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The False Click Beetles (Coleoptera: Eucnemidae) of Laos

by Robert L. Otto

Abstract. The false click beetle fauna is surveyed from Laos. Six new eucnemid genera are described. They include: *Brevisegmentus* gen.nov. (type locality: Matsuyama, Japan), *Siniugum* gen.nov. (Houaphanh province, Laos), *Pseudoisarthrus* gen.nov. (Borikhamxay province, Laos), *Xylofornax* gen.nov. (Khammuane province, Laos), *Graciliforma* gen.nov. (Houaphanh province, Laos) and *Miruantennus* gen.nov. (Champasack province, Laos). Fifty-three new species are described. They include: *Xylophilus hylocharoides* sp.nov. (Houaphanh province), *Xylophilus laosianus* sp.nov. (Houaphanh province), *Bioxylus barclayi* sp.nov. (Houaphanh province), *Bioxylus castaneus* sp.nov. (Houaphanh province), *Bioxylus granulatus* sp.nov. (Phongsaly province), *Hylis parallelus* sp.nov. (Houaphanh province), *Balistica cuneiforma* sp.nov. (Borikhamxay province), *Rhagomicrus cylindriformis* sp.nov. (Houaphanh province), *Rhagomicrus haucki* sp.nov. (Houaphanh province), *Rhagomicrus tibialis* sp.nov. (Houaphanh province), *Siniugum houaphanensis* sp.nov. (Houaphanh province), *Microrhagus bolavenensis* sp.nov. (Attapeu province), *Microrhagus entomophthalmoides* sp.nov. (Houaphanh province), *Microrhagus rufoantennatus* sp.nov. (Oudomxay province), *Microrhagus rufus* sp.nov. (Houaphanh province), *Microrhagus walkeri* sp.nov. (Houaphanh province), *Dirrhagofarsus foveicollis* sp.nov. (Houaphanh province), *Prodirhagus kresli* sp.nov. (Vientiane province), *Sarpedon apicalis* sp.nov. (Houaphanh province), *Scopulifer asiaticus* sp.nov. (Borikhamxay province), *Scopulifer laosianus* sp.nov. (Luangnamtha province), *Euryostus asiaticus* sp.nov. (Houaphanh province), *Feaia geiseri* sp.nov. (Xiengkhouang province), *Heterotaxis elongata* sp.nov. (Borikhamxay province), *Semnodema punctata* sp.nov. (Houaphanh province), *Hodocerus ceratoides* sp.nov. (Borikhamxay province), *Macroscython granulosus* sp.nov. (Louangnamtha province), *Pseudoisarthrus annamensis* sp.nov. (Borikhamxay province), *Spinifornax nigridorsus* sp.nov. (Houaphanh province), *Spinifornax pacholatkoi* sp.nov. (Phongsaly province), *Spinifornax striatus* sp.nov. (Borikhamxay province), *Ceratus phoupaniensis* sp.nov. (Houaphanh province), *Fornax astriatus* sp.nov. (Houaphanh province), *Fornax brancuccii* sp.nov. (Houaphanh province), *Fornax carinicollis* sp.nov. (Borikhamxay province), *Fornax oudomxaiensis* sp.nov. (Oudomxai province), *Fornax phoupaniensis* sp.nov. (Houaphanh province), *Fornax rufoantennatus* sp.nov. (Borikhamxay province), *Dorsifornax borikhamxaiensis* sp.nov. (Borikhamxay province), *Xylofornax dromaeoloides* sp.nov. (Khammuane province), *Xylofornax piceus* sp.nov. (Attapeu province), *Dromaeolus bolavenensis* sp.nov. (Attapeu province), *Dromaeolus depressifrons* sp.nov. (Houaphanh province), *Dromaeolus divergentus* sp.nov. (Khammuane province), *Dromaeolus foveatus* sp.nov. (Xiengkhouang province), *Dromaeolus kubani* sp.nov. (Borikhamxay province), *Dromaeolus laosianus* sp.nov. (Houaphanh province), *Dromaeolus phonsavanicus* sp.nov. (Xiengkhouang province), *Dromaeolus simplicifrons* sp.nov. (Xiengkhouang province), *Dromaeolus xiengkhouangiensis* sp.nov. (Xiengkhouang province), *Nematodes lateralis* sp.nov. (Houaphanh province), *Graciliforma rufoapicalis* sp.nov. (Houaphanh province) and *Miruantennus basalis* sp.nov. (Champasack province). Three new combinations have been detected. They include: *Brevisementus miyatakei* (Hisamatsu, 1955) (*Balistica*), *Spinifornax dubius* (Fleutiaux, 1899) (*Fornax*) and *Spinifornax carissae* (Fleutiaux, 1930) (*Fornax*). Dorsal habitus for 154 of the 162 species, along with lateral habitus for some are illustrated. Aedeagus has been illustrated for four species. New diagnostic keys are provided to distinguish these new species from other species in their respective groups. An annotated checklist is provided for Laotian false click beetles.

Keywords. Coleoptera – Eucnemidae – Laos – checklist – keys – taxonomy – new genera – new species

Introduction

The false click beetles (Elateroidea: Eucnemidae) are a moderately sized group of rarely encountered beetles. The family is globally distributed, found on all continents except Antarctica, and comprise approximately 1900 species in 200 genera. These

beetles are predominantly distributed in the subtropical and tropical regions, with some present in the temperate and boreal regions. Eucnemidae are more diverse in the Indo-Malayan, Australasia and Oceanic regions than any other biogeographical regions of the world.

In North America the term "The False Click Beetles" has been used to differentiate the group from the click beetles (family Elateridae), based on a belief that these beetles lack a clicking mechanism. This belief has been found to be false. Eucnemidae, like several families in the superfamily, utilize a clicking mechanism involving the well-developed prothoracic sternal spine and the cavity of the mesothoracic sternum, activated through contraction of a strong muscle in the pronotum that creates pressure. The clicking mechanism varies greatly among different species, stronger in some to almost absent in a few groups. The clicking mechanism present in many species of Eucnemidae may serve a different purpose than simply a means of righting itself on its feet. Muona (1993) postulated the clicking mechanism may serve as a defensive strategy through which these series of clicks are used to create an audiable sound as a means to startle a would-be predator. Nowadays, the common name for the family is still used, but these beetles are differentiated from Elateridae in a completely different way, mainly by the subterminal attachment of the pedicel to the scape.

These unassuming beetles often have a very interesting and diverse life history. Uncovering unique mysteries of their biology creates a greater appreciation of the family, especially their immature stages and lifecycles. Understanding the lifecycles of these beetles will often lead to a better understanding of their roles in natural communities around the globe. Larvae are highly specialized and structurally diverse, with some being well sclerotized (elateriform), while others are unsclerotized (buprestiform to fusiform) (see Gardner 1935). Larvae are predominately mycetophagous, feeding on fungal mycelia and hyphae present in the surrounding wood. Muona & Teräväinen (1998) observed no evidence of wood fragments in the gut, from which they concluded larvae might obtain nutrition by ingesting liquids from the moist wood. They presumed this was a type of extraoral digestion through means of vomiting digestive juices in the surrounding areas to break down fungal hyphae in the wood, and re-ingesting the fluids.

Close association with fungus present in the trees and wood within the forest system is an important factor in the family's role in forest regeneration, especially in tropical regions. Additionally, Eucnemidae are also good indicators of a diverse forest structure.

Materials and Methods

The study was based on the examination of 851 dry-mounted specimens of Eucnemidae, mostly from Laos, but including some from nearby countries. Specimens were borrowed and identified from over half dozen major institutions and several private collections. Eucnemidae from the Project's collection were also examined as noted below, along with standard codens (referenced in the text) for other collections during the course of the study:

Abbreviations

AAC . . . . . Albert Allen Collection, Boise, ID
BMNH . . . . . Natural History Museum, London, United Kingdom
FSCA . . . . . Florida State Collection of Arthropods, Gainesville, FL
GERP . . . . . Global Eucnemid Research Project, Dept. Entomology, UW-Madison, Madison, WI
JMC . . . . . Jyrki Muona Collection, Helsinki, Finland
MNCN . . . . . Museo Nacional de Ciencias Naturales, Madrid, Spain
MNHN . . . . . Muséum national d'Histoire naturelle, Paris, France
NHMB . . . . . Naturhistorisches Museum, Basel, Switzerland
RBINS . . . . . Royal Belgian Institute of Natural Sciences, Brussels, Belgium
WSC . . . . . Wataru Suzuki Collection, Tokyo, Japan
ZSM . . . . . Zoologische Staatssammlung München, Munich, Germany

Genera are taxonomically arranged in accordance with the classification of MUONA (1993), except for six new genera; species are treated alphabetically. All existing species are redescribed and new species are also described; all taxa are provided with diagnoses. Additional nomenclatural notes are presented where appropriate.

Label data are presented verbatim, with text for each individual label separated from an underlying label by a slash (/). Specimens deposited in the collection of the Global Eucnemid Research Project (GERP) bear a green framed white label, "Collection of the Global Eucnemid Research Project, (Robert L. Otto)".

Specimens were examined under quartz halogen illumination, through a XTL-3300 series 7–90× zoom stereo trinocular microscope. Habitus and genitalic images were taken with a JVC KY-F75U digital camera attached to a Leica® Z16 APO dissecting microscope with apochromatic zoom objective and motor focus drive, using a Synchroscopy Auto-Montage® System and software, resulting image stacks were processed using CombineZP®.

For dissections and genital preparations, a representative dried beetle specimen was relaxed in hot water for 30 minutes and then transferred to a small dish of water where part of the abdomen was removed. The abdomen was placed in a beaker with 40 ml of room temperature weak KOH solution for three hours to soften the tissues around the aedeagus and then rinsed in water to neutralize the KOH. The aedeagus was dissected from the abdomen using a pair of insect pins and subsequently placed in a microvial filled with glycerine after examination and illustration. The microvial was pinned beneath the specimen for permanent storage; the dissected sclerites were secured on a glue board and also pinned beneath the specimen.

KOVALEV (2013) replaced the term clypeus with epistomal part of epicranium. Eucnemidae lack an epistomal sulcus, which would separate the clypeus from the frons below antennal insertions on the front, lower side of the head. The term, 'frontoclypeal region' will be used instead of clypeus or epistomal part of epicranium in these descriptions.

Ecoregions for particular species are listed from The Encylopedia of Earth, which in turn follows the classification of "WWF List of Ecoregions" <http://www.eoearth.org/view/article/51cbed7a7896bb431f692731/>.

Checklist of known false click beetles in Laos
[bold denotes new records]

SUBFAMILY MELASINAE

Tribe Melasini

Tribe Calyptocerini

Tribe Xylobiini

Tribe Epiphanini

Tribe Dirhagini

SUBFAMILY MACRAULACINAE

Tribe Echthrogasterini

Tribe Euryptychini

Tribe Orodotini

Tribe Macraulacini

FAMILY EUCNEMIDAE (False Click Beetles)

Diagnosis. Length 1.50–40.00 mm; body moderately elongate to very elongate; vestiture of recumbent setae often present, usually unicolored, sometimes bicolored; flat, scale-like setae present in some; color uniformly light brown to black, sometimes bicolored or metallic; head deeply inserted into prothorax, somewhat hidden above, strongly transverse, somewhat declined; antennae inserted in front above frontoclypeal region; antennae 11-segmented (rarely 12-segmented), variable in length; scape elongated, inflated; pedicel small, globular, subterminally attached to scape; antennae either moniliform, capitate, clavate, serriform, filiform, pectinate, bipectinate, biserrate or flabellate; mandibles variable, either stout, with basal ventral tooth or slender, without teeth; eyes variable, either small or large, incised in some groups; pronotum variable, either quadrate, longer than wide or wider than long; widest in middle, often parallel-sided or arcuate laterally; disc convex, usually with impressions or gibbosities; lateral pronotal ridge present, usually simple and well developed or serrate and divided; hind angles variably developed; hypomera variable, either without antennal grooves, with notosternal antennal grooves or with lateral antennal grooves; lateral antennal grooves variable, either shallow or deep, wide or narrow, basally opened or basally closed; prothoracic sternal spine variable; either poorly developed, low or high and truncate; elytra variably striate from absent to well striate; interstices usually elevated; metathoracic coxal plates either wider mediad, parallel-sided or wider laterad; male protarsomere I with or without sex combs; male sex combs either basal and straight, basal and curved, encompass entire length or apical; lateral surfaces of mesothoracic and metathoracic tibiae variable with either setae only, setae and transverse rows of spine combs or setae and irregularly placed spines; tarsomere IV either simple or excavate-emarginate; tarsal claws either serrate, simple or basally toothed; last visible ventrite variable, either apically rounded, strongly produced, truncated or bispinose; male aedeagus extremely variable, trilobate; female genital tract variable (MUONA 1993, 2010).

Key to the subfamilies within the family Eucnemidae in Laos

1 Lateral surfaces of mesothoracic and metathoracic tibiae with setae and spines or setae and transverse rows of spine combs. **2**

– Lateral surfaces of mesothoracic and metathoracic tibiae with setae only. ..... **Melasinae Fleming, 1821**

2 Mesothoracic and metathoracic tibiae with sharp angles between lateral and caudal surfaces. ..... **Eucneminae Eschscholtz, 1829**

– Mesothoracic and metathoracic tibiae with rounded angles between lateral and caudal surfaces. ..... **Macraulacinae Fleutiaux, 1922**

SUBFAMILY MELASINAE FLEMING, 1821

Diagnosis. Form oblong to elongate; antennae sexually dimorphic; antennal sensory pegs concentrated on apices and sides of individual antennomeres; mandibles short,

stout; lateral pronotal sides either with a simple ridge or with divided, serrate ridges; hypomeron either simple, without antennal grooves or with notosternal antennal grooves; prothoracic tibiae with single apical spur; tarsomere IV either simple or bilobed; pretarsal claws simple; male prothoracic tarsomere I with or without basal or apical sex combs; male aedeagus either bulbous, wide and with an entire, free median lobe, or highly modified with an enlarged flagellum; female eight sternite partially sclerotized; bursa simple, divided; spermatheca reduced, sclerotized.

Key to the tribes within the subfamily Melasinae

1 Form cylindirical. **2**
– Form narrowed craniad and caudad. **4**
2 Hypomera narrowed craniad. **3**
– Hypomera parallel-sided. ..... **Melasini Fleming, 1821**
3 Antennae either pectinate or flabellate. ... **Calyptocerini Muona, 1993**
– Antennae either tubular or serrate, flattened with lateral keels. .... **Xylobiini Reitter, 1911**
4 Pronotum with simple lateral ridge. ..... **Epiphanini Muona, 1993**
– Pronotum usually with divided lateral ridges. .... **Dirhagini Reitter, 1911**

Tribe Melasini Fleming, 1821

Diagnosis. Form cylindrical; mandibles short, without ventral tooth; antennomeres 3–10 equal, either pectinate or flabellate; pronotum with simple lateral ridge; hypomeron without antennal grooves, nearly parallel-sided; prothoracic sternal peg high and strongly convex behind prothoracic coxae; male prothoracic tarsomere I without sex combs; last visible ventrite strongly produced; tergite VII usually keeled, exposed; aedeagus originally bulbous; median lobe entire, free and originally with both dorsal and ventral basal struts; bursa divided, simple; spermatheca divided, sclerotized.

Melasis Olivier, 1790

Diagnosis. Melasini, with apical margin of frontoclypeal region feebly trilobed and less than twice as wide as between antennal sockets; antennal grooves absent; metathoracic coxal plate medially 1.20–2.50 times wider than laterally; last visible ventrite strongly produced; tibiae flattened; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, entire; flagellum simple.

Note. Identification of these two species was made possible by translating, interpretating and comparing information from Fleutiaux (1934) and Leiler (1985) with these specimens.

Key to the species of *Melasis* (males only)

1 Antennomere IV serrate; flabellate from V–X. ..... ***Melasis balwanti* Fleutiaux, 1934**

– Antennae flabellate from IV–X. ..... ***Melasis brinchangi* Leiler, 1985**

***Melasis balwanti* Fleutiaux, 1934** (Figs 1 and 2)

Material examined. One specimen was available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 130–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 9.00 mm. Width, 2.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae black, except second antennomere dark reddish; legs dark brown to black, tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 1).

Head: Very closely punctate, subspherical; frons convex, with circular fovea above frontoclypeal region; surface shiny; apical margin of frontoclypeal region trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Flabellate from antennomeres V–X in males, short and not reaching to hind angles of pronotum; antennomere III twice as long as II, antennomere IV serrate, ramus on V three-fourths as long as VI, ramus on VI slightly shorter than VII, rami on VII–X subequal (Fig. 2).

Pronotum: Very closely punctate, rugose basally and laterally; surface somewhat shiny; longer than wide, with short, sharp hind angles; parallel-sided, apically wider; disc convex, with median groove extending from base up 1/2 the length of pronotum; base sinuous.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae flattened in cross section; lateral surfaces of mesothoracic and metathoracic tibiae with hairs only; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws; metathoracic tibiae slightly shorter than the combined lengths of all tarsi.

Venter: Punctate and rugose, with yellow recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum partially concealed, apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Simply serrate, non-flabellate antennomere IV in males will distinguish *M. balwanti* from male specimens of *M. brinchangi*.

Distribution. A very rare eucnemid species was previously known from India. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Gardner (1935) described larvae collected from a *Gynocardia odorata* Brown (Achariaceae) log in Bengal, India. A single beetle was taken in a tropical montane deciduous forest.

Melasis brinchangi Leiler, 1985 (Fig. 3)

Material examined. Three specimens were available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH, GERP).

Redescription. Length, 8.00 mm. Width, 2.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae black, except second antennomere dark reddish; legs dark brown to black, tarsi medium brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 3).

Head: Very closely punctate, subspherical; frons convex, with circular fovea above frontoclypeal region; surface shiny; apical margin of frontoclypeal region trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Flabellate from antennomeres IV–X in males, V–X in females, short and not reaching to hind angles of pronotum; antennomere III twice as long as II; males: ramus on IV half as long as V, ramus on V two-thirds as long as VI, ramus on VI slightly shorter than VII, rami on VII–X subequal; females: ramus absent on IV and subequal to III, ramus on V three-fourths as long as VI, ramus on VI three-fourths as long as VII, ramus on VII slightly shorter than VIII, rami on VIII–X subequal.

Pronotum: Very closely punctate, rugose basally and laterally; surface somewhat shiny; longer than wide, with short, sharp hind angles; parallel-sided, apically wider; disc convex, with median groove extending from base up 2/3 the length of pronotum; base sinuous.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae flattened in cross section; lateral surfaces of mesothoracic and metathoracic tibiae with hairs only; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws; metathoracic tibiae as long as the combined lengths of all tarsi.

Venter: Punctate and rugose, with yellow recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum partially concealed, apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Flabellate antennomere V in males will distinguish *M. brinchangi* from male specimens of *M. balwanti*.

Distribution. Apparently a very rare eucnemid species previously known from Malaysia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Several beetles were taken from a tropical montane deciduous forest.

Tribe Calyptocerini Muona, 1993

Diagnosis. Form cylindrical; mandibles short, with secondary ventral tooth; antennomere III small; antennae either pectinate or flabellate; pronotum with simple

lateral ridge; hypomeron without antennal grooves, narrowing craniad; prothoracic sternal peg low, with simple apex; male prothoracic tarsomere I without sex combs; metathoracic coxal plates parallel-sided; tergite VII keeled; aedeagus bulbous; median lobe entire, wide, fused with lateral lobes, distinct, without dorsal basal struts; lateral lobes narrow, with small apical tooth; bursa simple and divided; spermatheca divided and sclerotized, with globular apical parts.

Otho Lacordaire, 1857

Diagnosis. Calyptocerini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as between antennal sockets; antennal grooves absent; metathoracic coxal plates laterally wider than medially; last visible ventrite strongly produced; tarsal claws simple; antennomeres II and III short, subequal; combined shorter than antennomere IV; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, entire; flagellum complex, apically wide.

Note. Identification of the species was made possible by translating and interpreting information from the key provided by Lucht (1989).

Otho coomani Fleutiaux, 1924 (Fig. 4)

Material examined. Eight specimens were available for study: 2, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "LAO-NE, Hua Phan prov., ~20°12′ N 104°01′E, PHU PHAN Mt., 1500–1900 m, 17.v.–3.vi.2007, M. Brancucci leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP); 4, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 5.00–8.00 mm. Width, 1.75–2.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae black; legs dark brown to black, tarsi medium brown; head, pronotum and elytra clothed with sparse, very short, white recumbent setae (Fig. 4).

Head: Very closely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface shiny; apical margin of frontoclypeal region very feebly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres IV–XI, short and not reaching to hind angles of pronotum.

Pronotum: Very closely punctate to rugose; surface somewhat shiny; about as long as wide, with moderate, sharp hind angles; sides arcuate; disc convex, with median groove extending from base to center of pronotum; base sinuous and slightly keeled.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate and rugose, with very short, white recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum partially concealed, apically widened; metathoracic coxal plates medially wider than laterally.

Differential diagnosis. LUCHT (1989) distinguished *O. coomani* in the identification key from other species in the region based on the presence of a very weak basal keel of the pronotum. All other species in the region have a furrow extending through the center of the pronotum.

Distribution. A rare eucnemid species previously known from Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Tribe Xylobiini Reitter, 1911

Diagnosis. Form cylindrical; size small; vestiture variable, clothed in inconspicuous yellowish setae; mandible short, with secondary ventral tooth; antennae tubular or flattened, usually with lateral ridges; antennomere III originally small; pronotum with simple lateral ridge; hypomeron without antennal grooves, narrowing craniad; prothoracic sternal peg low, apex simple; legs short; male prothoracic tarsomere I without sex combs; metathoracic coxal plates parallel-sided; tergite VII keeled; aedeagus bulbous; median lobe entire, wide, fused with lateral lobes, distinct, without dorsal basal struts; lateral lobes bilobed; flagellum complex, wide; bursa divided, simple; spermatheca divided, sclerotized, with globoular apex.

Key to the genera within the tribe Xylobiini

1 Antennomeres II and III combined shorter than IV. **2**
– Antennomeres II and III combined as long as or longer than IV. **3**
2 Antennomeres IV–VII without lateral ridges. ..... ***Bioxylus*** **Fleutiaux, 1923**
– Antennomeres IV–VII with lateral ridges. ..... ***Proxylobius*** **Fleutiaux, 1900**
3 Notosternal suture as long as to up to twice as long as hypomeral base. ..... ***Xylophilus*** **Mannerheim, 1833**
– Notosternal suture shorter than hypomeral base. ..... ***Saproxylobius*** **Leiler, 1990**

Xylophilus Mannerheim, 1823

(=*Xyloecus* Dejean, 1833: 85)
(=*Xylobius* Latreille, 1834: 124)

Diagnosis. Xylobiini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; antennal grooves absent; metathoracic coxal plates parallel-sided, last visible ventrite either rounded or truncated; antennae tubular, rounded in cross section; antennomeres II and III subequal, combined longer than IV; simple tarsal claws, lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, longitudinally bilobed; flagellum complex, apically wide.

Note. All Asian *Xylophilus* species are present in Japan. Both species were considered undescribed following comparison of these species against illustrations of *Xylophilus ainu* (Fleutiaux, 1922) and *Xylophilus rufomarginatus* (Fleutiaux, 1922) in Hisamatsu (1985).

Key to the species of *Xylophilus*

1 Pronotal disc with pair of horizontal foveae and median groove; antennae weakly serrate. ..... ***Xylophilus hylocharoides* sp.nov.**
– Pronotal disc with median groove only; antennae tubular. .... ***Xylophilus laosianus* sp.nov.**

Xylophilus hylocharoides sp.nov. (Fig. 5)

Type material. Female holotype: "LAO-NE, Hua Phan prov., 20°12′N, 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vít Kubáň leg." / "NHMB Basel, expedition to Laos, 2007" / "HOLOTYPE, *Xylophilus hylocharoides*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 4.00 mm. Width, 1.00 mm. Body cylindrical, elongate; uniformly black; antennae black, escept antennomeres II & III reddish; femur dark brown-black; tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 5).

Head: Very closely punctate, subspherical; frons convex, with median carina; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Setose, weakly serrate from antennomeres VI–X, reaching almost 1/3 the length of its body; lateral ridge absent on antennomeres IV–X; antennomere III short, slightly shorter than II, combined as long as IV; antennomeres IV–X each quadrate, subequal, weakly serrate; antennomere XI as long as X.

Pronotum: Very closely rugose to granulose; surface dullish; slightly longer than wide, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, with a pair of horizontal foveae and delicate median groove extending from scutellum through the length of the pronotum; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated, surfaces transversely rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Etymology. The specific epithet is named for its close appearance to a melasine group, *Hylochares* Du Val, 1859, especially with presence of a pair of horizontal foveae on the pronotal disc.

Differential diagnosis. Presence of horizontal foveae and dull, granulose pronotal surfaces will distinguish *X. hylocharoides* from *X. laosianus*.

Distribution. An apparently rare, endemic eucnemid species known from a holotype collected within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single beetle was taken from a tropical montane deciduous forest.

***Xylophilus laosianus* sp.nov.** (Fig. 6)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 27.iv.–1.vi.2011, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Xylophilus*, *laosianus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.

Paratypes: 6, from the following localities: 1, "LAO-NE, Hua Phan prov., 20°12′N, 104°01′E, PHU PHAN Mt., ~ 1750 m, 17.v.–3.vi.2007, Vít Kubáň leg." / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 27.iv.–.1.vi.2011, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 4, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Each specimen labeled: "PARATYPE, *Xylophilus*, *laosianus*, Otto, det. R.L.Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in BMNH, GERP and NHMB.

Description. Male holotype: Length, 5.00 mm. Width, 1.25 mm. Body cylindrical, elongate; uniformly dark brown, except scutellum reddish; antennae dark brown; legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Figure 6).

Head: Very closely punctate, subspherical; frons convex, with median carina; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Tubular, filiform from antennomeres VI–X, reaching almost 1/2 the length of its body; lateral ridge absent on antennomeres IV–X; antennomere III short, as

long as II, combined longer than IV; antennomeres IV–X each quadrate, subequal, tubular; antennomere XI slightly longer than X.

Pronotum: Very closely punctate to almost granulose; surface shiny; as longer as wide, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex; base sinuous, with delicate median groove extending almost the length of pronotum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated; surfaces closely punctate to rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Variation. Six adult paratypes were examined. Two male paratypes are as long as the holotype, with the length of 5.00 mm. Scutellum and elytral coloration are much darker than the holotype. Median pronotal groove is much shorter, extending to the center of the pronotum in one of the male paratype. Four female paratypes varied in lengths of 5.00–5.75 mm. One female paratype is slightly larger, more robust and coloration identical with the male holotype. Female antennae are shorter than males, reaching as far back as the hind angles of the pronotum. Median pronotal groove also showed some variations, with one specimen showing a shorter groove than all other specimens. One paratype female is slightly narrower than the holotype. Two of the female paratypes showed some reddish coloration at the elytral humeri, along with the reddish colored antennae.

Etymology. The specific epithet is named for the country in which the new species was collected.

Differential diagnosis. Simple and shiny, punctate to granulose pronotal surfaces will distinguish *X. laosianus* from *X. hylocharoides*.

Distribution. A rare, endemic eucnemid species known from a single locality within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All beetles were taken from a tropical montane deciduous forest.

Saproxylobius Leiler, 1990

Diagnosis. Xylobiini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as between antennal sockets; antennal grooves absent; metathoracic coxal plates parallel-sided; last visible ventrite rounded; antennal segments tubular, rounded in cross section, without lateral ridges; antennomeres II short,

antennomeres III elongate, combined longer than antennomere IV; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only.

Saproxylobius crassicollaris Leiler, 1990 (Fig. 7)

Material examined. Two specimens were available for study: 1, "LAOS, 1–9.v.1999, Louangphrabang pr., 20°33–4′N, 102°14′E, Ban Song Cha (5 km W), 1200 m, Vít Kubáň leg." / Proxylobius sp., J. Muona det. 2014" (JMC); 1, "LAOS, BOLIKHAMSAI PROV., BAN NAPE ENV., 7–16 v 2004, 400 m, 18°20′N 105°08′E, LEG: E. JENDEK/ O. SAUSA" (AAC).

Redescription. Length, 3.00–5.00 mm. Width, 1.00–1.50 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark brown, with pronotal apex and base, as well as elytral base variably infuscate reddish-brown; antennae reddish, except antennomeres I dark reddish-brown; femur dark reddish-brown, tibiae and tarsi medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 7).

Head: Closely, densely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Strongly serrate from antennomeres III–X, reaching at least 3/4 the length of its body in males, weakly serrate and reaching up to 1/2 the length of its body in females; setose; antennomere III longer than II and slightly shorter than IV, combined longer than IV; antennomeres IV–X each longer than wide, subequal, strongly serrate; antennomere XI slightly longer than X.

Pronotum: Very closely punctate to granulose; surface dullish; as long as wide, with moderate, sharp hind angles; lateral sides arcuate, gradually narrowed towards craniad; disc convex; base sinuous, with pair of antescutellar circular foveae above scutellum.

Scutellum: Shiny, short, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated; surface very closely, densely punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV narrow, excavate; metathoracic tarsomere V elongate with simple claws.

Venter: Densely punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates parallel-sided.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. An uncommon eucnemid species previously known from Malaysia and Taiwan. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests.

Biology. Larvae were described and partially illustrated by Leiler (1990). Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Bioxylus Fleutiaux, 1923

Diagnosis. Xylobiini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as between antennal sockets; antennal grooves absent; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; antennal segments tubular, rounded in cross section, without lateral ridges; antennomeres II and III short, subequal; combined shorter than antennomere IV; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, longitudinally bilobed; flagellum complex, apically wide.

Note. Identification of *Bioxylus bakeri* was made possible through translating and interpreting information from Fleutiaux (1930). New species diagnosis was made following the reading of Hisamatsu (1959) publication.

Key to the species of *Bioxylus*

1 Entirely dark brown or bicolored black and reddish. **2**
– Entirely castaneus or chestnut brown in color. ..... ***Bioxylus castaneus* sp.nov.**
2 Unicolored dark brown to black. **3**
– Bicolored with black head and pronotum and reddish-orange elytra. .... ***Bioxylus barclayi* sp.nov.**
3 Antennae weakly serrate; pronotum granulose, dull. ..... ***Bioxylus granulatus* sp.nov.**
– Antennae strongly serrate; pronotum closely punctate to rugose, shiny. ..... ***Bioxlyus bakeri* Fleutiaux, 1930**

Bioxylus bakeri Fleutiaux, 1930 (Fig. 8)

Material examined. One specimen was available for study: "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104°01′E, Ban Saluei → Phou Pane Mts., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, Dauck, V. Kubáň" (NHMB).

Redescription. Length, 5.25 mm. Width, 1.50 mm. Body subcylindrical, elongate; uniformly dark brown; antennae dark brown, except antennomeres I, II and part of III reddish; femur dark reddish to brown, tibiae and tarsi medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 8).

Head: Closely, evenly punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Strongly serrate from antennomeres VI–X, reaching at least 2/3 the length of its body; setose; antennomere III short, as long as II, combined shorter than IV; antennomeres IV–X each longer than wide, subequal, strongly serrate; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, rugose; surface shiny; as long as wide, with large, sharp hind angles; lateral sides arcuate, gradually narrowed towards craniad; disc convex; base sinuous, with pair of circular foveae and median carina above scutellum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated; surface closely punctate to nearly rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV narrow, excavate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates parallel-sided.

Differential diagnosis. Shiny, rugose surface of the pronotum, along with dark brown coloration will distinguish *B. bakeri* from other *Bioxylus* species.

Distribution. An apparently very rare eucnemid species previously known from Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single beetle was taken from a tropical montane deciduous forest.

***Bioxylus barclayi* sp.nov.** (Fig. 9)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Bioxylus*, *barclayi*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype, with same label data as holotype: / "ALLOTYPE, *Bioxylus*, *barclayi*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.

Paratype: 1, from the following locality: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / PARATYPE, *Bioxlyus*, *barclayi*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label] (GERP). Paratype is deposited in GERP.

Description. Male holotype: Length, 5.00 mm. Width, 1.50 mm. Body cylindrical, elongate; black, except apical margin of pronotum and elytra reddish-brown; antennae black, except antennomeres I–III infuscate dark reddish; legs reddish-brown; tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 9).

Head: Very closely punctate, subspherical; frons convex, with circular fovea above base of frontoclypeal region; surface shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching 2/3 the length of its body; lateral ridge absent on antennomeres IV–X; setose; antennomere III short, shorter than II, combined shorter than IV; antennomeres IV–X each twice as long than wide, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Rugose to granulose; surface dull; as long as wide, with moderate, sharp divergent hind angles; basal 2/3 parallel-sided, apical 1/3 narrowed craniad, widest in middle; disc convex, with shallow median groove throughout entire length; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated, closely punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish, recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates parallel-sided; last abdominal tergite strongly produced.

Allotype: Length 6.00 mm, width 2.00 mm; same as male except antennae are shorter and stouter; antennomeres IV–X are slightly longer than wide; larger and stouter body form.

Variation. One adult male paratype was examined. Coloration on the elytra and antennae are slightly darker than the holotype. Antennomeres II and III are redder in coloration than the holotype. No other physical characterizations differ between the holotype and paratype.

Etymology. The specific epithet is dedicated to a colleague, Max Barclay of the BMNH, who made this survey possible.

Differential diagnosis. Black coloration with reddish-brown elytra will distinguish *B. barclayi* from other *Bioxylus* species in Laos. It is very similar to other bi-colored *Bioxylus* species in Southeast Asia, particularly *Bioxylus galloisi* Fleutiaux, 1922, *Bioxylus japonensis* (Fleutiaux, 1900), *Bioxylus personatus* Mamaev, 1976 and *Bioxylus similis* Hisamatsu, 1985. *Bioxylus barclayi* differ from *B. galloisi*, *B. personatus* and *B. similis* based on the antennae; antennomeres IV–XI being serrate and black in the new species and weakly serrate and orange in the other species. The new species is also similar to *B. japonensis*. *Bioxylus japonensis* have dark infuscate reddish antennomeres IV–XI and dull elytra.

Distribution. A very rare, endemic eucnemid species known from a single locality within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Bioxylus castaneus sp.nov. (Fig. 10)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Bioxylus*, *castaneus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: with same label data as holotype: / "ALLOTYPE, *Bioxylus*, *castaneus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.

Paratypes: 5, from the following locality: 1, "LAO, Phongsaly prov., 21°41′N 102°6′E, PHONGSALY env., 6.–17.v.2004, ~1500 m, Vít Kubáň leg." (NHMB); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 27.iv.–1.vi.2011, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP); 3, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).
Each specimen labeled: "PARATYPE, *Bioxlyus*, *castaneus*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in BMNH, GERP and NHMB.

Description. Male holotype: Length, 4.00 mm. Width, 1.00 mm. Body cylindrical, elongate; uniformly reddish-brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 10).

Head: Very closely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching 2/3 the length of its body; lateral ridge absent on antennomeres IV–X; setose; antennomere III short, as long as II, combined shorter than IV; antennomeres IV–X each twice as long than wide, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, rugose; surface somewhat shiny; slightly longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with small carina above scutellum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated, closely punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish, recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates parallel-sided.

Allotype: Length 5.50 mm, width 1.25 mm; same as male except antennae are shorter and stouter, about 1/2 the length of its body; antennomeres IV–X are less serrate, slightly longer than wide.

Variation. Five adult paratypes were examined. Four male paratypes are shorter in length compared with the female allotype, but most are as long as the holotype. One of the male paratype is slightly shorter than the holotype, measuring 3.50 mm long. Length of the single female paratype is 4.00 mm; slightly shorter and narrower than the allotype, identical with the male holotype. Basal ridge at the base of the pronotum above the scutellum exhibits no variations at all. All other physical characterizations among these specimens are consistant and show little to no variations at all.

Etymology. The specific epithet is derived from its overall reddish-brown coloration.

Differential diagnosis. Uniformly reddish-brown coloration will distinguish *B. castaneus* from any *Bioxylus* species in Laos.

Distribution. A rare, endemic eucnemid species known from two localities in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Bioxylus granulatus sp.nov. (Fig. 11)

Type material. Male holotype: "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N, 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Vít Kubáň leg." / "HOLOTYPE, *Bioxylus*, *granulatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: "LAOS, Louangnamtha pr., 21°09′ N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." / "ALLOTYPE: *Bioxylus*, *granulatus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in NHMB.

Description. Male holotype: Length, 3.50 mm. Width, 1.00 mm. Body cylindrical, elongate; uniformly black, except for apical margin of pronotum and base of elytra reddish; antennae infuscate reddish; femur dark brown to black; tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 11).

Head: Very closely punctate, subspherical; frons convex, with median carina; surface somewhat dullish; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres VI–X, reaching 2/3 the length of its body; lateral ridge absent on antennomeres IV–X; setose; antennomere III short, as long as II, combined shorter than IV; antennomeres IV–X each twice as long than wide, subequal, weakly serrate; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dullish; slightly wider than long, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex; base sinuous, with small basal carina above scutellum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated; surfaces shiny, sparsely punctate.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates parallel-sided.

Allotype: Length 5.00 mm, width 1.50 mm; body stouter; antennae shorter and stouter, about 1/2 the length of its body; antennomeres IV–X are less serrate, slightly longer than wide; antennal coloration dark black, except antennomeres II and III reddish; body dark black, without reddish areas at base of pronotum or elytra; elytral interstices more rugose to granulose.

Etymology. The specific epithet is derived from its granulose texture on the pronotum.

Differential diagnosis. Granulose, dull texture of the pronotum, along with black coloration with reddish margin of the pronotum and elytral base will distinguish *B. granulatus* from other *Bioxylus* species.

Distribution. A very rare, endemic eucnemid species known from single localities within the Louangnamtha and Phongsaly provinces in northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Proxylobius Fleutiaux, 1900

(=*Phizoschilus* Fleutiaux, 1930: 273)

Diagnosis. Xylobiini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as between antennal sockets; antennal grooves absent; metathoracic coxal plates parallel-sided; last visible ventrite either rounded or truncated; antennal segments flattened, keeled and serrate; antennomeres II and III short, subequal; combined shorter than antennomere IV; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, longitudinally bilobed; flagellum complex, apically wide.

Note. Identification of both species were made through the examination of authoritatively identified specimens loaned from the BMNH.

Key to the species of *Proxylobius*

2 Hind angles straight. ..... ***Proxylobius orientalis* (Fleutiaux, 1896)**
– Hind angles divergent. ..... ***Proxylobius gardneri* (Fleutiaux, 1930)**

Proxylobius gardneri (Fleutiaux, 1930) (Fig. 12)

Phizoschilus gardneri Fleutiaux, 1930: 273–274.

Material examined. Five specimens were available for study: 1, "LAOS, Houaphanh, Phou Pan Mt., 12.–17.5.2004, Petr Kresl leg." / "30 km S of Xam Neua, alt. 2000 m, 103°59′E, 20°13′N″ / "Melanoscython sp., J. Muona det. 2014" (JMC); 2, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan (30 km NE): Phou Sane Mt., 1400–1700 m, 10.–30.v.2009, D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 4.50–5.00 mm. Width, 1.00–1.25 mm. Body subcylindrical, elongate; uniformly black, except apical margin of pronotum, hind angles and elytral humeri reddish; antennae black, except antennomeres II, III and XI reddish; femur reddish-black, tibiae and tarsi medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 12).

Head: Very closely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface somewhat dullish; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching at least 2/3 the length of its body; lateral ridge present on antennomeres IV–X; setose; antennomere III short, as long as II, combined shorter than IV; antennomeres IV–X each longer than wide, subequal, strongly serrate; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, granulose; surface somewhat dull; slightly longer than wide; hind angles short, sharp and divergent; lateral sides arcuate; disc with fine, shallow, median groove; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated, granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV narrow, excavate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Divergent pronotal hind angles will distinguish *P. gardneri* from *P. orientalis*.

Distribution. An apparently rare eucnemid species previously known from China and India. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Gardner (1930) described larvae collected from rotten *Machilus odoratissima* Nees (Lauraceae) wood in Darjeeling, India. Beeson (1941) reported the species bores in decaying wood of *Cedrus deodara* (Roxburgh) G. Don (Pinaeceae). All adults were taken from a tropical montane deciduous forest.

***Proxylobius orientalis* (Fleutiaux, 1896)** (Fig. 13)

Xylobius orientalis Fleutiaux, 1896: 538–539.

Material examined. Five specimens were available for study: 1, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg." / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 27.iv.–1.vi.2011, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 3, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH, GERP).

Redescription. Length, 4.00–5.00 mm. Width, 1.25–1.50 mm. Body subcylindrical, elongate; uniformly black; antennae black, except antennomeres II, III and XI variably reddish; femur reddish-black, tibiae and tarsi medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 13).

Head: Very closely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface somewhat dullish; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching at least 2/3 the length of its body in males, up to 1/2 the length of its body in females; lateral ridge present on antennomeres IV–X; setose; antennomere III short, as long as II, combined shorter than IV; antennomere V slightly shorter than IV; antennomeres VI–X each longer than wide, subequal, strongly serrate; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, granulose; surface somewhat dull; slightly longer than wide; hind angles moderate, sharp, narrow and straight; lateral sides arcuate; disc convex; base sinuous.

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striate; interstices elevated, granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Straight prothoracic hind angles will distinguish *P. orientalis* from *P. gardneri*.

Distribution. An apparently rare eucnemid species previously known from China and Myanmar. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Tribe Epiphanini Muona, 1993

Diagnosis. Body long, narrowing craniad and caudad; head usually with keeled frons; mandibles short, with a secondary tooth; pronotum with simple lateral ridge; hypomeron simple, without antennal grooves; metathoracic coxal plates narrowed laterally; legs short, narrowed; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; tarsomeres simple; pretarsal claws simple; male prothoracic tarsomere I without basal sex combs; aedeagus with median lobe deeply and widely bifurcate, fused to lateral lobes; lateral lobes bilobed; flagellum complex.

Hylis des Gozis, 1886

(=*Hypocaelus* auct., not Dejean, 1833)
(=*Hypohylis* Reitter, 1911: 203)
(=*Elatocoelus* Hyslop, 1921: 644)

Diagnosis. Epiphanini, with apical margin of frontoclypeal region evenly rounded and either more or less than twice as wide as the distance between antennal sockets; antennal grooves absent; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; antennal segments flattened, keeled and serrate; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, deeply and widely bifurcate apically; lateral lobes simple, longitudinally bilobed; flagellum complex, tubular.

***Hylis parallelus* sp.nov.** (Fig. 14)

Type material. Female holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Hylis*, *parallelus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.
Paratypes: 1, from the following locality: 1, "LAOS north, 13–24.V.1997, 15 km NW Louang Namtha, N21°07.5, E101°21.0., alt 750 ±100m, E. Jendek & O. Šauša leg.".
Specimen labeled: "PARATYPE, *Hylis*, *parallelus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on each label) [yellow printed label]. Paratype is retained in GERP.

Description. Female holotype: Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur black, tibiae and tarsi medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 14).

Head: Very closely punctate, subspherical; frons convex, with median carina extending from frontoclypeal region to vertex; surface somewhat dullish; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching to pronotal hind angles; antennomere III shorter than combined lengths of IV and V; antennomere IV subequal to II and V; antennomeres IV–VI longer than wide; antennomeres VII–X wider than long; antennomere XI longer than X.

Pronotum: Very closely punctate; surface somewhat shiny; slightly longer than wide, with moderate, sharp hind angles; basal half parallel-sided, apical half arcuate; disc convex; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices slightly elevated with dense punctations.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate and rugose, with short, yellowish recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite truncate.

Variation. One adult female paratypes was examined. The female paratype is 5.00 mm long and 1.25 mm wide; larger and wider than the holotype. Median carina is less

developed than the holotype. Antennae are slightly thicker in the paratype. Generally, the paratype is structurally similar to the holotype.

Etymology. The specific epithet is derived from the shape of the pronotum, that being parallel-sided at the basal 3/4.

Differential diagnosis. Identification of the new species was made possible by comparing the specimen against information of *Hylis sandakanus* Fleutiaux, 1930, the only other *Hylis* species in mainland Asia. *Hylis parallelus* differ from *H. sandakanus* by the presence of weakly indicated elytral striae. According to Fleutiaux (1930), *H. sandakanus* lack any elytral striae, except for a single set near the elytral suture.

Distribution. An apparently very rare, endemic eucnemid species known from two localities in Laos. Muona (1991a) noted a new species of *Hylis* from Vietnam in one of the analysis in his study. Without seeing the specimen, it is possible the Vietnamese specimen may also be one of this species.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Tribe Dirhagini Reitter, 1911

Diagnosis. Form narrowing craniad and caudad; vestiture variable, clothed in inconspicuous yellowish setae; mandible short, with secondary ventral tooth; male prothoracic tarsomere I originally with apical sex combs; pronotal lateral ridge serrate, often divided; hypomeron either simple or with notosternal antennal grooves, usually with deep pit near prothoracic coxae and narrowing craniad; metathoracic coxal plates originally narrowed laterad; median lobe deeply and widely bifurcate, without dorsal basal struts; ventral basal struts of median lobe lost; median lobe and lateral lobes fused without sutures; lateral lobes bilobed; flagellum complex, tubular; bursa divided, simple; spermatheca divided, sclerotized, originally with globular apex.

Key to the genera within the tribe Dirhagini

1 Antennae pectinate, serrate, filiform or moniform. **2**
– Antennae bipectinate or biserrate (Fig. 75). ..... ***Sarpedon*** **Bonvouloir, 1871**
2 Antennomere III shorter than or as long as IV. **3**
– Antennomere III longer than IV. **4**
3 Antennomeres II and III combined longer than IV (Fig. 30). ..... ***Brevisegmentus*** **gen.nov.**
– Antennomeres II and III combined shorter than IV. ..... ***Entomophthalmus*** **Bonvouloir, 1871**
4 Frons without vertical ridges near compound eyes. **5**
– Frons with vertical ridges near compound eyes. ..... ***Dirrhagofarsus*** **Fleutiaux, 1935**

5 Apices of elytra forming apical beak (Fig. 18). **6**
– Apices of elytra not forming apical beak. **7**

6 Apical margin of frontoclypeal region more than twice as wide as base. ..... ***Farsus* Du Val, 1860**
– Apical margin of frontoclypeal region less than twice as wide as base. ..... ***Arrhipis* Bonvouloir, 1871**

7 Pronotum with posterior lateral ridge. **8**
– Pronotum without posterior lateral ridge (Fig. 41). ..... ***Siniugum* gen.nov.**

8 Hypomeron with well developed notosternal antennal grooves. **9**
– Hypomeron with cranially indicated notosternal antennal grooves. ..... ***Cafolus* Bonvouloir, 1871**

9 Metathoracic coxal plates medially more than 1.25 times wider than laterally. **10**
– Metathoracic coxal plates parallel-sided. ..... ***Rhagomicrus* Fleutiaux, 1902**

10 Apical margin of frontoclypeal region more than twice as wide as base. **11**
– Apical margin of frontoclypeal region less than twice as wide as base. **12**

11 Hypomeral pits near prothoracic coxae deep, well-defined on all sides. ..... ***Balistica* Motschulsky, 1861**
– Hypomeral pits near prothoracic coxae deep, poorly defined. ..... ***Microrhagus* Dejean, 1833**

12 Pronotum strongly arched anteriorly (Fig. 69). ..... ***Rhacopus* Hampe, 1855**
– Pronotum evenly arched (Fig. 72, 74). ..... ***Prodirhagus* Fleutiaux, 1925**

Farsus Du Val, 1860

(=*Hylochares* auct., not Latreille, 1834)
(=*Rhagomerus* Iablokov-Khnzorian, 1964: 162)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; notosternal antennal grooves present; male prothoracic tarsomere I simple, with apical sex combs; metathoracic coxal plates medially 1.20–2.50 times wider than laterally; last visible ventrite either rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, deeply and widely bifurcate apically; lateral lobes simple, longitudinally bilobed; flagellum complex, tubular.

Farsus salvazai Fleutiaux, 1918 (Fig. 15)

Material examined. Twenty specimens were available for study: 1, "LAOS, Umg. Vientiane, III.–VI.1963" / "Farsus, Salvazai, Fleut., A. Cobos det. 1965" (genus, species, author and year handwritten) (ZSM); 2,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 17, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH, GERP).

Redescription. Length, 5.00–9.00 mm. Width, 1.00–2.50 mm. Body oblong, elongate; uniformly medium-dark brown; antennae medium brown; legs medium-dark brown, tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 15).

Head: Very closely punctate to granulose, subspherical; frons convex, with median circular fovea; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X; antennomere III as long as the combined lengths of IV and V; antennomeres IV–X subequal, slightly longer than wide; antennomere XI longer than X; extends just beyond elytral humeri.

Pronotum: Closely punctate, rugose; surface shiny; about as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc flattened; anterior lateral pronotal ridge short, directed posteriorally; posterior lateral ridge elongate, extends up to 3/4 the length; base sinuous.

Scutellum: Shiny, oblong, quadrate and distally truncated.

Elytra: Striae absent; interstices flattened with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with basally wide notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. Larger size and darker colored dorsum will distinguish *F. salvazai* from *Farsus brevis* Fleutiaux, 1931. Largely absence of elytral striae will further distinguish *F. salvazai* from *Farsus exoticus* Bonvouloir, 1875.

Distribution. An uncommon eucnemid species previously known from Vietnam and Luang-Prabang, Laos. Recent records indicate *F. salavazai* is more widespread across northern Laos.

Ecoregion(s). Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests, Northern Thailand-Laos moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

Arrhipis Bonvouloir, 1871

(=*Nematodinus* Lea, 1919: 730)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; notosternal antennal grooves variably present; male prothoracic tarsomere I simple, with apical sex combs; metathoracic coxal plates parallel-sided; last visible ventrite either rounded or truncated; serrate antennae flattened, without lateral keels; apices of elytra forming apical beak; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, deeply and widely bifurcate apically; lateral lobes simple, longitudinally bilobed; flagellum complex, tubular.

Note. Among the 18 species studied, Brüstle *et al.* (2010) included two undescribed *Arrhipis* species from Laos in their molecular and morphological analysis for the phylogeny of the group. New species "1" was taken from Oudomxai, Laos in 2002. New species "4" was taken in Nong Lom, Laos in 1999. These two undescribed species remain unpublished and are therefore excluded from the current study until their specific names and descriptions are published.

Identification of *Arrhipis orientalis* Fleutiaux, 1896 was made possible through comparisons against authoritatively identified specimens loaned from the BMNH. Identification of the remaining three species were made through examination of these specimens against species descriptions provided in Fleutiaux (1931b, 1932).

Key to the species of *Arrhipis*

1 Elytral striae either indicated or weakly indicated. **2**
– Elytral striae absent. ..... ***Arrhipis orientalis* Fleutiaux, 1896**

2 Frons convex; lateral pronotal ridge divided. **3**
– Frons concave; lateral pronotal ridge complete. ..... ***Arrhipis cavifrons* Fleutiaux, 1931**

3 Uniformly reddish-brown; lateral ridge of antennal grooves caudally obliterated. ..... ***Arrhipis striata* Fleutiaux, 1932**
– Uniformly medium-brown; lateral ridge of antennal grooves well-developed. ..... ***Arrhipis capucina* Fleutiaux, 1932**

Arrhipis capucina Fleutiaux 1932 (Figs 16 and 17)

Material examined. One specimen was available for study: "LAOS, Bolikhamxai pr., 18°16′N 103°11′E, 70 km NEE Vientiane, 27–30.iv.1997, 150 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 3.75–10.00 mm. Width, 1.50–2.00 mm. Body oblong, elongate; uniformly medium brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 16).

Head: Very closely punctate to granulose, subspherical; frons convex; surface somewhat dull; apical margin of frontoclypeal region feebly trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serriform from antennomeres IV–X; short, reaching to hind angles of pronotum; antennomere III longer than the combined lengths of IV and V; antennomeres IV–X subequal, slightly wider than long; antennomere XI slightly longer than X.

Pronotum: Closely punctate to rugose; surface somewhat dullish; longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc flattened, base sinuous, with short carina above scutellum extending near center of pronotum; anterior lateral pronotal ridge very short, directed ventrally; posterior lateral ridge elongate, extends up to 3/4 the length (Fig. 17).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices elevated, densely punctate to rugose; setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves, lateral ridge well-developed; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Uniformly medium brown coloration and well-developed lateral ridge of antennal grooves will distinguish *A. capucina* from *A. striata*. Convex frons and divided lateral prontal ridges will further distinguish *A. capucina* from *A. cavifrons*. Weakly indicated elytral striae will also distinguish *A. capucina* from *A. orientalis*.

Distribution. A very rare eucnemid species previously known from Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Arrhipis cavifrons Fleutiaux 1931 (Figs 18 and 19)

Material examined. One specimen was available for study: "LAOS: Phontiou, nr. Thakek., April 1964. J. Rondon., B.M. 1964-342" / "Arrhipis, near inimica, det. W. Lucht ("Arrhipis near inimica" handwritten on label)" (BMNH).

Redescription. Length, 5.50 mm. Width, 1.75 mm. Body oblong, short; dull black, except apical margin of pronotum, elytral humeri and scutellum infuscate reddish; antennomeres I–II reddish; legs reddish-brown, tarsi reddish-brown; head, pronotum and elytra clothed with very short, yellowish recumbent setae (Fig. 18).

Head: Very closely punctate; frons concave; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Left antennomeres III–XI missing; right antennomeres III–XI missing.

Pronotum: Closely punctate, rugose; surface dull; longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 narrowing craniad; disc flattened;

base sinuous, with short carina above scutellum extending to middle; lateral pronotal ridge complete (Fig. 19).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices elevated and transversely rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron without notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum caudally widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Concave frons and complete lateral pronotal ridge will distinguish *A. cavifrons* from any *Arrhipis* species known from Laos.

Distribution. An apparently rare, widespread eucnemid species previously collected in Indonesia, Papua New Guinea and the Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single beetle was taken from a lowland semi-evergreen forest.

Arrhipis orientalis Fleutiaux 1896 (Figs 20 and 21)

Material examined. Three specimens were available for study: 1, "LAOS, Umg. Vientiane, III.–VI.1963" / "Arrhipis, orientalis, Fleut., A. Cobos det. 1964" (genus, species, author and year handwritten) (ZSM); 1, "LAOS c., Khammouan prov., NAKAI env., 4.–8.V.1998, Route No. 8, alt. 560 m, N17°42.8′ E105°09.1′ GPS, E. Jendek, O. Sauša lgt." (GERP); 1, "LAOS, Vientiane prov., Lao Pako env., 200 m, 55 km NE Vientiane, 1–4.v.2004, J Bezděk leg." (GERP).

Redescription. Length, 4.50–10.00 mm. Width, 1.50–2.00 mm. Body oblong, elongate; uniformly dark brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 20).

