New species of the genus Menimus Sharp (Coleoptera: Tenebrionidae: Gnathidiini) from Peninsular Malaysia and adjacent southern Thailand 1

Author: Schawaller, Wolfgang

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New species of the genus *Menimus* Sharp (Coleoptera: Tenebrionidae: Gnathidiini) from Peninsular Malaysia and adjacent southern Thailand[1]

Wolfgang Schawaller

Abstract

Nine new species of the tenebrionid genus *Menimus* Sharp, 1876 (Diaperinae Latreille, 1802, Gnathidiini Gebien, 1921) from the Peninsular Malaysia and adjacent southern Thailand are described: *M. cameronicus* **n. sp.**, *M. gentingicus* **n. sp.**, *M. hauseri* **n. sp.**, *M. malayicus* **n. sp.**, *M. pahangicus* **n. sp.**, *M. perakicus* **n. sp.**, *M. riedeli* **n. sp.**, and *M. tiomanicus* **n. sp.**, all from Peninsular Malaysia, and *M. khaolakicus* **n. sp.** from southern Thailand. An identification key is compiled for these species. Although certain zoogeographical relations exist between the Malay Peninsula and the Sunda Islands Borneo and Sumatra, only a single species was found at present in both of these areas: *Menimus lineatopunctatus* (Pic, 1930) **n. comb.**, transferred from *Pentaphyllus* (= *Menimus klapperichi* Bremer, 1997 **n. syn.**).

Keywords: Coleoptera, Tenebrionidae, Diaperinae, Gnathidiini, *Menimus*, new species, new combination, new synonym, Malay Peninsula, Malaysia, Sumatra, Thailand.

Zusammenfassung

Neun neue Arten der Tenebrioniden-Gattung *Menimus* Sharp, 1876 (Diaperinae Latreille, 1802, Gnathidiini Gebien, 1921) von W Malaysia und dem angrenzenden südlichen Thailand werden beschrieben: *M. cameronicus* **n. sp.**, *M. gentingicus* **n. sp.**, *M. hauseri* **n. sp.**, *M. malayicus* **n. sp.**, *M. pahangicus* **n. sp.**, *M. perakicus* **n. sp.**, *M. riedeli* **n. sp.**, und *M. tiomanicus* **n. sp.**, alle von Westmalaysia, und *M. khaolakicus* **n. sp.** aus Süd-Thailand. Ein Bestimmungsschlüssel für diese Arten wird erstellt. Obgleich gewisse zoogeographische Beziehungen zwischen der malaiischen Halbinsel und den Sundainseln Borneo und Sumatra bestehen, wurde nur eine einzige Art in beiden dieser Gebiete gefunden: *Menimus lineatopunctatus* (Pic, 1930) **n. comb.**, transferiert von *Pentaphyllus* (= *Menimus klapperichi* Bremer, 1997 **n. syn.**).

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1 Introduction

The tenebrionid genus *Menimus* Sharp, 1876 (Gnathidiini Gebien, 1921, Diaperinae) contains so far more than 70 morphologically very diverse species, distributed in the Oriental, Papuan, Australian, and Pacific regions with a few species reaching the southern areas of the Palaearctic region in Japan, Sikkim (Kaszab 1982), Yunnan (Medvedev 2007, Schawaller 2009), and India and northern Burma (Schawaller 2016). Medvedev (2007) described the first three species from China (Yunnan), listed the species composition of the complete genus with full references, synonymised *Neomenimus* Kaszab, 1939 and discussed some particular morphological features.

So far, species of *Menimus* were unknown from the whole Malay Peninsula including adjacent southern Thailand. However, newly collected specimens in this area represented at least ten species, nine of them new to science described hereunder. The Malay Peninsula runs approximately north-south with a continuous longitudinal mountain range and its terminus is the southernmost point of the Asian mainland (map see Fig. 1). The Peninsula is accompanied by a few small offshore islands (for example Tioman). This area forms a biogeographic unit and contains the southern tip of Myanmar, the whole Peninsular Malaysia (9 species), and adjacent southern Thailand (1 species).

From Borneo and Sumatra two species of *Menimus* are known so far, and a couple of undescribed species are

[1] Contributions to Tenebrionidae, no. 136. – For no. 135 see: Stuttgarter Beiträge zur Naturkunde A, Neue Serie 9 (2016).

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available for a forthcoming revision by the present author. Although certain zoogeographical relations exist between these Sunda Islands and the Malay Peninsula, at present only a single species was found in both of these areas.

The species of *Menimus* have an epigean way of life in mature forests, and can be collected mostly by sifting or Berlese/Winkler extractors. Nearly all congeners occur obviously only in small areas because of limited flight abilities.

Acronyms of depositories

HNHM	Hungarian Natural History Museum, Budapest, Hungary
MNHN	Muséum National d'Histoire Naturelle, Paris, France
NHMB	Naturhistorisches Museum, Basel, Switzerland
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany

Acknowledgements

For the loan of specimens and for the generosity to donate some duplicates for SMNS I wish to express my thanks to Ben Brugge (Leiden), Dr. Ottó Merkl (Budapest) and Dr. Eva Sprecher-Übersax (Basel). Dr. Ottó Merkl kindly allowed to publish his results about the new combination of *Menimus lineatopunctatus* and recognition of a new synonymy. Dr. Martin Hauser (Sacramento), Dr. Alexander Riedel (Karlsruhe), Rudolf Schuh (Vienna), and Andreas Schulz (Dormagen) kindly deposited newly collected specimens in SMNS. The photographs were taken by Johannes Reibnitz (Stuttgart) with a Leica DFC320 digital camera on a Leica MZ16 APO microscope and subsequently processed by him with Auto-Montage (Syncroscopy) software, he also prepared the map. Dr. Roland Grimm (Neuenbürg) and Dr. Ottó Merkl proofread the manuscript.

