European Journal of Taxonomy 942: 1–76
https://doi.org/10.5852/ejt.2024.942.2581
ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2024 · Guzman Y.C. *et al.*

Monograph

urn:lsid:zoobank.org:pub:DF991BC4-1761-4C5D-96E5-EFC62F8F7D1A

Twenty-one new species of the Neotropical rove beetle genus *Neolindus* Scheerpeltz (Coleoptera, Staphylinidae, Paederinae)

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Abstract. Rove beetles (Staphylinidae) are a diverse insect group, especially in the Neotropical region. At the same time, this fauna remains significantly understudied. During our visits to museum collections, we encountered numerous specimens of undescribed species representing the Neotropical genus *Neolindus* Scheerpeltz, 1933 which was earlier thought to be rare. To address the knowledge gap in the genus, we studied the museum material that resulted in descriptions of 21 new species. Our work involves the redescription of the genus, descriptions of the new species, and an updated identification key to 39 previously described and new species. The newly described species are *Neolindus bicornis* Guzman, Tokareva & Żyła sp. nov., *N. elegans* Guzman, Tokareva & Żyła sp. nov., *N. longithorax* Guzman, Tokareva & Żyła sp. nov., *N. luxipenis* Guzman, Tokareva & Żyła sp. nov., *N. maya* Guzman, Tokareva & Żyła sp. nov., *N. minutus* Guzman, Tokareva & Żyła sp. nov., *N. napo* Guzman, Tokareva & Żyła sp. nov., *N. niger* Guzman, Tokareva & Żyła sp. nov., *N. ornatus* Guzman, Tokareva & Żyła sp. nov., *N. parahermani* Guzman, Tokareva & Żyła sp. nov., *N. paraplectrus* Guzman, Tokareva & Żyła sp. nov., *N. parasinuatus* Guzman, Tokareva & Żyła sp. nov., *N. parautriensis* Guzman, Tokareva & Żyła sp. nov., *N. pseudosensillaris* Guzman, Tokareva & Żyła sp. nov., *N. sauron* Guzman, Tokareva & Żyła sp. nov., *N. sibyllae* Guzman, Tokareva & Żyła sp. nov., *N. triangularis* Guzman, Tokareva & Żyła sp. nov., *N. tropicalis* Guzman, Tokareva & Żyła sp. nov., *N. utriensis* Guzman, Tokareva & Żyła sp. nov., *N. volkeri* Guzman, Tokareva & Żyła sp. nov., and *N. yotokae* Guzman, Tokareva & Żyła sp. nov. This research emphasises the importance of museum collections in advancing taxonomy and enriching biodiversity knowledge. With these contributions, the known number of species of *Neolindus* reaches 60, thereby enhancing data on the Neotropical rove beetles diversity. Additionally, we provide several new country records for the genus (Guyana, Mexico, Nicaragua, and Suriname), which widen its distribution, and new occurrence records for the described species of *Neolindus*, *N. agilis* Herman, 1991; *N. apiculus* Herman, 1991; *N. basisinuatus* Herman, 1991; *N. campbelli* Herman, 1991; *N. cuneatus* Herman, 1991;

N. hermani Asenjo, 2011; *N. irmleri* Asenjo, 2011; *N. lodhii* Herman, 1991; *N. procarinatus* Herman, 1991; *N. punctogularis* Herman, 1991; and *N. retusus* Herman, 1991.

Keywords. Rove beetles, Central and South America, taxonomy, biodiversity, museum collections.

Guzman Y.C., Tokareva A., Koszela K. & Żyła D. 2024. Twenty-one new species of the Neotropical rove beetle genus *Neolindus* Scheerpeltz (Coleoptera, Staphylinidae, Paederinae). *European Journal of Taxonomy* 942: 1–76. https://doi.org/10.5852/ejt.2024.942.2581

Introduction

Rove beetles (Staphylinidae) stand as one of the most speciose group of insects, encompassing over 67 000 described species distributed among 37 subfamilies (Żyła & Solodovnikov 2020; Newton *et al*. 2023). They predominantly occupy soil habitats (Thayer 2016) and can be found in various ecosystems, including forests and agroecosystems, acting mainly as predators and, some of their lineages, as detritivores, contributing to ecosystem functioning (Thayer 2016; Méndez-Rojas *et al*. 2021).

Among Staphylinidae Latreille, 1802, the subfamily Paederinae Fleming, 1821 is one of the most speciose in the group, encompassing almost 8000 species within 238 genera with worldwide distribution (Żyła *et al*. 2021; Newton *et al*. 2023). In the Neotropics, the subfamily Paederinae lacks comprehensive taxonomic revisions and species-level summaries. Available catalogues and checklists focus only on specific regions, mainly Mexico (Navarrete-Heredia *et al*. 2012), Colombia (Newton *et al*. 2005; Méndez-Rojas *et al*. 2012), and Brazil (Asenjo *et al*. 2013). Among the Neotropical Paederinae, the subtribe Cylindroxystina Bierig, 1943 is morphologically derived and has been difficult to place within the broader evolutionary history of the subfamily. However, it was recently resolved in phylogeny published by Żyła *et al*. (2021) as a lineage nested within the tribe Lathrobiini Laporte, 1835. The subtribe Cylindroxystina can be distinguished by the presence of a pair of paratergites on abdominal segment III and their absence on segments IV–VII, along with narrow, edentate mandibles, and a small nipple-shaped fourth segment of maxillary palpi (maxillary palpomere 4) (Herman 1991). It currently includes two genera, *Cylindroxystus* Bierig, 1943 and *Neolindus* Scheerpeltz, 1933 (Herman 1991; Żyła *et al*. 2021). The genus *Neolindus* represents a diverse group distributed throughout Central and South America primarily inhabiting forest leaf litter at altitudes up to 2500 meters (Irmler 1981; Herman 1991; Asenjo 2011; Assing 2012). *Neolindus* comprises 39 described species and the most characteristic feature that defines the genus is the presence of paired trichobothria on the head (Herman 1991; Newton *et al*. 2023). Trichobothria are specialised sensory organs consisting of elongate, hair-like structures typically placed in a 'hole' on a sclerite or open socket. They are sensitive to small changes in air currents and mechanical stimuli, which makes them essential for insects to sense their surroundings (Boublil *et al*. 2021). In *Neolindus*, trichobothria are present in one or two pairs, and they are located in the posterior half of the head, near the eyes. A 'hole' in sclerite from which the sensitive hair-like sensilla emerges is usually surrounded by a raised border. Despite the potential ecological significance of *Neolindus* in Neotropical forests, our understanding of its taxonomy, distribution, and ecology remains limited. The first attempt to systematise data on species of *Neolindus* was made by Herman (1991). He revised the subtribe Cylindroxystina and both its genera and added 27 new species of *Neolindus* to the six species each described before by Sharp (1876) and Irmler (1981). The latest taxonomic contributions were made by Asenjo (2011), Irmler (2011), and Assing (2012). Asenjo (2011) reported the first record of *Neolindus* from French Guiana, describing two new species and providing a key for the identification of all described species based on males. Assing (2012) described two new species from Peru and Venezuela. Irmler (2011) described two new species from Ecuador and Peru and suggested that tree trunks may be the main habitat for *Neolindus*, based on information known from labels. Since then, no further updates on the taxonomy of the group have been published.

Addressing this knowledge gap, we gathered museum material of ca 250 specimens preliminary identified as *Neolindus* from different collections, and conducted a comprehensive study. As a result, we redescribed the genus with an emended diagnosis, described 21 new species of *Neolindus* and provided an updated identification key for all 60 known and newly described species. In addition, we present new locality records of several already described species. Our study is fully based on material from museum collections, which house historical specimens that have been overlooked and understudied for a long time. Specimens of all 21 new species were found within the unidentified material of some collections, mainly of the Natural History Museum of the University of Kansas (KUNHM-ENT). This fact again highlights the crucial importance of museum collections for taxonomic studies and their contribution to filling gaps in other related fields.

Material and methods

Specimen examination

All examined specimens were either dry-pinned or card-mounted. Dissections were carried out under an Olympus SZX-7 stereo microscope. The beetles were boiled in water to facilitate tissue softening, followed by the separation of larger parts. These parts were then macerated in a 5% KOH solution for tissue breakdown and sclerite clarification before water rinsing. The aedeagus was dissected after this process.

Specimens were photographed using a 4K Ultra-high accuracy microscope VHX-7000 Series by KEYENCE in auto-stacking mode at the Museum and Institute of Zoology, Polish Academy of Science (MIZ, PAS), or Canon EOS 5DS R camera installed on a Camlift with a 65 mm 2.5f lens at the Museum of Nature Hamburg, Leibniz Institute for the Analysis of Biodiversity Change (ZMH, LIB). In the case of the Canon-based photography system, the stacking of photos was performed using Zerene Stacker (Zerene Systems LLC, 2012). All the photos were edited in Adobe Photoshop 2023 while scheme designs were made in Adobe Illustrator CS5 ver. 15.1.0. based on photos and recurrent specimens observations. Scanning electron micrographs were taken using a HITACHI S-3400N microscope under low vacuum conditions at MIZ, PAS, or a Hitachi TM4000Plus Tabletop Microscope at ZMH, LIB.

Measurements

All measurements were made on holotypes using ImageJ V1.53K (Schneider *et al*. 2012) based on photos and are given in millimetres (mm). For the holotype of each new species, the following measurements were made:

Antenna	=	length was measured based on separate measurements of all antennomeres, including their stems
Body length	=	measured from the margin of completely closed mandibles to the tip of the last visible abdominal segment
Elytra	=	length measured at the longest part of one elytron; width measured at the widest point of closed elytra; when only one elytron was present, its width was multiplied by two
Head	=	length measured from the anterior margin without labrum to the posterior margin at the midline of the head; width measured at the widest point including the eyes
Legs	=	coxal width measured at the base of the articulation; femoral and tibial width measured at the widest part, usually at the most distal end
Neck width	=	measured at the widest point
Pronotum	=	length measured at the midline; width measured at the widest point of the pronotum

Measurements abbreviations

A	=	Antennae length
a1–a11	=	Antennomeres 1–11 (length, width)

BL = Body length
E = Elytra (length, width)
GL = Gular sutures, separation distance
H = Head (length, width)
MSC = Mesocoxa (length, width)
MSF = Mesofemur (length, width)
MST = Mesotibia (length, width)
MTC = Metacoxa (length, width)
MTF = Metafemur (length, width)
MTT = Metatibia (length, width)
NKW = Neck (width)
P = Pronotum (length, width)
PC = Procoxa (length, width)
PF = Profemur (length, width)
PT = Protibia (length, width)

Terminology

We mostly used terminology from Blackwelder (1936) and Bogri *et al*. (2020) for body parts. Terminology for male genitalia follows Herman (1991). Additionally, below we suggest orientation-based terms for the sclerites of the apical complex of the aedeagus in *Neolindus*, follows Inoue & Maruyama (2022). These terms are not homology-based, do not propose hypotheses of homology, and are presented to facilitate the description of the structure and distinction between the morphology of sclerites.

APS = single antiparameral sclerite
pLS = paired lateral sclerites
pPMS = paired parameral sclerites

In this paper, every aedeagus scheme features patterns of a specific colour that characterise the apical sclerite complex: the antiparameral sclerite (APS) is highlighted in blue, the pair of lateral sclerites (pLS) is yellow, and the pair of parameral sclerites (pPMS) is represented in red.

Head chaetotaxy of *Neolindus*

To identify the setae on the head, we divided the head into three horizontal parts (above, between and behind the eyes), and two vertical parts. Horizontally, we used the imaginary transversal lines between eye margins the first part extends from the anterior margin of the head to the line between the anterior eye margins; the second part is located between the line joining the anterior eye margins and the line joining the posterior eye margins; and the third part extends from the line joining the posterior eye margins to the posterior margin of the head (Fig. 1). Terms for structures and head parts are taken and adapted from Blackwelder (1936), and some terms for setae from Smetana & Davies (2000).

FS = frontal setae: a pair of setae located in the third part of the head, slightly in front of a transverse line defined by the posterior margin of the eyes
IFOS = infraocular setae: a pair of setae located near the margin of the eyes on the ventral side of the head
IOS = interocular setae: a pair of setae located in the second part of the head at the level of transversal midline between the eyes and toward the centre of the head
MS = mandibular setae: a pair of setae located in the first part of the head in front of the transverse line formed by the anterior margin of eyes behind the mandibular articulation
OS = ocular setae: a pair of setae located in the second part of the head, close to the anterior margin of the eyes

OT = ocular trichobothria, a pair of trichobothria located in the first or second part of the head, near the anterior margin of the eyes

PCS = postclypeal setae: a pair of setae located in the first part of the head on the anterior margin just behind the clypeus, between the antennal incisions, closer to the latter than to the centre; may be present in pairs on both sides

PFS = postfrontal setae: setae of variable number, forming a row located in the third part of the head, close to the posterior margin of the eyes; they may be arranged in rows bordering the epicranium, which rises from this point; this row of setae is present in almost all species and varies in seta density

PMS = postmarginal setae: a group of setae that form rows along the posterior margin of the head, usually projecting perpendicular to the surface of the head; in smaller specimens, they are sparser and may be grouped in pairs

POCS = postocular setae: a pair of setae located in the third part of the head from the ventral side, close to the posterior margin of an eye

POS = preocular setae: a pair of setae located in the first part of the head above the transverse line formed by the anterior margin of eyes, sometimes being present in pairs on each side

POT = postocular trichobothria: a pair of trichobothria located in the third part of the head, near the posterior margin of the eyes

PTOS = postocular setae: a pair of setae located in the third part of the head, close to the eyes, behind the median line of eyes and nearer to the posterior margin of the head

SAS = supra-antennal setae: a pair of setae located in the first part of the head, closer to the midline, just behind the antennal incisions, forming a square with the interocular setae

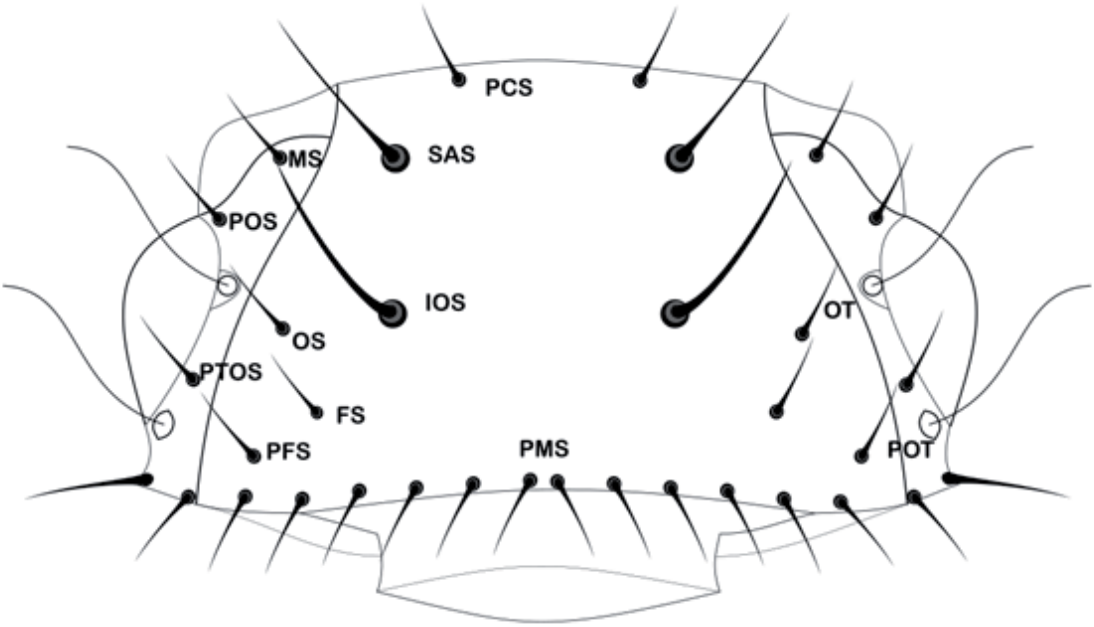

Fig. 1. Head chaetotaxy scheme. Abbreviations: FS = frontal seta; IOS = interocular seta; MS = mandibular seta; OS = ocular seta; OT = ocular trichobothrium; PCS = postclypeal seta; PFS = postfrontal seta; PMS = postmarginal setae; POS = preocular seta; POT = postocular trichobothrium; PTOS = postocular seta; SAS = supraantennal seta.

Density of punctures

Low density: with space between punctures greater than the mean punctures' diameter;
Moderate density: with space between punctures less than the mean punctures' diameter;
High density: almost no space between punctures.

Depository of the specimens

Type specimens are deposited at the University of Kansas Natural History Museum, Lawrence, Kansas, USA (KUNHM-ENT) and the Natural History Museum, London, UK (NHMUK).

Specimens used for this study were deposited in the following institutions:

KUNHM-ENT = University of Kansas Natural History Museum, Lawrence, Kansas, USA (Zachary H. Falin)
NHMUK = The Natural History Museum, London, UK (Maxwell V.L. Barclay, Michael Geiser)

Results

Taxonomic account

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Suborder Polyphaga Emery, 1886
Family Staphylinidae Latreille, 1802
Subfamily Paederinae Fleming, 1821
Tribe Lathrobiini Laporte, 1835
Subtribe Cylindroxystina Bierig, 1943

Genus ***Neolindus*** Scheerpeltz, 1933
Figs 1–24; Supp. file 1, Supp. file 2

Neolindus Scheerpeltz, 1933: 1219. Originally described as *Lindus* Sharp, 1876 (preoccupied; replaced with the name *Neolindus* by Scheerpeltz, 1933).

Neolindus – Blackwelder 1939: 120 (note on the type species); 1944: 122 (checklist of species, South America); 1952: 259 (note on the type species). — Fagel 1958: 9 (redescription; note on the type species). — Irmler 1981: 209 (new species and key to species); 2011: 103–107 (species descriptions). — Herman 1991: 33–82 (revision of subtribe, redescription, key to species, species descriptions). — Asenjo 2011: 57–67 (new record, species descriptions, key to males). — Assing 2012: 291–297 (species descriptions).

Type species

Neolindus religans (Sharp, 1876), designated by monotypy.

Diagnosis (modified from Herman 1991)

Neolindus is distinguished from all Paederinae genera due to the following combination of characters: head with 1 (Fig. 2A–B) or 2 pairs of trichobothria (Fig. 2C–D); maxillary palpomere 4 nipple-shaped (Supp. file 1, Supp. file 2); mesothoracic peritreme small; 1 pair of paratergites on segment III present; paratergites absent on segments IV–VIII; tergite and sternite IV–VI fused into cylinder (Figs 4–24A).

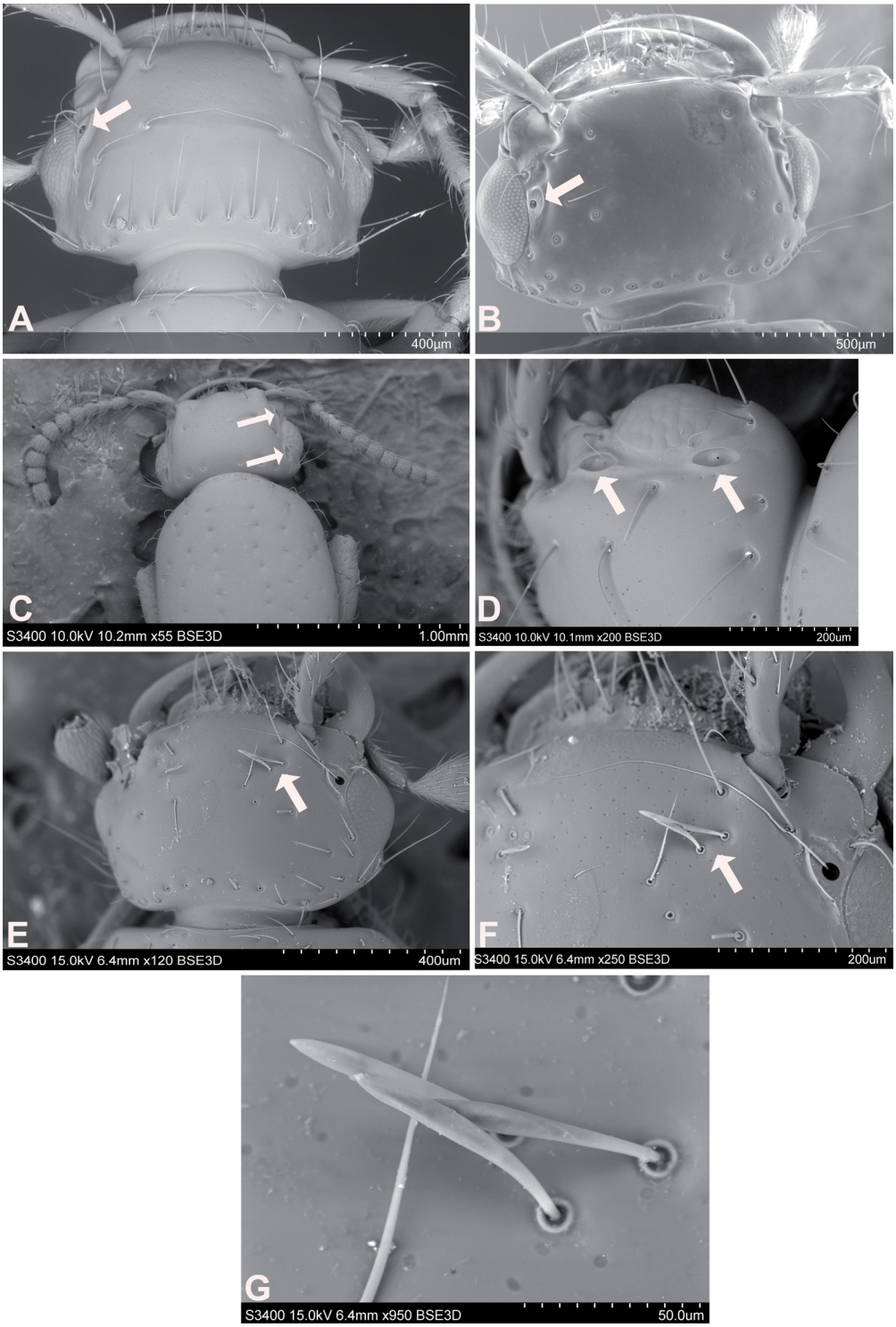

Fig. 2. Scanning electronic micrographs. **A**. One pair (marked with an arrow) of trichobothria in *Neolindus ornatus* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **B**. One pair of trichobothria in (marked with an arrow) *Neolindus niger* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **C–D**. Two pairs of trichobothria (marked with arrows) in *Neolindus sibyllae* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **E–G**. Pseudo-sensilla (marked with an arrow) on *Neolindus pseudosensillaris* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (NHMUK) with head in general view (E) and two closeups of pseudo-sensilla (F–G).

Redescription

Colouration. Head, pronotum and abdomen from light or dark brown to black, abdominal intersegmental membrane light brown, only in some species darker (e.g., *Neolindus maya* Guzman, Tokareva & Żyła sp. nov. and *N. parahermani* Guzman, Tokareva & Żyła sp. nov.); appendages brown, sometimes lighter than body.

Head. Head capsule in most species wider than long, shape square to trapezoidal; mandibular articulation rounded and prominent; posterior margin of head rounded to straight, slightly emarginate in front of neck; posterior angles of head rounded to straight, often with distinct dorsal ridge with setae; neck about ¼ to ⅓ width of head, dorsal surface with transverse groove, foramen magnum width up to ½ or ⅔ of occiput, with 2 round, anteriorly joined, lateral pits in ventral view. Eye without setae between ommatidia, shorter than or equal to temple length, covering majority of lateral side of head in some species. Epicranium shiny, convex, without microsculpture; setation with 1 pair of SAS and IOS arranged in square, with or without OS and FS, with 1–3 PFS arranged in parallel row to PMS in head lateral part (Fig. 1). Gena with lateral margin expanded (Figs 1, 2A–F), setation with MS, POS, PTOS, and 1 or 2 pairs of trichobothria (OT, or OT and POT); if 2 pairs of trichobothria, then sockets of POT more oval and elongate (Fig. 2C–D). Ventral side of head with IFOS and POCS; anterior part of gula with 1 or 2 setae in species with small body (up to and including 10 mm) size or 1 row of 6–8 irregular setae in species with large body size (more than 10 mm); gular sutures wide apart; postgena with 1 row of 2–5 setae in line from eye to gular suture (Supp. file 2). Antenna with antennomere 1 either as long as combined length of antennomeres 2 and 3, or extending as far as combined length of antenomeres 2–4. Labrum bilobed or with multiple lobes, with 3 pairs of setae on anterior margin. Mandibula long, slender, sickle-shaped, adentate, prostheca as membranous lobe. Maxilla (Supp. file 1) with row of 4 dark setae on outer margin of stipes; cardo with 1 seta; galea with thick and dark setae on outer margin; lacinia with additional sclerotisation on outer margin. Maxillary palpus with palpomere 1 slightly broadened at tip, glabrous; palpomere 2 elongate, shorter or as long as 3, slightly broadened at tip, with scattered setae; palpomere 3 rounded, expanding near middle, then narrowing toward tip, with denser setation than palpomere 2; palpomere 4 minute, nipple-like and small, glabrous. Ligula bilobed, lobes separate; mentum and submentum each with 1 pair of setae. Labial palpus with palpomere 1 shorter than 2, palpomere 2 longer than 3; palpomere 1 and 2 almost same width; palpomere 2 wider than 3.

Thorax. Pronotum nearly quadrate in most species, widest at middle, without microsculpture; anterior margin slightly convex, angles round; lateral margin smooth, without stout setae; posterior margin with rounded angles, slightly emarginate. Prosternum with superior marginal line parallel to anterior margin, not deflexed; pronotosternal suture present, poorly developed near coxal cavity and absent anteriorly (Supp. file 2); basisternum triangular with longitudinal ridge; furcasternum broad, well separated from hypomeron, triangular, with longitudinal ridge in middle. Hypomeron with postcoxal process with additional parallel carina along its margin. Procoxal cavity opened posteriorly. Prepectus longitudinally elongate, with umbilicate punctures on lateral side. Mesosternum, basisternum pentagonal, with acute angle producing between coxa; tuberculate micropunctuation sparse; longitudinal ridge not extended to anterior margin; transversal carina and sternopleural sutures elevated; furcasternum with longitudinal ridge; mesanepisternum smooth, transversely convex. Metasternum with scattered umbilicate micropunctuation; metanepisternum with 2 elevated longitudinal ridges. Mesothoracic peritremes small. Scutellum with 2 emarginate transversal ridges, impunctate. Elytron longer than wide; epipleural and additional ridge present; apical margin emarginate; apical angle rounded; dorsal surface with highly to moderately dense umbilicate micropunctures forming 5–8 longitudinal rows.

Legs. Procoxa longer than wide; profemur 3 times as long as wide; protibia with 3–5 well-developed combs of setae on ventral side; protarsomeres 1–4 wider than long, wider than apex of tibia, with long adhesive setae on ventral side and short dense setae between each other; mesocoxa longer than wide;

mesofemur 3 times as long as wide; mesotibia with apical ctenidium on both sides in most species, and metatibia with apical ctenidium on both sides in all species; metacoxa longer than wide; metafemur 3 times as long as wide; mesotarsomeres and metatarsomeres 1, 2, and 5 longer than 3 and 4; mesotrasomeres and metatarsomeres 3 and 4 subequal.

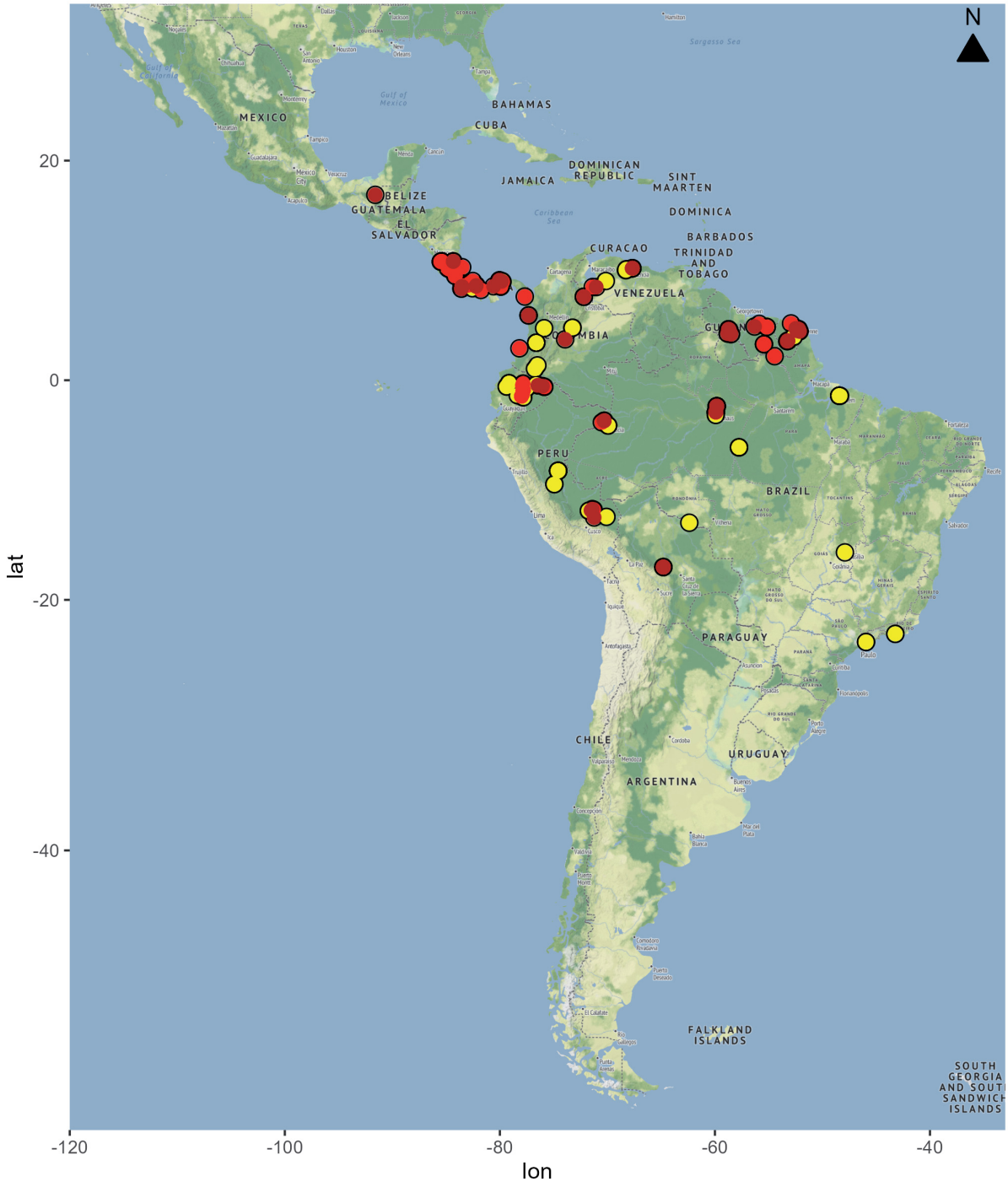

Fig. 3. Occurrences of *Neolindus* spp.; new records (red dots), new species records (dark red dots), previous records from Irmler (1981), Herman (1991), Chacón & Chacón (2006), Asenjo (2011), Assing (2012), Sissa-Dueñas & Navarrete-Heredia (2016), and Muñoz Ordóñez (2020) (yellow dots).

Abdomen. Surface without microsculpture, micropunctures varying in density from high to low, arranged randomly. Sternite II narrow and fused to sternite III; posterior margin of sternite II with row of setae. Sternite III with central longitudinal keel. Segment III with 1 pair of paratergites. Segments III–VI with straight posterior margin. Segments IV–VI with fused tergite and sternite forming cylinder. Abdominal segments III–IX sometimes with internal canals at base of sternite and tergite. Tergite IX with straight apices, fused or divided medially. No glandular openings in intersegmental membranes. *Males*: segment VII and VIII with tergite and sternite separate, posterior margin of various form, varies between species; aedeagus, median lobe oval to triangular, basal foramen acentric, near to base of median lobe, with asymmetrical appendages; some species with complex of movable sclerites at apex around opening of median foramen. *Females*: usually lack of emargination on abdominal segments VII and VIII, sometimes present, but shallow, always shallower than in respective male.

