

Koleopterologische Rundschau	87	325–334	Wien, September 2017
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# New data on Scolytini LATREILLE, 1804, mainly from Peru, with description of two new species of *Cnemonyx* EICHHOFF, 1868 (Coleoptera: Curculionidae: Scolytinae)

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## Abstract

Two new species of *Cnemonyx* EICHHOFF, 1868 (Coleoptera: Curculionidae: Scolytinae: Scolytini) are described from Peru: *C. cupreus* and *C. incanus*. One new combination is proposed: *Loganius acuminatus* (SCHEDL, 1976) (= *Cnemonyx acuminatus* SCHEDL, 1976). The males of *Camptocerus major* (EGGERS, 1929) and *Loganius acuminatus* SCHEDL, 1976 are described. The sexual dimorphism of the species of the genus *Scolytopsis* BLANDFORD, 1896 is clarified.

**Key words:** Coleoptera, Curculionidae, Scolytinae, Scolytini, *Camptocerus*, *Cnemonyx*, *Loganius*, *Scolytopsis*, taxonomy, Satipo, Peru.

## Introduction

The tribe Scolytini consists of six genera (*Camptocerus* DEJEAN, 1821, *Ceratolepis* CHAPUIS, 1869, *Cnemonyx* EICHHOFF, 1868, *Loganius* CHAPUIS, 1869, *Scolytopsis* BLANDFORD, 1896, *Scolytus* GEOFFROY, 1762), and approximately 220 species (SMITH & COGNATO 2010, 2013, SMITH et al. 2017). Two species of *Cnemonyx* are described as new for science, and the males of *Camptocerus major* (EGGERS, 1929) and *Loganius acuminatus* (SCHEDL, 1976) are described for the first time. The sexual dimorphism in the genus *Scolytopsis* has never been studied satisfactorily. The new data now available make it possible to clarify previous misinterpretations.

## Material and methods

All specimens of the new species described below were collected by A.V. Petrov in Satipo Province (Junín Region, Peru). Material is deposited in the following collections:

APP	Alexander Petrov private collection, Moscow, Russia
NMW	Naturhistorisches Museum Wien, Vienna, Austria
SDEI	Senckenberg Deutsches Entomologisches Institut, Leibniz-Zentrum für Agrarlandschaftsforschung, Müncheberg, Germany
ZMM	Zoological Museum of Moscow State University, Moscow, Russia

Proventriculi and male genitalia were placed in hot 10% KOH. After 20–30 minutes they were neutralized in 20% acetic acid and washed with water. Images of beetles were made with a Cannon 50D camera and a MP-e65 mm macro lens. Photographs of proventriculi and male genitalia were made with a Zeiss AxioSope.A1 microscope and a Canon EOS 6D camera.

## *Camptocerus major* (EGGERS, 1929)

### MATERIAL EXAMINED:

P E R U: JUNÍN: Chanchamajo Prov. (holotype ♀, NMW); JUNÍN: Satipo Prov., 5 km NNE Puerto Ocopa, left bank of Perené River, near Canan Eden village, 1100 m a.s.l., 3.–6.II.2008, leg. A.V. Petrov (8 ♂♂, 12 ♀♀, APP).

DESCRIPTION (male): 3.40–3.50 mm long, 2.26–2.40 × as long as wide (Fig. 1a–c). Color dark brown to black.

