

Four new species of the genus *Mendaxinus* Gilddenkov, 2004 (Coleoptera, Staphylinidae, Oxytelinae) from Afrotropical and Oriental regions

Четыре новых вида рода *Mendaxinus* Gilddenkov, 2004 (Coleoptera, Staphylinidae, Oxytelinae) из Афротропической и Восточной биогеографических областей

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Ключевые слова: Coleoptera, Staphylinidae, *Mendaxinus*, *Thinodromus*, новые виды, Тропическая Африка, Восточная биогеографическая область.

Abstract. Four new species of the genus *Mendaxinus* from Afrotropical and Oriental regions are described, namely *M. ambreensis* sp.n. from Madagascar, *M. seychelliensis* sp.n. from the Seychelles, *M. cardamoniensis* sp.n. from India and *M. kalutaraensis* sp.n. from Sri Lanka.

Резюме. Описано 4 новых вида жуков рода *Mendaxinus* из Афротропической и Восточной биогеографических областей: *Mendaxinus ambreensis* sp.n. с Мадагаскара, *M. seychelliensis* sp.n. с Сейшельских островов, *M. cardamoniensis* sp.n. из Индии и *M. kalutaraensis* sp.n. из Шри-Ланки.

Introduction

The taxon *Mendaxinus* was initially described as a subgenus of the genus *Thinodromus* [Gilddenkov, 2004]. Later, *Mendaxinus* was elevated to the rank of genus [Gilddenkov, 2005] based on the structure of the hypomera, male genitalia and female spermathecae, which was accepted in some modern systems of the subfamily Oxytelinae [Khachikov, 2012; Gilddenkov, 2013; 2015b]. The status of *Mendaxinus*, however, cannot be regarded as firmly established and this group is often treated as a subgroup of the genus *Thinodromus* [Makranzcy, 2006]. Recently, the *Thinodromus ferrugineus* species group [Makranzcy, 2018], very similar to *Mendaxinus* in the structure of the male genitalia and female spermathecae [Makranzcy, 2018], has been described from the Neotropical region. The «ferrugineus» species group was assigned to the genus *Thinodromus*, but this assignment was not regarded as final [Makranzcy, 2018]. It should be taken into account that there are groups intermediate between the genera *Thinodromus* and *Carpelimus*, among which are *Mendaxinus*, *Bucephalinus*

(now regarded as a subgenus of *Carpelimus*), and the «ferrugineus» and «circulus» species groups treated as members of the genus *Thinodromus* [Makranzcy, 2014; 2018]. It cannot be ruled out that *Thinodromus*, *Carpelimus* and *Mendaxinus* will be united into a single very large genus, as it was before the study of Herman [Herman, 1970]. However, from a point of view of practical taxonomy, this unification will complicate significantly the discrimination of the material and the work with the taxonomic system.

In any case, the taxon *Mendaxinus* is highly distinct in the structure of its hypomera, aedeagus and spermatheca. I believe it would be more correct to regard it for now as a separate genus. The present paper is a continuation of a series of studies on the world fauna of the genus *Mendaxinus* [Gilddenkov, 2007; 2013; 2015a, b].

Material and methods

This paper is based on the specimens deposited in the following collections: cJJ — private collection of J. Janák (Rtyně nad Bílinou, Czech Republic, to be donated to the National Museum Prague, Czech Republic); cMG — private collection of M. Gilddenkov (Smolensk, Russia); HNHM — Hungarian Natural History Museum (Budapest, Hungary); MHNG — Museum d'Histoire Naturelle Geneva (Switzerland). In the present study, standard methods were used for the taxonomic research of insects; the preparations were made on an MBS-10 binocular microscope. The genital preparations were processed using 10 % KOH and then fixed in euparal. In the descriptions and diagnoses giving the length to width ratio for the head, pronotum, and elytra,

the following standard units were used: 7 standard units = 0.1 mm; thus, 1 standard unit constitutes about 0.0143 mm. The labels are given in the original transcription. Photographs were taken with a Canon EOS 5D Mark III camera and a Canon MP-E 65 mm objective using the extended focus technology.