Distribution and habitat

Neolindus can be found in various localities across South and Central America. Central America ranges from south of Mexico in Chiapas, to Panama, including records from Honduras, Costa Rica, and Nicaragua. In South America, *Neolindus* is known from Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil, Suriname, Guyana, and French Guiana, with the Bolivian department Pando being the southernmost occurrence (Fig. 3). Species of *Neolindus* are typically found in forest leaf litter at altitudes ranging from 2 (*N. utriensis* Guzman, Tokareva & Żyła sp. nov.) to 2900 m a.s.l. (*N. campbelli* Herman, 1991).

Key to males of species of Neolindus Scheerpeltz, 1933

The identification of species of *Neolindus* mainly relies on features of the aedeagus, while females remain unknown for most of the described species of *Neolindus*. Therefore, the key is adapted only for male specimens identification and is modified from Asenjo (2011). The Peruvian species *N. amazonicus* Irmler, 1981, *N. hanagarthi* Irmler, 1981, and *N. peruvianus* Irmler, 1981 are excluded from the key because they are known only from females.

1. Head with 1 pair of trichobothria (Fig. 2A–B) 2
– Head with 2 pairs of trichobothria (Fig. 2C–D) 45

2. Head, epicranium with clusters of mid-tapered fusiform setae (Fig. 2E–G) .... ***N. pseudosensillaris*** Guzman, Tokareva & Żyła sp. nov.
– Head, epicranium without clusters of mid-tapered fusiform setae 3

3. Pronotum longer than wide (Fig. 14A) 4
– Pronotum wider than long (Fig. 8A) or almost as wide as long (quadrate) (Fig. 5A) 13

4. Tergite VIII with posterior margin round or truncate (Figs 5D, 12D) 5
– Tergite VIII with posterior margin emarginate (Figs 6D, 8D) 10

5. Antenna, antennomeres 3–11 combined longer than head, moniliform, flagellum wider at apex (antennomeres 9–11); body longer than 3 mm 6
– Antenna, antennomeres 3–11 combined shorter than head, discoid, flagellum widest at the middle; body shorter than 3 mm ..... ***N. minutus*** Guzman, Tokareva & Żyła sp. nov.

6. Antenna, tomentose pubescence starting from antennomere 3 ..... ***N. verhaaghi*** Irmler, 2011
– Antenna, tomentose pubescence starting from antennomere 4 or 5 7

7. Antenna, tomentose pubescence starting from antennomere 4 8
– Antenna, tomentose pubescence starting from antennomere 5 9

8. Tergite VIII with posterior margin rounded and without internal canals at base (Herman 1991: fig. 122), tergite III without paratergites; aedeagus, parameral view, apex of median lobe pointed (Herman 1991: fig. 119) ..... ***N. incanalis*** Herman, 1991
– Tergite VIII with posterior margin truncate and internal canals at base (Herman 1991: fig. 140), tergite III with 1 pair of paratergites; aedeagus, parameral view, apex of meadian lobe with emargination (Herman 1991: fig. 141) ..... ***N. cephalochymus*** Herman, 1991

9. Tergite VIII with posterior margin rounded (Herman 1991: fig. 127) .... ***N. brewsterae*** Herman, 1991
– Tergite VIII with posterior margin sinuate with straigh lateral angles (Herman 1991: fig. 144) .... ***N. agilis*** Herman, 1991

10. Head without midlongitudinal carina at anterior margin 11
– Head with midlongitudinal carina at anterior margin 12

11. Antenna, antennomere 2 longer than 3, tomentose pubescence starting from antennomere 5 .... ***N. densus*** Herman, 1991
– Antenna, antennomere 2 shorter than 3, tomentose pubescence starting from antennomere 4 .... ***N. punctiventris*** Herman, 1991

12. Body length about 9 mm; tergite VIII with moderately deeply emarginate posterior margin (Herman 1991: fig. 159) ..... ***N. retusus*** Herman, 1991
– Body length about 6 mm; tergite VIII with shallowly emarginate posterior margin (Herman 1991: fig. 165) ..... ***N. procarinatus*** Herman, 1991

13. Pronotum wider than long 14
– Pronotum almost as wide as long (quadrate) 37

14. Tergite VIII with posterior margin rounded or truncate (Herman 1991: figs 178, 215) 15
– Tergite VIII with posterior margin with 1–3 protruding processes (Herman 1991: figs 157, 203, 106) 22

15. Tergite IX with base fused medially (Herman 1991: fig. 180) 16
– Tergite IX with base divided medially (Herman 1991: fig. 171) 17

16. Antenna, antennomere 2 longer than 3 ..... ***N. cuneatus*** Herman, 1991
– Antenna, antennomere 2 shorter than 3 ..... ***N. milleri*** Herman, 1991

17. Antenna, tomentose pubescence starting from antennomere 3; aedeagus, parameral view, median foramen with sclerites hidden (Herman 1991: fig. 170) 18
– Antenna, tomentose pubescence from antennomere 4; aedeagus, parameral view, median foramen with sclerites exposed (Herman 1991: fig. 214) 19

18. Aedeagus, parameral view, median lobe with median apical carina (Herman 1991: fig. 170) .... ***N. campbelli*** Herman, 1991
– Aedeagus, parameral view, median lobe without median apical carina (Herman 1991: fig. 174) .... ***N. apiculus*** Herman, 1991

19. Antenna, antennomere 2 shorter than 3; tergite VIII with posterior margin rounded (Herman 1991: fig. 183) or with 3 protruding processes (Herman 1991: fig. 117); aedeagus, parameral view, without median invagination (Herman 1991: fig. 186) 20

– Antenna, antennomere 2 and 3 subequal in length; tergite VIII with posterior margin truncate (Herman 1991: fig. 215); aedeagus, parameral view, with median invagination (Herman 1991: fig. 214) ..... ***N. dichymus*** Herman, 1991

20. Tergite VIII, posterior margin rounded (Herman 1991: fig. 183) 21
– Tergite VIII, posterior margin with 3 acute processes (Fig. 6D) ..... ***N. longithorax*** Guzman, Tokareva & Żyła sp. nov.

21. Aedeagus, parameral view, setae absent (Herman 1991: fig. 186) ..... ***N. lodhii*** Herman, 1991
– Aedeagus, parameral view, setae present (Herman 1991: fig. 198) 22

22. Sternite VIII with shallow rectangular emargination; emargination about 1/15 of length of sternite VIII (Herman 1991: fig. 199) ..... ***N. sinuatus*** Herman, 1991
– Sternite VIII with deep emargination; emargination about 1/5 of length of sternite VIII (Herman 1991: fig. 195) ..... ***N. basisinuatus*** Herman, 1991

23. Aedeagus, parameral view, median invagination absent (Herman 1991: fig. 156) 24
– Aedeagus, parameral view, median invagination present (Herman 1991: fig. 210) 27

24. Antenna, antennomere 2 longer than 3; gula, anterior margin with 2 setae between gular sutures 25
– Antenna, antennomere 2 shorter than 3; gula, anterior margin with more than 2 setae between gular sutures 26

25. Tergite VIII, posterior margin with 1 central protruding process and central basal canals with longitudinal extended carinae (Herman 1991: fig. 203); tergite IX, base divided medially (Herman 1991: fig. 201) ..... ***N. unilobus*** Herman, 1991
– Tergite VIII, posterior margin emarginated and central basal canals without longitudinal extended carinae (Herman 1991: fig. 157); tergite IX, base fused medially (Herman 1991: fig. 155) ..... ***N. bullus*** Herman, 1991

26. Antenna, antennomere 9 longer than 10, tomentose pubescence starting from antennomere 3; tergite VIII, central basal canals without longitudinal extended carinae (Irmler 2011: fig. 2f) (Irmler 2011: fig. 2a) ..... ***N. pastazae*** Irmler, 2011
– Antenna, antennomere 9 and 10 subequal in length, tomentose pubescence starting from antennomere 4; tergite VIII, central basal canals with longitudinal carinae extended and joining medially at the tip (Herman 1991: fig. 206) ..... ***N. punctogularis*** Herman, 1991

27. Tergite VIII, central basal canals with longitudinal extended carinae not joined (Herman 1991: fig. 221) 28
– Tergite VIII, central basal canals with longitudinal extended carinae and joined medially (Asenjo 2011: fig. 6) 29

28. Antenna, antennomere 2 and 3 subequal in length; gula, anterior margin with 2 setae between gular sutures ..... ***N. bidens*** Herman, 1991
– Antenna, antennomere 2 shorter than 3; gula, anterior margin with 4 setae between gular sutures ..... ***N. schubarti*** Irmler, 1981

29. Sternite VIII not divided (Asenjo 2011: fig. 14) 30
– Sternite VIII divided into 3 plates (Asenjo 2011: fig. 7) ..... ***N. irmleri*** Asenjo, 2011

30. Antenna, antennomere 9 longer than 10; gula, anterior margin with more than 2 setae between gular sutures 31
– Antenna, antennomeres 9 and 10 subequal in length; gula, anterior margin with 2 setae between gular sutures ..... ***N. religans*** (Sharp, 1876)

31. Antenna, tomentose pubescense starting from antennomere 3 32
– Antenna, tomentose pubescense starting from antennomere 4 33

32. Tergite VIII, posterior margin with 3 acute protruded processes, median processes forming blunt angle (> 90°) (Asenjo 2011: fig. 13); aedeagus in parameral view fusiform; without setae on sides of median invagination (Asenjo 2011: fig. 9) ..... ***N. hermani*** Asenjo, 2011
– Tergite VIII, posterior margin with 3 acute protruded processes, median processes most protruded, pointed at acute angle (< 90°) (Fig. 23D); aedeagus in parameral view rhombus-shape; with setae on sides of median invagination (Fig. 23F–G) ..... ***N. volkeri*** Guzman, Tokareva & Żyła sp. nov.

33. Sternite VII, posterior margin with median emargination bordered by 2 processes (Herman 1991: fig. 101) 34
– Sternite VII, posterior margin with median emargination, without processes (Fig. 8C) ..... ***N. maya*** Guzman, Tokareva & Żyła sp. nov.

34. Sternite VII, posterior margin with a median emargination bordered by 2 blunt processes (Fig. 11C) ..... ***N. niger*** Guzman, Tokareva & Żyła sp. nov.
– Sternite VII, posterior margin with a median emargination bordered by 2 acute processes (Fig. 13C) 35

35. Aedeagus, parameral view, median lobe widest closer to apex than to base; pPMS apical arms bifurcate on top; pLS with microsculpture (Fig. 13F–I) ..... ***N. parahermani*** Guzman, Tokareva & Żyła sp. nov.
– Aedeagus, parameral view, median lobe widest closer to base; pPMS apical arms without bifurcation on top; pLS without distinct microsculpture (Figs 16F–I, 22F–I) 36

36. Aedeagus, parameral view, pPMS, basal arms wide, shorter than apical arms (Fig. 22F–I) ..... ***N. utriensis*** Guzman, Tokareva & Żyła sp. nov.
– Aedeagus, parameral view, pPMS, basal arms narrow, as long as apical arms (Fig. 16F–I) ..... ***N. parautriensis*** Guzman, Tokareva & Żyła sp. nov.

37. Tergite VIII, posterior margin round (Fig. 15D) 38
– Tergite VIII, posterior margin with 1 wide process, protruding or truncate (Herman 1991: fig. 194; Figs 18D, 22D) 42

38. Sternite VIII, posterior margin with shallow, rectangular emargination (Fig. 15D); tergite IX divided ..... ***N. parasinuatus*** Guzman, Tokareva & Żyła sp. nov.
– Sternite VIII, posterior margin with deep V-shaped emargination; tergite IX fused 39

39. Aedeagus, parameral view, pPMS with multiple denticles on top (Fig. 5F–G) ..... ***N. elegans*** Guzman, Tokareva & Żyła sp. nov.
– Aedeagus, parameral view, pPMS without denticles on top 40

40. Aedeagus, parameral view, APS sclerotised, continuous area with pair of arms 41
– Aedeagus, parameral view, APS partially membranous, divided (Fig. 21F–G) ..... ***N. tropicalis*** Guzman, Tokareva & Żyła sp. nov.

41. Aedeagus, lateral view, large apical sclerites expanded beyond median foramen and folded towards parameral side, with pair of processes with truncate tips (Fig. 7H–I) ..... ***N. luxipenis*** Guzman, Tokareva & Żyła sp. nov.
– Aedeagus, lateral view, large apical sclerites expanded beyond median foramen and folded towards parameral side, with pair of processes with acute tips (Fig. 10H–I) ..... ***N. napo*** Guzman, Tokareva & Żyła sp. nov.

42. Tergite VIII, posterior margin truncate (Fig. 12D) ...***N. ornatus*** Guzman, Tokareva & Żyła sp. nov.
– Tergite VIII, posterior margin with 1 wide protruding process (Figs 4D, 13D, 16D, 18D) 43

43. Aedeagus, parameral view, APS reduced, without processes, pLS longer than pPMS 44
– Aedeagus, parameral view, APS developed, with 2 processes, pLS shorter than pPMS (Fig. 18F–G) .....***N. sauron*** Guzman, Tokareva & Żyła sp. nov.

44. Aedeagus, parameral view, median lobe of triangular shape, tapering towards acute base, basal foramen oval (Fig. 20F–G) .....***N. triangularis*** Guzman, Tokareva & Żyła sp. nov.
– Aedeagus, parameral view, median lobe of another shape, base blunt, basal foramen triangular (Fig. 4F–G) ..... ***N. bicornis*** Guzman, Tokareva & Żyła sp. nov.
45. Tergite VIII, posterior margin rounded (Herman 1991: fig. 82) 46
– Tergite VIII, posterior margin emarginate, or with 3 protruding processes (Herman 1991: figs 109, 117) 53

46. Aedeagus, parameral view, apex of median lobe pointed (Herman 1991: fig. 81) 47
– Aedeagus, parameral view, apex of median lobe emarginate (Herman 1991: fig. 85) 50

47. Sternite VIII, posterior margin of emargination with elevated base (Fig. 14E) ....***N. paraplectrus*** Guzman, Tokareva & Żyła sp. nov.
– Sternite VIII, posterior margin of emargination without elevated base 48

48. Sternite VIII, carina of basal central canals unmodified (Herman 1991: fig. 80) ....***N. plectrus*** Herman, 1991
– Sternite VIII, carina of basal central canals bifurcated (Herman 1991: fig. 92) 49

49. Aedeagus, parameral view, lack of transversal carina or process (Herman 1991: fig. 105) ....***N. rudiculus*** Herman, 1991
– Aedeagus, parameral view, transversal carina or process present (Herman 1991: fig. 93) ....***N. pumicosus*** Herman, 1991

50. Antenna, antennomere 2 longer than 3 51
– Antenna, antennomere 2 and 3 subequal in length 52

51. Sternite VIII, posterior margin with deep parallel emargination (Herman 1991: fig. 88); aedeagus, parameral view, lack of developed processes at apex of median lobe ...***N. parallelus*** Herman, 1991
– Sternite VIII, posterior margin with shallow U-shape emargination (Fig. 24E); aedeagus, parameral view, developed processes at apex of median lobe ...***N. yotokae*** Guzman, Tokareva & Żyła sp. nov.

52. Sternite VII, posterior margin with moderately deep median emargination (Herman 1991: fig. 101) .....***N. brachiatus*** Herman, 1991
– Sternite VII, posterior margin straight (Fig. 19C) ....***N. sibyllae*** Guzman, Tokareva & Żyła sp. nov.

53. Pronotum longer than wide; aedeagus, parameral view, apex of median lobe pointed (Herman 1991: fig. 113) 54
– Pronotum wider than long; aedeagus, parameral view, apex of median lobe emarginate (Herman 1991: fig. 152) ..... ***N. hamatus*** Herman, 1991

54. Elytra shorter than pronotum; tergite VIII, posterior margin emarginate (Herman 1991: fig. 109) ... . ***N. lirellus*** Herman, 1991
– Elytra longer than or as long as pronotum; tergite VIII, posterior margin trilobed (Herman 1991: fig. 117) ..... ***N. prolatus*** Herman, 1991

Neolindus bicornis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:A3AE98B8-192C-498F-82DA-F147AF44B503
Fig. 4; Supp. file 2

Diagnosis

This species is similar to *N. apiculus* and *N. campbelli* in having a broad emargination of sternite VIII (Herman 1991: figs 168, 173; Fig. 4E). However, the structure of the aedeagus in *N. bicornis* Guzman, Tokareva & Żyła sp. nov. is different (Herman 1991: figs 170, 174; Fig. 4F–I). It resembles the aedeagus of *N. triangularis* Guzman, Tokareva & Żyła sp. nov., but it differs by having a rounded base of the median lobe and a narrower pLS in their middle part (the base of the median lobe acute in *N. triangularis*) (Figs 4F–I, 20F–I).

Etymology

The name is a combination of the Latin prefix '*bi*' meaning 'two' and the Latin word '*cornum*', which means 'a horn'. It describes the characteristic form of apical aedeagal sclerites. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus bicornis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Roura, 18.4 Km SSE, 240 m [m a.s.l.]; 4°36"38"N, 52°13'25''W; 29 May–10 Jun 1997; J. Ashe, R Brooks Leg.; FG1AB97 180; ex: flight intercept trap \\ SM0100688 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

FRENCH GUIANA • 2 ♀♀, 2 ♂♂; "*Neolindus bicornis* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Cayenne, Roura, 27.4 Km SSE; 280 m [m a.s.l.]; 4°44'20"N, 52°13'25''W; 10 Jun 1997; J. Ashe, R Brooks, FG1AB97 177 ex: flight intercept trap \\ [barcode] SM0133909 KUNHM-ENT"; KUNHM-ENT • 1 ♂; same data as for preceding; "SM0133998 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "18.4 Km SSE; 240 m; 4°36"38"N, 52°13'25''W; 25–29 May 1997; FG1AB97 081; ex: flight intercept trap \\ SM0098969 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (9), H (0.49, 1.04), A (1.71), a1 (0.34, 0.11), a2 (0.14, 0.07), a3 (0.26, 0.08), a4 (0.12, 0.09), a5 (0.13, 0.09), a6 (0.12, 0.08), a7 (0.12, 0.09), a8 (0.11, 0.09), a9 (0.11, 0.08), a10 (0.11, 0.09), a11 (0.14, 0.1), NKW (0.49), GL (0.21), P (1.09, 1.29), E (1.59, 1.39), PC (0.5, 0.29), PF (0.86, 0.39), PT (0.65, 0.15), MSC (0.4, 0.46), MSF (1.13, 0.29), MST (0.82, 0.11), MTC (0.46, 0.25), MTF (1.15, 0.28), MTT (0.9, 0.13).

Colouration. Head dark brown; pronotum brown; legs light brown; abdomen brown.

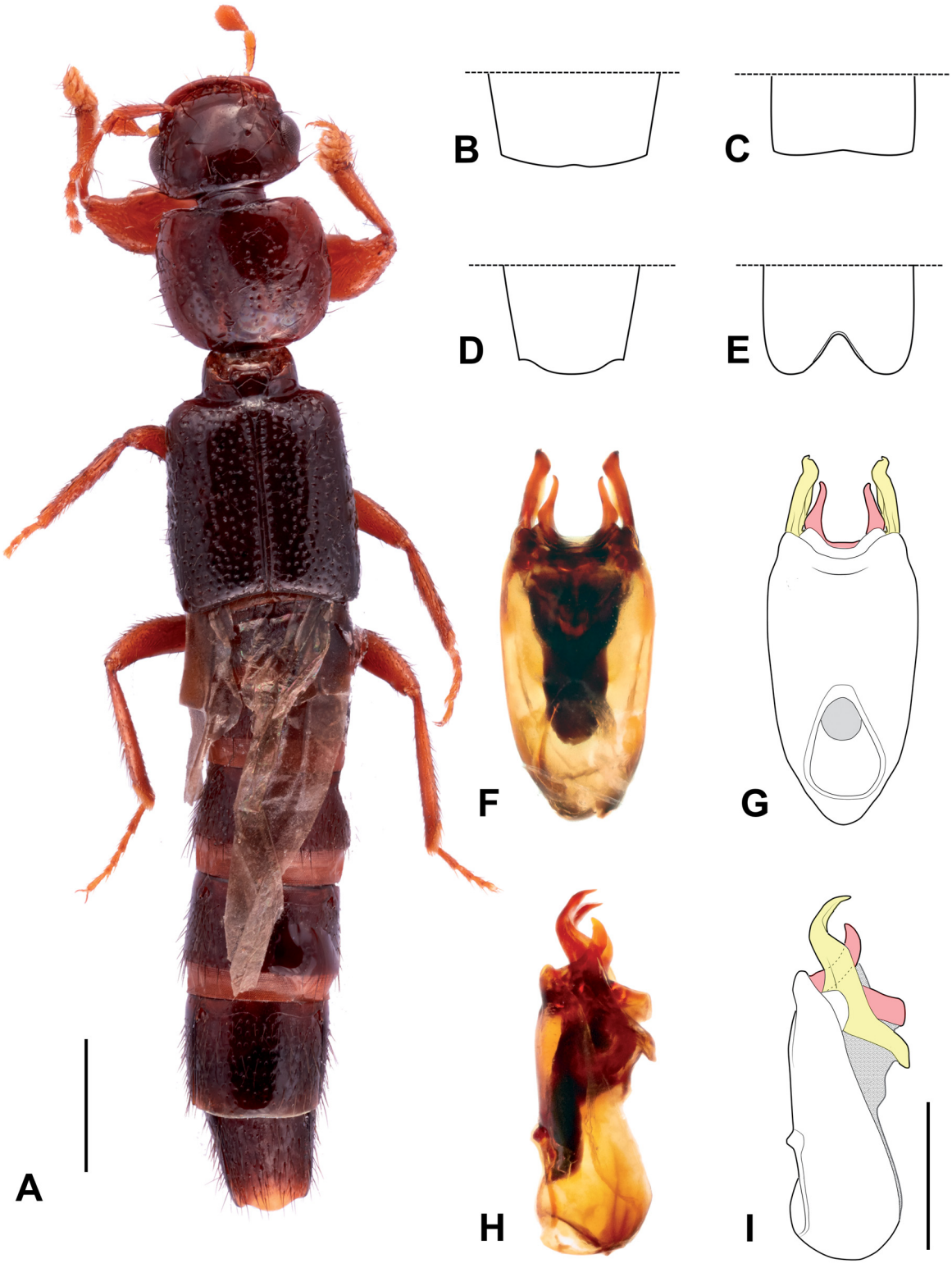

Fig. 4. *Neolindus bicornis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin straight with emargination in front of neck; posterior angles straight; setation with 1 pair of PCS and 1 row of PMS. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 1 pair of PFS, without OS. Gena with depression from mandibular base to middle of eye, setation with 1 OT, MS, POS and PTOS; sockets of MS and POS umbilicate. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 3, shorter than head and pronotum combined; antennomeres longer than wide, tomentose pubescence starting from antennomere 3; antennomere 1 shorter than antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, emargination deep, U-shaped, with 2 dark, thick seta in median line of labrum lobes (Fig. 4A, Supp. file 2).

Thorax. Pronotum slightly wider than long, with randomly distributed umbilicate micropunctuatoin and slightly convex anterior margin. Basisternum of prosternum with tuberculate micropunctuation. Metasternal intercoxal process with 1 pair of acute processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 8–10 longitudinal rows (Fig. 4A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae, apical comb longitudinal, composed of widely separated, thick setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 as long as mesotarsomere 2, mesotarsomere 3 shorter than mesotarsomere 1, but as long as mesotarsomere 4, mesotarsomere 5 as long as mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than metatarsomere 2, metatarsomere 2 longer than metatarsomere 3, metatarsomere 4 as long as metatarsomere 3, metatarsomere 5 shorter than 1 but longer than 2.

Abdomen. *Male*: posterior margin of sternite VII sinuate, with midlongitudinal emargination and rounded lateral angles (Fig. 4C). Posterior margin of tergite VIII with elongate rounded apex (Fig. 4D). Posterior margin of sternite VIII with median V-shaped emargination and rounded lateral angles (Fig. 4E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length, wider at margin and narrow towards apex; aedeagus, median lobe rounded at base, widening apically and well-sclerotised; pLS fused into flattened arcuate sclerite of almost even width with 2 acute processes on each side protruding distad from median foramen and ending bent to antiparameral side. APS flattened, arcuate, smaller than pLS, with 2 acute processes on each side protruding distad from median foramen and ending bent to parameral side, shorter than processes of pLS. pPMS not visible (Fig. 4F–I). *Female*: lack of emargination on abdominal segments.

Distribution

This species is known from the type locality in French Guyana (Cayenne, Roura) and the surrounding area. It was collected by a flight interception trap at an altitude of 240–280 m a.s.l.

Neolindus elegans Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:F14030CB-549D-48BA-B857-E961C078B08D
Fig. 5; Supp. file 2

Diagnosis

This species is similar to *N. milleri* in shape of sternite and tergite VIII. However, in *N. elegans* Guzman, Tokareva & Żyła sp. nov., the posterior margin of sternite VII has a wide middle emargination with a straight middle part, delimited on sides by 2 long acute processes (Fig. 5C). In contrast, *N. milleri* has a shallower emargination lacking acute processes on the sides (Herman 1991). Furthermore, the aedeagus of *N. elegans* displays a complex composition of apical sclerites surrounding the median foramen of the

median lobe (Fig. 5F–I), while the aedeagus of *N. milleri* has a simpler arrangement of sclerites (Herman 1991: fig. 189).

Etymology

The name is derived from the Latin word '*elegans*', which means 'elegant' or 'tasteful'. It refers to the symmetry of the aedeagus in parameral view, particularly the straight angle between the median lobe apex and some apical sclerites. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus elegans* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Saül, 7 km N, 3 km NW, Les Eaux Claires, Mt. La *Fumée* trail, 230-400m [m a.s.l.]; 3°39'46''N, 53°13'19''W; 1 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 103; ex: fungusy log \\ SM0094312 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (5.2), H (0.42, 0.68), A (1.06), a1 (0.24, 0.08), a2 (0.06, 0.06), a3 (0.09, 0.06), a4 (0.07, 0.06), a5 (0.09, 0.6), a6 (0.08, 0.08), a7 (0.09, 0.08), a8 (0.08, 0.07), a9 (0.08, 0.08), a10 (0.08, 0.07), a11 (0.1, 0.08), NKW (0.31), GL (0.2), P (0.7, 0.8), E (0.92, 0.9), PC (0.3, 0.2), PF (0.5, 0.2), PT (0.2, 0.1), MSC (0.26, 0.2), MSF (0.7, 0.12), MST (0.54, 0.07), MTC (0.2, 0.25), MTF (0.6, 0.16), MTT (0.42, 0.08).

Colouration. Head and pronotum dark brown; legs brown; abdomen dark brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded; posterior angles rounded; setation with 1 pair of PCS, 1 row of PMS, and 2 long setae at neck junction. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 1 pair of PFS, without OS. Gena with depression around trichobothria, setation with 1 OT, MS, POS and PTOS; sockets of POS concave. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae close to gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 3, shorter than head and pronotum combined; antennomeres longer than wide; antennomeres 4–11 with tomentose pubescence; antennomere 1 as long as antenomeres 2 and 3 combined; antennomere 3 longer than 2. Labrum bilobed, with U-shaped emargination, with 2 dark thick seta in median line of labrum lobes (Fig. 5A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Metasternum with umbilicate micropunctuation in longitudinal rows, metasternal intercoxal process with pair of barely visible rounded processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 10–12 longitudinal rows (Fig. 5A; Supp. file 2).

Legs. Protibia with 3 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than 2, mesotarsomeres 3 and 4 as long as mesotarsomere 2, mesotarsomere 5 longer than 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 as long as 2, metatarsomere 3 shorter than 1 and as long as metatarsomere 4, metatarsomere 5 longer than metatarsomere 1.

Abdomen. *Male*: tergites with low-density random micropunctuation. Posterior margin of tergite VII slightly convex, almost straight (Fig. 5B). Posterior margin of sternite VII with wide midpoint emargination with straight angles, delimited by 2 long teeth-like processes with acute ends (Fig. 5C).

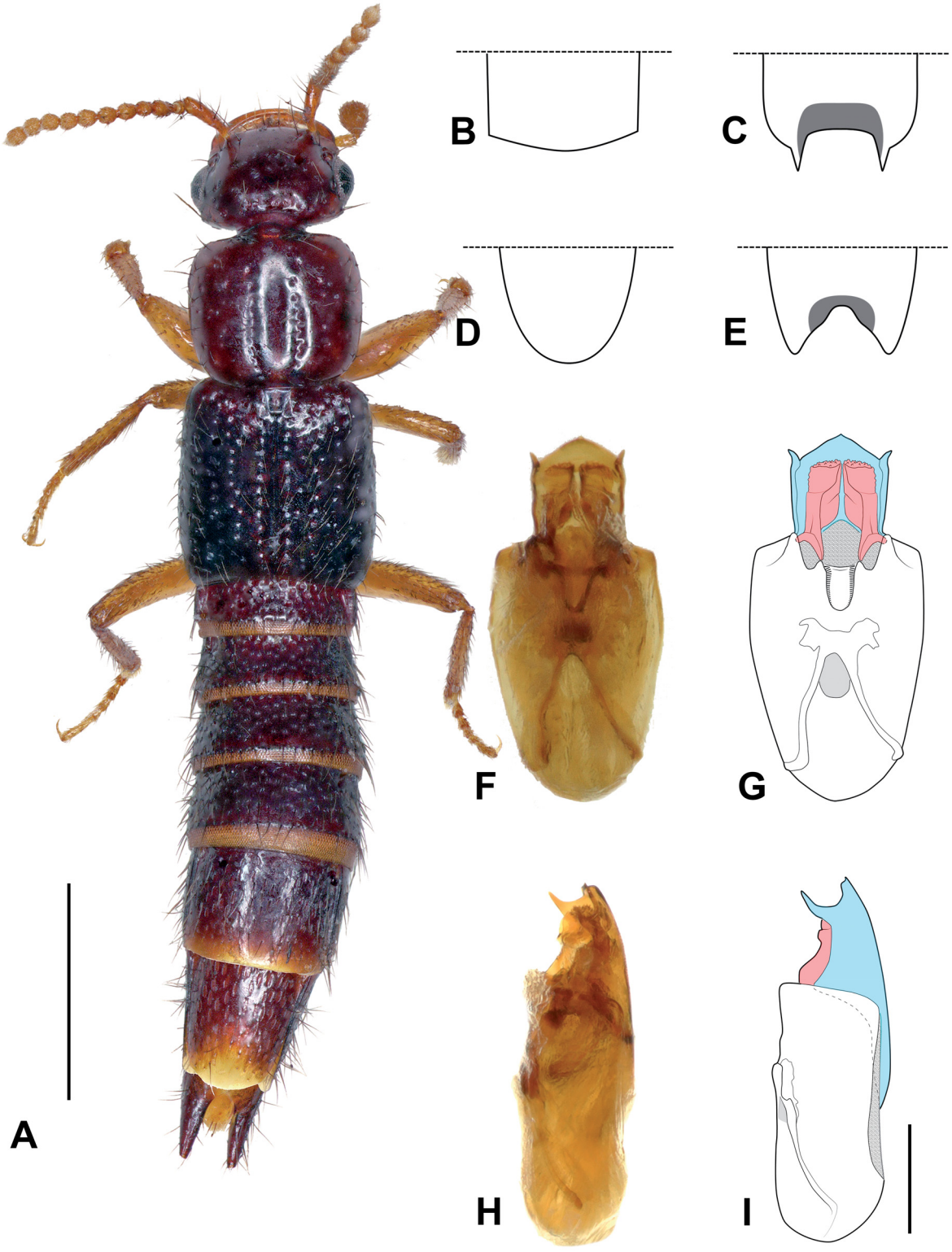

Fig. 5. *Neolindus elegans* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Posterior margin of tergite VIII with elongate rounded apex (Fig. 5D). Posterior margin of sternite VIII with midlongitudinal V-shaped emargination, lateral angles rounded (Fig. 5E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, median lobe vase-shaped, rounded at base, broadening towards apex; apex notched on parameral side with elongate median hole or cavity not reaching basal foramen elevation, apical part of median lobe with 2 pairs of processes near middle, as part of joint with movable pPMS. pPMS robust, of complex form, protruding upwards, shorter than APS, upper part curved on parameral side, with multiple small denticles on curved top. pLS small, oval, obscure, shorter than other apical sclerites. APS spoon-shaped, longer than pLS and pPMS, with central emargination having acute tip and 2 acute narrow short processes on sides (Fig. 5F–I). *Female*: unknown.