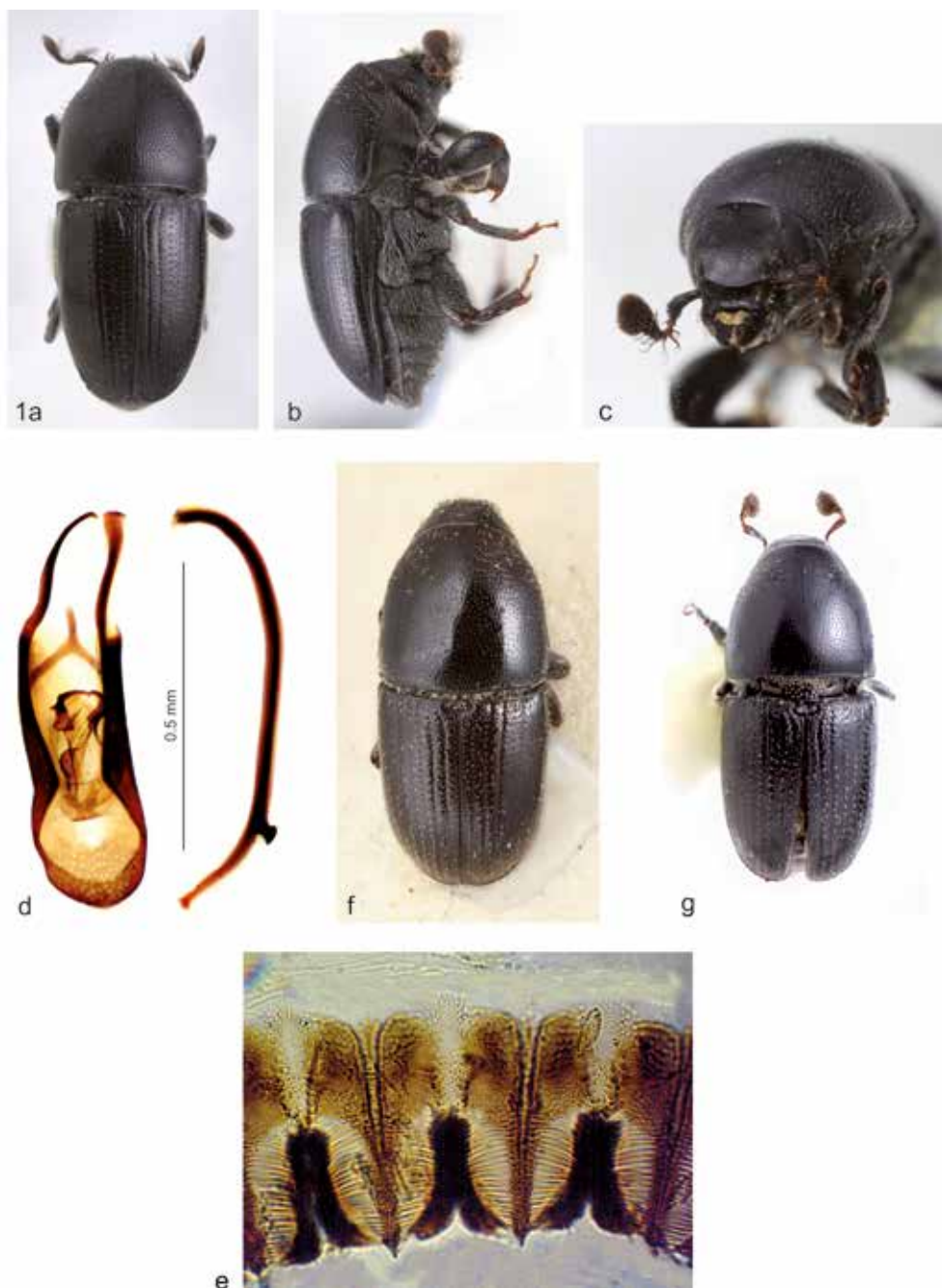


Fig. 1: *Camptocerus major*; a-e: male: a) dorsal view, b) lateral view, c) frons, d) aedeagus, e) proventriculus; f-g: female: f) holotype, dorsal view, g) dorsal view of female from Canan Eden.

Head dark brown to black, dull. Epistoma impressed, basal epistomal margin armed with a strongly developed, subacute, arcuate carina, lateral margins with a vertical subacute carina; surface shagreened, with short brown erect setae. Frons strongly excavated, with the excavation bordering the ocular margin; surface shagreened, reticulated, with fine small sparse punctures; lateral margins to the median line with brown erect setae; vertex closely punctate by small punctures with short pale setae. Pregena (sensu HOPKINS 1909) with long light setae. Gena with limited area covered by light pale setae (mycangia), the part of gena near episternal area strigate. Eyes entire, large, oval. Antennal scape elongate and narrowly rounded distally, bearing setae on distal two-thirds, those equal to length of scape; segments 2–7 of funicle bearing brushes of long dark brown setae; anterior face of club covered by numerous dark brown setae.