Head: Very closely punctate to rugose, subspherical; frons convex; surface somewhat dull; apical margin of frontoclypeal region feebly trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serriform from antennomeres IV–X; short, reaching to hind angles of pronotum; antennomere III longer than the combined lengths of IV and V; antennomeres IV–X subequal, slightly wider than long; antennomere XI ovoid, slightly longer than X.

Pronotum: Closely punctate to rugose; surface somewhat dullish; longer than wide, with moderate, sharp hind angles; lateral sides parallel-sided; disc flattened, base sinuous, with short carina above scutellum; anterior lateral pronotal ridge very short, directed ventrally and posteriorally; posterior lateral ridge elongate, extends up to 3/4 the length (Fig. 21).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened, densely punctate to rugose; setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves, lateral ridge well-developed; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Uniformly dark brown coloration and lack of elytral striae will distinguish *A. orientalis* from both *A. capucina* and *A. striata*. Convex frons and divided lateral prontal ridges will further distinguish *A. orientalis* from *A. cavifrons*.

Distribution. A very rare, widespread eucnemid species found in India, Indonesia, Laos, Thailand and Vietnam. In Laos, *A. orientalis* have been taken at Sem-Kam ("Haut-Mékong prov.") (FLEUTIAUX 1923). Recent records indicate the species continues to thrive in both northern and central areas of Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Khorat Plateau moist deciduous forests.

Biology. GARDNER (1935) described larvae collected from a decaying *Macaranga denticulata* (Blume) (Euphorbiaceae) log in Bengal, India. BEESON (1941) reported the species bores in decaying wood of *Anthocephalus cadamba* (now *Neolamarkia cadamba* (Roxburgh) Bosser (Rubiaceae)). All beetles were taken from a lowland semi-evergreen forest and tropical montane evergreen forest.

Arrhipis striata Fleutiaux 1932 (Figs 22 and 23)

Material examined. Thirteen specimens were available for study: 1, "LAOS, Louangnamtha pr., 21°00′N 101°25′E, LOUANG NAMTHA, 4.v.1997, 600 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Bolikhamxai pr., 18°16′N 103°11′E, 70 km NEE Vientiane, 27–30.vi.1997, 150 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Champassak Prov., Ban Nong Luang (village), 12 km S of Pakxong, 15°6′N 106°12′E" / "800 m, at light, No. 39, 6.IV.1998, leg. O. Merkl & G. Csorba" (GERP); 6, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~200 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1500 m, 21°41′N 102°06–8′E, M. Brancucci leg." (NHMB); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 6.00–7.00 mm. Width, 1.50–1.75 mm. Body oblong, elongate; uniformly reddish-brown; antennae reddish-brown; legs reddish-brown, tarsi yellowish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 22).

Head: Very closely punctate to granulose, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Moniliform from antennomeres IV–X; short, reaching to hind angles of pronotum; antennomere III as long as the combined lengths of IV–VI; antennomeres IV–X subequal, wider than long; antennomere XI slightly longer than X.

Pronotum: Closely punctate, rugose; surface somewhat dullish; longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc

flattened; base sinuous, with short carina above scutellum; anterior lateral pronotal ridge very short, directed ventrally; posterior lateral ridge elongate, extends up to 2/3 the length (Fig. 23).

Scutellum: Shiny, oblong, quadrate and distally truncated.

Elytra: Striae indicated; interstices elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves, lateral ridges poorly developed caudally; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Uniformly reddish-brown coloration, along with poorly developed lateral ridges of antennal grooves will distinguish *A. striata* from *A. capucina*. Convex frons and divided lateral prontal ridges will further distinguish *A. striata* from *A. cavifrons*. Indicated elytral striae will also distinguish *A. striata* from *A. orientalis*.

Distribution. An uncommon eucnemid species previously known from the Philippines and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Southern Annamites montane rain forests.

Biology. One specimen was taken at lights. These beetles were taken from a dry evergreen forest, lowland semi-evergreen forest, tropical montane deciduous forest, lowland semi-evergreen forest and tropical montane evergreen forest.

Balistica Motschulsky, 1861

Diagnosis. Dirhagini, with apicl margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; notosternal antennal grooves present; male prothoracic tarsomere I simple, without apical sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; hypomeral pits near prothoracic coxae deep, well-defined on all sides; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae with setae only.

Note. The two known *Balistica* species were identified through translating and interpreting information provided in Fleutiaux (1899).

Key to the species of *Balistica*

1 Body cuneiform. **2**

– Body cylindrical. ..... ***Balistica distincta* Fleutiaux, 1899**

2 Lateral side of pronotum sinuous; pronotum as long as wide. ..... ***Balistica vicina* Fleutiaux, 1899**

– Lateral side of pronoutm parallel-sided; pronotum slightly longer than wide. ..... ***Balistica cuneiforma* sp.nov.**

***Balistica cuneiforma* sp.nov.** (Figs 24 and 25)

Type material. Female holotype: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE) ~600 m, V. Kubáň leg." / "HOLOTYPE, *Balistica*, *cuneiforma*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.
Paratypes: 2, from the following localities: 1, "LAOS north, 5–11.V.1997, 20 km NW Luang Namtha, N 21°09.2′ E 101°18.7′, alt. 900 ±100 m, M. Strba & R. Hergovits leg." / "Balistica sp.nov., J. Muona det. 2014" (JMC); 1, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE) ~600 m, V. Kubáň leg." (NHMB).
Each specimen labeled: "PARATYPE, *Balistica*, *cuneiforma*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on label) [yellow printed label]. Paratypes are deposited in JMC and NHMB.

Description. Female holotype: Length, 4.50 mm. Width, 1.25 mm. Body elongate, cuneiform; uniformly black; antennae black, except antennomeres II and XI apically reddish; legs and tarsi dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 24).

Head: Very closely punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region weakly trilobed, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X, extending up to elytral humeri; antennomere IV shorter than II and V; antennomeres V–X subequal, slightly longer than wide; antennomere XI longer than X.

Pronotum: Closely punctate; surface shiny; slightly longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with short, median carina above scutellum; anterior lateral pronotal ridge elongate, directed posteriorally; posterior lateral ridge elongate, extending at least 3/4 the length (Fig. 25).

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striae absent; interstices flattened with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with well defined ridges; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One female and one male paratypes were examined. Female paratype measured 5.00 mm long. Male paratype measured 4.00 mm long. Female paratype is broader than the male. Elytral surfaces are more rugose in the male paratype as compared to the female holotype and paratype. No other exoskeletal difference can be found among these specimens.

Etymology. The new species name is derived from its cuneiform shape of its body.

Differential diagnosis. Cuneiform shape of the body will distinguish *B. cuneiforma* from *B. distincta* in Laos. Parallel-sided pronotum will further distinguish *B. cuneiforma* from *B. vicina*.

Distribution. A very rare, endemic eucnemid species known from two localities in central and northern areas of Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Balistica distincta Fleutiaux, 1899 (Figs 26 and 27)

Material examined. One specimen was available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 5.00 mm. Width, 1.25 mm. Body subcylindrical, elongate; uniformly black; antennae black, except antennomeres II and XI apically reddish; legs dark brown, tarsi dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 26).

Head: Very closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X; antennomere IV shorter than II and V; antennomeres V shorter than VI; antennomeres VI–X subequal, slightly longer than wide; antennomere XI longer than X; extends up to elytral humeri.

Pronotum: Closely punctate; surface shiny; slightly longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with very short carina above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extending at least 3/4 the length (Fig. 27).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense to rugose punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with well defined ridges; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Cylindrical, parallel body form will distinguish *B. distincta* from either *Balistica* species present in Laos.

Distribution. A very rare eucnemid species previously known from Indonesia, Myanmar and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. One adult was taken from a tropical montane deciduous forest.

Balistica vicina Fleutiaux, 1899 (Figs 28 and 29)

Material examined. One specimen was available for study: "LAOS c., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4–1.5.1998, alt. 600 m, N18°22.3′ E105°09.1′ GPS, E. Jendek & O. Šauša lgt." (GERP).

Redescription. Length, 5.00 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere II and XI apically reddish; legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 28).

Head: Widely punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres V–X; antennomeres III as long as the combined lengths of IV and V; antennomere II as long as IV; antennomere IV and V subequal; antennomeres VI–X subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate; surface shiny; about as long as wide, with moderate, sharp hind angles; basal 2/3 parallel-side, slightly emarginated above hind angles; apical 1/3 arcuate; disc convex; base sinuous; anterior lateral pronotal ridge elongate, directed posteriorally; posterior lateral ridge elongate, extends about 1/2 the length of the pronotum (Fig. 29).

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striae absent; interstices flattened with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; outer ridge of antennal groove apically obliterated; inner ridge entire; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. Cuneiform body and quadrate pronotum will distinguish *B. vicina* from *B. distincta*. Sinuous lateral sides of the pronotum will further distinguish *B. vicina* from *B. cuneiforma* in Laos.

Distribution. A very rare eucnemid species previously known from Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. One adult was taken from a lowland semi-evergreen forest.

Brevisegmentus gen.nov.

Type species. *Balistica miyatakei* Hisamatsu, 1955, designated here.

Diagnosis. Adults of *Brevisegmentus* superficially resemble several Dirhagine genera *Balistica*, *Microrhagus* and *Entomophthalmus*. The group can be distinguished from both groups by its short antennomere III in relation to antennomere IV. Both *Balistica* and *Microrhagus* each have elongate antennomere III, much longer than IV. The new group can be distinguished from *Entomophthalmus* by the combined lengths of antennomeres II and III are longer than antennomere IV. Antennomeres II and III combined are shorter than IV in *Entomophthalmus*. The presence of sex combs along the entire length of prothoracic tarsomere I is a unique feature among males of the group and will distinguish the group from any known members of the tribe.

Description. Male. Body elongate, approximately four times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus with short setae. Antennae serriform with 11 antennomeres, setose; scape three times longer than pedicel; pedicel globular, shorter than antennomere III; antennomere III shorter than antennomere IV; antennomeres IV–X subequal in lengths, longer than wide and rounded in cross sectional view; antennomere XI slightly longer than X. Compound eye round, well developed, incised, large. Antennal groove present in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically trilobed, about 2.50 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles bidentate; right mandible unidentate. Maxillary and labial palpus concealed behind mandibles. Labrum concealed.

Pronotum: Convex, setose. Lateral sides parallel-sided, apically arcuate. Slightly wider than long. Two lateral pronotal ridges present. Disc convex. Base sinuous, with short median carina above scutellum.

Scutellum: Longer than wide, sub-triangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Humeri with short, dorsolateral carina. Disc and humeri indistinctly striate. Interstices flattened.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia apically rounded, rounded in cross section, setose with one apical spur. Prothoracic tarsi I with straight sex combs covering entire length of segment (Fig. 33). Lateral side of mesothoracic and metathoracic tibiae with setae only. Mesothoracic and metathoracic tarsi, including claws as long as the tibia. First metathoracic tarsi as long as the combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, slightly wider than III. Metathoracic tarsi V elongate with simple claws. Tarsal formula 5-5-5.

Venter: With elongate setae. Notosternal suture shorter than the hypomeral base. Hypomeron with parallel-sided notosternal antennal grooves. Hypomeral pits near procoxae with well defined ridges on all sides. Epipleura not grooved. Metathoracic episterna parallel-sided. Metathoracic coxal plate medially 3.00 times wider than laterally. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite caudally obtuse.

Etymology. The generic name combines *brevi-*, from the Latin *brevis*, meaning "small", plus the Latin *segmentum*, meaning "segment"; named for its short antennomere III. Gender: masculine.

Brevisegmentus miyatakei (Hisamatsu, 1955) comb.nov. (Figs 30–33)

Balistica miyatakei Hisamatsu 1955: 101–102.

Material examined. One specimen was available for study: "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~1500 m, Vít Kubáň leg." (NHMB).

Description. Length, 4.25 mm; width, 1.25 mm; body color reddish-brown (Fig. 30).

Head: Very closely punctate; subspherical; surface shiny; eyes slightly protuberant; frons convex. Antennae: Serriform, reaching about 2/3 the length of the body; reddish-brown (Fig. 31).

Pronotum: Reddish-brown, shiny with short, yellow recumbent setae; surfaces with closely spaced punctations; slightly wider than long, with moderate hind angles; lateral sides parallel-sided; arcuate apically; disc convex; base sinuous, with median carina above scutellum; anterior lateral pronotal ridge short, directed posteriorally, extends up to 1/4 the length; posterior lateral pronotal ridge elongate, extending nearly entire length of pronotum (Fig. 32).

Scutellum: Rugose, shiny, oblong, sub-triangular and distally rounded.

Elytron: Convex, shiny with short, yellow recumbent setae, reddish-brown; length 3.00 mm; width 0.66 mm at humeri; humeri and disc indistinctly striate; interstices flattened, closely punctate to transversely rugose.

Legs: Femur, tibiae and tarsi reddish-brown and somewhat shiny; surfaces shallowly punctate, with short, yellow recumbent setae.

Venter: Somewhat shiny; reddish-brown; surface with short, yellow recumbent setae; closely, shallowly punctate; abdominal sternum with dense, elongate recumbent setae; erect setae present on abdominal sterna IX.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. A very rare eucnemid species previously known from Japan. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. One adult was taken from a tropical montane deciduous forest.

Entomophthalmus Bonvouloir, 1871

Diagnosis. Dirhagini with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; antennomeres II and III combined shorter than IV; notosternal antennal grooves present; male prothoracic tarsomere I simple, without sex combs; metathoracic coxal plate medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded, acute or slightly emarginated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic

tibiae with setae only; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, deeply and widely bifurcate apically; lateral lobes simple, longitudinally bilobed; flagellum complex; tubular.

Entomophthalmus coomani Fleutiaux, 1928 (Figs 34 and 35)

Material examined. One specimen was available for study: "LAOS c., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4–1.5.1998, alt. 600 m, N 18°22.3′ E 105°09.1 GPS, E. Jendek, O. Šauša lgt" (JMC).

Redescription. Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate; black, except head and anterior margin of pronotum; head, antennae, anterior margin of pronotum and elytral suture reddish; femur, tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 34).

Head: Very closely and shallowly punctate, subspherical; frons convex, without fovea or carina; surface somewhat shiny; apical margin of frontoclypeal region rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres IV–X, reaching about 2/3 the length of its body; setose; antennomere II and III combined shorter than IV; antennomeres IV–X each longer than wide, subequal; antennomere XI about as long as X.

Pronotum: Shallowly and closely punctate; surface shiny; quadrate, slightly wider basally with moderate, sharp hind angles; lateral sides sub-parallel-sided; disc convex; base sinuous; anterior lateral pronotal ridge moderately elongate, directed ventrally; posterior lateral pronotal ridge extends near entire length of pronotum (Fig. 35).

Scutellum: Shiny, short, sub-triangular, distally rounded.

Elytra: Striae indistinct, except along suture; interstices flattened, surfaces shallowly punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially six times wider than laterally.

Differential diagnosis. Blackish dorsum with reddish antennae will distinguish *E. coomani* from *Entomophthalmus alutaceus* Fleutiaux, 1938, *Entomophthalmus loriai* Fleutiaux, 1896 and *Entomophthalmus suturalis* Fleutiaux, 1926. Shallowly punctate elytral surfaces will further distinguish *E. coomani* from *Entomophthalmus bonvouloiri* Fleutiaux, 1916.

Distribution. A very rare eucnemid species previously known from Malaysia and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult beetle was taken from a lowland semi-evergreen forest.

Rhagomicrus Fleutiaux, 1902

Diagnosis. Dirhagini with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; notosternal antennal grooves present; male prothoracic tarsomere I simple, without sex combs; metathoracic coxal plate parallel-sided; last visible ventrite either rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed, with basally attached secondary lateral lobes; median lobe simple, deeply and widely bifurcate apically; lateral lobes simple, longitudinally bilobed; flagellum complex; tubular.

Note. These three species were compared against the types of *Rhagomicrus circumdatus* Fleutiaux, 1929, *Rhagomicrus sandakanus* Fleutiaux, 1932 and *Rhagomicrus velutinus* (Fleutiaux, 1895) loaned from the Natural History Museum in Paris, France. None of the Laotian species matched with any of the known Southeast Asian *Rhagomicrus* species, so they are here described as new species.

Key to the species of *Rhagomicrus*

1 Posterior lateral pronotal ridge elongate; antennae weakly serrate. ... **2**
– Posterior lateral pronotal ridge shorter; antennae moderately serrate. ... . ***Rhagomicrus haucki* sp.nov.**
2 Antennomeres IV–X longer than wide; pronotum with short median groove. ..... ***Rhagomicrus tibialis* sp.nov.**
– Antennomeres IV–X as long as wide; pronotum with elongate median groove. ..... ***Rhagomicrus cylindriformis* sp.nov.**

Rhagomicrus cylindriformis sp.nov. (Figs 36 and 37)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 20°12′N, 104°01′E, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Rhagomicrus*, *cylindriformis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.

Paratypes: 3, from the following localities: 1, "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~1500 m, Vít Kubáň leg." (NHMB); 1, "LAO, Phongsaly prov., 21°41′N 102°06′E, PHONGSALY env., 6.–17.v.2004, ~1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19"N 103°59′54"–104°00′03"E, 1480–1550 m, PHOU PANE Mts., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (GERP).

Each specimen labeled: "PARATYPE, *Rhagomicrus*, *cylindriformis*, Otto, det. R.L. Otto, 2014" (♂ or ♀ handwritten behind species name on label) [yellow printed label]. Paratypes are retained in GERP and NHMB.

Description. Female holotype: Length, 5.75 mm. Width, 1.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black, except extreme base of elytra, apical margin of pronotum and elytral suture reddish; antennae reddish; femur dark reddish-brown, tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, white recumbent setae (Fig. 36).

Head: Very closely punctate, almost granulose, subspherical; frons convex, with pair of small circular foveae laterad of compound eyes; surface somewhat shiny; apical

margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X; antennomere III slightly longer than IV; antennomeres IV–X subequal, as long as wide; antennomere XI slightly longer than X; extends about 1/3 the length of the body.

Pronotum: Closely punctate, almost granulose; surface shiny; about as long as wide, with moderate, sharp hind angles; parallel-sided, apically arcuate; disc convex, with median groove and pair of horizontal foveae; base sinuous; anterior lateral pronotal ridge short, directed posteriorly; posterior lateral ridge elongate, extends 3/4 the length of pronotum (Fig. 37).

Scutellum: Shiny, quadrate, distally rounded with median groove apically present.

Elytra: Striate; interstices elevated with closely punctate to rugose surfaces.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, white recumbent setae; hypomeron with medially undefined notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum slightly widened apically; metathoracic coxal plates parallel-sided.

Variation. Two female and one male paratypes were examined. The size range from 4.00–5.00 mm long. Antennae are darker than the holotype. Median groove is shallowly indicated and confined to the basal 1/3 of the pronotal disc. Pair of horizontal foveae are absent in both paratypes. Median carina of the notosternal antennal grooves are fully developed in both paratypes. General coloration and exoskeletal characteristics are similar to the holotype.

Etymology. The specific epithet is derived from its cylindrical form of its habitus.

Differential diagnosis. Weakly serrate antennae and longer posterior lateral pronotal ridge will distinguish *R. cylindriformis* from *R. haucki*. Stout antennal segments and elongate median groove on the pronotal disc will further distinguish *R. cylindriformis* from *R. tibialis*.

Distribution. A very rare, endemic eucnemid species known from single localities in the Houphanh and Phongsaly provinces of northern Laos. Muona (1991a) noted a new species of *Rhagomicrus* from Vietnam in one of the analysis in his study. Without seeing the specimen, it is possible the Vietnamese specimen may be either of this species, *R. haucki* or *R. tibialis*.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

***Rhagomicrus haucki* sp.nov.** (Figs 38 and 39)

Type material. Male holotype: "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mts., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB)" / "HOLOTYPE, *Rhagomicrus*, *haucki*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Paratypes: 2, from the following localities: 1, "MALAYSIA, Elateroidea, Eucnemidae" (yellow printed label glued on large platen board alongside specimen on a smaller board) / "MALAYSIA – Pahang, Banjaran Benom, Lata Jarom, 18.–21.3.1997, Ivo Jeniš leg." (GERP); 1, "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC).

Each specimen labeled: "PARATYPE, *Rhagomicrus*, *haucki*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Paratypes are deposited in GERP and JMC.

Description. Male holotype: Length, 3.25 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black, except apical margin of pronotum reddish; antennae black, except part of I and II reddish; femur largely black; apical end of femur, tibiae and tarsi medium brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 38).

Head: Very closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Moderately serrate from antennomeres IV–X; setose; antennomere III longer than IV; antennomeres IV–X subequal, slightly longer than wide; antennomere XI slightly longer than X; extends about half the length of the body.

Pronotum: Closely punctate, granulose; surface dull; about as long as wide, with moderate, sharp hind angles; parallel-sided; disc convex; base sinuous, with very short carina above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extends 1/2 the length of pronotum (Fig. 39).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flatten with densely punctate to rugose surface.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Variation. Two female paratypes were examined. These paratypes ranged 3.00–4.25 mm long. One female is larger than the holotype. Antennae in both females are lighter than the holotype. Reddish coloration at the base of the pronotum is present in the paratypes, but absent in the holotype. General exoskeletal characteristics are similar to the holotype.

Etymology. The specific epithet, *haucki* is named after David Hauck, collector of the holotype specimen.

Differential diagnosis. Moderately serrate antennae and shorter posterior lateral pronotal ridge will distinguish *R. haucki* from *R. cylindriformis* and *R. tibialis*.

Distribution. A very rare eucnemid species taken from two localities in Laos and a single locality in Malaysia.

Ecoregion(s). Northern Indochina subtropical forests, Southern Annamites montaine rain forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Rhagomicrus tibialis sp.nov. (Figs 40 and 41)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Rhagomicrus*, *tibialis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: with same label data as holotype / "BMNH{E}, 2012-14, C. Holzschuh" / "ALLOTYPE, *Rhagomicrus*, *tibialis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.
Paratypes: 6, from the following localities: 6, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP). Each specimen labeled: "PARATYPE, *Rhagomicrus*, *tibialis*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on label) [yellow printed label]. Paratypes are deposited in BMNH and GERP.

Description. Male holotype: Length, 3.50 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black, except elytra and apical margin of pronotum reddish; antennae black in basal segment, remaining segments infuscate reddish; femur black, tibiae and tarsi reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 40).

Head: Very closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X; antennomere III slightly longer than IV; antennomeres IV–X subequal, slightly longer than wide; antennomere XI slightly longer than X; extends about half the length of the body.

Pronotum: Closely punctate, granulose; surface shiny; about as long as wide, with moderate, sharp hind angles; parallel-sided; disc convex; base sinuous, with slight median groove above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extends 3/4 to nearly towards apical end (Fig. 41).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae faintly indicated; interstices elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section, apically expanded

with hook-like appendenge present at lateral side; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Allotype: Length 3.00 mm, width 1.00 mm; same as male except unicolored; antennae shorter and darker; metathoracic tibiae slightly expanded, without lateral hook-like appendage.

Variation. Six adult paratypes were examined. The single female paratype is larger than the holotype and allotype, measuring 3.75 mm long. Five male paratypes varied in lengths from 3.50–4.00 mm. All specimens are varied in the elytral colorations. Some specimens have infuscate reddish areas present, especially near the humeri region. Other specimens show a more unicolored dark brown elytra. Antennal coloration is darker in all paratypes compared with the holotype.

Etymology. The new species name is derived from its expanded tibiae with the presence of a hook-like appendage on male specimens.

Differential diagnosis. Weakly serrate antennae and longer posterior lateral pronotal ridge will distinguish *R. tibialis* from *R. haucki*. Longer than wide antennal segments and expanded tibiae will further distinguish *R. tibialis* from *R. cylindriformis*.

Distribution. A rare, endemic eucnemid species taken from a single locality in the Houphanh province of northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Siniugum gen.nov.

Type species. *Siniugum houaphanensis* sp.nov., designated here.

Diagnosis. Adult *Siniugum* superficially resemble *Microrhagus*, but differ based on the absence of the posterior lateral pronotal ridge. The absence of sex combs in the male type will also distinguish the group from *Microrhagus*. In general, the absence of the posterior lateral pronotal ridge will distinguish the group from all other groups within the tribe Dirhagini.

Description. Male. Body elongate, approximately five times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus with short, recumbent setae. Antennae weakly serriform with 11 antennomeres, setose; scape four times longer than pedicel; pedicel globular, shorter than antennomere III; antennomere III slightly longer than antennomere IV; antennomeres V–XI each subequal in lengths, two time longer than wide, rounded in cross sectional view. Compound eye round, well developed, small. Antennal groove

present in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically trilobed, about 2.50 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles bidentate; right mandible unidentate. Maxillary and labial palpus concealed behind mandibles. Labrum concealed.

Pronotum: Subparallel, convex and setose. Lateral sides arcuate. Hind angles well developed. About as long as wide. Anterior lateral pronotal ridge short. Posterior lateral pronotal ridge absent. Disc convex. Base sinuous.

Scutellum: Quadrate, subtriangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Disc indistinctly striate. Humeral region shallowly striate. Interstices flattened.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia apically rounded, rounded in cross-section, setose with one apical spur. First prothoracic tarsi without sex combs. Lateral side of mesothoracic and metathoracic tibiae with setae only. Metathoracic tarsi, including claws longer than the tibia. First metathoracic tarsi shorter than combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, wider than III. Metathoracic tarsi V elongate with basally toothed claws. Tarsal formula 5-5-5.

Venter: With short, recumbent setae. Prothoracic sternal peg basally broad, short. Notosternal suture shorter than the hypomeral base. Hypomeron with notosternal antennal grooves. Hypomeral pits near prothoracic coxae without distinct ridges along lateral and/or caudal sides. Epipleura not grooved. Metathoracic episterna caudally widened. Metathoracic coxal plate medially 3.00–6.00 times wider than laterally. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite caudally acute.

Etymology. The generic name combines *sin-*, from the Latin *sine*, meaning without, plus the Latin *iugum*, meaning ridge; for the absence of the posterior lateral hypomeral ridge. Gender: neuter.

Note. Several species, *Microrhagus derelictus* Bonvouloir, 1871, *Microrhagus affinis* (Fleutiaux, 1932) and *Microrhagus wolffi* (Cobos, 1970) were described as lacking the posterior lateral pronotal ridge in the original descriptions. It is quite possible these species may belong in this group. I have not been able to examine the types first hand during the time of the study. For the time being, they will remain in *Microrhagus*, until a world-wide revision of the group can be done.

***Siniugum houaphanensis* sp.nov.** (Figs 42 and 43)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Siniugum*, *houaphanensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.

Description. Male holotype: Length, 5.00 mm; width, 1.00 mm; body color uniformly dark brown (Fig. 42).

Head: Very closely punctate; subspherical; surface dullish; eyes slightly protuberant; frons convex.

Antennae: Weakly serriform, reaching about 3/4 the length of the body; dark brown, except antennomere II reddish.

Pronotum: Dark brown, dullish with short, yellow recumbent setae; surfaces with closely spaced punctations to granulose; about as long as wide, with moderate sharp, divergent hind angles; lateral sides parallel-sided, slightly arcuate; disc convex; base sinuous, with short median carina above scutellum; anterior lateral pronotal ridge short, directed slightly ventrally, extends up to 1/4 the length; posterior lateral pronotal ridge absent (Fig. 43).

Scutellum: Punctate, reddish, shiny, slightly oblong, sub-triangular and distally rounded.

Elytron: Convex, somewhat shiny with short, yellow recumbent setae, dark brown; length 3.25 mm; width 0.75 mm at humeri; humeri shallowly striate; disc indistinctly striate; interstices flattened, closely punctate.

Legs: Femur and tibiae dark brown; tarsi medium brown and somewhat shiny; surfaces shallowly punctate, with short, yellow recumbent setae.

Venter: Somewhat dullish; dark brown; surface with short, yellow recumbent setae; closely, shallowly punctate.

Etymology. The specific epithet is derived from the name of the province, Houaphanh, in which the new species was collected.

Differential diagnosis. Smaller eyes will distinguish *S. houaphanensis* from *M. derelictus* and *M. affinis*. Pronotal shape and microsculpture will also distinguish *S. houaphanensis* from *M. wolffi*; that being parallel-sided and punctate in *M. wolffi* and slightly arcuate and granulose with divergent hind angles in the new species.

Distribution. A very rare, endemic eucnemid species known from a holotype collected within the Houaphanh province near Ban Saleui of northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Microrhagus Dejean 1833

(=*Dirhagus* Latreille, 1834: 130)
(=*Aulacostenus* Motschulsky, 1869: 33, not Marsham, 1853)
(=*Arhagus* Méquignon, 1925: 187, not Fleutiaux, 1921)
(=*Dichodirhagus* Méquignon, 1925: 240)
(=*Emyirhagus* Olexa, 1975: 162)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region trilobed and more than twice as wide as the distance between antennal sockets; well developed notosternal antennal grooves present, usually with smooth surfaces; male prothoracic tarsomere I simple, with apical sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; poorly defined deep hypomeral pits near prothoracic coxae; interrupted lateral pronotal ridges; lateral

surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; lateral lobes bilobed and directed dorsocaudad; median lobe simple, deeply and widely bifurcate apically; flagellum complex and tubular.

Note. Some of the identifications were made through interpreting translated keys from Bonvouloir (1872) and Fleutiaux (1926, 1947). These identifications were verified through comparing some specimens against descriptions provided by these authors. Remaining identifications were made possible after breaking down a list of all known species from the region and grouping them. These groupings were based on key diagnostic features (*i.e.* caudally widened versus parallel-sided metathoracic episternum and lateral pronotal ridges) found in each species descriptions from a number of references. These information were compared against any unidentified specimens. New species identification was made, when some specimens failed to match with any interpreted published descriptions of species distributed the region.

Key to the species of *Microrhagus*

1 Anterior lateral pronotal ridge elongate. **2**
– Anterior lateral pronotal ridge short. **3**

2 Elongate setae present at bases of pronotum and elytra as well as along elytral sutures. ..... ***Microrhagus pavidus*** **(Motschulsky, 1861)**
– Setae short, consistant at bases of pronotum and elytra as well as along elytral sutures. ..... ***Microrhagus luzonicus*** **(Fleutiaux, 1926)**

3 Metathoracic episternum parallel-sided. **4**
– Metathoracic episternum caudally widened. **6**

4 Dorsum blackish or black and reddish. **5**
– Dorsum entirely reddish-brown or brown. ..... ***Microrhagus minimus*** **Bonvouloir, 1872**

5 Pronotal base with short, median carina above scutellum; pronotum parallel-sided, dullish, and closely punctate to granulose. ..... ***Microhagus walkeri*** **sp.nov.**
– Pronotal base without short, median carina above scutellum; pronotum basally wide, shiny, and closely punctate. ..... ***Microrhagus entomophthalmoides*** **sp.nov.**

6 Antennae either serrate or pectinate. **7**
– Antennae filiform. ..... ***Microrhagus rufoantennatus*** **sp.nov.**

7 Dorsum reddish or reddish-brown in color. **8**
– Dorsum black in color. **9**

8 Posterior lateral pronotal ridge extending up to 3/4 the length of pronotum; compound eyes not incised. .... ***Microrhagus rufus*** **sp.nov.**
– Posterior lateral pronotal ridge extending nearly entire length of pronotum; compound eyes incised. ..... ***Microrhagus bolavenensis*** **sp.nov.**

9 Posterior lateral pronotal ridge elongate, extends at least 2/3 the length of the pronotum. **10**

– Posterior lateral pronotal ridge shorter, extends up to 1/2 the length of the pronotum. ..... ***Microrhagus posticus* (Fleutiaux, 1926)**

10 Pronotal base with short carina above scutellum. .... ***Microrhagus hoabinus* (Fleutiaux, 1938)**

– Pronotal base with short groove above scutellum. .... ***Microrhagus inconsultus* Bonvouloir, 1872**

***Microrhagus bolavenensis* sp.nov.** (Figs 44 and 45)

Type material. Female holotype: "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." / "HOLOTYPE, *Microrhagus*, *bolavenensis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Female holotype: Length, 4.50 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 44).

Head: Shallowly punctate, subspherical; frons without carina or sulcus; surface shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; compound eyes incised.

Antennae: Weakly serrate from antennomeres III–VII; antennomere III longer than IV; antennomere IV shorter than V; antennomeres V–VII subequal, slightly longer than wide; right antennomeres VIII–XI missing; left antennomeres IV–XI missing.

Pronotum: Closely, shallowly punctate; surface shiny; quadrate, with moderate, sharp hind angles; parallel-sided; disc convex; base sinuous, with median carina above scutellum; anterior lateral pronotal ridge short, angulated, directed postero-ventrally; posterior lateral ridge elongate, extends entire length of pronotum (Fig. 45).

Scutellum: Shiny, short, sub-triangular and distally rounded.

Elytra: Striae indistinct, except along suture; interstices flattened with shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with caudally widened notosternal antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet is derived from the Bolavan Plateau in the Attapeu province from which the new species was taken.

Differential diagnosis. *Microrhagus bolavenensis* is superficially similar to *Entomophthalmus* and *Brevisegmentus*. Generic characteristics will distinguish *M. bolavenensis* from either two groups. Within *Microrhagus*, presence of incised

compound eyes will further distinguish the new species from all known species present in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in southern Laos.

Ecoregion(s). Southern Annamites montaine rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Microrhagus entomophthalmoides sp.nov. (Figs 46 and 47)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Microrhagus*, *entomophthalmoides*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: with same label data as holotype / "BMNH{E}, 2012-14, C. Holzschuh" / "ALLOTYPE, *Microrhagus*, *entomophthalmoides*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.
Paratypes: 5, from the following localities: 2, "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~1500 m, Vít Kubáň leg." (NHMB); 1, "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~1500 m, Brancucci leg." (NHMB); 1, "Laos-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104° 00′03″E, 1480–1550 m, PHOU PANE Mt., 1.–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP).
Each specimen labeled: "PARATYPE, *Microrhagus*, *entomophthalmoides*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on label) [yellow printed label]. Paratypes are deposited in GERP and NHMB.

Description. Male holotype: Length, 3.50 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black, except apical margin of pronotum and scutellum reddish; antennae infuscate reddish; femur dark reddish-brown, tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 46).

Head: Very closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X; setose; antennomeres III–XI subequal in length, longer than wide; extends about 3/4 the length of its body.

Pronotum: Closely punctate; surface shiny; about as long as wide, with moderate, sharp hind angles; parallel-sided, basally wider; disc convex; base sinuous, with small, median carina above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extends nearly the entire length of pronotum (Fig. 47).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Allotype: Length 4.00 mm, width 1.25 mm; same as male except antennae are shorter, barely reaching towards elytral humeri. Antennomeres IV–X each slightly more serrate.

Variation. Five adult paratypes were examined. The single female paratype is subequal in length but slightly narrower than the allotype, measuring 1.00 mm wide. Four male paratypes varied in lengths from 3.00–4.00 mm and widths from 1.00–1.25 mm. Infuscate reddish coloration along apical pronotal margin and scutellum showed some variability among all parytypes. The female paratype have a stronger infuscate reddish coloration compared to all the males, which have a darker colored scutellum and a very narrow band along the apical margin. Dark, blackish colored antennae are present in all male paratypes, while the female have infuscate reddish antennae, similar to both the holotype and allotype. No other exoskeletal differences can be found between all specimens.

Etymology. The specific epithet is derived from its overall appearance of the species resembling a melasine eucnemid group, *Entomophthalmus* Bonvouloir, 1871.

Differential diagnosis. Filiform antennae will distinguish *M. entomophthalmoides* from all other Laotian *Microrhagus* species.

Distribution. A rare, endemic eucnemid species known from several localities in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Microrhagus hoabinus (Fleutiaux, 1938) (Figs 48 and 49)

Dirrhagus hoabinus Fleutiaux 1938: 209–210.

Material examined. One specimen was available for study: "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 3.75 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere II reddish; legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae; elongate setae more apparent on basal half of pronotum, elytral humeri and along elytral suture (Fig. 48).

Head: Closely punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Male antennae pectinate from antennomeres IV–X; antennomeres III triangular, as long as the combined lengths of IV and V; antennomere II shorter than IV; ramus on antennomere IV slightly shorter than V, ramus on antennomere V slightly shorter than VI; rami on antennomeres VI–X subequal; antennomere XI longer than X.

Pronotum: Densely, shallowly punctate; surface shiny; about as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with very short carina above scutellum; anterior lateral pronotal ridge short, directed posteriorally; posterior lateral ridge elongate, extends about 2/3 the length of the pronotum (Fig. 49).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense punctations; rugose near humeri.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with parallel-sided notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum caudally widened; metathoracic coxal plates medially 1.20–2.00 times wider than laterally.

Differential diagnosis. Presence of elongate setae at the base of the pronotum, elytral humeri and along the elytral sutures will distinguish *M. hoabinus* from all known *Microrhagus* species in Laos, except *M. pavidus* and *M. posticus*. Posterior lateral pronotal ridge will further distinguish *M. hoabinus* from *M. pavidus* and *M. posticus*, that being elongate in *M. hoabinus* and shorter in *M. pavidus* and M. *posticus*.

Distribution. A very rare eucnemid species previously known from Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Microrhagus inconsultus Bonvouloir, 1872 (Figs 50 and 51)

Material examined. One specimen was available for study: "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere II reddish; legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 50).

Head: Closely punctate to rugose, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Much of the antennae were missing in the examined specimen. From any remaining segments available to examine: antennomeres V–VI are pectinate; antennomere III longer than combined lengths of IV and V; antennomere IV as long as II.

Pronotum: Densely, closely punctate; surface dullish; about as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with very short, shallow groove above scutellum; anterior lateral pronotal ridge short, directed posteriorally; posterior lateral ridge elongate, extends about 3/4 the length of the pronotum (Fig. 51).

Scutellum: Dull, wide, sub-triangular and distally rounded.

Elytra: Striae faintly indicated; interstices flattened with dense punctations.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with caudally widened notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum caudally widened; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. *Microrhagus inconsultus* can be distinguished from *M. luzonicus* by its closely punctate surface of the pronotum and head, as well as the posterior lateral ridge reaching about 3/4 the length of the pronotum. Caudally widened metathoracic episternum will further distinguish *M. inconsultus* form *M. luzonicus*.

Distribution. A very rare eucnemid species previously known from Sri Lanka. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Microrhagus luzonicus (Fleutiaux, 1926) (Figs 52 and 53)

Dirhagus luzonicus Fleutiaux 1926: 82

Material examined. Two specimens were available for study: 1, "C. LAOS, Boli Khan Xai prov., Ban Nape (8 km NE), 1–18.5.2001, P. Pacholátko leg." (GERP); 1, "LAOS-N (Louangphrabang), 11–21.v.2002, 19°35′N 101°58′E, THONG KHAN, ~750 m, Vít Kubáň leg." (GERP).

Redescription. Length, 5.00 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown, except apical margin of pronotum reddish; antennae dark brown-black, except antennomeres II and XI apically reddish; legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 52).

Head: Granulose, subspherical; frons convex; surface dull; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres IV–X, extends 3/4 the length of its body; antennomere IV ramus about half as long as V; antennomere V ramus 2/3 as long as VI; antennomere VI ramus slightly shorter than VII; antennomere VII–X rami subequal in length; antennomeres IV–X subequal, longer than wide.

Pronotum: Granulose; surface dull; slightly longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous; anterior lateral pronotal ridge elongate, reaching 1/3 the length, slightly directed ventrally; posterior lateral ridge elongate, extends nearly entire length of pronotum (Fig. 53).

Scutellum: Dull, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense to rugose punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. *Microrhagus luzonicus* can be distinguished from *M. inconsultus* by its granulose surface of the pronotum and head, as well as the elongate posterior lateral ridge reaching near the apical end of the pronotum. Parallel-sided metathoracic episternum will further distinguish *M. luzonicus* from *M. inconsultus*. The eucnemid species also differ from the Southeast Asian *Microrhagus bruckii* Bonvouloir, 1872 by its posterior lateral pronotal ridge; that being elongate and reaching near apical end in *M. luzonicus* and shorter, about 1/2 to 2/3 the length of the pronotum in *M. bruckii*.

Distribution. A very rare eucnemid species previously known from the Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Thailand-Laos moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Microrhagus minimus Bonvouloir, 1872 (Figs 54 and 55)

Material examined. Three specimens were available for study: 1, "LAOS, 21°09′N 101°19′E, Louangnamtha pr., Namtha → Muang Sing, 5–31.v.1997, 900–1200m, Vít Kubáň leg." (JMC); 1, "LAOS centr., Khammouan prov., NAKAI env., 17°43′N, 105°09′E, 22.V.–8.VI.2001, alt. 500–600 m, E. Jendek & O. Šauša lgt." (GERP); 1, "LAOS c., Khammouan prov., NAKAI env., 4–8.V.1998, Route No. 8, alt. 560m, N17°42.8′, E105°09.1′ GPS, E. Jendek & O. Šauša lgt." (GERP).

Redescription. Length, 2.25–3.00 mm. Width, 0.75–1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 54).

Head: Closely and shallowly punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–XI; setose; antennomeres III slightly longer than IV; antennomeres IV–X subequal, quadrate; extends 1/2 the length of its body.

Pronotum: Closely punctate; surface shiny; about as long as wide, with moderate, sharp hind angles; parallel-sided; disc convex; base sinuous; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extends nearly entire length of pronotum (Fig. 55).

Scutellum: Dull, oblong, sub-triangular and distally rounded.

Elytra: Striae punctate; interstices flattened with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. The eucnemid species can be distinguished from *M. rufus* by it notosternal antennal grooves; that being caudally parallel-sided in *M. minimus* and caudally widened in *M. rufus*. Metaepisternum will also distinguish these two species; that being parallel-sided in *M. minimus* and caudally widened in *M. rufus*.

Distribution. A very rare eucnemid species previously known from Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a dry evergreen forest and tropical montane evergreen forest.

Microrhagus pavidus (Motschulsky, 1861) (Figs 56 and 57)

Aulacosternus pavidus Motschulsky 1861: 24.

Material examined. One specimen was available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark reddish-black; tarsi reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae; elongate setae more apparent on basal half of pronotum, elytral humeri and along elytral suture (Fig. 56).

Head: Closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres III–X, reaching about 3/4 the length of its body; antennomere III longer than IV; antennomere IV slightly shorter than V; antennomeres V–X subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Densely and shallowly punctate; surface somewhat shiny; about as long as wide, with shorter, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, with median circular fovea; base sinuous, with slightly elevated median carina above scutellum; anterior lateral pronotal ridge elongate, directed ventrally; posterior lateral pronotal ridge elongate, extends up to 1/2 the length (Fig. 57).

Scutellum: Punctate, short, sub-triangular and distally rounded.

Elytra: Striae present at humeri only, remaining areas without striae; interstices slightly elevated at humeri, flattened elsewhere with closely punctate to rugose surfaces.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Presence of elongate setae at the base of the pronotum, elytral humeri and along the elytral sutures will distinguish *M. pavidus* from all known *Microrhagus* species in Laos, except *M. posticus* and *M. hoabinus*. Posterior lateral pronotal ridge will further distinguish *M. pavidus* from *M. hoabinus*; that being shorter in M. *pavidus* and elongate in *M. hoabinus*. Laterally narrow pronotal hind angles and elongate anterior pronotal ridge will distinguish the species from *M. posticus*.

Distribution. A very rare eucnemid species previously found in the Sri Lanka. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. One adult was taken from a tropical montane deciduous forest.

Microrhagus posticus (Fleutiaux, 1926) (Figs 58 and 59)

Dirhagus posticus Fleutiaux 1926: 81–82.

Material examined. Four specimens were available for study: 1, "LAOS-N (Oudomxai), 1–9.v.2002, ~1100 m, 20°45′N 102°09′E, OUDOM XAI (17 km NEE), Vít Kubáň leg." (JMC); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 3.25–4.00 mm. Width, 1.00–1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae black, except antennomeres II and XI apically reddish; legs medium-dark brown, tarsi medium brown; head, pronotum and elytra clothed with short, yellowish recumbent

setae; elongate setae more apparent on basal half of pronotum, elytral humeri and along elytral suture (Fig. 58).

Head: Very closely punctate, subspherical; frons convex; surface somewhat shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X; males strongly serrate, females weakly serrate; extends just beyond elytral humeri; antennomere III slightly longer than IV; antennomeres IV–X subequal, about as long as wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate; surface shiny; about as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with median carina above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge short, extends nearly half the length (Fig. 59).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum apically widened; metathoracic coxal plates medially 1.20–2.00 times wider than laterally.

Differential diagnosis. Presence of elongate setae at the base of the pronotum, elytral humeri and along the elytral sutures will distinguish *M. posticus* from all known *Microrhagus* species in Laos, except *M. pavidus* and *M. hoabinus*. Posterior lateral pronotal ridge will further distinguish *M. posticus* from *M. hoabinus*; that being shorter in M. *posticus* and elongate in *M. hoabinus*. Shorter anterior pronotal ridge will also distinguish *M. posticus* from *M. pavidus*.

Distribution. A very rare eucnemid species previously found in the Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

***Microrhagus rufoantennatus* sp.nov.** (Figs 60 and 61)

Type material. Male holotype: "Collection Naturhistorisches Museum Basel" / "LAOS-N (Oudomxai), 1–9.v.2002, ~1100 m, 20°45′N 102°09′E, OUDOM XAI (17 km NEE), Vít Kubáň leg." / "HOLOTYPE, *Microrhagus*, *rufoantennatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Paratype: 1, from the following locality: "LAOS north, 13–24.V.1997, 15 km NW Louang Namtha, N21°07.5′, E101°21.0′, alt 750 ±100 m, E. Jendek & O. Šauša leg." / "PARATYPE, *Microrhagus*, *rufoantennatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Paratype is retained in GERP.

Description. Male holotype: Length, 4.00 mm. Width, 1.00 mm. Body parallel-sided, elongate, tapering towards apex; uniformly black, except pronotal apices and base, hind angles, elytral base as well as scutellum infuscate reddish; antennae infuscate reddish; femur dark brown; tibiae and tarsi medium brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 60).

Head: Shallowly punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–XI, setose, reaching 3/4 the length of its body; antennomere III slightly longer than IV; antennomere IV longer than II; antennomeres IV–X subequal, slightly longer than wide; antennomere XI longer than X.

Pronotum: Shallowly punctate; surface shiny; slightly wider than long, with moderate, sharp hind angles; lateral sides parallel-sided, apically arcuate; disc convex; base sinuous, with very short median carina above scutellum; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral ridge elongate, extending almost entire length of pronotum (Fig. 61).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened with dense to rugose punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; hypomeral pits near prothoracic coxae without well defined ridges; metathoracic episternum caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One adult paratype was examined. The single male paratype is subequal in length compared with the holotype. The paratype is more unicolored, losing the infuscate reddish coloration along the base of the pronotum and elytra as well as the scutellum. Antennomere III is slightly elongate in the paratype in relation to antennomere IV, compared with the antennal segments in the holotype.

Etymology. The specific epithet is derived from its reddish colored antennae present in the new species.

Differential diagnosis. Reddish colored filiform antennae, parallel-sided pronotum and caudally widened matathoracic episternum will distinguish *M. rufoantennatus* from *M. entomophthalmoides*.

Distribution. A very rare, endemic eucnemid species known from two localities in northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a dry evergreen forest.

***Microrhagus rufus* sp.nov.** (Figs 62 and 63)

Type material. Female holotype: "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" / "HOLOTYPE, *Microrhagus*, *rufus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.
Paratype. 1, from the following locality: "LAOS, 1–9.v.1999, Louangphrabang pr., 20°33–4′N, 102°14′E, Ban Song Cha (5 km W), 1200 m, Vít Kubáň leg." / "PARATYPE, *Microrhagus*, *rufus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Paratype is deposited in JMC.

Description. Female holotype: Length, 4.00 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 62).

Head: granulose, subspherical; frons with small, round tubercle; vertex with fine, shallow groove; surface dullish; apical margin of frontoclypeal region weakly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, extends up to elytral humeri; antennomeres III longer than IV; antennomere IV as long as II, shorter than V; antennomeres V–X subequal, as long as wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, almost granulose; surface dullish; slightly longer than wide, with moderate, sharp hind angles; parallel-sided, basally wider, arcuate craniad; disc convex; base sinuous, with median carina above scutellum; anterior lateral pronotal ridge short, angulated, directed ventrally; posterior lateral ridge elongate, extends 3/4 the length of pronotum (Fig. 63).

Scutellum: Dull, oblong, sub-triangular and distally rounded.

Elytra: Striae somewhat indicated, moreso at humeri; interstices slightly elevated with rugose to dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with caudally widened notosternal antennal grooves, lateral ridge caudally incomplete; hypomeral pits near prothoracic coxae indistinct; metathoracic episternum caudally widened; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Variation. One adult paratype was examined. The single female paratype is 4.25 mm in length, slightly larger than the holotype. There are no discernable morphological and exoskeletal differences between the holotype and paratype.

Etymology. The specific epithet is derived from the overall reddish coloration of the species.

Differential diagnosis. *Microrhagus rufus* can be distinguished from *M. minimus* by it notosternal antennal grooves; that being caudally widened in *M. rufus* and caudally parallel-sided in *M. minimus*. Metathoracic episternum will also distinguish these two species; that being caudally widened in *M. rufus* and parallel-sided in *M. minimus*.

Distribution. A very rare, endemic eucnemid species known from two localities in northern and northeastern Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Microrhagus walkeri sp.nov. (Figs 64 and 65)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Microrhagus*, *walkeri*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.
Paratype. 1, from the following locality: "MALAYSIA West, PAHANG, Cameron Highlands, TANAH RATA, 1200–1500 m, 3.ii–19.ii.2005, Cechovsky Petr lgt." / "PARATYPE, *Microrhagus*, *walkeri*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Paratype is retained in GERP.

Description. Male holotype: Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black with apical margin of pronotum reddish; antennae black, except antennomere II reddish; legs dark brown to black, tarsi medium brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 64).

Head: Very closely punctate, subspherical; frons convex; surface somewhat dullish; apical margin of frontoclypeal region evenly rounded, 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Flabellate from antennomeres V–X with very elongate rami, reaching close to the elytral humeri; antennomere III nearly as long as the combined lengths of IV–VI; antennomere IV serrate, triangular-shaped; antennomere XI elongate.

Pronotum: Very closely punctate to rugose; surface somewhat dullish; about as long as wide, with moderate, sharp hind angles; sides parallel-sided; disc convex; base sinuous; anterior lateral pronotal ridge short, slightly directed ventrally; posterior lateral pronotal ridge elongate, extends nearly entire length of pronotum (Fig. 65).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened; surfaces rugose nearest humeral region.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally swollen, simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves, medial ridge poorly developed; hypomeral pits near prothoracic coxae with poorly defined ridges; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One male paratype was examined. The single paratype is shorter than the holotype; measuring 3.50 mm long. Antennal rami are lighter brown in color compared to the holotype. No other exoskeletal differences can be found between these two types.

Etymology. The specific epithet is dedicated in memory of a favorite American actor, Paul Walker, best known for his acting roles in the "Fast and Furious" series of movies and many other films, who has entertained us for many years. He was tragically killed in an automobile accident in November 2013.

Differential diagnosis. Unique antennal structures will distinguish *M. walkeri* from all known species in Laos. *Microrhagus walkeri* is similar to oceanic *Microrhagus sexramosus* (Fleutiaux, 1931) and Asian *Microrhagus pennatus* (Fleutiaux, 1926). *Microrhagus walkeri* differs in the overall length and shape of the anterior lateral hypomeral ridge; that being extremely short, directed ventrally in *M. sexramosus* and elongate, directed posteriorally in *M. walkeri*. The new species also differ from *M. pennatus* by the form of antennomere IV; that being short and triangular in *M. walkeri* and elongate in *M. pennatus*.

Distribution. A very rare eucnemid species known from single localities in both Laos and Malaysia.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adults was taken from a tropical montane deciduous forest.

Dirrhagofarsus Fleutiaux, 1935

(= *Attenurhagus* Olexa, 1975: 161)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region fairly evenly rounded and more than twice as wide as the distance between antennal sockets; hypomeron with notosternal antennal grooves; serrate antennae; male prothoracic tarsomere I simple, without sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; with secondary lateral lobes; lateral lobes simple, apices directed mediad; median lobe simple, deeply and widely bifurcate apically; flagellum complex and tubular.

Dirrhagofarsus foveicollis sp.nov. (Figs 66 and 67)

Type material. Female holotype: "LAO-NE, Hua Phan prov., ~20°12′ N 104°01′E, PHU PHAN Mt., 1500–1900 m, 17.v.–3.vi.2007, M. Brancucci leg" / "NHMB Basel, expedition to Laos, 2007" / "HOLOTYPE, *Dirrhagofarsus*, *foveicollis*, Otto, Det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 9.00 mm. Width, 2.25 mm. Body subcylindrical, elongate; uniformly dark brown; antennae dark brown; femur, tibiae and tarsi dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 66).

Head: Very closely punctate; frons with lateral ridges, fovea above frontoclypeal region and pair of circular foveae near occipital area; surface somewhat shiny; apical

margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X, reaching almost 1/2 the length of its body; setose; antennomere III slightly longer than IV; antennomeres IV–X each longer than wide, subequal, weakly serrate; antennomere XI slightly longer than X.

Pronotum: Closely punctate to rugose; surface somewhat shiny; slightly longer than wide, with moderate, sharp hind angles; lateral sides parallel-sided; disc with small fovea near anterior end; base sinuous, with elongate carina above scutellum; anterior lateral pronotal ridge short, directed ventrally; posterior lateral pronotal ridge short, extends 1/2 the length of pronotum (Fig. 67).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Slightly striate, moreso near elytral humeri; interstices slightly elevated, surfaces closely punctate to rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 2.50–3.00 times wider than laterally.

Etymology. The name of the new species is derived from a pair of circular foveae present on the frons.

Differential diagnosis. Larger size, along with presence of fovea on the frons will distinguish *D. foveicollis* from any known Asian species of *Dirrhagofarsus*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Rhacopus Hampe, 1855

(= *Pseudorhacopus* Olexa, 1975: 160)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region fairly evenly rounded and less than twice as wide as the distance between antennal sockets; hypomeron with notosternal antennal grooves; pectinate or serrate antennae; male prothoracic tarsomere I simple, with straight, apical sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; without secondary lateral lobes; lateral lobes simple, entire, apices directed ventrad; median lobe simple, deeply and widely bifurcate apically; flagellum complex and tubular.

***Rhacopus olexai* (Hisamatsu, 1963)** (Figs 68 and 69)

(= *Dirrhagus sahlbergi* (Mannerheim, 1823) *sensu* Hisamatsu, 1960: 98)
Dirrhagus olexai Hisamatsu, 1963: 29

Material examined. One specimen was available for study: "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 6.50 mm. Width, 1.50 mm. Body subcylindrical, elongate; uniformly reddish-brown; antennae reddish-brown; femur, tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 44).

