Two new epigean species of the genus *Menimus* Sharp, 1876 from Yunnan (China) (Insecta: Coleoptera: Tenebrionidae)

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Abstract

Two new epigean species of the genus *Menimus* Sharp, 1876 (Coleoptera: Tenebrionidae: Diaperinae: Gnathidiini) from Yunnan, southwestern China are described (*M. medvedevi* n.sp. and *M. puetzi* n.sp.). Comparative species are figured. The isolated type localites of the known 5 Chinese species in the Gaoligong Shan in Yunnan are mapped and their diverse vertical zonations are figured.

Zusammenfassung

Zwei neue epigäische Arten der Gattung *Menimus* Sharp, 1876 (Coleoptera: Tenebrionidae: Diaperinae: Gnathidiini) aus Yunnan, südwestliches China, werden beschrieben (*M. medvedevi* n.sp. und *M. puetzi* n.sp.). Vergleichsarten werden abgebildet. Die isolierten Typus-Lokalitäten der 5 chinesischen Arten im Gaoligong Shan in Yunnan werden auf einer Karte dargestellt und ihre unterschiedlichen Vertikalzonierungen abgebildet.

Key words: Coleoptera, Tenebrionidae, *Menimus*, new species, China, Yunnan, Gaoligong Shan, vertical zonation

1. Introduction

The tenebrionid genus *Menimus* Sharp, 1876 (tribe Gnathidiini Gebien, 1921, subfamily Diaperinae) contains more than 70 species, distributed in the Oriental, Papuan and Pacific Regions with a few species reaching the southern areas of the Palaearctic Region in Japan, Sikkim (Kaszab 1982) and Yunnan (Medvedev 2007). Recently, Medvedev (2007) described not only the first 3 species from China (Yunnan), but listed also the species composition with full references of the complete genus, synonymized *Neomenimus* Kaszab, 1939 and discussed some particular morphological features. The present paper adds two further species from Yunnan, one of them being completely blind.

The different species of *Menimus* show a high plasticity of morphological features. Very probably, the so far described species of the genus from a large geographical area do not represent a monophyletic unit and must be distributed to different genera. In other words, the synonymization of different genera by Kaszab (1982) and Medvedev (2007) should be reexamined in a more comprehensive study of all Gnathidiini. This holds true also for the creation of single subgenera based on singular characters (for example subgenus *Sinomenimus* Medvedev, 2007). I have seen in different collections plenty newly collected specimens of "*Menimus*" with quite diverse external characters, representing a high number of undescribed species and probably turning inside out our knowledge about the generic limits within Gnathidiini. A good example for surprising discoveries within this tribe is the recent description of the genus *Sakaiomenimus* from Japan with 11-segmented antenna by Ando (2003) – so far all taxa of Gnathidiini are characterized mainly by a 10-segmented antenna.

The species of *Menimus* inhabit soil habitats in mature forests and possess mostly quite restricted distibutional patterns. Probably, our knowledge about the Palaearctic species is far from completeness and further collectings in adequate habitats may enlarge significantly the number of species. However, in spite of intensive siftings in the Central Himalayas by different coleopterologists, only a single species was found in the very eastern part in Sikkim (? doubtful origin, see below). In contrary, the species diversity in Yunnan (as yet 5 species only in the Gaoligong Shan) seems to be quite diverse. According to the present data, these 5 species are differently settled in that fissured mountain range. First, the type localities are isolated by a dense pattern of high mountains and deep valleys (Fig. 4). Additionally, the vertical zonations of the species are different (Fig. 5). So far, the genus is unknown in adjacent Burma and Sichuan, but might be expected there too.

Acronyms of depositories

CAPE	Collection Andreas Pütz, Eisenhüttenstadt, Germany
MNHUB	Museum für Naturkunde der Humboldt Universität, Berlin, Germany
NHMB	Naturhistorisches Museum, Basel, Switzerland
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany.