Pronotum dark brown to black, weakly shining, as long as wide. Basal pronotal margin weakly bisinuate; apical margin broadly rounded, lateral margin with a long straight carina; apical third without strigae, with numerous shallow punctures, disc coarsely reticulated, with round deep punctures; apical fourth bearing sparse stout brown setae and numerous very short pale setae. Episterna punctate in basal and apical areas (as on pronotal disc, but in central part with sparse small punctures); apical part with long pale setae, base and centre area with very short palmately pale setae divided into two filaments. Scutellum wide,  $3.60 \times$  as wide as long, black, dull.

Elytra dark brown to black, weakly shining,  $1.44\text{--}1.45 \times$  as long as wide,  $1.60 \times$  as long as pronotum. Elytral sides subparallel, narrowing to apex; surface smooth, with straight striae, striae 1–2 weakly impressed at base, punctures in striae large, rounded; interstriae flat with very small punctures. Each interstria with an uniseriate row of short hair-like pale setae, striae punctures each with a microscopic adjacent seta. Declivity evenly flattened.

Metaventrite and metepisternum black with pale setae palmately divided into four or more filaments. Abdomen dark brown to black, ventrites 1–4 bearing palmate setae and a transverse row of long pale hair-like setae, ventrite 5 with numerous long hair-like setae and short palmate setae. Legs dark brown, apex of tibia and tarsi reddish brown, femora and tibiae covered by short pale setae.

Genital morphology (Fig. 1d): Aedeagus elongate,  $3.10 \times$  as long as wide; apophyses  $1.60 \times$  as long as median lobe, lateral apical margins and apophyses more sclerotized; median lobe flat, apex narrowly rounded, apical orifice membranous; lateral margins folded dorsally, each forming a triangle with an apex just below the apical third of the median lobe. Internal sac membranous to moderately sclerotized at lateral margins, with two curved and pointed elongate sclerotized projections in basal area. Tegmen semi-circular, ventral side elongated proximad (manubrium or anterior strut). Spicule almost equal in length with aedeagus, sickle-shaped, with large curved hook near distal end.

Proventriculus (Fig. 1e): The inner lining consists of eight sclerotized fragments arranged in a cycle forming a tube. Each fragment  $1.65 \times$  as long as wide; posterior plate  $1.28 \times$  as long as anterior plate. Anterior plate with a deep cleft in sutural area. This cleft with very small pointed teeth. Lateral areas of anterior plate sclerotized with transverse rows of small rounded tubercles, teeth along central cleft larger, rounded. Posterior plate with brush in central suture and with 23–24 masticatory teeth in lateral parts.

FEMALE: 3.2–3.4 mm long,  $2.20\text{--}2.26 \times$  as long as wide (Fig. 1f). Similar to male but epistoma less impressed, occupying less than a quarter of head length, unarmed, without transverse subacute arcuate carina. Frons almost flat, with small punctures, glabrous, median area slightly impressed; lateral margins with setae. Each gena with a large sectoral mycangium (“circular” in SMITH & COGNATO 2010). Segments 4–7 of funicle with setae on dorsal margins; segments 5–7 with setae on ventral margins. Apical third of pronotum strigulate, surface of pronotum more shining.

**DIFFERENTIAL DIAGNOSIS:** The male of *Camptocerus major* is very similar to *C. opacicollis* (EGGERS, 1929), but can be distinguished by the uniseriate rows of small fine hair-like pale setae on the elytral interstriae. Males and females of *C. opacicollis* have wide scale-like setae on the elytral interstriae.

**NOTES:** WOOD (2007) described the male of *Camptocerus major* (SDEI). However, SMITH & COGNATO (2010), after comparing that specimen with the holotypes of *C. major* and *C. opacicollis*, found out that it actually belongs to *C. opacicollis*.

All beetles were collected in egg galleries on a damaged liana.

