New polymorphic species of the genus Menimus Sharp (Coleoptera: Tenebrionidae: Gnathidiini) from Borneo and Sumatra

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RESEARCH ARTICLE

New polymorphic species of the genus *Menimus* Sharp (Coleoptera: Tenebrionidae: Gnathidiini) from Borneo and Sumatra

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Abstract

New polymorphic species of the genus *Menimus* Sharp, 1876 (Diaperinae Latreille, 1802, Gnathidiini Gebien, 1921, Gnathidiina Gebien, 1921) from Borneo and Sumatra are described: *M. burut* **sp. n.**, *M. crockeri* **sp. n.**, *M. dasun* **sp. n.**, *M. dayak* **sp. n.**, *M. grimmi* **sp. n.**, *M. jacobsoni* **sp. n.**, *M. kadazan* **sp. n.**, *M. kinabalucus* **sp. n.**, *M. loebli* **sp. n.**, *M. matangicus* **sp. n.**, *M. merkli* **sp. n.**, *M. punggulicus* **sp. n.**, *M. sabahicus* **sp. n.**, *M. sarawakicus* **sp. n.** A new synonym is proposed: *Menimus seriepunctatus* Gebien, 1927 (*Menimus malayicus* Schawaller, 2016 **syn. n.**). A lectotype is designated for *Menimus seriepunctatus* Gebien, 1927. *Menimus burut* **sp. n.** and *Menimus sabahicus* **sp. n.** are the first known species with 9-segmented antennae, whereas *Menimus matangicus* **sp. n.** completely lacks eyes. An identification key is compiled for all 16 species so far known from Borneo and Sumatra. The high morphological plasticity of the epigean species of *Menimus* should be re-examined in a more comprehensive study of all Gnathidiini, not only with morphological but also with molecular data.

Keywords: Diaperinae, Gnathidiina, Indonesia, morphological diversity, new species, taxonomy.

Zusammenfassung

Neue morphologisch vielseitige Arten der Gattung *Menimus* Sharp, 1876 (Diaperinae Latreille, 1802, Gnathidiini Gebien, 1921, Gnathidiina Gebien, 1921) von Borneo und Sumatra werden beschrieben: *M. burut* **sp. n.**, *M. crockeri* **sp. n.**, *M. dasun* **sp. n.**, *M. dayak* **sp. n.**, *M. grimmi* **sp. n.**, *M. jacobsoni* **sp. n.**, *M. kadazan* **sp. n.**, *M. kinabalucus* **sp. n.**, *M. loebli* **sp. n.**, *M. matangicus* **sp. n.**, *M. merkli* **sp. n.**, *M. punggulicus* **sp. n.**, *M. sabahicus* **sp. n.**, *M. sarawakicus* **sp. n.** Ein neues Synonym wird vorgeschlagen: *Menimus seriepunctatus* Gebien, 1927 (*Menimus malayicus* Schawaller, 2016, **syn. n.**). Ein Lectotypus wird festgelegt für *Menimus seriepunctatus* Gebien, 1927. *Menimus burut* **sp. n.** und *Menimus sabahicus* **sp. n.** sind die ersten bekannten Arten mit 9-gliedrigen Antennen, *Menimus matangicus* **sp. n.** besitzt vollständig reduzierte Augen. Ein Bstimmungsschlüssel für die bislang bekannten 16 Arten von Borneo und Sumatra wird erstellt. Die große morphologische Variabilität der epigäischen Arten von *Menimus* sollte in einer umfassenderen Arbei aller Gnathidiini untersucht werden, nicht nur mit morphologischen, sondern auch mit molekularen Daten.

Introduction

The tenebrionid genus *Menimus* Sharp, 1876 (Diaperinae Latreille, 1802, Gnathidiini Gebien, 1921) contains so far about 80 morphologically very diverse species. The species are distributed in the Oriental, Papuan, Australian, and Pacific Regions with a few species reaching the southern areas of the Palaearctic Region in Japan (Lewis 1894), Sikkim (Kaszab 1982), Yunnan (Medvedev 2007; Schawaller 2009), India and northern Burma (Schawaller 2016a), and Taiwan (Ando 2018). Medvedev (2007) compiled a list of all described species with full references. At the same time, he synonymised *Neomenimus* Kaszab, 1939 and discussed the taxonomic significance of some particular morphological features. Recently, nine species from Peninsular Malaysia and adjacent southern Thailand were described by Schawaller (2016b), and three species were described from Sulawesi (Schawaller & Ando 2018). From Borneo and Sumatra, only three species of *Menimus* had been described so far (Gebien 1927; Pic 1930; Bremer 1997). However, one of them is a junior synonym (see below). Newly collected specimens are presented herein, which increase the total number of species from both large and zoogeographically similar Sunda islands to 16.

The tribe Gnathidiini Gebien, 1921 is divided in two subtribes: Anopidiina Jeannel & Paulian, 1945 and Gnathidiina Gebien, 1921. The latter is characterised by an unexposed clypeal membrane and contains, among others, the herein treated genus *Menimus*. Anopidiina from Africa with an exposed clypeal membrane were recently listed by Schawaller & Purchart (2012), and a new speciose genus of this subtribe from the West Indies was described by Spiessberger & Ivie (2020).

[1] Contribution to Tenebrionidae n. 165. For n. 164, see Biodiversität und Naturausstattung im Himalaya **7**; Erfurt (2021).

The newly collected species of *Menimus* described herein 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 synonymisation of different genera by Kaszab (1982) and Medvedev (2007), or the creation of subgenera based on single characters (for example the subgenus *Sinomenimus* Medvedev, 2007) should be re-examined in a more comprehensive study of all Gnathidiini, not only with morphological but also with molecular characters. Therefore, the species described herein are not assigned to subgenera because of their uncertain taxonomic status.

Already Gebien (1925) recognised the diversity among species of *Menimus* (translation from German: "If I would use the form of the antennae and of the epistome for the creation of new genera, we would obtain a high number of genera with only few species each"). Gebien expected the discovery of several new species and planned to later split *Menimus* into several genera.

Good examples of surprising discoveries within this tribe are the recent description of the genus *Sakaiomenimus* Ando, 2003 from Japan , which has 11-segmented antennae (ando 2003), and the present description of two species with 9-segmented antennae—with all other taxa of Gnathidiini characterised by 10-segmented antennae (besides other characters). Another surprise is the discovery of a species on Borneo completely lacking eyes (*M. matangicus* sp. n.). The subgenus *Sinomenimus* was based on a blind species from China, but this large species is completely different in external characters from the newly-discovered blind and tiny species from Borneo. Possibly, also *Micropeneta* Pic, 1921, with modified male head (see Bremer 1997; Li & Jiang 2019), is a synonym of *Menimus*.

The species of *Menimus* have an epigean way of life in mature forests, and can be collected mostly by sifting or with Berlese/Winkler extractors. Andújar & Grebennikov (2021) used a special technique for collecting these beetles, including species of Gnathidiini, on Madagascar. Nearly all the species examined herein, with the exception of *M. jacobsoni* **n. sp.**, possess wings. Nevertheless, they probably have limited flight abilities, because they obviously occur only in small areas. It seems likely that most species evolved in their present area and that they did not immigrate from mainland Asia or other Sunda islands to Borneo or Sumatra.

So far, nine species of *Menimus* are known from Peninsular Malaysia, three from Sumatra, and 14 from Borneo. This discrepancy between both Sunda Islands might be caused by different collecting activities. Only one species, *M. lineatopunctatus* (Pic, 1930), was collected in Peninsular Malaysia, Borneo, and Sumatra, and only one species (*M. seriepunctatus* Gebien, 1927) was collected in Peninsular Malaysia and Sumatra, all other species seem to be endemic either to Sumatra or Borneo.

Material and methods

The locality data are not given verbatim, but are modified in a standard form, partly completed by additional geographical information for the better localisation, and are translated into English when given in other languages on the labels. The designated holotypes and paratypes are provided with printed red labels. The aedeagi are mounted by a water-soluble glue on cards together with the specimens. The photographs were taken with a VHX-5000 Keyence microscope, and edited and assembled in Adobe Photoshop Elements 15.