Head: Very closely punctate, subspherical; frons convex, with median triangular fovea; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching at least 1/2 the length of its body; setose; antennomere III slightly longer than IV; antennomeres IV–X each longer than wide, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Rugose; surface somewhat dull; slightly wider than long, with moderate, sharp hind angles; lateral sides parallel-sided; disc convex; base sinuous, with elongate carina above scutellum; anterior lateral pronotal ridge short, directed ventrally; posterior lateral pronotal ridge extends close to anterior margin of pronotum (Fig. 45).

Scutellum: Shiny, oblong, sub-triangular, distally rounded and apically furrowed.

Elytra: Slightly striate; interstices slightly elevated, surfaces closely punctate to rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; metathoracic episternum slightly widened caudally; metathoracic coxal plates medially two times wider than laterally.

Differential diagnosis. Based on translated, interpreted information from Fleutiaux (1899, 1924, 1926, 1929, 1933 & 1938b) as well as Hisamatsu (1960 & 1963); diagnosis are based on the following: absence of median carina on frons and longer posterior lateral pronotal ridge will separate *R. olexai* from *Rhacopus yasumatsui* (Hisamatsu, 1960). Slightly caudally widened metathoracic episternum will further distinguish *R. olexai* from *Microrhagus rouani* (Fleutiaux, 1924) and *Microrhagus validus* (Fleutiaux, 1926). Incomplete posterior lateral pronotal ridge will also distinguish *R. olexai* from *Microrhagus coomani* (Fleutiaux, 1938), *Microrhagus dohertyi* (Fleutiaux, 1899), *Microrhagus indicus* (Fleutiaux, 1933) and *Microrhagus tonkinensis* (Fleutiaux, 1929).

Distribution. A very rare eucnemid species previously known from Japan. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Cafolus Bonvouloir, 1871

(= *Arhagus* Fleutiaux, 1921: 72)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region feebly trilobed and less than twice as wide as the distance between antennal sockets; hypomeron simple, without antennal grooves; pectinate or flabellate antennae; male prothoracic tarsomere I simple, without basal sex combs; metathoracic coxal plates laterally wider than medially; last visible ventrite either rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; without secondary lateral lobes; lateral lobes simple, longitudinally bilobed, apices directed mediad; median lobe simple, deeply and widely bifurcate apically; flagellum complex and tubular.

Note. Identification of the species was made through examination of the specimen against a description provided in Fleutiaux (1935).

Cafolus crassus (Fleutiaux, 1935) (Fig. 70)

Arhagus crassus Fleutiaux, 1935: 172

Material examined. One specimen was available for study: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 11.00 mm. Width, 3.50 mm. Body robust, elliptical; uniformly black; antennae black, except antennomere II dark brown; femur and tibiae black; tarsi dark reddish-brown; head, pronotum and elytra clothed with very short, white recumbent setae (Fig. 70).

Head: Very closely punctate; frons with median groove and fovea above frontoclypeal region; surface somewhat dull; apical margin of frontoclypeal region feebly trilobed, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching about 1/3 the length of its body; rami elongate, arising from base of each antennomere; antennomere XI elongate.

Pronotum: Closely punctate to rugose; surface somewhat dull; about as long as wide, with moderate, sharp hind angles; lateral sides arcuate; disc with median groove; base sinuous, with enlarged, elongate, medially grooved carina above scutellum; anterior lateral pronotal ridge short, arcuate, directed ventrally; posterior lateral pronotal ridge elongate, extends near entire length of pronotum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded; median carina slightly elevated.

Elytra: Striate; interstices elevated, surfaces closely punctate to rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with anteriorally indicated notosternal antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates laterally wider than medially.

Differential diagnosis. Larger size, unicolored black dorsum and robust form will distinguish *C. crassus* from most species in the group distributed in Southeast Asia.

Distribution. A very rare eucnemid species previously known from Thailand and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Prodirhagus Fleutiaux, 1925

(=*Collartinia* Cobos 1959: 47)

Diagnosis. Dirhagini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; hypomeral antennal grooves present; serrate, pectinate or flabellate antennae; male prothoracic tarsomere I simple, with straight apical sex combs; metathoracic coxal plates medially either 1.20–2.50 or 3.00–6.00 times wider than laterally; last visible ventrite either rounded or acute; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; without secondary lateral lobes; lateral lobes simple, longitudinally bilobed, apices directed mediad; median lobe simple, moderately and narrowly bifurcate apically; flagellum complex and tubular.

Note. Identification of the species were made through examination of the specimen against a description provided in Bonvouloir (1872). New species determination was made by Jyrki Muona and verified against other species descriptions in the group.

Key to the species of *Prodirhagus*

1 Anterior lateral pronotal ridge directed ventrally; posterior lateral pronotal ridge complete. ..... ***Prodirhagus kresli* sp.nov.**

– Anterior lateral pronotal ridge directed posteriorly; posterior lateral pronotal ridge shorter, near complete. .... ***Prodirhagus subparallelus* (Bonvouloir, 1872)**

Prodirhagus kresli sp.nov. (Figs 71 and 72)

Type material. Male holotype: "LAOS, Vientiane pr., Lao Pako, 19.–21.5.2004, Petr Kresl leg." / "65 km NE of Vientiane, alt. 200 m, near Nam Noum river" / Prodirrhagus n. sp, J. Muona det. 2014" / "HOLOTYPE, *Prodirhagus*, *kresli*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Male holotype: Length, 9.00 mm. Width, 2.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark reddish-brown; antennae

dark reddish; legs dark reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 71).

Head: Closely, deeply punctate, subspherical; frons with very shallow median impression; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, extending just beyond hind angles of pronotum; setose; antennomere II short, triangular; antennomere III with short lateral ramus; antennomeres III–X short between each rami; rami moderately elongate.

Pronotum: Closely, deeply punctate, almost rugose; surface dull; slightly longer than wide, with moderate, sharp hind angles; parallel-sided, slightly arcuate; disc convex, with pair of circular foveae and median groove extending from base to near apical end; base sinuous; anterior lateral pronotal ridge shorter, directed ventrally; posterior lateral pronotal ridge complete, extending to apical end (Fig. 72).

Scutellum: Shiny, punctate, sub-triangular and distally rounded.

Elytra: Striae present, especially at humeri; interstices elevated; rugose at basal half, closely punctate at apical half.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Densely punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates 1.20–2.50 times wider than laterally.

Etymology. The specific epithet is named after Petr Kresl, collector of the new species.

Differential diagnosis. Anterior lateral pronotal ridge directed ventrally and entire posterior lateral pronotal ridge will distinguish *P. kresli* from *P. subparallelus*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected within the Vientiane province in western Laos.

Ecoregion(s). Luang Prabang montaine rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

***Prodirhagus subparallelus* (Bonvouloir, 1872)** (Figs 73 and 74)

Microrhagus subparallelus Bonvouloir, 1872: 594–595; plate 29, Fig. 2

Material examined. One specimen was available for study: "LAOS, Phongsaly prov., BAN SANO MAI, 19.–26.v.2004, ~1500 m, 21°21′N 102°03′E, P. Pacholátko leg." (NHMB).

Redescription. Length, 5.25–5.50 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark reddish-brown; antennae dark reddish-brown; legs medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 73).

Head: Very closely punctate, subspherical; frons with very short, median ridge; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Female antennae serrate from antennomeres III–X, reaching almost 1/2 the length of its body; antennomere III longer than IV; antennomere IV longer than II; antennomeres IV–X subequal, longer than wide; antennomere XI longer than X. Male antennae pectinate from antennomeres VI–X, reaching about 1/2 the length of its body; antennomeres IV and V serrate; rami elongate, arising from apices of antennomeres VI–X; antennomere XI elongate.

Pronotum: Deeply and closely punctate to rugose; surface dull; longer than wide, with moderate, sharp hind angles; parallel-sided, apically arcuate; disc with pair of shallow, circular foveae and deep median groove; anterior lateral pronotal ridge short, directed posteriorally; posterior lateral pronotal ridge elongate, extends near entire length of pronotum; base sinuous (Fig. 74).

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae feebly indicated; interstices elevated; surfaces closely transversely rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with notosternal antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates medially 1.20–2.50 time wider than laterally.

Differential diagnosis. Anterior lateral pronotal ridge directed posteriorly and shorter posterior lateral pronotal ridge will distinguish *P. subparallelus* from *P. kresli*.

Distribution. A very rare eucnemid species previously known from Papua New Guinea. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Sarpedon Bonvouloir, 1871

Diagnosis. Dirhagini, with apical margin of frontoclypeal region trilobed and more than twice as wide as the distance between antennal sockets; antennae either bipectinate or biserrate; hypomeron simple, without antennal grooves; male prothoracic tarsomere I simple, without sex combs; metathoracic coxal plates parallel-sided; last visible ventrite either acute, rounded or truncated; hypomeral pits absent; lateral pronotal ridges complete; lateral surfaces of mesothoracic and metathoracic tibiae with setae only; male aedeagus dorsoventrally compressed; lateral lobes longitudinally bilobed, with apices directed mediad; median lobe simple, deeply and widely bifurcate apically; flagellum complex and tubular.

Note. Identification of *Sarpedon bipectinatus* was made possible through a paper I received from my colleague, Wataru Suzuki. The illustration in the paper provided the means to identify the species. The determination of *Sarpedon apicalis* as a new species was fascilitated through a personal correspondence with Wataru Suzuki to understand diagnostic feature of the Japanese *Sarpedon atratus* Fleutiaux, 1922 and compare information he provided against the specimen. The specimen failed to match well with any features Suzuki provided and concluded the determination of the new species.

Key to the species of *Sarpedon*

1 Size smaller, less than 7.00 mm long; elytra black. ..... ***Sarpedon apicalis* sp.nov.**

– Size large, greater than 7.00 mm long; elytra infuscate reddish. ..... ***Sarpedon bipectinatus* Fleutiaux, 1896**

***Sarpedon apicalis* sp.nov.** (Fig. 75)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Sarpedon*, *apicalis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.

Description. Male holotype: Length, 5.00 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dull black, except apical margin of pronotum reddish-brown; antennae black; femur and tibiae infuscate dark reddish-black, tarsi reddish-brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 75).

Head: Rugose, almost granulose, subspherical; frons with very shallow median groove; surface dull; apical margin of frontoclypeal region trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Bipectinate from antennomeres III–X, extending just beyond hind angles of pronotum; setose; antennomere II short, triangular; antennomere III with short lateral ramus; antennomeres III–X elongate between each rami; antennomere XI missing.

Pronotum: Rugose, almost granulose; surface dull; about as long as wide, with moderate, sharp hind angles; parallel-sided, slightly arcuate; disc convex, with median groove extending from base to near apical end, each lateral side with short, vertical groove; base sinuous; lateral pronotal ridge complete.

Scutellum: Shiny, wide, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices elevated with rugose punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Deeply punctate to rugose, with short, yellowish recumbent setae; hypomeron without notosternal antennal grooves; hypomeral pits absent; metathoracic episternum caudally widened; metathoracic coxal plates parallel-sided.

Etymology. The specific epithet is derived from its reddish-brown apical margin of the pronotum.

Differential diagnosis. Smaller size, black elytra and reddish-brown apical margin of pronotum will distinguish *S. apicalis* from *S. bipectinatus*. *Sarpedon apicalis* is very similar to the Japanese *Sarpedon atratus* Fleutiaux, 1896, but differs by the presence of vertical grooves on the lateral sides of the pronotum and lack of basal grooves or impressions on the pronotal base.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in the Houaphanh province of Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Sarpedon bipectinatus Fleutiaux, 1896 (Fig. 76)

Material examined. One specimen was available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 10.75 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black, except elytra dark infuscate red; antennae black; legs black; tarsi black, except tarsomeres IV and V infuscate reddish-black; head, pronotum and elytra clothed with very short, yellowish recumbent setae (Fig. 76).

Head: Very deeply punctate, subspherical; frons with tear drop-shaped median groove; surface shiny; frontoclypeal region with very fine median carina; apical margin of frontoclypeal region trilobed, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Bipectinate from antennomeres III–X, extending just beyond hind angles of pronotum; setose; antennomere II short, globular; antennomere III with short lateral and medial rami; antennomeres III–X short between each rami; antennomere XI bilobed.

Pronotum: Rugose to granulose; surface shiny; as long as wide, with moderate, sharp hind angles; parallel-sided, apically arcuate; disc with pair of shallow, circular foveae near base and median groove extending from base to near apical end; lateral pronotal ridge complete; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices elevated, keeled; surfaces rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate to rugose, with short, yellowish recumbent setae; hypomeron without notosternal antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Larger size, infuscate reddish elytra and entirely black colored pronotum will distinguish *S. bipectinatus* from *S. apicalis*.

Distribution. A very rare eucnemid species previously known from Papua New Guinea, Taiwan and Vietnam (Fleutiaux 1947, Suzuki & Chou 2012)). The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

SUBFAMILY EUCNEMINAE ESCHSCHOLTZ, 1829

Diagnosis. Mandibles slender, without teeth, originally with ventrally expanded lateral surfaces; antennomeres IX–XI originally enlarged, tubular, sexually dimorphic; prothoracic tibiae with one apical spur; lateral surfaces of mesothoracic and metathoracic tibiae flattened with sharp angles between lateral and caudal surfaces, originally with hairs and spines; male prothoracic tarsomere I with or without sex combs; tarsomere IV originally simple; prohypomeron with basally closed lateral antennal grooves; male aedeagus flattened; median lobe free, without dorsal basal struts, originally with notched apex; female eighth sternite partly sclerotized; bursa originally bifurcate, undivided; spermatheca sclerotized, divided.

Key to the tribes within the subfamily Eucneminae

1 Prothoracic tibiae with one apical spur. **2**
– Prothoracic tibiae without apical spur. .... **Dendrocharini Fleutiaux, 1920**
2 Tarsi simple, without ventral lobes. **3**
– Tarsi with ventral lobes. ..... **Galbitini Muona, 1991**
3 Cylindrical form; hypomeron usually without excretory hairs along antennal grooves. ..... **Mesogenini Muona, 1993**
– Elongated form; hypomeron with excretory hairs along antennal grooves. ..... **Eucnemini Eschscholtz, 1829**

Tribe Dendrocharini Fleutiaux, 1920

Diagnosis. Form massive, cylindrical; eyes small; mandible short, with secondary ventral tooth; frontoclypeal region short, very wide; antennal sockets widely separated; apical spur absent on prothoracic tibiae; tarsomere IV simple; antennomeres III–XI flattened, triangular; metathoracic sternum without tarsal grooves; aedeagus flattened, highly modified, tubular; basal piece very small, dorsally closed; median lobe with entire apex; lateral lobes transversely divided dorsally; bursa simple, divided; spermatheca sclerotized, divided.

Key to the genera within the tribe Dendrocharini

1 Tarsi simple, without ventral lobes. ... ***Scopulifer*** **Fleutiaux, 1896**
– Tarsi with ventral lobes. ... ***Dendrocharis*** **Guérin-Méneville, 1843**

Scopulifer Fleutiaux, 1896

Diagnosis. Dendrocharini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; male prothoracic tarsomere I simple, with sex combs; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; tarsomeres simple, without ventral lobes.

Key to the species of *Scopulifer*

1 Elytra with indications of broken striae. **2**
– Elytra without striae. ..... ***Scopulifer atkinsoni*** **Fleutiaux, 1912**
2 Lateral sides of pronotum weakly arcuate, gradually narrowing craniad; frons with delicate median carina. .... ***Scopulifer asiaticus*** **sp.nov.**
– Lateral sides of pronotum strongly arcuate, not narrowed craniad; frons without delicate median carina. .... ***Scopulifer laosianus*** **sp.nov.**

Scopulifer asiaticus sp.nov. (Fig. 77)

Type material. Male holotype: "LAOS centr., 27.IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150 m, N 18°16.1′, E 103°10.9′, M. Strba and R. Hegovits leg." / "Scopulifer alternans, Bonvouloir, 1875, J. Muona det. 2014" / "HOLOTYPE, *Scopulifer*, *asiaticus*, Otto, det. R.L. Otto, 2015" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.
Paratype: 3, from the following locality: LAOS: 1, "LAOS centr., 27.IV.–1.V.1997, 70 km NE Vientiane, BAN PHABAT env., 150 m, N18°16.1′, E103°10.9′, E. Jendek & O. Šauša leg." / "Scopulifer alternans, Bonvouloir, 1875, J. Muona det. 2014"; 1, "LAOS centr, Bolikhamsai prov., BAN NAPE – Kaew Nua Pass, 18.4.–1.5.1998, alt. 600 ±100 m, N 18°22.3′ E 105°09.1′ (GPS), M. Strba & R. Hergovits leg." / "Scopulifer alternans, Bonvouloir, 1875, J. Muona det. 2014"; THAILAND: 1, "THAILAND Bor. occ., PAI, SOPPING, 28.5–5.6.1997, lgt. M. Snizek" / "Scopulifer alternans, Bonvouloir, 1875, J. Muona det. 2014".
Each specimen labeled: "PARATYPE, *Scopulifer*, *asiaticus*, Otto, det. R.L. Otto, 2015" (♂ handwritten behind species name on label) [yellow printed label]. Paratypes are deposited in JMC.

Description. Male holotype: Length, 6.50 mm. Width, 2.00 mm. Body cylindrical, elongate; uniformly dark brown; basal antennal segment dark brown, remaining segments reddish-brown; femur and tibiae dark brown; tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 77).

Head: Tightly granulose, subspherical; frons with small, median, deep, circular fovea above frontoclypeal region and delicate median carina extending from vertex to apical margin of frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres II–X, reaching as far back as the hind angles of the pronotum; antennomere III longer than IV; antennomeres IV–X subequal, serrate, about as long as wide; antennomere XI slightly longer than X.

Pronotum: Granulose; surface somewhat shiny; as long as wide, with short, slightly divergent hind angles; lateral side gradually narrow cranially, arcuate; disc convex, with delicate median groove extending from base up to 3/4 the length of pronotum; base sinuous.

Scutellum: Somewhat shiny, oblong, sub-trapezoid and distally rounded.

Elytra: Striae very weakly indicated, almost indistinct, broken; interstices slightly elevated, surfaces granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple, without ventral lobes; metathoracic tarsomere V elongate with simple claws.

Venter: Granulose, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Variation. Three male paratypes were examined. The paratypes measured 7.00–7.50 mm long and 2.25–2.50 mm wide, larger and slightly wider than the holotype. Exoskeletal coloration are similar to the holotype. Granules on the apical edge of the pronotum is slightly spaced wider on one of the paratypes. Frontal carina on the frons are much more reduced in one of the paratypes compared against the holotype.

Etymology. The specific epithet is derived from the term Asia, in which the new species is distributed on the Asian subcontinent.

Differential diagnosis. Presence of weakly indicated, near indistinct elytral striae will distinguish *S. asiaticus* from *S. atkinsoni*. Weakly arcuate, gradually narrowing pronotum and presence of delicate median carina on frons will further distinguish *S. asiaticus* from *S. laosianus*.

Distribution. A very rare eucnemid species known from two localities in northern and northeastern Laos, as well as a single locality in Thailand.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest.

Scopulifer atkinsoni Fleutiaux, 1912 (Fig. 78)

Material examined. Seven specimens were available for study: 2, "LAOS centr, 27.IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150m, N 18° 16.1 E 103° 10.9, M. Strba & R. Hegovits leg." / "Scopulifer atkinsoni, Fleutiaux 1912, J. Muona Det. 2014" (JMC); 3, "LAOS, Bolikhamxai pr., 18°16′N 103°11′E, 70 km NEE Vientiane, 27–30.iv.1997, 150 m, Vít Kubáň leg." (GERP, NHMB); 1, "LAOS-N (Louangphrabang), 11–21.v.2002, 19°35′N, 101°58′E, THONG KHAN, ~750 m, Vít Kubáň leg." / "Scopulifer atkinsoni, Fleutiaux, 1912, J. Muona det. 2014" (JMC); 1, "LAOS, Houa Phan prov., 20°42.40′N/104°23.70′E, Muang Sop Bao, 300 m, 6–8.vi.2009, M. Geiser & D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 6.50–9.00 mm. Width, 2.50–3.00 mm. Body cylindrical, elongate; uniformly dark brown to black; basal antennal segment dark brown to black, remaining segments reddish-brown; femur and tibiae dark brown to black; tarsi reddish-brown; head, pronotum and elytra clothed with sparse, short, yellowish recumbent setae (Fig. 78).

Head: Granulose, subspherical; frons with small, median, deep, circular fovea above frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres II–X, reaching as far back as the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV–X progressively wider than long to as long as wide, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dull; as long as wide, with short hind angles; lateral side gradually narrow cranially, arcuate; disc convex; base sinuous.

Scutellum: Shiny, oblong, sub-trapezoid, distally rounded and apically grooved.

Elytra: Striae absent; interstices absent, surfaces granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple, without ventral lobes; metathoracic tarsomere V elongate with simple claws.

Venter: Granulose, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Lack of elytral striae will distinguish *S. atkinsoni* from both *S. asiaticus* and *S. laosianus* in Laos.

Distribution. A rare eucnemid species previously known from India, Myanmar, Philippines and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Beeson (1941) reported the species bores in wood of *Pentacme suavis* de Candolle (Dipterocarpaceae). Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

***Scopulifer laosianus* sp.nov.** (Fig. 79)

Type material. Female holotype: "LAOS north, LUANG NAMTHA env., 4.–12.v.1998, R. HERGOVITS leg." (handwritten) / "Scopulifer ?feai, Fleutiaux, 1896, J. Muona det. 2014" / "HOLOTYPE, *Scopulifer, laosianus*, Otto, det. R.L. Otto, 2015" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Female holotype: Length, 11.50 mm. Width, 3.75 mm. Body cylindrical, elongate; uniformly black; basal antennal segment black, remaining segments brown; femur and tibiae dark brown to black; tarsi dark brown; head, pronotum and elytra clothed with short, whitish recumbent setae (Fig. 79).

Head: Granulose, subspherical; frons with small, median, deep, circular fovea above frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres II–X, reaching as far back as the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV–X subequal, serrate; antennomeres IV, VIII–X as long as wide; antennomeres V–VII wider than long; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dullish; as long as wide, with divergent, moderate hind angles; lateral sides arcuate; disc convex, with short, basal, delicate median groove; base sinuous.

Scutellum: Somewhat shiny, oblong, sub-trapezoid and distally rounded.

Elytra: Striae very weakly indicated, broken; interstices flattened, surfaces granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple, without ventral lobes; metathoracic tarsomere V elongate with simple claws.

Venter: Granulose, with short, whitish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Etymology. The specific epithet, *laosianus* is derived from the country in which the new species has been collected.

Differential diagnosis. Laterally arcuate pronotum will distinguish *S. laosianus* from both *S. asiaticus* and *S. atkinsoni* in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in the Luangnamtha province in Northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a dry evergreen forest.

Dendrocharis Guérin-Méneville, 1843

Diagnosis. Dendrocharini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; male prothoracic tarsomere I simple, with sex combs; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; tarsomeres with ventral lobes; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, usually pointed apically; lateral lobes simple, entire; flagellum simple.

Note. A revision of the tribe Dendrocharini is currently underway as of this publication, including descriptions of several new *Dendrocharis* species collected in Laos. Three new species will not be included in this study.

Key to the species of *Dendrocharis*

1 Dorsum with elongate setae. ..... ***Dendrocharis intermedia* Fleutiaux, 1896**

– Dorsum with short, sparse setae. ..... ***Dendrocharis rouyeri* Fleutiaux, 1912**

Dendrocharis intermedia Fleutiaux, 1896 (Fig. 80)

Material examined. Ten specimens were available for study: 2, "LAOS centr., 27.IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150 m, N18°16.1′, E103°10.9′, M. Strba & R. Hegovits leg." / "Dendrocharis bicolor "B", Redtenbacher 1867, J, Muona det. 2014" (JMC); 5, "LAOS, Borikhamxai prov., 18°16′N, 103°11′E, 70 km NEE Vientiane, 27–30.iv.1997, 150 m, Vít Kubáň leg." (GERP, NHMB); 1, "LAOS, Louangnamtha pr., 21°09′N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (NHMB); 1, "LAOS-N, 22.iv.1999, Louangphrabang pr., 20°43′N, 102°41′E, MUANG NGOY, 500 m, Vít Kubáň leg." / "Dendrocharis bicolor "B", Redtenbacher 1867, J, Muona det. 2014" (JMC); 1, "LAOS: S-Oudomxai Prov., PAK BENG, 450 m, N19°53′37″, E101°07′51″, 18–27.v.2001, JIŘÍ KOLIBÁČ leg." (NHMB).

Redescription. Length, 10.00–13.00 mm. Width, 3.00–4.00 mm. Body cylindrical, elongate; uniformly dark brown-black; antennomeres I dark brown-black, antennomeres II–XI reddish-brown; femur and tibiae dark brown-black; tarsi dark reddish-brown; head, caudal area of pronotum and scutellum with distinct but scant, short gold colored setae; remaining areas of pronotum and elytra clothed with sparse, short, yellowish recumbent setae (Fig. 80).

Head: Granulose, subspherical; frons convex, with small, median circular fovea above frontoclypeal region; surface dullish; apical margin of frontoclypeal region evenly rounded, less than 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum; antennomere III as long as IV; antennomeres IV–X each wider than long, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Granulose; surface somewhat shiny; setose; slightly longer than wide, with moderate hind angles; lateral sides parallel-sided at basal 2/3, arcuate at apical 1/3; disc convex, with moderately developed median tubercle, with median shallow groove extending from base to tubercle; base sinuous.

Scutellum: Setose, quadrate, distally rounded; without median keel.

Elytra: Striae strongly indicated at apical 1/2; interstices flattened to slightly elevated, surfaces granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres II–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Granulose, with scant, recumbent, short, yellowish setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Presence of elongate setae on dorsum, along with broken elytral striae near apices will distinguish *D. intermedia* from *D. rouyeri*.

Distribution. A rare, widespread eucnemid species have been taken in India, Laos, Malaysia, Myanmar, the Philippines and Vietnam.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Fleutiaux (1927) and Beeson (1941) both reported the species bores in wood of *Shorea robusta* Roth (Dipterocarpaceae). Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

Dendrocharis rouyeri Fleutiaux, 1912 (Fig. 81)

Material examined. Three specimens were available for study: 1, "N LAOS, 13–24.V.1997, 15 km NW Luang Namtha, N 21°07.5′ E 101°21.0′, M. Strba & R. Hergovits leg." / "Dendrocharis rouyeri, Fleutiaux, 1912, J. Muona det. 2014" (JMC); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan : Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition:, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 9.50–12.00 mm. Width, 2.50–4.00 mm. Body cylindrical, elongate; uniformly dark brown; antennomere I dark brown, antennomeres II–XI medium brown; femur and tibiae dark brown; tarsi medium brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 81).

Head: Granulose, subspherical; frons convex, with median circular fovea above frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres II–X, reaching as far back as the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV–X each as long as wide, subequal, serrate; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dull; sparsely setose; slightly longer than wide, with short hind angles; lateral side gradually narrow apically, arcuate; disc convex, with small median tubercle, without median shallow groove or carina; base sinuous.

Scutellum: Sparsely setose, short, quadrate, distally rounded.

Elytra: Striae not indicated; interstices slightly elevated; surfaces granulose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres II–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Granulose, with sparse, short, recumbent yellowish setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Lack of elytral striae as well as presence of short, sparse setae on dorsum will distinguish *D. rouyeri* from *D. intermedia* in Laos.

Distribution. A very rare eucnemid species previously known from Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Tribe Mesogenini Muona, 1993

Diagnosis. Form cylindrical; frons with median keel; tarsomere IV simple; male prothoracic tarsomere 1 without sex combs; tarsomeres without ventral lobes; antennomeres III–XI gradually more serrate and transverse towards apex; hypomeron usually without hairy excretory organs along antennal grooves; metathoracic sternum with tarsal grooves; metathoracic coxal plates usually parallel-sided; basal piece dorsally closed; median lobe divided in apical and basal parts; ventral basal struts apically fused; fused basal portion of lateral lobes dorsally attached to basal piece; lateral lobes transversely divided dorsally, apices turned dorsocaudad; bursa simple, divided; spermatheca sclerotized, divided, globular with secondarily expanded, pileated apex.

Key to the genera within the tribe Mesogenini

1 Tarsomere IV simple. **2**
– Tarsomere IV excavate-emarginate. **3**
2 Metathoracic coxal plates medially 3.00–6.00 times wider than laterally; body elliptical, robust. ..... ***Euryostus*** **Bonvouloir, 1871**
– Metathoracic coxal plates parallel-sided; body subcylindrical. .... ***Mesogenus*** **Bonvouloir, 1871**
3 Metathoracic sternum without tibiotarsal grooves. **4**
– Metathoracic sternum with tibiotarsal grooves. .... ***Vitellius*** **Bonvouloir, 1871**
4 Antennomere III shorter than or as long as IV. .... ***Feaia*** **Fleutiaux, 1896**
– Antennomere III longer than IV. ..... ***Arisus*** **Bonvouloir, 1871**

Arisus Bonvouloir, 1871

Diagnosis. Mesogenini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates either parallel-sided or medially 1.20–2.50 times wider than laterally; last visible ventrite either rounded or truncated; tarsomere IV excavate-emarginate; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, with separate apical median sclerite either entire or bifurcate; lateral lobes with secondary constriction apically, longitudinally bilobed; flagellum simple.

Note. J. Muona (pers. comm.) is currently revising the group. He will be describing a few new species in the Southeast Asian and Oceanic regions, including one species taken in Laos. The new species will not be included in this study. Identification was made

possible by examining the types of two species from the MNHN. The remaining species identification was accomplished with assistance of Jyrki Muona through personal communication.

Key to the species of *Arisus*

1 Vertex with median carina. **2**
– Vertex convex, without median groove or carina. **3**
2 Pronotum shiny, with confluent punctations. ..... ***Arisus castelnaui* Bonvouloir, 1871**
– Pronotum dullish, densely rugose to granulose. ..... ***Arisus orientalis* Bonvouloir, 1871**
3 Pronotum with lateral gibbosities. ..... ***Arisus bituberculatus* Fleutiaux, 1935**
– Pronotum without lateral gibbosities. ..... ***Arisus wicardi* Bonvouloir, 1871**

Arisus bituberculatus Fleutiaux, 1935 (Fig. 82)

Material examined. One specimen was available for study: "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~ 1500 m, 21°41′N 102°06′E, M. Brancucci leg." (BMNH).

Redescription. Length, 10.50 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark brown; antennomeres I dark brown, antennomeres II–XI medium-brown; legs dark reddish-brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 82).

Head: Rugose, subspherical; frons convex; surface somewhat shiny; frontoclypeal region with pair of carina present along lateral sides; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III almost as long as the combined lengths of IV and V; antennomere IV as long as V; antennomeres V–X each as long as wide, serrate; antennomere XI longer than X.

Pronotum: Very closely punctate to rugose; surface dullish; wider than long, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex, with pair of delicate small circular foveae and pair of very small gibbosities; base sinuous, with foveae at both sides of scutellum.

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striae indicated; interstices slightly elevated; surfaces closely, shallowly punctate to transversely rugose, setose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Lack of median carina or groove on the head will distinguish *A. bituberulatus* from *A. castelnaui* and *A. orientalis*. Presence of lateral gibbosities will further distinguish *A. bituberulatus* from *A. wicardi*.

Distribution. A very rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. GARDNER (1935) described larvae collected from a decaying *Macaranga denticulata* (Blume) (Euphorbiaceae) log in Bengal, India. A single adult was taken from a tropical montane deciduous forest.

Arisus castelnaui Bonvouloir, 1871 (Fig. 83)

Material examined. Four specimens, including the holotype were available for study: 1, "INDONESIA: Sumatra, Annai Valley, 400m, October 1995, St. Jakl lgt" (GERP); 1, "INONESIA: S. Kalimantan, Kandangan Dist., Loksado vill., 8–15.11.1997, St. jakl lgt" (GERP); 1, "INDONESIA: Sumatra, Mt. Tandikat, 400–600m, cca 25 km N. Pariaman, January 2007, St. Jakl lgt." (GERP). These specimens were compared against the holotype (Fig. 83) collected in Malaysia from Bonvouloir's collection conserved at the Paris Museum. No specimens from Laos were available for study during the course of this research.

Redescription. Length, 11.50–16.00 mm. Width, 3.50–4.50 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark brown; antennomeres I–II dark brown, antennomeres III–XI reddish-brown; legs reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 83).

Head: Confluently punctate, subspherical; frons convex; vertex with short, delicate median carina; surface somewhat shiny; lateral sides of frontoclypeal region carinate; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Strongly serrate from antennomeres IV–X, reaching just beyond the pronotal hind angles; antennomere III almost as long as the combined lengths of IV and V; antennomeres IV–X each wider than long; antennomere XI longer than X.

Pronotum: Rugose to confluently punctate; surface shiny; as long as wide, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, with pair of tubercules and shallow median groove extending throughout entire length; base sinuous, with short median carina above scutellum.

Scutellum: Finely punctate, shiny, setose, quadrate and distally rounded; median carina present.

Elytra: Striae indicated; interstices slightly elevated; surfaces closely punctate, setose.

Legs: First tarsomere presumably longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae flattened in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V presumably elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25–2.50 times wider than laterally.

Differential diagnosis. Delicate median carina on the frons will distinguish *A. castelnaui* from *A. bituberculatus* and *A. wicardi*. Shiny pronotal luster and confluently punctate surfaces will further distinguish *A. castelnaui* from *A. orientalis*.

Distribution. A very rare eucnemid species was previously found in India, Indonesia, Laos, Malaysia and Papua New Guinea. In Laos, *A. castelnaui* was taken at Haut Mékong, Pang-Ngéou (Fleutiaux 1923).

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown.

Arisus orientalis Bonvouloir, 1871 (Fig. 84)

Material examined. One specimen was available for study: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 9.25 mm. Width, 2.75 mm. Body elliptical, robust and tapering towards elytral apex; uniformly dark brown; antennomere I dark brown, antennomeres II–XI medium-brown; legs dark brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 84).

Head: Deeply punctate to rugose, subspherical; frons convex; vertex with short, fine median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III almost as long as the combined lengths of IV and V; antennomere IV slightly shorter than V, as long as wide; antennomeres V–X each wider than long; antennomere XI longer than X.

Pronotum: Irregularly rugose to granulose; surface dull; slightly wider than long, with moderate, sharp hind angles; lateral sides narrowing craniad; disc convex, with small pair of circular foveae and median groove from base to apical end, basally depressed; base sinuous.

Scutellum: Shiny, quadrate and distally rounded.

Elytra: Striae indicated; interstices slightly elevated; surfaces closely punctate to transversely rugose, setose.

Legs: First tarsomere shorter the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25–2.50 times wider than laterally.

Differential diagnosis. Delicate median carina on the frons will distinguish *A. orientalis* from *A. bituberculatus* and *A. wicardi*. Duller pronotal luster and microsculpture will further distinguish *A. orientalis* from *A. castelnaui*.

Distribution. A very rare eucnemid species previously found in Indonesia and Myanmar. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Arisus wicardi Bonvouloir, 1871 (Fig. 85)

Material examined. Two specimens were available for study: 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1.–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 11.00 mm. Width, 3.50 mm. Body elliptical, robust and tapering towards elytral apex; uniformly dark brown; antennomeres I–II dark brown, antennomeres III–XI medium-brown; legs dark brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 85).

Head: Strongly confluently punctate, subspherical; frons convex, with delicate median groove; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III almost as long as the combined lengths of IV and V; antennomere IV slightly shorter than V; antennomeres V–X each wider than long, serrate; antennomere XI longer than X.

Pronotum: Irregularly confluently punctate to rugose; surface shiny; slightly wider than long, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex; base sinuous, with two deep impressions.

Scutellum: Shiny, oblong, quadrate and distally rounded; apical median carina present.

Elytra: Striae indicated; interstices slightly elevated; surfaces closely punctate to transversely rugose, setose.

Legs: First tarsomere shorter the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25–2.50 times wider than laterally.

Differential diagnosis. Delicate median groove on the frons will distinguish *A. wicardi* from all *Arisus* species present in Laos.

Distribution. A very rare eucnemid species previously found in Indonesia, Myanmar, Papua New Guinea. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Euryostus Bonvouloir, 1871

Diagnosis. Mesogenini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either strongly produced, rounded or truncated; tarsomere IV simple; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and longitudinal rows of spines or with setae and transverse rows of spine combs.

Note. These two specimens were compared against types of *Euryostus reichei* Bonovuloir, 1871 and *Euryostus hypocrita* Bonvouloir, 1871 loaned from the MNHN. Both specimens did not match against these types and have determined these specimens belong to an undescribed species.

Euryostus asiaticus sp.nov. (Fig. 86)

Type material. Female holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Euryostus*, *asiaticus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Male allotype: "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1.–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "ALLOTYPE, *Euryostus*, *asiaticus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Holotype is deposited in BMNH. Allotype is deposited in NHMB.

Description. Female holotype: Length, 13.00 mm. Width, 4.50 mm. Body elliptical, robust and tapering towards elytral apex; uniformly dark brown; antennomeres I and II dark brown, antennomeres III–XI reddish-brown; legs reddish-brown; head, pronotum and elytra clothed with short, sparse, yellowish recumbent setae (Fig. 86).

Head: Confluently punctate to rugose, subspherical; frons convex, with median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III longer than the combined lengths of IV and V; antennomere IV slightly longer than V; antennomeres V–X each wider than long, each antennomere progressively smaller, serrate; antennomere XI longer than X.

Pronotum: Confluently rugose; surface dull; wider than long, with moderate, sharp hind angles; lateral side gradually narrowing craniad, arcuate; disc convex, with delicate median groove extending through entire length of pronotum; base sinuous.

Scutellum: Shiny, oblong, quadrate and distally truncated.

Elytra: Punctate striae indicated; interstices elevated, closely punctate, setose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, almost rugose with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Allotype: 12.00 mm long, 4.00 mm wide; pronotum strongly arcuate apically; similar exoskeletal structures.

Etymology. The specific epithet is derived from the term Asia, in which the new species is distributed on the Asian subcontinent.

Differential diagnosis. Sparse setae and slightly less densely punctuated elytra will distinguish *E. asiaticus* from *E. reichei*. Vaugely defined elytral striae will further distinguish *E. asiaticus* from *E. hypocrita*.

Distribution. A very rare, endemic eucnemid species known from two localities within a single province in NE Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Vitellius Bonvouloir, 1871

Diagnosis. Mesogenini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and longitudinal rows of spines; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, with separate apical median sclerite that is usually entire or bifurcate; basal piece dorsally closed; lateral lobes entire, simple, without transverse evagination dorsally; apices of lateral lobes directed laterally; flagellum simple.

Note. Identification was based on comparing these beetles against translated, interpreted information from Fleutiaux (1896).

Vitellius singularis (Fleutiaux, 1896) (Fig. 87)

Feaia singularis Fleutiaux, 1896: 540–541

Material examined. Five specimens were available for study: 2, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~ 200 m, Vít Kubáň leg." (NHMB); 1, "LAOS-N (Louangphrabang), 11–21.v.2002, 19°35′N, 101°58′E, THONG KHAN, ~750 m, Vít Kubáň leg." / Vitellius sp., J. Muona det. 2014" (JMC); 1, "LAO, Phongsaly prov., 21°21′N 102°03′E, BAN SANO MAI, 19–26.v.2004, ~ 1150 m, D. Pacholátko leg." (NHMB); 1, "LAOS, Bokeo prov., 5 km W Ban Toup, Bokeo Nature Reserve, 500–700m, 20°27–28′N 100°45′E, 4.–18.v.2011" / "NHMB Basel, Laos 2011 Expedition, M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phantala & V. Vongphachan" (GERP).

Redescription. Length, 4.00–6.25 mm. Width, 1.25–2.00 mm. Body subcylindrical, robust and tapering towards elytral apex; uniformly dark black; antennomeres I dark brown, antennomeres II–XI reddish-brown; legs reddish-brown; head, pronotum and elytra clothed with short, sparse, greysh-white recumbent setae (Fig. 87).

Head: Very closely punctate to rugose, subspherical; frons convex, with delicate median carina, not extending to apex of frontoclypeal region; surface somewhat dull; apical margin of frontoclypeal region feebly trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate to flabellate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III as long as II, rectangular; antennomere IV broadly triangular; antennomeres V–X each longer than wide; rami subequal, each slightly longer than IV ramus; antennomere XI shorter than X.

Pronotum: Very closely punctate to rugose; surface dull; as long as wide, with moderate, sharp hind angles; lateral sides arcuate; disc convex, with variable delicate pair of circular fovea and median groove extending from base to near center of pronotum; base sinuous.

Scutellum: Shiny, broadly triangular and distally rounded.

Elytra: Striae indicated; interstices elevated, closely punctate to rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, greyish-white recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. A single species within the group is known in the region. Majority of other species in the group are largely distributed in the Neotropical region, extending up to the far southern areas of the Nearctic region.

Distribution. A very rare eucnemid species previously found in Myanmar. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

Feaia Fleutiaux, 1896

Diagnosis. Mesogenini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates parallel-sided; last visible ventrite either produced or excavated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae.

***Feaia geiseri* sp.nov.** (Figs 88 and 89)

Type material. Male holotype: "LAOS-NE., Xieng Khouang prov., 19°37–8′N, 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition:, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Feaia*, *geiseri*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "ALLOTYPE, *Feaia*, *geiseri*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype is deposited in NHMB. Allotype is deposited in BMNH.
Paratype: 1, from the following locality: "Coll. I.R.Sc.N.B, TONKIN, Hoa-Binh, (North-VIETNAM), ex. coll. OBERTHUR, I.G.: 18.293" (light yellow cardstock) / "Feaia ?geiseri Otto, J. Muona det. 2014" / "PARATYPE, *Feaia*, *geiseri*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Paratype is in RBINS.

Description. Male holotype: Length, 5.25 mm. Width, 1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black, except lateral elytral margin brownish; antennae black, except antennomere II brownish; femur and tibiae black; tarsi brownish; head and pronotum clothed with very short black recumbent setae; elytra clothed with very short, white recumbent setae (Fig. 88).

Head: Very closely punctate, subspherical; frons convex, with fine median carina and median fovea above clypeus; surface dull; apical margin of frontoclypeal region feebly trilobed, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres VI–X, reaching to hind angles of pronotum; antennomeres III–V gradually wider, triangular; rami on antennomeres VI–X short, thick, arising laterally; antennomere XI wide, thick and asymmetrically ellyptical.

Pronotum: Granulose; surface dull; as long as wide, with short hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc simple; base sinuous, with median shallow groove above scutellum.

Scutellum: Shiny, without punctations, quadrate and distally rounded.

Elytra: Striate; interstices elevated; surfaces with dense, shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally swollen claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum partially concealed, caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Allotype: 6.50 mm long; same as male holotype, except antennae are shorter and strongly serrate (Fig. 89).

Variation. One fragmented female paratype was examined. The paratype measured 5.75 mm long, shorter than the allotype, but longer than the holotype. Apical margin of the pronotum is reddish in the paratype. The reddish apical margin of the pronotum is not present in both holotype and allotype. Elytra is dark brown in the paratype. Elytra in both holotype and allotype are black. It is likely the paratype was slightly teneral at the time of collection, owing to its lighter coloration of the elytra.

Etymology. The specific epithet is named after Michael Geiser, collector of the new species.

Differential diagnosis. *Feaia geiseri* differ from Southeast Asian *Feaia dubia* Fleutiaux, 1896 based on the structures of the antennae; progressively pectinate from antennomeres V–X in *F. dubia*, pectinate from VI–X in the new species in male specimens.

Distribution. A very rare eucnemid species known from two localities in Laos – a single locality within the Xiengkhouang province near Phonsavan and a single locality in the Houaphanh province in Northeastern Laos. The species have been taken from a single locality in Vietnam.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

Mesogenus Bonvouloir, 1871

Diagnosis. Mesogenini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; simple tarsal claws, lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, with separate apical median sclerite either entire or bifurcate; lateral lobes with secondary constriction apically, entire; flagellum simple.

Note. J. Muona (pers. comm.) is currently revising the group, including descriptions of two new species which were also collected in Laos. Both new species are not included in this study.

Key to the species of *Mesogenus*

1 Antennae moniliform to weakly serrate; scutellum sutrapezoidally-shaped, distally rounded. ..... ***Mesogenus harmandi* Fleutiaux, 1922**

– Antennae strongly serrate; scutellum quadrate, distally carinulate. .... ***Mesogenus laosianus* Cobos, 1979**

Mesogenus harmandi Fleutiaux, 1922 (Fig. 90)

Material examined. One specimen was available for study: "LAOS, Louangnamtha pr., 21°00′N 101°25′E, LOUANG NAMTHA, 31.v.1997, 600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 7.00–10.00 mm. Width, 2.00–3.00 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark reddish-brown to dark brown, including antennae and legs; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 90).

Head: Granulose, subspherical; frons convex, with very shallow, median groove from vertex to frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Short, filiform from III–X, reaching as far back as the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV–X each quadrate; antennomere XI longer than X.

Pronotum: Densely granulose; surface shiny; setose; slightly longer than wide, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 narrowing craniad; disc convex, with delicate median groove extending through entire length of pronotum.

Scutellum: Shiny, oblong, sub-trapezoid and distally rounded.

Elytra: Striae indicated; interstices elevated, closely punctate to rugose, setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae flattened in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episterna caudally widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Form, antennal structures and shape of the scutellum will diagnose *M. harmandi* from *M. laosianus* Cobos in Laos.

Distribution. A very rare eucnemid species has been taken in Laos and Malaysia. In Laos, *M. harmandi* was taken at Melouprey and Tonlé-Repou (Fleutiaux 1922). Recently, record indicate the eucnemid species is still thriving in northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a dry evergreen forest.

Mesogenus laosianus Cobos, 1979 (Fig. 91)

Material examined. Both holotype and allotype are known from a single locality in Laos (Cobos, 1979). A male holotype from ZSM was available for study: "(platen board with aedeagus)" / "Laos, Umg. Vientiane, III.–VI.1963" / "HOLOTYPUS, A. COBOS" (red card) / "Mesogenus, laosianus, nov. sp., Holotypus, A. Cobos det. 1967" (genus, species, nov. sp. Holotypus and year handwritten) / "Stethon, (=Mesogenus), siamensis, Muona 2014" (handwritten). Images of a female allotype were provided by Mercedes París of Museo Nacional de Ciencias Naturales in Madrid, Spain (MNCN): "♀" / "Laos, Umg. Vientiane, III.–VI.1963" / "EX COLECCION, Dr. A. Cobos (yellow label)" / "ALLOTYPUS, A. COBOS (red label)" / "Mesogenus, laosianus, nov. sp., allotypus, A. Cobos det. 1967 (genus, species, type and year handwritten in blue ink)" / "MNCN, Cat. Tipos No., 2448 (number handwritten)" / "MNCN_ENT, 99929" (MNCN).

Redescription. Length, 9.00 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark brown; antennomeres I and VI dark brown, antennomeres VIII–XI slightly lighter; legs dark brown; tarsi slightly lighter; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 91).

Head: Punctate, subspherical; frons convex with median carina from vertex to frontoclypeal region; surface shiny.

Antennae: Weakly serrate from antennomeres V–X, reaching as far back as the hind angles of the pronotum; antennomere III nearly as long as the combined lengths of IV and V; antennomeres V–X each as long as wide, subequal, serrate; antennomere XI longer than X.

Pronotum: Densely punctate to granulose; surface shiny; setose; slightly longer than wide, with moderate, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 narrowing craniad; disc convex, with delicate median groove extending through entire length of pronotum.

Scutellum: Shiny, oblong, quadrate and distally carinate.

Elytra: Striae faintly indicated; interstices slightly elevated, closely punctate, setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae flattened in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic coxal plates parallel-sided.

Differential diagnosis. Form, antennal structures and form of the scutellum will diagnose *M. laosianus* from *M. harmandi* Fleutiaux in Laos.

Distribution. A very rare, endemic eucnemid species have been taken in western Laos.

Ecoregion(s). Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. Both adults were taken from a lowland semi-evergreen forest.

Tribe Eucnemini Eschscholtz, 1829

Diagnosis. Form elongate; frons with median keel; prothoracic tibiae with one apical spur; tarsomere IV simple; male prothoracic tarsomere 1 without sex combs; antennomeres III–XI gradually more or less serrate and transverse towards apex; hypomeral antennal grooves with hairy excretory organs; metathoracic sternum with tarsal grooves; metathoracic coxal plates originally parallel-sided; basal piece dorsally closed; median lobe divided in apical and basal parts; ventral basal struts apically fused; fused basal portion of lateral lobes dorsally attached to basal piece; lateral lobes transversely divided dorsally, apices turned dorsocaudad, with basally placed apical tooth; bursa simple, divided; spermatheca sclerotized, divided, globular.

Poecilochrus Bonvouloir, 1871

Diagnosis. Eucnemini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates medially 1.20–2.50 times wider than laterally; last visible ventrite strongly produced; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, with separate apical median sclerite

that is usually entire or bifurcate; lateral lobes entire, with secondary constriction apically; flagellum simple.

Note. Identification of these species were made through comparisons against translated, interpreted information from BONVOULOIR (1871) and FLEUTIAUX (1922, 1924b).

Key to the species of *Poecilochrus*

1 Pronotum without median carina. **2**
– Pronotum with median carina. ..... ***Poecilochrus piceus* Bonvouloir, 1871**
2 Striae confined largely at elytral humeri. ..... ***Poecilochrus cordieri* Fleutiaux, 1922**
– Striae present at humeri and near elytral apices. ..... ***Poecilochrus striatus* Fleutiaux, 1924**

Poecilochrus cordieri Fleutiaux, 1922 (Fig. 92)

Material examined. Seven specimens were available for study: 1, "LAOS, Louangnamtha pr., 21°09′N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (NHMB); 2, "Collection Naturhistorisches Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Vít Kubáň leg." (NHMB); 4, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Redescription. Length, 6.00–10.00 mm. Width, 2.00–2.75 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly medium-dark brown; antennomere I dark brown, antennomeres II–XI medium brown-orange; legs reddish-brown; head, pronotum and elytra clothed with elongate, yellowish recumbent setae (Fig. 92).

Head: Punctate, subspherical; frons convex, with median carina; surface shiny; frontoclypeal region with pair of lateral carinae; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the elytral humeri; antennomere III almost as long as the combined lengths of IV and V; antennomere IV slightly longer than V; antennomeres V–X each as long as wide, subequal, serrate; antennomere XI longer than X.

Pronotum: Sparsely punctate, laterobasal side granulose; surface shiny; setose; slightly wider than long, with moderate, sharp hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striae faintly indicated at humeri; interstices slightly elevated, sparsely punctate, setose.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Absence of median carina on the pronotum will distinguish *P. cordieri* from *P. piceus*. Faint indications of elytral striae confined at the humeri will distinguish *P. cordieri* from *P. striatus*.

Distribution. A rare eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Poecilochrus piceus Bonvouloir, 1871 (Fig. 93)

Material examined. One specimen was available for study: "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 9.–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 7.50 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly medium-dark brown; antennomere I dark brown, antennomeres II–XI medium brown-orange; legs reddish-brown; head, pronotum and elytra clothed with elongate, yellowish recumbent setae (Fig. 93).

Head: Punctate, subspherical; frons convex, with median carina; surface shiny; frontoclypeal region with pair of lateral carinae; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the elytral humeri; antennomere III almost as long as the combined lengths of IV and V; antennomere IV slightly longer than V; antennomeres V–X each as long as wide, subequal, serrate; antennomere XI longer than X.

Pronotum: Closely punctate, laterobasal sides granulose; surface shiny, setose; slightly wider than long, with moderate, sharp hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex, with delicate median carina extending through 3/4 the length of pronotum; base sinuous.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae faintly indicated at humeri; interstices flattened; surfaces rugose at hymeri, sparsely punctate elsewhere; setose.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Presence of median carina on the base of the pronotum will distinguish *P. piceus* from both *P. cordieri* and *P. striatus*.

Distribution. A very rare eucnemid species previously found in Indonesia and Malaysia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

***Poecilochrus striatus* Fleutiaux, 1924** (Fig. 94)

Material examined. One specimen was available for study: "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saleui → Phou Pane Mt., 9.–17.vi.2009, 1340–1870 m, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 11.00 mm. Width, 2.50 mm. Body subcylindrical, elongate and tapering towards elytral apex; uniformly dark brown; antennomere I dark brown, antennomeres II–XI medium brown-orange; legs reddish-brown; head, pronotum and elytra clothed with elongate, yellowish recumbent setae (Fig. 94).

Head: Punctate, subspherical; frons convex, with median carina; surface shiny; frontoclypeal region with pair of lateral carinae; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum; antennomere III about as long as the combined lengths of IV and V; antennomeres IV–X each as long as wide, subequal, serrate; antennomere XI longer than X.

Pronotum: Closely punctate, basal and laterobasal sides granulose; surface shiny; setose; slightly wider than long, with moderate, sharp hind angles; lateral sides arcuate; disc convex; base sinuous.

Scutellum: Oblong, quadrate and distally rounded.

Elytra: Striae faintly indicated at humeri and apically; interstices flattened; surfaces sparsely punctate, setose.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Presence of weak striae on the elytra will distinguish *P. striatus* from *P. cordieri*. Absence of median carina on the base of the pronotum will further distinguish *P. striatus* from *P. piceus*.

Distribution. A very rare eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Tribe Galbitini Muona, 1991

Diagnosis. Form cylindrical; frons originally with median keel; tarsomere IV simple; male prothoracic tarsomere 1 without sex combs; tarsomeres I–IV with ventral lobes; antennomeres III–XI originally flattened, serrate, gradually more so towards apex; metathoracic sternum originally with tarsal grooves; metathoracic coxal plates parallel-sided; median divided in apical and basal parts; ventral basal struts apically fused; fused basal portion of lateral lobes dorsally attached to basal piece; lateral lobes transversely divided dorsally, apices turned dorsocaudad, with basally placed apical tooth; bursa simple, divided; spermatheca sclerotized, divided, globular.

Note. All species within the tribe was identified through a number of identification keys provided in Muona (1991b). Types of most *Galbimorpha* species and an authoratively identified specimen of *Galbimorpha agasterceroides* (Fleutiaux) were examined from loans provided by the MNHN and the BMNH.

Key to the genera within the tribe Galbitini

1 Antennomeres III–XI serrate in both sexes. **2**

– Antennomeres III–XI at least pectinate in both sexes. ..... ***Galbites* Fleutiaux, 1918**

2 Metathoracic sternum with defined tarsal grooves. ..... ***Agastocerus* Bonvouloir, 1871**

– Metathoracic sternum without tarsal grooves. ..... ***Galbimorpha* Fleutiaux, 1920**

Agastocerus Bonvouloir, 1871

Diagnosis. Galbitini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; last visible ventrite either rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines.