2. The Palaearctic species of *Menimus*

***Menimus belousovi* Medvedev, 2007**
Type locality: China, Yunnan, N of Baoshan, 2265–2530 m (Figs. 4–5).

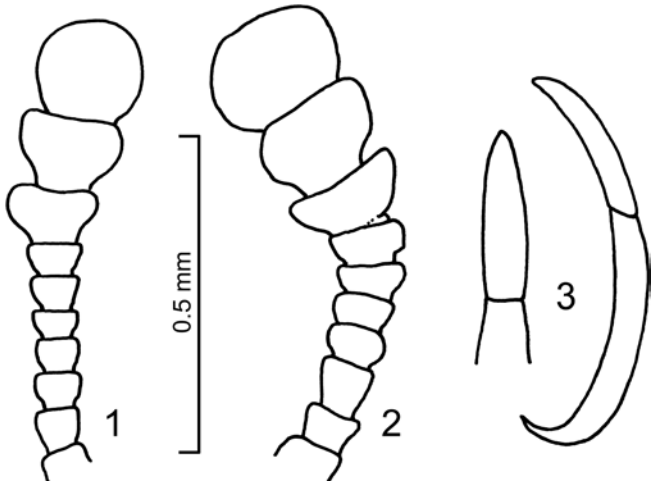
***Menimus (Sinomenimus) kabaki* Medvedev, 2007**
(Plate XIV Fig. d)
Type locality: China, Yunnan, SSW of Liuku, 2860 m (Figs. 4–5).
New material: China, Yunnan, Nujiang Lisu Autonomous Region, Gaoligong Shan, side valley 19 km NW Liuku, 2730 m, 9.VI.2007, leg. M. Schülke, 10 ex. SMNS, 2 ex. MNHUB. – China, Yunnan, Nujiang Lisu Autonomous Region, Gaoligong Shan, side valley 19 km NW Liuku, 2730 m, 9.VI.2007, leg. A. Pütz, 1 ex. CAPE.

* Contribution to Tenebrionidae no. 76. For no. 75 see: Stuttgarter Beiträge zur Naturkunde A (NS) 2, 2009.

***Menimus medvedevi* n. sp.** (Figs. 1, 3; Plate XIV Fig. c)
Holotype (♂): China, Yunnan, Baoshan Pref., Gaoligong Shan, E pass, 36 km SE Tengchong, 2200 m, 4.VI.2007, leg. M. Schülke, MNHUB.
Paratypes: Same data as holotype, 14 ex. MNHUB, 4 ex. SMNS. – China, Yunnan, Gaoligong Shan, 33 km SE Tengchong, 2200–2500 m, 8.–16.V.1995, leg. V. Kubáň, 2 ex. NHMB.
Description: Dorsal side dark ferrugineous without colour pattern, without any metallic shine, surface shining and without distinct setation (puntures only with microsetae not longer than a puncture diameter), antennae and legs light ferrugineous. Head with large but not confluent punctation, punctation sparser on the clypeus. Eyes small, not prominent. Antennae (Fig. 1) with 3-segmented club (antennomeres 8–10), antennomeres 3–7 wider than long. Pronotum widest at base, 1.55x wider than long, anterior corners not protruding, posterior corners rectangular, lateral margins regularly rounded, basal margin with indistinct border; surface shining with punctation distinctly finer and sparser than on head, disc convex without any impressions; propleura scattered with similar punctation as pronotum, surface feebly wrinkled and shagreened; prosternal apophysis conical, pointing posteriorly. Elytra short oval, 1.2x wider than long, elytron with punctation irregularly arranged in rows, punctures larger than pronotal punctures; lateral margin to be seen from dorsal only in the anterior quarter, shoulders pronounced, lateral margin with extremly fine dentation; epipleura diminishing somewhat before apex, scattered with a small punctures, punctures smaller than those on metasternum. Abdominal ventrites with punctation, size of punctures as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without any keel. Aedeagus (Fig. 3) with long finger-like apicale, basale feebly bent in lateral view and with hooked base. Body length 3.2–3.7 mm.
Diagnosis: To be recognized by the small body size, by an antenna with 3-segmented club, by a convex pronotum widest at base, by short oval elytra with punctation irregularly arranged in rows, and by the shape of the aedeagus. According to the detailed description and figures (Medvedev 2007), *M. yunnanus* has a similar oval body shape and also elytra with punctural rows, but the body size is larger (4.0–5.9 mm), the pronotum is wider (1.7x wider than long), the pronotal punctation is similar as on head, and the aedeagus is different (apicale in dorsal view triangular and widest at base, in lateral view straight).
Etymology: Named in honor of Dr. Gleb S. Medvedev (St. Petersburg, Russia), eminent specialist of Asian Tenebrionidae, publishing recently the first record of *Menimus* in China.