Distribution

The species is known only from the type locality in French Guyana (Saint-Laurent-du-Maroni, Saül). It was collected on Monts La Fumée between 230–400 m a.s.l. from fungus log.

Neolindus longithorax Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:39F8C257-B035-4DC9-8952-55AE96FC0E1D
Fig. 6; Supp. file 2

Diagnosis

Neolindus longithorax Guzman, Tokareva & Żyła sp. nov. resembles *N. bidens* in the structure of tergite VIII as well as the broader median lobe of the aedeagus. However, the posterior margin of tergite VIII in *N. longithorax* differs from that of *N. bidens* with a more prominent central lobe and less developed lateral lobes (Herman 1991: fig. 221; Fig. 6D). Additionally, the aedeagus of *N. longithorax* has narrower and more elongate median lobe without median hole, contrasting with robust and medially widened median lobe with distinct median hole on parameral side of aedeagus in *N. bidens* (Herman 1991: fig. 222; Fig. 6F–G).

Etymology

The specific epithet is a combination of Latin words '*longus*' meaning 'long' and '*thorax*' as an anatomical part of an insect and refers to relatively long thorax of this species. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus longithorax* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Saül, Galbao summit, 740 m [m a.s.l.]; 3°37'18''N, 53°16'42''W, 5–7 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 154; ex: flight intercept trap \\ SM0099826 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (9.4), H (0.57, 0.9), A (1.95), a1 (0.42, 0.1), a2 (0.15, 0.07), a3 (0.23, 0.07), a4 (0.15, 0.09), a5 (0.14, 0.09), a6 (0.15, 0.08), a7 (0.15, 0.07), a8 (0.14, 0.09), a9 (0.14, 0.09), a10 (0.13, 0.09), a11 (0.15, 0.09), NKW (0.43), GL (0.24), P (1.01, 1.02), E (1.48, 1.24), PC (0.38, 0.37), PF (0.8, 0.5), PT (0.63, 0.2), MSC (0.54, 0.32), MSF (0.9, 0.23), MST (0.66, 0.1), MTC (0.43, 0.37), MTF (1.04, 0.26), MTT (0.1, 1.08).

Colouration. Head brown; pronotum light brown; legs brown; elytra dark brown; abdomen brown.

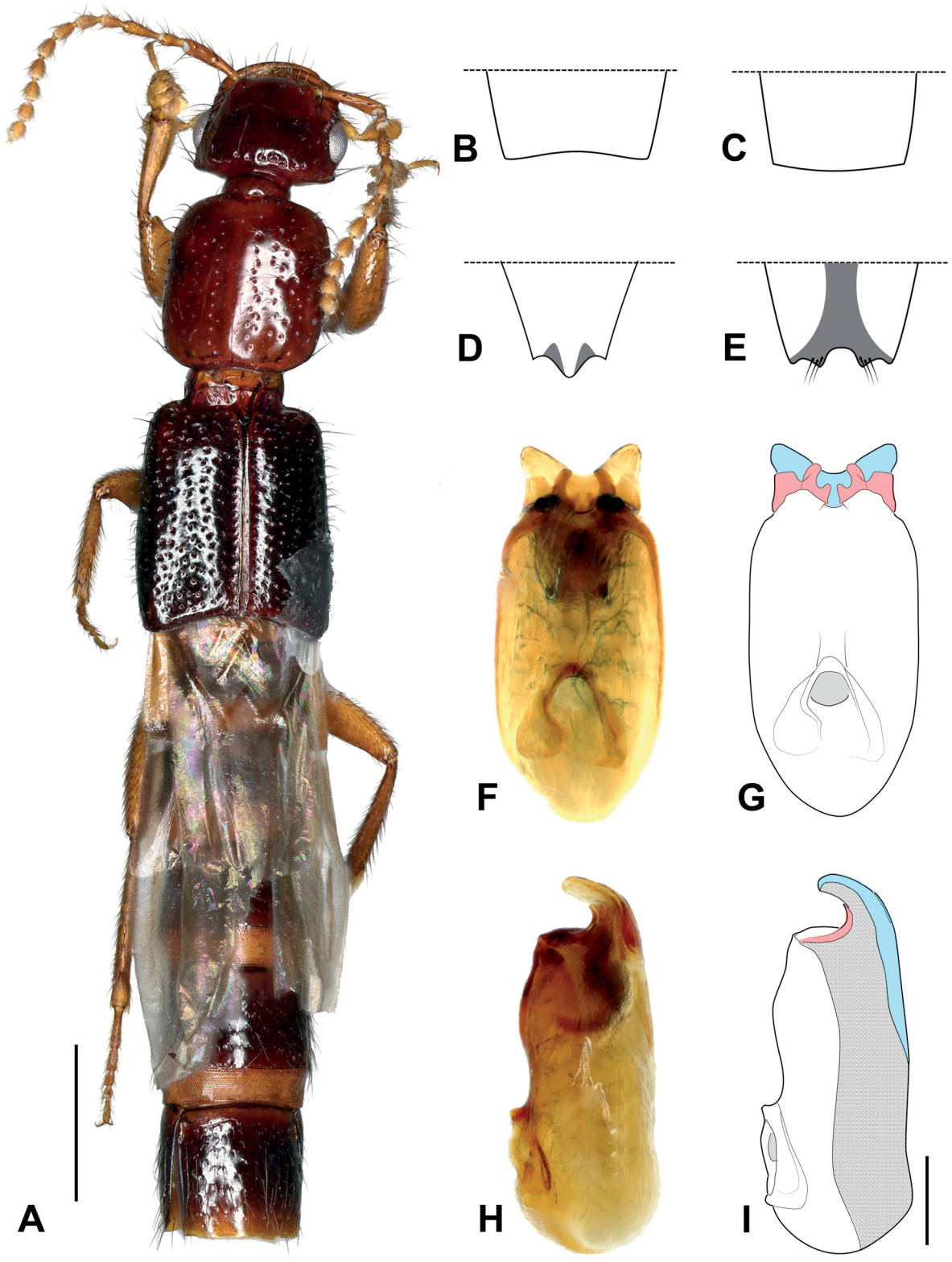

Fig. 6. *Neolindus longithorax* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded, with emargination in front of neck; posterior angles rounded; setation with 1 pair of PCS and 1 row of PMS. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 1 pair of PFS, without OS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, MS, POS, and PTOS; sockets of all setae umbilicate. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae near gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 4, longer than head and pronotum combined (Fig. 6A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with V-shaped emargination (Fig. 6A; Supp. file 2).

Thorax. Pronotum quadrate, with umbilicate randomly distributed micropunctures absent in medial longitudinal line. Metasternal intercoxal process with 1 pair of minute rounded processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 8–10 longitudinal rows (Fig. 6A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thick setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than 2, mesotarsomeres 3 and 4 as long as 2, mesotarsomere 5 longer than 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than metatarsomere 2, metatarsomeres 3 and 4 as long as metatarsomere 2, metatarsomere 5 longer than metatarsomere 1.

Abdomen. *Male*: tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite and sternite VII straight (Fig. 6B–C). Posterior margin of tergite VIII trilobed, with slightly triangular central lobe, lateral lobes less developed (Fig. 6D). Posterior margin of sternite VIII with midlongitudinal U-shape emargination; 2 lobes delimiting emargination with row of 5 dark setae; lateral angles slightly elevated (Fig. 6E). Posterior margin of tergite IX with midlongitudinal deep emargination in ½ of segment length; aedeagus, in parameral view, median lobe of uniform width along sides, slightly narrowing at base; apex with median emargination with elevated thinner disrupted edges laterally. pPMS of complex form, quadrate, flattened, shorter than APS. pLS not visible. APS spoon-like, flat, protruding upwards, with apex divided into 2 oval lobes (Fig. 6F–I). *Female*: unknown.

Distribution

This species is known only from the type locality in French Guiana (Saint-Laurent-du-Maroni, Saül, Mont Galbao). It was collected at a higher altitude, 740 m a.s.l., by a flight interception trap.

Neolindus luxipenis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:B0810A98-899B-46D2-8654-16AFB54371E1
Fig. 7; Supp. file 2

Diagnosis

Neolindus luxipenis Guzman, Tokareva & Żyła sp. nov. is most similar to *N. lirellus* and *N. brachiatus*. However, *N. luxipenis* differs from *N. lirellus* in sternite VII by the more pronounced central process of posterior margin, and tergite VIII, where the posterior margin is rounded (Fig. 7C–D; Herman 1991: figs 108–109, 111). In comparison to *N. brachiatus*, sternite VII of *N. luxipenis* has a central narrower emargination, with 2 protruded processes on each side and invaginated surface around emargination; in *N. brachiatus* central emargination is wider and the processes are less protruded (Fig. 7C; Herman 1991: fig. 101).

Etymology

The name combines the Latin word '*luxus*' for 'luxury' or 'extravagant' and '*penis*' which addresses the aedeagus here. It refers to an elaborate structure of aedeagus in the species. An adjective.

Type material

Holotype

BOLIVIA • ♂; "*Neolindus luxipenis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Cochabamba, Cochabamba, 67.5 km NE, Est. Biol. Valle de Sajita, Univ. de San Simon; 300 m [m a.s.l.]; 17°6'33''S, 64°47'52''W; 9–13 Feb 1999; F. Genier Leg.; BOL1G99 069; ex: light intercept trap \\ SM0173627 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratype

BOLIVIA • 1 ♂; "*Neolindus luxipenis* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ same data as for holotype \\ 7 Feb 1999; R. Anderson Leg.; BOL1A99 027; ex: rain forest litter \\ SM0169264 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (8.08), H (0.46, 0.7), A (1.08), a1 (0.25, 0.09), a2 (0.09, 0.06), a3 (0.14, 0.07), a4 (0.07, 0.07), a5 (0.01, 0.08), a6 (0.08, 0.09), a7 (0.09, 0.08), a8 (0.09, 0.08), a9 (0.08, 0.08), a10 (0.06, 0.09), a11 (0.12, 0.09), NKW (0.33), GL (0.21), P (0.78, 0.83), E (0.94, 0.91), PC (0.52, 0.27), PF (0.7, 0.34), PT (0.44, 0.12), MSC (0.34, 0.22), MSF (0.75, 0.17), MST (0.48, 0.08), MTC (0.36, 0.26), MTF (0.8, 0.22), MTT (0.69, 0.1).

Colouration. Head and pronotum brown; coxa, femur and tibia brown, tarsomeres light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded; setation with 1 pair of PCS, 1 row of PMS, and 2 long setae at neck articulation. Epicranial setation with 1 pair of FS and 2 pairs of PFS, without OS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, 1 pair of MS, POS and PTOS; sockets of MS umbilicate; sockets of POS concave. Postgena with row of 3 setae in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 1 seta on each side of gular sutures. Neck with foramen magnum occupying ⅔ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 7A), antennomeres 1–4, 6–8, and 11 longer than wide, antennomeres 5, 9, 10 wider than long; tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, emargination U-shaped, with 2 dark thick seta in median line of labrum lobes (Fig. 7A; Supp. file 2).

Thorax. Pronotum nearly quadrate, with umbilicate micropunctures and 2 distinct paramedial rows of setae; anterior margin slightly convex. Metasternal intercoxal process with 1 pair of obtuse processes. Elytron longer than wide, surface of elytra with umbilicate micropunctures in 5–7 moderately dense longitudinal rows (Fig. 7A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb composed of widely separated, thick setae; mesotibial apical ctenidium only on outer side; mesotarsomere 1 longer than 2, mesotarsomere 3 as long as 2, mesotarsomere 4 as long as 2, mesotarsomere 5 longer than 1; metatarsomere 1 longer than 2, metatarsomere 2 longer than 3, metatarsomere 3 as long as 4, metatarsomere 5 equal to metatarsomere 1.

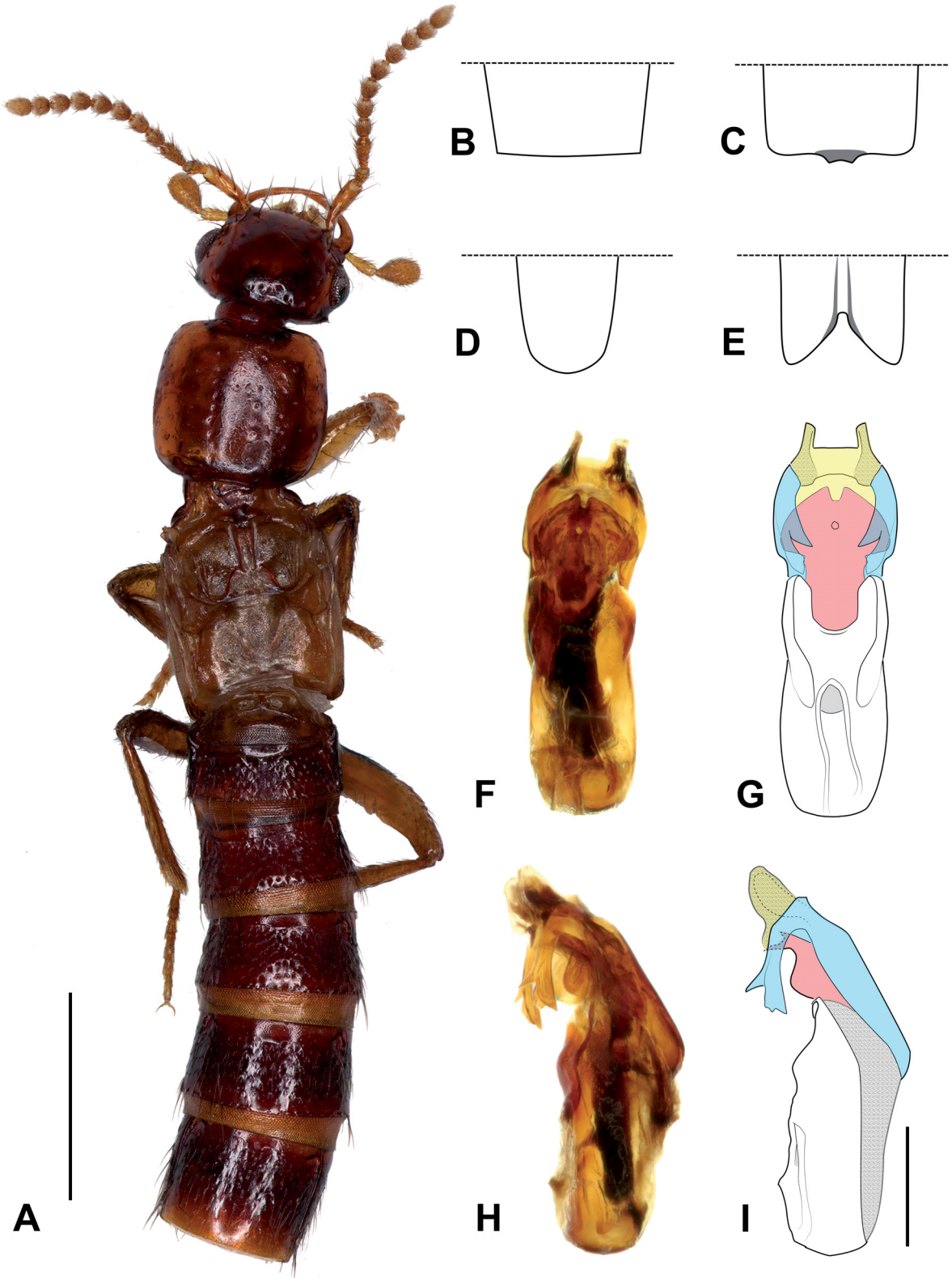

Fig. 7. *Neolindus luxipenis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Abdomen. *Male*: segments V–VII wider than III, IV, and VIII. Tergites III–VI with high density of micropunctuation; tergites VII and VIII with low density of micropunctuation, punctures randomly distributed. Posterior margin of tergite VII straight (Fig. 7B). Posterior margin of sternite VII with median tooth-like processes (Fig. 7C). Tergite VIII with 4 internal canals with carinated margins; 2 median canals forming quadrate area. Posterior margin of tergite VIII apically extended and rounded (Fig. 7D). Sternite VIII with broad midlongitudinal emargination covering ⅓ of segment length, starting as narrow and widening towards rounded lateral edges (Fig. 7E). Posterior margin of tergite IX with midlongitudinal deep emargination ½ of segment length, fused; aedeagus, median lobe with uniform width from base to apex, apex emarginate; pLS flat with rounded edges, expanded laterally and folded inward; APS complex with 2 processes, each process with 2 arms, apical arm acute, frontal arms bend downward and subdivided to long tooth and group of several small teeth at top of acute process; pPMS absent (Fig. 7F–I). *Female*: unknown.

Distribution

This species is known only from the type locality in Bolivia (Cochabamba, Cochabamba, Valle de Sajta Biological Station). It was collected at a lower altitude (300 m a.s.l.) using a flight interception trap.

Neolindus maya Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:C0B837AA-1976-4F78-80D3-C0DD7AC72E69
Fig. 8; Supp. file 2

Diagnosis

Habitus of *N. maya* sp. nov. resembles that of *N. punctogularis*, but these species are separated by characters of abdominal sclerites and the aedeagus. *N. maya* differs from *N. punctogularis* in the shape of the posterior margin of sternite VII, which narrows towards the apex with a moderately deep concave middle emargination in *N. maya* and oblique rest of the posterior margin on the sides of the emargination (Fig. 8C). In contrast, in *N. punctogularis*, the margin is straight and the emargination is bordered by wide rounded processes (Herman 1991: fig. 207). Moreover, *N. maya* differs in the shape of the posterior margin of sternite VIII with V-shaped emargination and a narrow elevated midlongitudinal invagination on the sternite (Fig. 8E), while *N. punctogularis* lacks the invagination (Herman 1991: fig. 205); in the shape of the posterior margin of tergite VIII, with the middle acute lobe longer than the 2 lateral acute lobes (Fig. 8D), in contrast to all lobes almost equal in length in *N. punctogularis* (Herman 1991: fig. 206); and in a different shape of the median lobe of the aedeagus, as well as apical arms of pPMS (Herman 1991: fig. 204; Fig. 8F–G).

Etymology

The name honours the Maya communities that inhabit the type locality in Mexico. A noun in apposition.

Type material

Holotype

MEXICO • ♂; "*Neolindus maya* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Chiapas, Najá; 16°58.450'N, 91°35.155'W; 950 m [m a.s.l.]; 14 Jul 2007; J. Longino Leg.; ex. winkler, montane wet forest leaf litter; LLAMA07 JTL6047-s \\ SM0787486 KUNHM-ENT [barcode] \\ *Oedichirus* M.K. Thayer det. 2017"; KUNHM-ENT.

Description

Measurements. BL (10.07), H (0.75, 1.38), A (2.62), A1 (0.53, 0.14), A2 (0.16, 0.09), A3 (0.27, 0.97), A4 (0.24, 0.09), A5 (0.23, 0.09), A6 (0.22, 0.09), A7 (0.21, 0.12), A8 (0.22, 0.08), A9 (0.2, 0.1), A10 (0.18, 0.11), A11 (0.18, 0.1), NKW (0.62), GL (0.4), P (1.3, 1.67), E (2.02, 2.18), PC (0.69, 0.36),

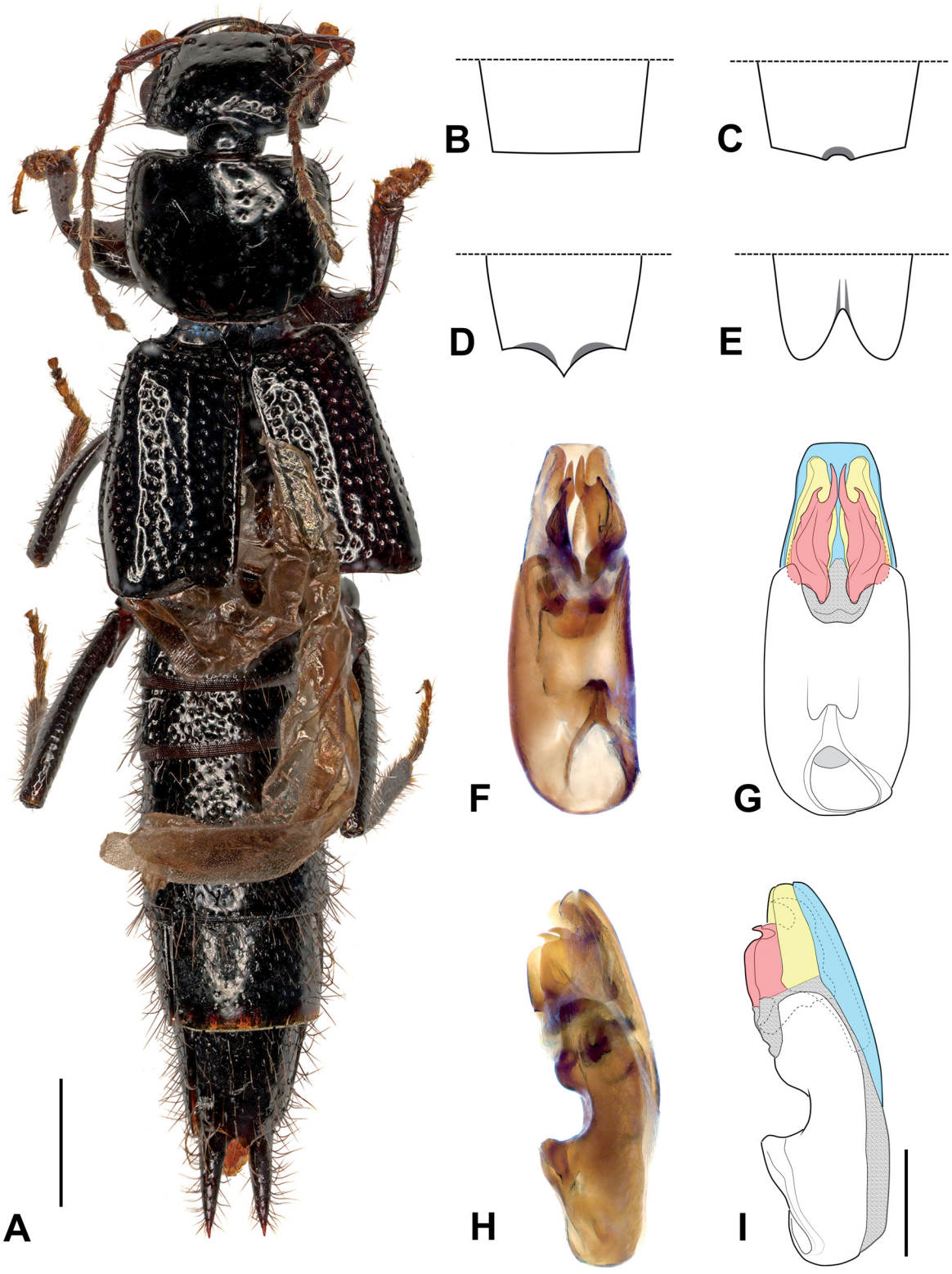

Fig. 8. *Neolindus maya* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes, **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus, **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

PF (1.1, 0.58), PT (0.71, 0.2), MSC (0.56, 0.37), MSF (1.5, 0.34), MST (0.18, 0.12), MTC (0.62, 0.77), MTF (1.61, 0.35), MTT (1.61, 0.15).

Colouration. Shiny black body and appendages; abdominal intersegmental membrane between segments III and IV dark brown, rest black.

Head. Head capsule wider than long; anterior margin straight; posterior margin rounded, with emargination in front of neck; posterior angles straight; setation with 1 pair of PCS and 1 row of PMS. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 2–3 pairs of PFS in rows parallel to FS, without OS. Gena with irregular surface, with depression from mandibular base to posterior margin of head; setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 3 setae in line from eye to gular suture; gular sutures not reaching posterior margin of head; anterior part of gula with irregular row of 6–8 setae. Neck with foramen magnum occupying ¾ of occiput. Antenna thin, longer than head and pronotum combined (Fig. 8A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with V-shaped emargination (Fig. 8A; Supp. file 2).

Thorax. Pronotum wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Prosternum with superior marginal line parallel to anterior margin. Metasternal intercoxal process with 1 pair of rounded processes. Elytron wider than long, surface of elytra with moderately dense umbilicate punctures in 10–11 longitudinal rows (Fig. 8A; Supp. file 2).

Legs. Protibia with 5–6 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; metatibial apical ctenidium on both sides, inner longer than outer; metatarsomere 1 longer than 2, metatarsomere 2 longer than 3, metatarsomere 3 longer than 4, metatarsomere 5 as long as 2.

Abdomen. *Male*: tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite VII straight (Fig. 8B). Posterior margin of sternite VII with moderate midline emargination bordered by rounded processes (Fig. 8C). Posterior margin of tergite VIII trilobed, median lobe wide with triangle tip, lateral lobes narrow (Fig. 8D). Posterior margin of sternite VIII with midlongitudinal V-shaped emargination ¼ of segment length, lateral angles rounded (Fig. 8E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, in parameral view, median lobe of even width, apex with moderately deep emargination. pPMS elongate, robust, with 2 acute apical arms bent inwards; arm closer to median foramen longer than arm closer to parameral side. pLS thin, with net-like microsculpture, forming elongate flat processes equal in length to pPMS and slightly longer than APS. APS spoon-shaped, with blunt top, wider than pLS (Fig. 8F–I). *Female*: unknown.

Distribution

The species is known only from the type locality in Mexico (Chiapas, Laguna Naja). It sets the northernmost border of the distribution for the genus. It was collected at the altitude of 950 m a.s.l. in the montane wet forest by sifting leaf litter and using a Winkler extractor.

Neolindus minutus Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:D5782A9D-41EE-4C22-93EB-31655E31E39B
Fig. 9; Supp. file 2

Diagnosis

Neolindus minutus Guzman, Tokareva & Żyła sp. nov. and *N. bullus* are the smallest species in the genus with body length no longer than 4 mm. Both species have the same shape of the posterior margin of sternite VIII with U-shaped median emargination, but it is deeper in *N. minutus* (Herman 1991: fig. 154; Fig. 9E). Other differences are in the shape of the posterior margin of tergite VIII, which is rounded in *N. minutus* (Fig. 9D), but emarginated in *N. bullus* (Herman 1991: fig. 157). Furthermore, aedeagus in

N. minutus has a different form of median lobe as well as structure and composition of apical sclerites (Herman 1991: fig. 156; Fig. 9F–G).

Etymology

The Latin epithet '*minutus*' means 'very small, little, minute' and describes the noticeably smaller size of this species of *Neolindus* compared with others. An adjective.

Type material

Holotype

GUYANA • ♂; "*Neolindus minutus* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Region 8, Iwokrama Forest, 1 km W Kurupukari, Iwokrama Field Stn [Station]; 60 m [m a.s.l.]; 4°40'19''N, 58°41'4''W; 21 MAY 2001, R. Brooks, Z. Falin, GUY1BF01 005 ex: *Acromyrmex hystrix* refuse pile \\ SMO568781 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

ECUADOR • 1 ♀ ; "*Neolindus minutus* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Napo, Yuturi Longe, Rio Napo; 270 m; 0°32'54''S, 76°02'18''W; 20–21 Mar 1999; R. Brooks, D. Brzoska Leg.; ECU1B99 010; ex: flight interception trap \\ SM0153469 KUNHM-ENT [barcode]"; KUNHM-ENT.

FRENCH GUIANA • 1 ♀; "*Neolindus minutus* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Saül, 7 km N, 0.5 km ESE, Les Eaux Claires, Mt. La Fumée; 3°39'46''N, 53°13'19''W; 300 m; 4–8 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 164; ex: flight interception trap \\ SM0134044 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; "Roura, 39.4 km SSE; 270 m; 4°32'43''N, 52°8'26''W; 25–29 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 076; ex: flight interception trap \\ SM0131319 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; "27.4 km SSE; 280 m; 4°44'20''N, 52°13'25''W; 25–29 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 079; ex: flight interception trap \\ SM0101388 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "FG1AB97 177; ex: \\ SM0133995 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "Cayenne, 33.5 km S and 8.4 km NW of HWY N2 on HWY D5; 30 m; 4°48'18''N, 52°28'41''W; 25–29 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 171; ex: flight interception trap \\ SM0131037 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "Saül, 7 km N, Les Eaux Claires; 220 m; 3°39'46''N, 53°13'19''W; 30 May–4 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 143B; ex: flight interception trap \\ SM0099466 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "Roura, 39.4 km SSE; 270 m; 4°32'43''N, 52°8'26''W; 29.May–10 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 172; ex: flight interception trap \\ SM0099394 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; same data as for preceding; "FG1AB97 076 \\ SM0131322 KUNHM-ENT [barcode]"; KUNHM-ENT.

GUYANA • 1 ♀; same data as for holotype; "PARATYPE [yellow label] \\ GUY1BF01 034 \\ SM0566025 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 034 \\ SM0567438 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 034 \\ SM05661128 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 034 \\ SM0566308 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 034 \\ SM0565913 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 034 \\ SM0567446 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 146 \\ SM0567615 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for holotype; "GUY1BF01 097 \\ SM0570780 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; same data as for holotype; "GUY1BF01 034 \\ SM0566193 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; same data as for holotype; "GUY1BF01 034 \\ SM05661153 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; same data as for holotype; GUY1BF01 034 \\ SM056663 KUNHM-

ENT [barcode]"; KUNHM-ENT • 1 ♂; "Kabocalli Field Stn [Station]; 3–5 Jun 2001; GUY1BF01 146 \\ SM0567596 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "Turtle Mt. [Mountains] Summit; 290 m; 4°43'57''N, 58°44'1''W; 30 May–1 Jun 2001; GUY1BF01 09 \\ SM0570865 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♂; "Kabocalli Field Stn; 60 m; 21 May 2001; GUY1BF01 005; ex: *Acromyrmex* sp. \\ SM0568401 KUNHM-ENT [barcode]"; KUNHM-ENT.

NICARAGUA • 1 ♀; "Rio San Juan Dept. [Departamento], 60 km SE San Carlos, Refugio Bartola; 100 m; 10°58'52.5"N, 84°20'08.9"W; 25–28 May 2002; R. Brooks, Z. Falin, S. Chatzimanolis Leg.; ex: flight interception trap; NIC1BFC02 112 \\ SM0555340 KUNHM-ENT [barcode]" • 1 ♀; same data as for preceding "NIC1BFC02 112 \\ SM0540900 KUNHM-ENT [barcode]" • 1 ♀; same data as for preceding; "NIC1BFC02112 \\ SM0540901 KUNHM-ENT [barcode]"; KUNHM-ENT.

PERU • 1 ♀; "Madre de Dios, Concha Cashu Bio. Stn [Biological Station], Manu National Park; 350 m; 11°53'45''S, 71°24'24''W; 17–19 Out 2000; R. Brooks Leg.; PERU1B00 042; ex: flight interception trap \\ SM0210599 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; "Concha Salvador, Reserved Zone Manu National Park; 310 m; 12°0'13''S, 71°31'36''W; 20–21 Out 2000; R. Brooks Leg.; PERU1B00 070; ex: flight interception trap \\ SM0210838 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; "Pantiacolla Lodge, Alto Madre de Dios River; 400 m; 12°39'22''S, 71°13'55''W; 23–26 Out 2000; R. Brooks Leg.; PERU1B00 099; ex: flight interception trap \\ SM0210824 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (2.65), H (0.3, 0.3), A (0.65), A1 (0.09, 0.03), A2 (0.31, 0.02), A3 (0.03, 0.03), A4 (0.03, 0.04), A5 (0.04, 0.05), A6 (0.04, 0.05), A7 (0.04, 0.06), A8 (0.04, 0.06), A9 (0.04, 0.06), NKW (0.20), GL (0.1), P (0.43, 0.44), E (0.54, 0.46), PC (0.25, 0.13), PF (0.29, 0.1), PT (0.13, 0.08), MSC (0.17, 0.09), MSF (0.26, 0.07), MST (0.21, 0.06), MTC (0.13, 0.1), MTF (0.27, 0.09), MTT (0.21, 0.06).