### *Cnemonyx cupreus* sp.n.

**TYPE LOCALITY:** Satipo Province, Junín Region, Peru.

**TYPE MATERIAL:** **Holotype** ♂ (ZMM): P E R U: JUNÍN: 15 km NW Satipo, near Rio Venado village, 1300 m a.s.l., 74°46'07.0"W 11°11'35.2"S, 21.X.2015, window trap, leg. A.V. Petrov. **Paratype** ♂, same collection data as holotype, but 6.X.2015 (APP).

**DESCRIPTION (holotype):** 3.40 mm long,  $2.19 \times$  as long as wide (Fig. 2a–d). Body dark brown to black; head, pronotum and elytra with metallic coppery sheen.

Head dark brown to black, surface of frons with a brilliant coppery sheen; lower part of frons above epistoma with a transverse glabrous shining narrow median callus (0.1 mm long); frons concave from epistoma to well above upper level of eyes, frontal surface reticulate, punctures coarse, deep; surface from upper level of eyes to epistoma densely pubescent, lateral parts of excavated area with coarse dark brown setae longer on upper part of frons; vertex strigulate and closely reticulate, with numerous punctures. Eyes entire, large, oval. Antennae dark brown, scape bearing short setae on distal two-thirds, funicle 7-segmented, segments 2–7 of funicle bearing long dark brown setae, club flattened with short dark brown setae.

Pronotum  $0.87 \times$  as long as wide, widest at base, gradually converging in  $2/3$  of length and narrowly converging toward rounded anterior margin. Basal margin bisinuate; lateral margin marked by straight raised line from base toward antero-lateral area. Surface smooth, brilliantly shining, with evenly distributed small fine round punctures, becoming coarser toward margins, more abundant in antero-lateral area. Scutellum wide,  $2.30 \times$  as wide as long, black, shining.

Elytra  $1.29 \times$  as long as wide,  $1.48 \times$  as long as pronotum; basal margin with small crenulations; lateral margins slightly bent towards center of elytra and broadly rounded in posterior third, without pointed crenulations in apical part. Declivity occupying posterior third of elytral length, weakly convex. Elytral disc with straight striae, striae 1–2 shallowly impressed; punctures in striae small, round, distinctly impressed. Interstriae wide, four times as wide as striae, interstriae on elytral disc smooth and brilliantly shining, with sparse punctures smaller than striae punctures. Interstriae 2 with two rows of punctures, other interstriae with one row. Vestiture on elytra absent, except interstriae 9 on declivity with sparse, very fine, small pale setae.

Metaventrite and metepisternum black with short pale setae palmately divided into four or more filaments. Abdomen black with numerous small punctures and short fine pale setae. Legs dark brown, tibia covered by short pale setae.

Female: Unknown.

**VARIATION:** The paratype (male) is 2.10 mm long,  $1.61 \times$  as long as wide; the elytra are  $1.28 \times$  as long as wide,  $1.41 \times$  as long as pronotum.

**DIFFERENTIAL DIAGNOSIS:** The new species is closely related to *Cnemonyx atratus* (BLANDFORD, 1896), but can be distinguished by metallic coppery sheen; by transverse median

callus on lower part of frons; by lack of vestiture on elytra, except microscopic short pale setae on interstriae 9 at declivity.



Fig. 2: *Cnemonyx cupreus* sp.n., male: a) dorsal view, b) lateral view, c) frons, d) caudal view.

**DISTRIBUTION:** Known only from the type locality.

**ETYMOLOGY:** The epithet refers to the color of head, pronotum and elytra. “Cupreus” (Latin) means of coppery color.

### *Cnemonyx incanus* sp.n.

**TYPE LOCALITY:** Satipo Province, Junín Region, Peru.

**TYPE MATERIAL:** **Holotype** ♂ (ZMM): P E R U: JUNÍN: 15 km NW Satipo, near Rio Venado village, 1300 m a.s.l., 74°46'07.0"W 11°11'35.2"S, 4.IV.2014, window trap, leg. A.V. Petrov. **Paratype** ♀: same collection data as holotype, but 11.X.2015 (APP).