Agastocerus frontalis Fleutiaux, 1899 (Fig. 95)

Material examined. Eleven specimens were available for study: 9, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (FSCA, GERP, NHMB); 1, "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (GERP); 1, "Collection Naturhistorisches Musem Basel" / "LAOS-N (Louangphrabang), 11–21.v.2002, 19°35′N 101°58′E, THONG KHAN, ~750 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 7.50–10.00 mm. Width, 2.75–3.25 mm. Body cylindrical, elongate; uniformly black with transverse bands of white hairs below mid section of elytra and apices; antennae black; femur and tibiae black; tarsi dark brown; head, pronotum and elytra sparsely clothed with white setae (Fig. 95).

Head: Finely punctate and rugose, subspherical; frons convex, with faintly indicated median groove; surface sparsely setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Gradually serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Granulose; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex, with median groove and a pair of circular gibbosities near base; base sinuous.

Scutellum: Sparsely setose, oblong, sub-trapezoid and distally rounded.

Elytra: Striae faintly indicated; interstices slightly elevated, finely and closely rugose; sparsely setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with white recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Faintly indicated median groove on the frons, along with conspicuous band of white setae across the elytra will distinguish *A. frontalis* from *Agastocerus confusus* Fleutiaux, 1899 currently distributed in Indonesia and Pennisular Malaysia.

Distribution. A rare, widespread Asian eucnemid species have been taken in India, Indonesia, Laos, Malaysia, Philippines, Singapore and Thailand. In Laos, *A. frontalis* were taken at Ban Van Heue and Houei-Sai (Muona 1991b). Recently, eleven specimens have been taken in central and northeastern Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Thailand-Laos moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Galbites Fleutiaux, 1918

(=*Pterotarsus* auct., not Guérin-Méneville, 1831: 67)
(=*Galba* Latreille, 1829: 451, not Schrank, 1803)

Diagnosis. Galbitini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; metathoracic coxal plates either parallel-sided or wider laterally than medially; last visible ventrite either rounded

or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines.

Key to the species of *Galbites*

1 Median ridge present on frons. **2**
– Median groove present on frons. **5**
2 Pronotal vestitures on dorsum dense. **3**
– Pronotal vestitures on dorsum sparse. ..... ***Galbites fulva* (Fleutiaux, 1923)**
3 Exoskeletal coloration black. **4**
– Exoskeletal coloration dark reddish-brown. ..... ***Galbites australiae* (Lea, 1919)**
4 Vestitures usually copper and brown, rarely with white. ..... ***Galbites chrysocoma* (Hope, 1845)**
– Vestitures usually white and silvery. ..... ***Galbites albiventris* (Chevrolat, 1856)**
5 Antennomere II triangular, ramus much shorter than III. **6**
– Antennomere II with ramus about 1/2 the length of III. ..... ***Galbites funebris* (Chevrolat, 1856)**
6 Frontoclypeal region with divergent lateral keels. ..... ***Galbites tuberculata* (Redtenbacher, 1867)**
– Frontoclypeal region with parallel lateral keels. ..... ***Galbites nigrita* Muona, 1991**

Galbites albiventris (Chevrolat, 1856) (Fig. 96)

Galba albiventris Chevrolat, 1856: 85–86

Material examined. Six specimens were available for study: 1, "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 5, "LAOS, Bokeo Prov., 5 km W Ban Toup, Bokeo Nature Reserve, 500–700 m, 20°27–28′N/100°45′E, 4.–18.v.2011" / "NHMB Basel, Laos 2011 Expedition, M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phantala & E. Vongphachan" (FSCA, NHMB).

Redescription. Length, 9.50–11.50 mm. Width, 3.00–4.00 mm. Body robust, elongate; uniformly black; antennae and legs black; tarsi dark brown; head, pronotum and elytra clothed with white to silvery dense setae, especially along lateral sides and scutellum (Fig. 96).

Head: Closely punctate to finely rugose, subspherical; frons convex, with median carina; surface setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching as far back as the hind angles of the pronotum; antennomere III elongate, sharply serrate in females, slightly pectinate in males.

Pronotum: Finely rugose; surface setose; as long as wide, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex, gibbose, with median groove and a pair of triangularly-shaped gibbosities near base; base sinuous, with basal carina above scutellum.

Scutellum: Setose, oblong, sub-triangular and distally rounded.

Elytra: Striae feebly indicated; interstices slightly elevated, finely and closely punctate to slightly rugose; setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with cream colored recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Black colored exoskeleton with dense vestitures of white and silvery setae, especially along lateral sides and scutellum will distinguish *G. albiventris* from all other *Galbites* species in Laos.

Distribution. An uncommon, widespread eucnemid species previously found in India, Indonesia, Malaysia and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest.

***Galbites australiae* (Lea, 1919)** (Fig. 97)

Galba australiae Lea, 1919: 741–742
(= *Pterotarsus mouhoti* Fleutiaux, 1924: 305)
(= *Pterotarsus bakeri* Fleutiaux, 1926: 36–37)

Material examined. Two specimens were available for study: 1, "PAPUA NEW GUINEA, Gulf, Ivimka Res., Station, Lakekamu, Basin,120m, 7° 44′S, 146° 30′E, 22.II-, I.III.2000, TSears" (GERP); 1, "PAPUA NEW GUINEA, Gulf, Ivimka Res., Station, Lakekamu, Basin,120m, 7° 44′S, 146° 30′E, 14.IV., 2000, TSears" (GERP). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 13.00–18.00 mm. Width, 4.00–5.00 mm. Body robust, elongate; uniformly dark reddish-brown; antennae and legs reddish-brown; head, pronotum and elytra clothed with gold and brown dense setae, often forming patterns on elytra (Fig. 97).

Head: Finely granulose, subspherical; frons convex, with median carina; surface setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Finely granulose; surface setose; as long as wide, with moderate, sharp hind angles; lateral sides arcuate; disc convex, with median furrow and a pair of triangularly shaped gibbosities near base; base sinuous, with basal keel present above scutellum.

Scutellum: Setose, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices slightly elevated, finely and closely punctate; setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with cream colored recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Dark reddish-brown exoskeleton with dense vestitures of gold and brown setae will distinguish *G. australiae* from all other *Galbites* species in Laos.

Distribution. An uncommon, widespread eucnemid species has been taken in Australia, Bhutan, India, Indonesia, Japan, Laos, Papua New Guinea, Philippines, Solomon Islands and Thailand. In Laos, *G. australiae* was taken in Nom Mia (Muona, 1991b).

Ecoregion(s). Unknown.

Biology. Developmental stages remain unknown.

***Galbites chrysocoma* (Hope, 1845)** (Fig. 98)

Galba chrysocoma Hope, 1845: 14
(=*Pterotarsus chrysocomus* sensu Fleutiaux, 1924: 303,305)
(= *Pterotarsus chrysocomus* var. *puniceus* Fleutiaux, 1924: 305)

Material examined. Four specimens were available for study: 1, "TAMEN NEGARA NP, 22.–25.2.1998, MALAYSIA, leg. Cempírek" (GERP); 1, "SUMATRA:, Mt. Singgalang, Annai Valley N.R., 500 m.a.s.l., 3 February 2003" (GERP); 1, "INDONESIA: Mentawai Is., Siberut Is., Salappa vill. env., 50m, 3.2006, St. Jakl lgt." (GERP); 1, "N. MALAYSIA, Cameron Highlands, Tanah Rata dist., 1500m, May 2009" (GERP). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 14.00–16.00 mm. Width, 5.00 mm. Body robust, elongate; uniformly black; antennae and legs reddish-brown; head, pronotum and elytra clothed either with uniformly copper and brown dense setae or with copper and brown dense setae with cream colored setae present at humeral region, mid-section as well as lateral areas of pronotum (Fig. 98).

Head: Finely rugose, subspherical; frons convex, with median carina; surface setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Finely granulose to rugose; surface setose; as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with median groove and series of gibbosities; base sinuous, with basal keel above scutellum.

Scutellum: Setose, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated, punctate; interstices slightly elevated, finely and closely punctate; setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with cream colored recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Black exoskeleton along with dense vestitures of copper and brown setae, rarely with cream color setae will distinguish *G. chrysocoma* from other *Galbites* in Laos.

Distribution. An uncommon, widespread eucnemid species have been taken in China, Indonesia, Laos, Malaysia, Papua New Guinea, Philippines and Singapore (MUONA 1991b). In Laos, *G. chrysocoma* were taken at Nhat-Oai and Pahia.

Ecoregion(s). Unknown.

Biology. Developmental stages remain unknown.

Galbites fulva (Fleutiaux, 1923) (Fig. 99)

Pterotarsus wallacei var. *fulvus* Fleutiaux, 1923: 303, 307
(=*Galba wallacei* sensu Fleutiaux, 1918: 176; partly Fleutiaux, 1924: 307)
(= *Pterotarsus wallacei* var. *fulvus* Fleutiaux, 1924: 16)
(=*Pterotarsus fulvus* Fleutiaux, 1947: 19 (as new status))

Material examined. Three specimens were available for study: 1, "Solomon Islands, Guadalcanal, 1944, D. Elden Bock" / "611" (handwritten) (GERP); 1, "Solomon Islands, Guadalcanal, 1944, D. Elden Bock" / "232" (GERP); 1, "MALAYSIA-W. Perak, 25 km NE of IPOH, 1200 m, Banjaran TitiWangsa mts., KoRBU mt., 1–5.iv.2000, P. Cechovský leg." (GERP). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 7.00–11.00 mm. Width, 2.00–3.50 mm. Body robust, elongate; uniformly dark reddish-brown and black; antennae and legs reddish-brown; head, pronotum and elytra clothed with sparse cream and orange setae, often forming a tight pattern on elytra (Fig. 99).

Head: Finely granulose, subspherical; frons convex, with median carina; surface sparsely setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres IV–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Finely rugose; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with shallow median groove and two pairs of circular shaped gibbosities; base sinuous, with basal keel above scutellum.

Scutellum: Setose, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices flattened, closely and deeply punctate; sparsely setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with either silver-white or yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Sparse vestitures of setae on the pronotal dorsum will distinguish *G. fulva* from all other *Galbites* in Laos.

Distribution. An uncommon, widespread eucnemid species were taken from Indonesia, Laos, Malaysia, Papua New Guinea, Philippines and Solomon Islands (Muona 1991b). In Laos, *G. fulva* were taken at Pak Lay (Fleutiaux 1947).

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Beeson (1941) reported the species bores in the decaying wood of *Crataeva unilocularis* Buchanan-Hamilton (Capparidaceae).

Galbites funebris (Chevrolat, 1856) (Fig. 100)

Galba funebris Chevrolat, 1856: 84–85

Material examined. Two specimens were available for study: "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 6.00–17.00 mm. Width, 2.25–5.00 mm. Body robust, elongate; uniformly black; antennae and legs black; tarsi dark brown; head, pronotum and elytra very inconspicuously clothed with white setae; dense yellow setae present at pronotal base and scutellum; dull, inconspicuous black patches present along lateral sides and near apices of elytra (Fig. 100).

Head: Rugose, subspherical; frons with median groove, deeply impressed above clypeus; surface sparsely setose; frontoclypeal region with diverging lateral keels; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres II–X, reaching as far back as the hind angles of the pronotum; antennomere II ramus about 1/2 as long as III.

Pronotum: Rugose; as long as wide, with moderate, sharp hind angles; lateral sides arcuate; disc gibbose, with median groove and a pair of triangularly shaped gibbosities near base; base sinuous, with enlarged basal ridge above scutellum.

Scutellum: Setose, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices slightly elevated, finely and closely rugose; sparsely setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with cream colored recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Black colored exoskeleton with inconspicuous vestitures of white setae on dorsum, along with divergent lateral keels on frontoclypeal region will distinguish *G. funebris* from all other *Galbites* species in Laos.

Distribution. An uncommon, widespread eucnemid species previously collected in India, Indonesia, Malaysia, Philippines, Solomon Islands, Thailand and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. Two adults were taken from a lowland semi-evergreen forest.

Galbites nigrita Muona, 1991 (Fig. 101)

Material examined. One specimen was available for study: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 3.50–10.00 mm. Width, 1.50–3.50 mm. Body robust, elongate; uniformly black; antennae and legs dark brown; tarsi medium brown; head, pronotum and elytra very inconspicuously clothed with white setae (Fig. 101).

Head: Rugose, subspherical; frons with median groove, deeply impressed above clypeus; surface inconspicuously setose; frontoclypeal region with parallel lateral keels; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching as far back as the hind angles of the pronotum; antennomere II triangular, much shorter than III.

Pronotum: Rugose; as long as wide, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc gibbose, with median groove and a pair of triangularly shaped gibbosities near base; base sinuous, with enlarged basal ridge above scutellum.

Scutellum: Oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices slightly elevated, finely and closely rugose; inconsipcuously setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, black with sparse, cream colored setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Black colored exoskeleton with inconspicuous vestitures of white setae on dorsum, along with straight lateral keels on frontoclypeal region will distinguish *G. nigrita* from all other *Galbites* species in Laos. Short triangular antennomere II will also distinguish *G. nigrita* from *G. funebris*.

Distribution. An uncommon, widespread eucnemid species previously collected in India, Indonesia, Malaysia, Philippines and Solomon Islands. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Galbites tuberculata (Redtenbacher, 1867) (Fig. 102)

Galba tuberculata Redtenbacher, 1867: 90
(=*Pterotarsus tuberculata* sensu Fleutiaux, 1924: 304 as junior subjective synonym of *Pterotarsus funebris*)
(= *Pterotarsus similaris* Cobos, 1985: 18)

Material examined. One specimen was available for study: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 7.00–10.00 mm. Width, 2.50–3.25 mm. Body robust, elongate; uniformly black; antennae black; femur and tibiae reddish-brown; tarsi medium brown; head, pronotum and elytra sparsely clothed with light yellow setae (Fig. 102).

Head: Finely granulose, subspherical; frons convex, with median groove above frontoclypeal region ; pair of delicate carinae present on frontoclypeal region, extending from antennal socket to apices; surface sparsely setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Finely granulose and rugose; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex, with series of gibbosities; base sinuous, with very large basal keel above scutellum.

Scutellum: Setose, oblong, sub-trapezoid and distally rounded.

Elytra: Striae indicated; interstices slightly elevated, finely and closely punctate; sparsely setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely rugose, black with silver-white sparse, recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Median groove on the frons above the frontoclypeal region will distinguish *G. tuberculata* from all *Galbites* species in Laos.

Distribution. An uncommon, widespread eucnemid species were found in Brunei, Indonesia, Laos, Malaysia, Papua New Guinea, Philippines, Solomon Islands, Taiwan and Thailand. In Laos, *G. tuberculata* was taken fom an unknown locality (Muona, 1991b) and recently in central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Galbimorpha Fleutiaux, 1920

Diagnosis. Galbitini, with apical margin of frontoclypeal region evenly rounded and less than twice as wide as the distance between antennal sockets; last visible ventrite either

rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines.

Key to the species of *Galbimorpha*

1 Exoskeletal coloration either unicolored dark brown to black or bicolored. **2**
– Exoskeletal coloration reddish-brown. ..... ***Galbimorpha ferruginea* Fleutiaux, 1920**
2 Dorsum with sparse setae. **3**
– Dorsum with dense setae. ..... ***Galbimorpha quadricollis* Fleutiaux, 1947**
3 Frons with weakly indicated median carina; antennae stouter. ..... ***Galbimorpha agastoceroides* (Fleutiaux, 1896)**
– Frons with strongly indicated median carina; antennae slenderer. ..... ***Galbimorpha curta* Muona, 1991**

***Galbimorpha agastoceroides* (Fleutiaux, 1896)** (Fig. 103)

Galba agastoceroides Fleutiaux, 1896: 543–544

Material examined. One specimen was available for study: 1, "67839 (handwritten)" / "Birmah, Karen Mts." (calligraphic handwriting) / "Carin Checu, 1300–1400, L. Fea II-III-88" (calligraphic handwriting) / "Fry Coll., 1905.100" / "Galba, agastoceroides, Fleut., FLEUTIAUX det." (genus, species and author handwritten; specific epithet underlined) / "Syntype?" (handwritten) / "Galbimorpha, agastoceroides, (Fleutiaux), J. Muona det. 1984" (specific epithet, author and year handwritten) (BMNH). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 6.00 mm. Width, 2.00 mm. Body cylindrical, elongate; black and infuscate reddish; anterior part of pronotum and elytral base and suture reddish; antennae infuscate reddish; legs reddish-brown; head, pronotum and elytra sparsely clothed with white recumbent setae (Fig. 103).

Head: Finely rugose, subspherical; frons convex, with faintly indicated median carina; surface sparsely setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Gradually serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Granulose; dull; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with median carina and a pair of circular gibbosities near base; base sinuous.

Scutellum: Sparsely setose, oblong, sub-triangular and distally rounded.

Elytra: Striae indicated; interstices elevated, finely and closely rugose; sparsely setose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate and rugose, infuscate reddish with white, recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Bicolored with infuscate reddish at the anterior part of the pronotum, elytral suture and base as well as sparse setae on dorsum will distinguish *G. agastoceroides* from all other *Galbimorpha* in Laos.

Distribution. A very rare, widespread eucnemid species have been taken in India, Laos and Myanmar. In Laos, *G. agastoceroides* was taken at Vientiane (Muona 1991b).

Ecoregion(s). Northern Khorat Plateau moist deciduous forests.

Biology. Gardner (1935) described larvae collected from a decaying *Macaranga denticulata* (Blume) (Euphorbiaceae) log in Bengal, India. Beeson (1941) reported the species bores in the decaying wood of *Anthocephalus cadamba* (now *Neolamarkia cadamba* (Roxburgh) Bosser (Rubiaceae). A single adult was taken from a lowland semi-evergreen forest.

Galbimorpha curta Muona, 1991 (Fig. 104)

Material examined. Female holotype was available for study: "Lou-Chot, Luang Prabang, 9-3-18" / "LAOS, Luang Prabang (Environs), VITALIS DE SALVAZA" / "ferruginea Fleut. 1923, collection Fleutiaux" / "Galbimorpha quadricollis Fleut.? 1942, FLEUTIAUX det." / "HOLOTYPE, ♀, Galbimorpha curta sp.nov., Muona des. 1983" (MNHN).

Redescription. Length, 6.50 mm. Width, 2.00 mm. Body cylindrical, elongate; dark brown to black; antennae dark brown to black, except antennomeres II–XI dark reddish-brown; legs reddish-brown; head, pronotum and elytra clothed with sparse, short recumbent setae (Fig. 104).

Head: Finely punctate to granulose, subspherical; frons convex, with delicate median carina; surfaces sparsely setose; apical margin of frontoclypeal region trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Slender, gradually serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Densely punctate to granulose; dull; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 1/4 parallel-sided, apical 3/4 arcuate, wider than basal 1/4; disc convex, with median groove at basal 1/2 and pair of small circular impressions; base sinuous, with pair of small circular impressions.

Scutellum: Sparsely setose, oblong, sub-trapezoidal and distally truncate.

Elytra: Striae indicated; interstices elevated, finely and closely punctate; with sparse setae.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate, dark brown with sparse yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum

apically widened; metathoracic coxal plates parallel-sided; abdominal sternum with weak lateral impressions.

Differential diagnosis. Stronger presence of median carina on the frons along with deeper median groove on the pronotum and slenderer antennae will distinguish *G. curta* from other *Galbimorpha* in Laos.

Distribution. A very rare eucnemid is a precintive species in Laos.

Ecoregion(s). Northern Thailand-Laos moist deciduous forest.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Galbimorpha ferruginea Fleutiaux, 1920 (Fig. 105)

Material examined. Lectotype and paralectotype were available for study: 1, "India, Assam, Andrewes" / "Nilgiri Hills H. L.Andrewes" / "Type" / Galbimorpha ferruginea Fleut., COLLECTION FLEUTIAUX type" / "LECTOTYPE, Galbimorpha, ferruginea Fleutiaux, J. Muona des. 1983" (MNHN); 1, "PARA-,LECTO-,TYPE" (blue framed round label) / "H.L. Andrewes, Nilgiri Hills" / "Andrewes, Bequest., B.M. 1922-221" / "Galbimorpha, ferruginea Fleut., co-type, FLEUTIAUX det." (black framed white label; genus, species and "co-type" handwritten) (BMNH). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 8.00 mm. Width, 2.50 mm. Body cylindrical, elongate; entirely reddish-brown, including antennae and legs; head, pronotum and elytra sparsely clothed with yellowish recumbent setae (Fig. 105).

Head: Finely rugose, subspherical; frons convex; surface sparsely setose; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Gradually serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Granulose; dull; surface sparsely setose; as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with a pair of circular gibbosities near base; base sinuous.

Scutellum: Sparsely setose, oblong, sub-trapezoid and distally truncated.

Elytra: Striae indicated; interstices elevated, finely and closely rugose; sparsely setose.

Legs: First tarsomere presumably as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section.

Venter: Finely punctate and rugose, reddish with white, recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates parallel-sided.

Differential diagnosis. Lighter reddish-brown exoskeletal coloration will distinguish *G. ferruginea* from other *Galbimorpha* species in Laos.

Distribution. A very rare eucnemid species is distributed in both India and Laos. In Laos, *G. ferruginea* was taken at Vientiane (Muona 1991b).

Ecoregion(s). Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Note. Muona (1991b) noted both lectotype and paralectotype were collected in Assam. However, M. Geiser (pers. comm.) informed me the type locality, Nilgiri Hills are a mountain range found in the state of Tamil Nadu, which is located near the southern tip of the Indian subcontinent.

Galbimorpha quadricollis Fleutiaux, 1947 (Fig. 106)

Galbimorpha ferruginea sensu Fleutiaux, 1923: 326.

Material examined. Lectotype was available for study: "Vang Nham Luang-Prab., 16-3-18" / "LAOS, Luang Prabang (Environs), VITALIS DE SALVAZA" / "Galbimorpha ferruginea Fleut. 1923" / "Type" / "Galbimorpha quadricollis Fleut., COLLECTION FLEUTIAUX type" / "LECTOTYPE, Galbimorpha quadricollis, Muona des. 1983" (MNHN).

Redescription. Length, 8.50 mm. Width, 3.00 mm. Body cylindrical, elongate; dark brown to black; antennae dark brown to black, except antennomeres II–XI dark reddish-brown; legs reddish-brown; head, pronotum and elytra clothed with yellowish recumbent setae (Fig. 106).

Head: Finely punctate to granulose, subspherical; frons convex, with faintly indicated median carina; surfaces setose; apical margin of frontoclypeal region trilobed, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Gradually and strongly serrate from antennomeres III–X, reaching as far back as the hind angles of the pronotum.

Pronotum: Finely punctate to granulose; dull; surface setose; as long as wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with weak groove as well as a pair of circular gibbosities near base and a small pair near anterior; base sinuous, with short carina above scutellum.

Scutellum: Sparsely setose, oblong, sub-trapezoidal and distally rounded.

Elytra: Striae indicated; interstices elevated, finely and closely punctate; with short setae.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV ventrally lobed; metathoracic tarsomere V elongate with simple claws.

Venter: Finely punctate, dark brown with yellowish recumbent setae; hypomeron with deep, basally closed lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates parallel-sided.

Differential diagnosis. Dense vestitures of setae on the dorsum will distinguish *G. quadricollis* from other *Galbimorpha* species in Laos.

Distribution. A very rare eucnemid is a precintive species in Laos.

Ecoregion(s). Northern Thailand-Laos moist deciduous forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

SUBFAMILY MACRAULACINAE FLEUTIAUX, 1922

Diagnosis. Form oblong, elongate or obtuse; antennomeres usually sexually dimorphic; mandibles either stout with a basal tooth or slender without teeth; simple lateral pronotal ridge present; hypomeron either simple, with basally closed lateral antennal grooves or with basally open lateral antennal grooves; legs slender; prothoracic tibiae with one apical spur; lateral surfaces of mesothoracic and metathoracic tibiae usually with transverse rows of spines; tarsomere IV often bilobed; tarsal claws either simple or basally toothed; prothoracic tarsomere I usually with basal sex combs in males; male aedeagus with dorsally open basal piece; median lobe simple, with solidly fused slender basal struts; fused to lateral lobes; lateral lobes entire, either with notched or apically deeply and narrowly bifurcate; bursa either simple or divided; spermatheca tripartite, sclerotized, divided.

Key to the tribes within the subfamily Macraulacinae

1 Antennomeres IX–XI enlarged. **2**
– Antennomeres IX–XI simple, some usually with elongated rami. **3**
2 Lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs. .... **Euryptychini Mamaev, 1976**
– Lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly places spines. ..... **Orodotini Muona, 1993**
3 Mandible stout, with basal tooth. **4**
– Mandibles slender, without basal tooth. .... **Echthrogasterini Cobos, 1964**
4 Antennomeres VI–X equal, rounded in cross section. .... **Macraulacini Fleutiaux, 1922**
– Antennomeres VI–X enlarged, slightly flattened in cross section. .... **Nematodini Leiler, 1976**

Tribe Echthrogasterini Cobos, 1964

Diagnosis. Mandibles originally slender, without teeth and expanded lateral margins; prothoracic tibiae with one apical spur; male prothoracic tarsomere I without sex combs; tarsomere IV simple; lateral sides of mesothoracic and metathoracic tibiae either with setae only or with setae and irregularly placed spines; hypomeron without antennal grooves; prothoracic sternal peg with simple apex; median lobe without dorsal basal struts, fused with lateral lobes, distinct, with notched apex; bursa divided, originally bifurcate; spermatheca divided, sclerotized, reduced.

Henecocerus Bonvouloir, 1871

Diagnosis. Echthrogasterini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; lateral sides of mesothoracic and metathoracic tibiae with setae and irregularly placed spines;

metathoracic coxal plates either medially 1.20–2.50 or 3.00–6.00 times wider than laterally; last visible ventrite strongly produced in males, bispinose in females; simple tarsal claws; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, apically notched; lateral lobes simple, entire; flagellum simple.

Henecocerus angusticollis Bonvouloir, 1871 (Fig. 107)

(= *Henecocerus abdominalis* Fleutiaux, 1922: 115–116)

Material examined. One specimen was available for study: "Xieng Khouang, LAOS, VII 1996, native collector" (WSC).

Redescription. Length, 8.00–13.00 mm. Width, 2.00–2.75 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown to dark brown; antennae and legs reddish-brown to dark brown; head, pronotum and elytra clothed with sparse, very short, yellow recumbent setae (Fig. 107).

Head: Granulose, subspherical; frons convex, frontoclypeal region distinctly ridged; surfaces dull; apical margin of frontoclypeal region feebly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly moniliform, short, reaching as far back near hind angles of pronotum; antennomeres III as long as IV and V combined; antennomere IV subequal to II; antennomeres V–X gradually wider; antennomere XI slightly longer than X.

Pronotum: Surface dull, granulose; longer than wide, with short, sharp hind angles; parallel-sided; disc convex, with pair of circular fovea and delicate median groove extending from base to middle of pronotum; base sinuous.

Scutellum: Dull, granulose, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated with very closely punctate to rugose surfaces.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate and rugose, with very short, yellowish recumbent setae; hypomeron simple, without lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. A very rare, widespread eucnemid species has been taken in Indonesia, Laos, Malaysia and Vietnam. In Laos, *H. angusticollis* was taken from "Haut-Mékong", Tong-King; Sala-Quang-Pa (Fleutiaux 1922) and recently in north central Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown.

Tribe Euryptychini Mamaev, 1976

Diagnosis. Mandibles slender, without teeth; prothoracic tibiae with one apical spur; male prothoracic tarsomere I with complete or apical sex combs; tarsomere IV simple;

lateral sides of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; antennomeres IX–XI enlarged, sexually dimorphic; hypomeron without antennal grooves; prothoracic sternal peg with simple apex; median lobe without dorsal basal struts, fused with lateral lobes, distinct, with notched apex; bursa divided, simple; spermatheca divided, sclerotized.

Euryptychus LeConte, 1852

(=*Dyscolocerus* Bonvouloir, 1871: 73)

Diagnosis. Euryptychini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite rounded; tarsal claws simple; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, notched apically; lateral lobes simple, entire; flagellum simple.

Note. Identification was made possible through comparisons of all specimens against translated, interpreted information from FLEUTIAUX (1896c).

Euryptychus pasteuri (Fleutiaux, 1896) (Fig. 108)

Dyscolocerus pasteuri Fleutiaux, 1896: 295

Material examined. Eight specimens were available for study: 2,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 6, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Redescription. Length, 7.00–9.50 mm. Width, 2.00–2.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except for apices of antennomere XI reddish; legs black, tarsi dark brown; head, pronotum and elytra clothed with sparse, very short, white recumbent setae (Fig. 108).

Head: Punctate, subspherical; frons convex, with circular fovea; surface shiny; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Capitate, antennomere III as long as the combined lengths of IV and V; antennomeres IV–VIII subequal, slightly longer than wide; antennomere IX subequal to III; antennomere X shorter than IX, subequal to XI.

Pronotum: Surface shiny, with widely spaced punctations; slightly longer than wide, with moderate, sharp hind angles; sides gradually narrowed, arcuate; disc convex, with median groove extending through length of pronotum; base sinuous.

Scutellum: Shiny, oblong, sub-trapezoid, with median groove and distally truncate.

Elytra: Strongly striate; interstices elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate and rugose, with very short, white recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Dark black coloration will distinguish *E. pasteuri* from any known *Euryptychus* species in Southeast Asia. All other known *Euryptychus* species in Southeast Asia outside the Australian continent are either unicolored dark brown or reddish-orange.

Distribution. A rare eucnemid species is distributed in Indonesia, Laos and Myanmar. In Laos, *E. pasteuri* were previously taken at "Haut-Mékong" (Fleutiaux 1947) and most recently taken in northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Tribe Orodotini Muona, 1993

Diagnosis. Mandible originally slender with expanded lateral margins, without teeth; prothoracic tibiae with one apical spur; male sex combs lost on prothoracic tarsomere I; tarsomere IV simple; lateral surfaces of mesothoracic and metathoracic tibiae variable; antennomeres IX–XI originally enlarged; hypomeron without antennal grooves; prothoracic sternal peg with simple apex; median lobe without dorsal basal struts, fused with lateral lobes, distinct, with notched apex; bursa divided, simple; spermatheca divided, U-shaped, sclerotized.

Eudorus Laporte, 1835

Diagnosis. Orodotini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; antennomeres IX and X enlarged; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, apically notched; lateral lobes simple, entire; flagellum simple.

Eudorus javanicus Laporte, 1835 (Fig. 109)

Material examined. One specimen was available for study: 1, "DUTCH NEW GUINEA:, Cyclops mts., Sabron., 930 ft. v.1936, L.E. Cheesman, B.M. 1936-271" (yellow line through label) / "*Eudorus*, *javanicus*, Laporte, det. R.L. Otto, 2014" (BMNH). No specimens from Laos were available for study during the course of this research.

Redescription. Length, 8.00 mm. Width, 2.25 mm. Body subcylindrical, elongate; entirely reddish-brown to dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 109).

Head: Deeply and closely punctate to rugose, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Capitate, short, reaching about 1/4 the length of the body, not quite reaching the hind angles of the pronotum. Antennomere III slightly longer than IV; antennomeres IV about as long as II; antennomeres IV–VIII each subequal, quadrate; antennomeres IX–XI enlarged; antennomere XI longer than X.

Pronotum: Shallowly punctate, widely spaced; surface shiny; as long as wide, with moderate hind angles; parallel-sided; disc simple; base sinuous, with short groove above scutellum.

Scutellum: Surface shiny; shallowly punctate, sub-triangular and distally rounded.

Elytra: Faintly indicated striae near sutural area present; interstices flattened, shallowly punctate; surface shiny.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Shallowly punctate, surface shiny; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Smaller size, along with elongate setae will distinguish *E. javanicus* from another species, *Eudorus irianensis* Lucht, 1999; also present in the Southeast Asian region.

Distribution. A very rare, widespread eucnemid species has been taken in Indonesia, Laos, Malaysia, New Caledonia and Vietnam (Fleutiaux 1947). In Laos, *E. javanicus* have been taken in Nam-Nham (Luang-Prabang prov.) and Ban-Na-Houa (Haut-Mékong prov.) (Fleutiaux 1923).

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown.

Tribe Macraulacini Fleutiaux, 1922

Diagnosis. Mandibles short, with a ventral tooth; legs slender; prothoracic tibiae with one apical spur; mesothoracic and metathoracic tibiae with apical spines; lateral surfaces of mesothoracic and metathoracic tibiae variable, either with hairs and simple spines or with hairs and transverse rows of spine combs; tarsomere IV usually wide, bilobed; tarsal claws either simple or basally toothed; male prothoracic tarsomere I with basal sex combs; antennomeres IV–X variable, about equal in length; hypomeron variable, either simple, with basally closed lateral antennal grooves or with basally open lateral antennal grooves; prothoracic sternal peg high, variably elongate, excavated or truncated; median lobe without dorsal basal struts, fused with lateral lobes, with narrowly, deeply bifurcate apex; bursa divided, simple; spermatheca sclerotized, divided, U-shaped.

Key to the genera within the tribe Macraulacini

1 Antennomeres II and III subequal. **2**
– Antennomeres II shorter than III. **5**

2 Antennomeres II and III together shorter than IV. **3**
– Antennomeres II and III together longer than IV (Fig. 160). **4**

3 Tarsal claws basally toothed. ..... ***Hodocerus*** **Bonvouloir, 1871**
– Tarsal claws simple. ..... ***Ceratus*** **Bonvouloir, 1871**

4 Antennomeres IV–X wider than long (Fig. 111). ..... ***Heterotaxis*** **Bonvouloir, 1871**
– Antennomeres IV–X longer than wide (Fig. 160). ..... ***Xylofornax*** **gen.nov.**

5 Antennomeres III–X serrate, pectinate, flabellate, filiform or moniliform. **6**
– Antennomeres III–X bipectinate or biserrate (Fig. 112). ..... ***Procladidus*** **Fleutiaux, 1902**

6 Pronotum without enlarged basal keel. **7**
– Pronotum with enlarged basal keel (Fig. 158). ..... ***Dorsifornax*** **Fleutiaux, 1926**

7 Elytral apices dehiscent (Fig. 133). **8**
– Elytral apices meeting tightly together. **9**

8 Antennomeres III–X pectinate (Fig. 157). ..... ***Raapia*** **Fleutiaux, 1899**
– Antennomeres III–X serrate or filiform. ..... ***Spinifornax*** **Fleutiaux, 1926**

9 Metathoracic coxal plates parallel-sided. **10**
– Metathoracic coxal plates medially more than 1.25 times wider than laterally. **11**

10 Antennomeres III–X moniliform (Fig. 110). ..... ***Chapianus*** **Fleutiaux, 1921**
– Antennomeres III–X pectinate (Fig. 113). ..... ***Semnodema*** **Bonvouloir, 1871**

11 Metathoracic coxal plates medially 1.25–2.50 times wider than laterally. **12**
– Metathoracic coxal plates medially at least 3.00 times wider than laterally. **13**

12 Hypomeron with medially vaguely defined, basally open lateral antennal grooves. ..... ***Scython*** **Bonvouloir, 1871**
– Hypomeron with well defined, narrow, basally open or basally closed lateral antennal grooves. ..... ***Dromaeolus*** **Kiesenwetter, 1858**

13 Metathoracic coxal plates medially 3.00–6.00 times wider than laterally. **14**

– Metathoracic coxal plates medially more than 6.00 times wider than laterally. **16**

14 Tarsal claws basally toothed. **15**
– Tarsal claws simple. ..... ***Melanoscython*** **Fleutiaux, 1902**

15 Antennomeres III–X pectinate. ..... ***Macroscython*** **Fleutiaux, 1902**
– Antennomeres III–X serrate. ..... ***Serrifornax*** **Fleutiaux, 1926**

16 Hypomeron with medially vaguely defined basally open lateral antennal grooves. ..... ***Pseudoisarthrus*** **gen.nov.**
– Hypomeron with well defined, narrow, basally open lateral antennal grooves. ..... ***Fornax*** **Laporte, 1835**

Chapianus Fleutiaux, 1921

Diagnosis. Macraulacini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; well defined, basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates parallel-sided; last visible ventrite evenly rounded; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae or setae and irregularly placed spines.

Note. Identification of two specimens was based on the comparison against a specimen from the collection of the Global Eucnemid Research Project.

Chapianus monilicornis Fleutiaux, 1921 (Fig. 110)

Material examined. Two specimens were available for study: 2, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB).

Redescription. Length, 4.00–5.00 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown to black; antennae dark brown; legs medium-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 110).

Head: Very closely punctate, subspherical; frons with deep, circular fovea above frontoclypeal region; interantennal carina complete; surface dull; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Moniliform from antennomeres III–XI; short, extends up to the hind angles of pronotum; antennomere III longer than II.

Pronotum: Surface dull, very closely punctate to rugose; longer than wide, with moderate, sharp hind angles; lateral sides arcuate; disc convex; base sinuous, with delicate median groove above scutellum.

Scutellum: Dull, oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated; surfaces densely punctate to rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III; metathoracic tarsomere IV narrow, excavate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with very short, yellowish recumbent setae; hypomeron with basally open, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00–2.50 times wider than laterally.

Differential diagnosis. Single lateral pronotal margin will distinguish *C. monilicornis* from another species, *Chapianus bimarginatus* Lucht, 1987, currently distributed in Malaysia.

Distribution. A very rare eucnemid species previously found in Papua New Guinea and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Heterotaxis Bonvouloir, 1871

Diagnosis. Macraulacini with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; well defined, basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plate parallel-sided; last visible ventrite either rounded, acute or slightly emarginated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae only or with setae and irregularly placed spines.

Heterotaxis elongata sp.nov. (Fig. 111)

Type material. Female holotype: "LAOS central, Sasombun zone, PHOU KHAO KHOUAY Nat. Park, TAD LEUK 18°23′N, 103°04′E, 15.–21.V.2001, alt. 150–200 m, E. Jendek & O. Šauša leg." / "HOLOTYPE, *Heterotaxis*, *elongata*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Female holotype: Length, 3.75 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; dark brown; antennomere I brown; antennomeres II–XI reddish-brown; femur and tibiae brown; tarsi reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 111).

Head: Closely punctate, subspherical; frons convex, slightly impressed above base of frontoclypeal region; interantennal carina complete; surface dull; apical margin of frontoclypeal region evenly rounded, more than two times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Moniliform from antennomeres III–X; antennomeres III–X subequal, wider than long; antennomere XI longer than wide, apically produced.

Pronotum: Closely punctate; surface dull; as long as wide, with short, sharp hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, simple; base sinuous, with pair of small round fovea above scutellum.

Scutellum: Rugose, dull, oblong, sub-triangular and distally rounded.

Elytra: Striae present; interstices elevated; surfaces transversely rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–IV simple; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellow recumbent setae; hypomeron with basally open, deep lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates parallel-sided.

Etymology. The specific epithet is derived by its elongate body form of the species.

Differential diagnosis. Parallel-sided pronotum will distinguish *H. elongata* from another Southeast Asian species, *Heterotaxis myrimidon* Bonvouloir, 1871. Pronotum is cranially wider in *H. myrimidon*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Borikhamxay province of central Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Procladidus Fleutiaux, 1902

(=*Dicladus* Fleutiaux, 1912: 320; not Bonvouloir, 1872)

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; deep, wide, well-developed basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with sex combs; metathoracic coxal plates medially 1.25–2.50 times wider than laterally; last visible ventrite either rounded, acute or slightly emarginated; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, moderately and narrowly bifurcate apically; lateral lobes simple, apices directed laterad; flagellum simple.

Note. Identification was based on the translated, interpreted identification key from LUCHT (1984) and compared against a specimen from the collection of the Global Eucnemid Research Project.

Procladidus coomani Fleutiaux, 1927 (Fig. 112)

Material examined. Five specimens were available for study: LAOS: 2, "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan; Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); THAILAND: 1, "THAILAND, 1000–1600m, CHAING MAI prov., 20 km NW from FANG, 2.–5.v.1996, lgt. S. & E. Becvar" (GERP).

Redescription. Length, 12.00–15.00 mm. Width, 3.00–3.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black with metallic blue and violet reflections on elytra; antennae and legs black, except tarsomeres IV and V dark

brown; head, pronotum and elytra clothed with very short, white recumbent setae (Fig. 112).

Head: Closely punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Bipectinate from antennomeres III–XI, extends about 1/3 the length of its body in both sexes.

Pronotum: Surface shiny, sparsely and shallowly punctate; longer than wide, with moderate, sharp hind angles; lateral sides gradually narrowed craniad; disc with median groove; base sinuous.

Scutellum: Shiny, oblong, quadrate and distally rounded.

Elytra: Striate absent; interstices flatten with sparse punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with very short, brownish recumbent setae; hypomeron with basally open, deep, wide, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 1.25 times wider than laterally.

Differential diagnosis. Shiny, smooth pronotal surfaces will distinguish *P. coomani* from another species, *Procladidus favrei* (Fleutiaux, 1912), also present on mainland Southeast Asia.

Distribution. A very rare eucnemid species previously found in Thailand and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Semnodema Bonvouloir, 1871

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; basally open, deep, lateral antennal grooves well developed, usually with smooth surfaces; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates parallel-sided; last visible ventrite strongly produced; basally toothed tarsal claws; pectinate antennae in both sexes; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lobe simple, moderately and narrowly bifurcate apically; flagellum simple.

Note. Both species are similar to a Southeast Asian *Semnodema flabellicorne* (Castelanu, 1835). *Semnodema flabellicorne* can be distinguished from both species based on a couple of features. These features include sinuous lateral sides of the pronotum present in *S. flabellicorne*; parallel-sided lateral sides of the pronotum for the

other two species. Secondly, the median groove on the pronotum is deeper in *S. flabellicorne*, shallower in the other two species.

Key to the species of *Semnodema*

1 Surfaces of pronotum shallowly punctate. ..... ***Semnodema punctata* sp.nov.**

– Surfaces of pronotum rugose. ..... ***Semnodema harmandi* Fleutiaux, 1896**

***Semnodema harmandi* Fleutiaux, 1896** (Figs 113–115)

Material examined. Seventeen specimens were available for study: 1, "LAOS, Umg. Vientiane, III.–VI.1963" / "Semnodema, harmandi, Fleut., A. Cobos det. 1965" (genus, species, author and year handwritten) (ZSM); 1, "LAOS Centr., Bolikhamsai prov., BAN NAPE – Kaew Nua Pass, 18.4.–1.5.1998, alt. 600 ±100m., N18° 22.3, E 105° 09.1 (GPS), M. Strba & R. Hergovits leg." (JMC); 1, "LAOS c., Khammouan prov., NAKAI env., 4–8.V.1998, Route no. 8, alt. 560 m, N17°42.8′ E105°09.1′ GPS, E. Jendek, O. Sausa lgt." (GERP); 1, "LAOS, Louangnamtha pr., 21° 09′N 101° 19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (NHMB); 1, "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "Collection naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′ N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1500 m, 21°41′N 102°6′E, P. Pacholátko leg." (NHMB); 1, "Laos-NE, Xieng Khouang prov., ~19°37–8′N 103°20′E, Phonsavan (30 km NE): Phou Sane Mt., ~1400–1500 m, 10.–30.v.2009, Z. Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19"N 103°59′54"104°00′03"E, 1480–1550 m, PHOU PANE Mts., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′-104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (FSCA); 1, "N.E. LAOS, MT PHU PHAN, ii 2010, 2060 m, LEG: STEVE POLLARD" (AAC); 5, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 9.00–16.00 mm. Width, 2.00–4.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black; legs dark brown to black; head, pronotum and elytra clothed with very short, white recumbent setae (Fig. 113).

Head: Very closely punctate, rugose, subspherical; frons convex, with short median carina; surface dull; apical margin of frontoclypeal region rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose; pair of small horns present between antennal sockets above clypeus.

Antennae: Pectinate from antennomeres III–X, reaching to hind angles of pronotum.

Pronotum: Very closely punctate to rugose; surface somewhat shiny; longer than wide, with short hind angles; basal 3/4 parallel-sided, slightly arcuate anteriorly; disc with pair of horizontal foveae and a median groove; base sinuous, with large sub-triangular median keel above scutellum.

Scutellum: Slightly rugose, oblong, sub-trapezoid and distally truncated.

Elytra: Humeri with striae; striae absent on remaining areas of disc; interstices slightly elevated at humeri with dense punctations, absent in remaining areas.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; lateral surfaces of mesothoracic and metathoracic tibiae with single spines; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate and rugose, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum partially concealed, parallel-sided; metathoracic coxal plates parallel-sided.

Aedeagus (Fig. 115): Elongate, dorsoventrally flattened, caudally widened and laterally compressed; median lobe free with deeply notched, narrowed apex; lateral lobes apically rounded, laterally toothed and as long as the median lobe; basal piece elongate, dorsally open, quadrate and apically rounded.

Differential diagnosis. Closely punctate, rugose surfaces will distinguish *S. harmandi* from *S. punctata*. Males are best identified by presence of a pair of small horns between antennal insertions (Fig. 114), as well as aedeagus. Variability among female specimens in the species seems to overlap with *S. punctata*.

Distribution. An uncommon, widespread eucnemid species have been taken in India, Laos, Papua New Guinea, Philippines, Thailand and Vietnam. In Laos, *S. harmandi* were previously taken at Huat-Mékong (Fleutiaux, 1947) and most recently in many locations throughout much of northern and central Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. All adults were taken from a dry evergreen forest, lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

***Semnodema punctata* sp.nov.** (Figs 116–118)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Semnodema*, *punctata*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: with same label data as holotype: / "ALLOTYPE, *Semnodema*, *punctata*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.

Paratypes: 37, from the following localities: 1, "LAOS, Umg. Vientiane, III.–VI.1963" (ZSM); 2, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 19,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP); 15, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Each specimen labeled: "PARATYPE, *Semnodema*, *punctata*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in BMNH, GERP, JMC, NHMB and ZSM.

Description. Holotype male: Length, 11.50 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black, except lateral sides of elytra below humeri variably brownish; antennae black; legs dark brown to black; head, pronotum and elytra clothed with very short, white recumbent setae (Fig. 116).

Head: Very closely punctate, rugose, subspherical; frons convex, with short median carina at vertex; surface dullish; apical margin of frontoclypeal region feebly trilobed, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching to hind angles of pronotum.

Pronotum: Very closely punctate to rugose near base; surface somewhat shiny; longer than wide, with short hind angles; basal 1/2 parallel-sided, slightly arcuate anteriorly; disc with pair of horizontal despressions along with a pair of large gibbosities near base and median groove extending from base to center of disc; base sinuous.

Scutellum: Closely punctate, oblong, sub-triangular and distally rounded.

Elytra: Humeri with striae; striae indicated on remaining areas of disc; interstices elevated at humeri, slightly elevated in remaing areas; with dense punctations.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; lateral surfaces of mesothoracic and metathoracic tibiae with single spines; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum partially concealed, parallel-sided; metathoracic coxal plates parallel-sided.

Aedeagus (Fig. 118): Elongate, dorsoventrally flattened and caudally widened; median lobe free with deeply notched, wider apex; lateral lobes apically rounded, laterally toothed and as long as the median lobe; basal piece elongate, dorsally open and apically rounded.

Allotype: 14.00 mm long; pair of small horns absent between antennal sockets; shallower punctations present on pronotum. Pair of horizontal impressions deeper than male specimens. Striae more indicated, with slightly elevated interstices; elytron with smaller lateral orange spot.

Variation. Thirty-seven adult paratypes were examined. Twenty male paratypes varied in length from 10.00–12.00 mm. Seventeen female paratypes varied in length from 12.00–15.00 mm. Females are on average larger than males. Presence of lateral orange spot on each elytron exhibits some variability. Only one male paratype lack an orange spot on each elytron. Orange spot is more diffused and less apparent in females. Median impressed line along with horizontal depressions and size of pronotal gibbosities exhibits some variability. Some specimens exhibits shallower depressions and small gibbosities.

Etymology. The name of the new species is derived its punctate sculpture on the dorsum of the pronotum.

Differential diagnosis. Shallowly punctate surfaces of the pronotum will distinguish *S. punctata* from *S. harmandi*. Males are best identified by the lack of small horns between

antennal insertions (Fig. 117) and aedeagus. Exoskeletal structure of the pronotum will distinguish females from *S. harmandi*.

Distribution. An uncommon eucnemid is a precintive species found in two localities in northeastern and east central areas of Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Hodocerus Bonvouloir, 1871

Diagnosis. Macraulacini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; well developed, wide, basally open lateral antennal grooves present; antennomeres II and III short, subequal, together shorter than IV; male prothoracic tarsomere I simple with sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs.

Note. Identification of the new species was based on a single generic character state, which being the presence of basally toothed tarsal claws; a feature not present in *Ceratus* Bonvouloir, 1871.

Key to the species of *Hodocerus*

1 Antennae serrate; size smaller. ..... ***Hodocerus ceratoides* sp.nov.**
– Antennae pectinate; size larger. .....
..... ***Hodocerus malaisiensis* Bonvouloir, 1875**

Hodocerus ceratoides sp.nov. (Fig. 119)

Type material. Male holotype: "C. LAOS, Boli Kham Xai prov., Ban Nape (8 km NE), 1–18.5.2001, P. Pacholátko leg." / "HOLOTYPE, *Hodocerus*, *ceratoides*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype was transferred from GERP to BMNH.
Paratype: 1, from the following locality: "LAOS c., Bolikhamsai pr., BAN NAPI – Kaew Nua Pass, 18.4.–1.5.1998, alt. 600 m, N18°22.3′ E105°09.1′ GPS, E. Jendek, O. Šauša lgt." / "PARATYPE, *Hodocerus*, *ceratoides*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Paratype is retained in GERP.

Description. Male holotype: Length, 7.00 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; dark brown-black; antennae dark reddish-brown, except basal segment dark brown-black; legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 119).

Head: Very closely punctate, almost rugose, subspherical; frons convex; interantennal carina incomplete; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, more than two times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres IV–X (left antenna missing antennomeres X–XI; right antenna missing XI); antennomere III as long as II, combined shorter than IV; antennomere IV longer than V; antennomeres V–X subequal, longer than wide.

Pronotum: Closely and shallowly punctate; surface shiny; as long as wide, with moderate, sharp hind angles; lateral sides gradually narrowed craniad, arcuate; disc convex; base sinuous.

Scutellum: Punctate, shiny, oblong, sub-triangular and distally rounded.

Elytra: Striae shallowly indicated; interstices slightly elevated; surfaces shallowly punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with short, yellow recumbent setae; hypomeron with basally open, deep lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variations. One male paratype was examined. The paratype is subequal in length and width compared with the holotype. The paratype exhibits a much darker coloration on the femur and tibiae. Tarsi remain to be the same in coloration. Antennomere IV is as long as V in the paratype; whereas the holotype exhibits a much longer antennomere IV in relation to V.

Etymology. The specific epithet, *ceratoides* is derived from its similar appearance to the macraulacine eucnemid genus, *Ceratus*.

Differential diagnosis. Smaller size, along with serrate antennae will distinguish *H. ceratoides* from *H. malasiensis*.

Distribution. A very rare, endemic eucnemid species known from two localities in Borikhamxay province in central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a lowland semi-evergreen forest.

Hodocerus malaisiensis Bonvouloir, 1871 (Fig. 120)

Material examined. Sixteen specimens were available for study: 1, "♀" / "LAOS, Umg. Vientiane, III.–VI.1963" / "Hodocerus, malasiensis, Bonv., A. Cobos det. 1967 (genus, species, author and year handwritten) (ZSM); 1, "LAOS north, 24–30.V.1997, 20 km NW Louang Namtha, N21°09.2′, E101°18.7′, alt. 900 ±100 m, E. Jendek & O. Šauša leg." (GERP); 2, LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~200 m, Vít Kubáň leg." (FSCA, NHMB); 1, "Collection Naturhistorisches Museum Basel" / "LAO, 26–27.v.2003, Bolikhamxai prov., PAKKADING, ~300 m, 18°20′N 104°00′E, Vít Kubáň leg." (NHMB); 2, "LAOS, BOLIKHAMSAI PR., BAN NAPE ENV., 100–400 m, 18°20′N 105°08′E, 7–16 v 2004, LEG: E. JENDEK/ O. SAUDA" (AAC); 1, "LAO, Phongsaly prov., 21°41′N 102°6′E, PHONGSALY env., 6.–17.v.2004, ~1500 m, M. Brancucci leg." (NHMB); 3, "Laos-NE, Xieng Khouang prov., ~19°37–8′N 103°20′E, Phonsavan (30 km NE): Phou Sane Mt., ~1400–1500 m, 10.–30.v.2009, Z. Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 2, "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20′E, 30 km NE Phonsavan; Ban

Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Brancucci leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan (30 km NE): Phou Sane Mt., 1400–1500 m, 10.–30.v.2009, D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan; Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mts., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 9.00–14.00 mm. Width, 3.00–4.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark reddish-brown; antennae and legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 120).

Head: Very closely punctate, rugose, subspherical; frons convex, with circular fovea above frontoclypeal region; surface dull; apical margin of frontoclypeal region evenly rounded, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres IV–X; extends as long as 1/2 the length of its body.

Pronotum: Surface dull, rugose to granulose; slightly longer than wide, with moderate, sharp hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc convex, with median impression; base sinuous, with pair of oblong fovea above scutellum.

Scutellum: Shiny, oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated with sparse punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate and rugose, with very short, yellowish recumbent setae; hypomeron with basally open, deep, wide lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially more than 6.00 times wider than laterally.

Differential diagnosis. Larger size, along with pectinate antennae will distinguish *H. malaisiensis* from *H. ceratoides*.

Distribution. An uncommon, widespread eucnemid species have been taken in Japan, Laos, Malaysia, Philippines and Vietnam. In Laos, *H. malaisiensis* was taken at Vientiane (Fleutiaux 1918), Xieng-Khouang (Fleutiaux 1923) and Phong-Salay (Fleutiaux 1947) and most recently in northern and central areas of the country.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Beeson (1941) reported the species bores in the wood of *Pentacme suavis* de Candolle (Dipterocarpaceae). All adults were taken from a lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

Melanoscython Fleutiaux, 1926

Diagnosis. Macraulacini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; medially vaguely defined, basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either rounded or truncated; simple tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines; male aedeagus dorsoventrally compressed, with laterally attached secondary lateral lobes; median lobe simple, moderately and narrowly bifurcate apically; lateral lobes simple, entire; flagellum simple.

Note. Identification of both species was based on the diagnostic key provided by MUONA (1988).