Colouration. Head and pronotum brown, legs light brown, abdomen brown.

Head. Head capsule nearly as wide as long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded, with emargination in front of neck; posterior angles rounded; setation with 1 pair of PCS and 2 pairs of PMS, central and distal. Epicranium shiny, without micropunctuation, setation with 1 pair of FS, without OS and PFS. Gena with irregular surface, with depression from mandibular base to posterior margin of head, setation with 1 OT, MS, and POS. Sockets of MS and POS umbilicate, socket of OT oval, narrowed anteriorly. Postgena with 1 seta in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae near gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 9A); antennomeres 1 and 2 longer than wide; antennomeres 3–9 wider than long; antennomeres 10–11 longer than wide, tomentose pubescence starting from antennomere 5; antennomere 1 shorter than antennomeres 2 and 3 combined. Labrum slightly bilobed (Fig. 9A, Supp. file 2).

Thorax. Pronotum quadrate, with umbilicate micropunctures, setation with 1 pair of setae in middle of dorsal side and 1 pair of setae in posterior third part of dorsal side; anterior margin slightly convex with anterior angles rounded; posterior margin rounded and slightly emarginate, posterior angles rounded. Metasternal intercoxal process with 1 pair of acute processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 4–5 longitudinal rows (Fig. 9A; Supp. file 2).

Legs. Protibia with 2 well-developed combs of setae; mesotibial apical ctenidium with spines; mesotarsomere 1 longer than 2, mesotarsomeres 3 and 4 as long as 2, mesotarsomere 5 longer than 1;

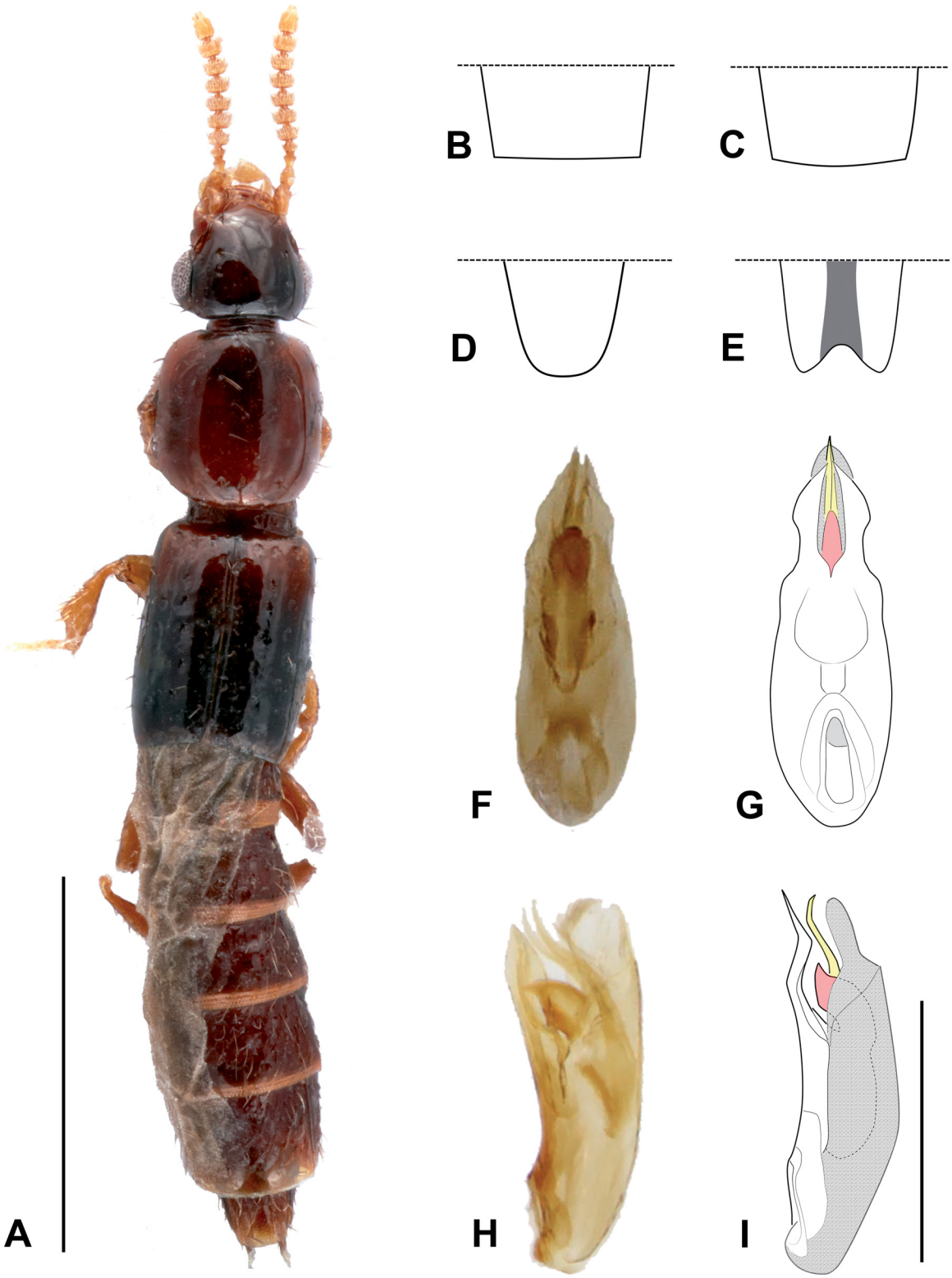

Fig. 9. *Neolindus minutus* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

metatarsomere 1 as long as 2, metatarsomeres 3 and 4 as long as metatarsomere 2, metatarsomere 5 longer than 1.

Abdomen. Tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite and sternite VII straight (Fig. 9B–C). Posterior margin of tergite VIII apically rounded (Fig. 9D). *Male*: posterior margin of sternite VIII with midlongitudinal U-shaped emargination, ⅓ of segment length, lateral angles rounded (Fig. 9E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, median lobe widened in first half, narrowed to apex; with wide oval median invagination above basal foramen; apex of lobe with 2 spoon-shaped flattened lobes with acute tips and rounded lateral edges, joined with U-shape emargination. pPMS fused in conical structure folding inside median foramen. pLS long, narrow, acute, curved. APS absent, antiparameral side membranous, with bilobed cover folding pLS (Fig. 9F–I). *Female*: lack of emargination on abdominal segments VIII and IX.

Distribution

The species is known from the type locality in Guyana (Region 8, Potaro-Siparuni, Iwokrama Field Station), and several other countries, i.e., Ecuador (Napo, El Eden), French Guiana (Cayenne, Montsinery-Tonnegrande; Regina-Kaw; Roura, Roura; Saül, Cambrouze), Nicaragua (Rio San Juan, El Bambu), Peru (Madre de Dios, Fitzcarrald District and Itahuania). The holotype has a note that it was collected from the *Acromyrmex hystrix* (Latreille, 1802) refuse pile. One paratype specimen was also collected near ants from the same genus (*Acromyrmex* Mayr, 1865), while the others by using a flight interception trap.

Neolindus napo Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:43C4CAA7-3DC0-4835-92DA-252113D9E6AF
Fig. 10; Supp. file 2

Diagnosis

Similar to *N. apiculus* and *N. campbelli* in the shape of the posterior margin of sternite VIII and tergite VIII. However, *N. napo* Guzman, Tokareva & Żyła sp. nov. differs from these species by the different structure of apical sclerites of aedeagus, especially, by much larger bifid protruding APS (Herman 1991: figs 170, 174; Fig. 10F–G).

Etymology

The epithet ‘napo’ is derived from the toponym of the type locality near the Napo River basin in Ecuador. A noun in apposition.

Type material

Holotype

ECUADOR • ♂; “*Neolindus napo* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ ECUADOR: Sucumbíos, Sacha Lodge; 0.5° S, 76.5° W; 270 m [m a.s.l.]; 13–25 Jul 1994; Hibbs Leg.; ex: malaise \\ SM0019856 KUNHM-ENT [barcode]”; KUNHM-ENT.

Paratypes

ECUADOR • 1 ♂; “*Neolindus napo* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ same data as for holotype \\ SM0024346 KUNHM-ENT [barcode] \\ *Neolindus* spp. Det. J.S. Ashe 1996”; KUNHM-ENT.

SURINAME • 1 ♂; “*Neolindus napo* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Saramacca, West Suriname Road, 178 km WSW, Zaderij Airport; 25 m; 4°59’6’’N, 56°18’48’’W; 12–14

Jun 1999; Z. H. Falin, B. DeDijin Leg.; SUR1F99 073; ex: flight intercept trap \\ SM0175295 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (5.67), H (0.3, 0.64), A (1.73), A1 (0.24, 0.07), A2 (0.1, 0.06), A3 (0.13, 0.06), A4 (0.09, 0.06), A5 (0.08, 0.06), A6 (0.63, 0.09), A7 (0.09, 0.07), A8 (0.09, 0.07), A9 (0.08, 0.06), A10 (0.08, 0.06), A11 (0.11, 0.07), NKW (0.30), GL (0.2), P (0.74, 0.81), E (1.08, 0.84), PC (0.44, 0.21), PF (0.54, 0.24), PT (0.27, 0.11), MSC (0.38, 0.22), MSF (0.68, 0.18), MST (0.54, 0.07), MTC (0.39, 0.24), MTF (0.54, 0.2), MTT (0.56, 0.08).

Colouration. Head and pronotum brown; legs light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded, with emargination in front of neck; posterior angles rounded; setation with 1 pair of PCS and 1 row of PMS. Epicranium shiny, without micropunctuation, setation with 1 pair of FS and 2 pairs of PFS, without OS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, IOS, MS, and POS. Sockets of MS and POS umbilicate. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae near gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, longer than head and pronotum combined (Fig. 10A); antennomeres longer than wide, antennomeres 3–11 with tomentose pubescence; antennomere 1 shorter than antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with U-shaped emargination (Fig. 10A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Prosternum with superior marginal line parallel to anterior margin. Metasternal intercoxal process with 1 pair of acute processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 8–9 longitudinal rows (Fig. 10A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thick setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than 2, metatarsomeres 3 and 4 as long as 2, mesotarsomere 5 longer than 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than 2, metatarsomeres 2, 3 and 4 equal, metatarsomere 5 as long as metatarsomere 1.

Abdomen. *Male*: tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite VII straight (Fig. 10B). Posterior margin of sternite VII sinuate (Fig. 10C). Posterior margin of tergite VIII apically rounded (Fig. 10D). Posterior margin of sternite VIII with midlongitudinal glabrous depression and midpoint U-shaped emargination, 1/5 of segment length, lateral angles rounded (Fig. 10E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, in parameral view, median lobe widest at middle, with pair of oval invaginations on sides from basal foramen to apex of lobe, apex of median lobe with 2 flattened processes. pPMS of complex form, with 2 pairs of acute triangular arms protruding towards parameral side. pLS longer than pPMS and APS, fused into plate on parameral side, with 2 acute flat triangular elongate arms bent towards parameral side. APS flat, with 2 long arms with rounded tips aligned with pLS (Fig. 10F–I). *Female*: unknown.

Distribution

This species is known from the type locality in Ecuador (Sucumbíos, Shushufindi), and Suriname (Sipaliwini, Kabalebo). It was collected at low altitudes between 25 to 270 m a.s.l. using Malaise and flight interception traps.

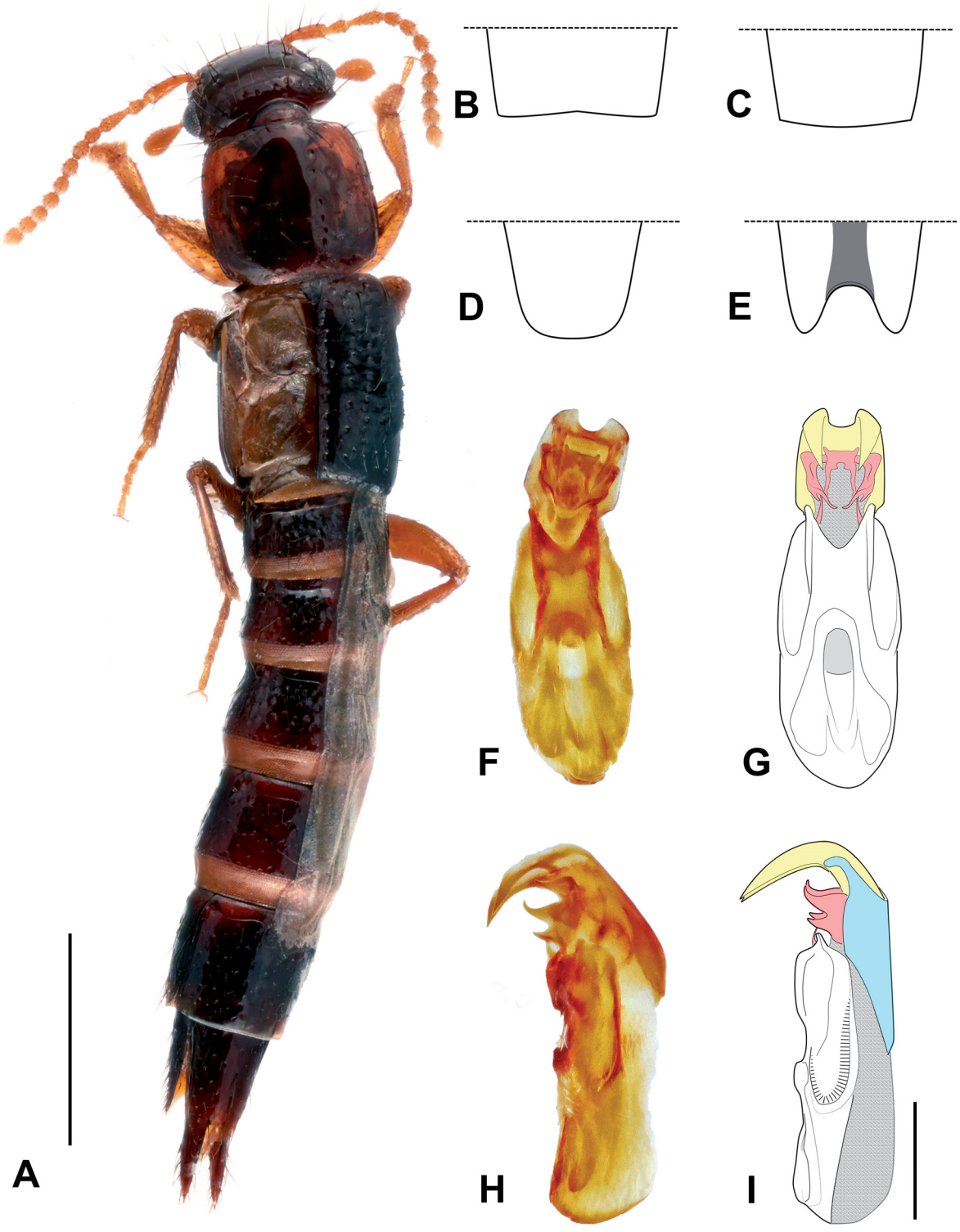

Fig. 10. *Neolindus napo* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Neolindus niger Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:574C159C-8F90-43B7-981D-66215377F07B
Figs 2B, 11; Supp. file 2

Diagnosis

The unusual head chaetotaxy of this species including 2 pairs of PCS, the morphology of abdominal apical sclerites, and the aedeagus make this species similar to *N. punctogularis*. *Neolindus niger* Guzman, Tokareva & Żyła sp. nov. differs from it by the shiny black colouration of the head and pronotum (brown in *N. punctogularis*) and the presence of setae and paired long midlongitudinal invagination anteriorly to the emargination of abdominal sternite VIII (absent in *N. punctogularis*) (Herman 1991: fig. 205; Fig. 11E).

Etymology

The name is a Latin adjective '*niger*' which means 'shiny black' and refers to the colouration of specimens.

Type material

Holotype

COSTA RICA • ♂; "*Neolindus niger* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Punta. Prov. Rincon de Osa, 50m [m a.s.l.]; 8°41.141'N, 83°31.117'W; 23–26 Jun 2001; S. & J. Peck Leg.; 01-13; ex FIT; CR1P01 005 \\ SM0551715 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratype

COSTA RICA • 1 ♂; "*Neolindus niger* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Puntarenas, Corcovado National Park, Sirena Stn. Corcovado Trail, 150m [m a.s.l.]; 8°29'7''N, 83°34'39''W; 28 Jun–1 Jul 2000; Z. H. Falin Leg.; CR1ABF00 059; ex flight intercept trap \\ SM0203548 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (11.76), H (0.95, 1.24), A (2.91), a1 (0.56, 0.13), a2 (0.17, 0.09), a3 (0.3, 0.12), a4 (0.25, 0.08), a5 (0.27, 0.09), a6 (0.28, 0.11), a7 (0.27, 0.07), a8 (0.25, 0.71), a9 (0.19, 0.08), a10 (0.18, 0.1), a11 (0.19, 0.08), NKW (0.60), GL (0.4), P (1.36, 1.65), E (2.01, 1.67), PC (0.73, 0.26), PF (1.28, 0.49), PT (0.9, 0.23), MSC (0.63, 0.39), MSF (1.27, 0.37), MST (1.12, 0.14), MTC (0.53, 0.26), MTF (1.28, 0.29), MTT (1.64, 0.14).

Colouration. Head and pronotum dark brown; coxa and femur dark brown, tibia and tarsomeres light brown; abdomen dark brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin straight with emargination in front of neck; posterior angles straight; setation with 2 pairs of PCS, PMS setae in single row. Epicranium with dense micropunctuation, setation with 1 pair of FS, 1 pair of OS and 2 pairs of PFS. Gena with irregular surface, with depression from mandibular base to middle of eye, with 1 OT; socket of mandibular seta umbilicate, sockets of POS concave. Postgena with row of 3 setae in line from eye to gular suture and 1 seta parallel to PTOS on each side; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula with irregular row of 6–8 setae. Neck with foramen magnum occupying ½ of occiput. Antenna thin and elongate, longer than head and pronotum combined (Fig. 11A); antennomeres longer than wide; tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with V-shaped emargination and 2 dark thick setae in median line of lobes (Fig. 11A; Supp. file 2).

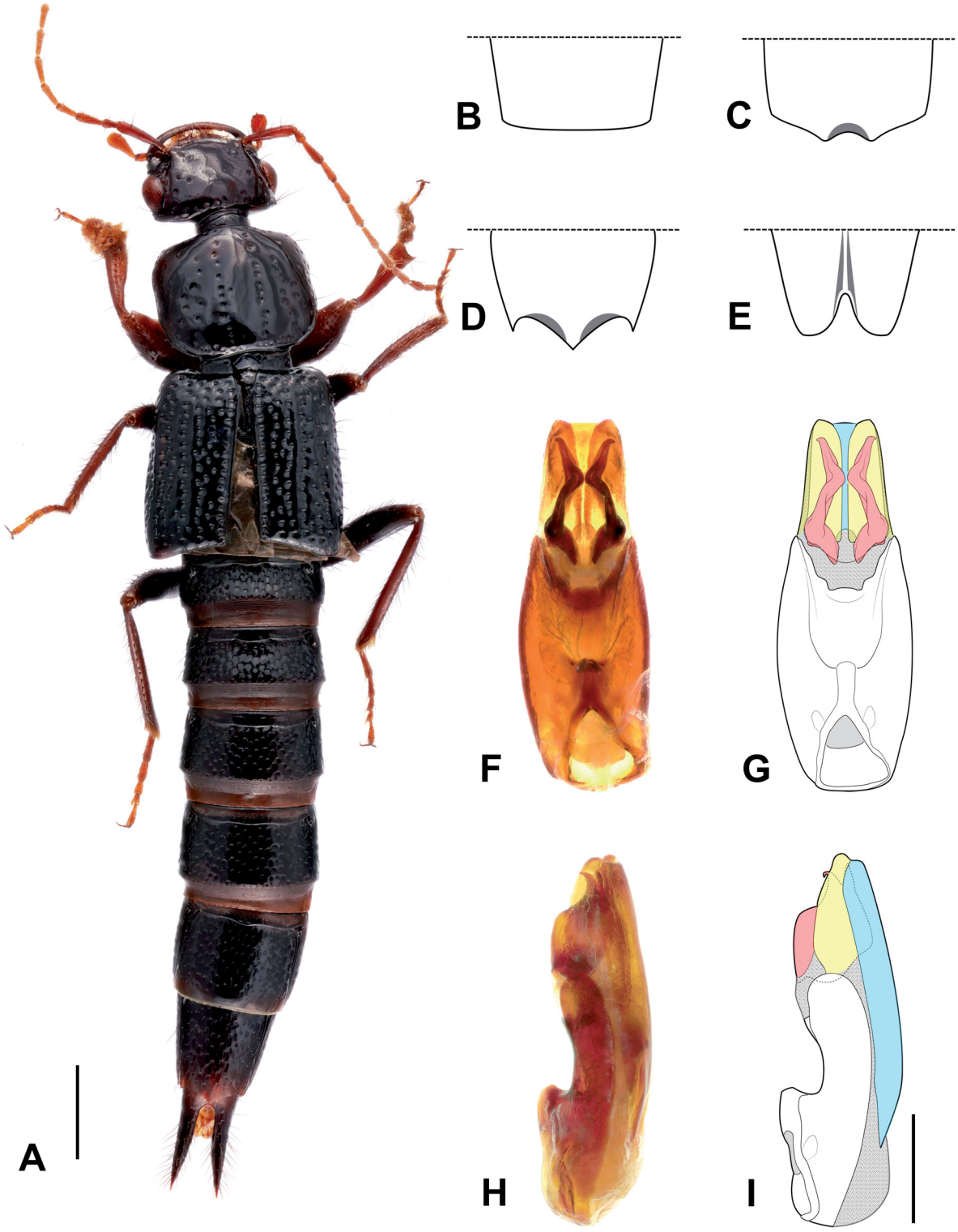

Fig. 11. *Neolindus niger* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

Thorax. Pronotum slightly wider than long. Basisternum of prosternum with row of 8 setae on anterior margin. Metasternal intercoxal process with 1 pair of rounded processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 8–10 longitudinal rows (Fig. 11A; Supp. file 2).

Legs. Protibia with 5 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 equal to mesotarsomere 2, mesotarsomere 3 shorter than 1 and as long as 4, mesotarsomere 5 longer than 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than 2, metatarsomere 2 longer than 3, metatarsomere 4 equals 3, metatarsomere 5 equals 2.

Abdomen. *Male*: tergites III–VI with high density of micropunctuation, tergites VII and VIII with low density of micropunctuation. Tergite VII with posterior margin straight (Fig. 11B). Sternite VII with posterior margin moderately emarginate, bordered by obtuse distinct processes (Fig. 11C). Tergite VIII with posterior margin trilobed, central lobe triangular, apically acute; lateral lobes slightly acute (Fig. 11D). Sternite VIII posterior margin with broad emargination; with pair of midlongitudinal invaginations on sides of flat elevation in middle (Fig. 11E). Tergite IX with posterior margin deeply emarginated to ¾ of segment length (Fig. 11A; as in Herman 1991: fig. 137); aedeagus, median lobe medially widened, apex with deep emargination bordered by rounded processes; pLS thin, with net-like microsculpture, forming elongate flat processes; APS spoon-shaped, with rounded apical edge; pPMS sickle-like, wider than long in lateral view; apical arm closer to parameral side, bent towards it, apical arm closer to antiparameral side, straight (Fig. 11F–I). *Female*: unknown.

Distribution

This species is known from the type locality in Costa Rica (Puntarenas, Rincon de Osa) and Corcovado National Park (Puntarenas). It was collected in a cloud forest at a low altitude using flight interception trap.

Neolindus ornatus Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:C9A162F2-2A4E-490A-842A-36D00DE02441
Figs 2A, 12; Supp. file 2

Diagnosis

Neolindus ornatus Guzman, Tokareva & Żyła sp. nov. is similar to *N. cuneatus* in sternite and tergite VIII (Fig. 12C, D and figs 177, 178 in Herman 1991, respectively). However, *N. ornatus* has longer pPMS and longer, bifid pLS of aedeagus than *N. cuneatus* (Herman 1991: fig. 179; Fig. 12F–I).

Etymology

The name is derived from the Latin word '*ornatus*' meaning 'adorned' or 'equipped', referring to the complex structure of the aedeagus. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus ornatus* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Matoury, 41.5 km SSW on HWY N2; 4°37'22''N, 52°22'35''W; 50 m [m a.s.l.]; 29 May–9 Jun 1997, J. Ashe, R. Brooks Leg.; FG1AB97 170; ex: light intercept trap \\ SM0100511 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

FRENCH GUIANA • 1 ♂; "*Neolindus ornatus* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Matoury, 41.5 km SSW on HWY N2; 4°37'22''N, 52°22'35''W, 50 m; 29 May–9 Jun 1997, J. Ashe, R. Brooks Leg.; FG1AB97 170 ex: flight intercept trap \\ [barcode] SM0100507 KUNHM-

ENT"; KUNHM-ENT • 1 ♂; "Cayenne, 33.5 km S and 8.4 km NW of Hwy N2 on Hwy D5; 4°48'18''N, 52°28' 41''W; 30 m; 26–28 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 059 ex: flight intercept trap \\ [barcode] SM0099850 KUNHM-ENT"; KUNHM-ENT.

Description

Measurements. BL (7.3), H (0.48, 0.79), A (1.31), A1 (0.3, 0.09), A2 (0.05, 0.06), A3 (0.13, 0.06), A4 (0.09, 0.06), A5 (0.1, 0.06), A6 (0.01, 0.07), A7 (0.12, 0.07), A8 (0.11, 0.07), A9 (0.11, 0.08), A10 (0.11, 0.09), A11 (0.17, 0.09), NKW (0.40), GL (0.2), P (0.89, 0.91), E (1.16, 0.96), PC (0.41, 0.26), PF (0.69, 0.26), PT (0.32, 0.12), MSC (0.44, 0.24), MSF (0.82, 0.19), MST (0.47, 0.09), MTC (0.46, 0.33), MTF (0.75, 0.22), MTT (0.65, 0.11).

Colouration. Whole body and appendices brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded, with emargination in front of neck; posterior angles rounded, setation with 1 pair of PCS, 1 row of PMS, and longer setae near posterior margin before neck. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 2 pairs of PFS, without OS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 1 or 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae near gular sutures. Neck with foramen magnum occupying ⅔ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 12A); antennomeres longer than wide, tomentose pubescence from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with U-shaped emargination (Fig. 12A; Supp. file 2).

Thorax. Pronotum quadrate, with umbilicate randomly distributed micropunctures. Metasternal intercoxal process with 1 pair of acute processes, joining medially in U-like invagination. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 10–11 longitudinal rows (Fig. 12A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thick setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 as long as 2, mesotarsomere 3 equals to 4, shorter than 2, mesotarsomere 5 longer than 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than 2, metatarsomeres 3 and 4 as long as metatarsomere, metatarsomere 5 as long as metatarsomere 1.

Abdomen. *Male*: tergites with low-density micropunctuation. Posterior margin of tergite VII straight (Fig. 12B). Posterior margin of sternite VII slightly emarginated, with small midpart invagination (Fig. 12C). Posterior margin of tergite VIII truncate (Fig. 12D). Posterior margin of sternite VIII with midlongitudinal V-shape emargination, with elevated area in midpart (Fig. 12E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length, divided; aedeagus, in parameral view, median lobe basally narrower, and wider in middle, apex deeply invaginated, with prominent sclerotised rounded processes on each side; foramen triangular, with round angles; APS not visible; pLS flattened with 2 arms, apical arm, curving towards non-parameral side, ending in acute tip, basal arm projecting to parameral side ending as acute tip; pPMS flattened with 2 arms, apical arm tapering to end as acute tip, basal arm projects in parameral side with rounded end (Fig. 12F–I). *Female*: unknown.

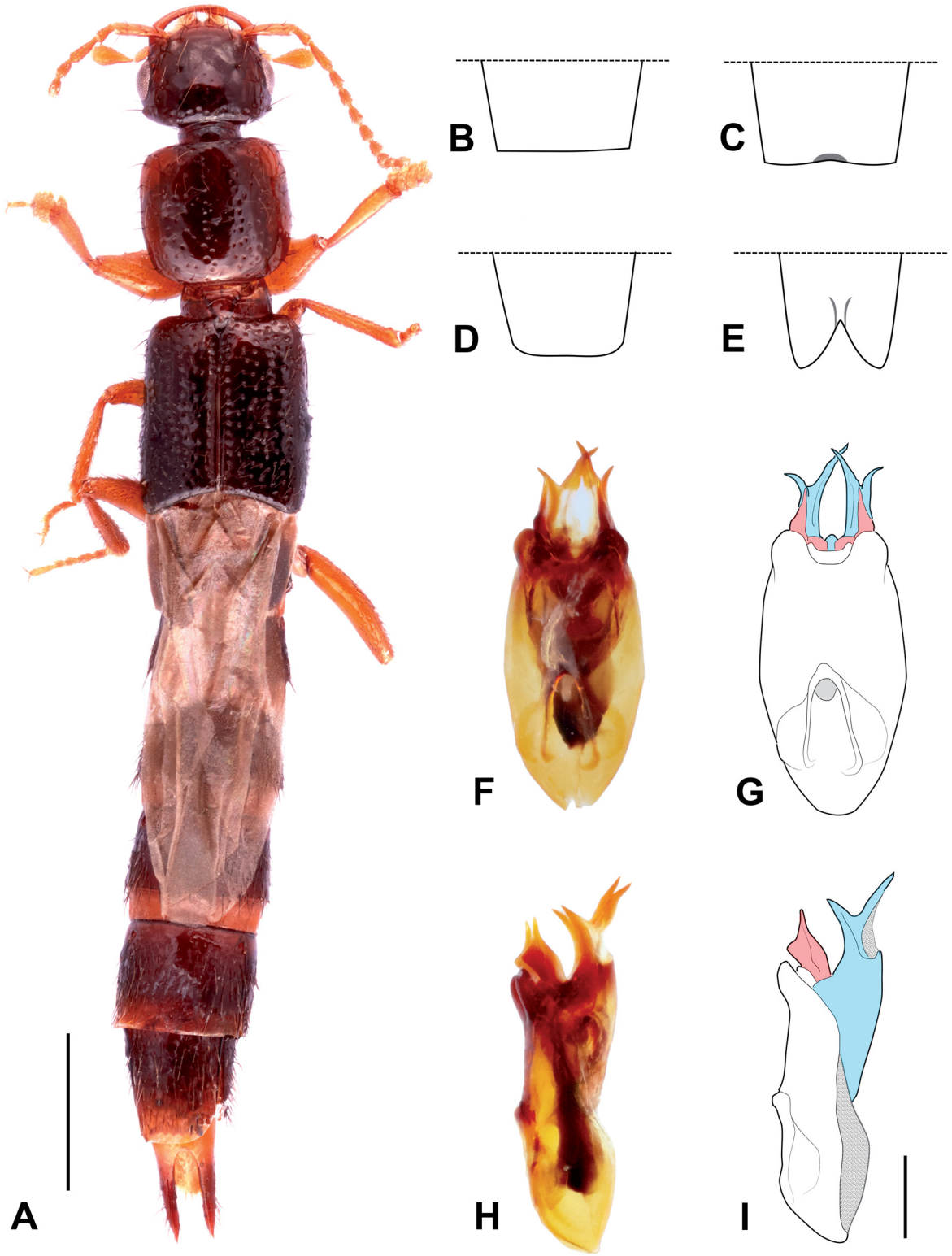

Fig. 12. *Neolindus ornatus* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Distribution

The species is known from the type locality in French Guyana (Cayenne, Roura, near Matoury) and the surrounding area. It was collected at low altitudes using a flight interception trap.