**DESCRIPTION (male):** 1.95 mm long,  $2.50 \times$  as long as wide (Fig. 3a–d). Body reddish-brown. Head reddish-brown, lower part of frons above epistoma with a long transverse narrow median callus along apical margin of epistoma; frons shallowly concave on median half from epistoma

to upper level of eyes. Surface reticulate, with deep coarse punctures. Surface covered by numerous short yellow setae in concave area, longer in lateral sides of this area. Vertex strigulate and closely punctate. Eyes entire, large, oval. Antennae dark brown, scape elongate and narrow, bearing short setae on distal two-thirds, funicle 7-segmented, segments 2–7 of funicle with long dark brown setae, club flattened with two sutures and short yellow setae.



Fig. 3: *Cnemonyx incanus* sp.n., male: a) dorsal view, b) lateral view, c) frons, d) caudal view.

Pronotum reddish-brown, shining,  $0.9 \times$  as long as wide. Pronotal base almost straight, lateral margin gradually converging from base toward anterior margin, marked by fine raised line; anterior margin narrowed, broadly rounded,  $0.6 \times$  as long as width of base. Apical half of pronotum strigulate, basal half coarsely reticulate, punctures deep, elliptic. Apical third and lateral margins of pronotum covered by long pale hair-like setae. Scutellum wide,  $1.9 \times$  as wide as long, black, dull.

Elytra reddish brown,  $1.35 \times$  as long as wide,  $1.40 \times$  as long as pronotum. Basal margin with small crenulations, lateral margins subparallel on  $3/4$  of elytral length, broadly rounded toward apex. Declivity occupying posterior third of elytra, weakly convex. Elytral disc with straight, not impressed striae, punctures in striae small. Interstriae flat, surface shagreened, with sparse small punctures. Vestiture dense, each interstria with 2–3 rows of short adjacent silvery setae.

Metaventrite and metepisternum dark brown with short pale setae palmately divided into four or more filaments. Ventrites dark brown with small punctures, ventrites 1–5 covered by palmate setae and short fine pale hair-like setae. Legs reddish-brown, covered by short pale setae.

FEMALE: 1.90 mm long,  $2.27 \times$  as long as wide. Similar to male except wider body; transverse narrow median callus in lower part of frons less distinct; shorter setae on antennal funicle.

DIFFERENTIAL DIAGNOSIS: The new species is closely related to *Cnemonyx glaber* (EGGERS, 1929), but can be distinguished by the following characteristics: smaller size, slender habitus, transverse median callus on lower part of frons, dense silvery vestiture covering elytra entirely.

DISTRIBUTION: Known only from the type locality.

ETYMOLOGY: The epithet refers to the color of the elytral vestiture. “Incanus” (Latin) means grey, hoary.

### ***Loganius acuminatus* (SCHEDL, 1976) comb.n.**

*Cnemonyx acuminatus* SCHEDL, 1976: 61.

#### **MATERIAL EXAMINED:**

P E R U: JUNÍN: Satipo Prov., San Isidro, 580 m a.s.l.,  $74^{\circ}38'24.7''\text{W}$   $11^{\circ}11'94.5''\text{S}$ , 19.III.2005, leg. A.V. Petrov (5 ♂♂, 79 ♀♀, APP); JUNÍN: Satipo Prov., 15 km NW Satipo, near Rio Venado village, 1100 m a.s.l.,  $74^{\circ}46'07.0''\text{W}$   $11^{\circ}11'35.2''\text{S}$ , 21.X.2015, window trap, 3.–6.V.2013, leg. A.V. Petrov (1 ♀, APP); LORETO: Loreto Prov., 64 km SW Iquitos, Itaya river, near Cahuide village, 120 m a.s.l.,  $73^{\circ}28'01.3''\text{W}$   $04^{\circ}15'32.4''\text{S}$ , 3.II.2006, leg. A.V. Petrov (1 ♀, APP).

B R A Z I L: BAHIA: Encruzilhada, XI.1972, 980 m, leg. V. Alvarenga (holotype ♀, NMW).

DESCRIPTION (male): 1.50–1.75 mm long,  $2.53\text{--}2.80 \times$  as long as wide (Fig. 4a). Color reddish brown, antenna and tarsi brown.

