holotype: 1(1)♂, "China, Sichuan Province, SW Mianning Town, 28º13´19´´ N / 101º43´21´´ E, H=3700 m, 07.07.2011, Belousov & Kabak leg." (ZISP). **Paratype:** 1(1)♀, collected together with holotype (CBK).

Description. Medium-sized species, body length 4.10–4.25 mm. The morphometric characters of this species are given in Table 1. Habitus (Figs. 1–2) briefly ovate, strongly convex, with relatively strong constriction at pronotal base. Legs and antennae rather thin, medium in length. Color of dorsum blackish piceous, translucent with reddish tinge. Head slightly obscured in its median part, labrum darkened medially, mandibles weakly paler than the remainder of head; pronotum pale-reddish in apical part, at base, along median line and along margins. Elytra vaguely reddish at base, margins and suture. Legs and antennae unicolorously reddish-brown, only femora in their proximal parts feebly darkened.

Head rather large, widest across eyes. Frontal furrows strongly sinuate in anterior third, subparallel-sided in median portion, gradually arcuate posteriorly, deepest at level of clypeal suture and at level of parietal impression, becoming increasingly shallower behind the latter. Frons strongly convex. Parietal impression shallow but distinguishable. Eyes rather large, evenly convex, clearly longer than tempora, the latter rather weakly convex, glabrous. Supraorbital carina well developed, rather high, becoming less elevated towards the eyes. Two clypeal setae on each side of head, two usual supraorbital setiferous pores of which the anterior one is strongly foveolate. Labrum sexsetose, with angular emarginate anterior margin. Mandibles rather slender, regularly curved for most of

their length, their apices distinctly attenuated and more strongly curved inward. Tooth on the right mandible tridentate, proximal denticle being fused with the rest of the tooth, incision between it and median denticle deepest. Both proximal and distal denticles acute and produced, distal one biggest, median one shortest, subrectangular. Tooth on the left mandible bidentate, with proximal denticle weakly longer. Maxillary palpi glabrous or at most with a rudimentary seta located in apical portion of penultimate segment. All segments rather thick, the ultimate weakly attenuating in the apical half; penultimate strongly constricted towards the base and deeply concave along inner margin; inner margin of the second segment S-shaped, its outer margin evenly convex. Labial palpi relatively robust, ultimate segment fusiform, asetose, approximately as long as penultimate; its maximum width near mid-length; penultimate segment quadrisetose (two setae located on the inner margin, of which the posterior one is slightly before the mid-length of the segment, one seta on the outer margin of the segment at the level of inner anterior seta, and one seta in usual subapical position). Glossum triangular-shaped, with a couple of long median setae and a few shorter lateral setae on each side. Paraglossae rather long, weakly curved, feebly pubescent internally. Mentum and submentum fused in a semicircular structure. Six rather long submental setae, of which the lateral are the longest. Anterior margin of labial emargination thickly bordered, labial tooth rather long, produced forwards and upwards, not grooved ventrally but with a small fovea in the distal part, its apex is blunt or weakly notched.

TABLE 1. Morphometric characters of *Dactylotrechus yalongensis* sp. n.

Indices	Range	Indices	Range
PW/HW	1.25–1.28	EL/BH	2.04–2.05
YL/TL	1.52–1.73	EL/TiL	1.84–1.89
YL/L3	1.01–1.19	TiL/TaL	1.38–1.44
AL/EL	1.00–1.02	EL/BH	2.04–2.05
L3/L2	1.23–1.25	(DP/EL) x 100	78.5–81.5
L3/W3	2.16–2.29	(U1/EL) x 100	10.1–10.9
PW/PL	1.21–1.23	(U2/EL) x 100	14.3–14.5
PW/PB	1.57	(U3/EL) x 100	19.9–20.8
PW/PA	1.29–1.35	(U4/EL) x 100	26.8–27.2
EL/EW	1.29–1.30	(U5/EL) x 100	57.1–57.4
EL/PL	2.55–2.59	(U6/EL) x 100	62.8–63.7
EW/HW	2.02–2.07	(U7/EL) x 100	74.9–76.8
EW/PW	1.61–1.63	(U8/EL) x 100	83.1–84.5

Pronotum distinctly transverse, strongly constricted toward base and slightly constricted toward apex. Pronotal sides nearly straight in anterior quarter, evenly rounded in broadest part at level of anterior third of pronotum and sinuate posteriorly. Lateral border distinct only in anterior part of pronotum, disappearing behind mid-length; at most, partly traceable near posterior lateral seta. Lateral groove rather wide in anterior third of pronotum, nearly disappearing at level of posterior termination of lateral border and further posteriad again well-impressed and fused with basal fovea of pronotum forming a sharp common angular impression. Lateral sides of prosternum shifted onto dorsal surface in a way that posterior lateral seta is markedly displaced inward. Outer margin of pronotum in its posterior third is made up of lateral portion of prosternum, which is freely visible from above. Hind angles as small processes produced backwards, triangular-shaped in lateral view, their lateral surface visible from above. Prebasal transverse impression smooth and shallow laterally, reduced medially, joining lateral foveae. Apical transverse impression reduced, barely traceable laterally. Three (seldom two on one side) anterior lateral setiferous pores located in the anterior third of the pronotum. Basal margin straight medially, deeply and briefly emarginate laterally near the hind angles. Anterior margin rectilinear, anterior angles of pronotum not protruding. Surface of pronotum smooth.

FIGURE 1. *Dactylotrechus yalongensis* sp.n., male holotype, habitus.

FIGURE 2. *Dactylotrechus yalongensis* sp.n., female paratype, habitus.