Neolindus parahermani Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:2D2F08A4-E884-4C1C-8AED-B289223FDC9B
Fig. 13; Supp. file 2

Diagnosis

Neolindus parahermani sp. nov. resembles *N. hermani* in habitus and genitalia morphology. However, they can be distinguished by the structure of pPMS of aedeagus. Antiparameral apical arms of pPMS in *N. parahermani* are bifid with two acute processes, while in *N. hermani*, they end with a rounded tip (Asenjo 2011: figs 9–10; Fig. 13F–I).

Etymology

The specific epithet is the combination of '*para*', a Latin prefix that means 'similar' or 'equal', and '*hermani*' as the name of the species described by Asenjo (2011), *N. hermani.* It indicates the similarity of morphology between aedeagi of the two species. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus parahermani* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Réserve Trésor, cca 225m: 4°36'37.0"N, 52°16'42.5"W; Dec 2009; Stephane Brule Leg.; ex. Window trap \\ BMNH{E} 2010-62"; NHMUK.

Description

Measurements. BL (13.63), H (0.96, 2.03), A (3.56), A1 (0.78, 0.16), A2 (0.19, 0.14), A3 (0.37, 0.13), A4 (0.27, 0.1), A5 (0.28, 0.11), A6 (0.33, 0.1), A7 (0.34, 0.1), A8 (0.31, 0.1), A9 (0.26, 0.1), A10 (0.2, 0.11), A11 (0.21, 0.1), NKW (0.85), GL (0.4), P (1.87, 2.3), E (2.63, 2.49), PC (0.7, 0.42), PF (1.35, 0.76), PT (0.81, 0.35), MSC (0.72, 0.59), MSF (1.58, 0.47), MST (1.14, 0.15), MTC (0.71, 0.64), MTF (1.72, 0.49), MTT (1.7, 0.22).

Colouration. Head and pronotum black; legs dark brown; abdomen black; intersegmental membrane dark brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin rounded; with emargination in front of neck; setation with 1 pair of PCS and 1 row of PMS. Epicranium with umbilicate, high density micropunctuation, setation with 2 pairs of FS and 1 pair of PFS, without OS. Gena with irregular surface, with depression from mandibular base to posterior margin of head, setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 3–5 setae in line from eye to gular suture; gular sutures not reaching posterior margin of head; anterior part of gula with 6–8 setae. Neck with foramen magnum occupying ¾ of occiput. Antenna thin, longer than head and pronotum combined (Fig. 13A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with U-shaped emargination (Fig. 13A; Supp. file 2).

Thorax. Pronotum wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Metasternal intercoxal process with pair of acute processes light brown at tips. Elytron longer

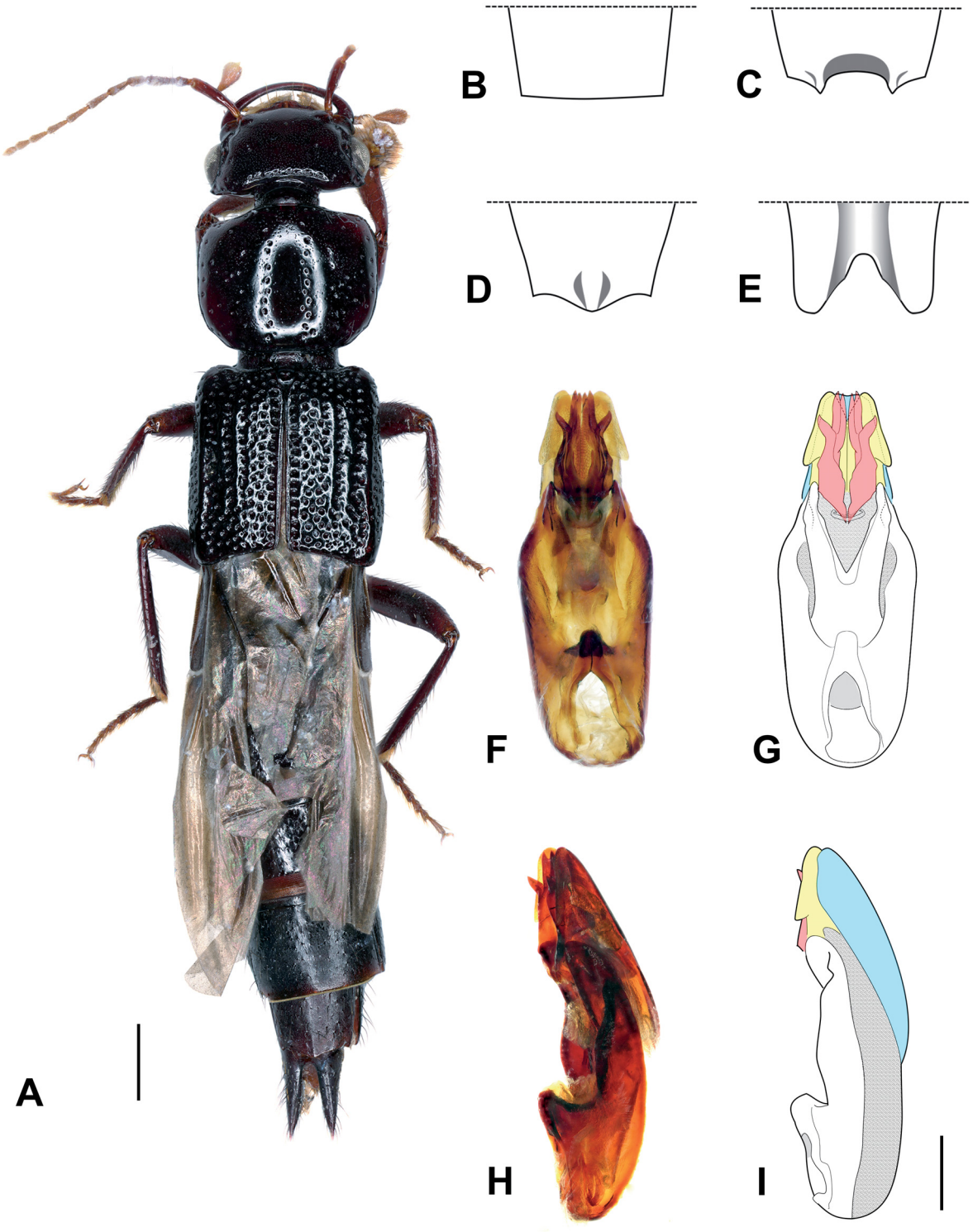

Fig. 13. *Neolindus parahermani* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (NHMUK). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

than wide, surface of elytra with moderately dense umbilicate micropunctures in 8–10 longitudinal rows (Fig. 13A; Supp. file 2).

Legs. Protibia with 5–6 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 as long as 2, mesotarsomere 3 shorter than 1 and as long as 4, mesotarsomere 5 as long as mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than metatarsomere 2, metatarsomere 3 shorter than metatarsomere 2, metatarsomere 4 as long metatarsomere 3, metatarsomere 5 as long as metatarsome 1.

Abdomen. *Male*: tergites with low-density random micropunctuation. Posterior margin of tergite VII straight (Fig. 13B). Posterior margin of sternite VII with wide midline emargination delimited with 2 long teeth-like processes with acute ends (Fig. 13C). Posterior margin of tergite VIII trilobed, with rounded middle lobe and triangle acute lateral lobes (Fig. 13D). Posterior margin of sternite VIII with broad midline emargination about ½ of segment length and 1 pair of longitudinal depressions on sides of midline emargination (Fig. 13E). Posterior margin of tergite IX with midlongitudinal deep emargination in ½ of segment length; aedeagus, in parameral view, median lobe slightly widened at apical part, apex with deep V-shaped emargination and with narrow flattened lateral processes adjacent to pair of lateral elongated 'windows' in membrane. pPMS elongated, complex, curved around longitudinal axis, with 2 apical arms almost fully fused and pointing distad and 1 apical arm short and bent laterad; bases of pPMS triangular, anchored in median foramen with internal sclerotised ring. pLS thin, slightly longer than pPMS and APS, with net-like microsculpture, forming elongate flat processes with lateral rounded lobes. APS spoon-shaped, with slightly emarginate top, shorter than pPMS (Fig. 13F–I). *Female*: unknown.

Distribution

This species is only known from the type locality in French Guiana (Roura, Réserve Naturelle Régionale Trésor). It was collected at a low altitude of 225 m a.s.l. using window trap.

Neolindus paraplectrus Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:1C892CF5-7D91-49E1-A867-02FC75A3D1D8
Fig. 14; Supp. file 2

Diagnosis

Neolindus paraplectrus Guzman, Tokareva & Żyła sp. nov. is most similar to *N. plectrus* by the morphology. However, *N. paraplectrus* can be distinguished by the straight posterior margin of abdominal sternite VII, which is widely emarginate in *N. plectrus* (Fig. 14C; Herman 1991: fig. 83) and the median lobe of aedeagus with tapering triangular apex with additional ridge outlining the triangle, absent in *N. plectrus* (Herman 1991: fig. 81; Fig. 14F–G).

Etymology

The specific epithet is the combination of '*para*', a Latin prefix that means 'similar' or 'equal', and '*plectrus*' as the name of the species described by Herman (1991), *N. plectrus*. It indicates the similarity of morphology between the aedeagi of these species. An adjective.

Type material

Holotype

VENEZUELA • ♂; "*Neolindus paraplectrus* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Merida, Tabay, 7 km E., La Mucuy Station, Sierra Nevada Natl Park; 2300–2700 mm; 8°37'44''N,

71°2’26’’W; 24 May 1998, R. Anderson Leg.; VEN1A98 034B; ex: cloud forest litter \\ SM0110682 KUNHM-ENT [barcode]”; KUNHM-ENT.

Description

Measurements. BL (7.4), H (0.55, 0.86), A (1), a1 (0.21, 0.07), a2 (0.09, 0.07), a3 (0.08, 0.06), a4 (0.07, 0.08), a5 (0.07, 0.09), a6 (0.08, 0.1), a7 (0.08, 0.09), a8 (0.09, 0.11), a9 (0.08, 0.1), a10 (0.08, 0.1), a11 (0.08, 0.1), NKW (0.50), GL (0.22), P (1.12, 0.97), E (0.8, 0.88), PC (0.35, 0.22), PF (0.7, 0.42), PT (0.48, 0.16), MSC (0.42, 0.24), MSF (0.59, 0.22), MST (0.51, 0.13), MTC (0.25, 0.38), MTF (0.73, 0.38), MTT (0.78, 0.12).

Colouration. Head and pronotum dark brown; legs brown; abdomen dark brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded with emargination in front of neck; posterior angles rounded; setation with 1 pair of PCS and 1 row of PMS clustered in middle. Epicranium convex, elevated above gena, with low-density micropunctuation in first part of head, setation with 1 pair of OS, without FS and PFS. Gena with smooth surface, with depression from mandibular base to posterior margin of head, setation with 2 trichobothria, MS close to antennal incisions, sockets of POS and PTOS umbilicate. Postgena with row of 3 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula without setae, with lateral invaginations; midlength of gula with 2 setae; posterior margin of head with 2 setae close to gular sutures. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 14A); antennomeres 1–4 longer than wide, antennomeres 5–11 wider than long, tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 2 longer than 3. Labrum with multiple lobes and 1 wide quadrate emargination, marginal clypeal setae of equal lengths (Fig. 14A; Supp. file 2).

Thorax. Pronotum slightly longer than wide, with umbilicate randomly distributed micropunctures and irregular setation. Prosternal basisternum with longitudinal carina and smooth surface. Mesosternum with scutiform basisternum with scarce tuberculate micropunctuation. Mesanepisternum smooth, transversely convex. Metasternal intercoxal process with 1 pair of rounded processes. Elytron wider than long, shorter than pronotum; surface of elytra with umbilicate micropunctures in 8–9 moderately dense longitudinal rows (Fig. 14A; Supp. file 2).

Legs. Protibia with 3 well-developed combs of setae, one of combs with thickened spines-like setae; mesotibial apical ctenidium on both sides, spines-like; mesotarsomeres 1, 2 and 3 as long as mesotarsomere 4, mesotarsomere 5 as long as mesotarsomeres 1–4 combined; inner ctenidium of metatibia longer than outer; metatarsomeres 1 to 4 subequal, metatarsomere 5 as long as metatarsomeres 1–4 combined.

Abdomen. *Male*: abdomen gradually widened towards segment VII. Tergites with low density of micropunctuation. Posterior margin of tergite and sternite VII straight (Fig. 14B, C). Posterior margin of tergite VIII elongate, rounded (Fig. 14D). Posterior margin of sternite VIII with midlongitudinal V-shaped emargination, and longitudinal glabrous invagination with carinated margin in middle part of emargination, lateral angles rounded (Fig. 14E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length, fused; aedeagus, in parameral view, median lobe elongated, gradually narrowed towards apex; apex of lobe with triangular tapering process with additional ridge outlining triangular area. pPMS and pLS absent. APS long, spoon-like, flattened, shorter than median lobe, partially covering median foramen (Fig. 14F–I). *Female*: unknown.

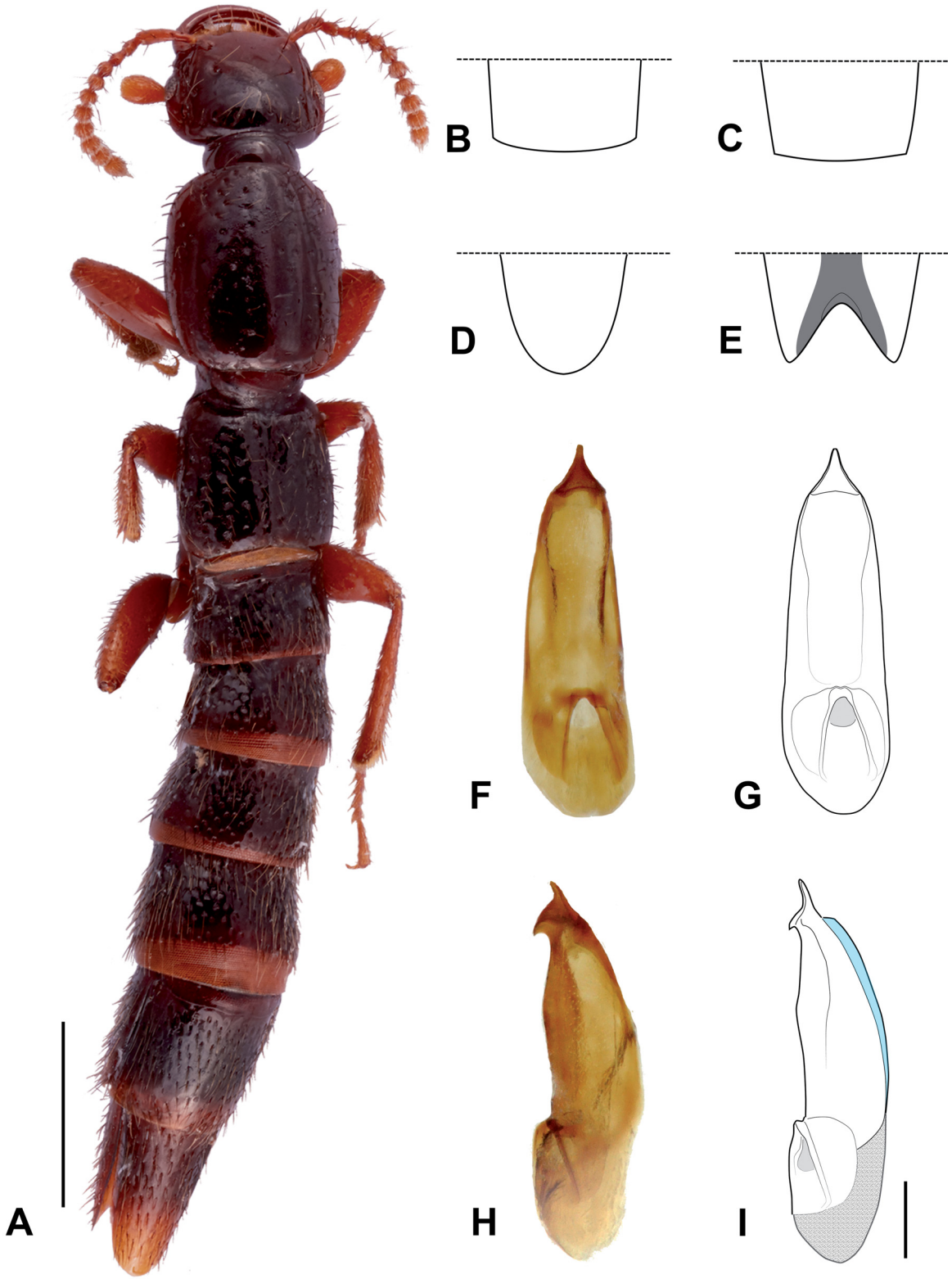

Fig. 14. *Neolindus paraplectrus* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.2 mm.

Distribution

This species is known only from the type locality in Venezuela (Merida, Tabay). It was collected in a cloud forest in Sierra Nevada National Park at a high altitude between 2300–2700 m a.s.l.

Neolindus parasinuatus Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:FAD92BD2-8A53-4DBC-88F1-3BD907287FD2
Fig. 15; Supp. file 2

Diagnosis

This species resembles *N. sinuatus* and *N. basisinuatus*, but can be distinguished by a combination of characters. Unlike in *N. sinuatus*, the posterior margin of male sternite VIII in *N. parasinuatus* Guzman, Tokareva & Żyła sp. nov. has a wide emargination with a concave middle part surrounded by invagination on the sclerite (Herman 1991: fig. 199; Fig. 15E). In contrast to *N. basisinuatus*, the posterior margin of tergite VIII in *N. parasinuatus* is rounded (Herman 1991: fig. 194; Fig. 15D). In comparison to both species, the aedeagus of *N. parasinuatus* lacks a pair of setal brushes near the median invagination on the parameral side (Herman 1991: figs 193, 198; Fig. 15F–G).

Etymology

The specific epithet is a combination of '*para*', a Latin prefix that means 'similar to' or 'equal', and '*sinuatus*' as the name of the species described by Herman (1991), *N. sinuatus*. It indicates the similarity in the morphology of the aedeagi of the two species. An adjective.

Type material

Holotype

COLOMBIA • ♂; "*Neolindus parasinuatus* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Amazonas, PNN [National Natural Park] Amacayacu, San Martin; 3°46'S, 70°18'W; Malaise; 19–27 Out 1997; 150 m [m.a.s.l]; B. Amado Leg.; M.839 \\ SM0549284 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

COLOMBIA • 1 ♂; "*Neolindus parasinuatus* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Amazonas, PNN Amacayacu, San Martin; 3°46'S, 70°18'W; 150m; Malaise; 11–29 Nov 2000; B. Amado Leg.; M.1318. \\ SM0549282 KUNHM-ENT [barcode]": KUNHM-ENT • 1 ♂; same data as for preceding; "19–27 Nov 2000 \\ SM549297 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (7.9), H (0.85, 0.69), A (1.67), a1 (0.37, 0.08), a2 (0.13, 0.05), a3 (0.15, 0.07), a4 (0.13, 0.07), a5 (0.11, 0.08), a6 (0.14, 0.09), a7 (0.14, 0.09), a8 (0.13, 0.86), a9 (0.12, 0.89), a10 (0.1, 0.1), a11 (0.14, 0.09), NKW (0.37), GL (0.23), P (0.86, 0.92), E (1.27, 1.2), PC (0.63, 0.38), PF (0.71, 0.29), PT (0.43, 0.14), MSC (0.52, 0.3), MSF (0.1, 0.2), MST (0.67, 0.12), MTC (0.39, 0.33), MTF (1.16, 2.28), MTT (1, 0.1).

Colouration. Whole body and appendages brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin slightly convex anteriad with emargination in front of neck; posterior angles rounded; setation with 1 PCS, PMS in moderately dense row. Epicranium with low-density micropunctuation, setation with 1 pair of FS, 1 pair of OS, and 3 pairs of PFS. Gena with irregular surface, with depression from mandibular base to middle of eye, with 1 OT; socket of mandibular seta umbilicate, sockets of POS with raised edges. Postgena with row

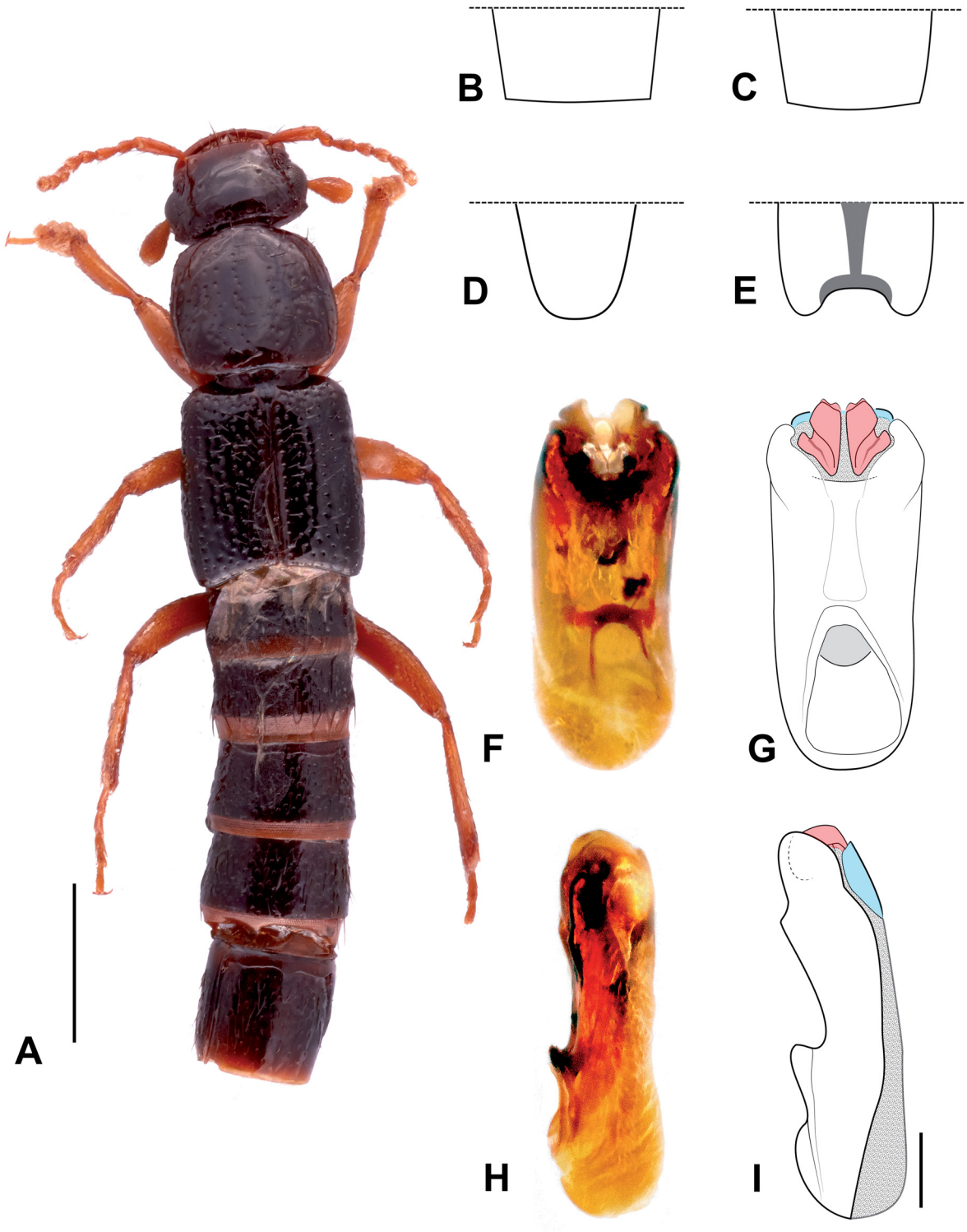

Fig. 15. *Neolindus parasinuatus* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.1 mm.

of 3 setae in line from eye to gular suture; posterior margin close to gular sutures with 2 setae; gular sutures straight, extended to posterior margin of head; anterior part of gula with 2 rows of setae. Antenna shorter than head and pronotum combined (Fig. 15A), moniliform starting from antennomere 5; antennomeres 1–7, 10 and 11 longer than wide, antennomeres 8 and 9 wider than long; tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum tetralobed, with 2 dark thick setae in median line of lobes, central lobes more developed than lateral lobes, emargination deep, V-shaped (Fig. 15A; Supp. file 2).

Thorax. Pronotum quadrate, with umbilicate micropunctures, 2 paramedial and 2 lateral distinct rows of setae. Basisternum of prosternum triangular, with row of 8 setae on anterior margin, longitudinal ridge, and wrinkled surface. Metasternal intercoxal process with 1 pair of acute long processes. Elytron longer than wide, surface of elytra with punctures in 7–8 longitudinal rows (Fig. 15A; Supp. file 2).

Legs. Protibia with 3 well-developed combs of setae, 1 anterior row covering ⅔ of tibia length; mesotibial apical ctenidium only on inner side; outer margin with row of spines; metatarsomere 1 as long as metatarsomere 2, metatarsomere 3 as long as metatarsomere 4 and shorter than 1, metatarsomere 5 as long as metatarsomere 1.

Abdomen. *Male*: tergites with sparse micropunctures. Anterior margin of tergite VII with 4 basal canals with elevated margin, posterior margin straight (Fig. 15B). Posterior margin of sternite VII straight (Fig. 15C). Anterior margin of tergite VIII with 4 internal canals, central canals fused, forming inverted pentagon; posterior margin rounded (Fig. 15D). Posterior margin of sternite VIII with wide and shallow midlongitudinal emargination with straight middle part and rounded lateral angles (Fig. 15E). Posterior margin of tergite IX with midlongitudinal deep emargination of ¾ of segment length (Herman 1991: fig. 192); aedeagus, median lobe rounded at base, with parallel lateral sides, apex on parameral side deeply notched with elongate, blunt-end median hole or cavity. pPMS shell-shaped, triangular, robust, immersed into opening of median foramen. pLS absent. APS flattened, wider than long, shorter than pPMS; 1 pair of inner sclerites attached to pPMS and single, symmetrical, flattened sclerite attached to paired ones (Fig. 15F–I). *Female*: unknown.

Distribution

The species is known only from the type locality in Colombia (Amazonas, Leticia, Parque Nacional Natural Amacayacu). It was collected by Malaise trap at low altitude.

Neolindus parautriensis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:89840CD7-5CE1-4759-8B2A-305CAB96681D
Fig. 16; Supp. file 2

Diagnosis

This species resembles *N. utriensis* sp. nov. and *N. maya* sp. nov. in habitus, but can be distinguished from them by the characters of the apical sclerites of the aedeagus. pPMS of *N. parautriensis* Guzman, Tokareva & Żyła sp. nov. are crossed with each other, narrower than in *N. utriensis* and *N. maya* with apical arms of equal lengths, slightly bent inwards, while in *N. utriensis* and *N. maya*, pPMS are more robust, not crossing each other, with apical arms of different lengths (Fig. 16F–I).

Etymology

The name is a combination of '*para*', a Latin prefix that means 'similar to' or 'equal', and '*utriensis*', which refers to one of the species described in this paper. An adjective.

Type material

Holotype

PANAMA • ♂; "*Neolindus parautriensis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Colón, 14 km N jct Escobal & Piña Rds.; 02–11 Jun 1996; J. Ashe & R. Brooks Leg.; PAN1AB96 181B; ex: flight interception trap \\ SM0016476 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

PANAMA • 1 ♀; "*Neolindus parautriensis* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Colón, 14 km N jct Escobal & Piña Rds.; 02–11 Jun 1996; J. Ashe & R. Brooks Leg.; PAN1AB96 181B; ex: flight interception trap \\ SM0016473 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "SM0016472 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "SM0016477 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (11.48), H (1.01, 1.68), A (3.15), a1 (0.63, 0.14), a2 (0.23, 0.12), a3 (0.3, 0.12), a4 (0.26, 0.11), a5 (0.27, 0.12), a6 (0.26, 0.09), a7 (0.24, 0.11), a8 (0.25, 0.1), a9 (0.27, 0.10), a10 (0.21, 0.10), a11 (0.22, 0.10), NKW (0.60), GL (0.38), P (1.38, 1.98), E (2.24, 1.96), PC (0.94, 0.52), PF (1.46, 0.46), PT (0.06, 0.36), MSC (0.44, 0.5), MSF (1.32, 0.42), MST (0.95, 0.18), MTC (0.72, 0.98), MTF (1.93, 0.40), MTT (1.74, 0.18).

Colouration. Head and pronotum dark brown; antennae and maxillary palpi light brown; legs brown and partially light brown; meso- and metatibia lighter than other parts of respective legs; abdomen dark brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin straight with emargination in front of neck; posterior angles straight; setation with 1 pair of PCS, PMS setae in dense straight row. Epicranium with dense micropunctuation, setation with 1 pair of FS, 1 OS, 2–3 pairs of PFS in row parallel to PMS, and without OS. Gena with irregular surface, setation with 1 POS, 2 PTOS, 1 MS with umbilicate socket, and 1 OT, sockets of POS concave. Postgena with row of 3–5 setae in line from eye to gular suture, gular sutures not reaching posterior margin of head, anterior part of gula with irregular row of 6 setae. Antenna thin, longer than head and pronotum combined (Fig. 16A); antennomeres longer than wide; tomentose pubescence starting from antennomere 3; antennomere 1 as long as antennomeres 2 and 3 combined; antennomere 3 longer than 2. Labrum bilobed, with shallow V-shaped emargination (Fig. 16A; Supp. file 2).

Thorax. Pronotum wider than long, almost quadrate (ratio 0.87), with umbilicate punctures and 2 paramedial rows of setae. Basisternum of prosternum triangular, with row of 8 setae on anterior margin, well-developed longitudinal ridge, and wrinkled surface. Metasternal intercoxal process with 1 pair of acute spine-like processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 6–8 longitudinal rows (Fig. 16A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; mesotibial apical ctenidia on both sides, inner longer than outer; mesotarsomere 1 longer than mesotarsomere 2; metatarsomere 1 as long as metatarsomere 2, metatarsomere 3 as long as metatarsomere 4 but shorter than metatarsomere 2, metatarsomere 5 as long as metatarsomere 1.