Head reddish brown, dull. Epistoma entire, unarmed. Frons flat, weakly concave from epistoma to median level of eyes, surface reticulate, with round punctures and covered by two thick bands of short yellow scale-like setae, clearly divided between the median line. Vertex with closely set, round punctures, without pale setae. Eyes entire, coarsely faceted, elongate-oval, dark brown. Antennal scape short, rounded distally, funicle as long as scape. Funicular segment 1 ovoid and laterally compressed; segments 2–7 ventrally produced and  $3.5\text{--}4.0 \times$  as wide as long. Each funicular segment with long setae ( $1.3\text{--}1.6 \times$  as long as funicle) on ventral margin. Antennal club flattened ovoid, with three concentric, strongly procurved sutures marked by rows of pale setae.

Pronotum reddish brown, weakly shining,  $0.96\text{--}1.10 \times$  as long as wide. Base weakly recurved, lateral margin of pronotum marked by fine raised line; basal half of lateral margins subparallel, sides gradually converging toward rounded anterior margin. Surface of pronotal disc reticulate, punctures deep, large, oval, coarser toward margins. Antero-lateral part of pronotum covered by short sparse pale hair-like setae. Scutellum short, rounded.

Elytra  $1.65\text{--}1.80 \times$  as long as wide,  $1.65\text{--}1.68 \times$  as long as pronotum; basal margin with very small crenulations; lateral margins subparallel on  $3/4$  of elytral length, broadly rounded toward apex; on apical part of elytra with pointed crenulations. Elytral disc with straight, not impressed striae, striae 1–4 shallowly impressed on declivity; punctures in striae round, distinctly impressed. Interstriae twice as wide as striae, interstriae on elytral disc smooth and weakly shining, with few sparse punctures on interstriae 1–5, interstriae 6–7 with sparse punctures equal to punctures of striae. Declivity occupying posterior third of elytral length, weakly convex, almost flat. Each interstria on declivity armed with pointed tubercles. Interstriae on declivity with uniseriate rows of sparse erect scale-like pale setae, lateral margin of elytra covered with sparse short setae from base to apex.