Key to the species of *Melanoscython*

1 Antennomere IV about 1/2 the size of antennomere III. .... ***Melanoscython monilicornis*** **Fleutiaux, 1931**

– Antennomere IV slightly shorter than antennomere III. .... ***Melanoscython ohmomoi*** **Muona, 1988**

Melanoscython monilicornis Fleutiaux, 1931 (Fig. 121)

Material examined. Holotype was available for study: "Neme-Tiene, Haut-Mekong" / "LAOS, Luang-Prabang (Environs), VITALIS DE SALVAZA" / "Type" / "Melanoscython monilicornis Fleut. type, Collection FLEUTIAUX" (MNHN).

Redescription. Length, 7.50 mm. Width, 2.00 mm. Body subcylindrical, elongate; dorsum uniformly black; antennae and legs dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 121).

Head: Rugose to granulose; frons convex, with a very faint indication of median carina above frontoclypeal region; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Moniliform from antennomeres IV–X, reaching up to the hind angles of the pronotum; rounded in cross section; antennomere III almost as long as IV and V together; antennomeres IV–X each quadrate, subequal; antennomere XI slightly longer than X.

Pronotum: Rugose to granulose; surface somewhat shiny; slightly longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc simple, convex; base slightly wider, sinuous, with short median impression above scutellum.

Scutellum: Shiny, sparsely punctate, sub-triangular and distally rounded.

Elytra: Striate; interstices elevated; surfaces transversely rugose, sparsely setose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with medially undefined basally opened lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Antennomere III is being twice as long as IV will distinguish *M. monilicornis* from *M. ohmomoi*.

Distribution. A very rare eucnemid is a precintive species in Laos.

Ecoregion(s). Northern Thailand-Laos moist deciduous forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Melanoscython ohmomoi Muona, 1988 (Fig. 122)

Material examined. Three specimens were available for study: 2, "LAOS c., Bolikhamsai prov., BAN NAPE – Kaew Nua Pass, 18.4–1.5.1998, alt. 600 m, N 18°22.3′ E 105°09.1′ GPS, E. Jendek & O. Šauša leg." (GERP, JMC); 1, "LAOS central, Saisombun zone, PHOU KHAO KHOUAY Nat. Park, TAD LEUK, 18°23′N 103°04′E, 15–21.V.2001, alt. 150–200 m, E. Jendek & O. Šauša leg." (GERP).

Redescription. Length, 6.00–7.00 mm. Width, 1.00–2.00 mm. Body subcylindrical, elongate; dorsum uniformly brownish-black; antennae dark reddish-brown; legs reddish-brown; abdominal sternites reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 122).

Head: Densely punctate; frons convex; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate to rugose.

Antennae: Filiform from antennomeres III–XI, reaching up to 1/2 the length of its body; flattened in cross section; lateral keels present on antennomeres I, III–X; antennomere III slightly longer than IV; antennomeres IV–XI each longer than wide, subequal.

Pronotum: Closely punctate; surface dull; slightly longer than wide, with moderate, sharp hind angles; lateral sides arcuate toward apex; disc simple, convex with shallow, delicate median groove; base sinuous, slightly depressed.

Scutellum: Dull, closely punctate, short, sub-triangular and distally rounded.

Elytra: Feebly striate; interstices flettened; surfaces densely punctate to rugose, sparsely setose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally swollen claws.

Venter: Densely punctate, with short, yellowish recumbent setae; hypomeron with medially undefined basally opened lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Slightly longer antennomere III in relation to IV will distinguish *M. ohmomoi* from *M. monilicornis*.

Distribution. A very rare eucnemid species previously known from Japan. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest.

Scython Bonvouloir, 1872

Diagnosis. Macraulacini, with apical margin of frontoclypeal region either evenly rounded or feebly trilobed and more than twice as wide as the distance between antennal sockets; medially vaguely defined, basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially 1.25–2.50 times wider than laterally; last visible ventrite strongly produced; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines; male aedeagus dorsoventrally compressed, with laterally attached secondary lateral lobes; median lobe simple, moderately and narrowly bifurcate apically; lateral lobes simple, entire, apices directed laterad; flagellum simple.

Note. Identification of the species was based on the translated, interpreted diagnostic key from Bonvouloir (1872).

Scython apicalis Bonvouloir, 1872 (Fig. 123)

Material examined. Two specimens were available for study: 1, "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "C. LAOS, Boli Khan Xai prov., Ban Nape (8 km NE), 1–18.5.2001, P. Pacholátko leg" (GERP).

Redescription. Length, 12.00 mm. Width, 3.25 mm. Body subcylindrical, elongate; dorsum uniformly reddish-orange, with scutellum and elytral apices black; venter black, except hypomera reddish-orange; antennae black; femur, tibiae black; tarsi dark reddish-brown; head, pronotum and elytra clothed with short, orange recumbent setae (Fig. 123).

Head: Very closely, deeply punctate; frons convex, with elliptical fovea above frontoclypeal region; surface somewhat shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Assymetrically serrate from antennomeres IV–X, reaching about 1/2 the length of its body; flattened; antennomere III slightly longer than IV; antennomeres IV–X each slightly longer than wide, subequal; antennomere XI slightly longer than X.

Pronotum: Rugose; surface somewhat shiny; longer than wide, with moderate, sharp hind angles; basal 1/3 parallel-sided, apical 2/3 arcuate; disc simple, convex; base sinuous, with elongate ridge above scutellum.

Scutellum: Shiny, sparsely punctate, oblong, quadrate and distally rounded.

Elytra: Striate; interstices elevated, surfaces rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with short, yellowish recumbent setae; hypomeron with medially undefined basally opened lateral antennal grooves; metathoracic episternum slightly widened apically; metathoracic coxal plates medially 1.50 times wider than laterally.

Differential diagnosis. Largely reddish-orange unicolored dorsum will distinguish *S. apicalis* from another species, *Scython florentini* Fleutiaux, 1918, also present on mainland Southeast Asia.

Distribution. A very rare, widespread eucnemid species previously found in Indonesia, Malaysia and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a lowland semi-evergreen forest.

Macroscython Fleutiaux, 1902

(=*Galbocerus* Lea, 1916: 320)

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and less than twice as wide as the distance between antennal sockets; either deep or shallow medially vaguely defined, basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite strongly produced; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines.

Note. Identifications of both species were based on personal correspondences with Jyrki Muona.

Key to the species of *Macroscython*

1 Dorsum lighter; rami shorter. ..... ***Macroscython coomani* Fleutiaux, 1933**

– Dorsum darker; rami elongate. .... ***Macroscython granulosus* sp.nov.**

Macroscython coomani Fleutiaux, 1933 (Fig. 124)

Material examined. One specimen was available for study: "LAOS centr, 27.IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150m, N 18° 16.1 E 103° 10.9, M. Strba & R. Hegovits leg." / "Macroscython coomani, Fleutiaux 1933, J. Muona Det. 2014" (underlined) (JMC).

Redescription. Length, 8.00 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; head and pronotum dark brown; elytra, venter, antennae and legs medium reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 124).

Head: Very closely punctate to rugose, subspherical; frons convex; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, extends as long as 2/3 the length of its body. Rami shorter, arising apically from each antennomere.

Pronotum: Surface dull, rugose to granulose; wider than long, with moderate, sharp hind angles; parallel-sided; disc convex; base sinuous; short carina present above scutellum.

Scutellum: Shiny, short, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices flattened to slightly elevated with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III; metathoracic tarsomere IV excavate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with very short, yellowish recumbent setae; hypomeron with shallow medially vaguely defined, basally open lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Shorter antennal rami and lighter coloration will distinguish *M. coomani* from *M. granulosus*.

Distribution. A very rare eucnemid species previously taken in Vietnam. The species was found for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

***Macroscython granulosus* sp.nov.** (Fig. 125)

Type material. Male holotype: "LAOS, Louangnamtha pr., 21°09′N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." / "HOLOTYPE, *Macroscython*, *granulosus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Paratypes: 8, from the following localities: LAOS: 1, "LAOS c., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4.–1.5.1998, alt. 600 m, N18°22.3′, E105°09.1′ GPS, E. Jendek & O. Šauša lgt." (GERP); 1, "Laos south, Chamasak prov., Bolaven Plateau, 10–18.IV.1999, Route (no. 23) Pakse – Paksong, BAN ITOU env., (km.35), alt. 800 m, N15°10.4′, E106°05.8′ (GPS), E. Jendek & O. Šauša leg." (GERP); 1, "LAOS-N (Oudomxai), 1–9.v.2002, ~1100m, 20°45′N 102°09′E, OUDOM XAI (17 km NEE), Vít Kubáň leg." (GERP); 1, "LAOS-N (Louangphrabang), 11–21-v.2002, 19°35′N 101°58′E, THONG KHAN, ~750m, Vít Kubáň leg." / (male aedeagus glued on mounting board) (JMC); 1, "LAOS, BOLIKHAMSAI PR., BAN NAPE ENV., 100–400 m, 18°20′N 105°08′E, 7–16 v 2004, LEG: E. JENDEK/ O. SAUDA" (AAC); THAILAND: 1, "Thai 17–24/6.1991, DCI CHIANG DAO mts., 19°25′N 98°52′ E, lgt. D. Král 1000 m" (GERP); 1, "NV THAI, Cheng Dao, Ban San Pakia, 5–10.v.2004, 1000 m, S. Bilý leg." (AAC); 1, "Phu Ru NP (900m alt.), Loei P., NE, Thai. 26–30.IV.2006, Takakuwa, M. leg." / "Wataru Suzuki collection, Tokyo 12.VIII.2013" (green label) (WSC).

Each specimen labeled: "PARATYPE, *Macroscython*, *granulosus*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. Paratypes are deposited in AAC, GERP, JMC and WSC.

Description. Male holotype: Length, 10.00 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark reddish-brown to dark brown; antennae and legs dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 125).

Head: Surfaces granulose, subspherical; frons convex; surface dull; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, extends as long as 2/3 the length of its body; each ramus elongate, 3/4 the length compared to the next ramus; antennomere XI elongate.

Pronotum: Surface dull, granulose; wider than long, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous.

Scutellum: Somewhat shiny, closely punctate oblong, sub-triangular and distally rounded.

Elytra: Strongly striate; interstices elevated with close, dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Sparsely punctate, with very short, yellowish recumbent setae; hypomeron with shallow medially vaguely defined, basally open lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. Seven male and one female paratypes were examined. The paratypes measured 7.00–11.25 mm long. Four males were slightly shorter than the holotype. The other two are slightly larger than the holotype. Length of one male is subequal to that of the holotype. The female is much larger and more robust compared to the holotype, measuring 12.00 mm long and 3.25 mm wide. Female antennae are strongly serrate. Coloration varied a little. One specimen have a medium reddish-brown colored elytra, while all others have a more darker coloration, similar to the pronotum. There are no variations in exoskeletal structures among these paratypes in relation to the holotype.

Etymology. The specific epithet, *granulosus* is derived from the Latin word '*granulos*' for its granulose surfaces of the pronotum.

Differential diagnosis. Darker coloration along with elongate rami of the antennae will distinguish *M. granulosus* from *M. coomani*.

Distribution. A rare new eucnemid species have been taken in both Laos and Thailand.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. All adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Pseudoisarthrus gen.nov.

Type species. *Pseudoisarthrus annamensis* sp.nov., designated here.

Diagnosis. Adult *Pseudoisarthrus* superficially resemble the Nearctic genus *Isarthrus*, but differ in the structure of the antennae, that being short and quadrate in the new group and longer than wide in *Isarthrus*. The antennal grooves are medially undefined in

Pseudoisarthrus and well defined in *Isarthrus*. Metathoracic coxal plates are medially more than 6.00 times wider than laterally in *Pseudoisarthrus* and medially 3.00–6.00 times wider than laterally in *Isarthrus*. Tarsal claws are basally toothed in *Pseudoisarthrus*, simple in *Isarthrus*. The combinations of these features will also distinguish the new group from any other previously described groups within this large and speciose tribe.

Description. Male. Body elongate, approximately four times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus with elongate setae. Antennae tubular, filiform with 11 antennomeres, setose; scape four times longer than pedicel; pedicel globular, shorter than antennomere III; antennomere III longer than antennomere IV; antennomeres IV–X subequal in lengths, quadrate and rounded in cross sectional view; antennomere XI slightly longer than X. Compound eye round, well developed, small. Antennal groove present in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically trilobed, less than 2.50 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles bidentate; right mandible unidentate. Maxillary and labial palpus concealed behind mandibles. Labrum concealed.

Pronotum: Subparallel, convex and setose. Basal 2/3 subparallel-sided, apical 1/3 arcuate. About as long as wide. Lateral pronotal ridge entire, slightly sinuate near apical 1/3. Disc convex; base sinuous.

Scutellum: Longer than wide, sub-triangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Disc with slight indications of striae. Humeral region strongly striate. Interstices slightly elevated.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia apically rounded, flattened, setose with one apical spur. First prothoracic tarsi partially concealed by prothoracic tibia, with straight sex combs covering nearly entire length of segment. Lateral side of mesothoracic and metathoracic tibiae with setae and transverse rows of tiny spines. Metathoracic tarsi, including claws as long as the tibia. First metathoracic tarsi shorter than combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, wider than III. Metathoracic tarsi V elongate with basally toothed claws. Tarsal formula 5-5-5.

Venter: With elongate setae. Prothoracic sternal peg basally broad, short. Notosternal suture about as long as the hypomeral base. Hypomeron with medially undefined basally open, shallow lateral antennal grooves. Epipleura not grooved. Metathoracic episterna parallel-sided. Metathoracic coxal plate medially more than 6.00 times wider than laterally, caudally angulated. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite caudally rounded.

Aedeagus (Fig. 128): Elongate, dorsoventrally flattened and laterally compressed; median lobe free, unsclerotized with shallowly notched apex; lateral lobes apically rounded and unsclerotized; lateral lobes laterally toothed, internally hollowed and longer than median lobe; basal piece elongate, dorsally open, apically narrowed and rounded.

Etymology. The generic name is a combination of the stem '*pseudo*' for resembling and the root '*isarthrus*' for a eucnemid genus, in which the new group superficially resembles the Nearctic eucnemid group in form. Gender: masculine.

***Pseudoisarthrus annamensis* sp.nov.** (Figs 126–128)

Type material. Male holotype: "LAOS C., Bolikhamsai pr., BAN NAPI env., 7–16.V.2004, alt. 400 ±100m, 18°20′N, 105°08′E, E. Jendek & O. Sausa leg." / "HOLOTYPE, *Pseudoisarthrus*, *annamensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype, with same label data as holotype: / "ALLOTYPE, *Pseudoisarthrus*, *annamensis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype were transferred from GERP to BMNH.

Paratypes: 43, from the following localities: 2, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 38, "LAOS C., Bolikhamsai pr., BAN NAPI env., 7–16.V.2004, alt. 400 ±100m, 18°20′N, 105°08′E, E. Jendek & O. Sausa leg." (BMNH, FSCA, GERP, JMC, WSC and ZSM); 3, "LAOS, BOLIKHAMSAI PROV., BAN NAPE ENV., 7–16 v 2004, 400 m, 18°20′N 105°08′E, LEG: E. JENDEK/ O. SAUSA" (AAC).

Each specimen labeled: "PARATYPE, *Pseudoisarthrus*, *annamensis*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in AAC, BMNH, FSCA, GERP, JMC, NHMB, WSC and ZSM.

Description. Male holotype: Length, 4.00 mm. Width, 1.50 mm. Body color dark brown-black (Fig. 126).

Head: Very closely punctate, almost rugose; surface dull; eyes slightly protuberant; frons with slight depression above antennal insertions.

Antennae: Tubular, filiform, reaching about 1/3 the length of the body, just beyond the hind angles; reddish-brown.

Pronotum: Dark brown-black, dull with short, yellow recumbent setae; surface with closely spaced punctations; slightly rugose; about as long as wide, with moderate hind angles; basal 2/3 subparallel-sided, apical 1/3 arcuate; disc convex.

Elytron: Convex, shiny with short, yellow recumbent setae, dark brown-black. Length 3.25 mm. Width 0.75 mm at humeri. Humeri striate. Disc slightly striate. Interstices slightly elevated, punctate.

Legs: Femur, tibiae and tarsi reddish-brown and somewhat shiny. Surfaces shallowly punctate; with short, yellow recumbent setae.

Venter (Fig. 127)**:** Dull to somewhat shiny, dark brown-black, surface with short, yellow recumbent setae; closely, shallowly punctate.

Allotype: Length 4.75 mm, width 1.50 mm; same as male except antennae are shorter, barely reaching the hind angles of the pronotum. Antennomeres IV–X each wider than long.

Variation. Forty-three adult paratypes were examined. Thirty-five male paratypes varied in length from 3.25–5.00 mm. Eight female paratypes varied in length from 3.75–5.00 mm. Females are slightly larger than males. Very little to no variations were observed while examining these paratypes. All specimens are structurally consistent. Some male specimens exhibit some reddish coloration on the elytra and have surmised these specimens were not quite sclerotized as compared to other specimens were in the series.

Etymology. The specific epithet is derived from a geological feature in Laos, the Annamite Highlands in which the species was collected.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. An uncommon, endemic eucnemid species known from a single locality within the Borikhamxay province near Ban Nape in central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest.

Spinifornax Fleutiaux, 1926

Diagnosis. Macraulacini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; basally open, deep, lateral antennal grooves well developed, usually with smooth surfaces; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates narrowing laterad; evenly rounded apex of last ventrite; dehiscent elytral apex; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; male aedeagus dorsoventrally compressed, with laterally attached secondary lobes; median lobe simple, moderately and narrowly bifurcate apically; flagellum simple.

Note. Loaned types of *Fornax carissae* Fleutiaux, 1930 and *Fornax vitalisi* Fleutiaux, 1918 were examined from the MNHN. Identification of several species was based on the translated, interpreted descriptions from Bonvouloir (1872) and Fleutiaux (1899, 1918). New species determinations were based on failure to match these species against any translated, interpreted description of other "*Fornax*" species in the region.

Key to the species of *Spinifornax*

1 Elytral striae shallowly and weakly indicated. **2**
– Elytral striae strongly indicated. ..... ***Spinifornax striatus*** **sp.nov.**

2 Pronotum gradually narrowing craniad. **3**
– Basal 3/4 of pronotum parallel-sided. ..... ***Spinifornax salvazai*** **(Fleutiaux, 1918)**

3 Species usually unicolored. **4**
– Species bicolored. **6**

4 Species unicolored black. **5**
– Species mostly unicolored orange. ..... ***Spinifornax superbus*** **(Bonvouloir, 1872)**

5 Antennomere III shorter than IV. ..... ***Spinifornax carissae*** **(Fleutiaux, 1930), comb.nov.**
– Antennomere III slightly longer than IV. ..... ***Spinifornax dubius*** **(Fleutiaux, 1899), comb.nov.**

6 Venter bicolored. **7**
– Venter entirely unicolored orange. ... ***Spinifornax nigridorsus* sp.nov.**
7 Ventral areas of head and pronotum black, abdominal sterna orange. ... . ***Spinifornax pacholatkoi* sp.nov.**
– Ventral areas of head and pronotum orange, abdominal sterna blackish. ..... ***Spinifornax vitalisi* (Fleutiaux, 1918)**

***Spinifornax carissae* (Fleutiaux, 1930) comb.nov.** (Fig. 129)

Fornax carissae Fleutiaux, 1930: 153–154. Presence of dehiscent elytral apices places the species in *Spinifornax*, rather than maintaining its current placement in *Fornax*.

Material examined. Five specimens were available for study: 1, "LAOS Bolikhamsai pro., 1998–4–18...1–5 600 asl, BAN NAPE Kaew Nua pass, Jendek & Sausa leg." (JMC); 3, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." (NHMB); 1, "LAOS-CE, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." (GERP).

Redescription. Length, 8.00–12.00 mm. Width, 2.00–3.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black; antennae black, except basal two segments reddish; Femur and tibiae black; tarsi infuscate reddish; head, pronotum and elytra clothed with short, brownish recumbent setae (Fig. 129).

Head: Closely punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to elytral humeri; antennomeres III shorter than IV; antennomere IV longer than both II and V; antennomere V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowed craniad; disc convex, with short median groove above scutellum; base sinuous.

Scutellum: Punctate, oblong, quadrate and distally rounded.

Elytra: Shallowly striate; interstices slightly elevated, with sparse and shallow punctations; dehiscent.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with whitish recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Unicolored black coloration, along with shorter antennomere III in relation to antennomere IV will distinguish *S. carissae* from all other known *Spinifornax* species in Laos.

Distribution. A very rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. BEESON (1941) reported the species bores in the decaying wood of *Carissa spinarum* L. (Apocynaceae). All adults were taken from a lowland semi-evergreen forest.

Spinifornax dubius (Fleutiaux, 1899) comb.nov. (Fig. 130)

Fornax dubius Fleutiaux, 1899: 229–230. Presence of dehiscent elytral apices places the species in *Spinifornax*, rather than maintaining its current placement in *Fornax*.

Material examined. Six specimens were available for study: 1, "LAOS, Louangnamtha pr., NAMTHA → Muang Sing, 21°09′N 101°19′E, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (JMC); 1, "Laos, Louangnamtha pr., 21°09′N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (GERP); 1, "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." (NHMB); 2, "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1500 m, 21°41′N 102°06′E, P. Pacholátko leg." (NHMB).

Description. Length, 6.50–9.50 mm. Width, 1.50–2.00 mm. Body subcylindrical, elongate, slightly attenuated and tapering towards the elytral apex; uniformly black; antennae dark brownish-black, except basal two segment infuscate reddish; legs dark brown; tibiae dark reddish-brown; head, pronotum and elytra clothed with brownish recumbent setae (Fig. 130).

Head: Closely and shallowly punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomere IV longer than II; antennomeres IV–XI each subequal, longer than wide.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Slightly rugose, narrow, oblong, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices flattened, with sparse and shallow punctations; dehiscent.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Length of antennomere III in relation to IV will distinguish *S. dubius* from *S. carissae*, that being shorter in *S. carissae* and subequal in *S. dubius*. Unicolored black coloration of the dorsum and venter will distinguish *S. dubius* from all other *Spinifornax* species in Laos.

Distribution. A rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

Spinifornax nigridorsus sp.nov. (Fig. 131)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Spinifornax*, *nigridorsus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.
Paratype. 1, from the following locality: "N. Vietnam, vii.1999, Vinh Phu prov., Mt. Tam Dao, local collector" / "Wataru Suzuki Collection, Tokyo 12.VIII.2013 (green label)" (WSC).
Specimen labeled: "PARATYPE, *Spinifornax*, *nigridorsus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on each label) [yellow printed label]. Paratype is deposited in WSC.

Description. Male holotype: Length, 10.50 mm. Width, 3.00 mm. Body elongate and tapering towards the elytral apex; dorsum and head unicolored black; venter and legs unicolored orange; antennomeres I, II and apical half of XI infuscate orange; remaining antennal segments black; head, pronotum and elytra clothed with short, black decumbent setae; venter and legs clothed with short, orange recumbent setae (Fig. 131).

Head: Shallowly punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Weakly serrate, nearly filiform, reaching about 1/3 the length of the body, close to the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV longer than II; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Shallowly punctate, widely spaced; surface shiny; slightly longer than wide, with short hind angles; sides gradually arcuate towards apex; disc simple; base sinuous with a pair of circular foveae above scutellum.

Scutellum: Surface shiny; shallowly punctate, sub-trapezoid and distally truncated.

Elytra: Faintly indicated striae present; interstices slightly elevated, shallowly punctate; surface shiny.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; lateral surfaces of mesothoracic and metathoracic tibiae with transverse rows of spines; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V short with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One male paratype was examined. The paratype measured 12.00 mm long, a little longer than the holotype. The paratype is slightly wider than the holotype, measuring 3.25 mm wide. The paratype differs from the holotype based on the coloration of the pronotum. The orange coloration is present along the lateral side and at the base of the pronotum, but black on the rest of the surface. The pronotum is unicolored black at the dorsum on the holotype. There are no color variations among these two specimens on the venter. Antennae are slightly longer on the paratype compared to the holotype.

Etymology. The specific epithet, *nigridorsus* is derived from the combination of two words '*nigri*' for black and '*dorsus*' for the dorsum of the beetle.

Differential diagnosis. Gradually arcuate pronotum will distinguish *S. nigridorsus* from *S. salvazai*. Unicolored black dorsum will further separate this species from both *S. superbus* and *S. vitalisi*. Orange colored venter will distinguish *S. nigridorsus* from *S. carissae* and *S. dubius*. Faintly indicated elytral striae will distinguish the species from *S. striatus*. Orange colored ventral areas of head and pronotum will distinguish *S. nigridorsus* from *S. pacholatokoi*.

Distribution. A very rare eucnemid species known from a single locality within the Houaphanh province of Northeastern Laos and also a single locality in Vietnam.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

***Spinifornax pacholatkoi* sp.nov.** (Fig. 132)

Type material. Male holotype: "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1500 m, 21°41′N, 102°06′E, P. Pacholátko leg." / "HOLOTYPE, *Spinifornax*, *pacholatkoi*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Male holotype: Length, 6.50 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black, except abdominal sterna orange; antennomeres I and II dark infuscate reddish, remaining antennal segments black; legs dark brown; head, pronotum and elytra clothed with short, brown recumbent setae (Fig. 132).

Head: Punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region evenly rounded, less than 2.00 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Filiform, reaching just beyond the hind angles of the pronotum; antennomeres III–XI each subequal, longer than wide.

Pronotum: Closely punctate; laterally rugose; surface shiny; wider than long, with moderate hind angles; lateral side narrowing craniad; disc simple; base sinuous, slightly depressed above scutellum.

Scutellum: Surface shiny; shallowly punctate, sub-triangular and distally rounded.

Elytra: Faintly indicated striae present; interstices slightly elevated, shallowly punctate; surface shiny; dehiscent.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Shallowly punctate, surface shiny, sparsely setose; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *pacholatkoi*, is named after P. Pacholátko, collector of the new species.

Differential diagnosis. Gradually narrowing pronotum will distinguish *S. pacholatkoi* from *S. salvazai*. Unicolored black dorsum will further separate this species from both *S. superbus* and *S. vitalisi*. Orange colored abdominal sterna will distinguish *S. pacholatkoi* from *S. carissae* and *S. dubius*. Faintly indicated elytral striae will distinguish the species from *S. striatus*. Black colored ventral areas of head and pronotum will distinguish *S. pacholatkoi* from *S. nigridorsus*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in the Phongsaly province of Northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

***Spinifornax salvazai* (Fleutiaux, 1918)** (Fig. 133)

Fornax salvazai Fleutiaux, 1918: 178–179

Material examined. 5 exx. Five specimens were available for study: 1, "LAOS N. 13–24.5.1997, 15 km NW Louang Namtha, N21°07.5′ E101°21.0′, alt. 750 ±100 m, O. Šauša leg." (GERP); 2, "Laos-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan; Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 10.00–13.00 mm. Width, 3.00–4.00 mm. Body subcylindrical, elongate; head, antennae, parts of pronotum and elytra variably unicolored black; lateral and basal area of pronotum, elytral disc, venter and legs variably unicolored reddish-orange; head, pronotum and elytra clothed with short, black and orange recumbent setae (Fig. 133).

Head: Shallowly punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Filiform, reaching about 1/3 the length of the body, beyond the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV longer than II; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Shallowly punctate, widely spaced; surface shiny; slightly longer than wide, with short hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc simple; base sinuous.

Scutellum: Surface shiny; shallowly punctate, sub-trapezoid and distally truncated.

Elytra: Faintly indicated striae near sutural area present; interstices flattened, shallowly punctate; surface shiny.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V short with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 1.20–2.50 times wider than laterally.

Differential diagnosis. Shape of the pronotum will distinguish *S. salvazai* from all other *Spinifornax* species in Laos.

Distribution. A rare eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

***Spinifornax striatus* sp.nov.** (Fig. 134)

Type material. Female holotype: "LAOS-CE, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." / "HOLOTYPE, *Spinifornax*, *striatus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 12.50 mm. Width, 3.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; dark reddish-brown; antennae, legs and tibiae dark reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 134).

Head: Closely punctate to rugose, subspherical; frons convex, with median fovea above frontoclypeal region; interantennal carina interrupted in middle; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to elytral humeri; antennomeres III as long as the combined lengths of IV and V; antennomere IV longer than II; antennomere V slightly shorter than IV and VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and deeply punctate, laterally rugose; surface somewhat shiny; as long as wide, with moderate hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex; base sinuous.

Scutellum: Punctate, oblong, sub-triangular and distally rounded.

Elytra: With striae; interstices elevated, with closely spaced and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *striatus* is derived from strongly indicated striae present on the elytra.

Differential diagnosis. Strongly indicated elytral striae will distinguish *S. striatus* from all *Spinifornax* species in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Borikhamxay province of central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Spinifornax superbus (Bonvouloir, 1871) (Fig. 135)

Fornax superbus Bonvouloir, 1871: 350–352; plate 16, Fig. 5

Material examined. One specimen was available for study: "LAOS, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 15.50 mm. Width, 4.00 mm. Body subcylindrical, elongate; entirely reddish-orange; antennomeres I–II reddish-orange, antennomeres III–XI black; head, pronotum and elytra clothed with short, orange recumbent setae (Fig. 135).

Head: Shallowly punctate, subspherical; frons convex; surface shiny; apical margin of frontoclypeal region rounded, less than 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Filiform, reaching about 1/3 the length of the body, to the hind angles of the pronotum; antennomere III slightly longer than IV; antennomeres IV longer than II; antennomeres IV–X each subequal, longer than wide; antennomere XI as long as X.

Pronotum: Shallowly punctate, widely spaced; surface shiny; longer than wide, with short hind angles; lateral sides gradually arcuate; disc simple; base sinuous.

Scutellum: Surface shiny; shallowly punctate, sub-triangular and distally rounded.

Elytra: Faintly indicated striae present; interstices slightly elevated, shallowly punctate; surface shiny.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V short with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Largely orange coloration of the species will distinguish *S. superbus* from all other *Spinifornax* species in Laos.

Distribution. A very rare, widespread eucnemid species have been found in Indonesia, Laos, Malaysia and Vietnam. In Laos, *S. superbus* has been taken at Sen-Kam ("Haut-Mékong") (FLEUTIAUX 1923), currently in Phongsaly province and most recently in cental part of the country.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. BEESON (1941) reported the species bores in the wood of *Macaranga denticulata* (Blume) (Euphorbiaceae). A single adult was taken from a lowland semi-evergreen forest.

***Spinifornax vitalisi* (Fleutiaux, 1918)** (Fig. 136)

Fornax vitalisi Fleutiaux, 1918: 178

Material examined. One holotype was available for study: "Laos, Nape, 11 Oct. 15" / "Type" / "Fornax vitalisi Fleut., type, Collection FLEUTIAUX" (MNHN).

Redescription. Length, 8.00 mm. Width, 2.25 mm. Body subcylindrical, elongate; head, pronotum and scutellum orange; elytra black; venter dark brownish-black; antennomeres I–III orange, antennomeres IV–XI black; legs dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 136).

Head: Shallowly and densely punctate; frons subspherical, convex; surface shiny; apical margin of frontoclypeal region rounded, less than 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Filiform, reaching about 1/3 the length of the body, just beyond the hind angles of the pronotum; antennomere III shorter than IV; antennomeres IV longer than II; antennomeres IV–X each subequal, longer than wide; antennomere XI as long as X.

Pronotum: Shallowly and densely punctate; surface shiny; slightly longer than wide, with short hind angles; lateral sides gradually narrow apically; disc simple; base sinuous.

Scutellum: Surface shiny; shallowly punctate, sub-triangular and distally rounded.

Elytra: Faintly indicated striae present; interstices slightly elevated, shallowly and densely punctate; surface shiny.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V short with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Gradually arcuate pronotum will distinguish *S. vitalisi* from *S. salvazai*. Bicolored dorsum will further separate *S. vitalisi* from *S. carissae*, *S. dubius*, *S. nigridorsus*, *S. pacholatkoi* and *S. superbus*. Faintly indicated elytral striae will distinguish the species from *S. striatus*.

Distribution. A very rare eucnemid is a precintive species in Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Serrifornax Fleutiaux, 1926

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and more or less than twice as wide as the distance between antennal sockets; well developed, often wide basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either produced or rounded; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with hairs and transverse rows of spine combs; male aedeagus dorsoventrally compressed, with laterally attached secondary lateral lobes; median lobe simple, moderately and narrowly bifurcate apically; lateral lobes simple, entire; flagellum simple.

Note. Identification of both species were based on the translated, interpreted diagnostic key from Fleutiaux (1947).

Key to the species of *Serrifornax*

1 Dorsum with sparse vestitures; basally open lateral antennal grooves with well defined medial ridge. ..... ***Serrifornax brevicollis* Fleutiaux, 1947**

– Dorsum with dense vestitures; basally open lateral antennal grooves with medially undefined ridge. ..... ***Serrifornax tumidicollis* (Redtenbacher, 1867)**

Serrifornax brevicollis Fleutiaux, 1947 (Fig. 137)

Material examined. One specimen was available for study: "LAOS: S-Udomxai prov., Pak Beng, 450m, N 19°53′37″, E 101°07′51″, 18–27.v.2001, Jiří Kolibáč leg." (NHMB).

Redescription. Length, 7.50 mm. Width, 2.00 mm. Body subcylindrical, elongate; entirely medium reddish-brown, including antennae and legs; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 137).

Head: Deeply and closely punctate, subspherical; frons with circular fovea above frontoclypeal region; surface dullish; apical margin of frontoclypeal region rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Serrate, short, reaching about 1/3 the length of the body; antennomere III as long as IV; antennomeres IV longer than II; antennomeres IV–X, gradually shorter, longer than wide; antennomere XI as long as X.

Pronotum: Granulose; surface dull; wider than long, with moderate hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc simple, with very shallow, delicate groove; base sinuous, with pair of deep circular foveae at either side of scutellum.

Scutellum: Surface shiny; shallowly punctate, sub-triangular and distally rounded.

Elytra: Striae present; interstices elevated, shallowly punctate; surface shiny.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with basally open, wide, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially more than 6.00 times wider than laterally.

Differential diagnosis. Presence of medially well defined basally opened lateral antennal grooves, along with sparse vestitures on dorsum will distinguish *S. brevicollis* from *S. tumidicollis*.

Distribution. A very rare eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a dry evergreen forest.

***Serrifornax tumidicollis* (Redtenbacher, 1867)** (Fig. 138)

Fornax tumidicollis Redtenbacher, 1867: 91

Material examined. Three specimens were available for study: 1, "LAOS, Umg. Vientiane, III.–VI.1963" / "Fornax, (Serrifornax), tumidicollis, Redt., A. Cobos det. 1,965" (genus, subgenus, species, author and year handwritten) (ZSM); 1, "Laos, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~ 200 m, V. Kubáň leg." (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mts., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 11.00–17.00 mm. Width, 3.00–4.00 mm. Body subcylindrical, elongate; entirely dark brown, including antennae and legs; some specimens exhibits a metallic blue reflection on elytra; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 138).

Head: Deeply and closely punctate, often rugose, subspherical; frons often with delicate median groove extending down to frontoclypeal region; surface shiny; apical margin of frontoclypeal region rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate.

Antennae: Strongly serriform, reaching about 1/2 the length of the body in females, 3/4 the length of the body in males; antennomere III as long as IV; antennomeres IV longer than II; antennomeres IV–VI each subequal, longer than wide; antennomere VII–XI each slightly longer VI.

Pronotum: Shallowly punctate, widely spaced; surface shiny; lateral sides more granulose; slightly wider than long, with moderate hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc simple, with delicate groove extending from base to near middle; base sinuous, with pair of deep circular foveae.

Scutellum: Surface shiny; shallowly punctate, sub-trapezoid and distally rounded.

Elytra: Striae present; interstices elevated, shallowly punctate; surface shiny.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV bilobed and excavated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Shallowly punctate, surface shiny; hypomeron with medially undefined, basally open, shallow, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially more than 6.00 times wider than laterally.

Differential diagnosis. Presence of medially vaguely defined basally opened lateral antennal grooves, along with dense vestitures on dorsum will distinguish *S. tumidicollis* from *S. brevicollis*.

Distribution. A rare, widespread eucnemid species has been found in Indonesia, Laos, Malaysia, Philippines, Thailand and Vietnam. In Laos, *S. tumidicollis* have been taken at Pak-Lay (currently Xayabury prov.) (Fleutiaux 1923) and most recently in several northern Laotian provinces.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

Ceratus Bonvouloir, 1871

Diagnosis. Macraulacini, apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; well developed basally open lateral antennal grooves present; antennomeres II and III short, subequal, together shorter than IV; male prothoracic tarsomere I simple, with hidden curved basal sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite rounded; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs.

Note. The only known published identification key for the group covers species known from the Philippines Fleutiaux (1926). Both species failed to key out from the diagnostic key in the publication. Nearly all *Ceratus* species are present in the Indonesia, Bornean Malaysia and Papua New Guinea, with a single species present in Seychelles. New species identification was made when each specimen failed to match with any interpreted published descriptions of other species from the region. These two species are the first to be recorded in mainland Asia.

Key to the species of *Ceratus*

1 Antennae strongly, assymetrically serrate; pronotum parallel-sided. .... ***Ceratus antennatus* Otto, 2015**

– Antennae weakly serrate; pronotum laterally arcuate. .... ***Ceratus phoupaniensis* sp.nov.**

***Ceratus antennatus* Otto, 2015** (Fig. 139)

Material examined. One specimen was available for study.: "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC).

Description. Length, 5.00–5.50 mm. Width, 1.50–1.75 mm. Body subcylindrical, moderately elongate, tapering towards the elytral apex; uniformly black; antennae dark brown, except antennomeres II and III infuscate reddish; legs dark reddish-brown; head, pronotum and elytra clothed with short, white recumbent setae (Fig. 139).

Head: Very closely punctate, subspherical; frons convex, with very delicate median carina; surface shiny; frontoclypeal region with interantennal carina at base; apical margin of frontoclypeal region feebly trilobed, more than 2.50 times wider than base; mandibles stout.

Antennae: Strongly, asymmetrically serrate; nearly as long as the length of the body; setose; antennomere II and III short, combined shorter than IV; antennomeres IV weakly serrate, slightly shorter than V; antennomere V serrate, slightly shorter than VI; antennomeres VI–X each strongly and asymmetrically serrate, subequal and longer than wide; antennomere XI elongate, slightly longer than X.

Pronotum: Very closely punctate, almost rugose; surface shiny; slightly longer than wide, with short, sharp hind angles; laterally parallel-sided, rounded anteriorly; disc simple, convex; base sinuate, with short, median groove above scutellum.

Scutellum: Shallowly punctate, shining, oblong, sub-triangular and distally rounded.

Elytra: Very shallowly striate; interstices flattened; surfaces very closely punctate.

Legs: First tarsomere shorter than the combined lengths of the remaining 4 on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomeres IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Closely punctate, with short, recumbent white setae; hypomeron with well-developed basally opened lateral antennal grooves, widest near middle; hypomeral pit present near anterior end of antennal groove; metathoracic episternum caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Strongly, assymetrically serrate antennae and parallel-sided pronotum will distinguish *C. antennatus* from *C. phoupaniensis*.

Distribution. A recently described, very rare eucnemid species was previously taken in Thailand (Otto 2015). The species was found for the first time in Laos.

Ecoregion(s). Sourthern Annamites montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Ceratus phoupaniensis sp.nov. (Fig. 140)

Type material. Male holotype: "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Ceratus*, *phoupaniensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype Holotype is deposited in NHMB.
Paratype: 1, from the following locality: "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104°01′E, Ban Saluei → Phou Pane Mts., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "PARATYPE, *Ceratus*, *phoupaniensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Paratype is deposited in NHMB.

Description. Male holotype: Length, 5.00 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black; antennae black, except antennomere II reddish-brown; femur and tibiae black, except joints infuscate reddish-brown; tarsi medium brown to black; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 140).

Head: Closely punctate, subspherical; frons convex; interantennal carina complete; surface dullish; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres IV–X, reaching just beyond hind angles of pronotum; antennomeres II and III short, combined shorter than IV; antennomere IV longer than V; antennomeres V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate to rugose; surface dullish; slightly longer than wide, with moderate hind angles; lateral sides sinuous, gradually narrowed craniad; disc convex; base sinuous, with a pair of divergent elongate fovea above scutellum.

Scutellum: Punctate, shiny, quadrate and distally rounded.

Elytra: Weakly striate; interstices slightly elevated; surfaces transversely rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, lateral antennal grooves; metathoracic episternum caudally widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variations. One male paratype was examined. The paratype is longer and wider than the holotype, measuring 6.00 mm long and 2.00 mm wide. Exoskeletal structures between the paratype and holotype are essentially similar.

Etymology. The specific epithet, *phoupaniensis* is named after the Phou Pane mountain range in Northeastern Laos in which the species have been collected.

Differential diagnosis. Weakly serrate antennae and arcuate laterally arcuate pronotum will distinguish *C. phoupaniensis* from *C. antennatus*.

Distribution. A very rare, endemic eucnemid species known from two nearby localities within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

Fornax Laporte, 1835

(=*Filifornax* Fleutiaux, 1945: 188)
(=*Monilifornax* Fleutiaux, 1945: 189)

Diagnosis. Macraulacini, apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; well developed basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially more than 6.00 times wider than laterally; elytral epipleura basally grooved or evenly punctate; last visible ventrite either strongly produced, rounded or truncated; tarsal claws basally toothed; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; male aedeagus dorsoventrally compressed, without secondary lateral lobes; median lob simple, with moderately and narrowly bifurcate apices; lateral lobes simple, entire, flagellum simple.

Note. Some of the identifications were made through interpreting translated keys from Bonvouloir (1872) and Fleutiaux (1926, 1947). These identifications were verified through comparing some specimens against descriptions provided by these authors. Remaining identifications were made possible after breaking down a list of all known species from the region and grouping them. These groupings were based on key diagnostic features (*i.e.* presence versus absence of interantennal carina) found in each species descriptions from a number of references. These information were compared against any unidentified specimens. New species identification was made, when some specimens failed to match with any interpreted published descriptions of the species known from the region. Authoratively identified specimens, including some types were loaned from the MNHN to verify identity of some species.

Key to the species of *Fornax*

1 Tarsal claws basally toothed. **2**
– Tarsal claws simple. **4**

2 Antennomere III longer than IV. **3**
– Antennomere III as long as IV. ..... ***Fornax collega*** **Bonvouloir, 1872**

3 Last abdominal tergite strongly produced. .....
..... ***Fornax subacuminatus*** **Bonvouloir, 1872**
– Last abdominal tergite rounded. ..... ***Fornax vestitus*** **Fleutiaux, 1896**

4 Interantennal carina complete. **5**
– Interantennal carina interrupted in middle. **12**

5 Form elliptical. **6**
– Form subcylindrical. **8**

6 Elytra without indications of striae. **7**
– Elytra with shallowly indicated to near indistinct striae. ..... ***Fornax concolor*** **(Blanchard, 1853)**

7 Elongate setae more apparent on base of pronotum and elytra. ..... ***Fornax astriatus*** **sp.nov.**
– Elongate setae not apparent on base of pronotum and elytra. ..... ***Fornax nicotianae*** **(Fleutiaux, 1895)**

8 Frons with delicate median carina. **9**
– Frons without delicate median carina. **11**

9 Pronotum gradually narrowing craniad. **10**
– Pronotum subparallel-sided. ..... ***Fornax carinicollis*** **sp.nov.**

10 Pronotum much longer than wide; surface shallowly punctate. ..... ***Fornax incisus*** **Bonvouloir, 1872**
– Pronotum slightly longer than wide; surface moderately punctate. ..... ***Fornax oudomxaiensis*** **sp.nov.**

11 Pronotum subparallel-sided, arcuate. ..... ***Fornax morosus*** **Bonvouloir, 1872**
– Pronotum strongly narrowing craniad. ..... ***Fornax phoupaniensis*** **sp.nov.**

12 Antennomere V as long as VI. **13**
– Antennomere V shorter than VI. **14**

13 Pronotum longer than wide; dorsum dark brown-black. ..... ***Fornax attenuatus*** **Fleutiaux, 1899**
– Pronotum as long as wide; dorsum black. ..... ***Fornax brancuccii*** **sp.nov.**

14 Form subcylindrical. **15**
– Form elliptical. ..... ***Fornax rufoantennatus*** **sp.nov.**

15 Lateral sides of pronotum basally parallel-sided; antennomere III shorter than combined lengths of IV and V. ..... ***Fornax differens*** **Fleutiaux, 1918**
– Lateral sides of pronotum arcuate; antennomere III as long as combined lengths of IV and V. ..... ***Fornax rotundicollis*** **Fleutiaux, 1929**

Fornax astriatus **sp.nov.** (Fig. 141)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Fornax*, *astriatus*,

Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in the BMNH.
Paratype: 1, from the following locality: "1, "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104°01′E, Ban Saluei → Phou Pane Mts., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB)".
Specimen labeled: "PARATYPE, *Fornax*, *astriatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on each label) [yellow printed label]. Paratype is deposited in NHMB.

Description. Male holotype: Length, 5.25 mm. Width, 1.75 mm. Body elliptical, elongate and tapering towards the elytral apex; black; antennae dark brown-black, except antennomeres I and II dark infuscate reddish; legs dark reddish-brown; tarsi dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae, more apparent on base of pronotum and elytra as well as lateral sides of elytra (Fig. 141).

Head: Closely punctate, subspherical; frons convex; interantennal carina well developed; frontoclypeal region without median carina; surface shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to elytral humeri; antennomere III longer than IV; antennomere IV as long as II; antennomere V longer than IV; antennomeres V–XI each subequal, longer than wide.

Pronotum: Closely punctate; laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides gradually narrowed craniad; disc convex; base sinuous.

Scutellum: Punctate, elongate, sub-triangular and distally rounded.

Elytra: Striae absent; interstices flattened, with dense shallow punctations; humeri slightly rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One male paratype was examined. The specimen measured 5.00 long, shorter than the holotype. There are no structural variations observed between the paratype and the holotype.

Etymology. The specific epithet is derived from a lack of striae on the elytra.

Differential diagnosis. Elongate setae on the base of the pronotum and elytra will distinguish *F. astriatus* from *F. concolor* and *F. nicotianae*.

Distribution. A very rare, endemic eucnemid species known from a single locality within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

Fornax attenuatus Fleutiaux, 1899 (Fig. 142)

Material examined. Four specimens were available for study: 1, "LAOS, Louangnamtha pr., NAMTHA → Muang Sing, 21°09′N 101°19′E, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (JMC); 1, "LAOS, Bolikhamxai pr., N18°16′, E103°11′, 70 km NEE Vientiane, 2–3.vi.1997, 150 m, V. Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1150 m, 21°41′N 102°06′E, P. Pacholátko leg." (NHMB); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 8.00–8.50 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; dark brown-black; antennae, legs and tibiae dark brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 142).

Head: Closely and shallowly punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching just beyond hind angles of pronotum; antennomeres III as long as the combined lengths of IV and V; antennomere IV as long as II; antennomeres V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowed craniad; disc convex; base sinuous, with a pair of circular fovea above scutellum.

Scutellum: Punctate, oblong, quadrate and distally rounded.

Elytra: Without striae, except along suture; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Antennomere V as long as VI will distinguish *F. attenuatus* from *F. differens*, *F. incisus* and *F. rotundicollis*. Simple tarsal claws will further distinguish *F. attenuatus* from *F. subacuminatus* and *F. vestitus*.

Distribution. A very rare eucnemid species previously found in Myanmar. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

***Fornax brancuccii* sp.nov.** (Fig. 143)

Type material. Male holotype: "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" / "HOLOTYPE, *Fornax*, *brancuccii*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Male holotype: Length, 4.50 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black, except base of elytra reddish; antennae dark brown, except antennomeres II and IX–XI dark reddish; legs infuscate reddish to black; tarsi infuscate reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae, more apparent on base of pronotum and elytra as well as lateral sides and sutural areas of elytra (Fig. 143).

Head: Very closely punctate, subspherical; frons convex, with median tubercule above clypeus; interantennal carina absent; frontoclypeal region without median carina; surface dull; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to elytral humeri; antennomere III longer than IV; antennomere IV as long as II; antennomere V longer than IV; antennomeres V–XI each subequal, longer than wide.

Pronotum: Closely punctate; laterally rugose; surface dull; as long as wide, with moderate hind angles; lateral sides gradually narrowed craniad; disc convex; base sinuous, with a pair of circular foveae above scutellum.

Scutellum: Punctate, elongate, quadrate and distally rounded.

Elytra: Indistinctly striate; interstices flattened, with dense shallow punctations; humeri transversely rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum apically wide; elytral epipleurae basally grooved; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *brancuccii* is named in honor of M. Brancucci, who was instrumental in conducting extensive collecting expeditions in Laos.

Differential diagnosis. Simple tarsal claws, along with the shape of the pronotum and distinct pattern of setae on the pronotum and elytra will distinguish *F. brancuccii* from all *Fornax* species in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Houaphanh province of Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

***Fornax carinicollis* sp.nov.** (Fig. 144)

Type material. Female holotype: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~ 600 m, V. Kubáň leg" / "HOLOTYPE, *Fornax*, *carinicollis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 6.00 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres I and II reddish; legs dark brown; tarsi medium brown; head, pronotum and elytra clothed with short, white recumbent setae (Fig. 144).

Head: Very closely punctate, subspherical; frons convex, with circular shallow fovea above frontoclypeal region and median carina; interantennal carina well developed, frontoclypeal region with short median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface somewhat shiny; as long as wide, with moderate, divergent hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with short median carina near base; base with pair of divergent foveae, sinuous.

Scutellum: Punctate, wider, sub-trapezoid and distally rounded.

Elytra: Striae 1–4 present, remaining lateral areas weakly striate to absent; interstices elevated; surfaces transversely rugose to densely punctate.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *carinicollis* is derived from a short, delicate carina present on the vertex which extends down near center of the frons.

Differential diagnosis. Subcylindrical habitus along with the subparallel pronotum, median carina on vertex and middle of frons and presence of interantennal carina will distinguish *F. carinicollis* from other *Fornax* species present in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Borikhamxay province of eastern Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Fornax collega Bonvouloir, 1872 (Fig. 145)

Material examined. Five specimens were available for study: 1, "N LAOS, 13–24.V.1997, 15 km NW Luang Namtha, N 21°07.5′ E 101°21.0′, M. Strba & R. Hergovits leg." (JMC); 1, "LAOS north, 13–24.V.1997, 15 km NW Louang Namtha, N 21°07.6′, E 101°21.0′, alt. 750 ±100 m, M. Strba & R. Hergovits leg." (JMC); 1, "LAOS, Louangnamtha pr., NAMTHA → Muang Sing, 21°09′N 101°19′E, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (JMC); 1, "Laos, Louangnamtha pr., 21° 09′N 101° 19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (NHMB); 1, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29″E, Ban Khoun Ngeun, ~ 200 m, Vít Kubáň leg." (NHMB).

Redescription. Length, 4.50–10.75 mm. Width, 1.25–3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; dark brown-black, except apical margin of pronotum reddish-brown; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 145).

Head: Very closely punctate to rugose, subspherical; frons convex; interantennal carina interrupted in middle; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching just beyond hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate; surface somewhat shiny to dullish; slightly longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowed craniad; disc convex; base sinuous.

Scutellum: Punctate, oblong, quadrate and distally truncated.

Elytra: Striate; interstices slightly elevated, with close and shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Robust form, along with dull luster and the reddish-brown apical margin of the pronotum will distinguish *F. collega* from any known *Fornax* species in Laos.

Distribution. A rare eucnemid species previously found in Indonesia and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a dry evergreen forest and tropical montane evergreen forest.

Fornax concolor (Blanchard, 1853) (Fig. 146)

Eucnemis concolor Blanchard, 1853: 92
(= *Fornax ater* Bonvouloir, 1871: 312–313; plate 13, Fig. 4)

Material examined. Seventeen specimens were available for study: 4, "LAOS, 21°09′N 101°19′E, Louangnamtha pr., Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, V. Kubáň leg." / "Fornax concolor, Blanchard, 1853, J. Muona det. 2014" (JMC); 1, "LAOS Bolikhamsai province, BAN NAPE – Kaew Nua Pas, 18.04.01–05–1998 600 masl, 18 22.3′ N 105 9.1′ E, E. Jendek & O. Sausa legit" (JMC); 4, "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC); 2, "LAOS, 1.–9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, V. Kubáň leg." / "Fornax concolor, Blanchard, 1853, J. Muona det. 2014" (JMC); 1, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~200 m, V. Kubáň leg." / "Fornax concolor, Blanchard, 1853, J. Muona det. 2014" (JMC); 2, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1, "LAO-NE, Hua Phan prov., ~20°12′ N 104°01′E, PHU PHAN Mt., 1500–1900 m, 17.v.–3.vi.2007, M. Brancucci leg" / "NHMB Basel, expedition to Laos, 2007" (GERP); 2, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 4.00–7.00 mm. Width, 1.00–2.00 mm. Body elliptical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres I, II and XI apically reddish; legs and tibiae dark reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 146).

Head: Very closely punctate, subspherical; frons convex; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly shorter than the combined lengths of IV and V; antennomere IV as long as II; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Faintly to indistinctly striae; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Shorter and uniform setae on the pronotum and elytra will distinguish *F. concolor* from *F. astriatus*. Very shallowly indicated to indistinctly indicate elytral striae will further distinguish *F. concolor* from *F. nicotianae*.

Distribution. An uncommon, widespread eucnemid species found in India, Indonesia, Papua New Guinea and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

Fornax differens Fleutiaux, 1918 (Fig. 147)

Material examined. Eight specimens were available for study: 2, "LAOS centr., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4–1.5.1998, alt. 600 ±100 m, N 18°22.3′ E 105°09.1 (GPS), M. Strba & R. Hergovits leg" (JMC); 1,"LAOS c., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4–1.5.1998, alt. 600 m, N18°22.3′ E105°09.1′ GPS, E. Jendek & O. Šauša lgt." (GERP); 1, "LAOS Champasak province, Paksé-Paksong, Ban Itou env., 10–18.IV.1999 800 masl, N 15 10.4′ E 106 0.5.8′ (GPS), E. Jendek & O. Sausa leg." (JMC); 1, "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC); 1, "LAOS, Phongsaly prov., PHONGSALY env., 6.–17.v.2004, ~1500 m, 21°41′N 102°06′E, P. Pacholátko leg." (NHMB); 1, "LAO, Phongsaly prov., 21°41′N 102°06′E, PHONGSALY env., 6.–17.v.2004, ~ 1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 6.00–7.00 mm. Width, 1.50–2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 147).

Head: Closely and shallowly punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly shorter than the combined lengths of IV and V; antennomere IV as long as II, slightly shorter than V; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: Without striae; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V short with small, simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Simple tarsal claws will distinguish *F. differens* from *F. subacuminatus* and *F. vestitus*. Basally parallel-sided pronotum will further distinguish *F. differens* from *F. incisus* and *F. rotundicollis*. Antennomere V shorter than VI will also distinguish *F. differens* from *F. attenuatus*.