Abdomen. Tergites with sparse micropunctures. Posterior margin of tergite VII straight (Fig. 16B). Anterior margin of tergite VIII with 4 internal canals, central canals fused, forming inverted pentagon. Anterior margin of sternite VIII with 4 internal canals. *Male*: posterior margin of sternite VII with moderate emargination at middle, with acute processes on each side (Fig. 16C). Posterior margin of

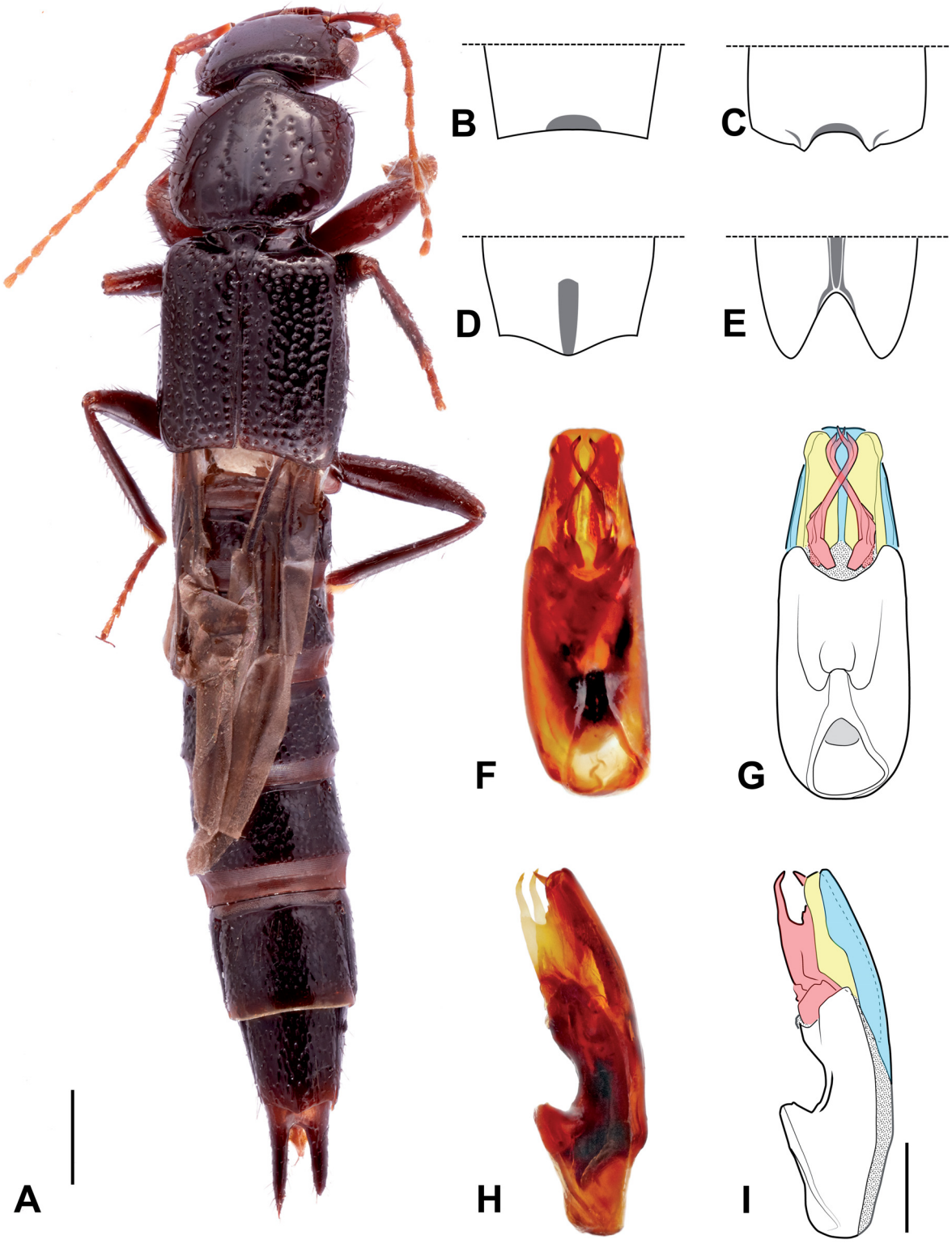

Fig. 16. *Neolindus parautriensis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

tergite VIII with 3 acute processes, wide 1 in middle and 2 narrow ones on sides (Fig. 16D). Posterior margin of sternite VIII bilobed, with narrow median emargination reaching up to ¼ of segment length, lobes obtuse (Fig. 16E). Posterior margin of tergite IX with midlongitudinal deep emargination, reaching up to ¾ of segment length (Fig. 16A; as in Asenjo 2011: fig. 12); aedeagus, median lobe broadened at base, apex with moderately deep emargination and rounded processes on each side. pLS thin, with net-like microsculpture, forming elongate flat processes equal in length to pPMS. APS spoon-shaped with widened distal third, wider than pLS, with slightly emarginate apical margin. pPMS elongate, thin, crossed with each other, with 2 acute apical arms of same length, slightly bent inwards (Fig. 16F–I). *Female*: lack of emargination on abdominal segments VIII and IX.

Distribution

This species is known from the type locality in Panama (Colón, Chagres). Based on the label information, it was collected in Bosque Protector San Lorenzo at a low altitude using a flight interception trap.

Neolindus pseudosensillaris Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:1F0AFABD-E3B6-4886-88AA-1E909C32AC13
Figs 2E–G, 17; Supp. file 2

Diagnosis

Neolindus pseudosensillaris Guzman, Tokareva & Żyła sp. nov. resembles *N. elegans* sp. nov in the shape of posterior margin of sternites VII, VIII, and tergite VIII, as well as structure of aedeagus with denticles on pPMS. However, *N. pseudosensillaris* has a unique character among all known species of *Neolindus*: 3 pairs of tapered, fusiform, smooth structures resembling sensilla on the epicranium (Fig. 2E–G). Moreover, in *N. pseudosensillaris*, posterior margin of sternite VII has narrower midline emargination without acute protruding processes on its sides, posterior margin of sternite VIII has narrower V-shape emargination, posterior margin of tergite VIII is slightly truncate (Figs 5C–E, 17C–E), and the shape of median lobe as well as morphology of APS is different from those of *N. elegans* (Figs 5F–I, 17F–I).

Etymology

The name combines '*pseudo*', the Latin prefix for 'false', with the New Latin '*sensillum*', a diminutive of Latin '*sensus*' ('perception, feeling'). It refers to the three sensilla-like structures on the head of unknown origin. An adjective.

Type material

Holotype

Brazil • ♂; "*Neolindus pseudosensillaris* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Amazonas, Manaus, INPA/Smithsonian Resv; 2°25'00''S, 59 °50'00''W; 93 m [m a.s.l.]; Jun 1994; R. Didham Leg.; 631|5"; NHMUK.

Paratypes

BRAZIL • 1 ♂; "*Neolindus pseudosensillaris* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ same data as for holotype \\ 901|3 (BMNH)"; NHMUK • 1 ♀; same data as for preceding; "21|3' (BMNH)"; NHMUK • 1 ♀; same data as for preceding; "197|10 (BMNH)"; NHMUK • 1 ♀; same data as for preceding; "501|1 (BMNH)"; NHMUK • 1 ♀; "Reserva Florestal Adolpho Ducke; 2°57'47.4"S, 59°55'21.2"W; 109 m; Feb 1995, Barbosa Leg., M.G.V; G26.30 (BMNH)"; NHMUK.

Description

Measurements. BL (5.3), H (0.43, 0.62), A (1.15), A1 (0.25, 0.07), A2 (0.1, 0.06), A3 (0.1, 0.07), A4 (0.07, 0.06), A5 (0.08, 0.06), A6 (0.08, 0.06), A7 (0.09, 0.08), A8 (0.07, 0.07), A9 (0.09 0.08),

A10 (0.08, 0.08), A11 (0.15, 0.07), NKW (0.25), GL (0.2), P (0.66, 0.73), E (0.98, 0.87), PC (0.4, 0.1), PF (0.36, 0.17), PT (0.61, 0.25), MSC (0.31, 0.14), MSF (0.66, 0.16), MST (0.48, 0.07), MTC (0.29, 0.22), MTF (0.66, 0.16), MTT (0.68, 0.08).

Colouration. Head and pronotum dark brown; legs light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin rounded, with emargination in front of neck; posterior angles straight; setation with 1 pair of PCS and 1 row of PMS. Epicranium smooth, without micropunctuation, setation with 1 pair of FS and 2 pairs of PFS, without OS; 3 pairs in line of tapered fusiform smooth structures resembling sensilla with sockets posterior to antennal incisions. Gena with irregular surface, with depression from mandibular base to middle of eye; setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 3 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining with neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 pairs of setae. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 17A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with U-shaped emargination (Fig. 17A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Prosternum with superior marginal line parallel to anterior margin. Metasternal intercoxal process with 1 pair of rounded processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 8–10 longitudinal rows (Fig. 17A; Supp. file 2).

Legs. Protibia with 5–6 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thick setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than 2, mesotarsomeres 3 and 4 as long as 2, mesotarsomere 5 longer than mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 as long as metatarsomere 2, metatarsomere 3 shorter than metatarsomere 1 and as long as metatarsomere 4, metatarsomere 5 longer than metatarsomere 1.

Abdomen. Tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite VII straight (Fig. 17B). Posterior margin of tergite VIII elongate, rounded, with lateral edges slightly curved (Fig. 17D). *Male*: posterior margin of sternite VII with moderately deep midline emargination bordered by acute processes, with internal margin of emargination slightly bent posteriad in middle; surface adjacent to emargination with shallow, median, glabrous, and quadrate invagination (Fig. 17C). Posterior margin of sternite VIII with midlongitudinal V-shaped emargination, lateral angles rounded (Fig. 17E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, in parameral view, median lobe slightly widened at base, apex with narrow emargination not exposing margin of median foramen and with flattened lateral processes folded towards emargination. Apical sclerites with more than 3 pairs of elements. pPMS robust, flattened, curved around longitudinal axis, with multiple denticles on top. pLS absent. APS flattened, spoon-like, with 3 apical projections; middle projection wide, flat, enfolding pPMS, longer than pPMS, with elevated angles; lateral projections acute, bent towards parameral side, shorter than pPMS (16F–I). *Female*: lack of emargination on abdominal segments VII and VIII.

Distribution

The species is known from the type locality in Brazil (Amazonas, Manaus, Projeto Dinâmica Biológica de Fragmentos Florestais reserve) and nearby Reserva Florestal Adolpho Ducke. It was collected at a low altitude.

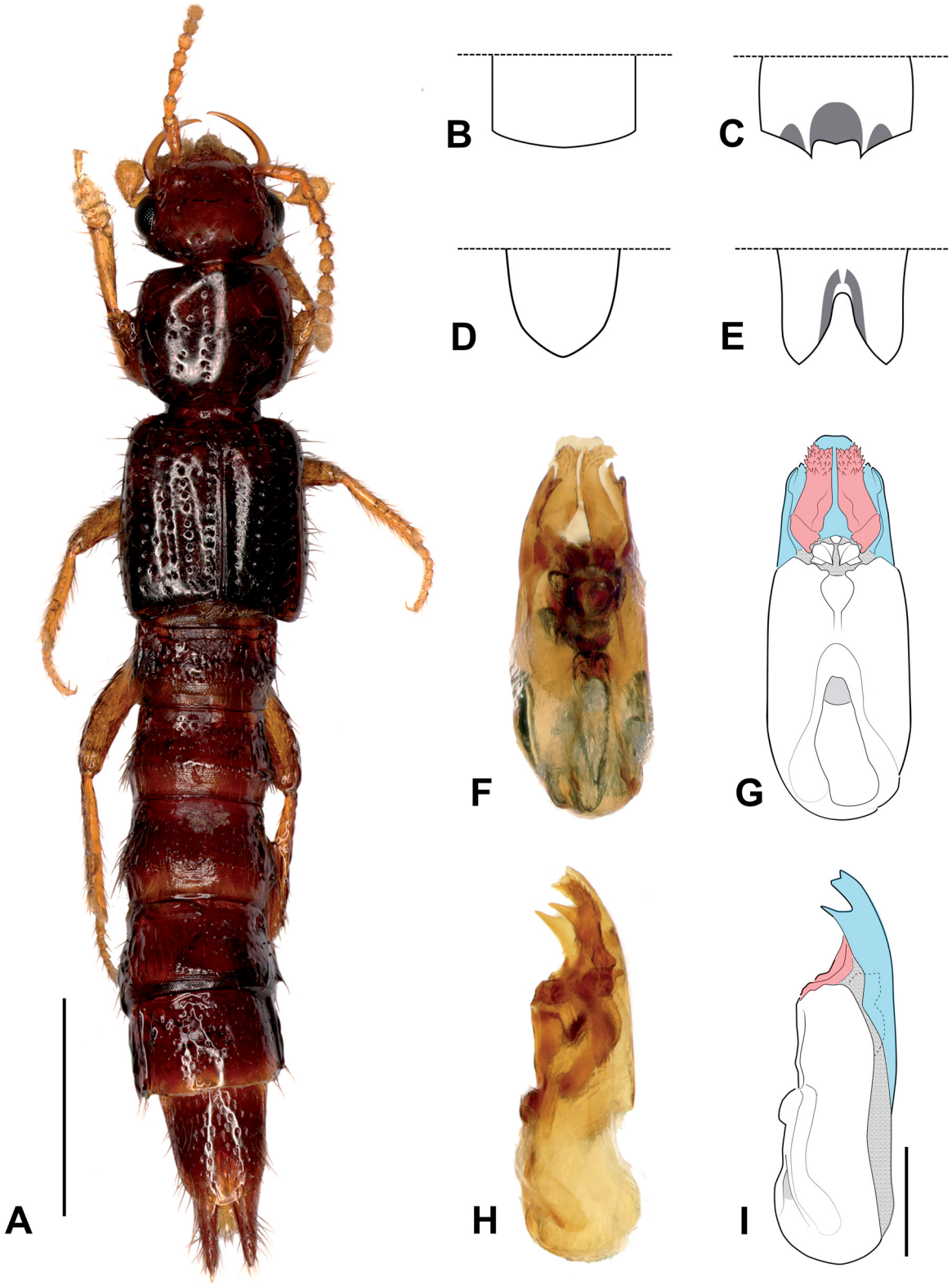

Fig. 17. *Neolindus pseudosensillaris* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (NHMUK). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Neolindus sauron Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:D5349E92-F31A-4FBA-B904-7D7326937DC4
Fig. 18; Supp. file 2

Diagnosis

The habitus of this species, as well as the broadly rounded posterior margin of tergite VIII, resembles that of *N. paralellus*. However, *N. sauron* Guzman, Tokareva & Żyła sp. nov. differs from *N. paralellus* in the morphology of sternite VIII with a concave, broad emargination of the posterior margin and a glabrous midlongitudinal invagination on the rest of the sclerite (Fig. 18E), while it is deeply and narrowly emarginated in *N. paralellus* (Herman 1991: fig. 88). Additionally, *N. sauron* differs in the shape of the apical complex of sclerites of the aedeagus (Herman 1991: fig. 85; Fig. 18F–I).

Etymology

The name is inspired by the structure of antiparameral sclerite in the aedeagus resembling the 'Eye of Sauron' in the movie trilogy 'The Lord of the Rings' based on J.R.R. Tolkien's book series. A noun in apposition.

Type material

Holotype

GUYANA • ♂; "*Neolindus sauron* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Region 8, Iwokrama Forest, Turtle Mt. Summit; 4°43'57.0"N, 58°44'01.0"W; 290 m [m a.s.l.]; 30 May–1 Jun 2001; R. Brooks, Z. Falin Leg.; GUY18F01 097; ex. flight interception trap \\ SM0253302 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

GUYANA • 1 ♂; "*Neolindus sauron* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Region 8, Iwokrama Forest, 26 km SW Kurupukari, Iwokrama Mt. Basecamp; 4°20'17.0"N, 58°48'38.0"W, 300 m; 23–25 May 2002; R. Brooks, Z. Falin Leg.; GUY18F01 031; ex. flight intercept trap \\ SM0253198 KUNHM-ENT [barcode]" • 1 ♂; same data as for preceding; "SM0253197 KUNHM-ENT[barcode]"; KUNHM-ENT.

Description

Measurements. BL (6.3), H (0.38, 0.78), A (1.23), A1 (0.28, 0.07), A2 (0.08, 0.06), A3 (0.07, 0.14), A4 (0.09, 0.06), A5 (0.1, 0.06), A6 (0.12, 0.07), A7 (0.11, 0.07), A8 (0.10, 0.07), A9 (0.1, 0.07), A10 (0.09, 0.07), A11 (0.09, 0.09), NKW (0.40), GL (0.21), P (0.92, 0.94), E (1.23, 1.1), PC (0.5, 0.26), PF (0.78, 0.34), PT (0.43, 0.12), MSC (0.38, 0.25), MSF (0.77, 0.21), MST (0.38, 0.1), MTC (0.28, 0.26), MTF (0.911, 0.16), MTT (0.64, 0.07).

Colouration. Head and pronotum brown; legs light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded with emargination at middle; posterior angles rounded; setation with 1 pair of PCS, 1 row of PMS, and 2 thick and dark setae at neck articulation. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 1 pair of PFS, without OS. Gena with depression from mandibular base to middle of eye, setation with 1 OT, MS, and POS; sockets of POS umbilicate. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head, joining neck pits; anterior part of gula with 2 setae; posterior margin of head with 2 setae close to gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 18A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2

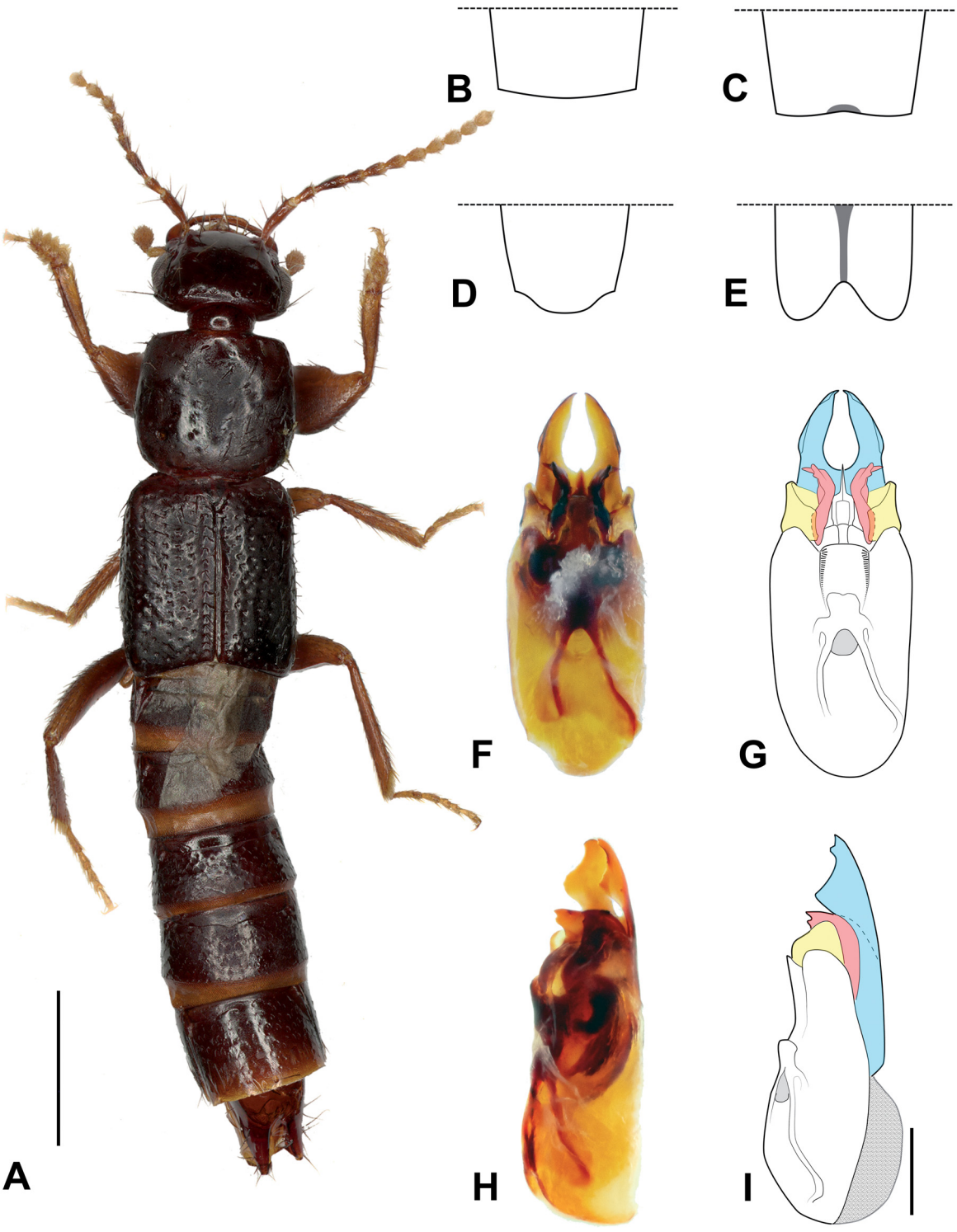

Fig. 18. *Neolindus sauron* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

and 3 combined, antennomere 2 longer than 3. Labrum bilobed, with shallow, V-shaped emargination (Fig. 18A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate micropunctures, 2 paramedial and 2 lateral rows of setae. Metasternal intercoxal process with 1 pair of rounded processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 10–11 longitudinal rows (Fig. 18A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thin setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than mesotarsomere 2, mesotarsomeres 3 and 4 as long as mesotarsomere 2, mesotarsomere 5 as long as mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than metatarsomere 2, metatarsomere 2 longer than metatarsomere 3, metatarsomere 3 as long as metatarsomere 4, metatarsomere 5 as long as metatarsomere 1.

Abdomen. *Male*: tergites with low-density micropunctuation. Posterior margin of tergite VII slightly convex, almost straight (Fig. 18B). Posterior margin of sternite VII sinuate, with small midlongitudinal depression (Fig. 18C). Posterior margin of tergite VIII broad, apically rounded (Fig. 18D). Posterior margin of sternite VIII with median broad, concave emargination, lateral angles rounded; disc of sternite with longitudinal glabrous invagination (Fig. 18E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length, fused; aedeagus, median lobe of same width from parameral side, rounded at base, apex notched on parameral side with elongate median hole or cavity reaching basal foramen elevation, apex of median lobe on parameral side with sclerotised processes on each sides of median foramen; pPMS elongate, thin, bifid at apex, longer apex pointing laterad. pLS shorter than pPMS and APM, pocket-shaped, enfolding pPMS. APS long, spoon-shaped, apically bifid; apical processes flattened, with distinct angle protruding laterad; emargination dividing 2 apical processes rounded (17F–I). *Female*: unknown.

Distribution

This species is known from the type locality in Guyana (Upper Demerara-Berbice, Iwokrama Forest, Turtle Mountain) and the nearby Iwokrama Mountains. It was collected at a lower altitude with a flight interception trap.

Neolindus sibyllae Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:66D4DDA9-79E6-49AF-BCCB-2DC7F98E33D3
Figs 2C–D, 19; Supp. file 2

Diagnosis

Neolindus sibyllae Guzman, Tokareva & Żyła sp. nov. is similar to *N. apiculus*, but can be distinguished by the more broadly rounded posterior margin of tergite VIII and short, flat APS of aedeagus (pointed in *N. apiculus*) (Fig. 19F–I; Herman 1991: figs 174–175).

Etymology

The name is given in honour of Maria Sibylla Merian, German entomologist, naturalist and scientific illustrator. An adjective.

Type material

Holotype

VENEZUELA • ♂; "*Neolindus sibyllae* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Táchira, San Cristobal, 8 km SE, P.N. [National Park] Chorro El Indio;1425 m [m a.s.l.]; 7°44'15''N,

72°11’37’’W; 29 May 1998; R. Anderson Leg.; VEN1A98 050D; ex: cloud forest litter \\ SM0113752 KUNHM-ENT [barcode]”; KUNHM-ENT.

Paratypes

VENEZUELA • 1 ♂; “*Neolindus sibyllae* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Táchira, San Cristobal, 8 km SE, P.N. Chorro El Indio, 1425 m; 7°44’15’’N, 72°11’37’’W; 28 May 1998; R. Anderson Leg.; VEN1A98 047A; ex: cloud forest litter \\ SM0111014 KUNHM-ENT[barcode]”; KUNHM-ENT • ♂; same data as for preceding; “29 May 1998; VEN1A98 050C \\ SM0111081 KUNHM-ENT [barcode]”; KUNHM-ENT.

Description

Measurements. BL (6.02), H (0.5, 0.7), A (1.41), a1 (0.24, 0.06), a2 (0.07, 0.06), a3 (0.05, 0.05), a4 (0.07, 0.05), a5 (0.6, 0.06), a6 (0.07, 0.07), a7 (0.08, 0.08), a8 (0.07, 0.06), a9 (0.08, 0.08), a10 (0.08, 0.07), NKW (0.42), GL (0.20), P (0.9, 0.9), E (0.7, 0.76), PC (0.54, 0.24), PF (0.66, 0.33), PT (0.36, 0.13), MSC (0.25, 0.16), MSF (0.62, 0.17), MST (0.5, 0.1), MTC (0.3, 0.2), MTF (0.5, 0.2), MTT (0.73, 0.1).

Colouration. Head and pronotum brown, legs light brown, abdomen brown.

Head. Head capsule wider than long; anterior and posterior margins rounded, posterior angles rather rounded; setation with 2 pairs of equal-sized PCS and PMS arranged in 2 pairs, directed upright. Epicranium with umbilicate and sparse micropunctuation, setation with 1 pair of OS, without FS and PFS. Gena smooth, with 2 OT; sockets of MS and POS umbilicate. Postgena with gular sutures reaching posterior margin of head joining neck pits; anterior part of gula with 1 seta near midline of gular suture and 2 close to posterior margin of gular sutures. Antenna widened towards tip, shorter than head and pronotum combined (Fig. 19A); antennomeres 1–11 longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 equals to antennomeres 2 and 3 combined, antennomere 2 longer than 3. Labrum bilobed, with U-shaped emargination and 2 darker, thicker setae along ⅔ line of lobes; marginal clypeal seta light, nearly same size (Fig. 19A; Supp. file 2).

Thorax. Pronotum quadrate with umbilicate micropunctures and 2 paramedial and lateral longitudinal rows of setae. Basisternum of prosternum with well-developed longitudinal carina and smooth surface. Elytron wider than long, surface of elytra with umbilicate micropunctures in 10–11 moderately dense longitudinal rows (Fig. 19A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than mesotarsomere 2, mesotarsomeres 3 and 4 equal to mesotarsomere 2, mesotarsomere 5 longer than mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 as long as metatarsomere 2, metatarsomere 3 shorter than metatarsomere 1 and equal to metatarsomere 4, metatarsomere 5 longer than metatarsomere 1.

Abdomen. *Male*: tergites III–VI with high density of micropunctuation; tergites VII and VIII with low density of micropunctuation, punctures randomly distributed. Posterior margin of tergite and sternite VII straight (Fig. 19B–C). Posterior margin of tergite VIII truncate, with lateral angles rounded (Fig. 19D). Posterior margin of sternite VIII with midlongitudinal emargination, lateral angles rounded (Fig. 19E). Posterior margin of tergite IX divided; aedeagus, median lobe uniformly wide, apex of median lobe with deep median cavity with 2 pairs of elongate processes on each side; bottom of median lobe cavity sclerotised with thin spoon-like lamella tapering upwards from top of parameral side. pLS and pPMS difficult to identify. APS rather small, oval, shorter than elongate processes of median lobe (Fig. 19F–I). *Female*: unknown.

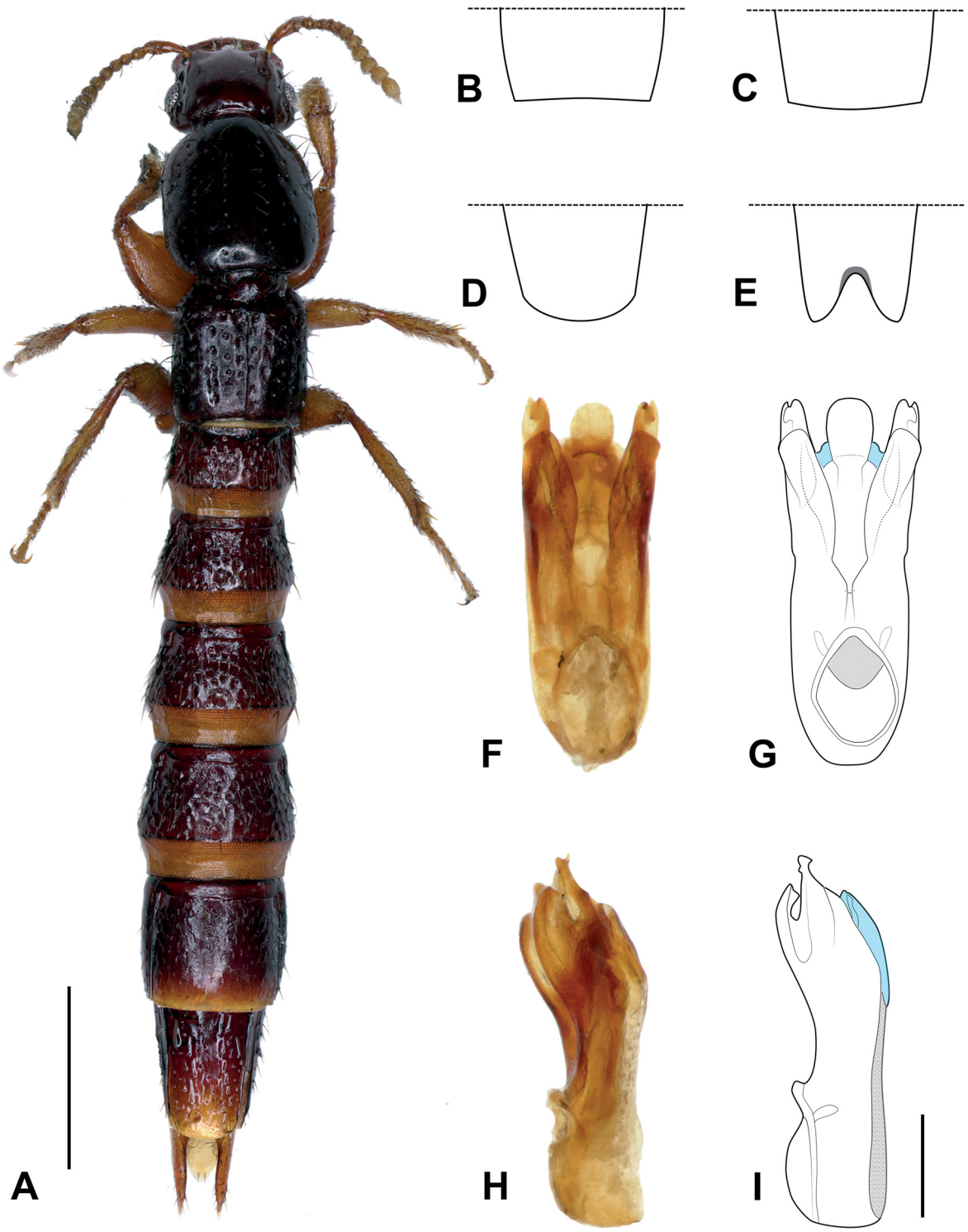

Fig. 19. *Neolindus sibyllae* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Distribution

The species is known only from the type locality in Venezuela (Tachira, San Cristobal, Parque Nacional Chorro El Indio). It was collected in the cloud forest at higher altitude – 1425 m a.s.l.

Neolindus triangularis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:040BF5AB-B5AC-4EFB-BDA4-1163885E5865
Fig. 20; Supp. file 2

Diagnosis

Neolindus triangularis sp. nov. is similar to *N. milleri* and *N. bicornis*. nov. in the shape of the median lobe of the aedeagus. However, the aedeagus of *N. triangularis* differs from that of *N. milleri* in the structure and composition of apical sclerites (Herman 1991; fig. 189; Fig. 20F–I) and has an acute base of the median lobe with a short median ridge on the parameral side, in contrast to the median lobe of the aedeagus in *N. bicornis*. Additionally, *N. triangularis* has noticeably wider fused pLS in the middle part, and a longitudinal invagination in sternite VIII continuing from the middle part of the emargination, limited by 2 ridges on the sides, which is absent in *N. bicornis* (Figs 4E–I, 20E–I).

Etymology

The name is derived from the Latin noun '*triangulus*' meaning 'a triangle", and refers to the form of the median lobe of aedeagus. An adjective.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus triangularis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Saül, 7 km N, 0.5 km ESE, Les Eaux Claires, Monts La Fumée; 3°39'46''N, 53°13'19''W, 300 m [m a.s.l.]; 4–8 Jun 1997; J. Ashe, R. Brooks Leg.; FGAB97 164; ex: flight interception trap \\ SMO134030 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

FRENCH GUIANA • 1 ♀; *"Neolindus triangularis* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Matoury, 41.5 km SSW on Hwy N2; 4°37'22''N, 52°22'35''W; 50 m; 26-28 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 060; ex: flight intercept trap \\ SM0099449 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; "Saül, 7 km N, Les Eaux Claires; 220 m; 3°39'46''N, 53°13'19''W; 30 May–04 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 144 \\ SM0131297. KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (7.9), H (0.43,1.06), A (1.43), A1 (0.4, 0.1), A2 (0.11, 0.07), A3 (0.22, 0.08), A4 (0.15, 0.09), A5 (0.15, 0.09), A6 (0.13, 0.09), A7 (0.12, 0.09), A8 (0.12, 0.1), NKW (0.42), GL (0.23), P (0.99, 1.22), E (1.56, 1.47), PC (0.63, 0.31), PF (0.96, 0.28), PT (0.67, 0.12), MSC (0.44, 0.41), MSF (1.1, 0.2), MST (0.76, 0.09), MTC (0.36, 0.31), MTF (1.24, 0.23), MTT (0.83, 0.1).