In some species, only female(s) were available, thus the aedeagus remains unknown. In a few other species the sex of the corresponding holotypes was not examined. Because of their tiny size (1–2 mm) and the presence of only single and rare specimens, the risk of destruction of these few available specimens seemed too high to take. Moreover, all treated species can be distinctly recognised without knowledge of the aedeagal shape (see identification key).

Acronyms of depositories

NHMUK	Natural History Museum, London, United Kingdom
CKA	Collection of Dr. Kiyoshi Ando, Osaka, Japan
CRG	Collection of Dr. Roland Grimm, Neuenbürg, Germany
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland
NHMB	Naturhistorisches Museum, Basel, Switzerland
SMNS	Staatliches Museum für Naturkunde Stuttgart, Germany
ZSM	Zoologische Staatssammlung, Munich, Germany

The species of *Menimus* from Borneo and Sumatra

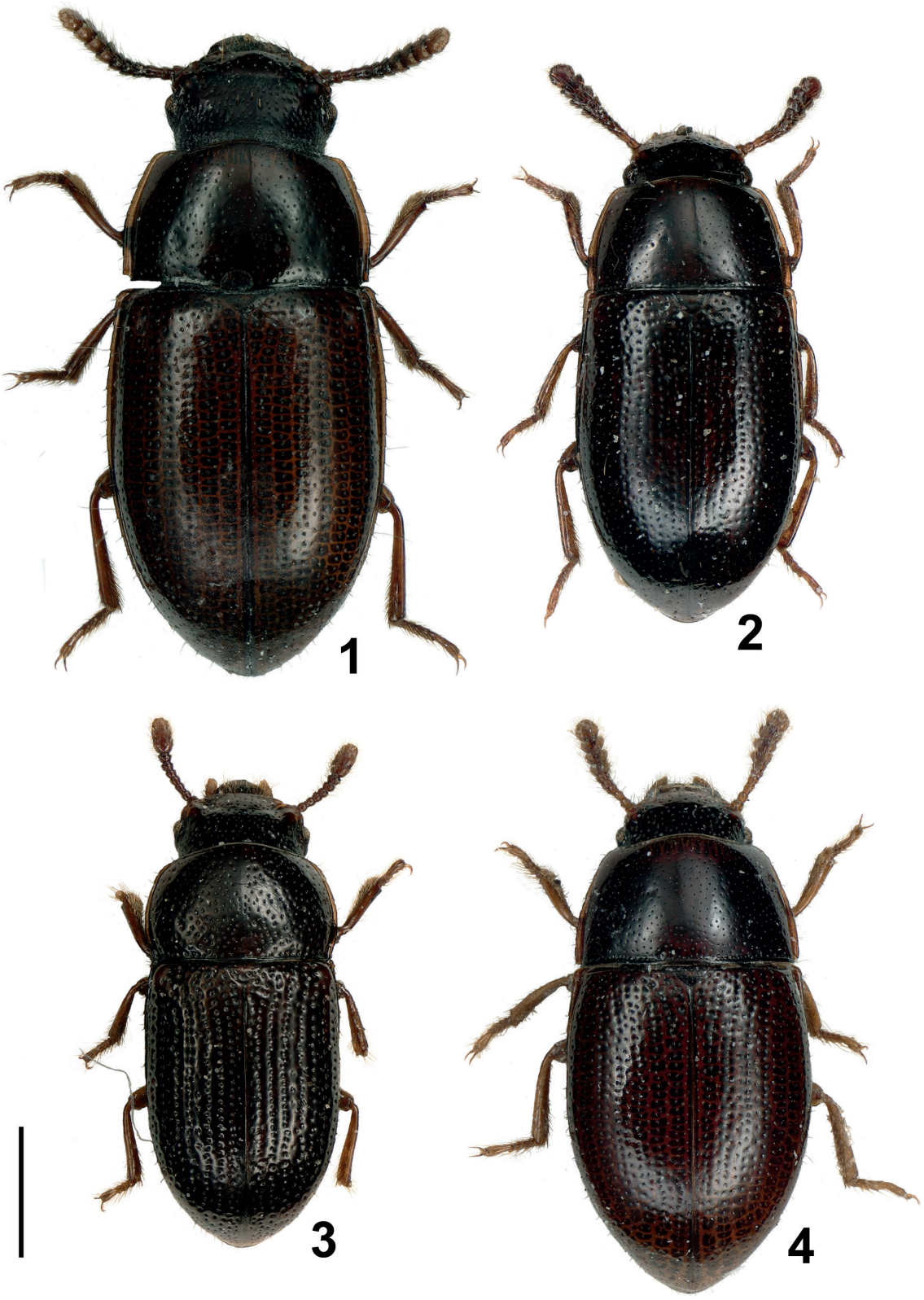
Menimus burut **sp. n.**
(Fig. 13)

Type material

Holotype (sex not examined): Borneo, Sarawak, confluence of Sun Oyan and Mujong rivers, E Kapit, 50 m, 19.V.1994, leg. I. Löbl & D. Burckhardt, MHNG.

Description

Body length 2.1 mm, body shape elongated parallel. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small and slightly globose. Antennae (Fig. 13) 9-segmented with separated 3-segmented club. Pronotum widest behind middle, 1.5x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin finely bordered; surface shiny with punctation similar



Figs. 1–4. Dorsal view of species of *Menimus* from Borneo and Sumatra. – **1**. *M. grimmi* **sp. n.**, paratype, SMNS. **2**. *M. merkli* **sp. n.**, paratype, SMNS. **3**. *M. crockeri* **sp. n.**, paratype, SMNS. **4**. *M. seriepunctatus* Gebien, 1927, non-type, Sumatra, SMNS. Scale bar: 1 mm.

to that on head, disc convex without any impressions; prothoracic hypomera with scattered punctation as on pronotum, surface smooth and shiny; prosternal apophysis conical, pointing posteriorly. Elytra elongated parallel, 0.6x as wide as long, widest at middle, elytra with irregular punctation, only rarely arranged in indistinct rows, punctures feebly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view only in the anterior third of the elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctures. Wings present. Abdominal ventrites with punctation as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown (sex not examined).

Diagnosis

Menimus burut **sp. n.** shares the 9-segmented antennae with a 3-segmented club with *M. sabahicus* **sp. n.**, but in *M. sabahicus* **sp. n.** the pronotum is more convex, the elytra are broader and the elytral punctation is arranged in rows. Additionally, the eyes are larger and slightly globose in *M. burut* **sp. n.**, whereas in *M. sabahicus* **sp. n.** the eyes are smaller and nearly flat. See also under *M. kadazan* **sp. n.** (with 10-segmented antennae). For separation of the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of the human ethnic group Burut, from Borneo.

Menimus crockeri **sp. n.**
(Figs. 3, 17)

Type material

Holotype (♂): Borneo, Sabah, Crocker Range, Gunung Emas, 500–1900 m, 6–21.III.1995, leg. I. Jeniš, SMNS.

Paratypes: Borneo, Sabah, Crocker Range, Gunung Alab, 1700 m, 23–29.V.1998, leg. J. Kodada & F. Ciampor, 3 ♀♀, SMNS.

Description

Body length 3.0–3.4 mm, body shape elongated parallel. Dorsal side dark brown, without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, globose. Antennae (Fig. 3) 10-segmented with separated 3-segmented club. Pronotum widest at middle, 1.5x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin with indistinct border; surface shiny with punctation similar to that on head, disc convex without any impressions but with a distinct transverse row of punctures before base; prothoracic hypomera with scattered punctation as on pronotum, surface feebly wrinkled and shagreened; prosternal apophysis conical, pointing posteriorly. Elytra parallel elongated, 0.7x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view nearly over the complete length of the elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, with a row of distinct punctures smaller than those on metasternum. Wings present. Abdominal ventrites with punctation as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 17) with apicale short and broad, spade-like, basale feebly bent in lateral view.

Diagnosis

Menimus crockeri **sp. n.** can be recognised by the large and elongated parallel body, the 3-segmented antennal club, the rounded lateral margins of the pronotum, the rough elytral punctation, and the shape of the aedeagus. For separation from the other species from Borneo and Sumatra, see key.