2 The species of *Menimus* from Peninsular Malaysia and adjacent southern Thailand

Menimus cameronicus **n. sp.**
(Figs. 3, 12)

Holotype (♂): W Malaysia, Pahang, Cameron Highlands, Tanah Rata, Gn. Jasar, 1300 m, 25.II.1997, leg. R. Schuh, SMNS.

Paratypes: W Malaysia, Pahang, Cameron Highlands, Tanah Rata, Gn. Jasar, 4.IV.1990, leg. A. Riedel, 3 ex. SMNS. – W Malaysia, Pahang, Cameron Highlands, Gn. Beremban, 1.–3.IV.1990, leg. A. Riedel, 1 ex. SMNS. – W Malaysia, Pahang, Cameron Highlands, Gn. Brinchang, 10.V.1990, leg. A. Riedel, 1 ex. HNHM.

Etymology: Named after the Cameron Highlands, where the type series was collected.

Description: Body length 2.8–3.0 mm, body shape round (Fig. 3). Dorsal side dark brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with similar fine punctation as on pronotum. Eyes small, not prominent. Antennae (Fig. 3) with 4-segmented club (antennomeres 7–10), all antennomeres separated, antennomeres 3–6 wider than long. Pronotum widest at base, anterior corners not protruding, posterior corners rectangular, lateral margins straight and without dentation, basal and distal margins unbordered in the middle; surface shining with fine punctation similar as on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shagreened; prosternal apophysis prominent. Wings completely reduced. Elytra round, 1.1 times as long as wide, widest in the middle, with irregular punctural rows, punctures distinctly larger than pronotal punctures; intervals flat, wider than punctural rows and with a row of slightly smaller punctures; humeral angles not pronounced; lateral margin without dentation and visible in dorsal view only in basal quarter of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures as small as on pronotum, lateral ones somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus (Fig. 12) with feebly bent long basale and with long triangular apicale with rounded tip.

Diagnosis: *Menimus cameronicus* n. sp., *M. gentingicus* n. sp., *M. hauseri* n. sp., and *M. pahangicus* n. sp., all from Peninsular Malaysia, form a natural species-group. These four species share a 4-segmented antennal club, larger body size, round body shape, no pronounced humeral angle of the elytra, completely reduced wings, and the lateral margin of elytra visible in dorsal view only in basal quarter of elytra. They can be mainly separated by the structure and punctation of the dorsal surface. *M. cameronicus* n. sp. is the smallest species of this group (body length 2.8–3.0 mm), and can be recognised by the strongly convex pronotum with straight lateral margins. For separation from the other congeners of the Malay Peninsula see the key (section 3).

Menimus gentingicus **n. sp.**
(Fig. 2)

Holotype (♀): W Malaysia, Genting Highland, 12.IV.1990, leg. A. Riedel, SMNS.

Etymology: Named after the Genting Highland, where the holotype was collected.

Description: Body length 4.4 mm, body shape round (Fig. 2). Dorsal side dark brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with similar fine punctation as on pronotum. Eyes small, not prominent. Antennae

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(Fig. 2) with 4-segmented club (antennomeres 7–10), all antennomeres separated, antennomeres 3–6 wider than long. Pronotum widest at base, anterior corners not protruding, posterior corners rectangular, lateral margins slightly rounded and without dentation, basal and distal margins unbordered in the middle; surface shining, with fine punctation similar as on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shagreened; prosternal apophysis prominent. Wings completely reduced. Elytra round, 1.05 times as long as wide, widest in the middle, with irregular punctural rows, punctures only slightly larger than pronotal punctures; intervals flat, wider than punctural rows and with a row of slightly smaller punctures; humeral angles not pronounced; lateral margin without dentation and visible in dorsal view only in basal quarter of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures as small as on pronotum, lateral ones somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus unknown, only female available.

Diagnosis: *Menimus gentingicus* n. sp. is similar to *M. cameronicus* n. sp., but somewhat larger, with wider and flatter pronotum, with slightly rounded lateral margins of pronotum, and with smaller punctures of the elytral rows. See also diagnosis of *M. cameronicus* n. sp. For separation from the other congeners of the Malay Peninsula see the key (section 3).

Menimus hauseri **n. sp.**
(Figs. 4, 13)

Holotype (♂): W Malaysia, Pahang, Cameron Highlands, Tanah Rata, 2.VIII.1999, leg. M. Hauser, SMNS.

Paratypes: W Malaysia, Pahang, Tanah Rata, 3.VIII.1974, leg. G. Minet, 3 ex. NHMB. – W Malaysia, Perak, Tapah, 5.VIII.1974, leg. G. Minet, 2 ex. SMNS. – W Malaysia, Pahang, Cameron Highlands, Gn. Beremban, 1.–3.IV.1990, leg. A. Riedel, 1 ♀ SMNS.

Etymology: Named in honour of Martin Hauser (Sacramento), collector of the holotype.