***Menimus niponicus* Lewis, 1894** (Plate XIV Fig. b)
Type locality: Japan, Kiga.
New material: Japan, Honshu, Nara-ken, Shakagatakeyama, E slope, 1600 m, 2.VIII.2002, leg. L. Bolm, 2 ex. SMNS.

***Menimus puetzi* n. sp**. (Fig. 2; Plate XIV Fig. a)
Holotype (♀): China, Yunnan, Baoshan Prefecture, Gaoligong Shan, 33 km SE Tengchong, 2100–2200 m, 31.V.2007, leg. A. Pütz, CAPE.
Paratype: Same data as holotype, 1 ♀ SMNS.
Description: Dorsal side dark ferrugineous without colour pattern, without any metallic shine, surface shining and with distinct, erect and acute setation, antennae and legs light ferrugineous. Head with large, laterally confluent punctation, punctation sparser on the clypeus. Eyes completely missing. Antennae (Fig. 2) with 3-segmented club (antennomeres 8–10), antennomeres 3–7 wider than long. Pronotum widest at anterior third, 1.15x wider than long, anterior corners not protruding, posterior corners rectangular, lateral margins regularly rounded but crenulated, basal margin with indistinct border; surface shining with punctation of similar size but sparser than on head, disc convex without any impressions; propleura scattered with similar punctation as pronotum, surface feebly wrinkled and shagreened; prosternal apophysis not prominet. Elytra short oval, 1.5x wider than long, elytron with irregular punctation without any traces of rows, punctures larger than pronotal punctures; lateral margin to



Figs. 1–3: Antenna and aedeagus of *Menimus* species. – 1, 3: *M. medvedevi* **n.sp.** – 2: *M. puetzi* **n.sp.**

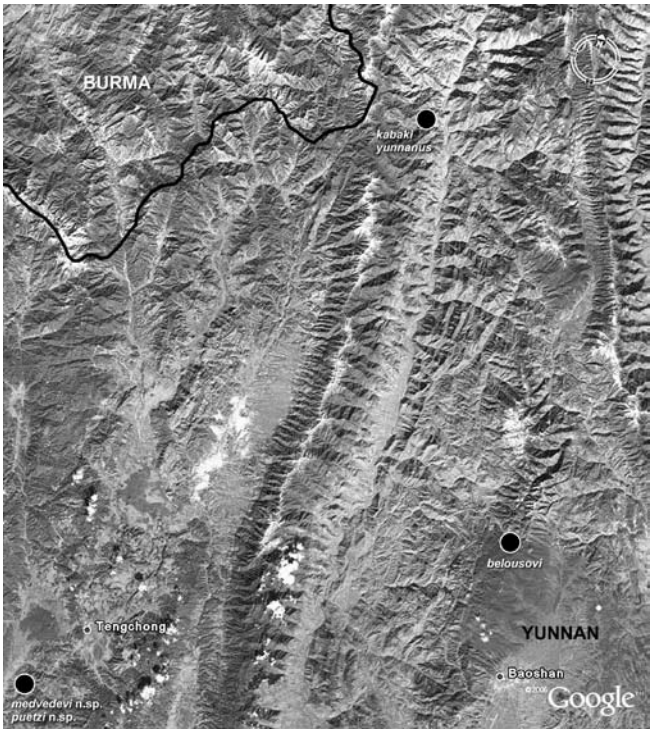


Fig. 4: Type localities of the 5 species of Menimus in the Gaoligong Shan.