Etymology

The type series was collected in the Crocker Range, which was named in honour of William Maunder Crocker (1843–1899), a British administrator in Borneo.

Menimus dasun **sp. n.**
(Figs. 15, 18)

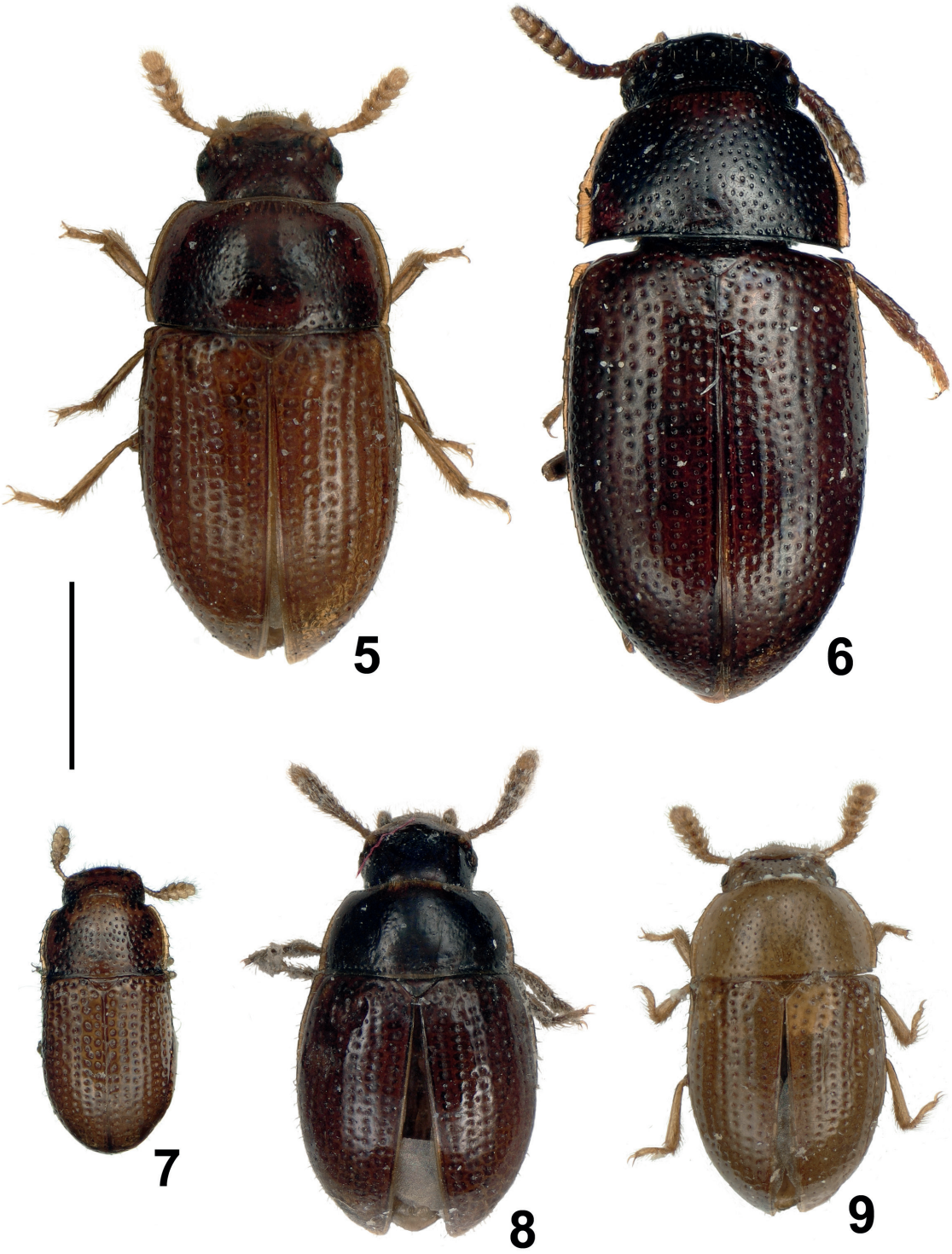
Type material

Holotype (♂): Borneo, Sabah, Crocker Range, Gunung Alab, 1700 m, 23–29.V.1998, leg. J. Kodada & F. Ciampor, SMNS.

Paratypes: Same data as for holotype, 13 ex., SMNS. – Borneo, Sabah, Crocker Range, Gunung Emas, 1500–1700 m, 6–18.VI.1996, [collector unknown], 1 ex., SMNS. – Borneo, Sabah, Crocker Range, 1550–1650 m, 16.V.1987, leg. I. Löbl & D. Burckhardt, 1 ex., MHNG. – Borneo, Sabah, Mt. Kinabalu NP, Headquarter, 1560–1660 m, 24.IV.1987, leg. A. Smetana, 1 ex., MHNG. – Borneo, Sabah, Mt. Kinabalu NP, Headquarter, 1520 m, 11.VIII.1988, leg. A. Smetana, 1 ex., MHNG.

Description

Body length 2.4–2.8 mm, body shape round. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs light brown. Head with rough and confluent punctation, sparser on clypeus, surface of head wrinkled. Clypeal membrane not exposed. Eyes small, globose. Antennae (Fig. 15) 10-segmented with separated 3-segmented club. Pronotum widest at base, 2.3x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, with



Figs. 5–9. Dorsal view of species of *Menimus* from Borneo and Sumatra. – **5**. *M. kinabalucus* **sp. n.**, paratype, CRG. **6**. *M. sarawakicus* **sp. n.**, paratype, SMNS. **7**. *M. matangicus* **sp. n.**, holotype, MHNG. **8**. *M. loebli* **sp. n.**, paratype, SMNS. **9**. *M. punggulicus* **sp. n.**, paratype, SMNS. Scale bar: 1 mm.

indistinct dentation, basal margin with indistinct border; surface shiny, wrinkled, with rough and confluent punctation as on head, disc convex without any impressions; prothoracic hypomera not punctured, with surface smooth and shiny; prosternal apophysis not distinctly pointing posteriorly. Elytra round circular, 0.95x as wide as long, widest at middle, with completely irregular punctation, punctures rough and confluent like pronotal punctures, surface wrinkled; lateral margins with fine dentation and visible in dorsal view only at shoulders, humeral angles pronounced; epipleura diminishing somewhat before apex, surface wrinkled as on elytra. Wings present. Abdominal ventrites with rough punctation as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 18) with apicale short and broad, nearly pentagonal with rounded apex, basale feebly bent in lateral view.

Diagnosis

Menimus dasun **sp. n.** can be recognised by the small body size, by the round body, the 3-segmented antennal club, and particularly by the rough and confluent dorsal punctation without any elytral rows. This dorsal structure is so far unique among the Oriental congeners. *M. dayak* **sp. n.** is also small and round, with a 3-segmented antennal club and with irregular dorsal punctation, but this punctation is finer and the surface of the elytra is smooth. Additionally, in *M. dasun* **sp. n.** the eyes are somewhat larger and more globose, as in *M. dayak* **sp. n.** For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of the human ethnic group Dasun, from Borneo.

Menimus dayak **sp. n.**
(Fig. 16)

Type material

Holotype (sex not examined): Borneo, Sarawak, Gunung Penrissen, 1000 m, 23.V.1994, leg. I. Löbl & D. Burckhardt, MHNG.

Paratypes: Same data as for holotype, 12 ex. MHNG, 4 ex. SMNS.

Description

Body length 1.3–1.5 mm, body shape round. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs light brown. Head with fine punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, slightly globose. Antennae (Fig. 16) 10-segmented with separated 3-segmented club. Pronotum widest at base, 2.0x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, without dentation, basal margin unbordered; surface shiny with distinctly finer punctation than on head, disc convex without any impressions; prothoracic hypomera with scattered punctation as on pronotum, surface smooth and shiny; prosternal apophysis round, pointing weakly posteriorly. Elytra round circular, 0.95x as wide as long, widest at middle, with completely irregular punctation, punctures fine but larger than pronotal punctures; lateral margins without dentation and visible in dorsal view only at shoulders, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metasternum. Wings present. Abdominal ventrites with punctation as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus not examined.