Distribution. A rare eucnemid species have been taken in India, Laos, Thailand and Vietnam. In Laos, *F. differens* were taken at an unknown locality and most recently in many locations throughout the country.

Ecoregion(s). Central Indochina dry forests, Luang Prabang montane rain forests, Northern Annamites rain forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Fornax incisus Bonvouloir, 1872 (Fig. 148)

Material examined. Two specimens were available for study: 1, "LAOS Bolikhamsai province, BAN NAPE – Kaew Nua Pas, 18.04.01–05-1998 600 masl, 18 22.3′ N 105 9.1′ E, E. Jendek & O. Sausa legit" (JMC); 1, "LAOS, Houa Phan prov., Ban Meuang Van near Muang Et., 20°49–50′N 103°59′–104°01–02′E, 2.–5.vi.2009, 300–800 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 6.50–10.00 mm. Width, 1.75–2.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly brownish-black; antennae, legs and tibiae dark reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 148).

Head: Closely punctate, subspherical; frons convex, with delicate median carina; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III as long as the combined lengths of IV and V; antennomere IV as long as II, shorter than V; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Punctate, slightly oblong, sub-triangular and distally rounded.

Elytra: Striate near elytral suture; interstices flattened; with dense, shallow punctations.

Legs: First tarsomere nearly as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V short with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Complete interantennal carina along with the presence of a delicate median carina on the frons will distinguish *F. incisus* from *F. attenuatus*, *F. differens*, *F. rotundicollis*, *F. subacuminatus* and *F. vestitus* in Laos.

Distribution. A very rare eucnemid species previously collected in Indonesia, Singapore and Thailand. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Fornax morosus Bonvouloir, 1872 (Fig. 149)

Material examined. Two specimens were available for study: 1, "LAOS, 1.–9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, V. Kubáň leg." / "Fornax morosus, Bonvouloir, 1872, J. Muona det. 2014" (JMC); 1, "LAOS, 1.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, V. Kubáň leg." / "Fornax morosus, Bonvouloir, 1872, J. Muona det. 2014" (JMC).

Redescription. Length, 4.50–6.00 mm. Width, 1.25–1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 149).

Head: Very closely punctate, subspherical; frons convex, without fovea or carina; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching up to hind angles of pronotum; antennomere III longer than IV; antennomere IV as long as II, shorter than V; antennomeres V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate; surface shiny; slightly longer than wide, with moderate hind angles; basal 2/3 subparallel-sided, apical 1/3 arcuate; disc convex, with very shallow median fovea at basal 1/4; base sinuous.

Scutellum: Punctate, short, triangular and distally rounded.

Elytra: Very weakly to indisitinctly striate; interstices flattened; surfaces closely punctate.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Presence of interantennal carina, simple tarsal claws, non-carinate frons along with the shape of the pronotum will distinguish *F. morosus* from any known *Fornax* species in Laos.

Distribution. A very rare, widespread eucnemid species previously found in Malaysia, Papua New Guinea and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a dry evergreen forest.

Fornax nicotianae (Fleutiaux, 1895) (Fig. 150)

Dromaeolus nicotianae Fleutiaux, 1895: 162–163
(= *Fornax ater* var. Bonvouloir, 1871: 313; plate 13, Fig. 5)

Material examined. Twenty-eight specimens were available for study: 1, "LAOS north, 13–24.V.1997, 15 km NW Louang Namtha, N21°07.5′, E101°21.0′, alt. 750 ±100 m, E. Jendek & O. Šauša leg." (GERP); 2, "LAOS north, 24–30.V.1997, 20 km NW Louang Namtha, N21°09.2′, E101°18.7′, alt. 900 ±100 m, E. Jendek & O. Šauša leg." (GERP); 1,"LAOS c., Bolikhamsai prov., BAN NAPE-Kaew Nua Pass, 18.4–1.5.1998, alt. 600 m, N18°22.3′ E105°09.1′ GPS, E. Jendek & O. Šauša lgt." (GERP); 1, "LAOS centr., Khammouan prov., NAKAI env., 17°43′N, 105°09′E, 22.V.–8.VI.2001, alt. 500–600 m, E. Jendek & O. Šauša leg." (GERP); 1, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~200 m, Vít Kubáň leg." (NHMB); 15, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′ N 105°08′E, Ban Nape (8 km NE); ~600 m, V. Kubáň leg." (NHMB); 1, "Collection naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′ N 102°06–8′E, 28.v. –20.vi.2003, PHONGSALY env., ~1500 m, Vít Kubáň leg." (NHMB); 3, "LAOS C., Bolikhamsai pr., BAN NAPE env., 7–16.V.2004, alt 400 ±100 m, 18°20′N, 104°08′E, E. Jendek & O. Šauša leg." (GERP); 2, "LAOS C., Khammouan pr., 20–29.V.2004, alt. 250 m, BAN KHOUN NGEUN env., 18°07′N, 104°29′E, E. Jendek & O. Šauša leg." (GERP); 1, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB).

Redescription. Length, 4.50–6.00 mm. Width, 1.50–2.00 mm. Body elliptical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres I, II reddish; legs and tibiae dark reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 150).

Head: Very closely punctate, subspherical; frons convex; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly shorter than the combined lengths of IV and V; antennomere IV as long as II; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, subtriangular and distally rounded.

Elytra: Without striae; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Shorter and uniform setae on the pronotum and elytra will distinguish *F. nicotianae* from *F. astriatus*. Absence of elytral striae will further distinguish *F. nicotianae* from *F. concolor*.

Distribution. An uncommon, widespread eucnemid species has been found in Indonesia, Malaysia, Papua New Guinea and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

***Fornax oudomxaiensis* sp.nov.** (Fig. 151)

Type material. Male holotype: "LAOS-N (Oudomxai), 1–9.v.2002, ~1100m, 20°45′ N 102°09′E, OUDOM XAI (17 km NEE), Vit. Kubáň leg" / "Fornax morosus, Bonvouloir, 1872, J. Muona det. 2014" / "HOLOTYPE, *Fornax*, *oudomxaiensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Male holotype: Length, 5.50 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; black; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 151).

Head: Very closely punctate, subspherical; frons convex, with delicate, short median carina; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–X, reaching up to hind angles of pronotum; antennomere III longer than IV; antennomere IV as long as II, slightly shorter than V; antennomeres V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and moderately punctate; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate; disc convex; base sinuous.

Scutellum: Punctate, short, triangular and distally rounded.

Elytra: Very weakly striate; interstices flattened; surfaces closely punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *oudomxaiensis* is named after the Oudomxay province in Northern Laos in which the species have been collected.

Differential diagnosis. Presence of a delicate, short, median carina on the frons will distinguish *F. oudomxaiensis* from *F. morosus*.

Distribution. A very rare, endemic eucnemid species have been taken from a holotype collected in northern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a dry evergreen forest.

Fornax phoupaniensis sp.nov. (Fig. 152)

Type material. Male holotype: "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" / "HOLOTYPE, *Fornax*, *phoupaniensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Male holotype: Length, 5.00 mm. Width, 1.25 mm. Body elongate and tapering towards the elytral apex; uniformly black; antennae infuscate dark reddish-brown; legs and tibiae infuscate dark reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 152).

Head: Very closely punctate, subspherical; frons convex; interantennal carina complete; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching just beyond the hind angles of pronotum; antennomeres III shorter than the combined lengths of IV and V; antennomere IV shorter than V, as long as II; V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Sparsely and shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides narrowed cranaid; disc convex; base sinuous.

Scutellum: Punctate, oblong, sub-triangular and distally rounded.

Elytra: With indications of striae at humeri; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet, *phoupaniensis* is named after the Phou Pane Mountain in Northeastern Laos where the species was collected.

Differential diagnosis. Complete interantennal carina, along with the form of the pronotum will distinguish *F. phoupaniensis* from all known *Fornax* species in Laos.

Distribution. A very rare, endemic eucnemid species have been taken from from a holotype collected in northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Fornax rotundicollis Fleutiaux, 1929 (Fig. 153)

Material examined. Eight specimens were available for study: 1, "LAOS, 10. –16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 2, "LAO-NE, Hua Phan prov., ~20°12′ N 104°01′E, PHU PHAN Mt., 1500–1900 m, 17.v.–3.vi.2007, M. Brancucci leg" / "NHMB Basel,

expedition to Laos, 2007" (NHMB); 1, "LAOS-NE, Houa Phan prov., Ban Saluei → Phou Pane Mts., 20°12–13.5′N 103°59.5′–104°01′E, 1340–1870 m, 15.iv.–15.v.2008, Laos collectors leg." (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 6.00–7.25 mm. Width, 1.25–1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly reddish-brown; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 153).

Head: Very closely punctate, almost rugose, subspherical; frons convex, with circular fovea above clypeus; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III subequal to combined lengths of IV and V; antennomere IV as long as II; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Sparsely and shallowly punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; lateral sides arcuate; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Simple tarsal claws will distinguish *F. rotundicollis* from *F. subacuminatus* and *F. vestitus*. Antennomere V shorter than VI will further distinguish *F. rotundicollis* from *F. attenuatus* and *F. incisus*. Laterally arcuate pronotum will also distinguish *F. rotundicollis* from *F. differens*.

Distribution. A rare eucnemid species previously found in Taiwan and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Fornax rufoantennatus sp.nov. (Fig. 154)

Type material. Male holotype: "LAOS-CE, 1–18.v.2001, Boli Kham Xai prov., 18° 21′N 105° 08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." / "HOLOTYPE, *Fornax*, *rufoantennatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Paratypes: 5, from the following localities: INDONESIA: 1, "Siberut isl., Mentawai, Malamean Mt., 13–17.1.2004, S. Jakl leg." (GERP); LAOS: 1, "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC); 1, "LAO-NE, Hua Phan prov., ~20°12′ N 104°01′E, PHU PHAN Mt., 1500–1900 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104°01′E, Ban Saluei → Phou Pane Mts., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).
Each specimen labeled: "PARATYPE, *Fornax*, *rufoantennatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on each label) [yellow printed label]. Paratypes are deposited in GERP, JMC and NHMB.

Description. Male holotype: Length, 5.00 mm. Width, 1.25 mm. Body elliptical, elongate and tapering towards the elytral apex; dorsum black, venter dark infuscate reddish; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 154).

Head: Closely and shallowly punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching just beyond hind angles of pronotum; antennomeres III nearly as long as the combined lengths of IV and V; antennomere IV short, as long as II; antennomere V slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides arcuate, gradually narrowed craniad; disc convex; base sinuous.

Scutellum: Sparsely punctate, oblong, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices flattened, with sparse and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V short with small, simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum caudally widen; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variations. Five male paratypes were examined. They range from 4.50–5.00 mm long. All specimens are structurally similar, showing little to no variations at all, except for one specimen being shorter in length. The degree of darkness of the venter varied slightly, some showing an almost blackish coloration, while others are dark infuscate reddish.

Etymology. The specific epithet is derived from the combination of two Latin terms "*rufo*" for red and "*antennatus*" for antennae in regards to reddish colored antennae the species possess.

Differential diagnosis. Reddish-brown colored antennae and legs, along with the interrupted interantennal carina will distinguish *F. rufoantennatus* from *F. nicotianae*.

Distribution. A rare eucnemid species known from a single locality in Indonesia and three localities in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Fornax subacuminatus Bonvouloir, 1872 (Fig. 155)

Material examined. Seven specimens were available for study: 1, "Laos:, Vientiane., J. Rondon, 1963, B.M. 1964-77." / "Fornax spec., det. W. Lucht, 1989 (genus, spec. and year handwrittened)" (BMNH); 1, "LAOS centr., 26.IV.1997, VIENTIANE env., 150 m, N 17°56.8′, E 102°37.3′, Mekong River bank, M. Strba & R. Hergovits leg." (JMC); 2, "LAOS centr., 27.IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150 m, N 18°16.1′, E 103°10.9′, M. Strba & R. Hergovits leg." (JMC); 1, "N LAOS, 13–24.V.1997, 15 km NW Luang Namtha, N 21°07.5′, E 101°21.0′, M. Strba & R. Hergovits leg." (JMC); 1, "LAOS, Louang Namtha pr., LOUANG NAMTHA, 21°00′N 101°25′E, 31.v.1997, 600 m, Vít Kubáň leg." (JMC); 1, "LAOS north, LUANG NAMTHA env., 4.–12.V.1998, R. HERGOVITS leg." (handwritten) (JMC).

Redescription. Length, 7.50–10.00 mm. Width, 2.00–2.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark reddish-brown; antennae, legs and tibiae reddish-brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 155).

Head: Very closely punctate, subspherical; frons convex; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III shorter than combined lengths of IV and V; antennomere IV short, as long as II; antennomere V slightly longer than IV, slightly shorter than VI; VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Sparsely and shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, basally depressed; base sinuous.

Scutellum: Slightly rugose, quadrate and distally truncated.

Elytra: Without striae; interstices flattened, with dense and shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last abdominal sternite strongly produced.

Differential diagnosis. Produced last abdominal sternite will distinguish *F. subacuminatus* from *F. attenuatus*, *F. differens*, *F. incisus*, *F. rotundicollis* and *F. vestitus*.

Distribution. An uncommon, widespread eucnemid species previously found in India, Indonesia, Malaysia, Papua New Guinea and Singapore. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Fornax vestitus Fleutiaux, 1896 (Fig. 156)

Material examined. Two specimens were available for study: 1, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29"E, Ban Khoun Ngeun, ~ 200 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., BAN SANO MAI, 19–26.v.2004, ~1150 m, 21°21′N 102°03′E, P. Pacholátko leg." (NHMB).

Redescription. Length, 9.50 mm. Width, 2.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae, legs and tibiae dark brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 156).

Head: Very closely punctate, subspherical; frons convex, with median circular fovea; interantennal carina interrupted in middle; surface shiny; apical margin of frontoclypeal region evenly rounded, 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III subequal to combined lengths of IV and V; antennomere IV as long as II; antennomere V slightly shorter than VI; VI–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Sparsely and shallowly punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened, with shallow punctations; humeri transversely rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Basally toothed tarsal claws will distinguish *F. vestitus* from *F. attenuatus*, *F. differens*, *F. incisus* and *F. rotundicollis*. Rounded last abdominal sternite will further distinguish *F. vestitus* from *F. subacuminatus*.

Distribution. An uncommon, widespread eucnemid species have been taken in Cambodia, India, Indonesia, Laos, Myanmar and Vietnam. In Laos, *F. vestitus* were

previously taken at Vientiane, Tranninh Plateau and "Haut-Mékong" (FLEUTIAUX, 1923) and most recently in two provinces.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. GARDNER (1935) described larvae collected from a decaying *Garuya pinnata* Roxburgh (Burseraceae) log in India. BEESON (1941) reported the species bores in the wood of *Bombax malabaricum* (now *Bombax ceiba* L. (Malvaceae)) and *Lannea grandis* (Dennstedt) Engler (now *Lannea coromandelica* (Houttuyn) Merrill (Anacardiaceae). Both adults were taken from a tropical montane deciduous forest and tropical montane evergreen forest.

Raapia Fleutiaux, 1898

Diagnosis. Macraulacini, with apical margin of frontoclypeal region evenly rounded and more than twice as wide as the distance between antennal sockets; well developed, often wide, basally open, lateral antennal grooves present; male prothoracic tarsomere I simple, with straight, basal sex combs; apices of elytra dehiscent; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either truncated, slightly emarginated or rounded; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs.

Note. Identification of the species was made possible through comparison of these specimen against an illustration of the species from SUZUKI & HSIEH (2014).

Raapia sauteri Fleutiaux, 1929 (Fig. 157)

Material examined. Two specimens were available for study: 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan (30 km NE), Phou Sane Mt., 1400–1700 m, 10.–30.v.2009, D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 6.50 mm. Width, 2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark black, except for infuscate orange area near pronotal hind angles and elytral humeri; antennae black, femur, tibiae dark brown; tarsi medium brown; head, pronotum and elytral humeri clothed with short, white recumbent setae (Fig. 157).

Head: Very closely punctate to rugose, subspherical; frons convex; surface dull; apical margin of frontoclypeal region evenly rounded, 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Pectinate from antennomeres III–X, reaching to hind angles of pronotum; rami arising from apical end of each segment; ramus on antennomere III slightly shorter than ramus on antennomere IV; rami on antennomere IV–X subequal; antennomere XI longer than X.

Pronotum: Closely punctate to rugose; surface somewhat shiny; slightly longer than wide, with short hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Punctate, oblong, sub-triangular with median groove and distally rounded.

Elytra: Indistinctly striate, except humeri shallowly striate; interstices slightly elevated, with dense, shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V short with basally toothed claws.

Venter: Closely punctate to rugose, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Narrower and less convex form of habitus will distinguish *R. sauteri* from another species, *Raapia galboides* Fleutiaux 1899 also present in mainland Asia.

Distribution. A very rare eucnemid species previously found in China (Taiwan). The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

Dorsifornax Fleutiaux, 1926

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; well developed, often wide basally open lateral antennal grooves present; male prothoracic tarsomere I simple, with basal sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite either truncated, slightly emarginated or rounded; basally toothed tarsal claws; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs.

Dorsifornax borikhamxaiensis sp.nov. (Fig. 158)

Type material. Female holotype: "LAOS-CE, 1–18.v.2001, Boli Kham Xai prov., 18°21′N 105°08′E, BAN NAPE (8 km NE), ~ 600 m, V. Kubáň leg." / "HOLOTYPE, *Dorsifornax*, *borikhamxaiensis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.
Paratype: 1, from the following locality: "LAOS C., Bolikhamsai pr., BAN NAPE-Kaew Nua Pass, 18.4.–1.5.1998, alt. 600 m, 18°22.3′N, 105°09.1′E, E. Jendek & O. Šauša leg.".
Specimen labeled: "PARATYPE, *Dorsifornax*, *borikhamxaiensis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [yellow printed label]. Paratype is retained in GERP.

Description. Female holotype: Length, 10.50 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly dark brown; antennae, apical margin of pronotum, scutellum, abdominal ventrites, legs and tarsi infuscate reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 158).

Head: Very closely punctate, almost rugose, subspherical; frons convex, without median carina or fovea; interantennal carina absent; frontoclypeal region without median

carina; surface dull; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–X, reaching to elytral humeri; antennomere III longer than IV; antennomere IV longer than II; antennomeres IV–XI each subequal, longer than wide.

Pronotum: Closely punctate to rugose; surface dull; as long as wide, with moderate hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex, with median groove; base sinuous, with large basal keel above scutellum.

Scutellum: Punctate, elongate, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices slightly elevated, with dense shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate, with recumbent yellowish recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum apically wide; elytral epipleurae basally grooved; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Variation. One male paratype was examined. Length is 7.00 mm. The pronotum is distinctly narrowing craniad compared to the female holotype. Antennae are slightly longer in the paratype, just beyond the elytral humeri. Colorations are similar to the holotype. There are no discernable differences in the exoskeletal structures between the holotype and the paratype.

Etymology. The specific epithet, *borikhamxaiensis* is named after the Laotian province in which both holotype and paratype were collected.

Differential diagnosis. Diagnosis of the new species was based on generic character traits, including presence of enlarged basal keel on the pronotum and comparing against translated, interpreted description of *Dorsifornax diapodiodes* (Fleutiaux, 1919). Unicolored dark brown dorsum along with sparser setae will distinguish *D. borikhamxaiensis* from *D. diapodiodes*.

Distribution. A very rare, endemic eucnemid species known from a single locality within the Borikhamxay province in central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a lowland semi-evergreen forest.

Xylofornax gen.nov.

Type species. *Xylofornax dromaeoloides* sp.nov., designated here.

Diagnosis. Adult *Xylofornax* superficially resemble *Dromaeolus* Kiesenwetter and *Fornax* Laporte. The new genus can be distinguished from either genera by it shorter antennomere III in relation to IV.

Description. Female. Body cylindrical, approximately four times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus, with short setae. Antennae weakly serrate to filiform, setose; scape three times longer than pedicel; pedicel globular, subequal to antennomere III; antennomere III shorter than antennomere IV; antennomeres IV–X subequal in lengths, longer than wide; antennomere XI longer than X (Fig. 161). Compound eye circular, well developed, small. Antennal groove present in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically rounded, less than 2.00 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles unidentate; right mandible bidentate.

Pronotum: Rectangular, convex, setose, subparallel-sided, cranially wider. Longer than wide. Lateral pronotal ridge entire, straight. Disc convex with short median carina present above scutellum; base sinuous.

Scutellum: Longer than wide, sub-triangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Disc with shallow striae. Interstices slightly elevated.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia elongate, triangular, rounded in cross section, basally narrowed, apically rounded, setose with one apical spur. Lateral side of mesothoracic and metathoracic tibiae with hairs and transverse rows of spines. Metathoracic tarsi, including claws longer than tibia. First metathoracic tarsi as long as the combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, wider than III. Metathoracic tarsi V short with simple claws. Tarsal formula 5-5-5.

Venter: With elongate setae. Prothoracic sternal peg basally broad, somewhat short. Notosternal suture as long as the hypomeral base. Hypomeron with wide, deep, basally open lateral antennal grooves (Fig. 160). Epipleura not grooved. Metathroacic episterna caudally wide. Metathoracic coxal plate medially 3.00 times wider than laterally. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite apically rounded.

Etymology. The generic name, *Xylofornax* is a combination of two words, the prefix '*xylo-*' is derived from the Greek word '*xýlon*' pertaining to wood and '*Fornax*', which is based on a eucnemid genus. Gender: masculine.

Key to the species of *Xylofornax*

1 Pronotum widest cranially. ..... ***Xylofornax dromaeoloides* sp.nov.**
– Pronotum parallel-sided. ..... ***Xylofornax piceus* sp.nov.**

***Xylofornax dromaeoloides* sp.nov.** (Figs 159–161)

Type material. Female holotype: "LAOS centr., Khammouan prov., NAKAI env., 4–8.5.1998, Route No. 8, alt. 560 ±20 m, N 17°42.8′, E 105°08.9′ (GPS), M. Strba & R. Hergovits leg." / "HOLOTYPE, *Xylofornax*, *dromaeoloides*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Female holotype: Length, 5.50 mm. Width, 1.50 mm. Body color black (Fig. 159).

Head: Black; closely punctate, surface dullish; eyes slightly protuberant; frons simple, without fovea or carina; interantennal carina complete; median carina absent on frontoclypeal region.

Antennae: Weakly serrate to filiform, reaching almost 1/2 the length of the body; antennomere I black, antennomeres II–XI reddish-brown.

Pronotum: Black, dullish with yellow recumbent setae; surface very closely punctate to rugose; longer than wide, basal half parallel-sided; with divergent, moderate hind angles; apical 1/2 wider; disc convex, with shallow median fovea present above scutellum; base sinuous.

Elytron: Length 4.00 mm. Width 0.50 mm at humeri. Black, convex, somewhat shiny with distinct elongate, yellow recumbent setae present on basal 1/3 and along elytral suture, remaining areas with short, yellow recumbent setae. Disc striate. Interstices slightly elevated, horizontally rugose.

Legs: Shiny, uniformly reddish-brown. Tarsi reddish-brown in color. Surfaces shallowly punctate; with short, yellow recumbent setae.

Venter: Shiny, black, surface with short, yellow recumbent setae; closely, shallowly punctate.

Etymology. The specific epithet is derived by its close appearance to some species of *Dromaeolus*.

Differential diagnosis. Cranially wide pronotum will distinguish *X. dromaeoloides* from *X. piceus*.

Distribution. A very rare, endemic eucnemid species is known from a holotype collected in Khammuane province of central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane evergreen forest.

Xylofornax piceus sp.nov. (Fig. 162)

Type material. Female holotype: "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." / "HOLOTYPE, *Xylofornax*, *piceus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Paratype. 1, from the following locality: "LAOS centr, 27.IV.–1.V.1997, 70 km NE Vientiane, BAN PHABAT env., 150m, N 18° 16.1 E 103° 10.9, M. Strba & R. Hegovits leg." / "PARATYPE, *Xylofornax*, *piceus*, Otto, det. R.L. Otto, 2015" (♀ handwritten behind species name on each label) [yellow printed label]. Paratype is deposited in GERP.

Description. Female holotype: Length, 6.00 mm. Width, 1.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennomere I black, antennomeres II–XI dark reddish; legs dark brown to black; tarsi dark brown; head,

pronotum and elytra clothed with short, yellow recumbent setae, more apparent on base of pronotum and base of elytra (Fig. 162).

Head: Very closely punctate, subspherical; frons simple, without carina or fovea; interantennal carina interrupted, frontoclypeal region without median carina; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III shorter than IV; antennomeres IV–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with divergent, moderate hind angles; lateral sides arcuate, slightly narrowing craniad; disc convex; base sinuous, with pair of circular fovea above scutellum.

Scutellum: Punctate, short, sub-triangular and distally rounded.

Elytra: Striate; interstices slightly elevated; surfaces shallowly punctate.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally. Last abdominal tergite apically slightly produced.

Variation. One female paratype was examined. The paratype measured 7.00 mm long and 1.75 mm wide, larger than the holotype. Hind angles are less divergent in the paratype as compared to the holotype. Exoskeletal structures are very similar to the holotype.

Etymology. The specific epithet '*piceus*' was used to describe the pitch black coloration of the new species.

Differential diagnosis. *Xylofornax piceus* can be distinguished from *D. granosus* by its punctate surfaces of the pronotum. *Xylofornax piceus* is also distinguished from *D. bolavenensis* by its vestitures on the pronotum and elytra as well as the last abdominal tergite. Parallel-sided pronotum will distinguish *X. piceus* from *X. dromaeoloides*.

Distribution. A very rare, endemic eucnemid species known from single localities within the Attapeu and Borikhamxay provinces.

Ecoregion(s). Luang Prabang montane rain forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a lowland semi-evergreen forest.

Dromaeolus Kiesenwetter, 1858

(=*Melanus* Broun, 1881: 676)
(=*Megathambus* Reitter, 1911: 201)

Diagnosis. Macraulacini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; well developed basally open or basally closed lateral antennal grooves present; male prothoracic tarsomere I simple with basal sex combs; metathoracic coxal plates medially 1.20–2.50 times wider than laterally; last visible ventrite either rounded or truncated; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae either with setae and transverse rows of spine combs or setae and irregularly placed spines; male aedeagus dorsoventrally compressed, with laterally attached secondary lateral lobes; median lobe simple, with moderately and narrowly bifurcate apices; lateral lobes simple, entire; flagellum simple.

Note. Some of the identifications were made through interpreting translated keys from Bonvouloir (1872) and Fleutiaux (1926, 1947), as well as comparing specimens against illustrations in the monograph. These identifications were verified through comparing some specimens against descriptions provided by these authors. Remaining identifications were made possible after breaking down a list of all known species from the region and grouping them. These groupings were based on key diagnostic features (*i.e.* presence versus absence of interantennal carina, presence versus absence of median carina on frons) found in each species descriptions from a number of references. These information were compared against any unidentified specimens. New species identification was made, when some specimens failed to match with any interpreted published descriptions of species distributed in the region. Authoratively identified specimens, including some types were loaned from the MNHN to verify identity of some species.

Key to the species of *Dromaeolus*

1 Lateral antennal grooves basally open. **2**
– Lateral antennal grooves basally closed. **9**

2 Head without median carina. **3**
– Head with median carina. **6**

3 Elytra without elongate setae at base and along sutural areas. **4**
– Elytra with elongate setae at base and along sutural areas. .....
..... ***Dromaeolus simplicifrons*** **sp.nov.**

4 Antennomere III longer than either IV or V. **5**
– Antennomere III as long as either IV or V. .....
..... ***Dromaeolus cylindricus*** **Fleutiaux, 1916**

5 Pronotal surfaces punctate. ..... ***Dromaeolus bolavenensis*** **sp.nov.**
– Pronotal surfaces granulose. ..... ***Dromaeolus granosus*** **Fleutiaux, 1928**

6 Median carina on head well developed. **7**
– Median carina on head weakly developed. ..... ***Dromaeolus coomani*** **Fleutiaux, 1947**

7 Setae more widely apparent up to 1/3 of elytral base; basal median pronotal groove shallow. **8**
– Setae narrowly apparent on extreme elytral base; basal median pronotal groove very deep and wide. ..... ***Dromaeolus sulcicollis*** **Fleutiaux, 1922**

8 Setae more apparent throughout pronotum and basal 1/4 of elytra. ..... ***Dromaeolus exilis*** **Bonvouloir, 1871**
– Setae more apparent on base of pronotum and basal 1/3 of elytra. ..... ***Dromaeolus semigriseus*** **Bonvouloir, 1871**

9 Interantennal carina well developed. **10**
– Interantennal carina interrupted in middle. ..... ***Dromaeolus assamensis*** **Fleutiaux, 1899**

10 Antennomere III longer than IV. **11**
– Antennomere III as long as IV. **20**

11 Frontoclypeal region without median carina. **12**
– Frontoclypeal region with at least one median carina. **15**

12 Frons without median carina above interantennal carina. **13**
– Frons with short median carina above interantennal carina. **14**

13 Frons without depression above base of frontoclypeal region; antennomeres II–XI reddish; elytra with uniform vesture. ..... ***Dromaeolus minimus*** **Fleutiaux, 1896**
– Frons with depression above base of frontoclypeal region; antennomeres II–XI black; basal 1/3 of elytra with elongate vestiture of setae. ..... ***Dromaeolus foveatus*** **sp.nov.**

14 Elongate setae present on elytral humeri and sutural areas and base of pronotum. ..... ***Dromaeolus phonsavanicus*** **sp.nov.**
– Elytra and base of pronotum with uniform vesture of setae. ..... ***Dromaeolus xiengkhouangiensis*** **sp.nov.**

15 Frontoclypeal region with median carina. **16**
– Frontoclypeal region with pair of diverging carina. ..... ***Dromaeolus divergentus*** **sp.nov.**

16 Base of pronotum without median carina above scutellum. **17**
– Base of pronotum with median carina above scutellum. ..... ***Dromaeolus modiglianii*** **Fleutiaux, 1896**

17 Antennomeres III–X reddish. **18**
– Antennomeres III–X either dark brown or black. **19**

18 Pronotum parallel-sided; surface rugose. ..... ***Dromaeolus ferruginipes*** **Bonvouloir, 1871**
– Pronotum gradually narrowed craniad; surface closely punctate. ..... ***Dromaeolus longicollis*** **Fleutiaux, 1896**

19 Elongate setae apparent on head, base of pronotum as well as basal 1/3 of elytra and suture. ..... ***Dromaeolus confusus*** **Fleutiaux, 1896**
– Elongate setae apparent on head, base of pronotum as well as basal 1/4 of elytra. ..... ***Dromaeolus dissimilis*** **Fleutiaux, 1896**

20 Frontoclypeal region with median carina. **21**
– Frontoclypeal region without median carina. **22**

21 Basal 2/3 of pronotum parallel-sided, apical 1/3 arcuate; antennae black. ..... ***Droameolus vicinus*** **Fleutiaux, 1899**
– Basal 3/4 of pronotum parallel-sided, apical 1/4 arcuate; antennae reddish. ..... ***Dromaeolus congener*** **Bonvouloir, 1871**

22 Elytra consistantly clothed with setae, without distinct band of elongate setae. **23**
– Elytra with distinct band of elongate setae confined up to basal 1/2. .... **24**

23 Frons with median carina above interantennal carina. ..... ***Dromaeolus laosianus*** **sp.nov.**
– Frons with median depression above interantennal carina. ..... ***Dromaeolus depressifrons*** **sp.nov.**

24 Pronotum without shallow median groove. **25**
– Pronotum with shallow median groove. ... ***Dromaeolus kubani*** **sp.nov.**

25 Elongate setae more apparent along lateral and basal 1/4 of pronotum as well as basal 1/2 of elytra; antennae slightly serriform, blackish. .... ***Dromaeolus amicus*** **Bonvouloir, 1871**
– Elongate setae more apparent along lateral and basal 1/2 of pronotum as well as basal 1/2 of elytra; antennae filiform, dark reddish. .... ***Dromaeolus indicus*** **Bonvouloir, 1871**

Dromaeolus amicus Bonvouloir, 1871 (Fig. 163)

Material examined. Four specimens were available for study: 1, "LAOS, 21°09′ N 101°19′ E, Louangnamtha pr., Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (JMC); 1, "LAOS, 1.–9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan, Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.00 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark brown to black; tarsi medium-dark

brown; head, pronotum and elytra clothed with short, yellowish recumbent setae, more apparent on head, pronotum and basal 1/3 of elytra (Fig. 163).

Head: Very closely punctate, subspherical; frons convex; interantennal carina complete; frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides gradually narrowed craniad; disc convex, with very shallow median groove; base sinuous.

Scutellum: Slightly rugose, slightly wide, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; humeri finely rugose, remaining areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Convex frons will distinguish *D. amicus* from *D. depressus*. Convex pronotal disc will separate *D. amicus* from *D. kubani*. Arrangements of elongate setae present on the pronotum and elytra, as well as the antennal structure and coloration will further distinguish *D. amicus* from *D. indicus*.

Distribution. A very rare eucnemid species previously found in Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Dromaeolus assamensis Fleutiaux, 1899 (Fig. 164)

Material examined. One specimen was available for study: "LAOS-NE, Houa Phan prov., 20°12′N 104°01′E, PHOU PANE Mt., ~ 1750 m, 17.v.–3.vi.2007, V. Kubáň leg." / "NHMB Basel expedition to Laos, 2007" (NHMB).

Redescription. Length, 4.75 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae reddish; legs and tarsi reddish; head, pronotum and elytra clothed with short, yellowish recumbent setae, more apparent on base of pronotum and elytral humeri, as well as the lateral sides (Fig. 164).

Head: Very closely punctate, subspherical; frons convex; interantennal carina absent, frontoclypeal region without median carina; surface shiny; apical margin of

frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III longer than IV; antennomeres IV–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely, shallowly punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous, with pair of divergent oblong foveae above scutellum.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; surfaces with dense punctations.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Reddish colored antennae and legs, along with the absence of interantennal carina will distinguish *D. assamensis* from all known *Dromaeolus* species in Laos.

Distribution. A very rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

***Dromaeolus bolavenensis* sp.nov.** (Fig. 165)

Type material. Female holotype: "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." / "HOLOTYPE, *Dromaeolus*, *bolavenensis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Female holotype: Length, 5.00 mm. Width, 1.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brownish-black; antennae dark brown; legs dark brown; tarsi dark brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 165).

Head: Very closely punctate, subspherical; frons simple, without carina or fovea; interantennal carina interrupted, frontoclypeal region without median carina; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; lateral sides arcuate, slightly narrowing craniad; disc convex; base sinuous, with pair of circular fovea above scutellum.

Scutellum: Punctate, short, sub-triangular and distally rounded.

Elytra: Shallowly striate; interstices slightly elevated; surfaces shallowly punctate.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last abdominal tergite apically truncate.

Etymology. The specific epithet, *bolavenensis* is derived from the Bolavan Plateau in which the new species was taken.

Differential diagnosis. *Dromaeolus bolavenensis* can be distinguished from *D. granosus* by its punctate surfaces of the pronoutm.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Attapeu province of southern Laos.

Ecoregion(s). Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

Dromaeolus confusus Fleutiaux, 1896 (Fig. 166)

Material examined. Seven specimens were available for study: 1, "LAOS, 1.–9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 4, "LAOS, 1.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.00–5.50 mm. Width, 1.50–1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae blackish, except antennomere II reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum, lateral side, suture and basal 1/3 of elytra (Fig. 166).

Head: Very closely punctate, subspherical; frons with delicate median carina; interantennal carina well developed, frontoclypeal region with median ridge; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate; surface shiny; longer than wide, with moderate hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous.

Scutellum: Slightly rugose, short, sub-triangular and distally rounded.

Elytra: With indications of striae, moreso at humeri; interstices slightly elevated; humeri and basal 1/3 rugose, remaining areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. *Dromaeolus confusus* can be separated from *D. longicollis* by its punctations and shinier surfaces of the pronotum as well as darker antennae and legs. *Dromaeolus confusus* can be further separated from *D. congener* by the form of the pronotum and antennomere III being longer than IV.

Distribution. A rare eucnemid species previously found in Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Louang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Dromaeolus congener Bonvouloir, 1871 (Fig. 167)

Material examined. Six specimens were available for study: 1, "LAOS centr., 27.IV.–IV.1997, 70 km NE Vientiane, BAN PHABAT env., 150 m, N18°16.1′, E103°10.9′, E. Jendek & O. Šauša leg." (GERP); 1, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~ 600 m, V. Kubáň leg." (NHMB); 1, "LAOS C., Bolikhamsai pr., BAN NAPE env., 7–16.V.2004, alt. 400 ±100 m, 18°20′N, 105°08′E, E. Jendek & O. Šauša leg." (GERP); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 6.00–7.00 mm. Width, 1.75–2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae dark reddish; femur dark brown to black; tibiae and tarsi reddish-brown; head, pronotum and elytra clothed with short, white recumbent setae; more apparent on the head, pronotum and basal 1/3 of pronotum (Fig. 167).

Head: Very closely punctate, almost rugose, subspherical; frons convex; interantennal carina well developed, median ridge extends down above frontoclypeal region from midline; surface somewhat shiny; apical margin of frontoclypeal region

evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface somewhat shiny; longer than wide, with moderate hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex; base sinuous, with delicate short median groove above scutellum extending close to center.

Scutellum: Slightly rugose, oblong, sub-trapezoid and distally rounded.

Elytra: With indications of striae; interstices slightly elevated, with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. *Dromaeolus congener* can be separated from *D. confusus* and *D. longicollis* by length of antennomere III relative to IV; that being III as long as IV in *D. congener* and antennomere III being longer than IV in the other two species.

Distribution. A rare, widespread eucnemid species in Indonesia, Malaysia, Myanmar and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Dromaeolus coomani Fleutiaux, 1947 (Fig. 168)

Material examined. Two specimens were available for study: 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP).

Redescription. Length, 9.75–11.00 mm. Width, 2.00–2.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere XI apically reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytral humeri clothed with short, white recumbent setae, with remaining elytra with sparse white setae (Fig. 168).

Head: Rugose; subspherical; frons convex, with weakly developed median carina extending from vertex to above frontoclypeal region; interantennal carina interrupted in middle; surface dull; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as IV and V combined; antennomere IV subequal to II; antennomere V slightly shorter than VI; antennomeres VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dull; longer than wide, with moderate hind angles; basal 3/4 parallel-sided, slightly arcuate anteriorly; disc convex; base sinuous, with very shallow and narrow median groove extending from base to near center of disc.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened; basal half rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Weakly developed median carina on the head and granulose, dull pronotum will distinguish *D. coomani* from *D. exilis*, *D. semigriseus*, *D. simplicifrons* and *D. sulcicollis*.

Distribution. A very rare eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

***Dromaeolus cylindricus* Fleutiaux, 1916** (Fig. 169)

Material examined. Five specimens were available for study: 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 4, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Redescription. Length, 6.50–7.00 mm. Width, 1.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere XI apically reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with sparse, short, white recumbent setae (Fig. 169).

Head: Very closely punctate, almost granulose,subspherical; frons convex; interantennal carina interrupted in middle; surface somewhat dull; apical margin of frontoclypeal region evenly rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as either IV or V; antennomere V slightly shorter than VI; antennomeres VI–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dull; longer than wide, with moderate hind angles; lateral sides arcuate, basally compressed above hind angles; disc convex; base sinuous, with delicate median groove extending from base to near center of disc.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: Without striae; interstices flattened; humeri rugose, with circular impressions; remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with sparse, white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. *Dromaeolus cylindricus* can be distinguished from *D. granosus* by antennomere III being as long as either IV or V. *Dromaeolus cylindricus* can be further separated from *D. exilis*, *D. semigriseus*, *D. simplicifrons* and *D. sulcicollis* by the absence of median carina on the head. Absence of elongate setae on the humeri and sutural regions of the elytra will separate *D. cylindricus* from *D. simplicifrons*.

Distribution. A rare eucnemid species previously found in Indonesia and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Dromaeolus depressifrons **sp.nov.** (Fig. 170)

Type material. Male holotype: "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *depressifrons*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype, with same label data as holotype: / "ALLOTYPE, *Dromaeolus*, *depressifrons*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in NHMB.

Description. Male holotype: Length, 3.75 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; scape black, antennomeres II and XI apically reddish, antennomeres III–X dark brown; femur and tibiae dark brown to black; tarsi medium brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 170).

Head: Very closely punctate, subspherical; frons convex, with shallow circular fovea and short delicate median carina above frontoclypeal region; interantennal carina complete; frontoclypeal region with very narrow base, without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface somewhat shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate; disc convex; base sinuous.

Scutellum: Punctate, elongate, sub-triangular and distally rounded.

Elytra: Faintly striate; interstices slightly elevated; humeri transversely rugose, apical areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 2.00 times wider than laterally.

Allotype: 4.00 mm long; antennae darker, similar to holotype; frons with deeper circular fovea above clypeus, with shorter delicate median carina.

Etymology. The specific epithet, *depressifrons* is derived for the depressed fovea present above the clypeus on the frons.

Differential diagnosis. Uniform vestitures of setae on the dorsum of *D. depressifrons* will distinguish the eucnemid species from most *Dromaeolus* species in Laos, except *D. laosianus* and *D. xiengkhouangiensis*. Lengths of antennomere III in relation to IV will distinguish *D. depressifrons* from *D. xiengkhouangiensis*; that being III as long as IV in *D. depressifrons* and antennomere III longer than IV in *D. xiengkhouangiensis*. *Dromaeolus depressifrons* can be further distinguished from *D. laosianus* based on the characteristics of the frons above the interantennal carina; circular fovea present in *D. depressifrons* and with median carina present in *D. laosianus*.

Distribution. A very rare, endemic eucnemid species known from a single locality within the Houaphanh province in Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

***Dromaeolus dissimilis* Fleutiaux, 1896** (Fig. 171)

Material examined. Four specimens were available for study: 1, "LAOS, 10.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "LAOS, Phongsaly prov., BAN SANO MAI, 19–26.v.2004, ~1150 m, 21°21′N 102°03′E, P. Pacholátko leg." (GERP); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan, Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saleui → Phou Pane Mt., 1340–1870 m, 10.v–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.75–7.00 mm. Width, 1.50–2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere II reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, lateral sides of pronotum and basal 1/4 of elytra (Fig. 171).

Head: Very closely punctate, almost rugose, subspherical; frons convex; interantennal carina well developed, median ridge extends down frontoclypeal region and above interantennal carina on frons; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally and basally rugose; surface somewhat shiny; slightly longer than wide, with moderate hind angles; lateral sides sinuous above hind angles, arcuate above; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, sub-trapezoid and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; surfaces transversely rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25 times wider than laterally.

Differential diagnosis. Antennomeres III longer than IV will distinguish *D. dissimilis* from *D. vicinus*. Absence of short median carina on the base of the pronotum will further distinguish *D. dissimilis* from *D. modiglianii*.

Distribution. A very rare eucnemid species previously found in Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

***Dromaeolus divergentus* sp.nov.** (Fig. 172)

Type material. Male holotype: "LAOS centr. Khammouan prov., 4–16.XI, 25–30.XI.2000, BAN KHOUN NGEUN env., N 18°07′ E 104°29′, alt. 250 m, E. Jendek & P Pacholátko leg." / "HOLOTYPE, *Dromaeolus*, *divergentus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Male holotype: Length, 4.50 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennomere I black,

antennomeres II–XI dark reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum and basal 1/3 of elytra (Fig. 172).

Head: Very closely punctate, subspherical; frons simple, without carina or fovea; interantennal carina well developed, frontoclypeal region with pair of diverging carina; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex; base sinuous, with pair of circular fovea above scutellum.

Scutellum: Punctate, short, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices slightly elevated; surfaces finely and horizontally rugose.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially less than 2.00 times wider than laterally.

Etymology. The specific epithet, *divergentus* is derived from the presence of a pair of divergent carina on the frontoclypeal region.

Differential diagnosis. A pair of divergent carina on the frontoclypeal region will distinguish *D. divergentus* from all known species known in Laos.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Khammuane province of central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane evergreen forest.

***Dromaeolus exilis* Bonvouloir, 1871** (Fig. 173)

Material examined. Seventeen specimens were available for study: 1, "LAOS centr., Khammouan prov., NAKAI env., 4–8.5.1998, Route No. 8, alt. 560 ±20 m, N 17°42.8′, E 105°08.9′ (GPS), M. Strba & R. Hergovits leg." / "Dromaeolus semigriseus, Bonvouloir, 1871, J. Muona det. 2014" (JMC); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19"N 103°59′54"–104°00′03"E, 1480–1550 m, PHOU PANE Mt., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104°01′E, Ban Saluei → Phou Pane Mt., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mt., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M.

Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 6,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP); 7, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 8.00–11.50 mm. Width, 1.90–2.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere XI apically reddish; legs black; tarsi dark brown-black; head, pronotum and elytral humeri clothed with short, white recumbent setae, with remaining elytra with sparse white setae (Fig. 173).

Head: Very closely punctate, almost rugose, subspherical; frons convex, with median ridge extending from vertex to above frontoclypeal region; interantennal carina interrupted in middle; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as IV and V combined; antennomere IV subequal to II; antennomere V slightly shorter than VI; antennomeres VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; basal 3/4 parallel-sided, slightly arcuate anteriorly; disc convex; base sinuous, with shallow and narrow median groove extending from base to near center of disc.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened; humeri rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Well developed median carina on the head will distinguish *D. exilis* from *D. coomani* and *D. simplcifrons*. Setae on the pronotum and elytra will further separate the species from *D. semigriseus*. *Dromaeolus exilis* can separated from *D. sulcicollis* by its shallower basal groove of the pronotum and setae on the base of the elytra.

Distribution. An uncommon eucnemid species previously found in Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a tropical montane deciduous forest and tropical montane evergreen forest.

Dromaeolus ferruginipes Bonvouloir, 1871 (Fig. 174)

Material examined. Four specimens were available for study: 1, "LAOS, 1.–9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~ 600 m, V. Kubáň leg." (GERP); 1, "Collection Naturhistorisches Museum Basel" / "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°26′N 103°13′E, Phonsavan town to Phu Padaeng, 1100–1200 m, 8.–9..v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.00–6.25 mm. Width, 1.25–1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae reddish, except basal segment black; legs dark brown to black; tarsi medium-dark reddish-brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum, suture and elytral humeri (Fig. 174).

Head: Very closely punctate, almost rugose, subspherical; frons convex; interantennal carina well developed, frontoclypeal region with median carina; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III longer than IV; antennomeres IV–X each subequal, as long as wide; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, laterally and basally rugose; surface somewhat dullish; longer than wide, with moderate hind angles; lateral sides parallel-sided, apicially arcuate; disc convex; base sinuous, with short median carina above scutellum.

Scutellum: Slightly rugose, wide, short, sub-triangular and distally rounded.

Elytra: With slight indications of striae; interstices slightly elevated; humeri and basal 1/2 rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Reddish colored antennae along with the absence of a median pronotal carina above the scutellum will distinguish *D. ferruginipes* from *D. modiglianii*. Shape of the pronotum and surface structure will further distinguish the species from *D. longicollis*; that being parallel-sided pronotum with rugose surfaces in *D. ferruginipes* and arcuate lateral sides with closely punctate surfaces in *D. longicollis*.

Distribution. A rare eucnemid species previously found in Papua New Guinea. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

Dromaeolus foveatus sp.nov. (Fig. 175)

Type material. Male holotype: "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan, Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *foveatus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: "LAOS, 1.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." / "ALLOTYPE, *Dromaeolus*, *foveatus*, Otto, det. R.L. Otto, 2014 (♀ handwritten behind species name on label) [yellow printed label]. Holotype is deposited in NHMB. Allotype is deposited in BMNH.

Description. Male holotype: Length, 5.75 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere II reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum and basal 1/3 of elytra (Fig. 175).

Head: Very closely punctate, subspherical; frons with circular fovea and delicate median carina above frontoclypeal region; interantennal carina well developed, frontoclypeal region without median carina; surface shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex; base sinuous, with delicate short median groove above scutellum.

Scutellum: Punctate, short, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; surfaces finely and horizontally rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Allotype: Length 5.00 mm; width 1.25 mm; elongate vestitures on elytra slightly different than holotype, more concave.

Etymology. The specific epithet, *foveatus* is derived for the depressed fovea present above the frontoclypeal region on the frons.

Differential diagnosis. *Dromaeolus foveatus* can be separated from *D. amicus*, *D. indicus* and *D. kubani* based on the presence of a circular fovea above the frontoclypeal region.

Distribution. A very rare, endemic eucnemid species known from single localities within the Louangprabang and Xiengkhouang provinces in Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. Both adults were taken from a dry evergreen forest and tropical montane deciduous forest.

Dromaeolus granosus Fleutiaux, 1928 (Fig. 176)

Material examined. Ten specimens were available for study: 1, "LAOS, 24–29.iv.2001, Khammouan prov., 18°07′N 104°29′E, Ban Khoun Ngeun, ~200 m, Vít Kubáň leg." (NHMB); 3, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 6, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Redescription. Length, 4.50–7.00 mm. Width, 1.00–1.75 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere XI apically reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae (Fig. 176).

Head: Very closely punctate, almost granulose, subspherical; frons convex, with variable short median ridge extending from vertex to absent; interantennal carina interrupted in middle; surface somewhat dull; apical margin of frontoclypeal region evenly rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III longer than either IV and V; antennomere IV subequal to II and V; antennomere V as long as VI; antennomeres VI–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Granulose; surface dull; longer than wide, with moderate hind angles; lateral sides arcuate, basally compressed above hind angles; disc convex; base sinuous, with delicate median impressed line extending from base to near center of disc.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened; humeri rugose, remaining areas with dense punctations.

Legs: First tarsomere longer than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. *Dromaeolus granosus* can be distinguished from *D. cylindricus* by antennomere III being longer than either IV or V. *Dromaeolus granosus* can be further separated from *D. coomani*, *D. exilis*, *D. semigriseus* and *D. sulcicollis* by the absence of median carina on the head. The eucnemid species can also be separated from *D. simplicifrons* by the absence of elongate setae on the humeri and sutural regions of the elytra.

Distribution. An uncommon eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a tropical montane deciduous forest and tropical montane evergreen forest.

Dromaeolus indicus Bonvouloir, 1871 (Fig. 177)

Material examined. Seven specimens were available for study: 1, "LAOS, 1.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 2, "LAOS, 10.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "LAOS, 24–29.vi.2001, Khammouan prov., 18°07′N 104°01"E, Ban Khoun Ngeun, ~ 200 m, Vít Kubáň leg." (NHMB); 2, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan, Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mt., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.00–5.50 mm. Width, 1.25–1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae very dark infuscate reddish, except basal segment black; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum and basal 1/4 of elytra (Fig. 177).

Head: Very closely punctate, subspherical; frons convex; interantennal carina well developed, frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface somewhat shiny; slightly longer than wide, with moderate hind angles; basal 1/2 parallel-sided, apical 1/2 arcuate; disc with fine median fovea extending towards base; base sinuous.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; humeri rugose, remaining areas with dense, shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25 times wider than laterally.

Differential diagnosis. Convex frons will distinguish *D. indicus* from *D. foveatus*. Convex pronotal disc will further separate *D. indicus* from *D. kubani*. Arrangements of elongate setae present on the pronotum and elytra, as well as the antennal structure and coloration will also distinguish *D. indicus* from *D. amicus*.

Distribution. A rare eucnemid species previously found in India, Malaysia and Philippines. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, tropical montane deciduous forest and tropical montane evergreen forest.

***Dromaeolus kubani* sp.nov.** (Fig. 178)

Type material. Female holotype: "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~ 600 m, V. Kubáň leg." / "HOLOTYPE, *Dromaeolus*, *kubani*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 5.00 mm. Width, 1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark brown to black; tarsi medium brown; head, pronotum and elytra clothed with short, whitish recumbent setae; basal 1/4 of elytra and pronotum with elongate whitish setae (Fig. 178).

Head: Very closely punctate, subspherical; frons convex, with short median carina; interantennal carina complete; frontoclypeal region with narrow base, without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; basal 2/3 parallel-sided; apical 1/3 arcuate; disc convex, basal 1/2 with median groove; base sinuous.

Scutellum: Punctate, elongate, sub-triangular and distally rounded.

Elytra: Slightly striate; interstices slightly elevated; humeri transversely rugose, apical areas with dense, shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with whitish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 1.50 times wider than laterally.

Etymology. The specific epithet, *kubani* is named after V. Kubáň, collector of this species.

Differential diagnosis. *Dromaeolus kubani* can be separated from *D. amicus*, *D. foveatus* and *D. indicus* based on the presence of a median groove on the pronotal disc.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Borikhamxay province of central Laos.

Ecoregion(s). Northern Annamites rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a lowland semi-evergreen forest.

***Dromaeolus laosianus* sp.nov.** (Fig. 179)

Type material. Male holotype: "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *laosianus*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Male holotype: Length, 4.00 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark brown to black; tarsi medium brown; head, pronotum and elytra clothed with short, whitish recumbent setae (Fig. 179).

Head: Very closely punctate, subspherical; frons convex, with delicate short median carina above frontoclypeal region; interantennal carina complete; frontoclypeal region with narrow base, without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate; disc convex; base sinuous, with slightly elevated keel above scutellum.

Scutellum: Punctate, elongate, sub-triangular and distally rounded.

Elytra: Very slightly striate; interstices slightly elevated; humeri transversely rugose, apical areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with whitish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 2.00 times wider than laterally.

Etymology. The specific epithet, *laosianus* is derived from the name of the country in which the species was collected.

Differential diagnosis. Uniform vestitures of setae on the dorsum of *Dromaeolus laosianus* will distinguish the species from most *Dromaeolus* species in Laos, except *D. depressifrons* and *D. xiengkhouangiensis*. Lengths of antennomere III in relation to IV will also distinguish *D. laosianus* from *D. xiengkhouangiensis*; that being III as long as IV in *D. laosianus* and antennomere III longer than IV in *D. xiengkhouangiensis*. *Dromaeolus laosianus* can be further distinguished from *D. depressifrons* based on the characteristics of the frons above the interantennal carina; median carina present in *D. laosianus* and with circular fovea in *D. depressifrons*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Houaphanh province of Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Dromaeolus longicollis Fleutiaux, 1896 (Fig. 180)

Material examined. Three specimens were available for study: 1, "LAOS, Louangnamtha pr., 21°09′N 101°19′E, Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, Vít Kubáň leg." (NHMB); 2, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~ 600 m, V. Kubáň leg." (GERP, NHMB).

Redescription. Length, 5.25–5.50 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae reddish, except basal segment black; legs dark brown; tarsi medium-dark reddish-brown; head, pronotum and elytra clothed with short, white recumbent setae, more apparent on head, pronotum, lateral side, suture and basal 1/3 of elytra (Fig. 180).