Description: Body length 4.0–4.5 mm, body shape round (Fig. 4). Dorsal side dark brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with punctuation slightly larger and denser than on pronotum. Eyes small, not prominent. Antennae (Fig. 4) with 4-segmented club (antennomeres 7–10), all antennomeres separated, antennomeres 3–6 wider than long. Pronotum widest at base, anterior corners not protruding, posterior corners rectangular, lateral margins slightly rounded and without dentation, basal and distal margins unbordered in the middle; surface shining, with punctuation finer and sparser than on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shagreened; prosternal apophysis prominent. Wings completely reduced. Elytra round, 1.15 times as long as wide, widest in the middle, with irregular, dense punctation with traces of rows, punctures distinctly larger than pronotal punctures; without distinct intervals; humeral angles not pronounced; lateral margin without dentation and visible in dorsal view only in basal quarter of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures as small as on pronotum, lateral ones somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus (Fig. 13) with feebly bent long basale and with long finger-like apicale with rounded tip.

Diagnosis: *Menimus hauseri* n. sp. can be recognised mainly by the elytra with irregular dense punctures with only traces of punctural rows, and without distinctly separated intervals. See also diagnosis of *M. cameronicus* n. sp. For separation from the other congeners of the Malay Peninsula see the key (section 3).

Menimus khaolakicus **n. sp.**
(Figs. 10, 16)

Holotype (♂): Thailand, Khao Lak NP, Thone Chong Fa Fall, 100–300 m, 6.–15.I.1998, leg. A. Schulz & K. Vock, SMNS.

Paratypes: Same data as holotype, 5 ex. SMNS, 1 ex. HNHM, 1 ex. NHMB.

Etymology: Named after the Khao Lak National Park in south-western Thailand, where the type series was collected.

Description: Body length 1.5–1.7 mm, body shape elongate parallel-sided (Fig. 10). Dorsal side light brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with punctation similar as on pronotum. Eyes reduced, not prominent. Antennae (Fig. 10) with 3-segmented club (antennomeres 8–10), all antennomeres separated, antennomeres 3–7 wider than long. Pronotum widest in the middle, anterior corners slightly protruding, posterior corners rectangular, lateral margins rounded and with fine dentation, basal and distal margins unbordered in the middle; surface shining, with punctation similar as on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shining; prosternal apophysis not prominent, bent down. Wings fully developed. Elytra elongate parallel-sided, 1.35 times as long as wide,

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widest at base, with irregular, dense punctural rows, punctures slightly larger than pronotal punctures; intervals flat, narrower than punctural rows and with some similar large punctures; humeral angles pronounced; lateral margin with fine dentation and visible in dorsal view only in basal quarter of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures as small as on pronotum, lateral ones somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without any keel. Aedeagus (Fig. 16) with feebly bent long basale and with tongue-like apicale with rounded tip, basale nearly 3 times as long as apicale.

Diagnosis: *Menimus khaolakicus* n. sp. can be recognised by the small body size below 2 mm, by the elongate parallel-sided elytra, by the 3-segmented antennal club, by the elytra with distinct and dense, irregular punctural rows, and by the shape of the aedeagus. *M. perakicus* n. sp. is similar, but larger (2.3 mm), and the punctures of elytral rows distinctly larger than pronotal punctures. The aedeagi cannot be compared because only a female is known of *M. perakicus* n. sp. In contrary, *M. lineatopunctatus* and *M. tiomanicus* n. sp. have a 4-segmented antennal club. For separation from the other congeners of the Malay Peninsula see also the key (section 3).

Menimus lineatopunctatus (Pic, 1930) **n. comb.**
(Fig. 7)

Pentaphyllus lineatopunctatus Pic, 1930: 34.
Menimus klapperichi Bremer, 1997: 68 **n. syn.** (O. Merkl, personal communication).

Examined type material: 2 syntypes (sex not examined) of *Pentaphyllus lineatopunctatus*, Sumatra, Palembang, coll. M. Pic [1 ex. labelled by O. Merkl 2003 as lectotype], MNHN. – Holotype (sex not examined) and 4 paratypes of *Menimus klapperichi* Sumatra, Prov. Aceh-Salatan, Babahrot, 100 m, 15.–20.VIII1983, leg. J. Klapperich, HNHM.

Other material examined: W Malaysia, Pahang, Tioman Island, Kampung Tekek, 16.–24.VII.1993, leg. R. Schuh, 1 ♀ SMNS.

Synonymy: Ottó Merkl (personal communication) studied the type series of *Pentaphyllus lineatopunctatus* Pic, 1930, recognised the generic misplacement, labelled a lectotype specimen, and recognised that *P. lineatopunctatus* Pic, 1930 is identical with *Menimus klapperichi* Bremer, 1997 (Pic 1930, Bremer 1997). However, this new combination and synonymy was not yet published so far.

Remarks: *Menimus lineatopunctatus* (Pic, 1930) and *M. tiomanicus* n. sp., occur both on the small Tioman Island, are quite similar, and share the small body size around 1.8–2.0 mm, the elongate parallel-sided elytra, the 4-segmented antennal club, and the elytra with distinct and dense, irregular punctural rows. However, *M. lineatopunctatus* is slightly larger (2 mm), the pronotum and elytra are higher convex and their lateral margins have a fine dentation, and the pronotum has a denser and larger punctation. In contrary, *M. khaolakicus* n. sp. and *M. perakicus* n. sp. have a 3-segmented antennal club. For separation from the other congeners of the Malay Peninsula see also the key (section 3).