Diagnosis

Menimus dayak **sp. n.** can be recognised by the small body size, the round body, the 3-segmented antennal club, and the fine dorsal punctation without any elytral rows. *Menimus dasun* **sp. n.** is also small and round with a 3-segmented antennal club and irregular dorsal punctation, but this punctation is rough and confluent and the surface is wrinkled. Additionally, *M. dayak* **sp. n.** has only slightly globose eyes, whereas in *M. dasun* **sp. n.** the eyes are somewhat larger and more globose. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of the human ethnic group Dayak, from Borneo.

Menimus grimmi **sp. n.**
(Fig. 1)

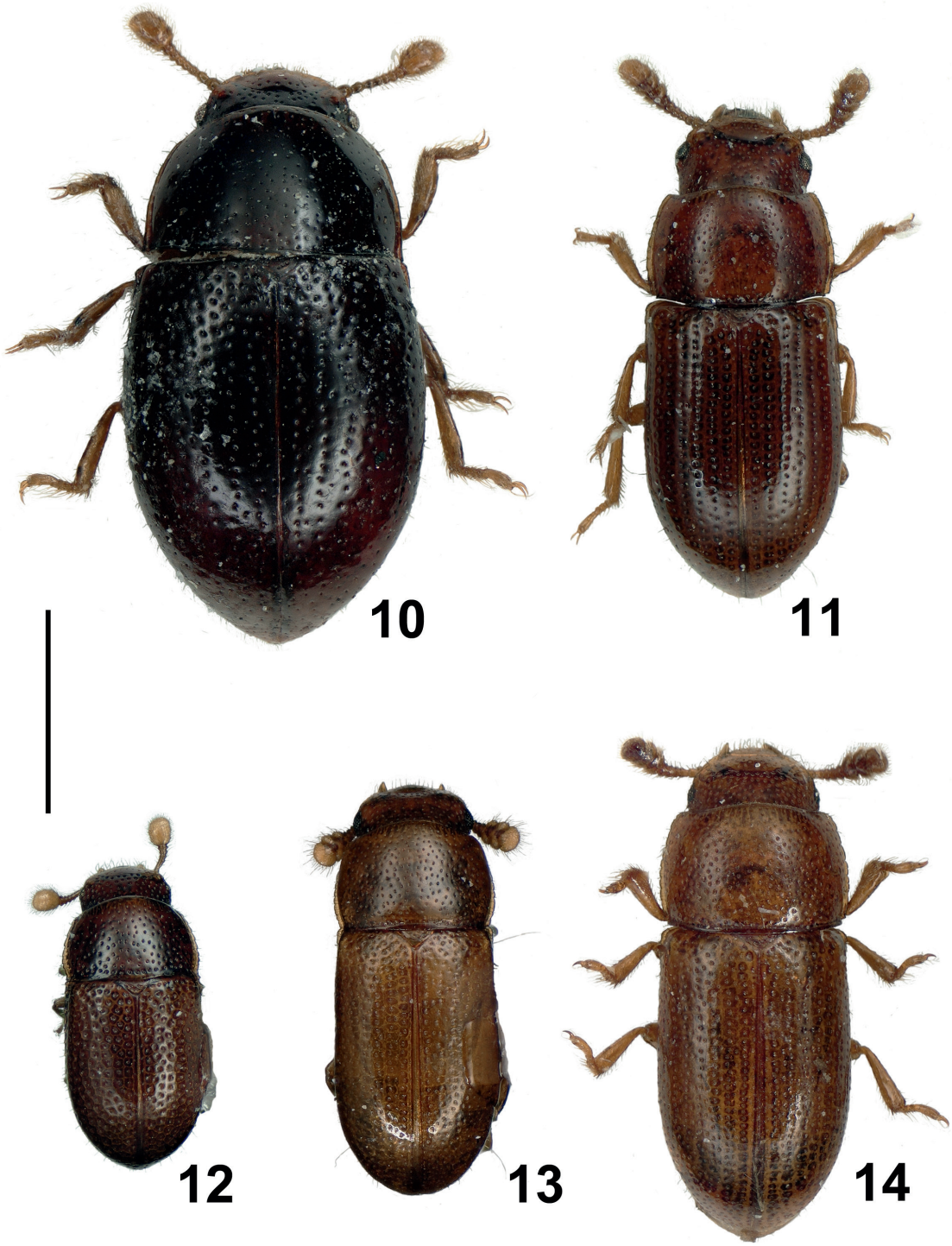
Type material

Holotype (♀): Borneo, Sarawak, Kuban NP, Matang Wildlife Center, 19–22.IX.2008, leg. R. Grimm, CRG.

Paratypes: Borneo, Sabah, Tawau Hills Park, 300 m, 3–6.IV.2015, leg. R. Grimm, 1 ♀ CRG, 1 ♀ SMNS. – Borneo, Sabah, Kinabalu NP, headquarter, 3–4.VI.1976, leg. R. Fujimoto, 1 ♀, CKA.

Description

Body length 3.5–4.0 mm, body shape broadly parallel. Dorsal side dark brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, distinctly globose. Antennae (Fig. 1) 10-segmented with separated 4-segmented club. Pronotum widest behind middle, 1.6x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins slightly constricted before base, with fine dentation,



Figs. 10–14. Dorsal view of species of *Menimus* from Borneo and Sumatra. – **10**. *M. jacobsoni* **sp. n.**, holotype, SMNS. **11**. *M. lineatopunctatus* (Pic, 1930), non-type, Borneo, SMNS. **12**. *M. kadazan* **sp. n.**, holotype, MHNG. **13**. *M. burut* **sp. n.**, holotype, MHNG. **14**. *M. sabahicus* **sp. n.**, holotype, SMNS. Scale bar: 1 mm.

basal margin with indistinct border; surface shiny with punctation similar to that on head, disc convex without any impressions; prothoracic hypomera with scattered punctation as on pronotum, surface smooth and shiny; prosternal apophysis not pointing posteriorly. Elytra broadly parallel, 0.8x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view nearly over complete length of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures, punctures smaller than those on metasternum. Wings present. Abdominal ventrites with punctation as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown, only females available.

Diagnosis

Menimus grimmi **sp. n.** is similar to *M. seriepunctatus* and *M. merkli* **sp. n.**, both from Sumatra—see diagnosis of *M. merkli* **sp. n.** For separation of the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of Roland Grimm (Neuenbürg), collector of some of the type specimens described herein and eminent explorer of the tenebrionid fauna of Borneo.

Menimus jacobsoni **sp. n.**
(Fig. 10)

Type material

Holotype (♀): W Sumatra, Bukittinggi, Gunung Singgalang, 2100–2600 m, 16.X.1990, leg. A. Riedel, SMNS.

Description

Body length 2.6 mm, body shape ovate. Dorsal side dark brown without colour pattern or metallic shine, surface shiny and without distinct setation, anterior part of head, antennae and legs light brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, distinctly globose. Antennae (Fig. 10) 10-segmented with fused 3-segmented club. Pronotum widest at basal half, 1.5x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, with fine dentation, basal margin with indistinct border; surface shiny with punctation distinctly finer and sparser than on head, disc convex without any impressions; prothoracic hypomera without distinct punctation, surface partly strigose and shiny; prosternal apophysis conical, pointing posteriorly. Elytra short ovate, 0.8x as wide as long, widest before middle, in anterior part with completely irregular punctation, in posterior part with punctation irregularly arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view only in anterior quarter of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctures. Wings absent. Abdominal ventrites with fine punctation, punctures smaller than on pronotum, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown, only female available.