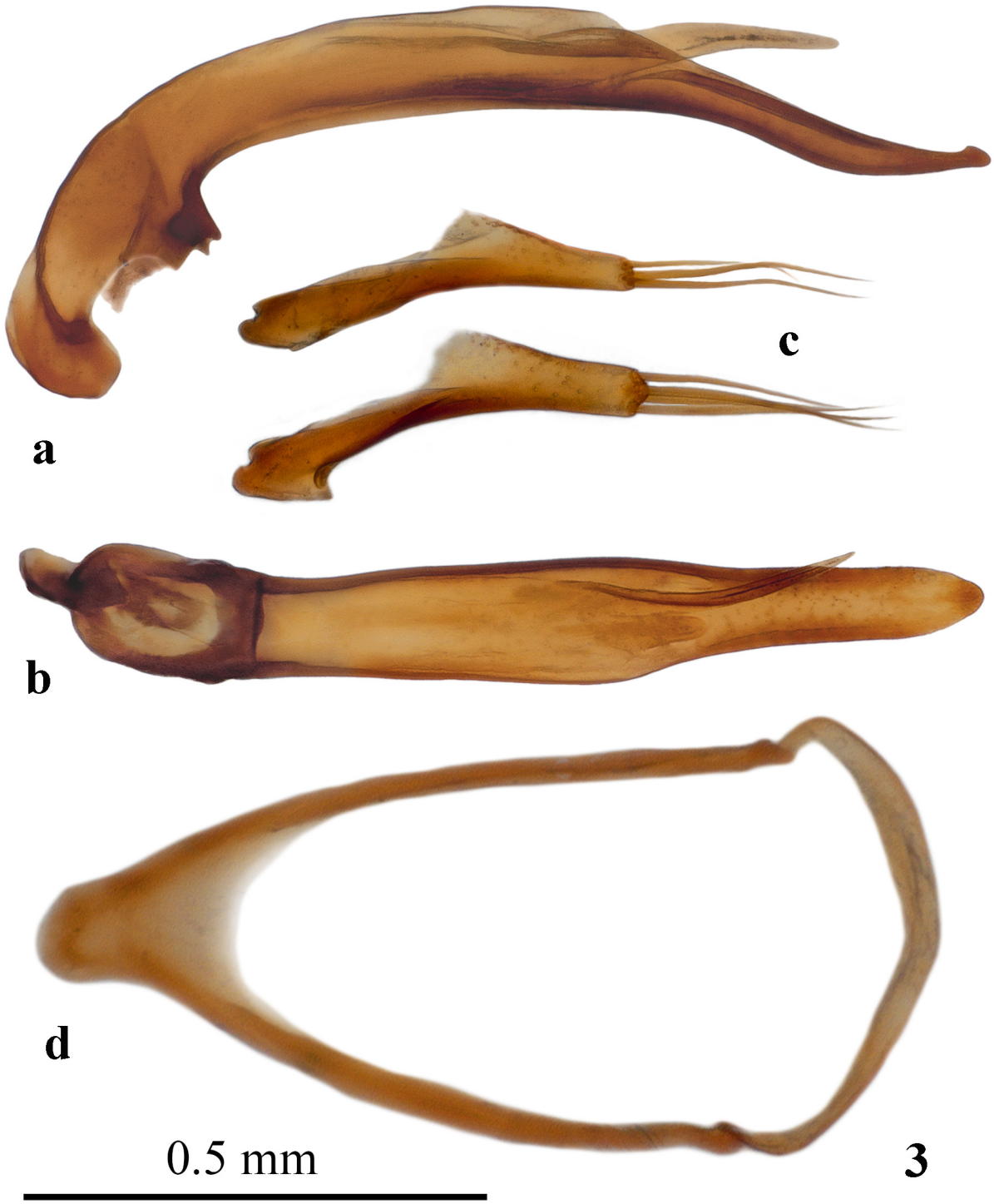


FIGURE 3. Male genitalia of *Dactylotrechus yalongensis* sp.n.: a—lateral view, b—dorsal view, c—parameres, d—genitalic sac.

Elytra broadly ovate, convex, with maximum width slightly behind mid-length, their lateral slopes very steep. Humeri distinct though rounded. Apices of elytra conjointly rounded, preapical sinuation weak. Lateral groove rather wide throughout its whole length, becoming narrower toward its anterior termination, but completely visible from above even here; lateral margins moderately reflexed upward. Discal elytral striae effaced, stria 8 traceable in posterior part of elytra, extending anteriad up to umbilicate pore 5. Parascutellar striole shallow, deeper in anterior part where it forms a comma-like sharp impression. Apical striole relatively long, broadly curved to nearly straight, directed latero-anteriad, gradually disappearing and curved inward anteriorly, its anterior termination at level of umbilicate pore 8; apical carinula wide, evenly convex. Normally seven, seldom eight foveolate discal setiferous

pores on each elytron. Their distribution on disc very irregular, varying on left and right elytron and different in two available specimens. In the male, these pores are arranged mostly in three longitudinal rows (left: 2–2–4, right: 3–2–2), inner row located on site of the third interspace between vestigial striae 2 and 3. In the female specimen, the discal setiferous pores are arranged principally in two longitudinal irregular rows (left: 2–5, right: 3–3), the middle pores of the inner rows being located in stria 3, both the anteriormost and posteriormost pores slightly shifted inward, the latter located in position typical of the preapical pore at level clearly anteriad of the anterior termination of the recurrent striole. Exterior row most stable, located approximately on site of stria 5 and consisting of two (three on one elytron of one specimen) pores confined to anterior third of elytron. Angulo-apical pore attached to apical border of elytron much further from suture than from apical margin and located only weakly closer to suture than to exterior pore. Preapical and angulo-apical pores located on lines clearly convergent posteriad. Pores of umbilicate series well aggregated, umbilicate pores 1, 4 and 7 markedly removed from lateral margin. All umbilicate pores of the humeral and median groups evenly distributed within their groups; pores 7 and 8 most spaced.

All dorsum smooth and shining, without any trace of microsculpture but with well-developed micropunctures rather densely disseminated throughout elytra and markedly more sparsely distributed on head and pronotum. Under-side mostly smooth, traces of microsculpture visible only fragmentary, mostly between hind coxae. Suture between second and third visible abdominal sternites interrupted medially.

Anal sternite with two pairs of setae in female and one pair in male; visible abdominal sternites 3-5 with one pair of paramedian setae.

Legs rather long. Femora densely pubescent, with three longer setae along lower margin. Tibiae nearly straight, strongly and densely pubescent, including anterior surface of front tibiae, exterior surface of the latter grooved, at least, in middle part. Male protarsi with two basal segments dilated, segment 1 barely longer than wide, segment 2 clearly transverse, both with short and stout inner tooth, their under-side with well-developed adhesive appendages.

Aedeagus (Fig. 3) long and slender, step-like curved at basal third, with distinct sagittal aileron and apical portion attenuated and weakly S-curved, with a small knobbed apex. Basal orifice clearly emarginate. Endophallus armature well-developed, pairwise, the right piece long, heavily sclerotized and markedly projecting beyond apical orifice while the left one much shorter, less distinctly outlined, rounded apically. Parameres slender, curved, each bearing 3–4 apical setae; left one clearly longer, with small but distinct ventral apophysis.

Sexual dimorphism. Though only one male and one female are presently availble, some differences in proportions between these are rather typical of most trechine beetles: antennae and legs are marginally longer (YL/L3 1.01 vs. 1.19; L3/W3 2.29 vs. 2.16; EL/TiL 1.84 vs. 1.89 respectively), elytra slightly larger (EL/PL 2.59 vs. 2.55) in the male specimen while head is somewhat larger in the female specimen (EW/HW 2.02 in female vs. 2.07 in male). On the contrary, the female specimen turns out to be marginally larger what, according to our experience, is not often observed in Trechini.

Comparative notes. The new species differs from the only known congener, *Dactylotrechus setosus* Belousov & Kabak, 2003, in having much more robust body, with shorter elytra, darker coloration of the upper-side (black piceous versus dark reddish-brown in *D. setosus*), only three (seldom two) anterior lateral pores on the pronotum instead of four or five in *D. setosus* and less numerous setiferous pores on the elytra (7–8 setae on each elytron versus normally more than 20 in *D. setosus*) (see Figs. 1–2 and 4). The shape of the median lobe of the aedeagus is very similar, though marginally longer, the endophallus armature, compared to *D. setosus*, is more clearly sclerotized, with the right piece attenuating and extending beyond the apical orifice while poorly sclerotized and not extending beyond the apical orifice in *D. setosus*.

Distribution. Right bank of the Yalong River, SW of Mianning City, Sichuan Province, China (Fig. 5, white circle).

Bionomics. The species was sifted from flood debris on banks of a small brook located within a mountain forest at an elevation of 3700 m.

Genus *Puertrechus* Belousov & Kabak, gen. n.

Type species: *Puertrechus mengsaensis* Belousov & Kabak, sp. n.

FIGURE 4. *Dactylotrechus setosus* Belousov & Kabak, 2003, female paratype.