Results

Mendaxinus ambreensis Gildenkova, sp.n.

Figs 1, 5–6.

Material. Holotype (♂): Madagascar, Ambre Mountain «MADAGASCAR Mt Ambre 1,5km NE N.P. camp site 12°32'05" S; 49°10'40" E 950m, 01.iii.2003 ♂4b G. Cuccodoro» (MHNG). Paratypes: 1♂, 2♀♀ «MADAGASCAR Mt Ambre 1,5 km NE N.P. camp site 12°32'05" S; 49°10'40" E 950 m, 01.iii.2003 ♂4b G. Cuccodoro» (MHNG; 1♂, 1♀ — cMG); 1♀ «MADAGASCAR: 1996 Toljara env. 23-27 11 | Jіии Stolarczyk leg.» «COLLECTIO Jiří JANÁK» (cJJ).

Description. Holotype: Length 2.1 mm. Colouration brown; elytra, legs and antennae slightly lighter than head, pronotum and abdomen light brown; anterior margin of frons black. Body with short, light-coloured hairs.

Head transverse, with wide base, ratio of its length (from posterior margin of head to anterior margin of clypeus) to maximum width about 18:28. Neck constriction prominent. Eyes small, temples well-developed, round, eye diameter in dorsal view about 2.5 times as small as temple length. Head widest across temples (Fig. 1). Head surface with very delicate, very fine and dense punctation, individual punctures discernible only on vertex giving smoothly shagreened effect. Antennae short, antennal segments 1–3 elongate; segments 4–10 transverse; segment 11 elongate, conical (Fig. 1).

Pronotum widest about 2/3 its length from base. Lateral margins slightly notched at base, then broadly rounded (Fig. 1). Ratio of pronotum length to its maximum width about 21:28. Surface of pronotum with exceedingly delicate, very fine and dense punctation, diameter of barely discernible punctures

about 10 times as small as eye facet. Pronotal disc with 2 prominent, symmetric, longitudinal depressions (Fig. 1).

Ratio of *length of elytra* to their combined width about 31:36. Elytra with shallow depressions extending from scutellum along suture (Fig. 1). Surface of elytra with delicate, fine and dense punctation. Punctures shallow, their diameter slightly smaller than eye facet. Distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining.

Abdomen delicately shagreened.

Aedeagus of characteristic structure (Fig. 5).

Female. Sexual dimorphism absent, female morphologically similar to male.

Spermatheca of characteristic structure (Fig. 6).

Differential diagnosis. Given a high degree of similarity between many species of *Mendaxinus* in colouration and body proportions, the new species can be clearly distinguished only by the structure of the aedeagus and spermatheca (Figs. 5, 6).

Distribution. Madagascar.

Etymology. Named for its geographical distribution.

Mendaxinus seychelliensis Gildenkova, sp.n.

Figs 2, 7–8.

Material. Holotype (♂): Seychelles, Mahé Island «SEYCHELLES Mahé Trois Frères, 600–620m 4°38'10" S, 55°26'39" E | J. Janák lgt. 21–27.11.2007» «forest spring area treading» «COLLECTIO Jiří JANÁK» (cJJ). Paratypes: 3♀♀, 12 ex. «SEYCHELLES Mahé Trois Frères, 600–620m, 4°38'10" S, 55°26'39" E | J. Janák lgt. 21–27.11.2007» «forest sifted litter» (cJJ); 2♀♀ — cMG); 2♀♀, 5 ex. «SEYCHELLES Mahé Trois Frères, 600–620m, 4°38'10" S, 55°26'39" E | J. Janák lgt. 21–27.11.2007» «forest spring area treading» (cJJ); 1♀ — cMG); 1♀ «SEYCHELLES Mahé Trois Frères, 300m, 4°38'10" S, 55°27'00" E | J. Janák lgt. 20–27.11.2007» «Cinnamon forest failed *Artocarpus* fruit» (cJJ); 1♀ «SEYCHELLES Mahé Trois Frères, 420–430m, 4°38'07" S, 55°26'52" E | J. Janák lgt. 20.11.2007» «shrubs spring area treading» (cJJ); 1 ex. «SEYCHELLES Mahé Trois Frères, 650–700 m, 4°38'05" S, 55°26'38" E, J. Janák lgt. 20.11.2007» «degraded indigenous forest, sifted litter» (cJJ).