Colouration. Head and pronotum brown; legs light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded; posterior angles straight; setation with 1 pair of PCS and 1 row of PMS. Epicranium with umbilicate, low-density micropunctuation, setation with 1 pair of FS and 2 pairs of PFS, without OS. Gena with irregular depressions; setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 2 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula with 2 setae; posterior margin of head

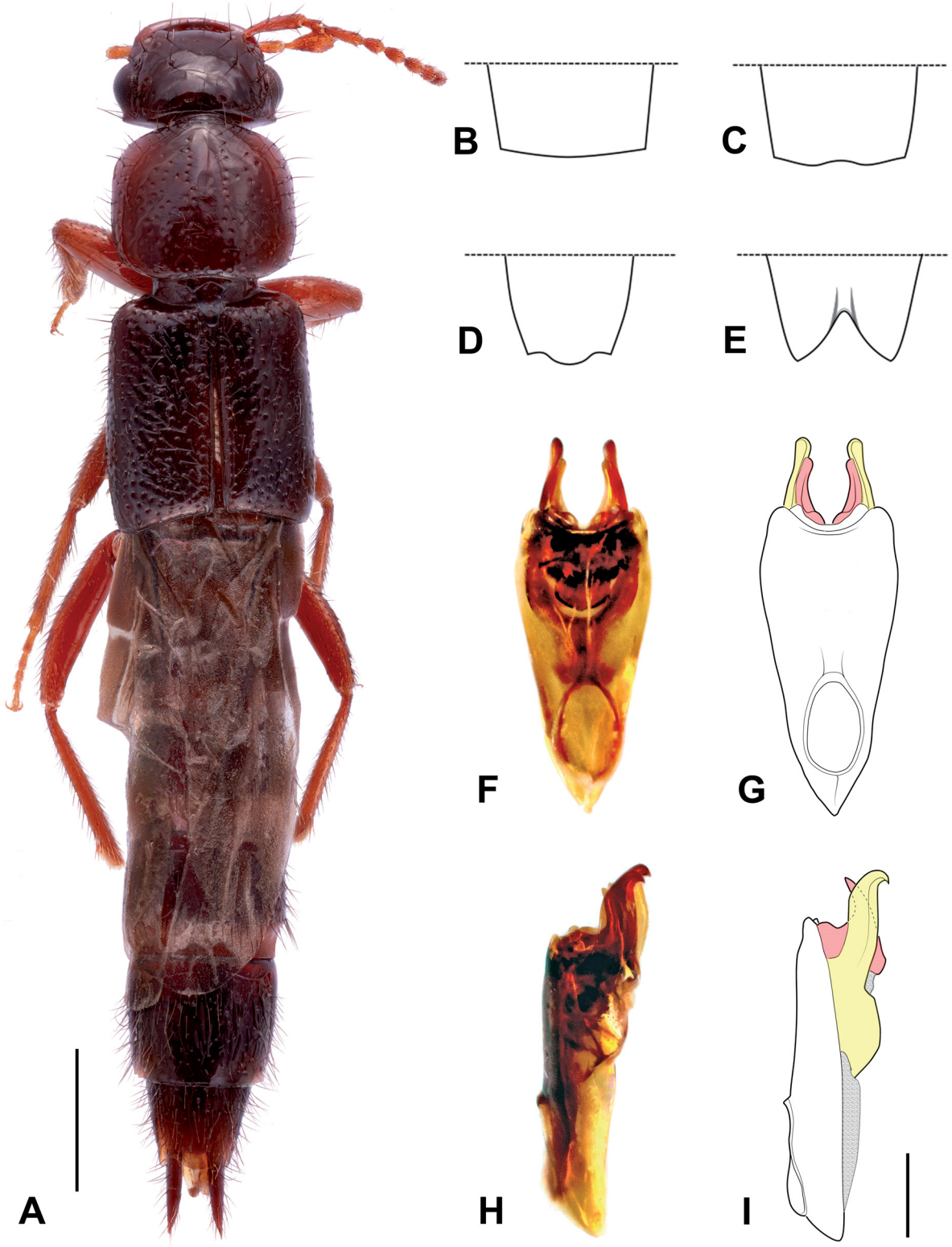

Fig. 20. *Neolindus triangularis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

with 2 setae near gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 20A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 3 longer than 2. Labrum tetralobed; central lobes well-developed; central emargination shallow, V-shaped (Fig. 20A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate randomly distributed micropunctures. Metasternal intercoxal process with 1 pair of acute processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 10–11 longitudinal rows (Fig. 20A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; apical comb longitudinal, composed of widely separated, thin setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 longer than mesotarsomere 2, mesotarsomere 2 longer than mesotarsomere 3, mesotarsomere 3 as long as mesotarsomere 4, mesotarsomere 5 as long as mesotarsomere 2; inner ctenidium of metatibia longer than outer. Metatarsomere 1 longer than metatarsomere 2, metatarsomere 2 longer than metatarsomere 3, metatarsomere 3 as long as metatarsomere 4, metatarsomere 5 as long as 2.

Abdomen. Tergites with low-density randomly distributed micropunctuation. Posterior margin of tergite VII straight (Fig. 20B). *Male*: posterior margin of sternite VII with small short midside emargination (Fig. 20C). Posterior margin of sternite VIII with V-shaped midlongitudinal emargination, lateral angles rounded (Fig. 20D). Posterior margin of tergite VIII with median acute elongation, lateral angles slightly lobed (Fig. 20E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length; aedeagus, median lobe acute at base, widening apically and well-sclerotised; with small suture connecting basal acute tip of median lobe with elevated area around basal foramen. pLS fused into flattened arcuate sclerite widening in middle with 2 acute processes on each side protruding distad from median foramen and ending bent to anti-parameral side. APS flattened, arcuate, smaller than pLS, with 2 acute processes on each side protruding distad from median foramen and ending bent to parameral side shorter than processes of pLS. pPMS not visible (Fig. 20F–I). *Female*: lack of emargination on posterior of sternite VII; posterior margin of tergite VIII sligthtly lobulated.

Distribution

The species is known from the type locality in French Guyana (Saint-Laurent-du-Maroni, Saül, Monts La Fumée), the surrounding forest, and around 130 km SE from the type locality (Cayenne, Matoury). It was collected between 50–300 m a.s.l. using flight interception trap.

Neolindus tropicalis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:2EEFAB58-D70D-45C4-AF11-381017182864
Fig. 21; Supp. file 2

Diagnosis

Neolindus tropicalis Guzman, Tokareva & Żyła sp. nov. has a very close structure of aedeagus to those of *N. lodhii*, but can be distinguished by the combination of the following characters: posterior margin of sternite VII with acute processes on each side of emargination (absent in *N. lodhii*), lobes of posterior margin of sternite VIII without longitudinal straight rows of short black setae (present in *N. lodhii*) and without short median carina between the lobes of sternite VIII (present in *N. lodhii*) (Herman 1991: figs 182, 187; Fig. 21C, E).

Etymology

The name is derived from the Latin word '*tropicus*', which refers to the tropics. It indicates that the species type locality is in tropical Brazil. An adjective.

Type material

Holotype

BRAZIL • ♂ (specimen lacks hind tarsi); "*Neolindus tropicalis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Amazonas, Manaus, Reserva Florestal Adolpho Ducke; 2°57'47.4"S, 59°55'21.2"W; 109 m [m a.s.l.]; 1995–1996"; NHMUK.

Description

Measurements. BL (6), H (0.43, 0.71), A (1.19), A1 (0.27, 0.71), A2 (0.07, 0.06), A3 (0.1, 0.06), A4 (0.08, 0.06), A5 (0.09, 0.06), A6 (0.08, 0.07), A7 (0.08, 0.07), A8 (0.09, 0.08), A9 (0.09, 0.07), A10 (0.12, 0.08), A11 (0.12, 0.08), NKW (0.32), GL (0.2), P (0.76, 0.82), E (1.05, 0.96), PC (0.33, 0.24), PF (0.4, 0.33), PT (0.47, 0.11), MSC (0.35, 0.25), MSF (0.75, 0.18), MST (0.49, 0.09), MTC (0.28, 0.23), MTF (0.801, 0.2), MTT (0.62, 0.09).

Colouration. Head and pronotum dark brown; legs light brown; abdomen dark brown.

Head. Head capsule wider than long; anterior margin sinuate, bent dorsoventrally, slightly elevated; posterior margin rounded with emargination in front of neck; posterior angles straight; setation with 1 pair of PCS and 1 row of PMS. Epicranium shiny and smooth, without micropunctuation, setation with 1 pair of OS, and 1 pair of PFS, without FS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, MS, and POS; sockets of MS and POS umbilicate. Postgena with row of 3 setae in line from eye to gular suture; gular sutures not reaching posterior margin of head; anterior part of gula with 2 setae; posterior margin of head with 2 setae close to gular sutures. Neck with foramen magnum occupying ¾ of occiput. Antenna moniliform from antennomere 5, shorter than head and pronotum combined (Fig. 21A); antennomeres longer than wide, tomentose pubescence starting from antennomere 4; antennomere 1 as long as 2 and 3 combined, antennomere 3 longer than 2. Labrum bilobed, with V-shaped emargination (Fig. 21A; Supp. file 2).

Thorax. Pronotum slightly wider than long, with umbilicate micropunctures and 3 longitudinal rows of seta, 1 median and 2 lateral. Metasternal intercoxal process with 1 pair of acute processes with light brown tips. Elytron longer than wide; surface of elytra with umbilicate micropunctures in 6–8 moderately dense longitudinal rows (Fig. 21A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae, apical comb with wider spaced and thicker longitudinal setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 as long as 2, mesotarsomere 3 shorter than 1 and as long as 4, mesotarsomere 5 as long as 1; inner ctenidium of metatibia longer than outer.

Abdomen. *Male*: tergites with low density of micropunctuation. Posterior margin of tergite VII straight (Fig. 21B). Posterior margin of sternite VII with moderate deep emargination flanked by acute processes on each side (Fig. 21C). Posterior margin of tergite VIII with single broad, triangular lobe with rounded tip (Fig. 21D). Posterior margin of sternite VIII with midline broad emargination, of about ¼ of segment length, lateral angles obtuse (Fig. 21E). Posterior margin of tergite IX with midlongitudinal deep emargination in ¾ of segment length (Fig. 21A); aedeagus, in parameral view, median lobe with consistent width throughout, apex emarginate with rounded sclerotised processes on each side; pPMS conical, sclerotised, slightly bent towards each other, shorter than pLS and APS. pLS partially sclerotised, narrow, flattened; APS longer than pLS and pPMS, apically divided in 2 partially membranous arrow-like processes (Fig. 21F–I). *Female*: unknown.

Distribution

The species is known only from the type locality in Brazil (Amazonas, Manaus, Reserva Florestal Adolpho Ducke). It was collected at a low altitude.

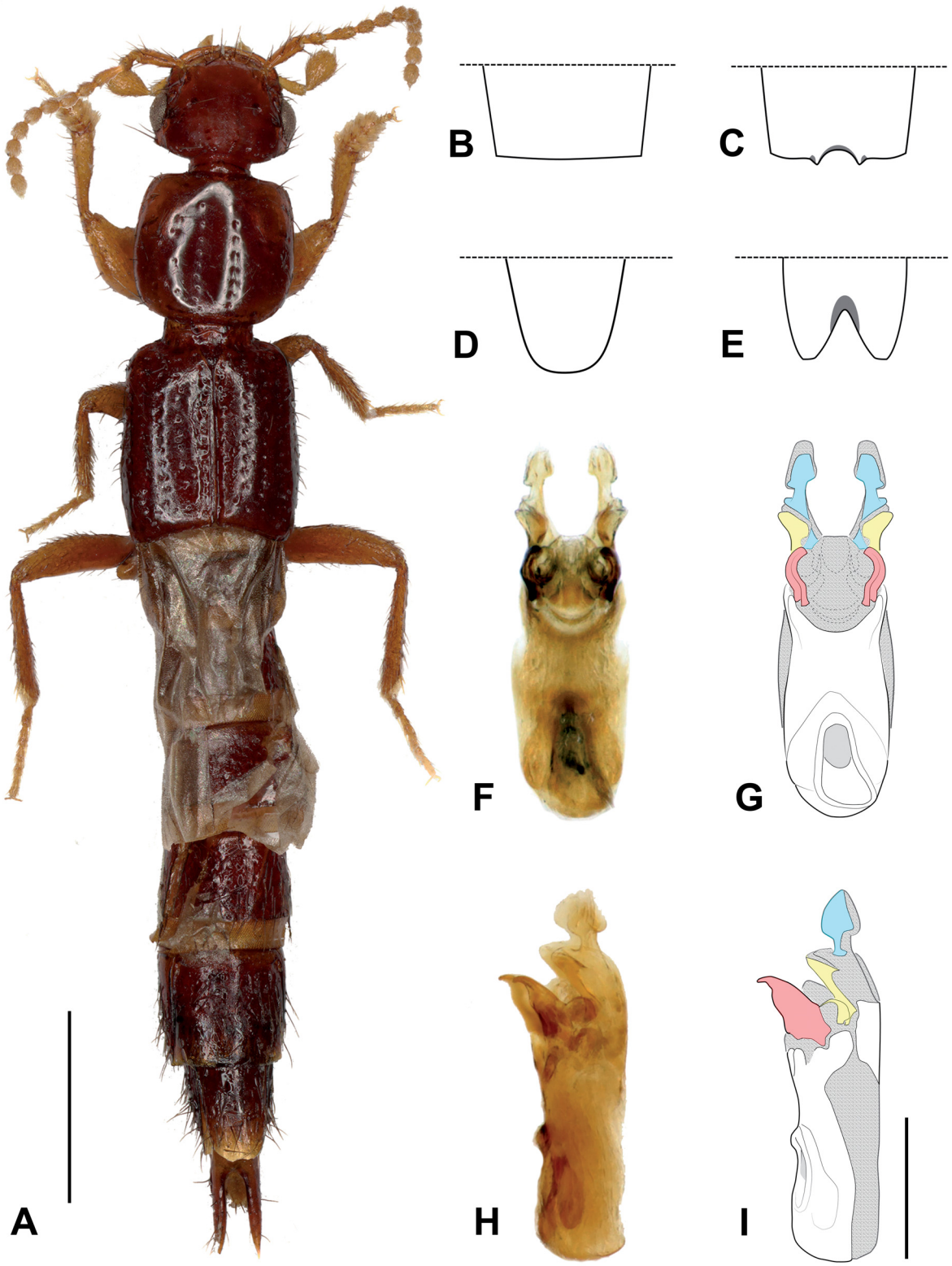

Fig. 21. *Neolindus tropicalis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (NHMUK). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.25 mm.

Neolindus utriensis Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:D8A5DF7F-1903-4F28-B5AD-49E6F04A16E6
Fig. 22; Supp. file 2

Diagnosis

This species resembles *N. parautriensis* sp. nov. and *N. maya* sp. nov. in terms of habitus, but can be distinguished from them by the characters of the apical sclerites of the aedeagus: pPMS of *N. utriensi*s sp. nov. is straight, narrower than in *N. maya* and wider than in *N. parautriensis*, bearing apical arms of uneven lengths, bent inwards (Fig. 22F–I).

Etymology

The species name is derived from the name of the Utría National Natural Park in Chocó, Colombia, which is the type locality. An adjective.

Type material

Holotype

COLOMBIA • ♂; "*Neolindus utriensis* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Chocó, Bahía Solano, PNN [National Natural Park] Utría Centro de Visitantes; 6°1'0.00''N, 77°20'0.00''W; 2 m [m.a.s.l]; Malaise; 15–30 Out 2000; J. Perez Leg.; M.816 \\ SM0549296 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

COLOMBIA • 1 ♀; "*Neolindus utriensis* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Chocó, Bahía Solano, PNN Utría Centro de Visitantes; 6°1'0.00''N, 77°20'0.00''W; 2 m; Malaise; 26 Dec 2000–01 Feb 2001; J. Perez Leg.; M.1465 \\ SM0549286 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "M.1342 \\ SM0549283 KUNHM-ENT [barcode]"; KUNHM-ENT.

Description

Measurements. BL (12.50), H (0.75, 1.53), A (3.25), a1 (0.53, 0.11), a2 (0.20, 0.08), a3 (0.42, 0.09), a4 (0.28, 0.08), a5 (0.29, 0.08), a6 (0.29, 0.07), a7 (0.28, 0.06), a8 (0.28, 0.07), a9 (0.25, 0.08), a10 (0.21, 0.06), a11 (0.21, 0.08), NKW (0.70), GL (0.35), P (1.45, 1.86), E (2.30, 1.80), PC (1.35, 0.65), PF (1.65, 0.75), PT (1.1, 0.3), MSC (0.9, 0.6); MSF (1.76, 0.5), MST (1.41, 0.15), MTC (0.73, 1.0), MTF (1.89, 0.37), MTT (1.83, 0.2).

Colouration. Head and pronotum dark brown, legs brown, abdomen dark brown.

Head. Head capsule wider than long; anterior margin straight; posterior margin straight with emargination in front of neck; posterior angles straight; setation with 1 PCS, PMS in dense straight row. Epicranium with dense micropunctuation, setation with 1 pair of FS, 2 pairs of PFS in row parallel to PMS, and without OS. Gena with irregular surface, with depression from mandibular base to posterior eye margin, and with 1 OT. Postgena with row of 3 setae in line from eye to gular suture, gular sutures not reaching posterior margin of head, anterior part of gula with irregular row of 6–8 setae. Antenna thin, longer than head and pronotum combined; antennomeres longer than wide; tomentose pubescence starting from antennomere 3; antennomere 1 shorter than antennomeres 2 and 3 combined; antennomere 3 longer than 2. Labrum bilobed, with shallow U-shaped emargination (Fig. 22A; Supp. file 2).

Thorax. Pronotum wider than long, almost quadrate (ratio 0.87), with umbilicate punctures and 2 paramedial rows of setae. Basisternum of prosternum triangular, with row of 8 setae on anterior margin, longitudinal ridge present, and surface wrinkled. Metasternal intercoxal process with 1 pair of

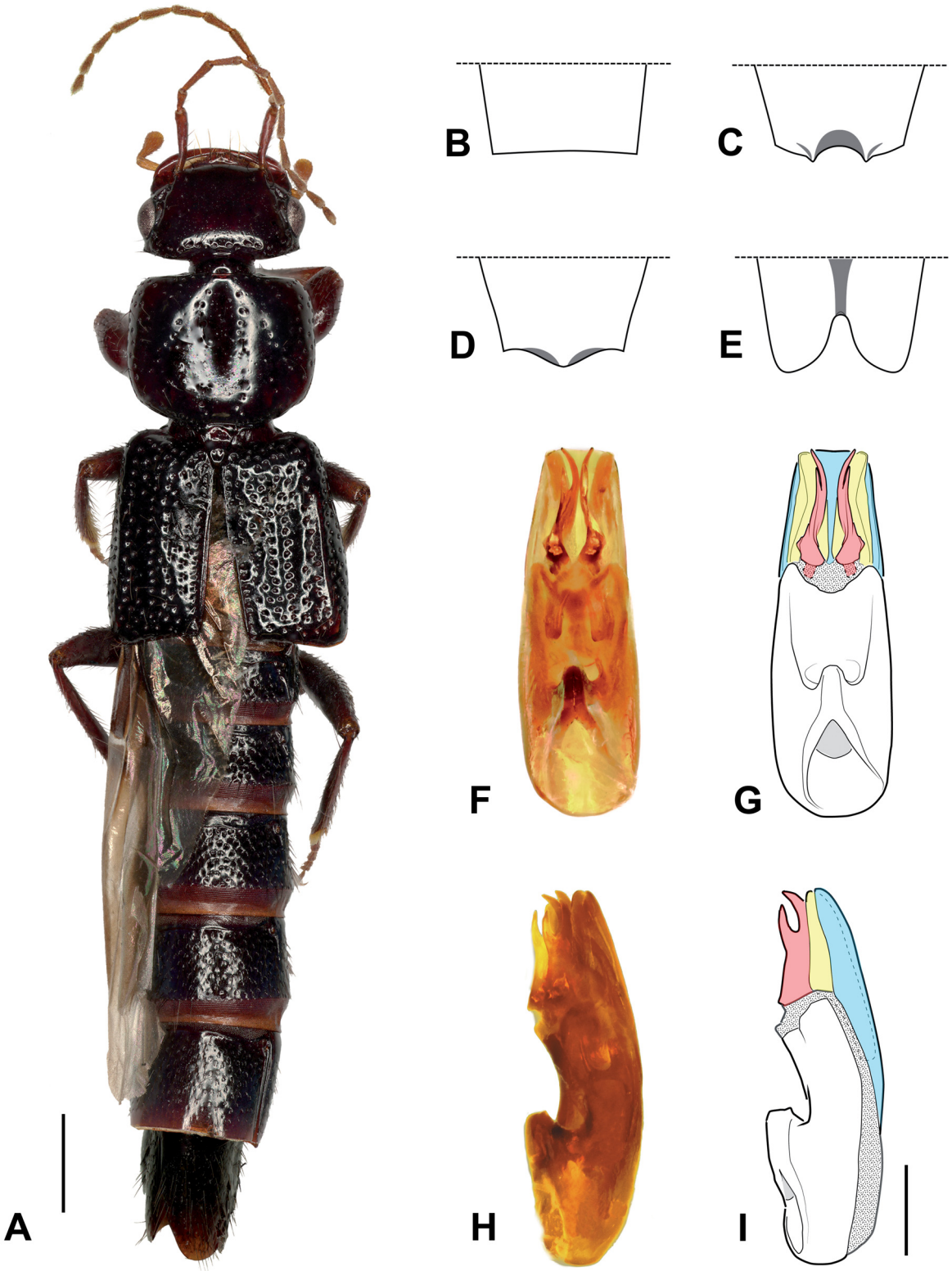

Fig. 22. *Neolindus utriensis* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B**–**E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F**–**I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.5 mm.

acute spine-like processes. Elytron longer than wide, surface of elytra with moderately dense umbilicate punctures in 6–8 longitudinal rows (Fig. 22A; Supp. file 2).

Legs. Protibia with 4 well-developed combs of setae; mesotibial apical ctenidia on both sides, inner longer than outer; mesotarsomere 1 as long as mesotarsomere 2; mesotarsomeres 3 and 4 shorter than mesotarsomere 1; mesotarsomere 5 longest; metacoxa wider than long; metatarsomere 1 as long as metatarsomeres 2 or 5; metatarsomeres 3 and 4 combined shorter than 5.

Abdomen. Tergites with sparse micropunctures. Anterior margin of tergite VIII (base of tergite) with 4 internal canals, elevated, central canals forming inverted pentagon. Anterior margin of sternite VIII with 4 internal canals. *Male*: posterior margin of tergite VII straight (Fig. 22B). Posterior margin of sternite VII with moderate emargination at middle, with acute processes on each side (Fig. 22C). Posterior margin of tergite VIII with wide median process with narrow invaginations on sides and acute angles (Fig. 22D). Posterior margin of sternite VIII bilobed, with narrow median emargination reaching up to ¼ of segment length, lobes rounded (Fig. 22E); posterior margin of tergite IX with midlongitudinal deep invagination at ¾ of segment length (Asenjo 2011: fig. 12); aedeagus, median lobe broadened at base, apex with moderately deep emargination and rounded processes on each side. pLS thin, with net-like microsculpture, forming elongate flat processes equal in length to pPMS and slightly longer than APS. APS spoon-shaped, wider than pLS, with slightly emarginate apical edge. pPMS elongate, thin, with 2 acute apical arms bent inwards; arm closer to median foramen longer than arm closer to parameral side (Fig. 4A–B). *Female*: posterior margin of sternite VII sinuate; sternite VIII bilobed, slightly emarginate (Fig. 22F–I).

Distribution

This species is known only from the type locality in Colombia (Choco, Bahía Solano, Utría National Natural Park). It was collected at a low altitude by Malaise trap.

Neolindus volkeri Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:2DDCFAA0-665A-41E8-8F11-6B69B9E06A7A
Fig. 23; Supp. file 2

Diagnosis

Neolindus volkeri Guzman, Tokareva & Żyła sp. nov. resembles *N. schubarti* and *N. irmleri* in aedeagus morphology. However, in *N. volkeri*, the median invagination on the parameral side of the median lobe is wider than in the other two species (Herman 1991: fig. 210; Asenjo 2011: fig. 2; Fig. 23F–G). Unlike the two similar species, *N. volkeri* has a deep midline emargination with a convex median part on the posterior margin of sternite VII, with acute protruding processes on both sides (emargination shallow and without processes in both *N. schubarti* and *N. irmleri*) (Herman 1991; fig. 208; Asenjo 2011: fig. 4; Fig. 23C). Additionally, the posterior margin of tergite VIII has deeper pair of emarginations surrounded by invaginated areas (shallower and without invagination in *N. schubarti* and *N. irmleri*) (Fig. 23D; Herman 1991: fig. 206; Asenjo 2011: fig. 6).

Etymology

This species is dedicated to the great taxonomist, Volker Assing, who passed away prematurely. He was a renowned specialist in Palaearctic and Oriental Paederinae and described two species of *Neolindus*.

Type material

Holotype

FRENCH GUIANA • ♂; "*Neolindus volkeri* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Roura, 8.4 Km SSE; 200 m [m a.s.l.]; 4°40'41''N, 52°13'25''W; 25–29 May 1997; J. Ashe, R Brooks Leg.; FG1AB97 O88; ex: flight intercept trap \\ SM0133899 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

FRENCH GUIANA • 1 ♂; "*Neolindus volkeri* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ Roura, 8.4 lm SSE; 200 m; 4°40'41''N, 52°13'25''W; 25–29 May 1997; J. Ashe, R. Brooks Leg.; FG1AB97 O88; ex: flight intercept trap \\ SM0133900 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "SM0131259 KUNHM-ENT [barcode]"; KUNHM-ENT • 1 ♀; same data as for preceding; "26 May–10 Jun 1997; FG1AB97 182 \\ SM0330895 KUNHM-ENT[barcode] \\ *Neolindus* sp. det. J.S. Ashe 1998"; KUNHM-ENT.

Description

Measurements. BL (12.95), H (1.46, 1.82), A (4.04), a1 (0.63, 0.12), a2 (0.13, 0.09), a3 (0.37, 0.09), a4 (0.22, 0.07), a5 (0.28, 0.09), a6 (0.29, 0.08), a7 (0.28, 0.08), a8 (0.27, 0.07), a9 (0.23, 0.08), a10 (0.18, 0.08), a11 (1.16, 0.82), NKW (0.62), GL (0.4), P (1.46, 1.82), E (2.22, 1.99), PC (0.6, 0.36), PF (1.01, 0.42), PT (0.62, 0.26), MSC (0.56, 0.54), MSF (1.54, 0.27), MST (0.86, 0.15), MTC (0.53, 0.44), MTF (1.69, 0.36), MTT (1.24, 0.17).

Colouration. Head and pronotum dark brown; legs brown; abdomen dark brown.

Head. Head capsule wider than long; anterior margin straight, posterior margin rounded, posterior angles rather rounded; setation with 1 pair of PCS and multiple PMS arranged in 1 row. Epicranium with umbilicate, highly dense micropunctuation, setation with 1 pair of FS and 1 pair of PFS, without OS. Gena with irregular surface, with depression from mandibular base to middle of eye, setation with 1 OT, 1 pair of MS, POS and PTOS; sockets of MS and POS concave. Postgena with row of 3 setae in line from eye to gular suture; gular sutures not reaching head posterior margin; anterior part of gula with irregular row of 6–8 setae. Neck with foramen magnum occupying ½ of occiput. Antenna thin and elongate, longer than head and pronotum combined, all antennomeres longer than wide, tomentose pubescence starting from antennomere 3, antennomere 1 as long as antennomere 2 and 3 combined, antennomere 3 longer than 2. Labrum tetralobed, central lobes well-developed, central emargination shallow, V-shaped, with 2 dark thick seta in median line of labrum lobes (Fig. 23A; Supp. file 2).

Thorax. Pronotum nearly quadrate, with umbilicate micropunctures and 2 distinct paramedial and lateral rows of setae. Basisternum of prosternum with 4 anterior setae and 1 posterior pair of setae. Metasternal intercoxal process with 1 pair of acute processes. Elytron longer than wide, surface of elytra with umbilicate micropunctures in 8–9 moderately dense longitudinal rows (Fig. 23A; Supp. file 2).

Legs. Protibia with 5 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer; mesotarsomere 1 as long as mesotarsomere 2, mesotarsomere 3 shorter than mesotarsomere 1 and as long as mesotarsomere 4, mesotarsomere 5 as long as mesotarsomere 1; inner ctenidium of metatibia longer than outer; metatarsomere 1 longer than metatarsomere 2, metatarsomere 2 as long as metatarsomeres 3 and 4 combined, metatarsomere 3 longer than metatarsomere 4, metatarsomere 5 as long as metatarsomere 2.

Abdomen. Tergites with low density, randomly placed micropunctures. Posterior margin of tergite VII straight (Fig. 23B). *Male*: posterior margin of sternite VII with moderate emargination and acute processes on each side (Fig. 23C). Posterior margin of tergite VIII trilobed, acute triangular lobe in middle and slightly acute-angled lateral lobes, each as long as central lobe (Fig. 23D). Posterior margin of sternite VIII with shallow midlongitudinal emargination and rounded lateral angles (Fig. 23E). Posterior margin of tergite IX with midlongitudinal deep emargination about ¾ of segment length; aedeagus, median lobe robust, strongly sclerotised, medially widened, apex with 2 sclerotised processes, deep midpoint emargination reaching middle of lobe, edges of emargination with brush of 5–7 short, dark setae; pLS small, oval, hidden under APS; APS oval, spoon-shape, covering pLS and pPMS. pPMS

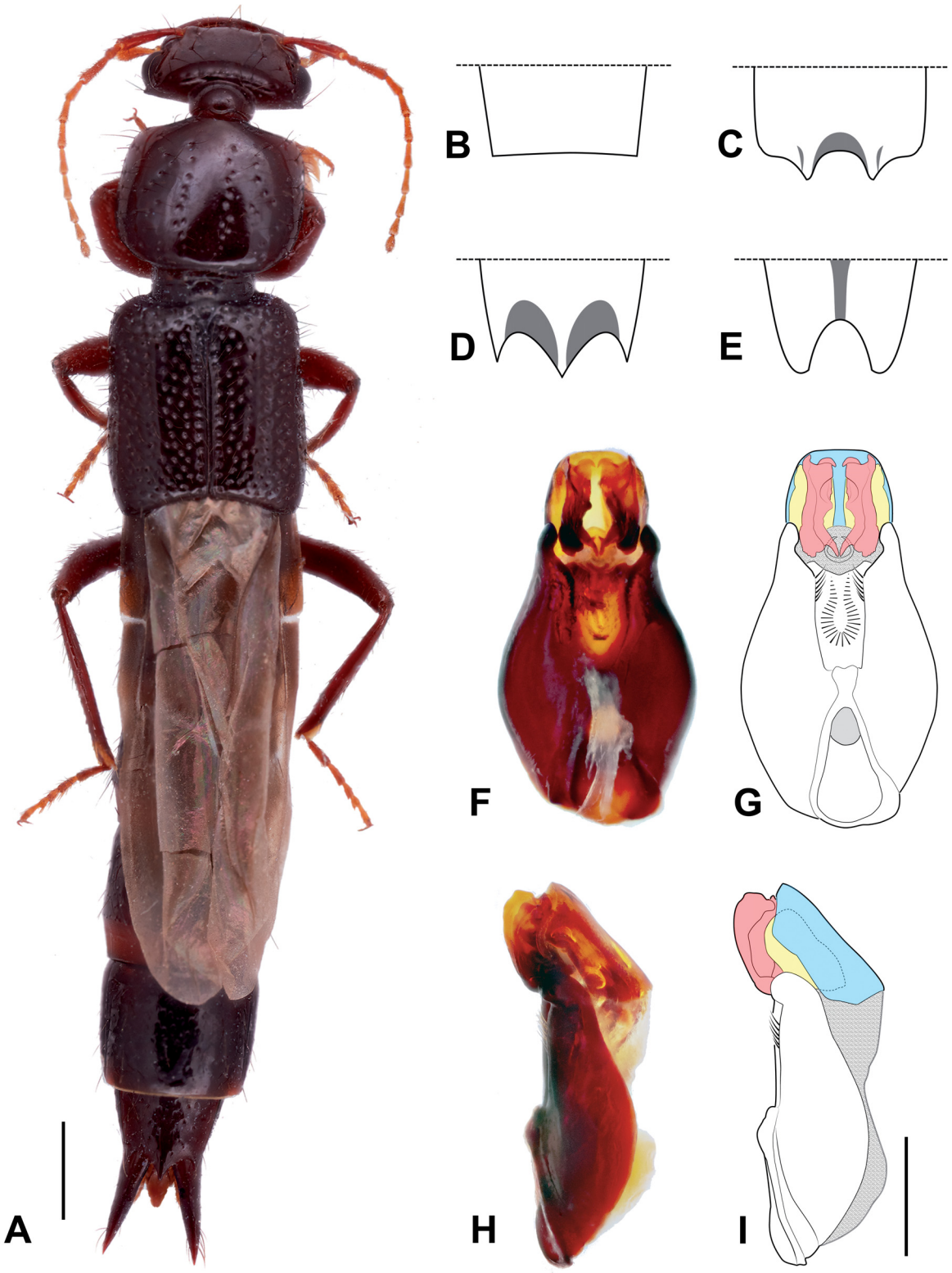

Fig. 23. *Neolindus volkeri* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: 1 = mm; B–I = 0.5 mm.

of complicated form, with several lamellas and arms, anchored with sclerotised ring under membrane (Fig. 23F–I). *Female*: lack of emargination on posterior margin of sternite VII; posterior margion of tergite VIII slightly sinuated.