Type localities: "Palembang" (*P. lineatopunctatus*), "Bahbarot" (*M. klapperichi*).

Distribution: Sumatra (type localities), W Malaysia (new record).

Menimus malayicus **n. sp.**
(Figs. 11, 15)

Holotype (♂): W Malaysia, Cameron Highlands, Gn. Beremban, 1.–3.IV.1990, leg. A. Riedel, SMNS.

Paratypes: Same data as holotype, 1 ♀ SMNS. – W Malaysia, Cameron Highlands, Gn. Beremban, 1600–1800 m, 29.VII.1993, leg. R. Schuh, 1 ♀ SMNS. – W Malaysia, Kelantan, road between Kampong Raja and Gua Musang, 1400–1700 m, 1.–28.IV.2006, leg. P. Čechovský, 2 ex. SMNS.

Etymology: Named after the Malay Peninsula, where the type specimens were collected.

Description: Body length 3.8–4.1 mm, body shape slightly ovate, nearly parallel-sided (Fig. 11). Dorsal side brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae and a few longer (? tactile) setae along lateral elytral margin, antennae and legs lighter. Head with slightly larger and denser punctation than on pronotum. Eyes small, not prominent. Antennae (Fig. 11) with 4-segmented club (antennomeres 7–10), all antennomeres separated, antennomeres 3–6 wider than long. Pronotum widest in posterior third, anterior corners not protruding, posterior corners rectangular, lateral margins nearly straight and with traces of a fine dentation, distal margin completely bordered, basal margin unbordered in the middle; surface shining, with punctation finer and sparser than on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shining; prosternal apophysis not prominent, bent down. Wings fully developed. Elytra slightly ovate, nearly parallel-sided, 1.45 times as long as wide, widest in the middle, with irregular, dense punctural rows, punctures larger than on pronotum; intervals flat, wider than punctural rows and with some smaller punctures; humeral angles pronounced; lateral margin with fine dentation and visible in dorsal view nearly throughout whole length; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on

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metaventrite. Abdominal ventrites finely punctate, medial punctures as small as on pronotum, lateral ones somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus (Fig. 15) with feebly bent short basale and with broad finger-like apicale with rounded tip.

D i a g n o s i s : *Menimus malayicus* n. sp. is most similar to *M. seriepunctatus* Gebien, 1927 from Sumatra, both having similar body size and shape, and also similar dorsal punctation. However, *M. seriepunctatus* is much more convex, and the lateral margins of elytra are visible in dorsal view only in the basal quarter of elytra. This species will be redescribed and figured in a forthcoming article about *Menimus* from Borneo and Sumatra. For separation from the other congeners of the Malay Peninsula see the key (section 3).

Menimus pahangicus **n. sp.**
(Figs. 5, 14)

H o l o t y p e (♂): W Malaysia, Pahang, Tanah Rata, 3.VIII.1974, leg. G. Minet, NHMB.

P a r a t y p e s : Same data as holotype, 2 ex. NHMB, 2 ex. SMNS. – W Malaysia, Perak, Tapah, 5.VIII.1974, leg. G. Minet, 3 ex. NHMB, 1 ex. HNHM.

E t y m o l o g y : Named after the sultanate Pahang, where some of the type specimens including the holotype were collected.

D e s c r i p t i o n : Body length 5.0–5.5 mm, body shape round (Fig. 5). Dorsal side dark brownish without colour pattern, without metallic shine, surface dull shagreened and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with fine punctation slightly larger and denser than on pronotum. Eyes small, not prominent. Antennae (Fig. 5) with