Diagnosis

Menimus jacobsoni **sp. n.** shares the ovate body, the 3-segmented antennal club and the irregular rows of punctures on the elytra with *M. riedeli* Schawaller, 2016, described from just the female holotype from Peninsular Malaysia. However, *M. riedeli* is distinctly smaller (1.7 mm), its pronotum is more narrowed in the anterior part, its elytra are rounder and widest at middle, and its elytral rows are more regular in the anterior part of the elytra. The other known round species from Peninsular Malaysia are larger and possess a 4-segmented antennal club and distinctly finer dorsal punctation. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of Edward Richard Jacobson (1870–1944), who collected intensively in Indonesia, particularly in Sumatra since 1923, and whose specimens are deposited mainly in the museums of Amsterdam, Genova, Leiden, and London.

Menimus kadazan **sp. n.**
(Fig. 12)

Type material

Holotype (sex not examined): Borneo, Sarawak, confluence of Sun Oyan and Mujong rivers, E Kapit, 50 m, 18.V.1994, leg. I. Löbl & D. Burckhardt, MHNG.

Description

Body length 1.5 mm, body shape broadly parallel. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, slightly globose, somewhat reduced. Antennae (Fig. 12) 10-segmented with fused 3-segmented club. Pronotum widest at middle, 1.5x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded with fine dentation, basal margin unbordered; surface shiny with punctation similar to that on head, disc convex without any impressions; prothoracic hypomera with a few scattered punctures, surface shiny; prosternal apophysis conical, pointing posteriorly. Elytra broadly parallel, 0.6x as wide as long, widest at middle, with irregular punctation only rarely arranged in indistinct

rows, punctures feebly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view only in anterior half of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctures. Wings present. Abdominal ventrites with punctures smaller than on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown (sex not examined).

Diagnosis

Menimus kadazan **sp. n.** shares the small body size, the parallel body shape and particularly the elytra with irregular punctation with *M. burut* **sp. n.** However, in *M. burut* **sp. n.** the antennae are 9-segmented with a separated 3-segmented club, the dorsal punctation is finer, and the elytra are somewhat longer (compare Figs. 12–13). Additionally, in *M. burut* **sp. n.** the eyes are not reduced as in *M. kadazan* **sp. n.** For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of the human ethnic group Kadazan, from Borneo.

Menimus kinabalucus **sp. n.**
(Fig. 5)

Type material

Holotype (♀): Borneo, Sabah, Mt. Kinabalu, 1450–1550 m, 23.V.1987, leg. I. Löbl & D. Burckhardt, MHNG.

Paratype: Borneo, Sabah, Crocker Range, Gunung Alab, 1400 m, 5–6.I.2010, leg. R. Grimm, 1 ♀, CRG.

Description

Body length 2.6–2.8 mm, body shape broad elongate. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, slightly globose. Antennae (Fig. 5) 10-segmented with separated 4-segmented club. Pronotum widest at middle, 1.8x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin with indistinct border; surface shiny with punctation distinctly finer and sparser than on head, disc convex without any impressions; prothoracic hypomera without distinct punctation, surface smooth and shiny; prosternal apophysis conical, pointing posteriorly. Elytra broad elongate, 0.7x as wide as long, widest before middle, with punctation irregularly arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view nearly over complete length of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures smaller than those on metasternum. Wings present. Abdominal ventrites with punctures as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown, only females available.

Diagnosis

Menimus kinabalucus **sp. n.** shares the body shape and the large punctures of the elytral rows with *M. sarawakicus* **sp. n.** However, in *M. kinabalucus* **sp. n.** the pronotum is widest at middle and the pronotal punctation is finer and sparser, whereas in *M. sarawakicus* **sp. n.** the pronotum is widest in basal half and the pronotal punctation is larger and denser. *Menimus kinabalucus* **sp. n.** is also similar to *M. grimmi* **sp. n.**, but this species is distinctly larger and the punctures of the elytral rows are smaller. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named after Mt. Kinabalu, in whose vicinity the type series was collected.

Menimus lineatopunctatus (Pic, 1930)
(Figs. 11, 19)

Pentaphyllus lineatopunctatus Pic, 1930: Pic 1930: 34.
Menimus klapperichi Bremer, 1997: Bremer 1997: 68.

Examined type specimens

2 paratypes of *M. klapperichi*: Sumatra, Aceh-Selatan, Babahrot, 100 m, 15–20.VIII.1983, leg. J. Klapperich, ZSM.

Other examined specimens

Borneo, Sabah, Gaya Island, 22–23.XI.1996, leg. W. Schawaller, 5 ex., SMNS. – Borneo, Sabah, Poring Hot Springs, Langanan river, 850 m, 14.V.1987, leg. I. Löbl & D. Burckhardt, 7 ex. MHNG, 1 ex. SMNS. – Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 3–4.VI.1976, leg. R. Fujimoto, 1 ex., CKA. – Borneo, Sarawak, Santubong Peninsula, Permai Rainforest Resort, 10–200 m, 23–27.III.2009, leg. R. Grimm, 1 ex., CRG.

Remarks

Synonymy and figure of dorsal view by Schawaller (2016b).

Diagnosis

Body length 2.0 mm, body shape elongated parallel. Clypeal membrane not exposed. Eyes globose. Antennae (Fig. 11) 10-segmented with separated 4-segmented club. Pronotum widest behind middle, 1.8x as wide as long. Elytra parallel, 0.6x as wide as long, with punctation arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible

in dorsal view in the anterior half of the elytra. Aedeagus (Fig. 19) with basale as long as apicale, apicale long triangular, rounded at apex.

Published localities

Sumatra: Palembang (type locality of *M. lineatopunctatus*); Sumatra: Babahrot (type locality of *M. klapperichi*); W Malaysia: Tioman Island (Schawaller 2016b).

Menimus loebli **sp. n.**
(Figs. 8, 20)

Type material

H o l o t y p e (♂): Borneo, Sabah, Poring Hot Springs. 550–600 m, 9–10.V.1987, leg. I. Löbl & D. Burckhardt, MHNG.

P a r a t y p e s : Same data as for holotype, 5 ex., MHNG. – Borneo, Sabah, Mt. Kinabalu NP, Headquarter, 1500 m, 17–23.V.1987, leg. A. Smetana, 1 ex., SMNS. – Borneo, Sabah, Crocker Range, km 63 on road to Tambunan, 1200 m, 19.V.1987, leg. I. Löbl & D. Burckhardt, 1 ex., MHNG. – Borneo, Sabah, Poring Hot Springs, 500 m, 12.V.1987, leg. A. Smetana, 2 ex., SMNS. – Borneo, Sabah, Poring Hot Springs, 480 m, 15.V.1987, leg. A. Smetana, 1 ex., MHNG. – Borneo, Sabah, Poring Hot Springs, 485 m, 19.VIII.1988, leg. A. Smetana, 2 ex., MHNG. – Borneo, Sabah, Sandakan, Sepilok, X.1996, leg. A. Y. C. Chung, 15 ex. NHMUK, 3 ex. SMNS. – Borneo, Sabah, Sandakan, S Lokan, IX.1996, leg. A. Y. C. Chung, 1 ex., NHMUK. – Borneo, Sabah, Sandakan, S. Lokan, III.1997, leg. A. Y. C. Chung, 1 ex., NHMUK. – Borneo, Sarawak, 20 km W Kuching, Gunung Matang, 200–850 m, 25–26.V.1994, leg. I. Löbl & D. Burckhardt, 1 ex., MHNG.

Description

Body length 1.8–1.9 mm, body shape ovate. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs light brown. Head without distinct punctation. Clypeal membrane not exposed. Eyes small, slightly globose. Antennae (Fig. 8) 10-segmented with feebly separated 4-segmented club. Pronotum widest in basal half, 2.0x as wide as long, anterior corners rounded and feebly protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, with fine dentation, basal margin unbordered; surface shiny without punctation, disc convex without any impressions but with a transverse row of punctures before base; prothoracic hypomera without distinct punctation, surface smooth and shiny; prosternal apophysis conical, pointing posteriorly. Elytra short ovate, 0.8x as wide as long, widest at middle, elytra with regular punctural rows, punctures larger than those of the basal transverse row on pronotum; lateral margins with fine dentation and visible in dorsal view only in anterior quarter of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures smaller than those on metasternum. Wings present. Abdominal ventrites without distinct punctation, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 20) with finger-like apicale rounded at apex, basale feebly bent in lateral view.