Figs 1–4. *Mendaxinus* spp., dorsal view: 1 — *Mendaxinus ambreensis*, sp.n., holotype, male; 2 — *Mendaxinus seychelliensis*, sp.n., paratype, female. 3 — *Mendaxinus cardamoniensis*, sp.n., holotype, male; 4 — *Mendaxinus kalutaraensis*, sp.n., holotype, male.

Рис. 1–4. *Mendaxinus* spp., сверху: 1 — *Mendaxinus ambreensis*, sp.n., голотип, самец; 2 — *Mendaxinus seychelliensis*, sp.n., паратип, самка. 3 — *Mendaxinus cardamoniensis*, sp.n., голотип, самец; 4 — *Mendaxinus kalutaraensis*, sp.n., голотип, самец.

Description.(holotype). Length 2.5 mm. Colouration dark brown; legs and antennae light brown. Body with short, light-coloured hairs.

Head transverse, with wide base, ratio of its length (from posterior margin of head to anterior margin of clypeus) to maximum width about 22:30. Neck constriction prominent. Eyes rather small, temples well-developed, round, eye diameter in dorsal view noticeably smaller but less than 1.5 times as small as temple length. Head widest across temples (as in female in Fig. 2). Head surface with very delicate, very fine and dense punctation, individual punctures almost indiscernible giving smoothly shagreened effect. Antennae rather short, antennal segments 1–3 elongate; segment 4 about as wide as long; segment 5 slightly transverse; segments 6–10 transverse; segment 11 elongate, conical (as in female in Fig. 2).

Pronotum widest about 2/3 its length from base. Lateral margins slightly notched at base, then broadly rounded (as in female in Fig. 2). Ratio of pronotum length to its maximum width about 25:32. Surface of pronotum with very delicate, very fine and dense punctation, individual punctures almost indiscernible giving smoothly shagreened effect. Pronotal disc with 2 shallow, symmetric, longitudinal depressions (as in female in Fig. 2).

Ratio of *length of elytra* to their combined width about 35:39. Elytra with shallow depressions extending from scutellum along suture. Surface of elytra with delicate, fine and dense punctation. Punctures shallow, their diameter about equal to that of eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining.

Abdomen delicately shagreened.

Aedeagus of characteristic structure (Fig. 7).

Female. Sexual dimorphism absent, female morphologically similar to male.

Spermatheca of characteristic structure (Fig. 8).

Differential diagnosis. This species is the only representative of *Mendaxinus* reported from the Seychelles. However, given a high degree of similarity between many species of *Mendaxinus* in colouration and body proportions, the new species can be clearly distinguished only by the structure of the aedeagus and spermatheca (Figs. 7, 8).

Distribution. Seychelles, Mahe.

Etymology. Named for its geographical distribution.

Mendaxinus cardamoniensis Gildenkov, **sp.n.**

Figs 3, 9–10.

Material. Holotype (♂): India, Kerala State «INDIA N. 11 Kerala Cardamon H. Pambanar et Peermade 950 m. 5-XI-72 Besuchet Löbl Mussard» (MHNG). Paratypes: 1♂, 4♀♀ «INDIA N. 11 Kerala Cardamon H. Pambanar et Peermade 950 m. 5-XI-72 Besuchet Löbl Mussard» (MHNG; 1♂, 1♀ — cMG).

Description. (holotype). Length 1.8 mm. Colouration brown; legs and antennae yellow brown; anterior margin of frons black. Body with short, light-coloured hairs.