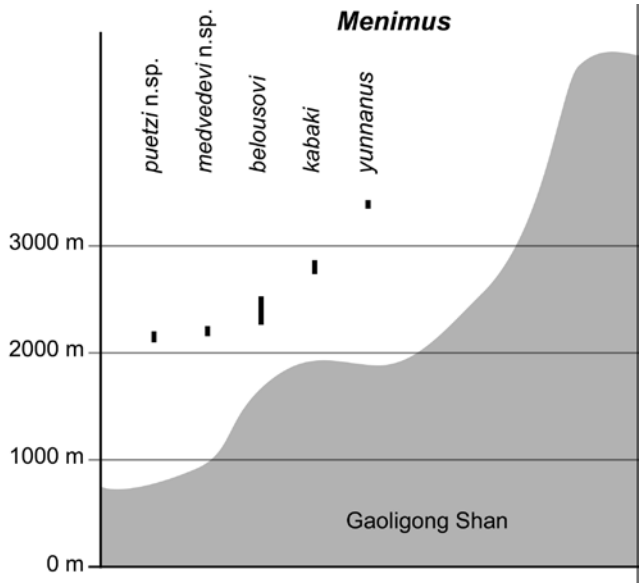


Fig. 5: Vertical zonations of the 5 species of *Menimus* in the Gaoligong Shan.

be seen from dorsal only in the anterior third, shoulders pronounced, lateral margin with distinct dentation; epipleura diminishing somewhat before apex, scattered with a small punctures, punctures smaller than those on metasternum. Abdominal ventrites with punctation, size of punctures as on elytra, last visible ventrite 5 unbordered and medially somewhat swollen. Legs without specific characters, tibiae rounded in cross section and without any keel. Aedeagus unknown, only females available. Body length 3.6–3.8 mm.
Diagnosis: To be recognized by the small body size, by completely missing eyes, by an antenna with 3-segmented club, by a subquadrate pronotum with crenulated lateral margin, by elongate elytra without any punctural rows and with a distinctly dentated lateral margin, and by distinct dorsal setation. This species is unique among the congeners by this combination of characters, and a similar species in the Palaearctic and adjacent Oriental Regions is unknown so far.
Remarks: This remarkable species can easily be recognized without having males at hands. So it seems justified to nominate herein this taxon as new on the base of only 2 females.
Etymology: Named in honor of Andreas Pütz (Eisenhüttenstadt, Germany), collector of the type series.

***Menimus yunnanus* Medvedev, 2007**
Type locality: China, Yunnan, SSW of Liuku, 3375 m (Figs. 4–5).

***Menimus wittmeri* Kaszab, 1982 (Plate XIV Fig. e)**
Type locality: India, Sikkim, Dzongori, 3000 m.
Remarks: The type series was discovered by a local collector (B. Bhakta) and I have my doubts about the exact locality of this finding (not only in this case). In adjacent eastern Nepal, several coleopterologists with various experiences in collecting epigean Coleoptera sifted in all altitudinal belts and could never find any specimen of *Menimus*. Thus, these specimens from Sikkim, where the ecological and historical conditions are quite similar as in Nepal, might be erroneously labelled and the series comes from elsewhere.