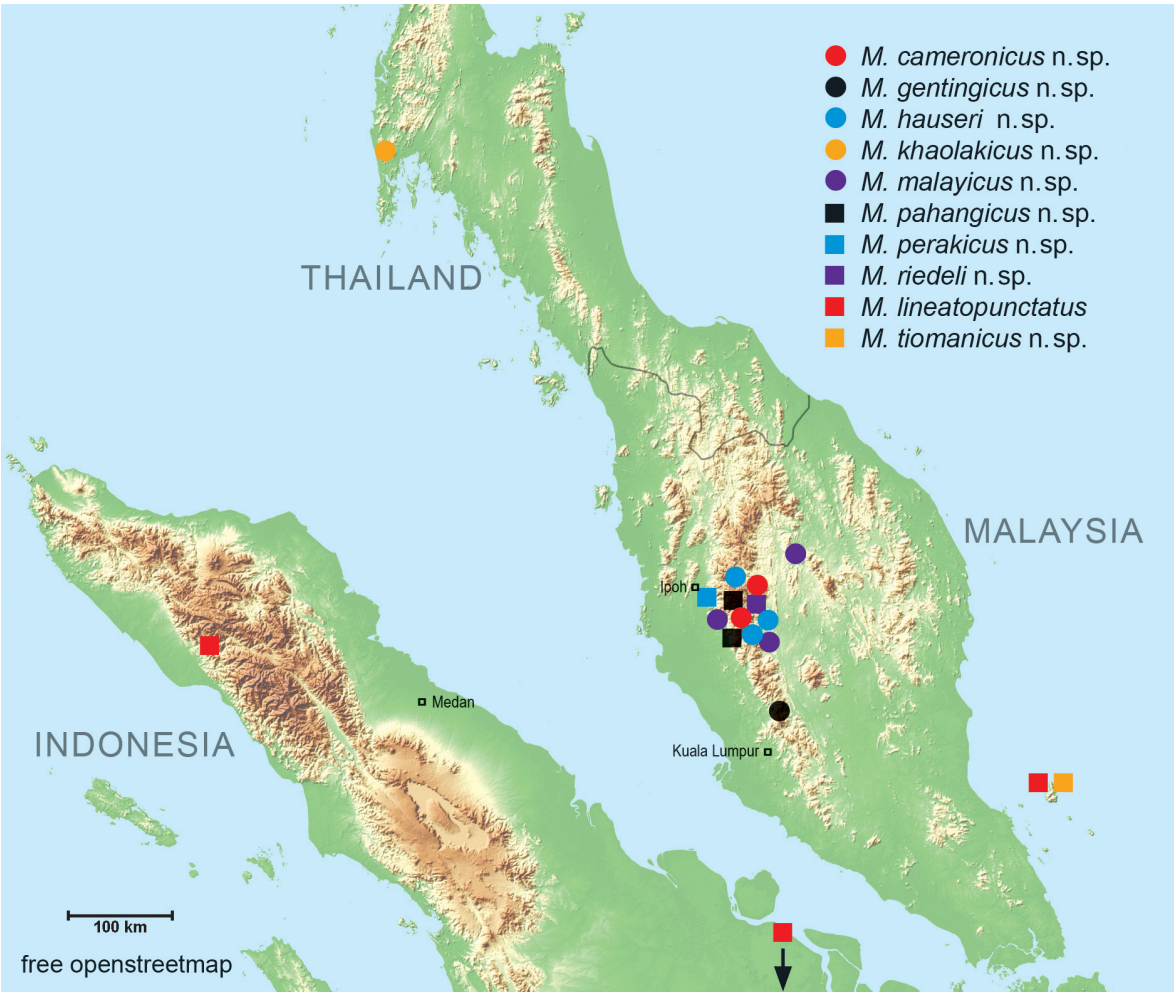

Fig. 1. Localities of *Menimus* in Peninsular Malaysia and adjacent southern Thailand.

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4-segmented club (antennomeres 7–10), all antennomeres separated, antennomere 3 longer than wide, antennomeres 4–6 wider than long. Pronotum widest at base, anterior corners not protruding, posterior corners rectangular, lateral margins slightly rounded and without dentation, basal and distal margins unbordered in the middle; surface dull shagreened, with punctation finer and sparser than on head, punctures nearly invisible on shagreened surface, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shagreened; prosternal apophysis prominent. Wings completely reduced. Elytra round, 1.1 times as long as wide, widest in the middle, impunctate, surface dull shagreened and slightly wrinkled; humeral angles not pronounced; lateral margin without dentation and visible in dorsal view only in basal quarter of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites dull shagreened and without punctation, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus (Fig. 14) with feebly bent long basale and with long finger-like apicale with rounded tip.

D i a g n o s i s : *Menimus pahangicus* n. sp. can be recognised mainly by the large body size around 5 mm, by the dull shagreened dorsal surface, and by the impunctate elytra. See also diagnosis of *M. cameronicus* n. sp. For separation from the other congeners of the Malay Peninsula see the key (section 3).

Menimus perakicus **n. sp.**
(Fig. 9)

H o l o t y p e (♀): W Malaysia, Perak, 40 km SE Ipoh, Banjaran Titi Wangsa, Ringlet, 900 m, 29.III.–15.IV.2004, leg. P. Čechovský, SMNS.

E t y m o l o g y : Named after the sultanate Perak, where the holotype was collected.

D e s c r i p t i o n : Body length 2.3 mm, body shape elongate parallel-sided (Fig. 9). Dorsal side brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with punctation similar as on pronotum. Eyes small, not prominent. Antennae (Fig. 9) with 3-segmented club (antennomeres 8–10), all antennomeres separated, antennomeres 3–7 wider than long. Pronotum widest in the middle, anterior corners slightly protruding, posterior corners rectangular, lateral margins rounded and with fine dentation, basal and distal margins unbordered in the middle; surface shining, with punctation similar as on head, disc convex, without impressions; propleura with coarse confluent punctation, surface somewhat wrinkled and shining; prosternal apophysis not prominent, bent down. Wings fully developed. Elytra elongate parallel-sided, 1.6 times as long as wide, widest at base, with irregular, dense punctural rows, punctures distinctly larger than pronotal punctures; intervals flat, narrower than punctural rows and with a few fine punctures; humeral angles pronounced; lateral margin with fine dentation and visible in dorsal view in basal half of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures smaller and sparser than on pronotum, lateral punctures somewhat larger, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus unknown, only female available.

D i a g n o s i s : *Menimus perakicus* n. sp. can be recognised by the small body size around 2.3 mm, by the elongate parallel-sided elytra, by the 3-segmented antennal club, and by the elytra with distinct and dense, irregular punctural rows. *M. khaolakicus* n. sp. is similar, but smaller (1.5–1.7 mm) and the punctures of elytral rows only slightly larger than pronotal punctures. In contrary, *M. lineatopunctatus* and *M. tiomanicus* n. sp. have a 4-segmented antennal club. For separation from the other congeners of the Malay Peninsula see also the key (section 3).