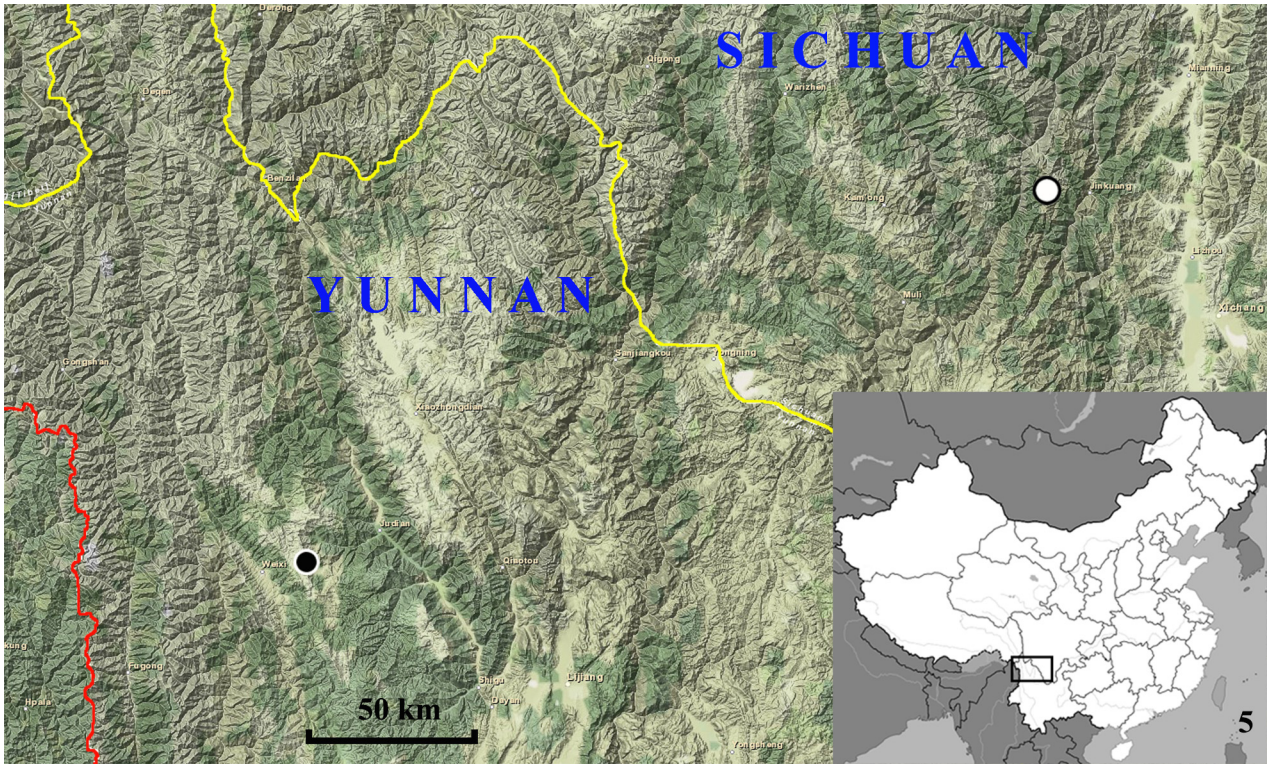


FIGURE 5. Distribution of *Dactylotrechus* species. 1 (black circle)—*Dactylotrechus setosus* Belousov & Kabak, 2003. 2 (white circle)—*Dactylotrechus yalongensis* sp. n.

Diagnosis. The genus is characterized by the combination of the following characters: pronotum with digitiform hind angles, complete lateral border and one anterior lateral seta; elytra with three (including preapical) discal setiferous pores in stria 3 and one (very seldom two) discal setiferous pore on site of stria 5; median lobe of the aedeagus impressed on the ventral surface; its distal part dilated in a spoon-like structure; endophallus armature spatulate.

Description. Medium-sized apterous trechines with shortly ovate convex body and strong constriction at base of pronotum. Antennae and legs medium in length and rather thin, tibiae nearly straight. Colour of body rather dark. Body surface, including underside, glabrous.

Head large, though markedly narrower than pronotum. Eyes well developed and rather convex, tempora completely glabrous and weakly convex. Frontal furrows entire, well impressed in median and anterior parts, shallow posteriorly. Two supraorbital setiferous pores on each side of head, the anterior being strongly, and posterior one slightly foveolate. Two long clypeal setae on each side of head. Labrum sexsetose, very seldom with seven setae. Mandibles rather robust, weakly and gradually curved; premolar on the right mandible missing, i.e. the proximal denticle is not isolated from the remainder of the tooth. Both maxillary and labial palpi rather stout, with ultimate segments subcylindrical, slightly attenuated toward apex. Maxillary palpi glabrous, only segment 2 with more or less distinct seta on its inner-anterior margin; penultimate segment of maxillary palpi strongly dilated distally and markedly shorter than ultimate. Penultimate segment of labial palpi quadrisetose, only marginally shorter than the last one. Glossum triangular-shaped, blunt at apex, with two longer median setae and a few shorter lateral setae. Paraglossae rather short though strongly protruding beyond anterior termination of ligula, without distinct hairs. Labial tooth rather long, wide, distinctly bidentate or broadly rounded at apex, directed forward and upward, with or without longitudinal groove on ventral surface; epilobes at base with distinct transverse border markedly dilated in median portion. Four very long submental setae corresponding to sublateral and median setae; subangular setae extremely thin and short, nearly reduced, often missing (? broken); occasionally one more short median seta. Submentum and mentum fused together, with arched callosum-like structure, labial suture very fine, easily distinguishable only in median portion. Central setae of both stipes and cardo very long, much longer than adjacent setae.

Pronotum cordiform, with sides strongly constricted and sinuate before hind angles. Latter modified into digitiform processes similar to those of *Queinnectrechus* Deuve, 1992; basal margin deeply emarginate near hind angles, weakly convex elsewhere. Both anterior and posterior lateral setae present. Lateral border of pronotum entire though becoming extremely fine in posterior half. Lateral groove of pronotum narrow in anterior part, degenerated posteriorly. Basal foveae small and deeply impressed. Prebasal transverse impression distinct. Apical transverse impression shallow. Median line distinct.

Elytra briefly ovate and evenly convex, humeri oblique. Base of elytra with an impression matching the shape of pronotal base. Lateral groove very wide, much wider than that of the pronotum. Lateral margins smooth and glabrous, not ciliated. Elytral striolation strongly reduced, inner striae visible only as fragments. Parascutellar striole distinct, deeply impressed, parascutellar pore present. Apical striole short and weakly impressed. Elytral chaetotaxy very characteristic: apart from two normal discal setiferous pores in stria 3, one more setiferous pore on site of stria 5 located in basal third of elytra. Preapical pore markedly shifted anteriad and located in cross of striae 2 and 3, clearly before anterior termination of apical striole. Both angulo-apical and exterior pores present. Humeral group of umbilicate series not aggregated: the first umbilicate pore more or less strongly shifted inward; all other umbilicate pores located approximately the same distance from lateral margin. Umbilicate pores 7 and 8 more spaced than others within their groups.

Microsculpture effaced to shallow depending on the species. All surface evenly and strongly micropunctured. These micropunctures distributed in more than two longitudinal rows on each interspace of elytra.

Ventral side covered with rather even and fine microsculpture consisting of strongly transverse meshes in median part of the second and third visible abdominal sternites, and of transverse serrate lines elsewhere. Metepisternite much longer than wide, smooth, only with a few very sparse and shallow punctures. Suture between second and third visible abdominal sternites effaced medially. Only one pair of paramedian setae on abdominal sternites 3-5; anal sternite with two setae in male and four setae in female.

Front tibiae distinctly grooved on exterior surface and shortly and rather sparsely pubescent in apical fifth on anterior surface. Two basal segments of male protarsi dilated and dentate, bearing on their underside very small adhesive appendages.

Aedeagus (Figs. 8–9 and 13–14) small, its median lobe slender, moderately curved, distinctly dilated in apical third; apex very blunt, apical portion forming a spoon-like structure with strongly extended walls. Endophallus armature spatulate, poorly sclerotized, located in the apical third of the median lobe. Parameres rather wide, gradually curved, with broadly rounded apex bearing 4–5 apical setae; left one slightly longer, with a distinct ventral apophysis.

Sexual dimorphism. The two known members of the genus do not reveal significant sexual dimorphism in morphometric characters. Nonetheless, the females are, on average, marginally larger, their appendages shorter, eyes smaller; only the length of the antennae in relation to the elytral length being significantly lesser ($p<0.05$ according to the Mann & Whitney *U*-test).