Distribution

The species is only known from the type locality in French Guiana, (Cayenne, Roura). It was collected at a low altitude using a flight interception trap.

Neolindus yotokae Guzman, Tokareva & Żyła sp. nov.
urn:lsid:zoobank.org:act:F2E11144-A406-413E-9DBF-465E1B0252DB
Fig. 24; Supp. file 2

Diagnosis

Among species with two pairs of head trichobothria, *N. yotokae* Guzman, Tokareva & Żyła sp. nov. resembles *N. paralellus* with a wide midlongitudinal invagination in sternite VIII and the structure of aedeagus. However, in contrast to *N. paralellus*, this invagination is glabrous (without setation), and the concave deep emargination of the posterior margin of sternite VIII is covering the whole width and has acute lateral ends (Herman 1991: fig. 88; Fig. 24E). Moreover, tergite VIII has a rounded posterior margin, compared to straight margin in *N. paralellus* (Herman 1991: fig. 87; Fig. 24D), and the aedeagus of *N. yotokae* has shorter apical invagination on the parameral side compared to these structures in *N. paralellus* (Herman 1991: fig. 85; Fig. 24F–G).

Etymology

The name is dedicated to Dr Karla Yotoko, evolutionary biologist, and Camilo Guzman's PhD advisor. An adjective.

Type material

Holotype

VENEZUELA • ♂; "*Neolindus yotokae* Guzman, Tokareva & Żyła 2024 HOLOTYPE [red label] \\ Aragua, [Mario Briceño Iragorry, Henri Pitttier National Park] Rancho Grande Biological Station; 10°21'38''N, 67°41'38''W; 1550 m [m a.s.l.]; 14 May 1998; R. Anderson Leg.; VEN1A98 008A; ex: cloud forest litter \\ SM0129897 KUNHM-ENT [barcode]"; KUNHM-ENT.

Paratypes

VENEZUELA • 1 ♂; "*Neolindus. yotokae* Guzman, Tokareva & Żyła 2024 PARATYPE [yellow label] \\ same data as for holotype \\1550 m; 10°21'38''N, 67°41'38''W; 14 May 1998; VEN1A98 007E \\ [barcode] SM0112571 KUNHM-ENT"; KUNHM-ENT • 1 ♂; same data as for preceding; "1100–1300 m; 10°21'32''N, 67°40'46''W; 14 MAY 1998; J. Ashe, R. Anderson Leg.; VEN1ABH98 009; ex: fungus log \\ SM0334139 KUNHM-ENT[barcode]"; KUNHM-ENT.

Description

Measurements. BL (5.7), H (0.34, 0.5), A (0.77), a1 (0.2, 0.06), a2 (0.09, 0.05), a3 (0.07, 0.05), a4 (0.06, 0.05), a5 (0.05, 0.05), a6 (0.05, 0.06), a7 (0.06, 0.06), a8 (0.06, 0.07), a9 (0.06, 0.07), a10 (0.06, 0.08), a11 (0.01, 0.08), NKW (0.33), GL (0.20), P (0.8, 0.7), E (0.06, 0.62), PC (0.32, 0.13), PF (0.57, 0.3), PT (0.3, 0.1), MSC (0.4, 0.25), MSF (0.6, 0.2), MST (0.4, 0.1), MTC (0.26, 0.21), MTF (0.38, 0.22), MTT (0.4, 0.07).

Colouration. Head and pronotum brown; legs light brown; abdomen brown.

Head. Head capsule wider than long; anterior margin sinuate, dorsoventrally deflexed, slightly elevated; posterior margin rounded with emargination in front of neck; posterior angles round; setation with 2 pairs of PCS and 1 row with 8 setae of PMS, central PMS wide apart, setae near neck longer than others. Epicranium with low-density micropunctuation, setation with 1 pair of OS; IOS and SAS displaced towards second and third parts of head. Gena with smooth surface, with depression from mandibular base to posterior margin of head, setation with 2 trichobothria, MS, 1 POS, and 1 PTOS between margin of eye and POT. Postgena with row of 3 setae in line from eye to gular suture; gular sutures reaching posterior margin of head joining neck pits; anterior part of gula without setae, with lateral depressions; midlength of gula with 2 setae; posterior margin of head with 2 setae close to gular sutures. Antenna moniliform from antennomere 3, shorter than head and pronotum combined; antennomeres 1–7 longer than wide, antennomeres 8–11 wider than long, tomentose pubescence starting from antennomere 5; antennomere 1 as long as antennomeres 2 and 3 combined, antennomere 2 longer than 3. Labrum bilobed, with wide quadrate emargination (Fig. 24A, Supp. file 2).

Thorax. Pronotum slightly longer than wide, with umbilicate randomly distributed micropunctures. Prosternal basisternum with longitudinal carina and smooth surface. Mesosternum with scutiform basisternum with scarce tuberculate micropunctuation. Metasternal intercoxal process with 1 pair of rounded processes. Elytron wider than long, shorter than pronotum; surface of elytra with umbilicate micropunctures in 4–6 moderately dense longitudinal rows (Fig. 24A, Supp. file 2).

Legs. Protibia with 3 well-developed combs of setae; mesotibial apical ctenidium on both sides, inner longer than outer, outer spine-like; mesotarsomeres 1, 2 and 3 as long as mesotarsomere 5 as longer than mesotarsomeres 1, 2, 3 and 4 combined; inner ctenidium of metatibia longer than outer; metatarsomeres 1, 2, 3 and 4 subequal, metatarsomere 5 as long as metatarsomeres 1–3 combined.

Abdomen. *Male*: tergites with moderate density of micropunctuation. Posterior margin of tergite VII straight (Fig. 24B). Posterior margin of sternite VII sinuate, with moderately shallow midline emargination, area around emargination invaginated (Fig. 24C, Supp. file 2). Posterior margin of tergite VIII elongate, rounded (Fig. 24D). Posterior margin of sternite VIII with midline concave emargination as long as posterior margin width, with wide longitudinal glabrous stripe throughout entire segment, lateral angles rounded (Fig. 24E, Supp. file 2). Posterior margin of tergite IX with midlongitudinal deep emargination in ⅓ of segment length, fused; aedeagus, in parameral view, median lobe of uniform width along sides, apex of median lobe with 2 lateral flattened rounded processes. pPMS and pLS absent. APS short, triangular, flattened, no longer than median lobe, partially covering median foramen (Figs. 24F–I). *Female*: unknown.

Distribution

The species is known from the type locality in Venezuela (Aragua, Rancho Grande Biological Station). It was collected in the cloud forest at high altitude (1550 m a.s.l.) by sifting leaf litter.

Additional records of Neolindus Scheerpeltz, 1933

Here, we present new occurrence records for several species of *Neolindus* that were previously known only from their type locality. All the data was retrieved from labels of specimens from the Kansas University collection (KUNHM-ENT). For each species, the total number of specimens collected in a specific country is indicated in square brackets at the end of the list of material studied.

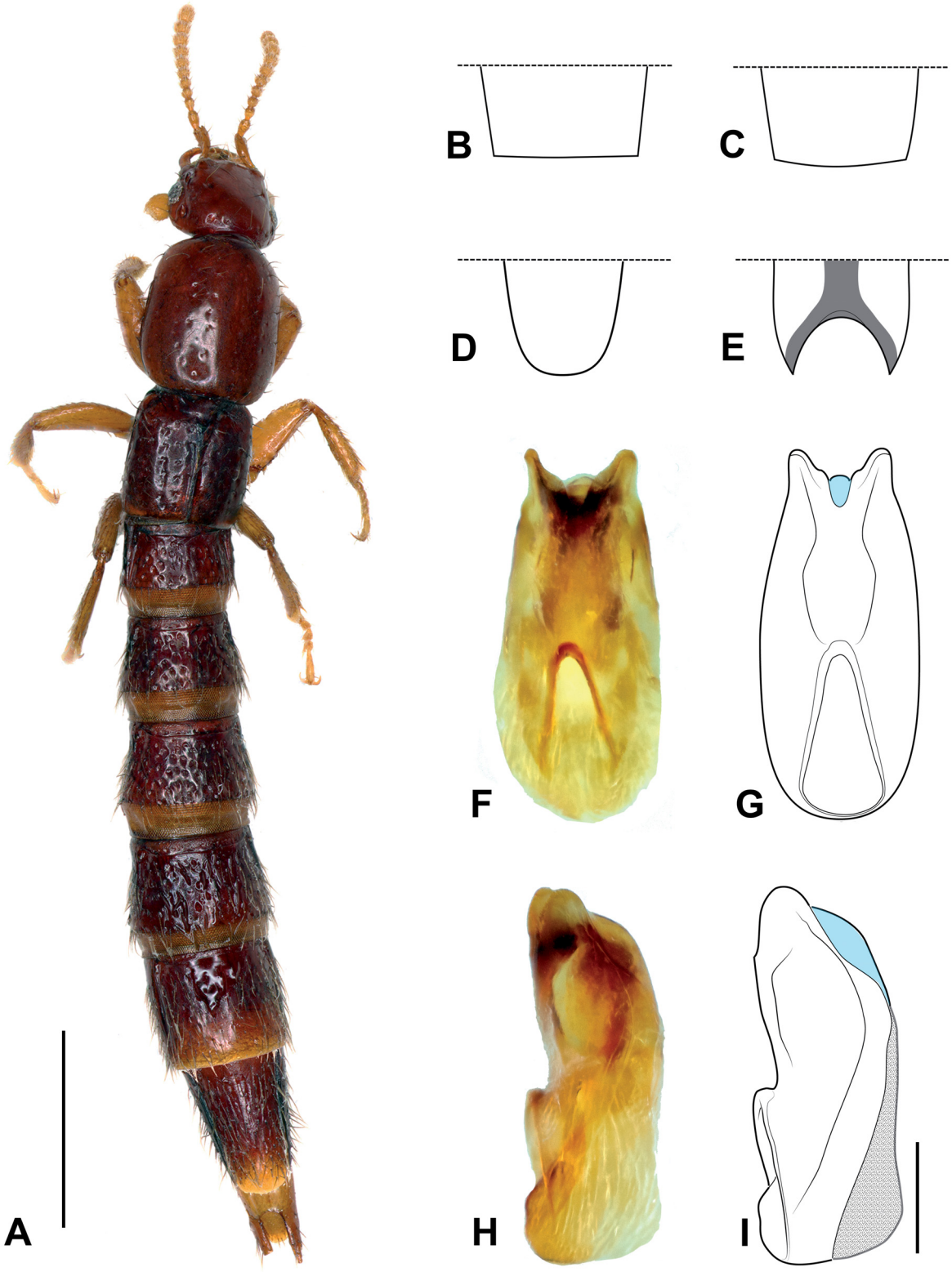

Fig. 24. *Neolindus yotokae* Guzman, Tokareva & Żyła sp. nov., holotype, ♂ (KUNHM-ENT). **A**. Habitus, dorsal view. **B–E**. Abdominal segments, posterior margin schemes. **B**. Tergite VII. **C**. Sternite VII. **D**. Tergite VIII. **E**. Sternite VIII. **F–I**. Aedeagus. **F**. Parameral view. **G**. Parameral view scheme. **H**. Lateral view. **I**. Lateral view scheme. Scale bars: A = 1 mm; B–I = 0.2 mm.

Neolindus agilis Herman, 1991

BOLIVIA • 1 spec.; "Cochabamba, Cochabamba, 67.5 km NE, Est. Biol. [Biological Estation] Valle del Sajita, Universidad de San Simon; 300 m; 17°6'33''S, 64°47'52''W; 7 FEB 1999; R. Anderson Leg.; BOL1A99 027; Rain forest litter"; KUNHM-ENT.

Neolindus apiculus Herman, 1991

COLOMBIA • 1 spec.; "Cauca, PNN [Natural National Park] Gorgona, El Roble; 130m; 2°58'0.00''N, 78°11'0.0''W; 9-27.VIII.2001; H. Torres Leg.; M.2124"; KUNHM-ENT.

PANAMA • 1 spec.; "Chiriqui, Prov. [Province] La Fortuna, Cont. Divide Trail; 1080m; 08°46'0.00''N, 82°12'0.00''W; 21 May 1995; J. Ashe, R. Brooks Leg.; #033"; KUNHM-ENT.

Neolindus basisinuatus Herman, 1991

COSTA RICA • 1 spec.; "Heredia, Puerto Viejo, Estacion Biologica La Selva - OET; 100m; [10°25'52.0"N, 84°00'13.0"W]; I-II.1993; P. Hanson Leg.; ex: Malaise"; KUNHM-ENT • 1 spec.; "Punta. [Puntarenas]; Prov. Rincon de Osa; 150m; 08°41'141''N,, 83°31'117''W; 23-26.VI.2001; S. Peck, J. Peck Leg.; CR1P01 006; 1-13, Flight Intercept Trap"; KUNHM-ENT • 2 specs; same data as for preceding; "CR1P01 006; 1-14"; KUNHM-ENT • 2 specs; "Puntarenas, Prov. Rincon de Osa; 50m; 08°41'141''N, 83°31'117''W; 23-26.VI.2001; S. Peck, J. Peck Leg.; CR1P01 005; 1-13, Flight Intercept Trap"; KUNHM-ENT • 1 spec.; same data as for preceding; "CR1P01 005; 1-14"; KUNHM-ENT • 1 spec.; same data as for preceding; "150m, CR1P01 006; 1-13"; KUNHM-ENT. [8 specimens.]

PANAMA • 1 spec.; "Panama, Colon, Parque Nac. Soberania, Pipeline Rd. Km 6; 40m; 09°07'0.00''N, 79°45'0.00''W; 7-21.VI.1995; J. Ashe, R. Brooks, Z. Fallin; #265; ex: FIT [Flight Intercept Trap]"; KUNHM-ENT • 1 spec.; "Panama, Prov. Barro Colorado Island; 200m; 9°11'0.0"N, 79°51'0.0"W; 7 July 2000; S. Chatzimanolis; PAN1C00 046; ex: FIT"; KUNHM-ENT • 3 specs; same data as for preceding; KUNHM-ENT • 1 spec.; same data as for preceding; "8 July 2000; PAN1C00 052"; KUNHM-ENT • 1 spec.; same data as for preceding; "17–23 July 2000 July 2000; PAN1C00 087"; KUNHM-ENT • 1 spec.; same data as for preceding; "40m; 14-18 July 2000; PAN1C00 07"; KUNHM-ENT • 2 specs; same data as for preceding; "100 m; 9°11'0.0"N, 79°51'0.0"W; 6.VIII.1994; D. Banks Leg.; ex: Flight Intercept Trap"; KUNHM-ENT • 1 spec.; "Colon, 14 km N jct Escobal & Piña Rds; [100]m; [9°14'33.2"N, 80°02'11.0"W]; 02-11.VII.1996; J. Ashe, R. Brooks Leg.; PAN1AB96 181B; ex: Flight Intercept Trap"; KUNHM-ENT. [11 specimens.]

Neolindus campbelli Herman, 1991

COSTA RICA • 2 specs; "Alajuela, E.B. San Ramon, R.B. San Ramon, 27 km N, 8 km W; 850-950m; 10°13'30''N, 84°35'30''W; 29 Jun -6 Jul 1999; R. Anderson Leg.; CR1A99 108A; ex: Wet premontane forest"; KUNHM-ENT • 1 spec.; "Guanacaste, Guanacaste, Conservación Area, Maritza Field Station; 950 m; [10°57'25.5"N, 85°29'41.4"W]; 13 Feb 1996; R. Anderson Leg.; CR1A96 010A; ex: Dry-tropical wet forest trans, litter"; KUNHM-ENT • 2 specs; "Guanacaste, Patilla Biological Station; 610m; 10°59'22''N, 85°25'33''W; 13–15 Jul 2000; J. Ashe, R. Brooks; CR1ABF00 135; ex: FIT [Flight Intercept Trap]"; KUNHM-ENT • 1 spec.; "Guanacaste, Parque Nacional Guanacaste, Maritza Field Station; 950 m; 10°57'25.5"N, 85°29'41.4"W; 13 Feb 1996; R. Anderson Leg.; CR1A96 010A; Ex: Dry-tropical wet forest trans, litter"; KUNHM-ENT • 1 spec.; "Guanacaste, Santa Cecilia, Patilla Biological Station; 610m; 10°59'22''N, 85°25'33''W; 13-15 Jun 2000; J. Ashe, R. Brooks Leg.; CR1ABF00 135; ex: FIT"; KUNHM-ENT • 3 specs; "Punta. [Puntarenas], Rincon de Osa; 150m; 08°41'41''N, 83°31'17''W; 23-26 Jun 2001; S. Peck, J. Peck Leg.; CR1P01 006; 1-14, ex:FIT"; KUNHM-ENT •

1 spec.; "Puntarenas, Las Cruces Biol. Sta., San Vito; 1425m; 8°46'59''N, 82°59'18''W; 22 Jun 1998; R. Anderson Leg.; CR 1A98 108; Berlese leaf litter"; KUNHM-ENT • 1 spec.; "Prov. Rincon de Osa; 150m; 08°41'141''N, 83°31'117''W; 23–26 Jun 2001; S. Peck, J. Peck; CR1P01 006; 1-14, ex: FIT"; KUNHM-ENT. [12 specimens.]

PANAMA • 2 specs; "Barro Colorado Island; 40m; 9°09'06.2"N, 79°50'44.7"W; 25–30 Jun 2000; S. Chatzimanolis Leg.; PAN1C00 033; ex: FIT" • same data as for preceding; "30 Jun–5 Jul 2000; PAN1C00 039"; KUNHM-ENT • 1 spec.; "Panama, Cerro Campa, nr Capira; 790m; 08°44'0.00''N, 79°57'0.00''W; 18 May 1995; C. Chaboo Leg."; KUNHM-ENT. [3 specimens.]

Neolindus cuneatus Herman, 1991

COSTA RICA • 1 spec.; "Puntarenas, Osa Penn., Fundacion Neotrop. 10 km W Rincon; 20m; 8°42'30''N, 83°31'30''W; 23 Jun 1997; R. Anderson Leg.; CR1A97 028B; ex: Berlese forest litter"; KUNHM-ENT.

PANAMA • 1 spec.; "Chiriqui, , 20.4 km N San Felix; 950m; 8°22'0.00''N, 81°46'0.00''W; 8 Jun 1995; R. Anderson Leg.; PAN2A95 09A; ex: Berlese forest litter"; KUNHM-ENT.

Neolindus hermani Asenjo, 2011

COSTA RICA •1 spec.; "Puntarenas, Rancho Quemado, Rincon de la Osa; 150m; 08°41'41''N, 83°31'17''W; 23–26 Jun 2001; S. Peck, J. Peck Leg.; CR1P01 006; 1-14, esx: FIT"; KUNHM-ENT.

FRENCH GUIANA • 1 spec.; "Saint-Laurent-du-Maroni, Saul, 7 km N,0.5 km ESE Les Eaux Claires, Mt. La Fumee; 220m; 3°39'46''N, 53°13'19''W; 31 May–3 Jun 1997; J. Ashe, R. Brooks; FG1AB97 124; Malaise • 1 spec.; same data as for preceding; "4–8 Jun 1997; FG1AB97 164"; flight intercept trap; KUNHM-ENT. [2 specimens.]

Neolindus irmleri Asenjo, 2011

FRENCH GUIANA • 1 spec.; "Saûl, 7 km N, 0.5 km ES Les Eaux Claires, Mt. La Fumee, 3°39'46"N, 53°13'19"W, 300 m 4–8 JUN 1997; J. Ashe, R. Brooks Leg.: FG1AB97 164 ex: flight intercept trap"; KUNHM-ENT • 1 spec.; same data as for preceding; "220 m 31 MAY-3 JUN 1997; FG1AB97 124; ex: malaise trap"; KUNHM-ENT. [2 specimens.]

Neolindus lodhii Herman, 1991

FRENCH GUIANA • 1 spec.; "Roura, 18.4 Km SSE; 240m; 4°36'38''N, 52°13'25''W; 29 May–10 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 180; ex: FIT [Flight Intercept Trap]"; KUNHM-ENT • 1 spec.; "Cayenne, 33.5 km S and 8.4 km NW of Hwy N2 On Hwy D5; 30m; 4°48'18''N, 52°28'41''W; 29 May–9 Jun 1997; J. Ashe, R. Brooks Leg.; FG1A97 171; ex: FIT."; KUNHM-ENT • 1 spec.; "Cayenne, Matoury, 41.5 km SSW or HWY N2; 50m; 4°37'22''N, 52°22'35''W; 29 May–9 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 170; ex: FIT"; KUNHM-ENT • 2 specs; "Saul, 7 km N,0.5 km ESE Les Eaux Claires, Mt. La Fumee; 300m; 3°39'46''N, 53°13'19''W; 4-8.VI.1997; J. Ashe, R. Brooks Leg.; FG1AB97 164; ex:FIT"; KUNHM-ENT. [5 specimens.]

SURINAME • 2 specs; "Brokopondo, Brownsberg Nature [Reserve], Witi Creek Trail; 420m; 4°56'55''N, 55°10'53''W; 22–23 Jun 1999; Z.H. Falin, H. Hiwat Leg.; SUR1F99 097; ex: Flight Intercept Trap"; KUNHM-ENT • 1 spec.; "Marowijne, Paloemeu; 160m; 3°20'56"N, 55°26'18W; 5–9 Jun 1999; D. Konoe Leg.; SUR1F99 185; ex: FIT"; KUNHM-ENT • 1 spec.; "Saramacca, West Suriname Road; 30m; 5°13'37''N, 55°52'54''W; 12–14 Jun 1999; Z. H. FaliN,B. DeDijin Leg.; ex: FIT"; KUNHM-

ENT • 2 specs; “Marowijne, Paloemeu; 160m; 3°20’56’’N, 55°26’18W; 5–9 Jun 1999; D. Konoe Leg.; SUR1F99 185; ex: FIT”; KUNHM-ENT. [6 specimens.]

Neolindus procarinatus Herman, 1991

COSTA RICA • 1 spec.;Heredia, Puerto Viejo, La Selva Biol. Res. Sta. [Biological Research Station] 3 km S; 100m; 10°25’52.0”N, 84°00’13.0”W; 2–15.Jun 1996; R. Hanley Leg.; CR1H96 016; ex: flight intercept trap”; KUNHM-ENT.

FRENCH GUIANA • 1 spec.; “Roura, 18.4 km SSE; 240m; 4°36’38’’N, 52°13’25’’W; 29 May 10 Jun 1997; J. Ashe, R. Brooks Leg.; FG1AB97 180; ex: flight intercept trap”; KUNHM-ENT.

Neolindus punctogularis Herman, 1991

COSTA RICA • 1 spec.; “Heredia, Puerto Viejo, OTS-La Selva; 100m; 10°25’52.0”N, 84°00’13.0”W; II-III.1993; P. Hanson Leg.; ex: Malaise”; KUNHM-ENT • 1 spec.; “Heredia, 3 km S Puerto Viejo, OTS-La Selva; 100m; [10°25’52.0”N, 84°00’13.0”W]; II-III.1993; P. Hanson Leg.; ex: Malaise”; KUNHM-ENT • 1 spec.;“Heredia, Puerto Viejo, La Selva Biol. Res. Sta. 3 km S; [100m]; 10°26’00.0”N, 84°01’00.0”W; 21.I-3.II.1991; J. S. Noyes Leg.; ex: Malaise”; KUNHM-ENT • 1 spec.; “Puntarenas, Alturas, 2 km NE, Estac. Biol. Las Alturas; 1520m; 8°56’56”N, 82°50’1”W; 20 Jun 1998; R. Anderson Leg.; CR1A98 104; ex: Berlese leaf litter”; KUNHM-ENT • 1 spec.; “Puntarenas, Sirena, Corcovado National Park, Sirena Stn,Upper Ollas Trail; 140m; 8°29’7’’N, 83°34’39’’W; 24–28 Jun 2000; Z.H. Falin Leg.; CR1ABF00 036; ex: Flight Intercept Trap”; KUNHM-ENT • 1 spec.; “Puntarenas, Prov. Rincon de Osa; 50m; 08°41’141’’N, 83°31’117’’W; 23–26 Jun 2001; S. Peck, J. Peck Leg.; CR1P01 005; ex: 1-13, Flight Intercept Trap”; KUNHM-ENT • 1 spec.; “Puntarenas, Estacion Biologica Monteverde; 1540 m; 10°19’40.0”N, 84°49’08.0”W; 12 Jun 2001; R. Anderson Leg.; CR1A01 108; ex: Montane Forest Litter”; KUNHM-ENT • 1 spec.; “Puntarenas, Bahia Chal, Reserva Forestal Golfo Dulce, 5 km W Piedras Blancas; 100m; [8°45’34.7”N, 83°28’54.8”W]; Feb–Mar.1993; Leg. P. Hanson; ex: Malaise”; KUNHM-ENT • 1 spec.; “San Jose, San Antonio de Escazu; 1300m; 9°39’16’’N, 84°08’16’’W; 1-30.IX.1998; W. Eberhard, P. Hanson Leg.; CR1EH99 04”; KUNHM-ENT • 1 spec.; same data as for preceding; “CR1EH99 02”; KUNHM-ENT • 1 spec.; “Guanacaste, Parque Nacional Guanacaste, Maritza Field Station; 950m; [10°57’25.5”N, 85°29’41.4”W]; 13 Feb 1996; R. Anderson Leg.; CR1A96 010A; ex: Dry tropical -Wet forest trans. litter”; KUNHM-ENT. [11 specimens.]

NICARAGUA • 1 spec.; “Rio San Juan Dept., 8 km SE, El Castillo, Refugio Bartola; 80m; 10°58’06.0”N, 84°20’04.0”W; 23–31 May 2002; S. Peck Leg.; NIC1P02 002; ex: Flight Intercept Trap”; KUNHM-ENT.

PANAMA • 1 spec.; “Chiriqui, La Fortuna; 1200m; 8°46’0.00’’N, 82°12’0.00’’W; 9 Jun 1995; R. Anderson Leg.; PAN2A95 10C; ex: Berlese forest litter”; KUNHM-ENT.

Neolindus retusus Herman, 1991

BOLIVIA • 1 spec.; “Cochabamba, Cochabamba, 67.5 km NE Estacion Biologica Valle del Sajita, Universidad de San Simon; 300m; 17°6’33’’S, 64°47’52’’W; 7–9 Feb 1999; F. Genier Leg.; BOL1G99 044; ex: Dung Trap 2”; KUNHM-ENT.

COSTA RICA • 1 spec.; “Heredia, Puerto Viejo, La Selva Biol. Res. Sta. 3 km S; 80m; 10°25’0.00’’N, N,84°0’0.00’’W; 2–15 Jun 1996; R. Hanley Leg.; CR1H96 016; ex: Flight Intercept Trap”; KUNHM-ENT.

Neolindus sinuatus Herman, 1991

PERU • 1 spec.; "Madre de Dios, Parque Nacional del Manu, Pakitza Bio. Stn. Casianal Trail, Reserved Zone; 317m; 11°56'41''S, 71°17'0.00''W; 15–16 Out 2000; R. Brooks Leg.; PERU1B00 013; ex: Flight Intercept Trap"; KUNHM-ENT.

Discussion

With our findings of 21 new species, the number of species described in the genus increases to 60, indicating that *Neolindus* is even more diverse that previously thought, although not frequently collected. Likewise, the distribution of *Neolindus* is expanded towards the north with a new species and record in Mexico, but still within the Neotropical realm. Its wide distribution across the Isthmus of Panama and the Andes mountain range, two of the main biogeographic barriers in the Neotropics (Domínguez *et al.* 2016; Winston *et al.* 2017), could have influenced the evolution and distribution of the genus. Such patterns are rarely studied in the insect soil fauna (but see e.g., Muñoz-Valencia *et al.* 2022). Additionally, we would like to emphasise that due to the loss and fragmentation of habitat in the regions where the specimens were found (Ma *et al.* 2023), some of the species could have changed their conservation status. Therefore, the species described from historical material housed in the museum collections could be now restricted to a few areas or even extinct.

Acknowledgements

We are grateful to the curators and collection managers for access to the collections under their care and for all their help, and to Magdalena Kowalewska of MIZ PAS, Poland, for the SEM micrograph preparation. We would also like to thank to Joshua Jenkins Shaw and two anonymous reviewers for their comments and suggestions. This project has received funding from the Polish National Science Centre, grant number 2019/35/B/NZ8/03431. DŻ was additionally supported by the SYNTHESYS+ Project (http://www.synthesys.info/), which European Community Research Infrastructure Action finances under the H2020 Integrating Activities Programme (GB-TAF Project number 823827).

Author contribution

The authors have contributed to the article as follows: YCGS and AT equally contributed to study conception and design, data collection and analysis, interpretation of results, and drafting the initial version of the manuscript. KK contributed to data collection, interpretation of results, and critical manuscript revision. DŻ contributed to study conception and design, data collection, interpretation of results, and critical manuscript revision.

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Manuscript received: 8 September 2023
Manuscript accepted: 26 February 2024
Published on: 24 June 2024

Topic editor: Tony Robillard
Section editor: Max Barclay
Desk editor: Pepe Fernández

Printed versions of all papers are deposited in the libraries of four of the institutes that are members of the EJT consortium: Muséum national d'Histoire naturelle, Paris, France; Meise Botanic Garden, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium. The other members of the consortium are: Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Leibniz Institute for the Analysis of Biodiversity Change, Bonn – Hamburg, Germany; National Museum of the Czech Republic, Prague, Czech Republic; The Steinhardt Museum of Natural History, Tel Aviv, Israël.

Supplementary files

Supp. file 1. Right maxilla scheme. Abbreviations: 1MP = maxillary palpomere 1; 2MP = maxillary palmere 2; 3MP = maxillary palpomere 3; 4MP = maxillary palpomere 4; GA = galea; GAB = galea base; LA = lacinia; LAB = lacinia base; ST = stipes. https://doi.org/10.5852/ejt.2024.942.2581.11741

Supp. file 2. Habitus of the type material of the new species of *Neolindus* Scheerpeltz, 1933. https://doi.org/10.5852/ejt.2024.942.2581.11743