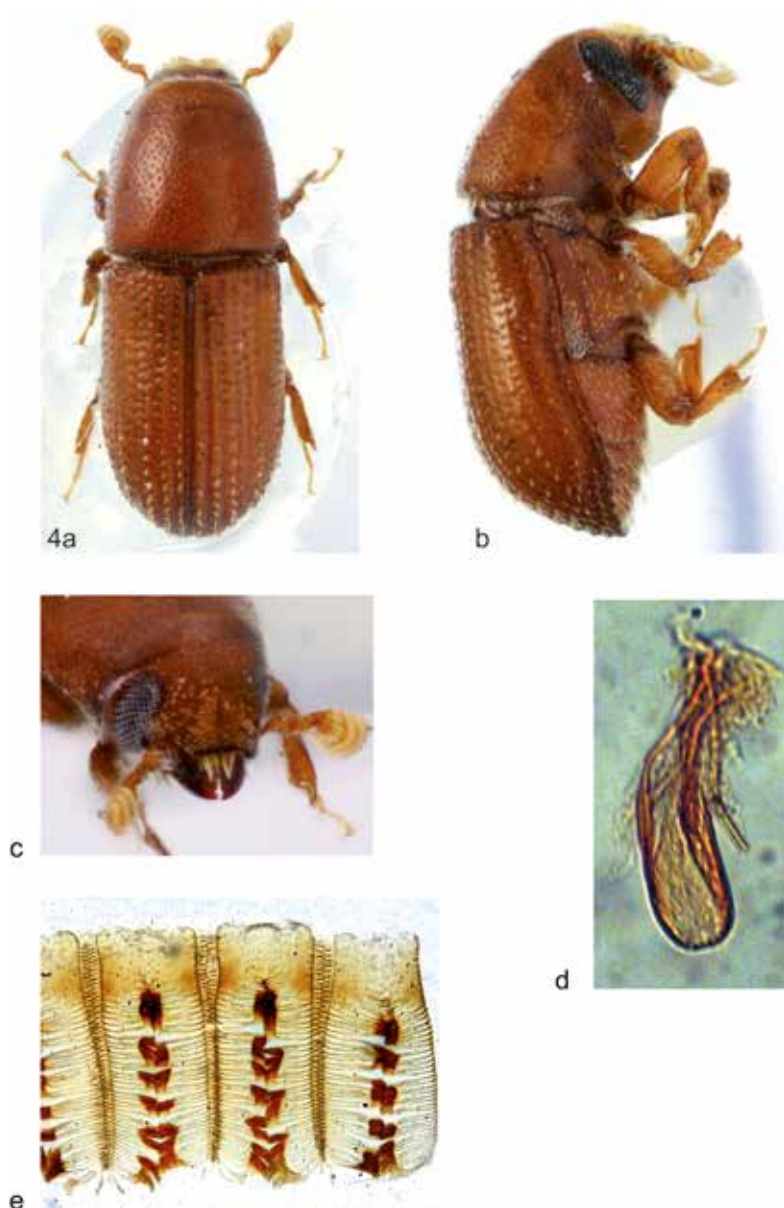


Fig. 4: *Loganius acuminatus*, male: a) dorsal view, b) lateral view, c) frons, d) aedeagus, e) proventriculus.

Episternum reddish-brown with pale short setae palmately divided into four or more filaments. Metaventricle covered by sparse short hair-like setae. Abdomen reddish-brown, ventrites 1–4 with short hair-like pale setae and a transverse row of long pale hair-like setae, ventrite 5 with numerous long and short hair-like setae. Legs with reddish brown femora and tibiae, tarsi brown,



femora and tibiae covered by short pale setae. Meso- and metatibia armed with one supplemental denticle on apical margin.

Proventriculus (Fig. 4e) typical for *Loganius*. Eight fragments of proventriculus oblong, with very short, weakly sclerotized anterior plate. Each fragment  $2.5 \times$  as long as wide; posterior plate  $3.0 \times$  as long as anterior plate. Anterior plate with a wide cleft, weakly sclerotized (more sclerotized in lateral parts), with microscopic tubercles in lateral parts of anterior plate. Posterior plate with brush in central suture and with 34 masticatory teeth in lateral parts.

Genital morphology (Fig. 4d): Aedeagus elongate,  $3.60 \times$  as long as wide; apophyses  $0.92 \times$  as long as median lobe, lateral apical margins and apophyses more sclerotized; median lobe flat, apex broadly rounded, apical orifice membranous; lateral margins folded dorsally. Internal sac membranous without sclerotized structures. Tegmen semi-circular, ventral side elongated proximally. Spicule almost as long as aedeagus, sickle-shaped with large curved hook near distal end.

FEMALE: 1.50–1.65 mm long,  $2.50\text{--}2.70 \times$  as long as wide; similar to male except head with shallowly convex upper part of frons, with concave area from epistoma to central part of the frons.

DIFFERENTIAL DIAGNOSIS: *Loganius acuminatus* is closely related to *L. prociduus* WOOD, 1961, but can be distinguished by the striae not being impressed on elytral disc, and by the shorter concave area of the frons (from epistoma to median level of eyes), which has a less dense vestiture. *Loganius prociduus* has slightly impressed striae on the elytral disc, and the frons is broadly concave from the epistomal margin to the upper level of the eyes.

DISCUSSION: This species is herewith transferred to the genus *Loganius* because of the following morphological features: antennal club with three concentric, strongly procurved sutures marked by rows of setae; funicular segments 2–7 ventrally produced and wider than long; meso- and metatibiae with supplemental denticle on apical margin.

### *Scolytopsis* BLANDFORD, 1896

#### MATERIAL EXAMINED:

*Scolytopsis brasiliensis* EGGERS, 1931: B R A Z I L: Santa Catarina, Nova Teutonia, 300–500 m a.s.l.,  $52^{\circ}23'W$   $27^{\circ}11'S$ , VIII.1966, leg. F. Plauman (2 ♂♂, NMW); same, but  $52^{\circ}23'W$   $27^{\circ}23'S$ , XII.1972, leg. F. Plauman (1 ♂, NMW).