Comparative notes. Some characters of the new genus are intermediate between those of *Queinnectrechus* and *Dactylotrechus,* for example, the elytral chaetotaxy is characterized by presence of one additional setiferous pore in the exterior series (approximately on site of stria 5) and by transitive position of the preapical pore. Other character states, such as the fixed normal number of the discal setiferous pores in the interior series and the male genital structure seem to be unique within this groupe of trechines.

The genus *Puertrechus* gen. n. differs from *Dactylotrechus* in having only one anterolateral pore on the pronotum, entire lateral border of the latter, only one outer setiferous pore of elytra, and the inner row always consisting of three setiferous pores, typical of most Trechines in contrast to varying number observed in members of both *Queinnectrechus* and *Dactylotrechus*. Apart from the latter character, members of *Puertrechus* gen. n. differ from those of *Queinnectrechus* in presence of the preapical pore (although slightly displaced anteriad) and exterior pore on the elytra, the entire lateral border of the pronotum and shorter tempora.

The location of the first umbilicate setiferous pore in *Puertrechus* gen. n. is worth to be noted. Both known species show a clear tendency to a non aggregated condition, which is most noticeable in *Puertrechus mengsaensis* sp. n. In some specimens of this species, umbilicate pore 1 is so strongly displaced inward and backward that is often located only marginally before the level of the second umbilicate pore. Such a condition is considered to be primitive and is rather common among the cave-dwelling troglobitic species but rather unusual for the humicolous trechines (Jeannel, 1928).

Apart from the external characters, the new genus has distinct male genitalia (Figs. 8–9 and 13–14): the median lobe rather small and thin, markedly curved, its apical portion modified in a spoon-like structure with expanded and deflexed upward margins, the ventral surface in proximal half with a flattening or even impression, which is carinate laterally; the endophallus armature spatulate and poorly sclerotized.

Derivatio nominis. The generic epithet refers to the name of the geographic area Pu Er (or Pu-Erh) located in southern Yunnan, China.

Distribution. The two species of this genus originate from the two isolated small mountain ranges situated not far from the Chinese boundary with Myanmar, southwestern Yunnan (see Fig. 15).

Puertrechus mengsaensis Belousov & Kabak, sp. n.

(Figs. 6–9)

Type material: Holotype: 1(1)♂, "CH, Yunnan Province, Mt. E Mengsa Town, 23º42′26′′ N / 99º47′26′′ E, H=3045 m, 30.05.2010, Belousov & Kabak leg."(ZISP). **Paratypes:** 117(5)♂♂, 76(3)♀♀, collected together with holotype (ZISP, ZSM, MPU, CAG, CAK, CBK, CDW, CMJ, CPM, CVZ). 10♂♂, 10♀♀ measured.

Description. Medium-sized species, body length 3.75–4.25 mm. For all morphometric characters of this and the next species see Table 2. Habitus (Figs. 6–7) briefly ovate, strongly convex, with relatively strong constriction at pronotal base. Antennae and legs medium in length. Colour amber-reddish with darker, nearly blackish lateral sides of pronotum (these spots often merged medially) and disc of elytra; the suture, margins and base of elytra usually reddish; head mostly reddish, with blackish narrow median spot on labrum and occasionally vague darkening in posterior part; legs and antennae usually unicolorously reddish, seldom barely obscured in median and distal parts.

Head large, clearly narrower than pronotum. Eyes rather large, strongly produced beyond outline of head, clearly longer than tempora which are completely glabrous and evenly convex. Frontal furrows entire, subparallel in median part, becoming much deeper near level of clypeal suture and approximately at level of anterior supraorbital setiferous pores, rather sharply curved and becoming very shallow posteriorly. Parietal impression shallow, frons convex. Supraorbital setiferous pores on lines subparallel to the body axis. Labrum clearly transverse, with anterior margin shallowly concave. Mandibles rather robust, weakly and gradually curved, tooth on the right mandible trilobed, each lobe being triangular-shaped, with distal lobe longest and median lobe shortest. Tooth on left mandible weakly cleft apically. Clypeal suture straight. Ultimate segment of antenna longest, third and fourth antennomeres weakly shorter, and second one being shortest.

Pronotum rather small, cordiform, with sides briefly rounded in anterior third and strongly constricted and sinuate in posterior half. Digitiform processes rather short, directed back- and outward, basal margin of pronotum weakly convex, except for its most lateral portions which are deeply emarginate. Anterior lateral setae located at broadest point of pronotum, posterior one—markedly shifted anteriad from basal margin. Lateral border of pronotum rather thick in anterior half, becoming very fine in posterior half. Lateral groove of pronotum distinct in anterior part, more or less reduced posteriorly. Discal foveae small and shallow but distinct. Basal foveae small and deep, completely smooth. Prebasal transverse impression rather shallow, base of pronotum smooth. Apical transverse impression barely distinguishable except for lateral parts. Apex of pronotum finely longitudinally rugulose. Median line rather shallow, not reaching anterior margin, slightly deepening toward preapical transverse impression but not projecting beyond it.

Elytra briefly ovate, their maximum width near mid-length, with distinct though strongly oblique humeri and broadly rounded apex, re-entrant angle distinct. Disc of elytra moderately and evenly convex. Lateral groove wide for most of its length, gradually narrowing only before humeri, slightly deflexed throughout. Discal striae reduced: only fragments of three inner striae visible. Eighth stria very shallow, distinguishable near pores of umbilicate series. Parascutellar striole rather long, parascutellar seta present. Apical striole short and shallow, directed mostly outward and curved inward anteriorly. Anterior discal pore located before level of umbilicate pore 1, posterior one—at level between umbilicate pores 4 and 5, preapical pore—at level near umbilicate pore 7, clearly before anterior termination of apical recurrent striole; with traces of striae 2 and 3 anastomosing here. Discal setiferous pore on site of stria 5 located in basal sixth of elytra slightly behind anterior discal pore. Angulo-apical pore approximately in middle between exterior pore and elytral suture. First umbilicate pore varying in position, more or less strongly shifted inward (distance between umbilicate pores 1 and 2, on average, 3% vs. 4.7% between pores 2 and 3). Location of all pores of umbilicate series as in table 2.

TABLE 2. Morphometric characters of *Puertrechus mengsaensis* gen. n., sp. n. and *P. daxueshanicus* gen. n., sp. n.

Indices	*P. mengsaensis* Range (average value)	*P. daxueshanicus* Range (average value)
Body length, mm	3.75–4.25 (**4.06**)	3.65–4.20 (**3.96**)
PW/HW	1.11–1.22 (**1.16**)	1.16–1.22 (**1.19**)
YL/TL	1.43–1.77 (**1.56**)	1.60–1.96 (**1.76**)
YL/L3	0.96–1.14 (**1.05**)	1.00–1.21 (**1.09**)
AL/EL	1.04–1.14 (**1.09**)	0.99–1.09 (**1.04**)
L3/L2	1.24–1.52 (**1.36**)	1.17–1.45 (**1.32**)
L3/W3	2.31–2.69 (**2.48**)	2.25–2.80 (**2.49**)
PW/PL	1.10–1.22 (**1.15**)	1.16–1.28 (**1.22**)
PW/PB	1.45–1.71 (**1.55**)	1.51–1.64 (**1.57**)
PA/PB	1.08–1.26 (**1.18**)	1.12–1.23 (**1.18**)
EL/EW	1.18–1.33 (**1.26**)	1.23–1.34 (**1.29**)
EL/PL	2.47–2.72 (**2.59**)	2.55–2.79 (**2.66**)
EW/HW	1.95–2.17 (**2.08**)	1.92–2.08 (**2.01**)
EW/PW	1.70–1.91 (**1.80**)	1.61–1.77 (**1.69**)
EL/BH	1.94–2.25 (**2.08**)	2.04–2.32 (**2.15**)
EL/TiL	1.81–1.94 (**1.87**)	1.81–2.01 (**1.92**)
TiL/TaL	1.37–1.57 (**1.44**)	1.38–1.55 (**1.43**)
(PSa/PL) x 100	24.6–33.6 (**28.6**)	25.7–32.1 (**29.4**)
(D1/EL) x 100	6.8–10.4 (**8.6**)	5.6–13.8 (**10.1**)
(D2/EL) x 100	30.3–47.0 (**40.1**)	40.4–50.95 (**46.9**)
(D5/EL) x 100	13.8–19.9 (**16.3**)	18.3–26.4 (**22.7**)
(DP/EL) x 100	75.3–83.8 (**79.6**)	69.6–82.0 (**76.3**)
(U1/EL) x 100	8.33–13.6 (**11.1**)	7.59–12.5 (**9.77**)
(U2/EL) x 100	11.4–17.1 (**14.1**)	10.8–15.3 (**13.2**)
(U3/EL) x 100	16.7–21.2 (**18.8**)	14.4–20.6 (**18.2**)
(U4/EL) x 100	22.5–27.8 (**24.9**)	20.6–27.8 (**24.4**)
(U5/EL) x 100	55.6–62.6 (**59.2**)	55.8–61.6 (**58.2**)
(U6/EL) x 100	60.5–68.4 (**65.3**)	62.3–77.0 (**64.8**)
(U7/EL) x 100	75.9–83.4 (**79.0**)	73.8–84.2 (**78.5**)
(U8/EL) x 100	84.0–89.4 (**87.1**)	81.7–92.2 (**85.5**)