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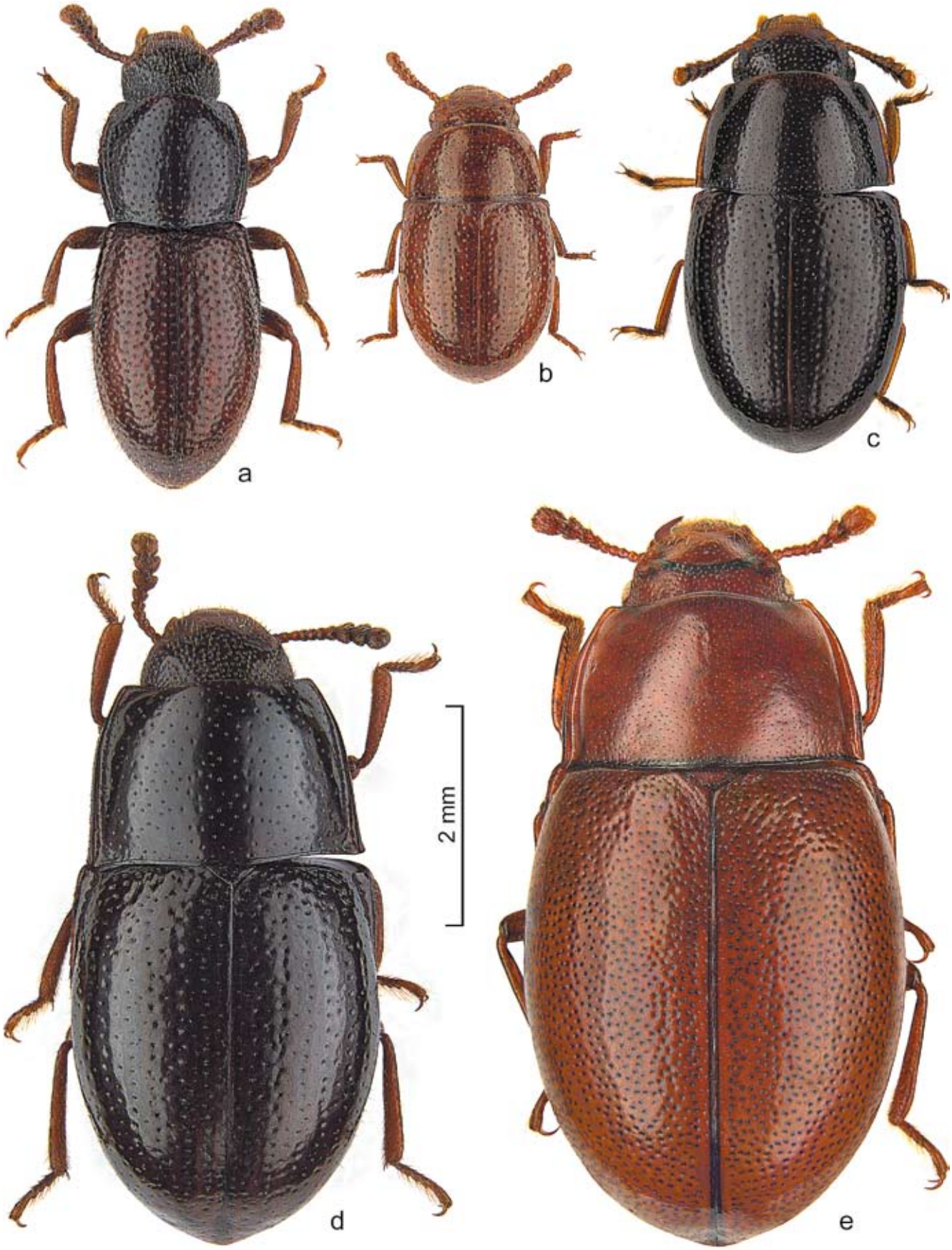
Tafel XIV



Figs. a–e: Dorsal view of some Palaearctic species of *Menimus*. – **a:** *M. puetzi* n.sp., holotype, Yunnan. – **b:** *M. niponicus*, non-type, Honshu. – **c:** *M. medvedevi* n.sp., paratype, Yunnan. – **d:** *M. kabaki*, non-type, Yunnan. – **e:** *M. wittmeri*, paratype, Sikkim.