Head: Very closely punctate, subspherical; frons with delicate median carina above frontoclypeal region; interantennal carina well developed; frontoclypeal region with median carina; surface somewhat dull; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Very closely punctate, laterally rugose; surface somewhat dull; slightly longer than wide, with moderate hind angles; lateral sides arcuate, gradually narrowing craniad; disc convex, with fine median line extending from base up near middle; base sinuous.

Scutellum: Slightly rugose, short, sub-trapezoid and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; basal 1/2 rugose, remaining areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25 times wider than laterally.

Differential diagnosis. *Dromaeolus longicollis* can be separated from *D. confusus* by its closer punctations and duller surfaces of the pronotum as well as reddish antennae and legs. *Dromaeolus longicollis* can be further separated from *D. congener* by the form of the pronotum and antennomere III being longer than IV.

Distribution. A very rare eucnemid species previously found in Papua New Guinea. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rainforests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

Dromaeolus minimus Fleutiaux, 1896 (Fig. 181)

Material examined. Four specimens were available for study: 3, "LAOS, 21°09′N 101°19′E, Louangnamtha pr., Namtha → Muang Sing, 5–31.v.1997, 900–1200 m, V. Kubáň leg." / "Dromaeolus minimus, Fleutiaux, 1896, J. Muona det. 2014" (JMC); 1, "LAOS Bolikhamsai province, BAN NAPE – Kaew Nua pas, 18.04.01–05–1998 600 masl, 18 22.3′ N 105 9.1" E, E. Jendek & O. Sausa legit" (JMC).

Redescription. Length, 3.50–4.25 mm. Width, 1.00–1.25 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennomere I black, antennomeres II–XI red; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellow recumbent setae (Fig. 181).

Head: Very closely punctate, subspherical; frons convex; interantennal carina well developed, frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface somewhat shiny; as long as wide, with moderate hind angles; lateral sides gradually narrowing craniad, arcuate; disc convex; base sinuous.

Scutellum: Rugose, short, sub-triangular and distally rounded.

Elytra: Weakly striate; interstices slightly elevated; humeri transversely rugose, remaining areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic

tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellow recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 1.25 times wider than laterally.

Differential diagnosis. Convex frons, reddish antennomeres II–XI as well as vestitures on elytra will distinguish *D. minimus* from *D. foveatus*.

Distribution. A very rare eucnemid species previously found in Indonesia, Malaysia, Philippines and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and lowland semi-evergreen forest.

***Dromaeolus modiglianii* Fleutiaux, 1896** (Fig. 182)

Material examined. Five specimens were available for study: 1, "LAOS, 1–.9.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "Collection Naturhistorisches Museum Basel" / "LAOS-N, (Oudomxai), 1–9.v.2002, ~ 1100 m, 20°45′N 102°09′E, OUDOM XAI (17 km NEE), Vít Kubáň leg." (NHMB); 2, "LAO-NE, Hua Phan prov., 20°12′ N 104°01′E, PHU PHAN Mt., ~1750 m, 17.v.–3.vi.2007, Vit. Kubáň leg" / "NHMB Basel, expedition to Laos, 2007" (GERP); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20′E, 30 km NE Phonsavan, Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Brancucci leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB).

Redescription. Length, 5.50–6.00 mm. Width, 1.50–1.75 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae reddish-brown, except basal segment black; legs, including tarsi infuscate reddish; head, pronotum and elytra clothed with short, white recumbent setae, moreso on elytral humeri and base of pronotum (Fig. 182).

Head: Very closely punctate, almost rugose, subspherical; frons covex; interantennal carina well developed, frontoclypeal region with median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III longer than IV; IV slightly shorter than V; V–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally and basally rugose; surface somewhat shiny; slightly longer than wide, with moderate hind angles; lateral sides gradually narrowing craniad; disc convex; base sinuous, with delicate short median carina above scutellum.

Scutellum: Punctate, wide, sub-trapezoid and distally rounded.

Elytra: With indications of striae, especially at humeri; interstices slightly elevated; humeri rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Antennomeres III longer than IV will distinguish *D. modiglianii* from *D. vicinus*. Presence of short median carina on the base of the pronotum will further distinguish *D. modiglianii* from *D. dissimilis*.

Distribution. A rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Lunag Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

***Dromaeolus phonsavanicus* sp.nov.** (Fig. 183)

Type material. Female holotype: "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *phonsavanicus*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 5.00 mm. Width, 1.50 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae; elongate setae present moreso on elytral humeri and sutural areas and base of pronotum (Fig. 183).

Head: Very closely punctate, subspherical; frons convex, with short median carina above clypeus; interantennal carina complete; frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; IV–X each subequal, slightly longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely and shallowly punctate, laterally rugose; surface shiny; slightly longer than wide, with moderate hind angles; lateral sides arcuate; disc convex; base sinuous, with median keel present above scutellum.

Scutellum: Punctate, wide, sub-triangular and distally rounded.

Elytra: Slightly striate; interstices slightly elevated, rugose; surfaces with elongate recumbent setae; lateral sides with very sparse, short setae.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 1.50 times wider than laterally.

Etymology. The specific epithet, *phonsavanicus* is named after the nearest community, Phonsavan, in which the new species was taken.

Differential diagnosis. *Dromaeolus phonsavanicus* is distinguished from all *Dromaeolus* species in Laos, based on the shape of the setal pattern on the elytra.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Xiengkhouang province of Northeastern Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Dromaeolus semigriseus Bonvouloir, 1871 (Fig. 184)

Material examined. Fifteen specimens were available for study: 1, "LAOS Bolikhamsai province, BAN NAPE – Kaew Nua Pas, 18.04.01.05–1998 600 masl, 18 22.3′ N 105 9.1′ E, E. Jendek & O. Sausa legit" / "Dromaeolus exilis, Bonvouloir, 1871, J. Muona det. 2014" (JMC); 1, "LAOS Champasak province, Paksé-Paksong, Ban Itou env., 10–18.IV.1999 800 masl, N 15 10.4′ E 106 0.5.8′ (GPS), E. Jendek & O. Sausa leg." / "Dromaeolus exilis, Bonvouloir, 1871, J. Muona det. 2014" (JMC); 1, "LAS-NE, Houa Phan prov., 20°12–13′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mt., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 9,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv. –25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH); 3, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP).

Redescription. Length, 7.50–10.50 mm. Width, 1.75–2.25 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomere XI apically reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and basal 1/4 of elytra clothed with short, white recumbent setae, with remaining elytra with sparse white setae (Fig. 184).

Head: Very closely punctate, almost rugose, subspherical; frons convex, with median carina extending from vertex to frontoclypeal region; interantennal carina interrupted in middle; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as IV and V combined; antennomere IV subequal to II; antennomere V slightly shorter than VI; antennomeres VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; basal 3/4 parallel-sided, arcuate anteriorly; disc with very small pair of small, circular despressions; base sinuous, with somewhat deep and narrow median groove extending from base to 3/4 the length of the pronotum.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; humeri rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Well developed median carina on the head will distinguish *D. semigriseus* from either *D. coomani* or *D. simplcifrons*. Setae on the pronotum and elytra will further separate *D. semigriseus* from *D. exilis*. *Dromaeolus semigriseus* can separated from *D. sulcicollis* by its shallower basal groove of the pronotum and setae at the base of the elytra.

Distribution. An uncommon, widespread eucnemid species previously found in Papua New Guinea and Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Central Indochina dry forest, Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

***Dromaeolus simplicifrons* sp.nov.** (Fig. 185)

Type material. Male holotype: "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Brancucci leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *simplicifrons*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype, with same label data as holotype: / "ALLOTYPE, *Dromaeolus*, *simplicifrons*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in NHMB.

Paratypes: 24, from the following localities: LAOS: 1, "LAOS north, 13–24.V.1997, 15 km NW Louang Namtha, N 21°07.5′ E 101°21.0′, alt. 750 ±100 m, M. Strba & R. Hergovits leg." (JMC); 1, "LAOS-CE, 1–18.v.2001, Boli Kham Xai prov., 18°21′ N 105°08′E, BAN NAPE (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "LAO, Phongsaly prov., 21°21′N 102°03′E, BAN SANO MAI, 19–26.v.2004, ~1150 m, Vít Kubáň leg." (NHMB); 1, "LAOS, Phongsaly prov., BAN SANO MAI, 19–26.v.2004, ~1150 m, 21°21′N 102°03′E, P. Pacholátko leg." (FSCA); 5, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Brancucci leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 13, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1700 m, 10.–30.v.2009, M. Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (GERP, NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan (30 km NE): Phou Sane Mt., 1400–1700 m, 10.–30.v.2009, D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); THAILAND: 1, "THAI. N. Nan prov., Doi Phu Kha N. P. Headq., 19°13′ N, 101°07′ E, 22–26.iv.1999, D. hauck leg." (JMC).

Each specimen labeled: "PARATYPE, *Dromaeolus*, *simplicifrons*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in FSCA, GERP, JMC and NHMB.

Description. Male holotype: Length, 10.00 mm. Width, 2.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres XI apically reddish; femur and tibiae black; tarsi dark brown-black; head, pronotum and basal 1/4 elytral humeri and suture clothed with whitish recumbent setae (Fig. 185).

Head: Very closely punctate, almost rugose, subspherical; frons convex, without median carina; interantennal carina absent; frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as IV and V combined; antennomere IV slightly longer than II; antennomeres IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally and basally rugose; surface somewhat shiny; longer than wide, with moderate hind angles; lateral sides slightly arcuate; disc convex; base sinuous, with somewhat shallow and narrow median groove extending from base to 1/2 the length of the pronotum.

Scutellum: Punctate, quadrate and distally rounded.

Elytra: Striae absent; interstices flattened; humeri transversely rugose, remaining areas with dense shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with whitish recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Allotype: 11.50 mm long; antennae slightly serrate; structurally similar to male holotype.

Variations. Twenty-four adult paratypes were examined. Thirteen male paratypes varied in length from 9.00–10.00 mm. Eleven female paratypes varied in length from 8.00–12.00 mm. Females are on average slightly larger than males. Female antennae are weakly serriform, not quite filiform as present in male specimens. Female antennae are shorter and more robust, reaching up to the hind angles. Male antennae are slightly longer and narrower, often reaching just beyond the hind angles of the pronotum. Reddish color intensity at the apical third of antennomere XI exhibits some variability. Some specimens were observed to have unicolored black antennae than in other specimens. The median sulcus above the scutellum on the pronotal disc is variable among some specimens. The impression is more elongate in some, while other specimens exhibit a shorter sulcus. One male specimen have a weakly developed median carina on the frons above the base of the epistomal part of the epicranium.

Etymology. The specific epithet, *simplicifrons* is derived from its simple frons which lacks a median carina, usually present in other similar species found in Laos.

Differential diagnosis. Absence of a median carina on the head will distinguish *D. simplicifrons* from *D. coomani*, *D. exilis*, *D. semigriseus* and *D. sulcicollis*.

Distribution. An uncommon eucnemid species known from several provinces in Central and Northeastern Laos and a single locality in Thailand.

Ecoregion(s). Lunang Prabang montaine rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest, lowland semi-evergreen forest and tropical montane deciduous forest.

Dromaeolus sulcicollis Fleutiaux, 1922 (Fig. 186)

Material examined. Nine specimens were available for study: 1, "LAO, Phongsaly prov., 21°21′N 102°03′E, BAN SANO MAI, 19–26.v.2004, ~1150 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20′E, 30 km NE Phonsavan: Ban Na Lam → Phou Sane Mt., 1300–1500 m, 10.–30.v.2009, M. Brancucci leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°12–13′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mt., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 5,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH; GERP); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 7.00–11.50 mm. Width, 1.75–2.50 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly black, with indications of metallic blue reflections (in some specimens); antennae black, except antennomere XI apically reddish; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytral humeri clothed with short, white recumbent setae, with remaining elytra with sparse white setae (Fig. 186).

Head: Very closely punctate, almost rugose, subspherical; frons convex, with median ridge extending from vertex to above the frontoclypeal region; interantennal carina interrupted in middle; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomere III as long as IV and V combined; antennomere IV subequal to II; antennomere V slightly shorter than VI; antennomeres VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; longer than wide, with moderate hind angles; basal 3/4 parallel-sided, slightly arcuate anteriorly; disc with slight pair of small, circular despressions; base sinuous, with deep and wide median groove extending from base to near center of disc.

Scutellum: Slightly rugose, oblong, quadrate and distally rounded.

Elytra: Without striae; interstices flattened; humeri rugose, remaining areas with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with white recumbent setae; hypomeron with basally open, deep, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Well developed median carina on the head will distinguish *D. sulcicollis* from either *D. coomani* or *D. simplicifrons*. *Dromaeolus sulcicollis* can be further separated from *D. exilis* and *D. semigriseus* by its deeper basal groove of the pronotum and setae at the base of the elytra.

Distribution. A rare eucnemid species distributed across Laos and Vietnam. In Laos, *D. sulcicollis* was previously taken at "Haut-Mékong" (FLEUTIAUX 1947) and most recently in northern and central areas of the country.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Dromaeolus vicinus Fleutiaux, 1899 (Fig. 187)

Material examined. Six specimens were available for study: 1, "LAOS, 1.–16.v.1999, Louangprabang pr., 20°33–4′N 102°14′E, BanSongCha (5 km W), 1200 m, Vít Kubáň leg." (JMC); 1, "LAO, Phongsaly prov., 21°41–2′N 102°06–8′E, 28.v.–20.vi.2003, PHONGSALY env., ~ 1500 m, Brancucci leg." (NHMB); 1, "LAOS, Phongsaly prov., BAN SANO MAI, 19–26.v.2004, ~1150 m, 21°21′N 102°03′E, P. Pacholátko leg." (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mt., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., Ban Saleui → Phou Pane Mt., 20°12–13.5′N 103°59.5′–104°01′E, 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (GERP); 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 5.00–7.00 mm. Width, 1.25–2.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae brownish, except antennomere II reddish-brown; legs dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 187).

Head: Very closely punctate, almost rugose, subspherical; frons convex; interantennal carina well developed, frontoclypeal region with median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, at least 2.50 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate to filiform from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, posteriorlaterally rugose; surface somewhat shiny; longer than wide, with moderate hind angles; basal 2/3 parallel-sided, apical 1/3 arcuate; disc convex; base sinuous.

Scutellum: Slightly rugose, oblong, sub-triangular and distally rounded.

Elytra: With indications of striae; interstices slightly elevated; humeri rugose, remaining areas with dense, shallow punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically widened; metathoracic coxal plates medially 2.00 times wider than laterally.

Differential diagnosis. Antennomeres III as long as IV will distinguish *D. vicinus* from *D. modiglianii* and *D. dissimilis*.

Distribution. A rare eucnemid species previously found in India. The species was taken for the first time in Laos.

Ecoregion(s). Luang Prabang montane rain forests, Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Adults were taken from a dry evergreen forest and tropical montane deciduous forest.

***Dromaeolus xiengkhouangiensis* sp.nov.** (Fig. 188)

Type material. Female holotype: "LAOS-NE, Xieng Khouang prov., 19°37–8′N 103°20–1′E, Phonsavan (30 km NE), Phou Sane Mt., 1400–1700 m, 10.–30.v.2009, D. Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" / "HOLOTYPE, *Dromaeolus*, *xiengkhouangiensis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in NHMB.

Description. Female holotype: Length, 4.25 mm. Width, 1.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly black; antennae black, except antennomeres II and XI apically reddish; femur and tibiae dark brown to black; tarsi medium-dark brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 188).

Head: Very closely punctate, almost rugose, subspherical; frons convex, with delicate median carina above frontoclypeal region; interantennal carina complete; frontoclypeal region without median carina; surface somewhat shiny; apical margin of frontoclypeal region evenly rounded, about 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Weakly serrate from antennomeres III–X, reaching to hind angles of pronotum; antennomeres III slightly longer than IV; IV–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally rugose; surface shiny; as long as wide, with moderate hind angles; lateral sides gradually narrow cranially; disc convex; base sinuous.

Scutellum: Punctate, slightly wide, sub-triangular and distally rounded.

Elytra: Slightly striate; interstices slightly elevated; humeri transversely rugose, apical areas with dense punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with basally closed, deep, lateral antennal grooves; metathoracic episternum apically wide; metathoracic coxal plates medially 2.00 times wider than laterally.

Etymology. The specific epithet, *xiengkhouangiensis* is named after the Laotian province where the holotype was collected.

Differential diagnosis. Uniform vestitures of setae on the dorsum of *D. xiengkhouangiensis* will distinguish the species from most *Dromaeolus* species in Laos, except *D. depressifrons* and *D. laosianus*. Lengths of antennomere III in relation to IV will further distinguish *D. xiengkhouangiensis* from either of these species; that being III longer than IV in *D. xiengkhouangiensis* and antennomere III as long as IV in the other two species.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Xiengkhouang province of Northeastern Laos.

Ecoregion(s). Luang Prabang montane rain forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Tribe Nematodini Leiler, 1976

Diagnosis. Mandibles short, with ventral secondary tooth, without expanded lateral surfaces; prothoracic tibiae with one apical spur; male prothoracic tarsomere I with basal sex combs; tarsomere IV originally bilobed; lateral sides of mesothoracic and metathoracic tibiae variable, either with setae and simple spines or with setae and transverse rows of spine combs; hypomeron with antennal grooves or without antennal grooves; prothoracic sternal peg high, either truncated or excavated; median lobe without dorsal basal struts, fused with lateral lobes, distinct, with narrowly and deeply bifurcate apex; bursa divided, simple; spermatheca sclerotized, divided and U-shaped.

Key to the genera within the tribe Nematodini

1 Hypomeron without indications of lateral antennal grooves (Fig. 198). **2**

– Hypomeron with shallow, basally open lateral antennal grooves (Fig. 194). ..... ***Graciliforma* gen.nov.**

2 Strongly elongate capitate antennae absent; last abdominal terga hidden beneath elytral apices (Fig. 188–192). **3**

– Strongly elongate capitate antennae present; last abdominal terga exposed beyond elytral apices (Fig. 196). ..... ***Miruantennus* gen.nov.**

3 Dorsal surface of tarsomere IV shallowly excavated to receive tarsomere V; tarsal claws simple. ..... ***Nematodes*** **Berthold, 1827**
– Dorsal surface of tarsomere IV deeply excavated to receive tarsomere V; tarsal claws basally toothed. ..... ***Coomanius*** **Fleutiaux, 1924**

Nematodes Berthold, 1827

(=*Hypocaelus* Dejean, 1833: 85)
(=*Emathion* Laporte, 1835: 171)
(=*Sphaerocephalus* Laporte, 1838: table)

Diagnosis. Nematodini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; antennal grooves absent; male prothoracic tarsomere I simple with basal curved sex combs; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite strongly produced; tarsal claws simple; lateral surfaces of mesothoracic and metathoracic tibiae with setae and transverse rows of spine combs; male aedeagus dorsoventrally compressed, with laterally attached secondary lateral lobes; median lobe simple, with moderately and narrowly bifurcate apices; lateral lobes simple, entire; flagellum simple.

Note. Identification of two species were based on the translated, interpreted species descriptions from Fleutiaux (1896a, 1896b). New species identification was made when specimen failed to match with any interpreted published descriptions of other species known from the region.

Key to the species of *Nematodes*

1 Elytra with evenly distributed setae. **2**
– Elytra with pronounced elongate setae at humeral and sutural regions. ..... ***Nematodes suturalis*** **Fleutiaux, 1896**
2 Antennae reddish; pronotum without lateral circular foveae. .... ***Nematodes feai*** **Fleutiaux, 1896**
– Antennae dark reddish-brown; pronotum with lateral circular foveae. ..... ***Nematodes lateralis*** **sp.nov.**

Nematodes feai Fleutiaux, 1896 (Fig. 189)

Material examined. Six specimens were available for study: 2, "LAOS-NE, Houa Phan prov., Ban Saleui → Phou Pane Mt., 20°12–13.5′N 103°59.5′–104° 01′E, 1340–1870 m, 15.vi.–15.v.2008, Lao collectors leg. (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104° 00′03″E, 1480–1550 m, PHOU PANE Mt., 9.–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°11–13′N 103°59′–104° 01′E, Ban Saleui → Phou Pane Mt., 9.–17.vi.2009, 1300–1900 m, Michael Geiser leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (GERP); 2, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 7.00–8.50 mm. Width, 1.50–2.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae

dark reddish; legs dark brown; tarsi reddish-brown; head, pronotum and elytra clothed with very short, yellow recumbent setae (Fig. 189).

Head: Very closely punctate, subspherical; frons convex; surface dull; apical margin of frontoclypeal region feebly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate, reaching to hind angles of pronotum; antennomere III as long as the combined lengths of IV and V; antennomeres IV–VI subequal; antennomeres VII–X slightly larger than VI; antennomere XI asymmetrical.

Pronotum: Very closely punctate to granulose; surface dull; longer than wide, with moderate, sharp hind angles; basal half parallel-sided, apical half arcuate; disc convex, with pair of circular fovea; median groove extends from base to near middle; base sinuous.

Scutellum: Dull, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices slightly elevated with dense punctations.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate and rugose, with very short, white recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Smaller size, along with redder colored antennae and pronotal sculpture will distinguish *N. feai* from *N. lateralis*. Uniformly distributed setae on elytra will further distinguish *N. feai* from *N. suturalis*.

Distribution. A rare eucnemid species previously found in Myanmar. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. All adults were taken from a tropical montane deciduous forest.

Nematodes lateralis sp.nov. (Fig. 190)

Type material. Female holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Nematodes*, *lateralis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [red printed label]. Holotype is deposited in BMNH.

Description. Female holotype: Length, 12.00 mm. Width, 3.00 mm. Body subcylindrical, elongate and tapering towards the elytral apex; uniformly brownish-black; antennae dark reddish-brown; legs dark reddish-brown; tarsi dark reddish-brown; head, pronotum and elytra clothed with short, yellowish recumbent setae (Fig. 190).

Head: Very closely punctate, subspherical; frons convex, with small median circiular fovea above base of frontoclypeal region; surface shiny; apical margin of frontoclypeal region feebly trilobed, more than 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate from antennomeres VI–X, reaching to elytral humeri; antennomeres III as long as combined lengths of IV and V; antennomeres IV and V subequal, shorter than VI; antennomeres VI–X each subequal, longer than wide; antennomere XI slightly longer than X.

Pronotum: Closely punctate, laterally and basally rugose; surface shiny; longer than wide, with moderate hind angles; basal 3/4 parallel-sided; apical 1/4 arcuate; disc convex, with median groove extending from base to near apical, lateral sides with circular fovea; base sinuous, depressed at both sides above scutellum.

Scutellum: Shallowly punctate, sub-trapezoid and distally truncated.

Elytra: Striate; interstices slightly elevated; humeri deeply, closely punctate; apical areas with shallow punctations.

Legs: First tarsomere shorter than the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavated and emarginated; metathoracic tarsomere V elongate with simple claws.

Venter: Punctate, with yellowish recumbent setae; hypomeron with apical basally opened, lateral antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Etymology. The specific epithet is derived from a pair of foveae present along the lateral sides of the pronotum.

Differential diagnosis. Larger size, along with darker colored antennae and pronotal sculpture will distinguish *N. lateralis* from *N. feai*. Uniformly distributed setae on elytra will further distinguish *N. lateralis* from *N. suturalis*.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Houaphanh province of Northeastern Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. A single adult was taken from a tropical montane deciduous forest.

Nematodes suturalis. Fleutiaux, 1896 (Fig. 191)

Material examined. Two specimens were available for study: 1, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (GERP); 1,"NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH).

Redescription. Length, 6.00–8.00 mm. Width, 1.50–2.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black; antennae dark brown-black, except antennomeres II and XI apically reddish; legs dark brown to black, tarsi medium brown; head, pronotum and elytra clothed with very short, white recumbent setae; humeral and sutural regions of elytra clothed with elongate, white recumbent setae (Fig. 191).

Head: Very closely punctate to granulose, subspherical; frons convex; surface dull; apical margin of frontoclypeal region feebly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Serrate, reaching to hind angles of pronotum; antennomere III as long as the combined lengths of IV and V; antennomeres IV–V subequal; antennomere VI slightly larger than IV and V; antennomeres VII–X slightly larger than VI; antennomere XI asymmetrical.

Pronotum: Very closely punctate to granulose; surface dull; longer than wide, with moderate, sharp hind angles; basal 3/4 parallel-sided, apical 1/4 arcuate; disc convex, with pair of circular fovea; median groove extends from base to near middle; base sinuous.

Scutellum: Dull, punctate, oblong, sub-triangular and distally rounded.

Elytra: Striate; interstices slightly elevated; surfaces densely punctate to transversely rugose.

Legs: First tarsomere as long as the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Punctate and rugose, with very short, white recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. Distinct, elongate setae on the humeral and sutural regions of the elytra will distinguish *N. suturalis* from both *N. feai* and *N. lateralis*.

Distribution. A very rare eucnemid species previously found in Indonesia. The species was taken for the first time in Laos.

Ecoregion(s). Northern Indochina subtropical forests.

Biology. Developmental stages remain unknown. Both adults were taken from a tropical montane deciduous forest.

Coomanius Fleutiaux, 1924

Diagnosis. Nematodini, with apical margin of frontoclypeal region feebly trilobed and more than twice as wide as the distance between antennal sockets; antennal grooves absent; metathoracic coxal plates medially 3.00–6.00 times wider than laterally; last visible ventrite strongly produced; tarsal claws basally toothed; lateral surfaces of mesothoracic and metathoracic tibiae with setae and irregularly placed spines.

Coomanius lugubris Fleutiaux, 1925 (Fig. 192)

Material examined. Seventeen specimens were available for study: 1, "Laos, Umg. Vientiane, III.–VI.1963" / "Coomanius, lugubris, Fleutiaux, A. Cobos det. 1965" (genus, species, author and year handwrittened) (ZSM); 1, "Laos, Umg. Vientiane, III.–VI.1963" / "Coomanius, lugubris, Fleutiaux, A. Cobos det. 1967" (genus, species, author and year handwrittened) (ZSM); 15, "Laos, Umg. Vientiane, III.–VI.1963" (GERP and ZSM).

Redescription. Length, 6.50–11.00 mm. Width, 1.50–3.00 mm. Body cylindrical, elongate and tapering towards the elytral apex; uniformly dark brown-black to black; antennae dark brown-black to black, except antennomere XI apically reddish; legs dark

brown to black, tarsi medium brown; head, pronotum and elytra clothed with very short, white, apically directed, erect setae on pronotum, recumbent on elytra (Fig. 192).

Head: Very closely punctate to rugose, subspherical; frons convex, with variable median carina; surface dull; apical margin of frontoclypeal region feebly trilobed, 2.00 times wider than base; mandibles stout, bidentate, densely punctate and rugose.

Antennae: Very weakly serrate, reaching to hind angles of pronotum; antennomere III shorter than the combined lengths of IV and V; antennomeres IV–X subequal; antennomeres IX–XI rounded; antennomere XI slightly shorter than X.

Pronotum: Granulose; surface dull; longer than wide, with moderate, sharp hind angles; lateral sides gradually wider toward craniad, apical quarter strongly arcuate, hooded over vertex; disc convex, without circular foveae; median groove extends from base to near middle; base sinuous.

Scutellum: Dull, rugose, rectangular, distally bilobed with median groove.

Elytra: Striate; interstices slightly elevated; surfaces transversely rugose.

Legs: First tarsomere slightly shorter the combined lengths of the remaining four on mesothoracic and metathoracic tarsi; tibiae rounded in cross section; metathoracic tarsomeres I–III simple; metathoracic tarsomere IV excavate-emarginate; metathoracic tarsomere V elongate with basally toothed claws.

Venter: Finely punctate, with very short, white recumbent setae; hypomeron simple, without antennal grooves; metathoracic episternum parallel-sided; metathoracic coxal plates medially 3.00–6.00 times wider than laterally.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. An uncommon eucnemid species previously found in Vietnam. The species was taken for the first time in Laos.

Ecoregion(s). Northern Khorat Plateau moist deciduous forests.

Biology. Developmental stages remain unknown. All adults were taken from a lowland semi-evergreen forest.

Graciliforma gen.nov.

Type species. *Graciliforma rufoapicalis* sp.nov., designated here.

Diagnosis. Adult *Graciliforma* superficially resemble those of other member of the tribe Nematodini, particularly *Nematodes* Berthold, 1827, *Neomathion* Fleutiaux, 1930 and *Trigonopleurus* Bonvouloir, 1871. Presence of basally open, shallow lateral antennal grooves on the hypomeron is a unique feature for *Graciliforma* within the tribe and serves as the best means to distinguish the group from all members of the tribe. The Neotropical *Microtrigonus* Bonvouloir is the only other group within the tribe which possess lateral hypomeral antennal grooves. Basally toothed tarsal claws and bicoloration will further diagnose *Microtrigonus* from *Graciliforma*. *Graciliforma* is superficially similar to *Fornax subacuminatus* Bonvouloir. Form of the antennal structures will distinguish *Graciliforma* from *F. subacuminatus*; that being slightly expanded and somewhat flattened in antennomeres VI–XI for *Graciliforma* and subequal and rounded in *F. subacuminatus*. Additionally, structure of the hypomeral

antennal grooves will also distinguish *Graciliforma* from *F. suacuminatus*; that being shallow and wider in *Graciliforma* and narrow and deeper in *F. subacuminatus*.

Description. Male. Body elongate-narrow, approximately four times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus with elongate setae. Antennae subfiliform with 11 antennomeres, setose; scape four times longer than pedicel; pedicel globular, subequal to antennomere III; antennomere III longer than antennomere IV; antennomere IV shorter than antennomere V; antennomere V slightly shorter than antennomere III; antennomeres VI–XI subequal in lengths, slightly expanded and slightly flattened in cross sectional view. Compound eye ovoid, well developed, moderately large. Antennal groove present in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically trilobed, 2.50 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles unidentate; right mandible bidentate. Maxillary palpi 3-segmented; apical segment rectangular, nearly as long as preceding two segments. Labial palpi short, 2 segmented; apical segment rectangular, longer than preceding segment. Labrum concealed.

Pronotum: Slightly trapezoidal, convex, setose, carinulate above hind angles, arcuate in apical 3/4. Slightly longer than wide, basally widest. Lateral pronotal ridge entire, slightly sinuate near middle. Disc convex with a slight median sulcus extending from base to 1/2 the length; base sinuous.

Scutellum: Longer than wide, sub-triangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Disc with slight indications of striae. Humeral region strongly striate. Interstices slightly elevated.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia rectangular, flattened, basally narrowed, setose with one apical spur. First prothoracic tarsi with straight basal sex combs. Lateral side of mesothoracic and metathoracic tibiae with hairs and transverse rows of spines. Metathoracic tarsi, including claws longer than tibia. First metathoracic tarsi longer than combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, wider than III. Metathoracic tarsi V short with basally swollen, somewhat notched claws. Tarsal formula 5-5-5.

Venter: With elongate setae. Prothoracic sternal peg basally broad, somewhat elongate. Notosternal suture shorter than hypomeral base. Hypomeron with basally open, wide, shallow lateral antennal grooves; widest in the middle (Fig. 194). Median ridge of antennal grooves present. Epipleura expanded, concealing metathoracic episterna; not grooved. Metathoracic coxal plate medially 3.00–6.00 times wider than laterally. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite forming a strongly produced, truncated beak.

Aedeagus (Fig. 195): Elongate, dorsoventrally flattened; median lobe free, with fairly deeply notched apex; lateral lobes apically rounded, laterally toothed, shorter than median lobe; secondary lateral lobes laterally attached, apically rounded and without lateral teeth; basal piece elongate, dorsally open, apically rounded.

Etymology. The generic name is a combination of two Latin words '*gracilis*' for slender and '*forma*' for form. Gender: feminine.

Graciliforma rufoapicalis sp.nov. (Figs 193–195)

Type material. Male holotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" / "HOLOTYPE, *Graciliforma*, *rufoapicalis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Female allotype: "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" / "ALLOTYPE, *Graciliforma*, *rufoapicalis*, Otto, det. R.L. Otto, 2014" (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in BMNH.
Paratypes: 152, from the following localities: 1, "LAOS South, Attapu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02′ E 106°35′, alt. 800 m, E. Jendek & O. Šauša leg." (JMC); 1, "LAOS, 1–18.v.2001, Bolikhamxai prov., 18°21′N 105°08′E, Ban Nape (8 km NE), ~600 m, Vít Kubáň leg." (NHMB); 1, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mts., 1–16.vi.2009, Zdeněk Kraus leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 2, "LAOS-NE, Houa Phan prov., 20°13′09–19″N 103°59′54″–104°00′03″E, 1480–1550 m, PHOU PANE Mts., 9–16.vi.2009, David Hauck leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 3, "LAOS-NE, Houa Phan prov., 20°12–13.5′N 103°59.5′–104°01′E, Ban Saluei → Phou Pane Mts., 1340–1870 m, 10.v.–16.vi.2009, M. Brancucci & local coll. leg." / "NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáň" (NHMB); 50, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), 1300–1900 m, 7.iv.–25.v.2010, 20°12′N, 104°01′E, leg. C. Holzschuh" / "BMNH{E}, 2012-14, C. Holzschuh" (AAC, BMNH, GERP, ZSM); 94, "NE LAOS, Hua Phan prov., Ban Saleui, Phou Pan (Mt.), N20°12′ E104°01′, 1300–1900 m, 11.iv.–15.v.2012" / "BMNH{E}, 2012-14, C. Holzschuh" (BMNH, FSCA, GERP, ZSM).
Each specimen labeled: "PARATYPE, *Graciliforma*, *rufoapicalis*, Otto, det. R.L. Otto, 2014" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label]. All paratypes are deposited in AAC, BMNH, FSCA, GERP, JMC, NHMB and ZSM.

Description. Male holotype: Length, 7.00 mm. Width, 1.50 mm. Body color brown-black (Fig. 193).

Head: Closely and deeply punctate, surface shiny; eyes slightly protuberant; frons with slight circular depression above antennal insertions; labial and maxillary palpi reddish-brown.

Antennae: Subfiliform, reaching about 1/2 the length of the body; black with antennomere II and apical half of antennomere XI reddish.

Pronotum: Dark brown-black, shiny with short, yellow recumbent setae; surface with closely spaced, deep punctations; slightly rugose; slightly longer than wide, basally widest; with moderate hind angles; slightly carinulate above hind angles; arcuate in apical 3/4; disc convex, lacking circular foveae; slight median sulcus present above scutellum, extending up to 1/2 the length of pronotum.

Elytron: Length 5.00 mm. Width 0.33 mm at humeri. Convex, shiny with short, yellow recumbent setae, dark brown-black. Disc slightly striate. Interstices slightly elevated, horizontally rugose.

Legs: Shiny, dark brown-black. Apical ends reddish. Tarsi dark reddish in color. Surfaces shallowly punctate; with short, yellow recumbent setae.

Venter: Shiny, dark brown-black, surface with short, yellow recumbent setae; closely, shallowly punctate.

Allotype: 6.00 mm long; antennae weakly serriform, reaching 1/3 the length of the body, just beyond the hind angles; antennomere XI shorter, more ovoid than male; pronotal disc more convex, median sulcus shorter than male; tarsi darker; metathoracic tarsi I as long as the combined lengths of the remaining four.

Variation. One hundred and fifty-two adult paratypes were examined. One hundred and thirty-six male paratypes varied in length from 4.00–7.25 mm. Sixteen female paratypes varied in length from 5.50–6.00 mm. Females are on average larger than males. Female antennae are weakly serriform, not quite filiform as present in male specimens. Female antennae are quite short, extending about 1/3 the length of the body, just beyond the hind angles of the pronotum Antennomere XI are shorter, more ovoid, while males have a more elongate terminal segment. Male antennae are slightly longer than 1/3 the length of the body. Color intensity at the apical half of antennomere XI exhibits some variability. Some specimens were observed to have a much smaller reddish area of the antennae than in other specimens. Coloration of the tibiae and tarsi also exhibit some variability. Some male specimens have similarly colored legs as in females, while other specimens have a lighter coloration. The median sulcus above the scutellum on the pronotal disc is variable among some specimens. The impression is more pronounced in some, while other specimens exhibit either weak to almost absent sulcus.

Etymology. The specific epithet is a combination of two Latin words '*rufus*' for red and '*apic-*' for apex in reference to antennomere XI having reddish coloration present on the apical half of the segment.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. A common, endemic eucnemid species known from a single locality within the Houaphanh province in Northeastern Laos and a single locality within the Borikhamxay province in Central Laos.

Ecoregion(s). Northern Annamites rain forests, Northern Indochina subtropical forests, Southern Annamites montane rain forests.

Biology. Developmental stages remain unknown. Adults were taken from a lowland semi-evergreen forest and tropical montane deciduous forest.

Miruantennus gen.nov.

Type species. *Miruantennus basalis* sp.nov., designated here.

Diagnosis. Within the tribe, adult *Miruantennus* superficially resemble *Graciliforma*, *Nematodes* Berthold and *Neomathion* Fleutiaux. *Miruantennus* can be distinguished from *Graciliforma* by the absence of basally open, shallow, lateral antennal grooves on the hypermeron. Strongly elongate capitate antennal segments and exposed last abdominal segment will further distinguish the new group from *Nematodes* and *Neomathion*.

Description. Male. Body elongate-narrow, approximately four times longer than wide, dorsally convex and ventrally well sclerotized.

Head: Hypognathus with elongate setae. Antennae capitate with 11 antennomeres, terminal four segments elongate, setose; scape two times longer than pedicel; pedicel

elongate, subequal to antennomere III; antennomere III slightly longer than antennomere IV; antennomere IV as long as antennomere V; antennomere V slightly shorter than antennomere III; antennomeres VI–VII subequal in lengths, slightly expanded; antennomeres VIII–XI subequal, enlarged, each as long as the combined lengths of antennomeres III–VI (Fig. 197). Compound eye circular, well developed, moderately large. Antennal groove absent in geni region between base of mandible and compound eye. Frontoclypeal region subtriangular, apically rounded, 2.00 times wider apically than the distance between antennal sockets. Mandibles well developed, stout, setose; left mandibles unidentate; right mandible bidentate. Maxillary palpi 3-segmented; apical segment rectangular, nearly as long as preceding two segments. Labial palpi short, 2-segmented; apical segment rectangular, longer than preceding segment. Labrum concealed.

Pronotum: Rectangular, convex, setose, parallel-sided, arcuate craniad. Longer than wide. Lateral pronotal ridge entire, slightly sinuate near craniad. Disc convex with pair of small circular foveae, short carina present above scutellum; base sinuous.

Scutellum: Longer than wide, sub-triangular, distally rounded.

Elytron: Elongate, convex, laterally marginate, setose. Disc with indistinct striae, except near suture. Humeral region moderately striate. Interstices flattened.

Legs: Prothoracic legs shortest, metathoracic legs longest. Prothoracic tibia elongate, triangular, flattened, basally narrowed, apically rounded, setose with one apical spur. First prothoracic tarsi with straight basal sex combs. Lateral side of mesothoracic and metathoracic tibiae with hairs and transverse rows of spines. Metathoracic tarsi, including claws longer than tibia. First metathoracic tarsi as long as the combined lengths of remaining four. Metathoracic tarsi I–III simple. Metathoracic tarsi IV excavated-emarginated, wider than III. Metathoracic tarsi V short with basally swollen, simple claws. Tarsal formula 5-5-5.

Venter: With elongate setae. Prothoracic sternal peg basally broad, somewhat short. Notosternal suture as long as the hypomeral base. Hypomeron simple, without lateral antennal grooves (Fig. 198). Epipleura expanded, not grooved. Metathroacic episterna caudally wide. Metathoracic coxal plate medially 2.00 times wider than laterally. Tarsal grooves absent on mesothoracic and metathoracic sterna. Abdoman with five visible ventrites, medially convex. Last visible ventrite forming a strongly produced, truncated beak. Last abdominal segment exposed, extending beyond elytral apices.

Etymology. The generic name, *Miruantennus* is a combination of two Latin words '*mirus*' for wonderful and '*antenna*' for sailyard in reference to its unique antennal structure found in the tribe. Gender: masculine.

***Miruantennus basalis* sp.nov.** (Fig. 196–198)

Type material. Male holotype: "LAOS Champasak province, Paksé-Paksong, Ban Itou env., 10–18.IV.1999 800 masl, N 15 10.4′ E 106 0.5.8′ (GPS), E. Jendek & O. Sausa leg." / "Graciliforma sp.nov., J. Muona det. 2014" / "HOLOTYPE, *Miruantennus*, *basalis*, Otto, det. R.L. Otto, 2014" (♂ handwritten behind species name on label) [red printed label]. Holotype is deposited in JMC.

Description. Male holotype: Length, 5.00 mm. Width, 1.00 mm. Body color dark brown-black, humeral region pale orange (Fig. 196).

Head: Black; closely punctate to granulose, surface dullish; eyes slightly protuberant; frons with small circular tubercule above antennal insertions; labial and maxillary palpi yellowish-brown.

Antennae: Capitate, reaching slightly more than a 1/3 the length of the body; medium brown with antennomeres VIII–XI dark brown.

Pronotum: Black, except for reddish apical margin, dullish with short, yellow recumbent setae; surface rugose to granulose; longer than wide, parallel-sided; with short hind angles; arcuate craniad; disc convex, with small, shallow circular foveae; slight median carina present above scutellum; base sinuous.

Elytron: Length 3.25 mm. Width 0.50 mm at humeri. Convex, shiny with short, yellow recumbent setae, dark brown-black, humeri pale orange. Disc indistinctly striate, except near suture. Interstices flattened, horizontally rugose.

Legs: Shiny, uniformly yellowish-brown. Tarsi yellowish-brown in color. Surfaces shallowly punctate; with short, yellow recumbent setae.

Venter: Shiny, black, surface with short, yellow recumbent setae; closely, shallowly punctate.

Etymology. The specific epithet is derived in reference to it lighter orange coloration present at the humeral region of the elytra.

Differential diagnosis. See Diagnosis of the monotypic genus.

Distribution. A very rare, endemic eucnemid species known from a holotype collected in Champasack province of Southern Laos.

Ecoregion(s). Central Indochina dry forest.

Biology. Developmental stages remain unknown. A single adult was collected from a lowland semi-evergreen forest.

Eucnemidae present in adjacent countries

Anelastes crenulatus (Bonvouloir, 1875) . . . . . Cambodia, India, Myanmar (Fleutiaux 1896, 1947)
Farsus brevis Fleutiaux, 1931 . . . . . Vietnam (Fleutiaux 1931a)
Farsus exoticus Bonvouloir, 1871 . . . . . India, Myanmar (Bonvouloir 1871; Fleutiaux 1896)
Rhagomicrus circumdatus Fleutiaux, 1929 . . . . . Vietnam (Fleutiaux 1929)
Entomophthalmus alutaceus Fleutiaux, 1938 . . Vietnam (Fleutiaux 1938b)
Microrhagus quadricollis (Fleutiaux, 1947) . . . . Vietnam (Fleutiaux 1947)
Microrhagus rouani (Fleutiaux, 1924) . . . . . Vietnam (Fleutiaux 1924a)
Microrhagus tonkinensis (Fleutiaux, 1929) . . . . Vietnam (Fleutiaux 1929)
Scopulifer florentini Fleutiaux, 1918 . . . . . Vietnam, Myanmar (Fleutiaux 1927)
Dendrocharis bicolor Redtenbacher, 1867 . . . . . Vietnam (Muona 1991a)
Dyscharachthis amplicollis (Fleutiaux, 1923) Thailand (Otto, pers. obs.)
Perrotius tenuipes Fleutiaux, 1938 . . . . . Vietnam (Fleutiaux 1938a)
Mesogenus blumei Fleutiaux, 1896 . . . . . Myanmar (Muona 1991a)
Mesogenus mellyi Bonvouloir, 1875 . . . . . Indonesia, Malaysia

Temnus sumatrensis (Fleutiaux, 1896) . . . . . Vietnam (Fleutiaux 1923)
Epipleurus coomani Fleutiaux, 1928 . . . . . Vietnam (Fleutiaux 1928)
Galbites auricolor (Bonvouloir, 1875) . . . . . India (Muona 1991b)
Galbites tomentosa (Montrouzier, 1855) . . . . . Malay Peninsula (Muona 1991b)
Galbites wallacei (Perroud & Montrouzier, 1864) . . . . . China, India, Myanmar, Singapore, Thailand (Fleutiaux 1896; Muona 1991b)
Diapodius infirmus Bonvouloir, 1875 . . . . . Thailand (Fleutiaux 1947)
Pseudoscython parvulus (Fleutiaux, 1899) . . . . . India, Myanmar, Vietnam (Fleutiaux 1899; Muona 1991a)
Scython florentini Fleutiaux, 1918 . . . . . Vietnam (Fleutiaux 1918)
Cladoscython ramosus (Fleutiaux, 1896) . . . . . Myanmar (Fleutiaux 1896)
Profornax languei Fleutiaux, 1896 . . . . . Vietnam (Fleutiaux 1896)
Serrifornax extractus Fleutiaux, 1947 . . . . . Vietnam (Fleutiaux 1947)
Serrifornax longipennis (Fleutiaux, 1927) . . . . . Vietnam (Fleutiaux 1927)
Fornax blaisei Fleutiaux, 1924 . . . . . Vietnam (Fleutiaux 1924a)
Fornax diversus Fleutiaux, 1929 . . . . . Vietnam (Fleutiaux 1929)
Raapia galboides Fleutiaux, 1899 . . . . . Vietnam (Fleutiaux 1928)
Dromaeolus hoabinus Fleutiaux, 1947 . . . . . Vietnam (Fleutiaux 1947)
Dromaeolus rufus Fleutiaux, 1918 . . . . . Myanmar (Fleutiaux 1896)
Dromaeolus tonkinensis (Fleutiaux, 1927) . . . . . Vietnam (Fleutiaux 1927, 1947)
Nematodes confusus Fleutiaux, 1947 . . . . . Vietnam (Fleutiaux 1947)
Nematodes incertus Bonvouloir, 1872 . . . . . Myanmar (Fleutiaux 1896)

Fleutiaux (1923) listed two species, *Mesogenus mellyi* Bonvouloir, 1875 and *Diapodius infirmus* Bonvouloir, 1875 captured in Laos. These two eucnemid species however, have not been verified as taken in Laos and I have regarded these species as erroneously listed. Further research and surveys are needed to verify their presence in Laos.

Fleutiaux (1927, 1947) listed *Pterotarsus tomentosus* (Montrouzier, 1855) (now *Galbites tomentosa* (Montrouzier)) captured in Tonkin (now Vietnam). This species however, has otherwise only been taken as far north as Penisular Malaysia (Muona 1991b). The Vietnamese record requires further confirmation and it is quite possible if verified in Vietnam, that the range of this eucnemid species may extend into Laos.

Discussion

Globally, 14 different biomes and 8 biogeographic regions are recognized under these categories established by the World Wildlife Fund. Laos, as part of the Indo-Malayan region is home to two major biomes: Tropical/Subtropical Moist Broadleaf Forests and Tropical/Subtropical Dry Broadleaf Forests. Small, discrete ecoregions are categorized within these biomes.

Of the 71 ecoregions recognized within the Tropical/Subtropical Moist Broadleaf Forests in the Indo-Malayan region, 6 ecoregions are present in Laos. These ecoregions include the following: Luang Prabang montane rain forests, Northern Annamites rain forests, Northern Indochina subtropical forests, Northern Khorat Plateau moist deciduous forests, Northern Thailand-Laos moist deciduous forests and Southern Annamites montane rain forests.

Of the 12 ecoregions within the Tropical/Subtropical Dry Broadleaf Forests in the biogeographic region, only 2 ecoregions are present in Laos. These two ecoregions include the following: Central Indochina dry forests and Southeastern Indochina dry evergreen forests.

Central Indochina dry forests encompass a large area of the Indochina sub region covering much of Thailand as well as Cambodia, southeastern Laos and extending in southern Vietnam. Dipterocarps are the dominant elements of the drier forest systems within the ecoregion. The ecoregion receives approximately 100–150 cm of rainfall annually, with periods of drought lasting 5–7 months. Wildfires are common occurances within the ecoregion. In Laos, only 3 species of Eucnemidae have been sampled within the ecoregion in the southern areas of the country.

Luang Prabang montane rain forests covers much of north central Laos south into north central Thailand. It is the second largest ecoregion in Laos, which is a heterogeneous mix of different forest communities including open montane forests, open conifer forests, mesic conifer-hardwood forests and montane hardwood forests dominated with Fagaeceae and Lauraceae. Soils are thin, granitic in areas. Other areas, particularly dominated with pines, occur on skeletal soils of sandstone or clay schist. The ecoregion receives approximately 200–300 cm of rainfall annually with a long dry season. In Laos, 43 species of Eucnemidae have been sampled within the ecoregion in the north central part of the country.

Northern Annamites rain forests lies largely in east central Laos, extending into the Annamite Range of west central part of Vietnam. Low level, two tiered mesic montane forest systems are predominately members of Myrtaceae, Fagaceae, Elaeocarpaceae, and Lauraceae, with high levels of endemism taking place within the ecoregion. Geologic substrates are varied within the ecoregion, with large areas of limestone karst topography is present. Climate within the ecoregion are abrupt along the mountain crest. Within montane habitats, the ecoregion receives 150–250 cm of rainfall annually. In Laos, 53 species of Eucnemidae have been taken within the ecoregion in the east central part of the country.

Northern Indochina subtropical forests extends across the highlands of four countries including southern China, northern Laos, Myanmar and northern Vietnam. It is one of the largest ecoregion in area within Laos, composed of a heterogeneous mix of different forest systems, which will have Himalayan floristic elements in some areas influenced by high rainfall totals of the spring/summer seasons and cooler temperatures in the winter. These include open canopy pine forests, tropical montane rain forests, subtropical broadleaf forests, monsoon forests, evergreen broadleaf forests and tropical seasonal forests. Many of the trees within the ecoregion includes members of the Theaceae, Magnoliaceae and Fagaceae families in these forest systems. Mountains are

composed largely of Paleozoic limestone or igneous rocks. The region is warmest in the spring, prior to the start of the summer monsoon season. January is the coldest period with infrequent frost activities at higher elevations. The ecoregion receives 120–250 cm of rainfall annually. In Laos, 104 species of Eucnemidae have been sampled in the northern areas of the country.

Northern Khorat Plateau moist deciduous forests is a small ecoregion largely confined along the Mekong River Valley largely in northern Thailand and into east central area of Laos, south of the capital city of Vientiane. It has been suggested the mixed deciduous forest present in the valley is an intermediate of the mesic semi-evergreen forests and the xeric deciduous Dipterocarp forests, similar to the forest structures present in the Central Indochina dry forests. Much of the natural habitat within the ecoregion have been converted to agriculture. The ecoregion receives 200–300 cm of rainfall annually with 5–6 month dry season. In Laos, only 12 species of Eucnemidae have been taken along the Mekong River within the valley of west central part of the country.

Northern Thailand-Laos moist deciduous forests is a small ecoregion which spans the northern areas of Thailand and extending into northern and western Laos north of Vientiane, largely confined along major river valleys and tributaries. Teak (*Tectona grandis* Linnaeus filius; Lamiaceae) is co-predominantly present as one of the major tree species within the moist mixed deciduous forests in the ecoregion. A number of other floristic families are also present in the mesic forest systems. However, much of the natural habitats, including teak forests have been either destroyed or degraded due to selective logging, burning or converted to agricultural use. The ecoregion receives 100–120 cm of rainfall annually. In Laos, 6 species of Eucnemidae have been sampled within the ecoregion in the northern areas of the country.

Southern Annamites montane rain forests is highly remote and scattered in several areas including the Bolavans Plataeu of southeast Laos and the Annamite Range of central Vietnam near the border with Cambodia. The region is extremely diverse in geologic strata, which includes granites, basalts and sedimentary substrates. The ecoregion consists of several forest systems, which includes the wet evergreen forests dominated by members of Fagaceae, Myrtaceae, and Lauraceae along with Anacardiaceae, Burseraceae, Dipterocarpaceae at lower elevations as well as conifer forests and hardwood forests largely consisting of Fagaceae, with members of Magnoliaceae, Aceraceae, Podocarpaceae, Lauraceae, and Theaceae at montane elevations. Forest systems at the highest levels consists largely members of Fagaceae, Theaceae, Ericaceae and a number of conifer species. These high elevation forest systems are often clothed in moist clouds. Abundences of dew and fog in these areas will make up for the lack of rainfall during the dry season. Mean rainfall totals in the ecoregion often exceeds more 250 cm followed by a short dry season lasting 2–3 months. In Laos, 11 species of Eucnemidae have been taken in the southern areas of the country, near the Bolavans Plateau.

Southeastern Indochina dry evergreen forests encompasses much of southern Vietnam and Cambodia, with narrow tracts of the ecoregion present in both southern Laos and central and northern areas of Thailand. Semi-evergreen forests composed

largely of Diptercarps usually have multi-layered, open structured canopies. Floristic composition within these plant communities are lower and less diverse as compared with the evergreen tropical rain forests. Dry evergreen forests within the region occur on both calcareous and crystalline rock substrates. The ecoregion is humid to sub-humid receiving approximately 120–200 cm of rainfall annually with 3–6 months of significant dry periods. In Laos, no Eucnemidae have been sampled within the ecoregion in the southern areas of the country.

Prior to the start of the current survey of the family in Laos, only 27 described species along with two undescribed *Arrhipis* species were recorded for Laos, based on four major resources (Fleutiaux 1947; Cobos 1979; Muona 1991b; Brüstle *et al.* 2010). The last revision of the family for the region was published by Fleutiaux (1947), in which he listed 23 species taken by various collectors in Laos. *Agastocerus signaticollis* Bonvouloir, 1875 was listed in the paper as one of the eucnemid species collected in Laos. However, the identification of that species is questionable and it may refer to *Agastocerus frontalis* Fleutiaux, 1899. Muona (1991b) revised the Eucnemine tribe Galbitini, added several *Galbimorpha* species to the Laotian fauna and synomynized *Pterotarsus mouhouti* Fleutiaux, 1924 under *Galba australiae* Lea, 1919 before transferring the species to *Galbites*. Brüstle *et al.* (2010) added two species to the fauna. The current study lists a total of 154 species collected in Laos. From those figures, 129 species of Eucnemidae are recorded for the first time from Laos, including 53 newly described species. Factoring in all unnamed new species in current revisionary research projects, the Laotian Eucnemid fauna will stand at 162 species.

The majority of the Eucnemidae surveyed in Laos were collected in the northern half of the country, mostly from the NHMB expeditions of 2010–2012 lead by M. Brancucci. Some survey work has been conducted in the southern part of Laos. Future surveys in Laos not only will add additional data for existing species present in unexplored areas of the country, but may potentially add many new country records for species already present in adjacent countries in the region. Revisionary work of at least several groups led by Jyrki Muona will certainly add a number of new species (two in *Arrhipis*, one in *Arisus* and two in *Mesogenus*) to the Laotian eucnemid fauna. The upcoming revision of the tribe Dendrocharini will also add several new species to the Laotian fauna. The potential of adding at least an additional 40 species is very likely, making Laos one of the richest countries not only in the region, but also around the globe for this family, which could reach close to 200 or more species.