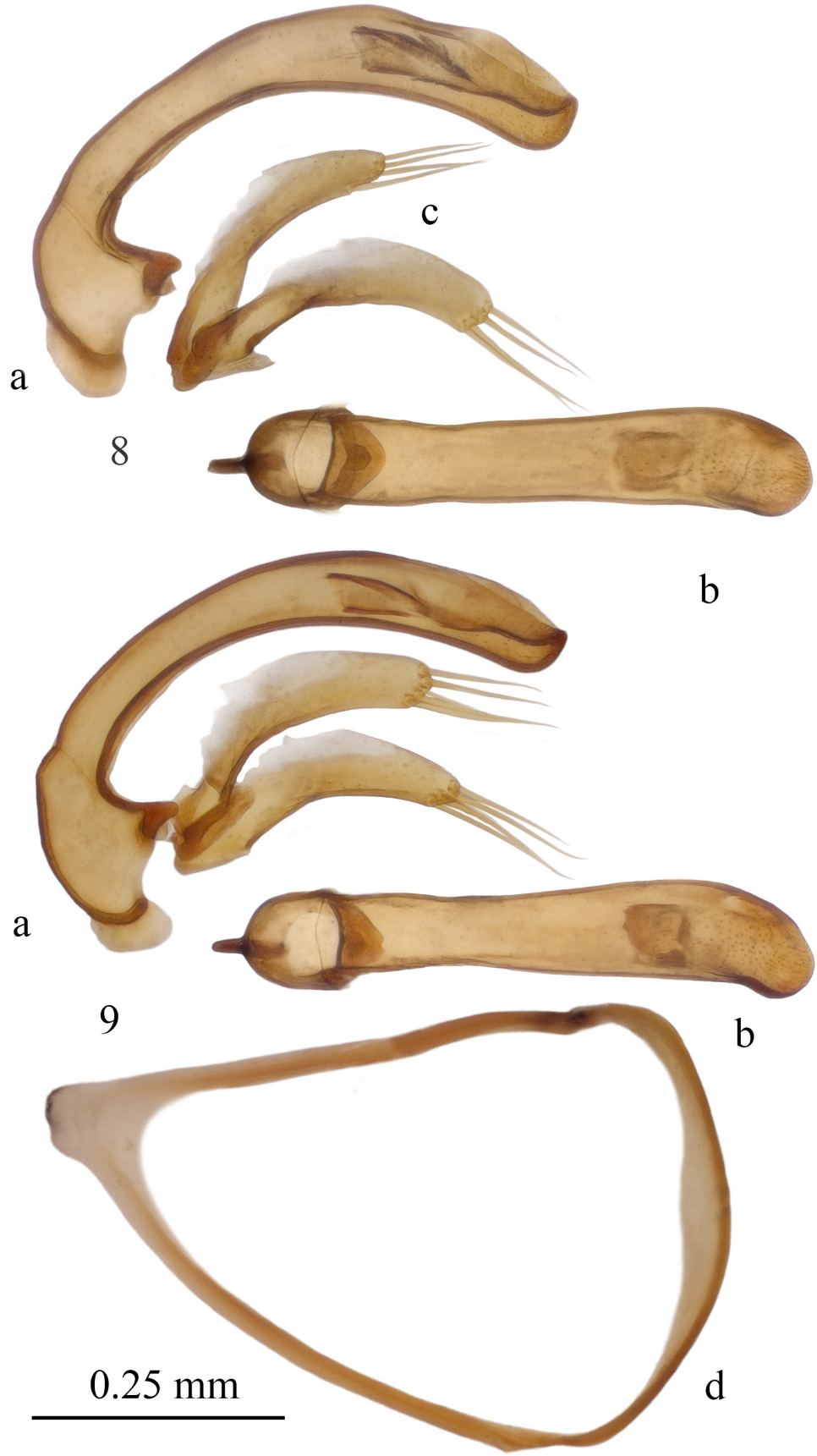
Microsculpture shallow though distinct, effaced only on some parts of head, consisting of more or less transverse meshes on elytra and pronotum and less transverse, nearly isodiametric meshes on head; upper-side evenly and strongly micropunctured.

Two basal segments of the male protarsi dilated and dentate, first segment being distinctly longer than wide and second approximately as long as wide.

Aedeagus (Figs. 8–9) of very characteristic shape, median lobe slender in basal part, weakly dilated in apical third. In lateral view, the endophallus armature is approximately as long as the spoon-like apex. Latter nearly perpendicularly truncate in lateral view while curved to left side and broadly rounded in dorsal view. Ventral flattening of the median lobe rather weak. Parameres thick, arched; with rather broadly rounded apices, each bearing 4-5 apical setae; ventral processus on the left paramere well-developed.

FIGURE 6. *Puertrechus mengsaensis* gen. n., sp. n., male paratype, habitus.

FIGURE 7. *Puertrechus mengsaensis* gen. n., sp. n., female paratype, habitus.



FIGURES 8–9. Male genitalia of *Puertrechus mengsaensis* gen. n., sp. n.: a—lateral view, b—dorsal view, c—parameres, d—genitalic sac.

Sexual dimorphism. Sexual dimorphism is very slightly expressed. Apart from longer antennae, males are distinct in having narrower elytra (EL/EW, on average, 1.27 vs. 1.24 in females, the difference significant at $p<0.05$, Mann & Whitney *U*-test).

Distribution. *P. mengsaensis* sp.n. was found only in one locality on Daxueshan Mount located East of Mengsa Town, (Lincang Prefecture) on the boundary between Gengma Dai and Va Autonomous County and Shuangjiang Lahu, Va, Bulang and Dai Autonomous County, Yunnan Province, China (Fig. 15, white circle).

Bionomics. The species was sifted from flood debris on banks of a small mountain brook in a broad-leaved forest at an elevation of 3045 m (Fig. 10).

FIGURE 10. Typical biotope of *Puertrechus mengsaensis* gen. n., sp. n.