Menimus riedeli **n. sp.**
(Fig. 6)

H o l o t y p e (♀): W Malaysia, Pahang, Cameron Highlands, Gn. Beremban, 1.–3.IV.1990, leg. A. Riedel, SMNS.

E t y m o l o g y : Named in honour of Alexander Riedel (Karlsruhe), collector of the holotype and other congeners in W Malaysia.

D e s c r i p t i o n : Body length 1.7 mm, body shape ovate (Fig. 6). Dorsal side brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with punctation similar as on pronotum. Eyes completely reduced. Antennae (Fig. 6) with 3-segmented club (antennomeres 8–10), all antennomeres separated, antennomeres 3–7 wider than long. Pronotum widest behind middle, anterior corners not protruding, posterior corners rectangular, lateral margins rounded and without dentation, basal and distal margins unbordered in the middle; surface shining, with punctation similar as on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shining; prosternal apophysis slightly prominent, bent down. Wings completely reduced. Elytra ovate, 1.2 times as long as wide, widest before middle, with irregular, punctural rows, punctures larger than pronotal punctures; intervals flat, broader than punctural rows and with a few punctures of similar size; humeral angles not pronounced; lateral margin without dentation and visible in dorsal view only near

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Figs. 2–5. Dorsal view of *Menimus* from Peninsular Malaysia and adjacent southern Thailand. – **2**. *M. gentingicus* n. sp., ♀ holotype SMNS. **3**. *M. cameronicus* n. sp., ♂ holotype SMNS. **4**. *M. hauseri* n. sp., ♂ holotype SMNS. **5**. *M. pahangicus* n. sp., ♂ holotype NHMB. – Scale: 1 mm.

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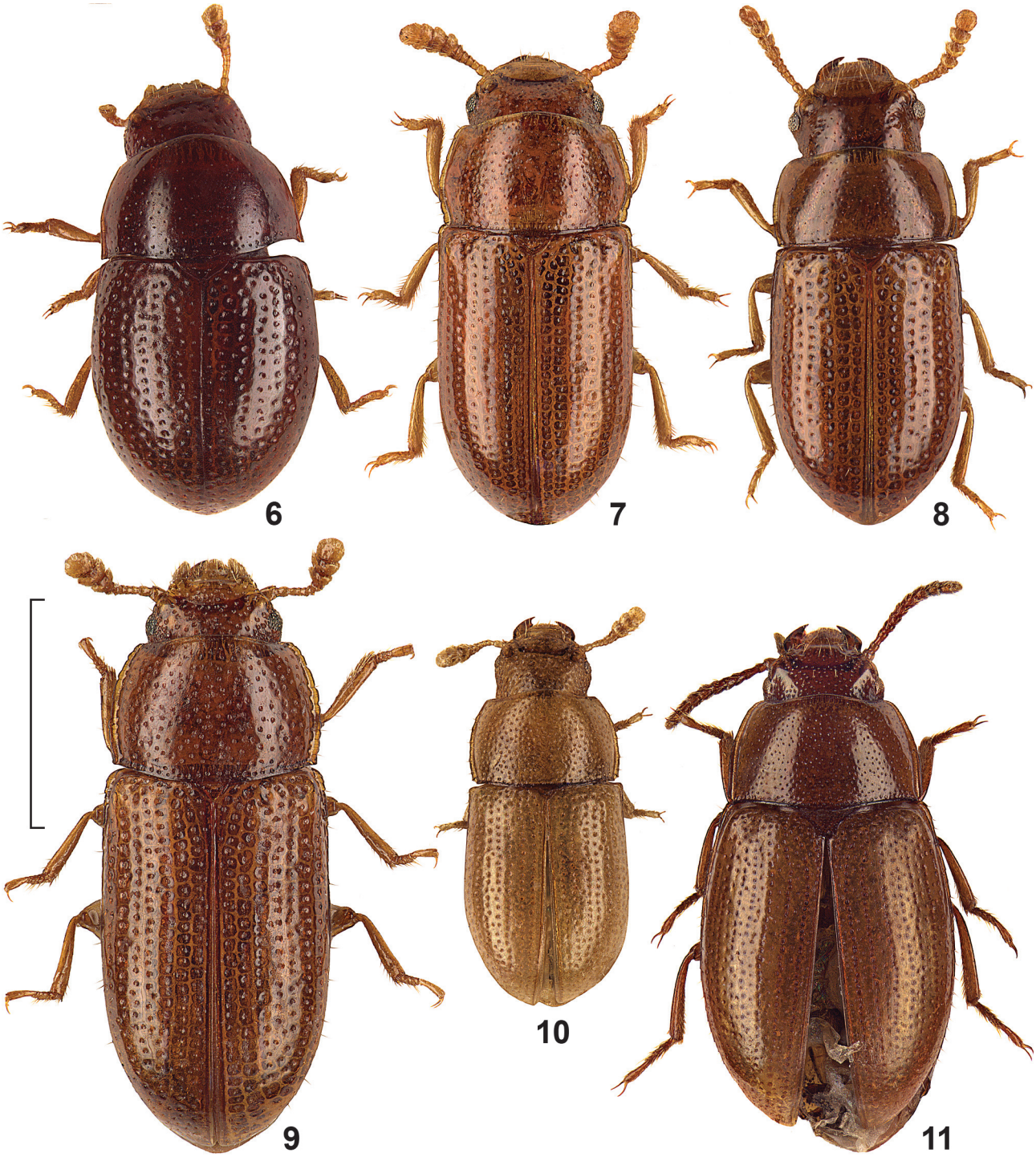

Figs. 6–11. Dorsal view of *Menimus* from Peninsular Malaysia and adjacent southern Thailand. – **6**. *M. riedeli* n. sp., ♀ holotype SMNS. **7**. *M. lineatopunctatus*, ♀ non-type SMNS. **8**. *M. tiomanicus* n. sp., ♂ holotype SMNS. **9**. *M. perakicus* n. sp., ♀ holotype SMNS. **10**. *M. khaolakicus* n. sp., ♂ holotype SMNS. **11**. *M. malayicus* n. sp., ♂ holotype SMNS. – Scale: 1 mm.