*Scolytopsis peruanus* EGGERS, 1937: P E R U: Cusco, Quispicanchi Prov., Marcapata, “COTYPE”, det. Eggers (1 ♂, NMW).

*Scolytopsis puncticollis* BLANDFORD, 1896: M E X I C O: Jalisco, Playa Pérulo, 3.III.1982, ex *Conocarpus erectus*, leg. T.H. Atkinson (2 ♂♂, 2 ♀♀, APP).

*Scolytopsis toba* WICHMANN, 1914: B R A Z I L: Mato Grosso do Sul, Bovino farm, near Paraná River, 314 m a.s.l.,  $51^{\circ}24'50.7''W$   $20^{\circ}22'56.7''S$ , 5.–6.III.2013, leg. A.V. Petrov (26 ♂♂, 64 ♀♀, APP).

SEXUAL DIMORPHISM: In the past, authors usually did not dissect specimens (BLANDFORD 1896, WOOD 1982, 2007) and therefore the sexual dimorphism of the species of *Scolytopsis* has so far not been studied carefully.

In *Scolytopsis* the frons is sexually dimorphic, flat in females, convex in males. More precisely, in females the frons is broadly flattened from the epistoma to the upper level of the eyes, the lateral and dorsal margins with a dense brush of long setae from vertex to epistoma, separated along the middle by a smooth and shining line. The long setae are bicolored (Fig. 5a). In males the frons is weakly transversely flattened in the lower half from the epistoma to the upper level of the eyes, the upper third of the frons is weakly convex from the center toward the vertex; the frontal surface is coarsely punctate; the center of the frons is provided with a narrow smooth obtuse carina; the vertex, the upper and lateral parts of the frons are weakly strigulate, bearing short sparse setae palmately divided into two filaments; the vestiture on the flat area is hair-like;

the basal epistomal margin has a wide brush of yellow setae in the center, and above the basal epistomal margin there are two longer narrow lateral brushes (Fig. 5b).

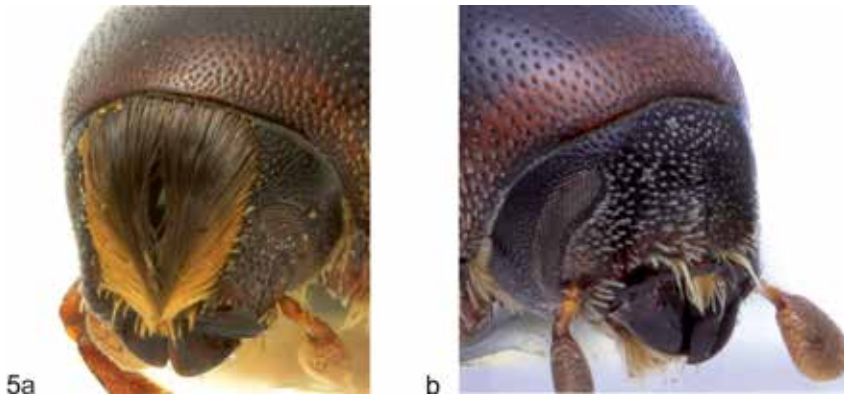


Fig. 5: *Scolytopsis toba*, frons of a) female, and b) male.

### Acknowledgements

The author expresses his most sincere gratitude to Dr. Harald Schillhammer and Dr. Helen Shaverdo (NMW) for providing access to the collection of Karl E. Schedl. Dr. Kirill Makarov (Moscow, Russia) is thanked for providing photographs of the microscopic slides. Dr. Thomas H. Atkinson (University of Texas Entomology Collection, USA) and Dr. Michail Y. Mandelshtam (Tyumen State University, Russia) are thanked for proofreading the manuscript. Special thanks are due to David Quispe for organizing fieldwork around Rio Venado village in Peru. The research was supported by a grant from the Russian Science Foundation (No. 17-04-00360).

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Autor(en)/Author(s): Petrov Alexandr V.

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