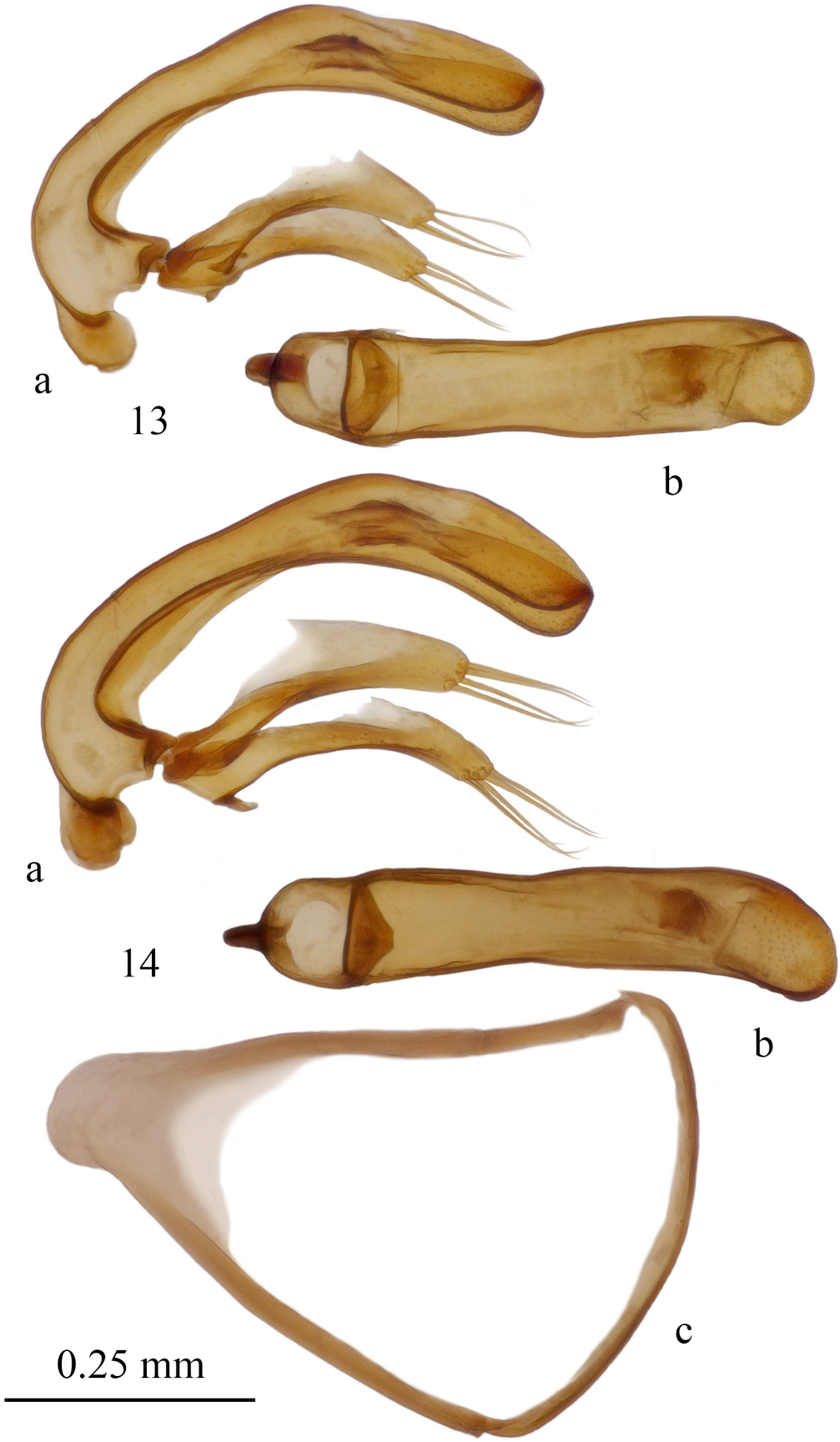
***Puertrechus daxueshanicus* Belousov & Kabak, sp. n.**
(Figs. 11–14)

Type material: Holotype: 1(1)♂, "CH, Yunnan Province, E sl. of Mt Daxueshan, W of Niutoushan Village, 24º07′15′′ N / 99º39′12′′ E, H=3375 m, 3.06.2010, Belousov & Kabak leg."(ZISP). **Paratypes:** 17(5)♂♂, 10(2)♀♀, collected together with holotype (ZISP, ZSM, MPU, CAG, CAK, CBK, CDW, CMJ, CPM, CVZ); 6 (4)♂♂, 8 (2)♀♀, "CH, Yunnan Province, Mt Daxueshan, W of Niutoushan Village, 24º06′53′′ N / 99º38′30′′ E, H=3465 m, 7.06.2010, Belousov & Kabak leg."(ZISP, ZSM, CBK); 1(1)♂, "CH, Yunnan Province, SE sl. of Mt Daxueshan, W of Niutoushan Village, 24º06′42′′ N / 99º38′38′′ E, H=3350 m, 6.06.2010, Belousov & Kabak leg."(CBK). 10♂♂, 12♀♀ measured.

Description. Medium-sized species, body length 3.65–4.20 mm. Habitus (Figs. 11–12) briefly ovate, strongly convex. Antennae and legs medium in length. Color blackish, with distinct amber-reddish tinge, head reddish piceous with blackish median spot on labrum; pronotum with paler reddish base and occasionally median longitudinal area; suture, margins and base of elytra also reddish; legs and antennae unicolorously pale amber-reddish.

FIGURE 11. *Puertrechus daxueshanicus* gen. n., sp.n., male paratype, habitus.

FIGURE 12. *Puertrechus daxueshanicus* gen. n., sp.n., female paratype, habitus.



FIGURES 13–14. Male genitalia of *Puertrechus daxueshanicus* gen. n., sp. n.: a—lateral view with parameres, b—dorsal view, c—genitalic sac.

Head large, weakly narrower than pronotum. Eyes rather large, markedly produced beyond outline of head, clearly longer than tempora which are completely glabrous and evenly convex. Frontal furrows entire, subparallel in median part, deeply impressed behind middle, rather sharply curved and becoming very shallow posteriorly. Parietal impression distinct though shallow, frons convex. Supraorbital setiferous pores on lines subparallel to the body axis. Labrum clearly transverse, with anterior margin distinctly concave. Mandibles rather robust, more strongly curved apically, retinacle on the right mandible trilobed, each lobe being triangular shaped, with distal lobe longest and median lobe normally weakly shorter. Tooth on the left mandible weakly cleft apically or obliquely truncate. Clypeal suture straight. Last segment of antenna longest, the third and fourth segments marginally shorter and the second one shortest.

Pronotum slightly transverse, cordiform, with sides feebly constricted anteriad and strongly constricted posteriad. Digitiform processes short, directed mainly backward and only slightly outward. Basal margin of pronotum convex medially, and deeply emarginate laterally near hind angles. Anterior lateral setae located approximately at broadest point of pronotum, posterior one—markedly before level of basal margin and weakly displaced inward. Lateral border of pronotum more distinct anteriorly, becoming very fine in its posterior portion. Lateral groove very narrow in anterior part, effaced posteriorly. Discal foveae small and shallow but distinct. Basal foveae small and deep, completely smooth. Prebasal transverse impression rather shallow, base of pronotum smooth. Apical transverse impression mostly distinct, especially in lateral portions, located close to anterior margin. Apex of pronotum occasionally with some longitudinal wrinkles and punctures. Median line shallow, not reaching both the anterior and posterior margin.

Elytra ovate, with maximum width near mid-length, humeri distinct though strongly oblique, their apex broadly rounded or evenly truncate, re-entrant angle small but distinct. Lateral margins, including prehumeral area, evenly convex, slightly deflexed. Lateral groove moderate in width, gradually narrowing forwards and slightly dilated posteriorly. Disc of elytra moderately convex. Discal striae reduced: only striae 2–3 and fragments of stria 4 distinguishable in their middle portion. Stria 8 very shallow, distinguishable mostly near pores of umbilicate series. Parascutellar striole rather long, parascutellar setiferous pore present. Apical striole short and shallow, directed mostly outward and curved inward anteriorly. Anterior discal setiferous pore located at level slightly behind umbilicate pore 1, posterior one—between umbilicate pores 4 and 5, preapical pore—before level of umbilicate pore 7, clearly before anterior termination of apical recurrent striole, in apical cross (although striae 2 and 3 barely traceable here). Discal setiferous pore on site of stria 5 located in basal quarter of elytra distinctly behind anterior discal pore. Angulo-apical pore approximately in middle between exterior pore and elytral suture. First umbilicate pore varying in position, normally weakly shifted inward. Within groups of umbilicate series, pores 7 and 8 most spaced. Location of all pores of the umbilicate series as in Table 2.