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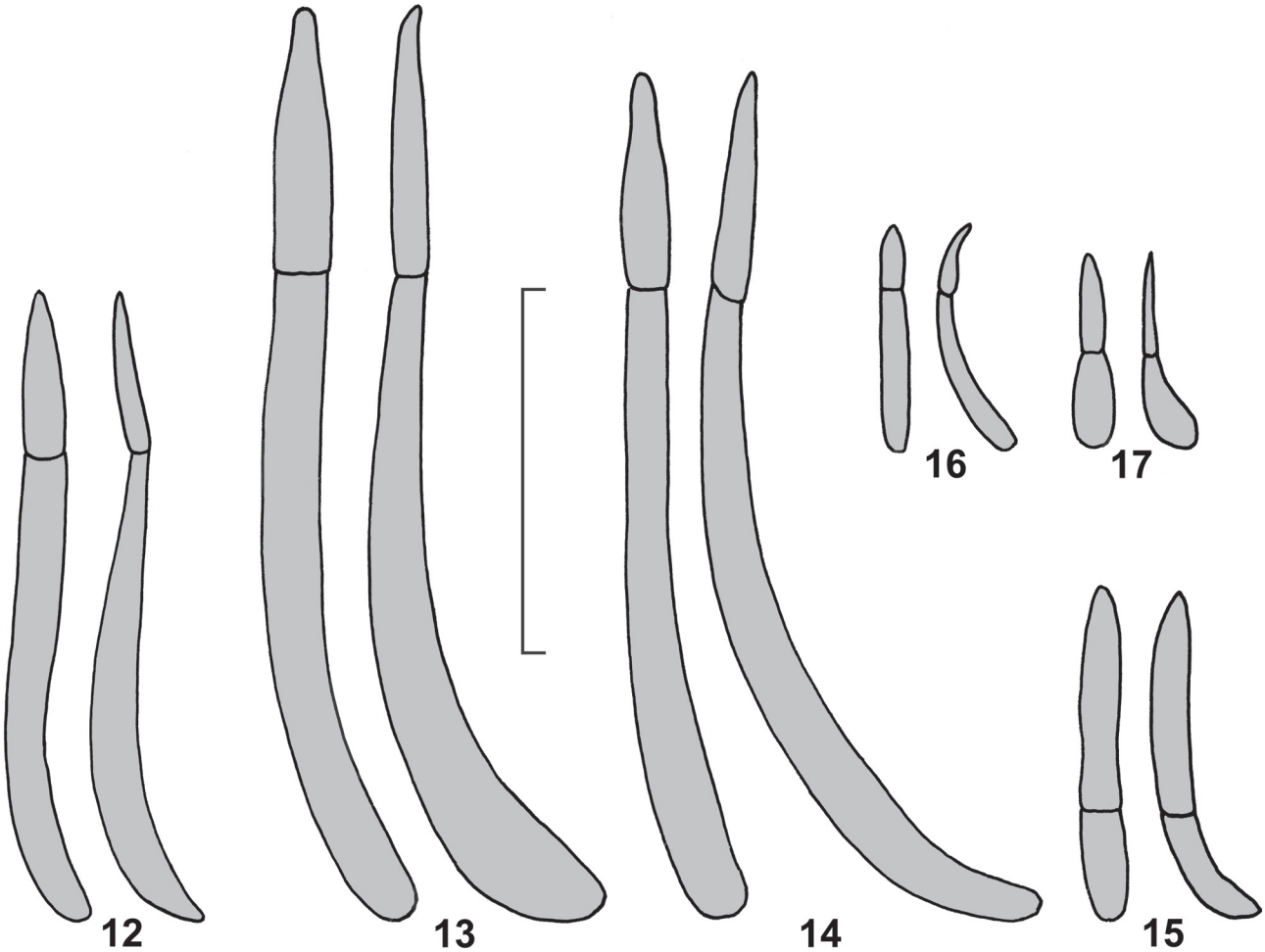

Figs. 12–17. Aedeagus of *Menimus* from Peninsular Malaysia and adjacent southern Thailand. – **12**. *M. cameronicus* n. sp., ♂ holotype SMNS. **13**. *M. hauseri* n. sp., ♂ holotype SMNS. **14**. *M. pahangicus* n. sp., ♂ holotype NHMB. **15**. *M. malayicus* n. sp., ♂ holotype SMNS. **16**. *M. khaolakicus* n. sp., ♂ holotype SMNS. **17**. *M. tiomanicus* n. sp., ♂ holotype SMNS. – Scale: 1 mm (12–15), 0.5 mm (16–17).

shoulders; epipleura diminishing somewhat before apex, scattered with a few punctures, punctures similar as those on metaventrite. Abdominal ventrites punctate, punctures similar as on pronotum, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus unknown, only female available.