Diagnosis

Menimus loebli **sp. n.** is characterised by the ovate body shape, the 4-segmented antennal club, the non-punctured head, the non-punctured disc of pronotum but with a transverse row of distinct punctures before unbordered base, and the regular elytral punctural rows. *Menimus punggulicus* **sp. n.** also possesses a small round ovate body and a 4-segmented antennal club, but in this species the pronotal disc is completely punctured and without a transverse row at base. The apicale of the aedeagus is finger-like with rounded apex in *M. loebli* **sp. n.** and triangular with acute apex in *M. punggulicus* **sp. n.** (compare Figs. 20, 22). For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of Ivan Löbl (Geneva), collector of several species of *Menimus* on Borneo, and world-known coleopterist.

Menimus matangicus **sp. n.**
(Fig. 7)

Type material

H o l o t y p e (sex not examined): Borneo, Sarawak, 20 km E Kuching, Gunung Matang, 200 m, 26.V.1994, leg. I. Löbl & D. Burckhardt, MHNG.

Description

Body length 1.5 mm, body shape broadly parallel. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes completely absent. Antennae (Fig. 7) 10-segmented with separated 4-segmented club. Pronotum widest at middle, 1.8x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin unbordered; surface shiny with punctation similar to that on head, disc convex without any impressions; prothoracic hypomera with a few scattered punctures, surface shiny; prosternal apophysis conical, pointing posteriorly. Elytra broadly parallel, 0.7x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view only in anterior half of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctures. Wings present. Abdominal ventrites with punctures smaller than on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown (sex not examined).

Figs. 15–16. Dorsal view of species of *Menimus* from Borneo and Sumatra. – **15**. *M. dasun* **sp. n.**, paratype, SMNS. **16**. *M. dayak* **sp. n.**, holotype, MHNG. Scale bar: 1 mm.

Diagnosis

Menimus matangicus **sp. n.** can be recognised by the small body size, by the 10-segmented antennae with a 4-segmented antennal club, and particularly by the completely absent eyes. *Menimus kadazan* **sp. n.** shares with it the small body size and broadly parallel body shape, has somewhat but not completely reduced eyes, and the antenna is also 10-segmented but with a fused 3-segmented antennal club and the elytral punctation is not distinctly arranged in rows. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named after Gunung (= Mount) Matang, where the holotype was collected.

Menimus merkli **sp. n.**
(Figs. 2, 21)

Type material

Holotype (♂): N Sumatra, Brastagi, Gunung Sibayak, 1450–1900 m, 19–23.II.1991, leg. L. Bocák & M. Bocáková, SMNS.

Paratypes: Same data as for holoptype, 2 ex. NHMB, 1 ex. SMNS. – Sumatra, Sibolangit, without date, leg. E. G. Mjoeberg, 2 ex., NHMB.

Description

Body length 3.2–3.5 mm, body shape elongated parallel. Dorsal side dark brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, distinctly globose. Antennae (Fig. 2) 10-segmented with separated 4-segmented club. Pronotum widest in basal half, 1.9x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, with fine dentation, basal margin with indistinct border; surface shiny with punctation distinctly finer and sparser than on head, disc convex without any impressions; prothoracic hypomera with scattered punctation as on pronotum, surface smooth and shiny; prosternal apophysis not pointing posteriorly. Elytra elongated parallel, 0.7x as wide as long, widest at middle, with punctation irregularly arranged in

rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view nearly over complete length of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures smaller than those on metasternum. Wings present. Abdominal ventrites with fine punctures, as large as on pronotum, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 21) with long finger-like apicale, basale feebly bent in lateral view.

Diagnosis

Menimus merkli **sp. n.** shares the body size and the 4-segmented antennal club with *M. seriepunctatus* from Sumatra and *M. grimmi* **sp. n.** from Borneo. However, in *M. seriepunctatus* the elytra are more ovate and the lateral margins are visible only in the anterior half, and the pronotal punctation is larger. In *M. grimmi* **sp. n.** the elytra are also parallel and the lateral margins are also visible on the complete length, but the elytra are broader in general in *M. grimmi* **sp. n.** than in *M. merkli* **sp. n.**, and the pronotal punctation in *M. grimmi* **sp. n.** is similar to that on the head, whereas in *M. merkli* **sp. n.** this punctation is finer than on the head. The aedeagi of *M. merkli* **sp. n.** and *M. seriepunctatus* are similar (compare Figs. 21, 24), the aedeagus of *M. grimmi* **sp. n.** is unknown (only females available). For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named in honour of the late Ottó Merkl (1957–2021), former curator of Coleoptera in the Hungarian Museum of Natural History in Budapest and eminent specialist of Tenebrionidae, for his long-term and fruitful cooperation.

Menimus punggulicus **sp. n.**
(Figs. 9, 22)

Type material

Holotype (♂): Borneo, Sabah, Sapulut, Batu Punggul Resort, 24.VI–1.VII.1996, [collector unknown], SMNS.

Paratypes: Same data as for holotype, 2 ex., SMNS. – Borneo, Sarawak, Gunung Penrissen, 1000 m, 23.V.1994, leg. I. Löbl & D. Burckhardt, 5 ex., MHNG.

Description

Body length 1.3–1.7 mm, body shape ovate. Dorsal side light brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs light brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, distinctly globose. Antennae (Fig. 9) 10-segmented with separated 4-segmented club. Pronotum widest at base, 2.0x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin unbordered; surface shiny with punctation distinctly finer and sparser than on head, disc convex without any impressions; prothoracic hypomera without distinct punctation, surface shiny; prosternal apophysis conical, pointing posteriorly. Elytra short ovate, 0.8x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation and visible in dorsal view in anterior two thirds of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctation. Wings present. Abdominal ventrites without distinct punctation, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 22) with triangular apicale acute at apex, basale feebly bent in lateral view.

Diagnosis

Menimus punggulicus **sp. n.** shares the small body size and round ovate shape, as well as the 4-segmented antennal club, with *M. loebli* **sp. n.**, but in *M. loebli* **sp. n.** the pronotal disc is without punctation and with a distinct transverse row of punctures before the base. The apicale of the aedeagus is triangular with acute apex in *M. punggulicus* **sp. n.** and finger-like with rounded apex in *M. loebli* **sp. n.** (compare Figs. 20, 22). For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named after the jungle-topped limestone outcrop Batu Punggul, in whose vicinity part of the type series was collected.