Microsculpture completely reduced, micropunctuation regular and distinct.

Two basal segments of the male protarsi dilated and dentate, the first segment being distinctly longer than wide and second approximately as long as wide.

Aedeagus (Figs. 13–14) small, slender, strongly curved, with characteristic spoon-like and markedly swollen apical third. Ventral surface of the proximal half of the median lobe with rather deep and wide impression carinate laterally. Endophallus armature spatulate, moderately sclerotized, clearly shorter than the apex of the median lobe. Parameres slender, curved, with rather broad apices (often obliquely truncate ventrally), each bearing 4–5 apical setae; left one slightly longer, with a rather small ventral apophysis.

Sexual dimorphism. In addition to longer antennae, males differ from females in having longer legs (EL/TiL 1.81–1.95 (1.89) vs. 1.90–2.01 (1.94), at $p<0.01$, Mann & Whitney *U*-test).

Comparative notes. Though very similar to the type species of the genus, *P. daxueshanicus* sp. n. is readily distinguished in having: completely shining surface of body, without any trace of microsculpture; tempora more convex in median part; pronotum more transverse, with weaker sinuation before noticeably shorter hind angles more protruding backward; Lateral groove of both pronotum and elytra much narrower and less strongly reflexed; pronotal lateral border much finer; contour of elytra distinctly convex in prehumeral area; discal setiferous pore on site of stria 5 shifted more backward and located behind anterior fifth on elytral length, at level between umbilicate pores 3 and 4 (versus anterior sixth of elytral length at level between umbilicate pores 2 and 3 in *P. mengsaensis* sp. n.); preapical setiferous pore (third discal pore in stria 3), on the contrary, shifted anteriad and usually located clearly before level of umbilicate pore 7 while approximately at this level in *P. mengsaensis* sp. n. Apart from the above characters, *P. daxueshanicus* sp. n. is distinct in having slightly smaller size, shorter appendages, larger eyes,

narrower elytra, and two anterior discal setiferous pores on elytra slightly shifted posteriad contrasting with the preapical pore weakly shifted anteriad as it was mentioned above (see Table 3). The aedeagus of *P. daxueshanicus* sp. n. is very similar to that of *P. mengsaensis* sp. n. (Figs. 8–9 vs. 13–14) but the spoon-like apical portion of the median lobe markedly longer than the endophallus armature (not longer in its counterpart); the median lobe, in dorsal view, is less strongly curved to the left side; the proximal portion of the median lobe is much more strongly flattened dorso-ventrad, with its ventral surface carinate laterally; the dorsal margin of the median lobe clearly convex near the endophallus armature in lateral view.

TABLE 3. Statistically significant differences between *Puertrechus mengsaensis* gen. n., sp. n. and *P. daxueshanicus* gen. n., sp. n. (t-criterion)

Indices	*P. mengsaensis*		*P. daxueshanicus*		
	Range (average value)	*N*	Range (average value)	*N*	sex
Significance level $p \leq 0.001$					
(D5/EL) x 100	13.84–19.87 (16.34)	20	18.36–26.44 (22.68)	22	both
EW/PW	1.70–1.91 (1.80)	20	1.61–1.77 (1.69)	22	both
PW/PL	1.10–1.22 (1.15)	20	1.16–1.28 (1.22)	22	both
AL/EL	1.04–1.11 (1.07)	10	0.99–1.04 (1.02)	12	females
YL/TL	1.43–1.77 (1.56)	20	1.60–1.96 (1.76)	22	both
(D2/EL) x 100	30.27–47.02 (40.11)	20	40.44–50.95 (46.91)	22	both
AL/EL	1.04–1.14 (1.09)	20	0.99–1.09 (1.04)	22	both
EW/HW	1.95–2.17 (2.08)	20	1.92–2.08 (2.01)	22	both
EL/TiL	1.85–1.92 (1.88)	10	1.90–2.01 (1.94)	12	females
(U1/EL) x 100	8.33–13.61 (11.06)	20	7.59–12.46 (9.77)	22	both
AL/EL	1.05–1.14 (1.10)	10	1.03–1.09 (1.06)	10	males
PW/HW	1.11–1.22 (1.16)	20	1.16–1.22 (1.19)	22	both
EL/PL	2.47–2.72 (2.59)	20	2.55–2.79 (2.66)	22	both
EL/TiL	1.81–1.94 (1.87)	20	1.81–2.01 (1.92)	22	both
Significance level $p \leq 0.01$					
EL/BH	1.94–2.25 (2.08)	20	2.04–2.32 (2.15)	22	both
(DP/EL) x 100	75.31–83.77 (79.62)	20	69.62–82.03 (76.34)	22	both
EL/EW	1.18–1.33 (1.26)	20	1.23–1.34 (1.29)	22	both
(D1/EL) x 100	6.79–10.39 (8.59)	20	5.57–13.76 (10.12)	22	both
(U8/EL) x 100	83.95–89.40 (87.08)	20	81.73–92.15 (85.54)	22	both
Significance level $p \leq 0.05$					
L3/L2	1.24–1.44 (1.36)	10	1.19–1.37 (1.29)	10	males
(PSa/PL) x 100	24.56–30.16 (27.44)	10	27.35–32.14 (29.02)	10	males
YL/L3	0.96–1.14 (1.05)	20	1.00–1.21 (1.09)	22	both
Body length, mm	3.75–4.23 (4.06)	20	3.65–4.20 (3.96)	22	both
(U2/EL) x 100	11.42–17.09 (14.07)	20	10.76–15.25 (13.21)	22	both
(U5/EL) x 100	55.56–62.58 (59.24)	20	55.76–61.64 (58.22)	22	both

Distribution. Mount Daxueshan (Lincang Prefecture, Gengma Dai and Va Autonomous County), Yunnan Province, China. The range of this species seems to be confined to a small isolated mountain range located NNW of that of *P. mengsaensis* (Fig. 15, black circles).

Bionomics. Most specimens of this species were sifted from the wet litter on the banks of brooks within the zone of subalpine shrubs (consisting mostly of *Rhododendron* species) at elevations of 3350–3465 m while some specimens—from the moist litter accumulated near stones and trunks.