Head transverse, with wide base, ratio of its length (from posterior margin of head to anterior margin of clypeus) to maximum width about 15:21. Neck constriction prominent. Eyes rather small, temples well-developed, round, eye diameter in dorsal view noticeably smaller but less than 1.5 times as small as temple length. Head widest across temples (Fig. 3). Head surface with delicate, fine and dense punctation. Puncture diameter about 3 times as small as eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining. Antennae short, antennal segments 1–2 elongate; segment 3 about as wide as long;

segments 4–10 transverse; segment 11 elongate, conical (Fig. 3).

Pronotum widest about 2/3 its length from base. Lateral margins straight at base, then broadly rounded (Fig. 3). Ratio of pronotum length to its maximum width about 17:22. Surface of pronotum with delicate, fine and dense punctation. Puncture diameter about 3 times as small as eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining. Pronotal disc with 2 prominent, symmetric, longitudinal depressions (Fig. 3).

Ratio of *length of elytra* to their combined width about 27:29. Elytra with shallow depressions extending from scutellum along suture (Fig. 3). Surface of elytra with delicate, fine and dense punctation. Puncture diameter about 2 times as small as eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining.

Abdomen delicately shagreened.

Aedeagus of characteristic structure (Figs. 9).

Female. Sexual dimorphism absent, female morphologically similar to male.

Spermatheca of characteristic structure (Fig. 10).

Differential diagnosis. The new species differs from many representatives of *Mendaxinus* by its small size. However, given a high degree of similarity between many species of *Mendaxinus* in colouration and body proportions, the new species can be clearly distinguished only by the structure of the aedeagus and spermatheca (Figs. 9, 10).

Distribution. India, Kerala.

Etymology. Named for its geographical distribution.

Mendaxinus kalutaraensis Gildenkov, **sp.n.**

Figs 4, 11–12.

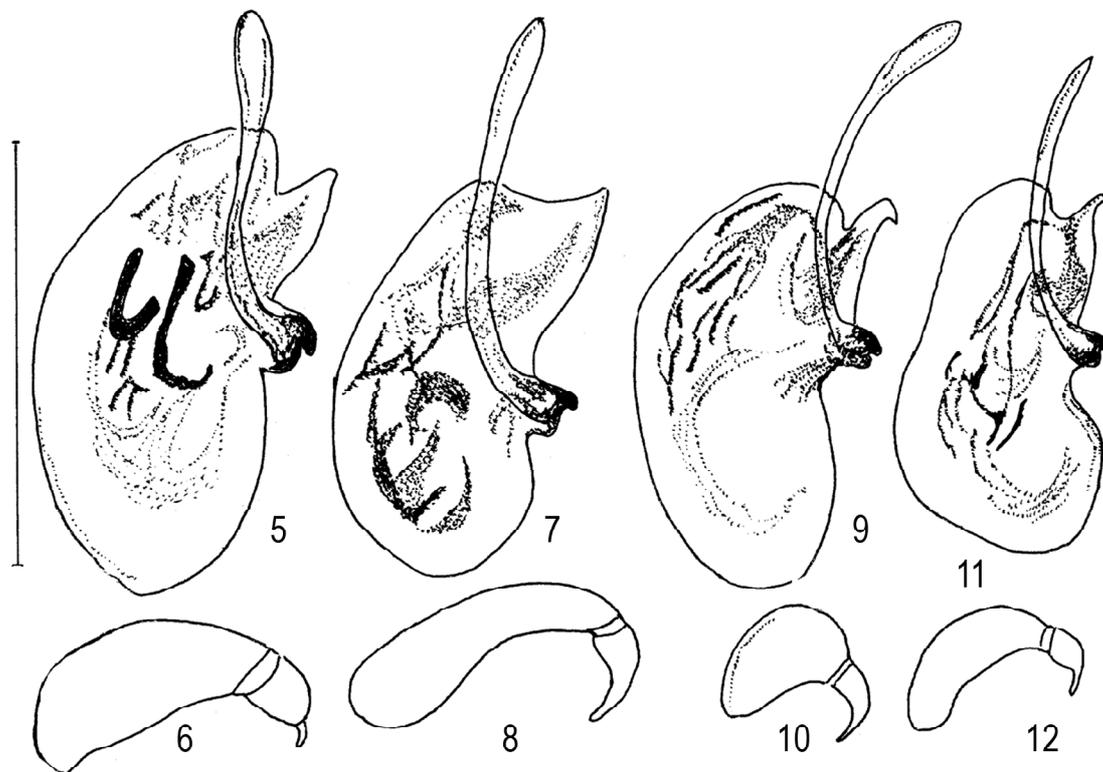
Material. Holotype (♂): Sri Lanka, Kalutara province «CEYLON, S Prov. Kalutara 19.VI.1968» «/No. CMB-B.15./ leg. Dr. J. Balogh» (HNHM). Paratypes: 1♀ «CEYLON, S Prov. Kalutara 19.VI.1968» «/No. CMB-B.12./ leg. Dr. J. Balogh» (cMG); 1♀: Sri Lanka, Siduwa province «CEYLON, W Prov. Siduwa, Colombo 29.VI.1968» «/No. CMB-B.60./ leg. Dr. J. Balogh» (HNHM).