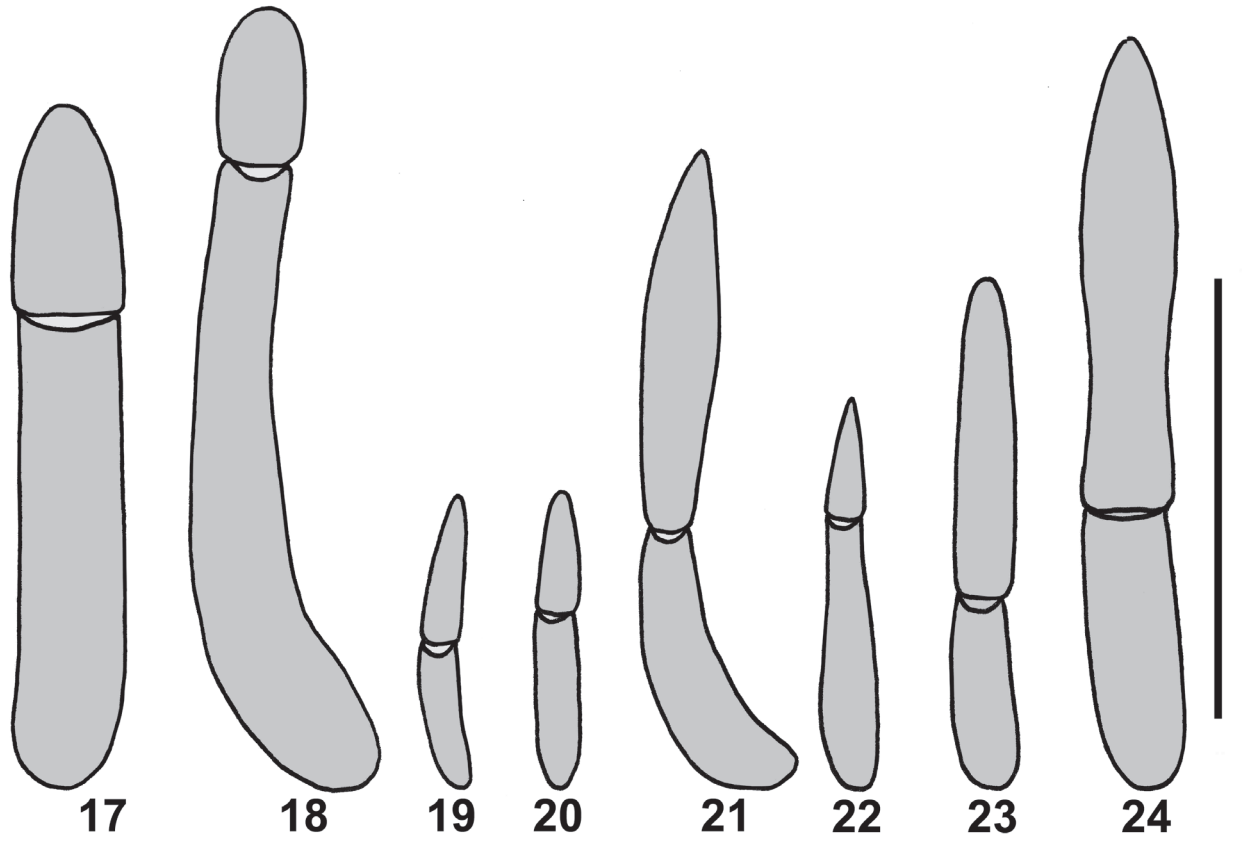
Menimus sabahicus **sp. n.**
(Fig. 14)

Type material

Holotype (sex not examined): Borneo, Sabah, Sapulut, Batu Punggul Resort, 24.VI–1.VII.1996, [collector unknown], SMNS.

Description

Body length 2.2 mm, body shape elongated parallel. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with small punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, slightly globose, nearly flat. Antennae (Fig. 14) 9-segmented with separated 3-segmented club. Pronotum widest at middle, 1.4x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins rounded, with fine dentation, basal margin with indistinct border; surface shiny with punctation similar to that on head, disc highly convex without any impressions; prothoracic hypomera with scattered punc-



Figs. 17–24. Aedeagus of species of *Menimus* from Borneo and Sumatra. – **17**. *M. crockeri* **sp. n.**, holotype, SMNS. **18**. *M. dasun* **sp. n.**, holotype, SMNS. **19**. *M. lineatopunctatus* (Pic, 1930), non-type, Borneo, SMNS. **20**. *M. loebli* **sp. n.**, paratype, SMNS. **21**. *M. merkli* **sp. n.**, holotype, SMNS. **22**. *M. punggulicus* **sp. n.**, holotype, SMNS. **23**. *M. sarawakicus* **sp. n.**, holotype, MHNG. **24**. *M. seriepunctatus* Gebien, 1927, holotype of *M. malayicus* Schawaller, 2016, **syn. n.**, SMNS. Scale bar: 0.5 mm.

tation as on pronotum, surface shiny; prosternal apophysis conical, pointing posteriorly. Elytra elongated parallel, 0.6x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures similar to pronotal punctures; lateral margins with fine dentation and visible in dorsal view only in anterior quarter of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, without distinct punctures. Wings present. Abdominal ventrites with punctures as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus unknown (sex not examined).

Diagnosis

Menimus sabahicus **sp. n.** is similar at a first glance to *M. perakicus* Schawaller, 2016 from Peninsular Malaysia, with the small elongate body and the 3-segmented antennal club, but it can be separated from the latter by the 9-segmented antennae and the more convex pronotum. *Menimus burut* **sp. n.** also has 9-segmented antennae with a 3-segmented club, but the disc of the pronotum is flatter, the elytra are more elongate, and the elytral punctation is more irregular. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named after the Malayan federal state Sabah, where the holotype was collected.

Menimus sarawakicus **sp. n.**
(Figs. 6, 23)

Type material

Holotype (♂): Borneo, Sarawak, 20 km W Kuching, Gunung Matang, 800 m, 13.V.1994, leg. I. Löbl & D. Burckhardt, MHNG.

Paratypes: Borneo, Sarawak, Gunung Penrissen, 1000 m, 23.V.1994, leg. I. Löbl & D. Burckhardt, 1 ♂, SMNS. – Borneo, Sarawak, Mt. Poi, 4000 ft. (= 1220 m), [no date], leg. E. Mjoeberg, 1 ♀, NHMUK.

Description

Body length 3.0–3.5 mm, body shape broad elongate. Dorsal side brown without colour pattern or metallic shine, surface shiny and without distinct setation, antennae and legs lighter brown. Head with large punctation, sparser on clypeus. Clypeal membrane not exposed. Eyes small, slightly globose. Antennae (Fig. 6) 10-segmented with separated 4-segmented club. Pronotum widest in basal half, 1.6x as wide as long, anterior corners rounded and not protruding, posterior corners rectangular, lateral margins parallel-sided in basal half, with fine dentation, basal margin with indistinct border; surface shiny with punctation similar in size to that on head but somewhat sparser, disc convex without any impressions; prothoracic hypomera with scattered punctation as on pronotum, surface flat, shiny; prosternal apophysis conical, pointing posteriorly. Elytra broad elongate, 0.7x as wide as long, widest at middle, with punctation irregularly arranged in rows, punctures similar to pronotal punctures; lateral margins with fine dentation and visible in dorsal view nearly over complete length of elytra, humeral angles pronounced; epipleura diminishing somewhat before apex, scattered with a few small punctures smaller than those on metasternum. Wings present. Abdominal ventrites with punctures as large as on elytra, last visible ventrite 5 unbordered and without modifications. Legs without specific characters, tibiae rounded in cross section and exteriorly without any keels. Aedeagus (Fig. 23) with long finger-like apicale, basale feebly bent in lateral view.

Diagnosis

Menimus sarawakicus **sp. n.** shares the general body shape and size as well as the 4-segmented antennal club with *M. kinabalucus* **sp. n.**, but in *M. kinabalucus* **sp. n.** the pronotum is widest at middle and the lateral margins are rounded and not parallel-sided before the posterior corners; the dorsal punctation on the head and pronotum is much finer. For separation from the other species from Borneo and Sumatra, see key.

Etymology

Named after the Malayan federal state Sarawak, where the type series was collected.

Menimus seriepunctatus Gebien, 1927 (Figs. 4, 24)

Menimus malayicus Schawaller, 2016, **syn. n.**

Examined type specimens

2 syntypes of *M. seriepunctatus*: Sumatra, Gunung Singgalang, without date, leg. E. R. Jacobson, NHMB, 1 ex. designated herewith as lectotype.

Holotype of *M. malayicus*: W Malaysia, Cameron Highlands, Gunung Beremban, 1–3.IV.1990, leg. A. Riedel, SMNS.

Other examined material

N Sumatra, Medan, Kabanjahe, Gunung Sinabung, 2000 m, 7–8.X.1990, leg. A. Riedel, 1 ex., SMNS.

Synonymy

The type specimens of *M. seriepunctatus* Gebien, 1927 from Sumatra and *M. malayicus* Schawaller, 2016 from Peninsular Malaysia show no distinct specific differences.

Diagnosis

Body length 3.8–4.1 mm, body shape slightly ovate. Clypeal membrane not exposed. Eyes distinctly globose. Antennae (Fig. 4) 10-segmented with separated 4-segmented club. Pronotum widest behind middle, 1.8x as wide as long. Elytra slightly ovate, 0.7x as wide as long, with punctation arranged in rows, punctures distinctly larger than pronotal punctures; lateral margins with fine dentation, visible in dorsal view nearly over complete length of elytra. Aedeagus (Fig. 24) with extremely long apicale, distinctly restricted in basal third.