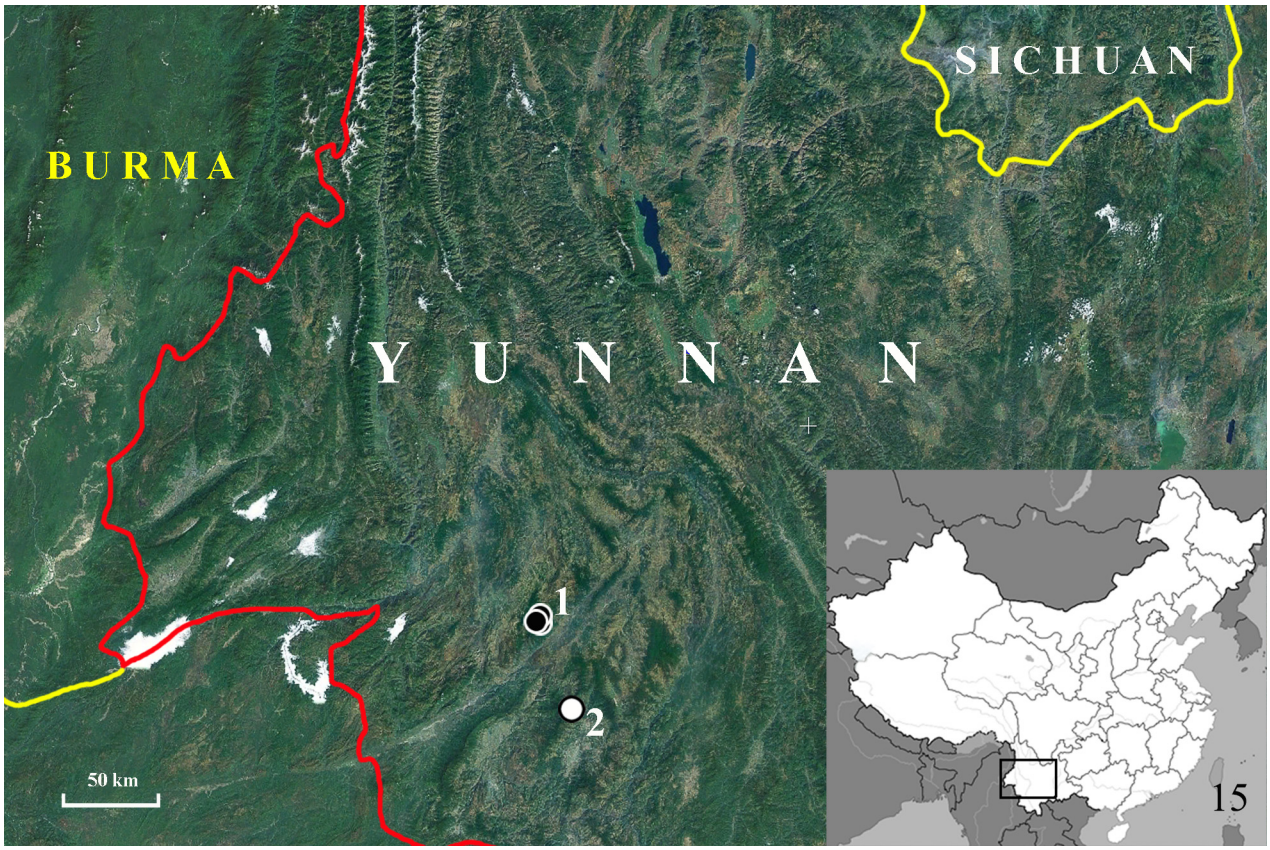


FIGURE 15. Distribution of *Puertrechus* species. 1 (black circle)—*Puertrechus daxueshanicus* gen. n., sp. n.; 2 (white circle)—*Puertrechus mengsaensis* gen. n., sp. n.

Key for determination of East Asian Trechine genera with digitiform hind angles of the pronotum

1. Discal setiferous pores on elytra arranged in one longitudinal row in stria 3 and interspace 3; number of pores normally ranging from 2 to 7; true preapical pore missing. Tempora rather long and subparallel . . . . . ***Queinnectrechus* Deuve, 1992**

\- Discal setiferous pores on elytra arranged in several, at least, two longitudinal rows located mostly in striae 3 and 5, or setiferous pores randomly disseminated over the whole disc of elytra beginning on the second interspace, true preapical pore present and located in apical cross of striae 2 and 3 (sometimes slightly displaced anteriad). Tempora rather short and evenly convex **2**

2. More than four elytral setiferous pores on each elytron, their number strongly varying. More than two (usually 3–5) anterior lateral setae on pronotum sides. Lateral border of pronotum well developed anteriorly, with wide lateral groove, obliterated posteriorly. Aedeagus slender, with simple, gradually narrowing apical portion and slightly knobbed apex . . . . . ***Dactylotrechus* Belousov & Kabak, 2003**

a) Each elytron with more than 20 setiferous pores, 4-5 anterior lateral setae on each side of pronotum (Fig. 4). Hind angles of pronotum produced out- and backward. Endophallus armature spatulate, poorly slerotized. Yunnan: vicinity of Weixi (Fig. 5) . . . . . *D. setosus* Belousov & Kabak, 2003

-. Each elytron with 7-8 setiferous pores, 2-3 anterior lateral setae on each side of pronotum (Figs. 1–2). Endophallus armature well sclerotized, consisting of two plates, one of which projected beyond apical orifice (Fig. 3). Sichuan: right bank of Yalong Jiang, SW of Mianning City (Fig. 5) . . . . . *D. yalongensis* sp. n.

\- Normally four (very seldom five) elytral setiferous pores on each elytron, three of which attached to stria 3 and one located on site of stria 5 in anterior third of elytra. Only one anterior lateral seta on each side of pronotum. Lateral border of pronotum entire, though becoming much finer behind anterior lateral seta. Aedeagus with dilated apical portion truncate in lateral view and provided with a deep impression on dorsal surface . . . . . ***Puertrechus* gen. n.**

a) Elytra, pronotum and head with distinct microsculpture, clearly visible under a 56x magnification; pronotal sides more strongly sinuate before hind angles which are more produced back- and outward; lateral groove of pronotum and elytra wider; exterior setiferous pore on elytra located mostly at level slightly behind umbilicate pores 2. Ventral surface of aedeagus (Figs. 8–9) moderately depressed and carinate in basal portion, with slenderer apical part, apex shorter. Southern Yunnan: Lincang Prefecture: Mt E of Mengsa Town (Fig. 15) . . . . . *P. mengsaensis* sp. n.

-.) Elytra, pronotum and head without any trace of microsculpture; pronotal sides more weakly sinuate before hind angles which are noticeably shorter and produced more backward; Lateral groove of pronotum and elytra narrower; exterior setiferous pore on elytra located mostly at level between umbilicate pores 3 and 4. Ventral surface of aedeagus (Figs. 13–14) deeply impressed and carinate laterally in basal portion, with massive apical part, apex longer. Southern Yunnan: Lincang Prefecture: Mt Daxueshan (Fig. 15) . . . . . *P. daxueshanicus* sp. n

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References

Belousov, I.A. & Kabak, I.I. (2000) Contribution to the knowledge of species of the genus *Trechus* Clairv. (Coleoptera, Carabidae) of China. *Revue d'Entomologie de l'URSS*, 79, 49–78. [in Russian]

Belousov, I.A. & Kabak, I.I. (2003) New Trechini from China (Coleoptera, Carabidae) (Coleoptera, Carabidae). *Tethys Entomological Research*, 8, 15–86.

Belousov, I.A. & Kabak, I.I. (2014) A taxonomic review of the genus *Junnanotrechus* Uéno & Yin, 1993 (Coleoptera: Carabidae: Trechinae), with description of six new species. *Zootaxa,* 3811 (4), 401–437. http://dx.doi.org/10.11646/zootaxa.3811.4.1

Deuve, Th. (1992 a) Un nouveau genre de Trechinae des montagnes du Sichuan (Coleoptera, Trechidae). *Bulletin de la Société entomologique de France*, 96 (1991), 354.

Deuve, Th. (1992 b) Contribution à la connaissance des Trechidae asiatiques (Coleoptera). *Bulletin de la Société entomologique de France*, 97, 171–184.

Jeannel, R. (1928) Monographie des Trechinae. Morphologie comparée et distribution géographique d'un groupe de coléoptères. (Première livraison). *L'Abeille, Journal d'Entomologie*, 32, 221–550. [1928 (1926)]

Jeannel, R. (1937) Nouveaux trechinae paléarctiques [Col. Carabidae]. *Bulletin de la Société entomologique de Françe*, 42, 82–88.

Uéno, Sh.-I. (1995) A second species of the trechine genus *Queinnectrechus* (Coleoptera, Trechinae). *Bulletin of the Natural Sciences Museum (A)*, 21, 93–102.

Uéno, Sh.-I. (1996) A new humicolous species of the *Stevensius* complex (Coleoptera, Trechinae) from western Yunnan, southwest China. *Elytra*, 24, 13–20.