Description.(holotype). Length 2.3 mm. Colouration brown; antennae light brown; anterior margin of frons black. Body with short, light-coloured hairs.

Head transverse, with wide base, ratio of its length (from posterior margin of head to anterior margin of clypeus) to maximum width about 20:29. Neck constriction prominent. Eyes rather large, convex, temples well-developed, round, eye diameter in dorsal view about equal to temple length. Head as wide across eyes as across temples (Fig. 4). Head surface with delicate, fine and dense punctation. Puncture diameter about 4 times as small as eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining. Antennae short, antennal segments 1–3 elongate; segments 4–10 transverse; segment 11 elongate, conical (Fig. 4).

Pronotum widest about 2/3 its length from base. Lateral margins slightly notched at base, then broadly rounded (Fig. 4). Ratio of pronotum length to its maximum width about 23:31. Surface of pronotum with delicate, fine and dense punctation. Puncture diameter about 4 times as small as eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining. Pronotal disc with 2 prominent, symmetric, longitudinal depressions (Fig. 4).

Ratio of *length of elytra* to their combined width about 35:40. Elytra with shallow depressions extending from scutel-



Figs 5–12. Genitalia of *Mendaxinus*: 5–6 — *M. ambreensis*, sp.n.; 7–8 — *M. seychelliensis*, sp.n.; 9–10 — *M. cardamoniensis*, sp.n.; 11–12 — *M. kalutaraensis*, sp.n.: 5, 7, 9, 11 — aedeagus, lateral view (holotypes); 6, 8, 10, 12 — spermatheca (paratypes). Scale bar: 0.25 mm.

Рис. 5–12. Гениталии *Mendaxinus*: 5–6 — *M. ambreensis*, sp.n.; 7–8 — *M. seychelliensis*, sp.n.; 9–10 — *M. cardamoniensis*, sp.n.; 11–12 — *M. kalutaraensis*, sp.n.: 5, 7, 9, 11 — эдеагус, сбоку (голотипы); 6, 8, 10, 12 — сперматека (паратипы). Масштаб: 0,25 мм.

lum along suture (Fig. 4). Surface of elytra with delicate, fine and dense punctation. Puncture diameter slightly smaller than eye facet, distances between punctures slightly smaller than their diameter, interspaces smooth, slightly shining.

Abdomen delicately shagreened.

Aedeagus of characteristic structure (Fig. 11).

Female. Sexual dimorphism absent, female morphologically similar to male.

Spermatheca of characteristic structure (Fig. 12).

Differential diagnosis. Given a high degree of similarity between many species of *Mendaxinus* in colouration and body proportions, the new species can be clearly distinguished only by the structure of the aedeagus and spermatheca (Figs 11, 12).

Distribution. Sri Lanka.

Etymology. Named for its geographical distribution.

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