Published localities

Sumatra: Gunung Singgalang (type locality of *M. seriepunctatus*); W Malaysia: Gunung Beremban (type locality of *M. malayicus*); W Malaysia: Kelantan (Schawaller 2016b).

Identification key to the species of *Menimus* from Borneo and Sumatra

1 Larger species, body length 3.0–4.0 mm **2**
- Smaller species, body length 1.3–2.8 mm **6**
2 Antennal club 3-segmented; punctation of pronotum and elytra rough (Fig. 3) ..... ***M. crockeri* sp. n.**
- Antennal club 4-segmented; punctation of pronotum and elytra fine **3**
3 Body shape ovate; lateral margins of elytra visible in dorsal view only in anterior half (Fig. 4) ..... ***M. seriepunctatus* Gebien, 1927**
- Body shape elongated parallel; lateral margins of elytra visible in dorsal view nearly over complete length **4**
4 Punctures of pronotum similar in size to punctures of elytral rows as well as head (Fig. 6) ..... ***M. sarawakicus* sp. n.**
- Punctures of pronotum distinctly smaller and sparser than on elytral rows **5**
5 Punctures of pronotum similar in size and density to those on head (Fig. 1); Borneo ..... ***M. grimmi* sp. n.**
- Punctures of pronotum distinctly finer and sparser than on head (Fig. 2); Sumatra ..... ***M. merkli* sp. n.**
6 Antennal club 4-segmented **7**
- Antennal club 3-segmented **10**
7 Body shape broadly parallel **8**
- Body shape round or ovate **9**
8 Eyes completely absent; body length 1.5 mm (Fig. 7) ..... ***M. matangicus* sp. n.**
- Eyes present and slightly globose; body length 2.6–2.8 mm (Fig. 5) ..... ***M. kinabalucus* sp. n.**

9 Body length 1.8–1.9 mm; pronotum with non-punctured pronotal disc but with a transverse row of punctures before base (Fig. 8), apicale of aedeagus finger-like, rounded at apex (Fig. 20)..... ***M. loebli* sp. n.**
- Body length 1.3–1.7 mm; pronotum with punctured pronotal disc, without a transverse row of punctures before base (Fig. 9), apicale of aedeagus triangular, acute at apex (Fig. 22) .....***M. punggulicus* sp. n.**

10 Antennae 9-segmented with separated 3-segmented club...**11**
- Antennae 10-segmented with separated or fused 3-segmented club **12**

11 Elytra with punctation irregularly arranged in rows; pronotum widest at middle; eyes smaller, nearly flat (Fig. 14) ....***M. sabahicus* sp. n.**
- Elytra with completely irregular punctation; pronotum widest behind middle; eyes larger, slighly globose (Fig. 13) .... ***M. burut* sp. n.**

12 Body shape elongated parallel or broadly parallel **13**
- Body shape circular, round or ovate **14**

13 Body length 2.0 mm; body shape elongated parallel; elytra with punctural rows; antennae 10-segmented with separated 4-segmented club; eyes globose (Fig. 11) ....***M. lineatopunctatus* (Pic, 1930)**
- Body length 1.5 mm; body shape broadly parallel; elytra with irregular punctation; antennae 10-segmented with fused 3-segmented club; eyes somewhat reduced (Fig. 12) ... .***M. kadazan* sp. n.**

14 Body shape ovate; elytra with irregular punctation in anterior part and with irregular rows in posterior part (Fig. 10)... .....***M. jacobsoni* sp. n.**
- Body shape circular, rounded; elytra with irregular punctation throughout.....**15**

15 Body length 2.4–2.8; elytra with rough and confluent irregular punctation (Fig. 15).....***M. dasun* sp. n.**
- Body length 1.3–1.5 mm; elytra with fine and separated punctation (Fig. 16) .....***M. dayak* sp. n.**

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References

Ando, K. (2003): A new genus of Tenebrionidae (Coleoptera) from Japan, with description of a new species. – Japanese Journal of systematic Entomology **9**: 135–141.

Ando, K. (2018): A new species of the genus *Menimus* Sharp (Coleoptera, Tenebrionidae) from Lan-yu Island, Taiwan. – Elytra (N. S.) **8**: 129–133.

Andújar, C. & Grebennikov V. V. (2021): Endogean beetles (Coleoptera) of Madagascar: deep soil sampling and illustrated overview. – Zootaxa **4963**: 317–334. https://doi.org/10.11646/zootaxa.4963.2.4

Bremer, H. J. (1997): Neue Gnathidiini der Gattungen *Anommabates* Koch, 1956, *Gnathidium* Gebien, 1920, *Menimus* Sharp, 1876 und *Micropeneta* Pic, 1921 (Coleoptera, Tenebrionidae). – Entomofauna **18**: 61–72.

Gebien, H. (1925): Die Tenebrioniden (Coleoptera) des indomalayischen Gebietes, unter Berücksichtigung der benachbarten Faunen, IV. Die Gattungen *Phloeopsidius*, *Dysantes*, *Basanus*, und *Diaperis*. – The Philippine Journal of Science **27**: 131–157.

Gebien, H. (1927): Fauna sumatrensis (Beitrag Nr. 31). Tenebrionidae (Col.). – Supplementa Entomologica **15**: 22–58.

Kaszab, Z. (1982): Neue orientalische Tenebrioniden (Coleoptera). – Acta Zoologica Academiae Scientiarum Hungaricae **28**: 57–80.

Lewis, G. (1894): On the Tenebrionidae of Japan. – Annals and Magazine of Natural History **13**: 377–400.

Li, B.-Y. & Jiang, R.-X. (2019): Discovery of the genus *Micropeneta* Pic in China, with description of a new species (Coleoptera: Tenebrionidae: Gnathidiini). – Zootaxa **4608**: 196–200. https://doi.org/10.11646/zootaxa.4608.1.14

Medvedev, G. S. (2007): New species of the tenebrionid genus *Menimus* Sharp, 1876 (Coleoptera, Tenebrionidae) from Southern Palaearctic. – Entomologicheskoe Obozrenie **86**: 665–682. [In Russian, English translation in Entomological Review **87**: 865–879.]

Pic, M. (1930): Nouveautés diverses. – Mélanges Exotico-Entomologiques **55**: 1–36.

Schawaller, W. (2009): Two new epigean species of the genus *Menimus* Sharp, 1876 from Yunnan (China) (Insecta: Coleoptera: Tenebrionidae). – In: Hartmann, M. & Weipert, J. (eds.): Biodiversität und Naturausstattung im Himalaya III, pp. 363–365, pl. XIV; Erfurt (Verein der Freunde und Förderer des Naturkundemuseums).

Schawaller, W. (2016a): The genus *Menimus* Sharp, 1876 (Coleoptera: Tenebrionidae: Gnathidiini) in India, with descriptions of two new species. – Stuttgarter Beiträge zur Naturkunde A, Neue Serie **9**: 191–195. https://doi.org/10.18476/sbna.v9.a11

Schawaller, W. (2016b): New species of the genus *Menimus* Sharp (Coleoptera: Tenebrionidae: Gnathidiini) from Peninsular Malaysia and adjacent southern Thailand. – Stuttgarter Beiträge zur Naturkunde A, Neue Serie **9**: 207–216. https://doi.org/10.18476/sbna.v9.a13

Schawaller, W. & Ando, K. (2018): New record of the genus *Menimus* Sharp, 1876 (Coleoptera, Tenebrionidae, Gnathidiini) from Sulawesi, with descriptions of three new species. – Elytra (N. S.) **8**: 319–323.

Schawaller, W. & Purchart, L. (2012): *Nanocaecus hlavaci* gen. & sp. nov. – first record of the tribe Gnathidiini (Coleoptera: Tenebrionidae: Diaperinae) from the Socotra Archipelago. – Acta Entomologica Musei Nationalis Pragae **52** (suppl. 2): 303–314.

Spiessberger, E. L. & Ivie, M. A. (2020): A new genus and fourteen new species of Anopidiina (Coleoptera: Tenebrionidae: Diaperinae: Gnathidiini) from the West Indies. – The Coleopterists Bulletin **74**: 667–695. https://doi.org/10.1649/0010-065X-74.4.667

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