Diagnosis: *Menimus riedeli* n. sp. can be recognised by the small body size below 2 mm, by the ovate body shape, by the convex elytra with irregular punctural rows and the lateral margin visible in dorsal view only near shoulders, and by the 3-segmented antennal club. All other small *Menimus* species from the Malay Peninsula have elongate parallel-sided body shape, and partly also a 4-segmented antennal club. For separation from the other congeners of the Malay Peninsula see also the key (section 3).

Menimus tiomanicus **n. sp.**
(Figs. 8, 17)

Holotype (♂): W Malaysia, Pahang, Tioman Island, Kampung Tekek, 16.–24.VII.1993, leg. R. Schuh, SMNS.

Etymology: Named after the Tioman Island, about 50 km east of the southern Malay Peninsula, where the holotype was collected.

Description: Body length 1.8 mm, body shape elongate parallel-sided (Fig. 8). Dorsal side light brownish without colour pattern, without metallic shine, surface shining and without distinct setation, only with a few microsetae, antennae and legs lighter. Head with punctation similar as on pronotum. Eyes small, not prominent. Antennae (Fig. 8) with 4-segmented club (antennomeres 7–10), all antennomeres separated, antennomeres 3–6 wider than long. Pronotum widest behind middle, anterior

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corners not protruding, posterior corners rectangular, lateral margins rounded and without dentation, basal margin completely bordered, distal margin unbordered in the middle; surface shining, with punctation similar as on head, disc convex, without impressions; propleura with a few fine punctures, surface smooth and shining; prosternal apophysis not prominent, bent down. Wings fully developed. Elytra elongate parallel-sided, 1.4 times as long as wide, widest at base, with irregular, punctural rows, punctures larger than on pronotum; intervals flat, broader than punctural rows and with a few fine punctures; humeral angles pronounced; lateral margin without dentation and visible in dorsal view only in basal half of elytra; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metaventrite. Abdominal ventrites punctate, medial punctures smaller than on pronotum, last ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and without keel. Aedeagus (Fig. 17) with short basale bent at base and with triangular apicale with acute tip, basale as long as apicale.

Diagnosis: See *Menimus lineatopunctatus* (Pic, 1930) n. comb. For separation from the other congeners of the Malay Peninsula see the key (section 3).

3 Identification key of *Menimus* from Peninsular Malaysia and adjacent southern Thailand

1 Larger species, body length 2.8–5.5 mm, antennae with 4-segmented club. **2**
– Smaller species, body length 1.5–2.3 mm, antennae with 3- or 4-segmented club. **6**
2 Body shape slightly ovate, nearly parallel-sided, humeral angle pronounced and wings present, lateral margin of elytra visible in dorsal view nearly throughout whole length. – Figs. 11, 15. ..... ***malayicus* n. sp.**
– Body shape round, humeral angle not pronounced and wings completely reduced, lateral margin of elytra visible in dorsal view only in basal quarter of elytra. **3**
3 Surface of pronotum and elytra dull shagreened, elytra impunctate and surface slightly wrinkled, body length 5.0–5.5 mm. – Figs. 5, 14. ..... ***pahangicus* n. sp.**
– Surface of pronotum and elytra shining, elytra punctate and surface smooth, body length 2.8–4.5 mm. **4**
4 Whole elytra with irregular dense punctation with only traces of punctural rows, intervals not distinctly separated. – Figs. 4, 13. ..... ***hauseri* n. sp.**
– Elytra with irregular punctural rows and with separated intervals. **5**
5 Pronotum conical and strongly convex, lateral margins straight, punctures of elytral rows distinctly larger than pronotal punctures, body length 2.8–3.0 mm. – Figs. 3, 12. .... ***cameronicus* n. sp.**
– Pronotum broader and flatter, lateral margins slightly rounded, punctures of elytral rows only slightly larger than pronotal punctures, body length 4.4 mm. – Fig. 2. .... ***gentingicus* n. sp.**
6 Antennae with 3-segmented club. **7**
– Antennae with 4-segmented club. **9**
7 Body shape ovate, eyes completely reduced. – Fig. 6. .... ***riedeli* n. sp.**
– Body shape elongate parallel-sided, eyes small, not prominent, but present. **8**
8 Body length 2.3 mm, elytra combined 1.6 times as long as wide, punctures of elytral rows distinctly larger than pronotal punctures. – Fig. 9. ..... ***perakicus* n. sp.**
– Body length 1.5–1.7 mm, joint elytra 1.35 times as long as wide, punctures of elytral rows slightly larger than pronotal punctures. – Figs. 10, 16. ..... ***khaolakicus* n. sp.**
9 Body length 1.8 mm, elytra combined 1.4 times as long as wide, pronotum and elytra flatter, their lateral margins without dentation. – Figs. 8, 17. ..... ***tiomanicus* n. sp.**
– Body length 2.0 mm, joint elytra 1.5 times as long as wide, pronotum and elytra highly convex, their lateral margins with fine dentation. – Fig. 7. ..... ***lineatopunctatus***

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Author's address:

Dr. Wolfgang Schawaller, Staatliches Museum für Naturkunde, Rosenstein 1, 70191 Stuttgart, Germany;
e-mail: wolfgang.schawaller@smns-bw.de

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