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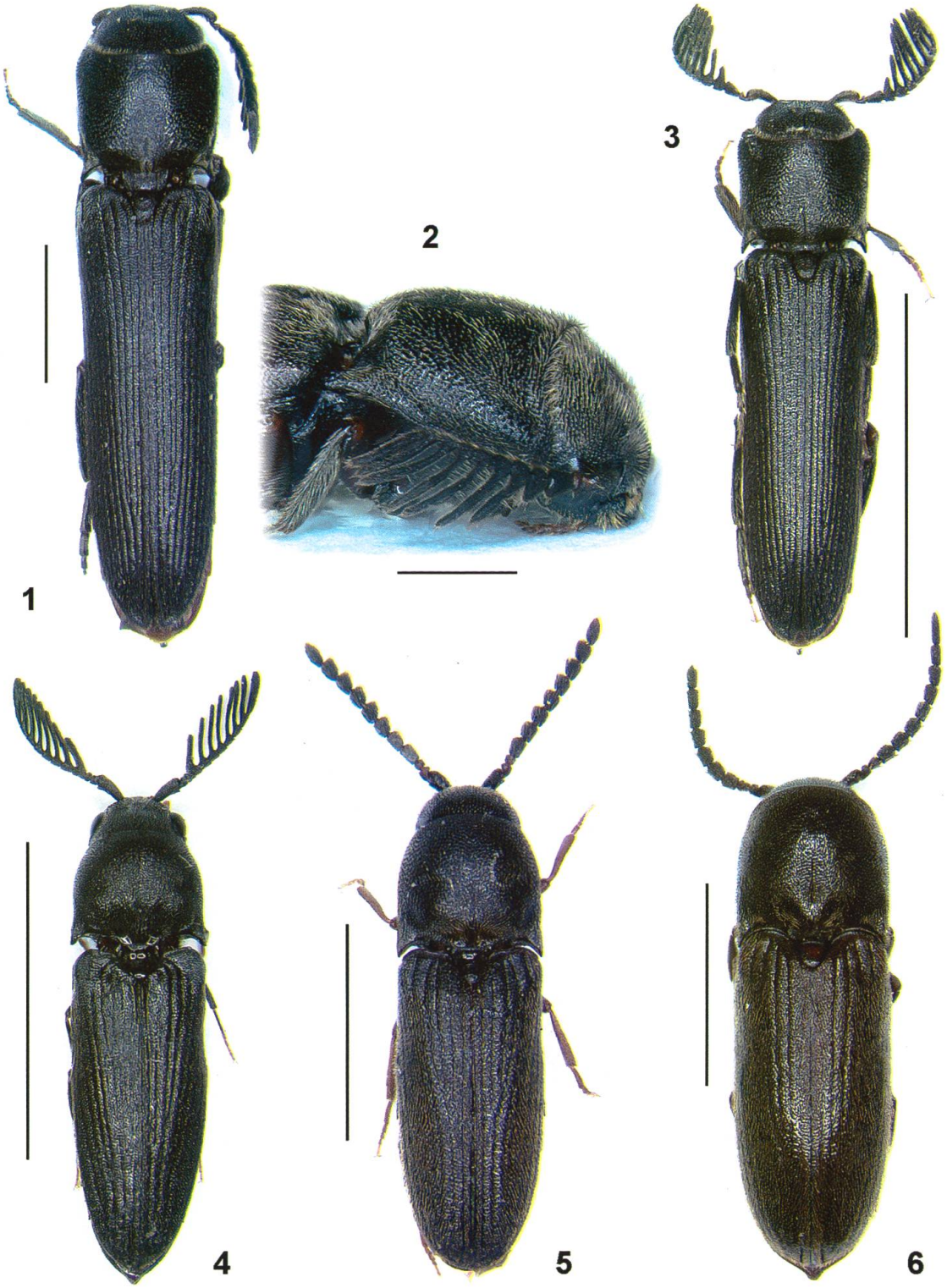
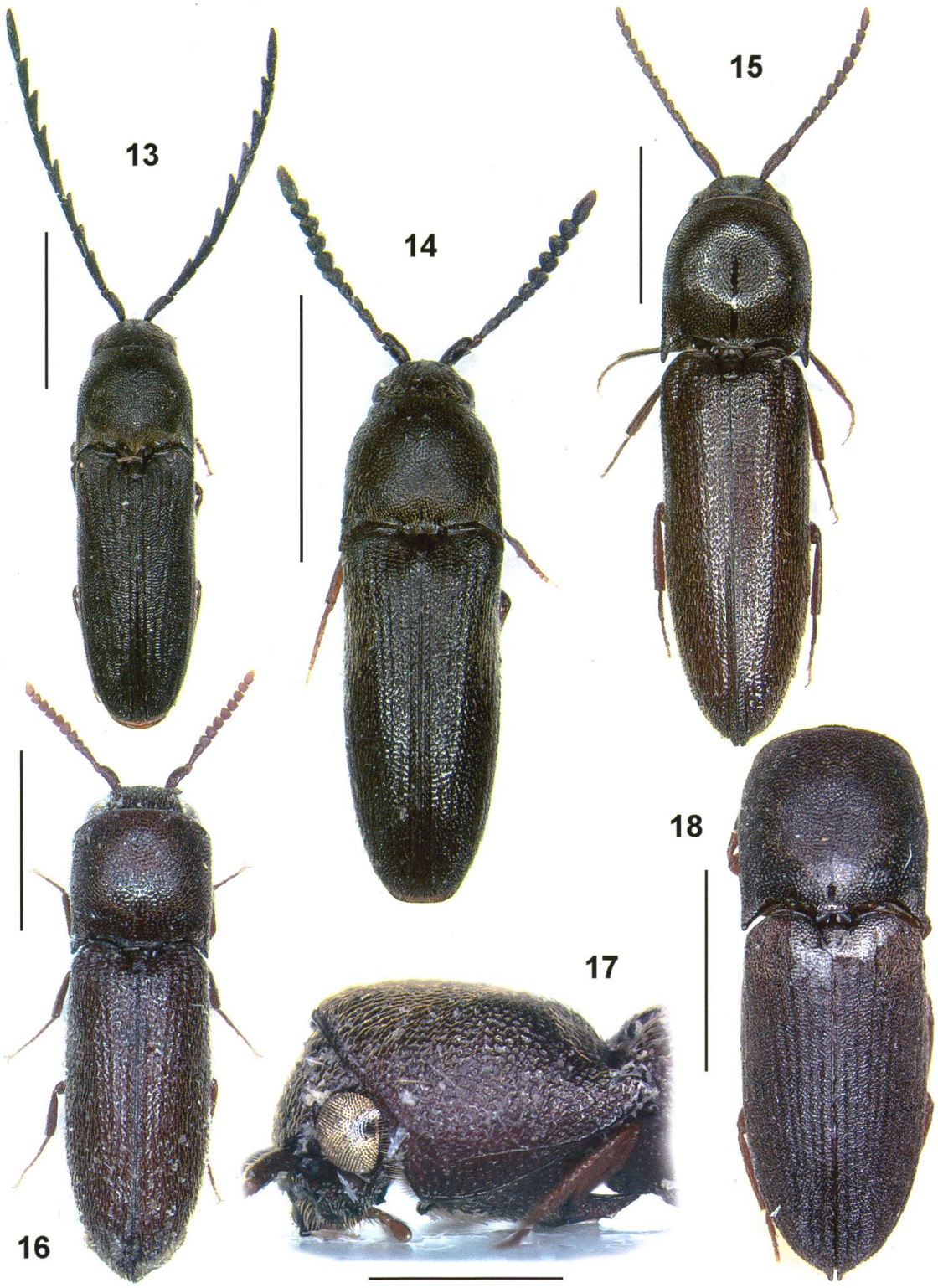
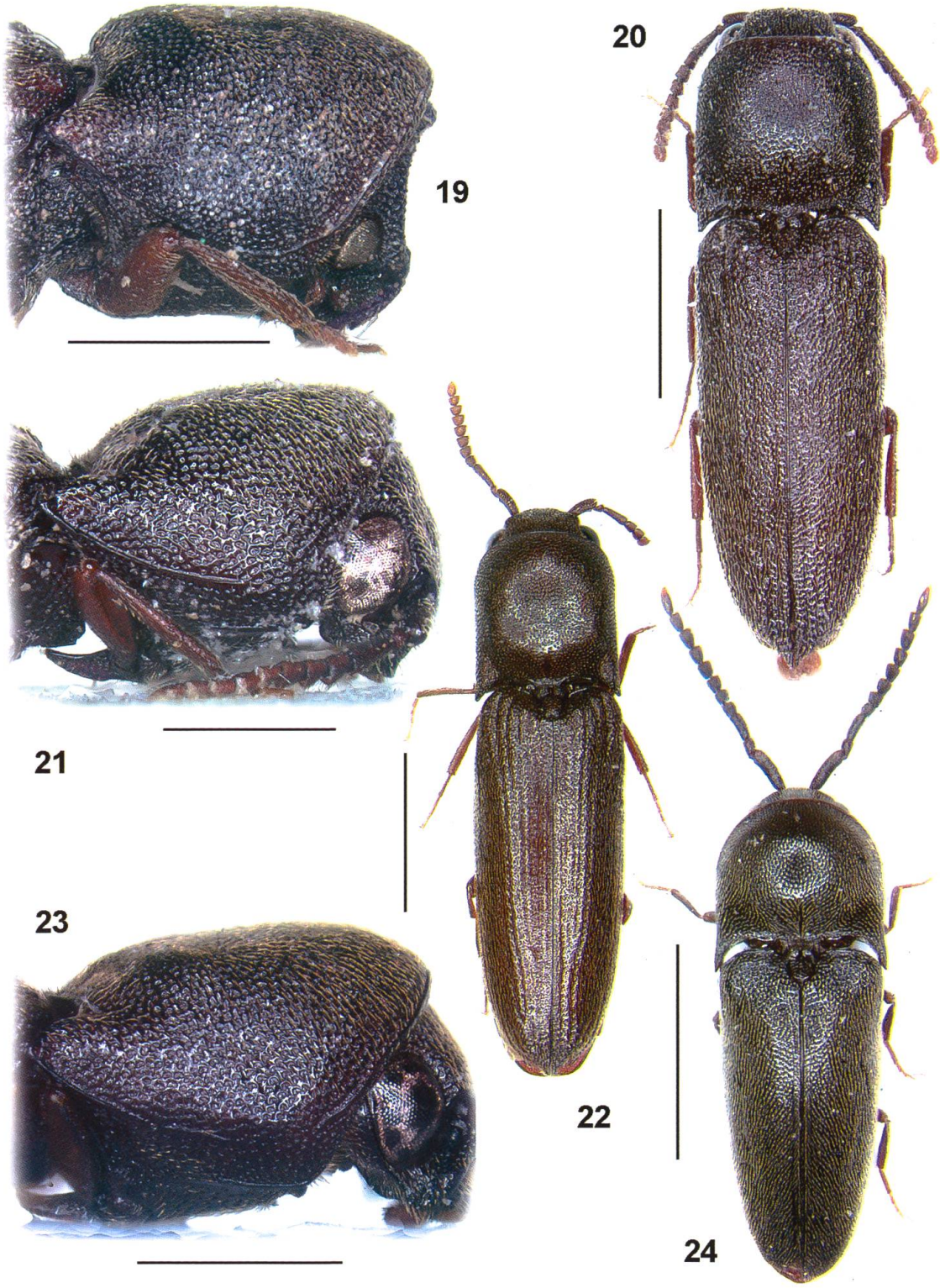


Figs 1–6. Eucnemidae from Laos: 1–2 – *Melasis balwanti* ♂ non type BMNH; 3 – *Melasis bringchangi* ♂ non type BMNH; 4 – *Otho coomani* ♂ non type BMNH; 5 – *Xylophilus hylocharoides* ♀ holotype NHMB; 6 – *Xylophilus laosianus* ♂ holotype BMNH. Dorsal habitus: 1, 3–6. Oblique frontal view: 2. (Scale 2 = 1.0 mm; 1, 5–6 = 2.0 mm; 3–4 = 5.0 mm.)

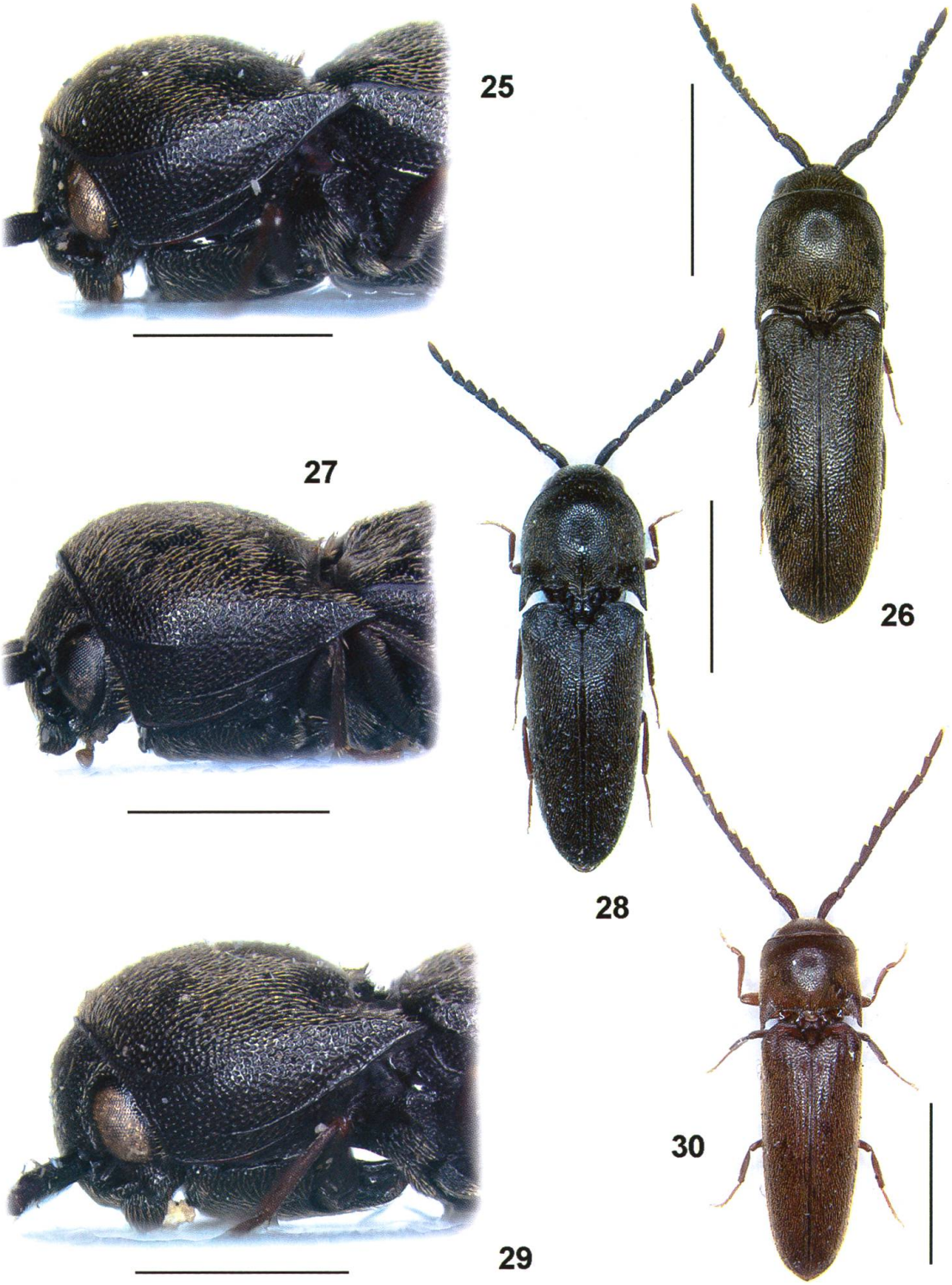
Figs 7–12. Eucnemidae from Laos: 7 – *Saproxylobius crassicollaris* ♂ non type AAC; 8 – *Bioxylus bakeri* ♂ non type NHMB; 9 – *Bioxylus barclayi* ♂ holotype BMNH; 10 – *Bioxylus castaneus* ♂ holotype BMNH; 11 – *Bioxylus granulatus* ♂ holotype NHMB; 12 – *Proxylobius gardneri* ♂ non type NHMB. Dorsal habitus: 7–12. (Scale = 2.0 mm.)



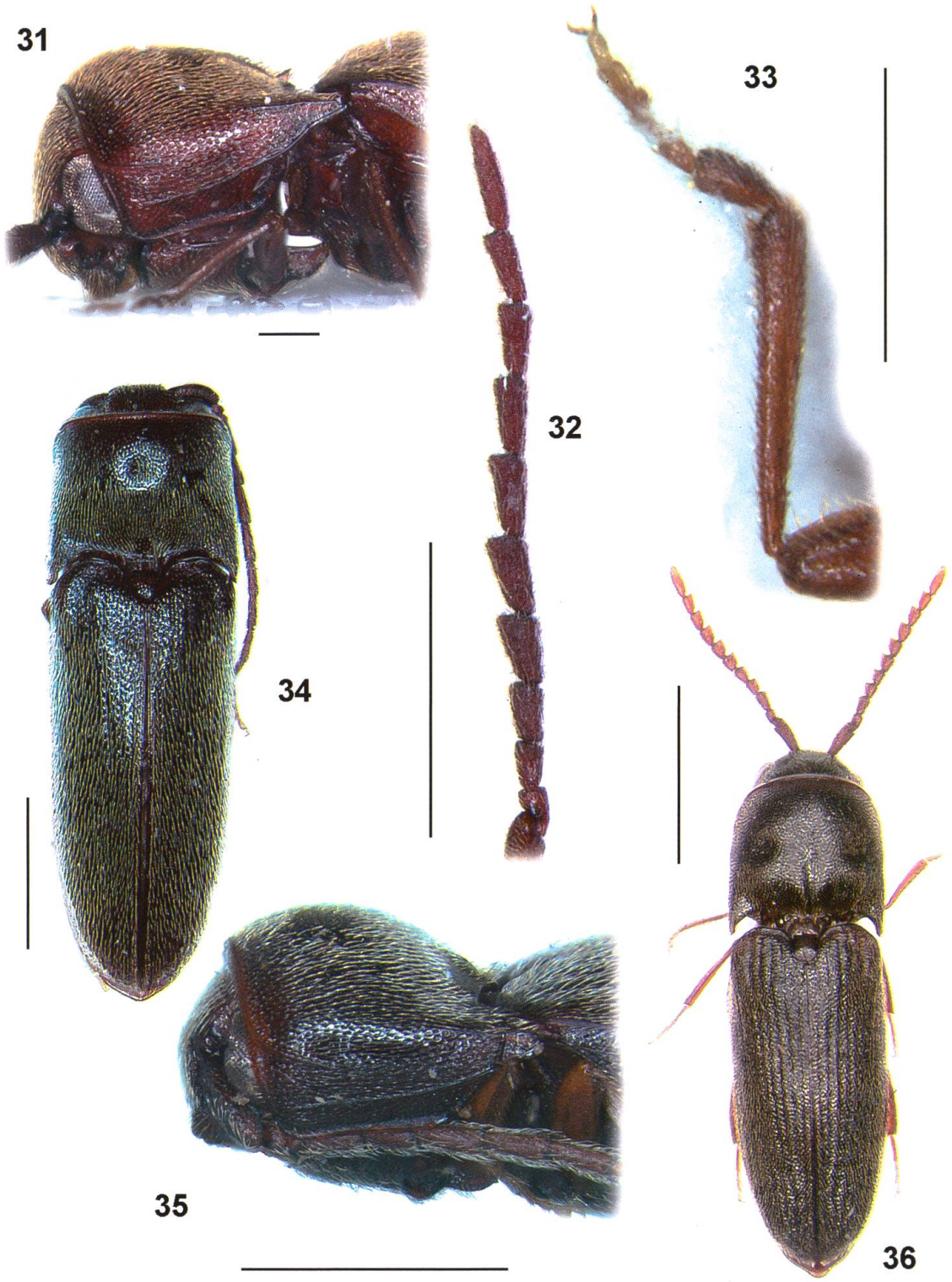
Figs 13–18. Eucnemidae from Laos: 13 – *Proxylobius orientalis* ♂ non type BMNH; 14 – *Hylis parallelus* ♀ holotype BMNH; 15 – *Farsus salvazai* ♂ non type BMNH; 16–17 – *Arrhipis capucina* ♀ non type NHMB; 18 – *Arrhipis cavifrons* ♂ non type BMNH. Dorsal habitus: 13–16, 18. Lateral view: 17. (Scale 17 = 1.0 mm; 13–16, 18 = 2.0 mm.)



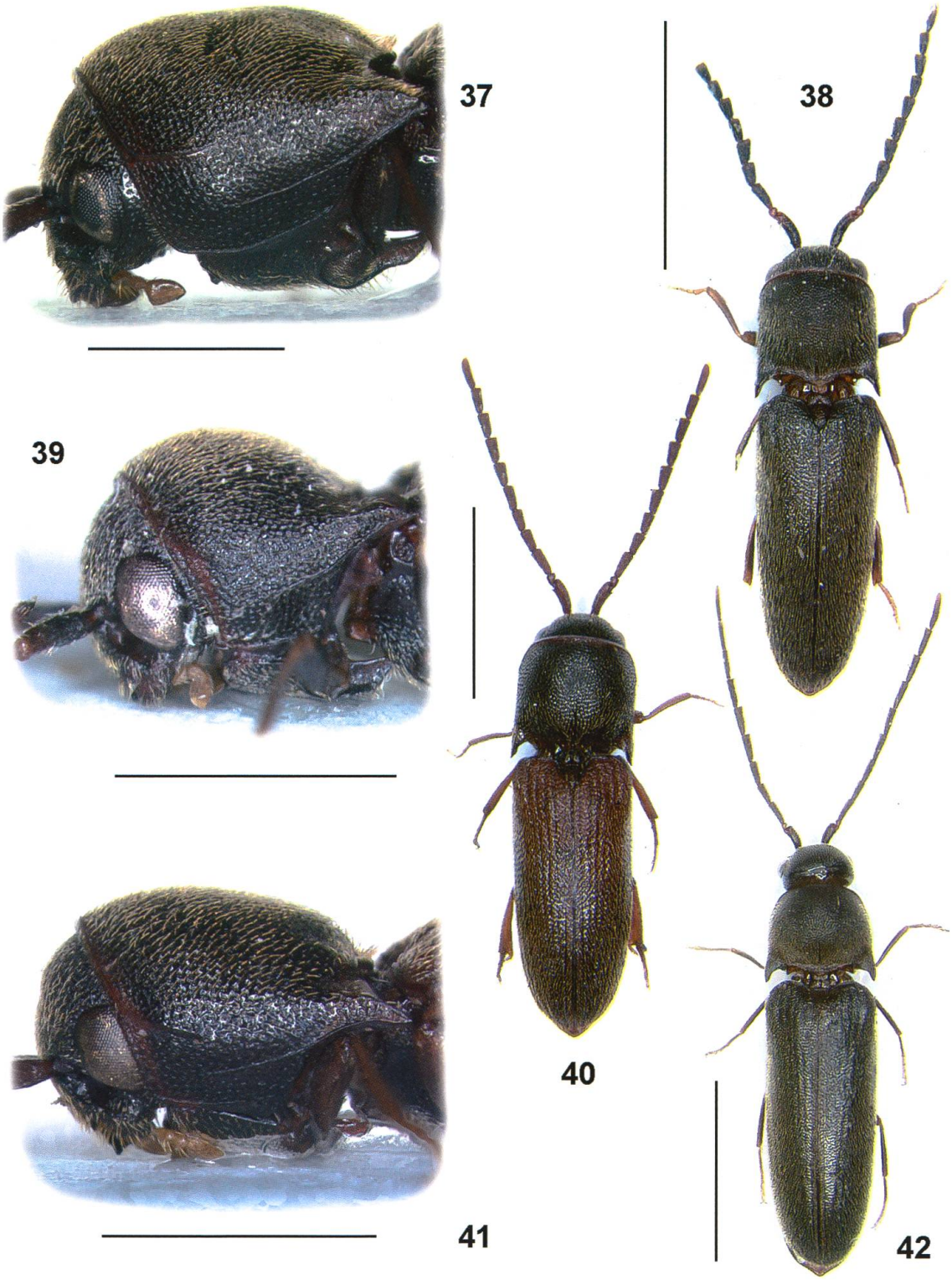
Figs 19–24. Eucnemidae from Laos: 19 – *Arrhipis cavifrons* ♂ non type BMNH; 20–21 – *Arrhipis orientalis* ♀ non type GERP; 22–23 – *Arrhipis striata* ♂ non type GERP; 24 – *Balistica cuneiforma* ♀ holotype NHMB. Dorsal habitus: 20, 22, 24. Lateral view: 19, 21, 23. (Scale 19, 21, 23 = 1.0 mm; 20, 22, 24 = 2.0 mm.)



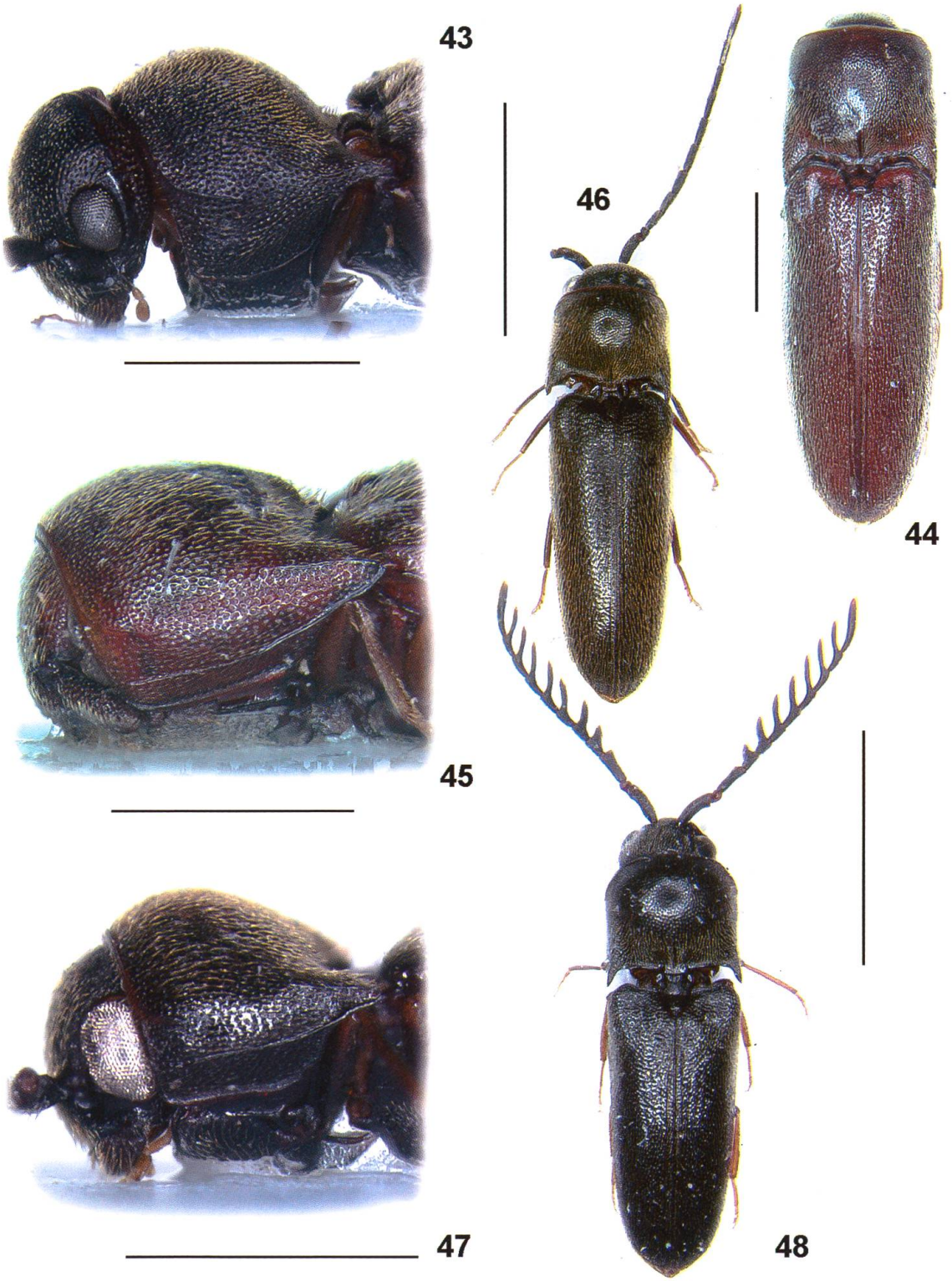
Figs 25–30. Eucnemidae from Laos: 25 – *Balistica cuneiforma* ♀ holotype NHMB; 26–27 – *Balistica distincta* ♀ non type BMNH; 28–29 – *Balistica vicina* non type GERP; 30 – *Brevisegmentus miyatakei* ♂ non type NHMB. Dorsal habitus: 26, 28, 30. Lateral view: 25, 27, 29. (Scale 25, 27, 29 = 1.0 mm; 26, 28, 30 = 2.0 mm.)



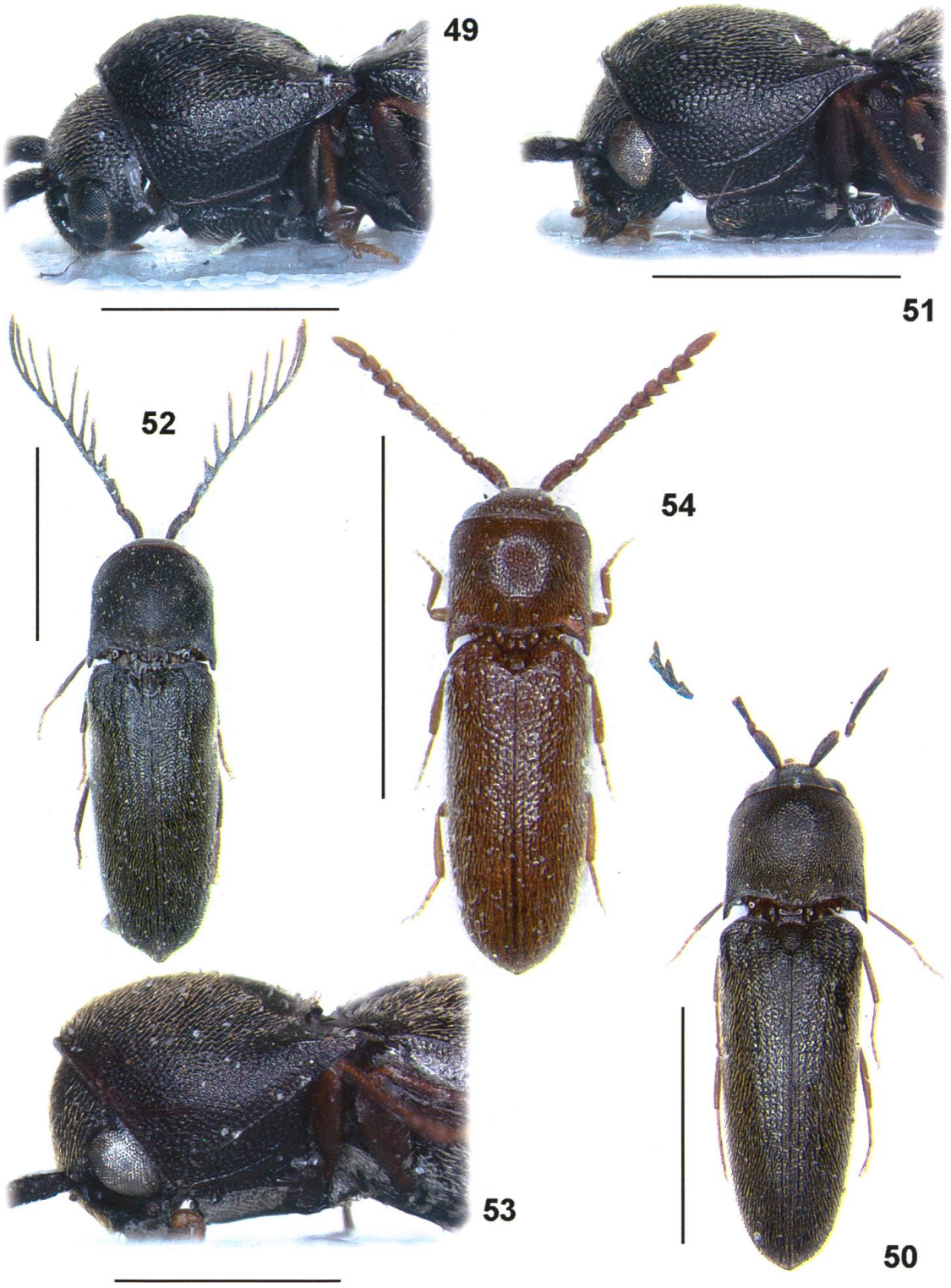
Figs 31–36. Eucnemidae from Laos: 31–33 – *Brevisegmentus miyatakei* ♂ non type NHMB; 34–35 – *Entomophthalmus coomani* ♀ non type JMC; 36 – *Rhagomicrus cylindriformis* ♀ holotype BMNH. Antenna: 32. Prothoracic tarsomere I: 33. Dorsal habitus: 34, 36. Lateral view: 31, 35. (Scale 33 = 0.5 mm; 31–32, 34–35 = 1.0 mm; 36 = 2.0 mm.)



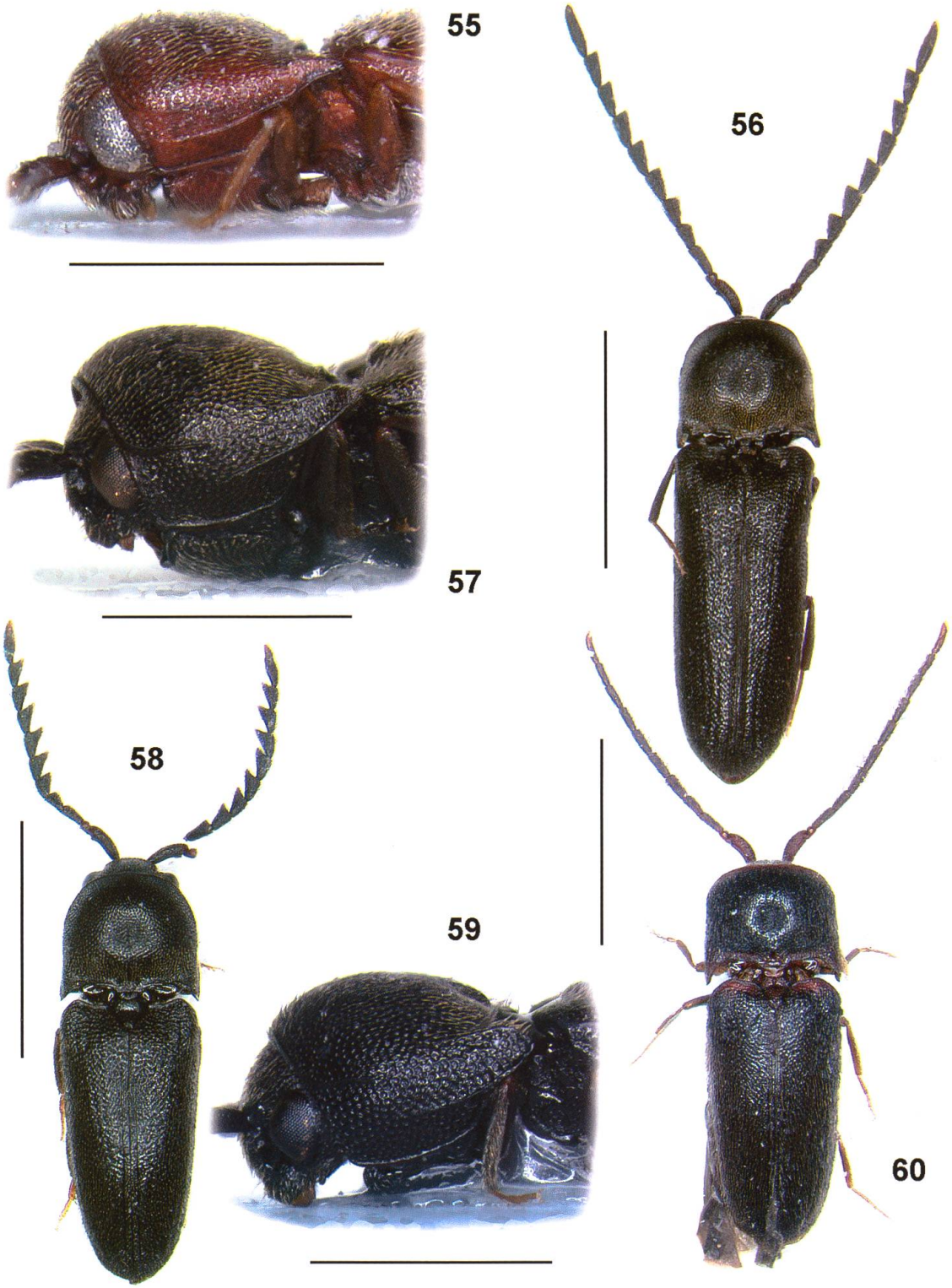
Figs 37–42. Eucnemidae from Laos: 37 – *Rhagomicrus cylindriformis* ♀ holotype BMNH; 38–39 *Rhagomicrus haucki* ♂ holotype NHMB; 40–41 – *Rhagomicrus tibialis* ♂ holotype BMNH; 42 – *Siniugum huaphanensis* ♂ holotype BMNH. Dorsal habitus: 38, 40, 42. Lateral view: 37, 39, 41. (Scale 37, 39, 41 = 1.0 mm; 38, 40, 42 = 2.0 mm.)



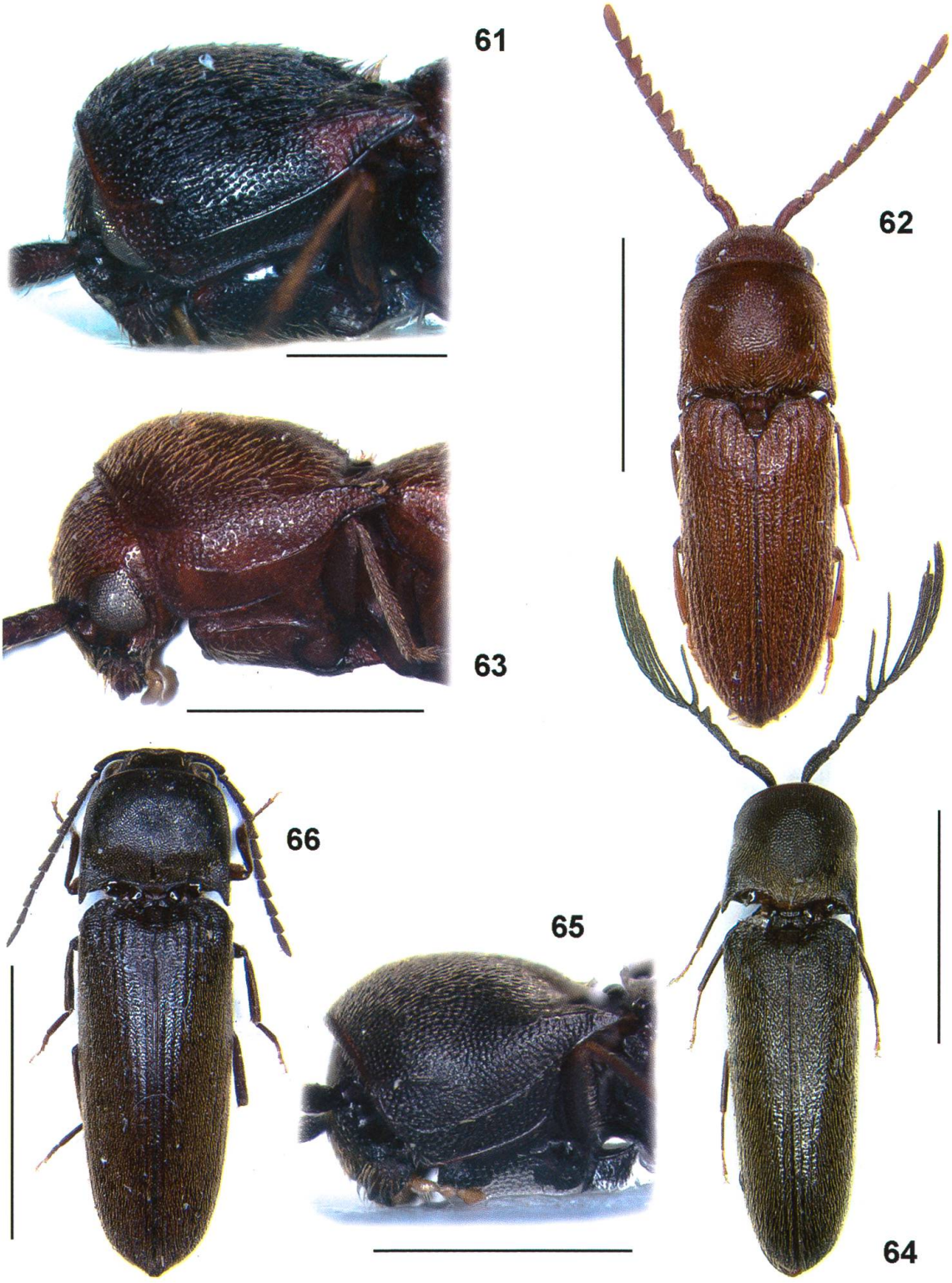
Figs 43–48. Eucnemidae from Laos: 43 – *Siniugum huaphanensis* ♂ holotype BMNH; 44–45 – *Microrhagus bolavenensis* ♀ holotype JMC; 46–47 – *Microrhagus entomophthalmoides* ♂ holotype BMNH; 48 – *Microrhagus hoabinus* ♂ non type NHMB. Dorsal habitus: 44, 46, 48. Lateral view: 43, 45, 47. (Scale 43–45, 47 = 1.0 mm; 46, 48 = 2.0 mm.)



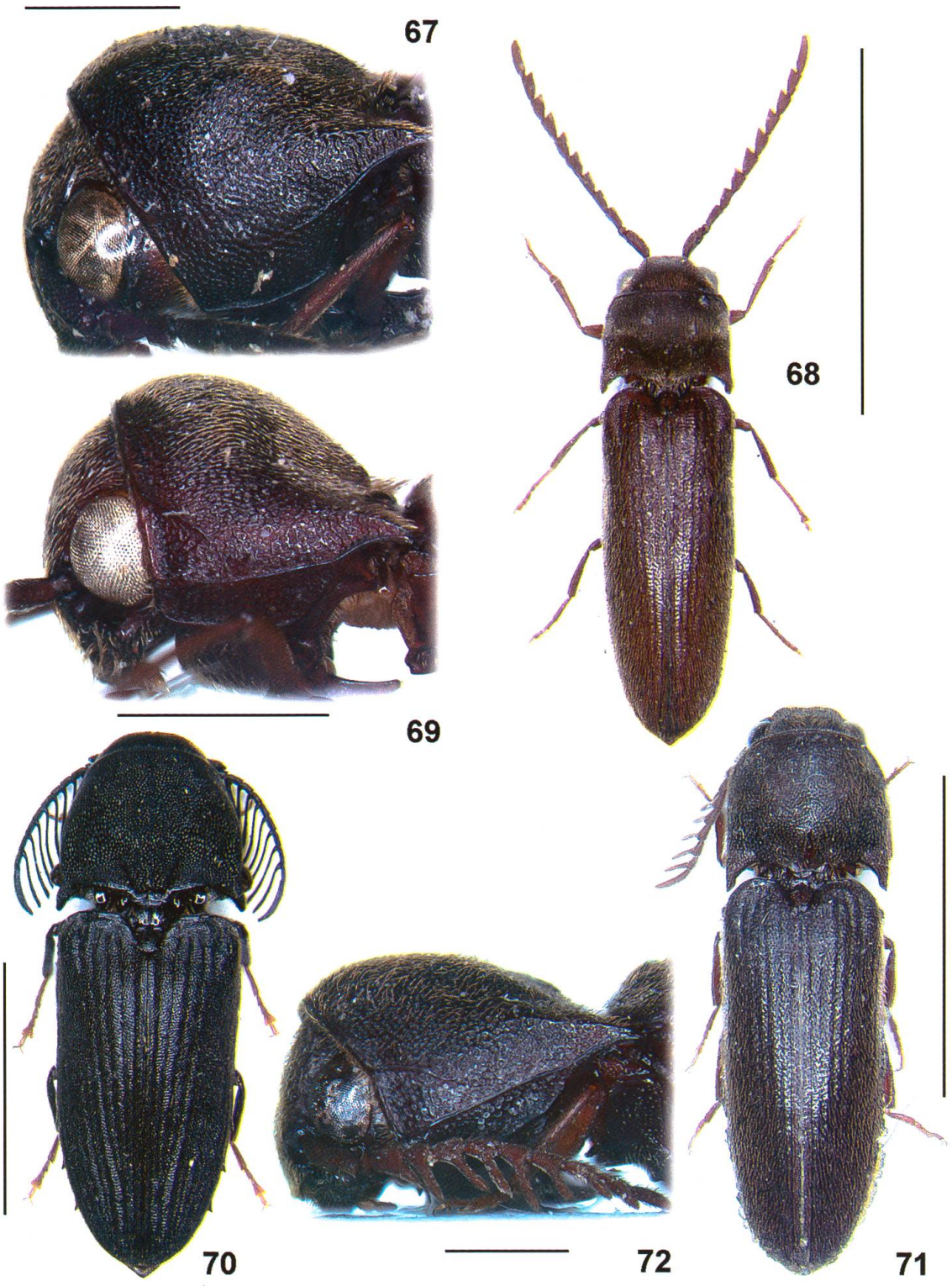
Figs 49–54. Eucnemidae from Laos: 49 – *Microrhagus hoabinus* ♂ non type NHMB; 50–51 – *Microrhagus inconsultus* ♂ non type NHMB; 52–53 – *Microrhagus luzonicus* non type GERP; 54 – *Microrhagus minimus* non type GERP. Dorsal habitus: 50, 52, 54. Lateral view: 49, 51, 53. (Scale 49, 51, 53 = 1.0 mm; 50, 52, 54 = 2.0 mm.)



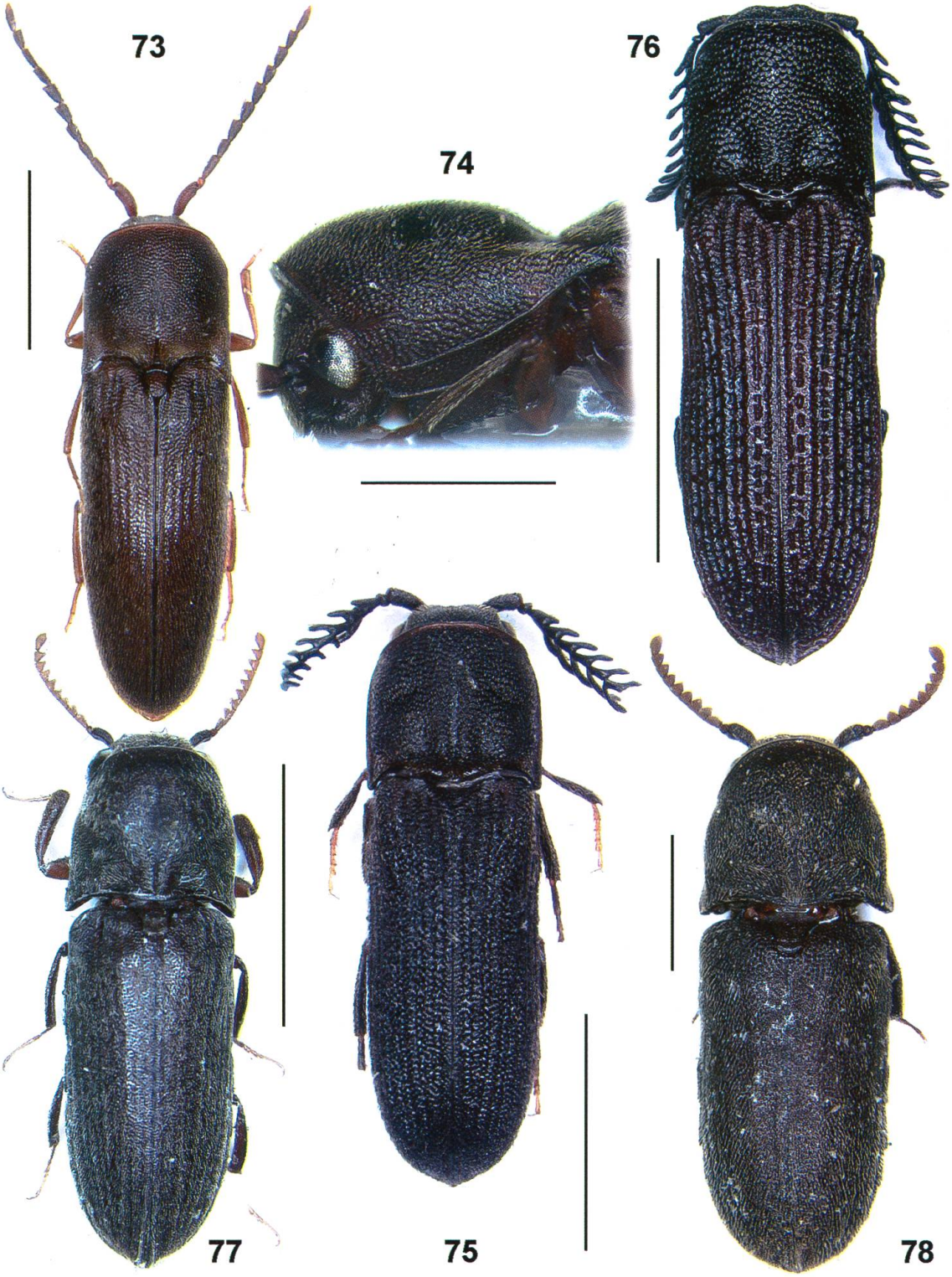
Figs 55–60. Eucnemidae from Laos: 55 – *Microrhagus minimus* non type GERP; 56–57 – *Microrhagus pavidus* non type BMNH; 58–59 – *Microrhagus posticus* ♂ non type BMNH; 60 – *Microrhagus rufoantennatus* ♂ holotype NHMB. Dorsal habitus: 56, 58, 60. Lateral view: 55, 57, 59. (Scale 55, 57, 59 = 1.0 mm; 56, 58, 60 = 2.0 mm.)



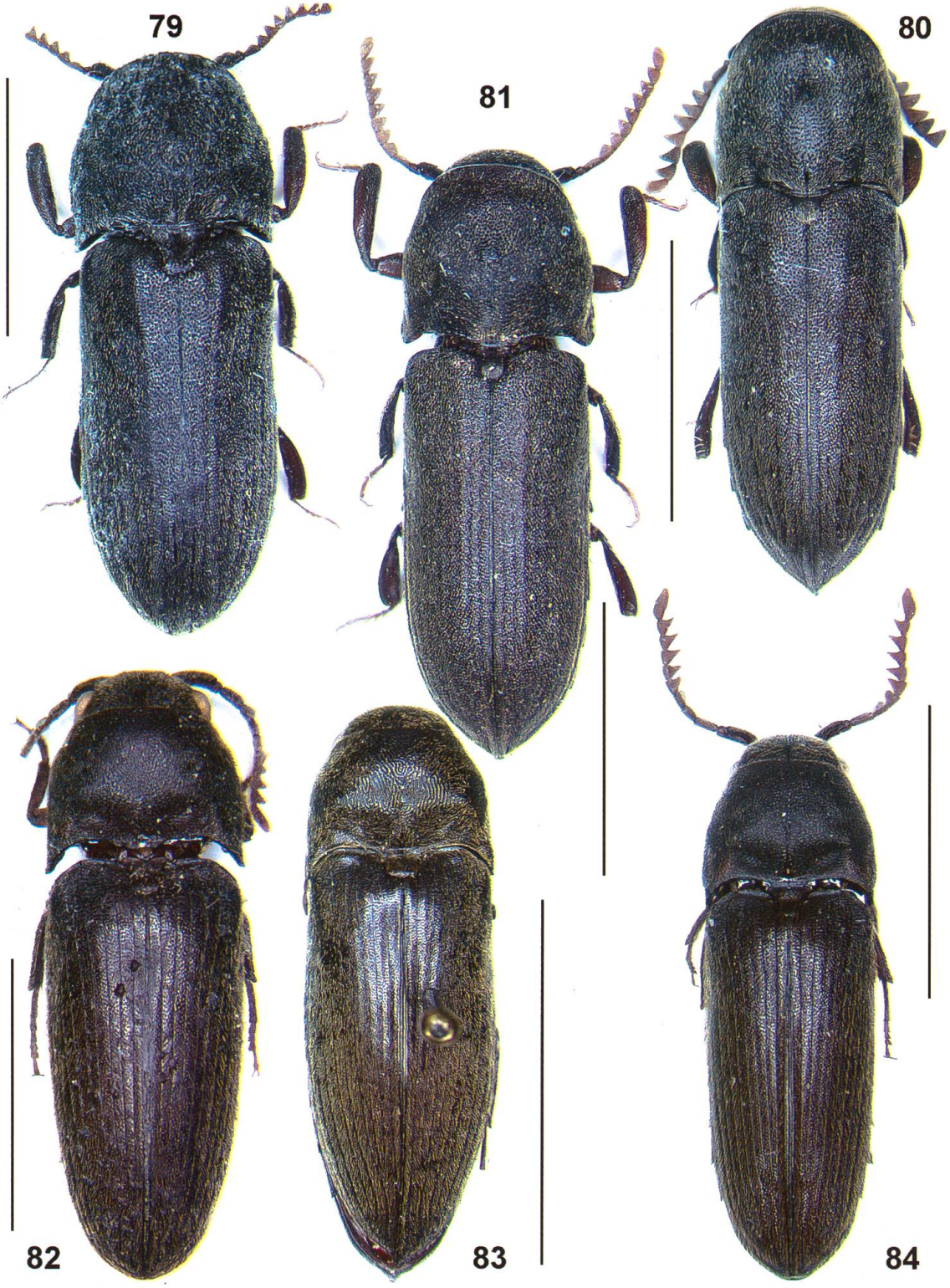
Figs 61–66. Eucnemidae from Laos: 61 – *Microrhagus rufoantennatus* ♂ holotype NHMB; 62–63 – *Microrhagus rufus* ♀ holotype NHMB; 64–65 – *Microrhagus walkeri* ♂ holotype BMNH; 66 – *Dirrhagofarsus foveicollis* ♀ holotype NHMB. Dorsal habitus: 62, 64, 66. Lateral view: 61, 63, 65. (Scale 61 = 0.5 mm; 63, 65 = 1.0 mm; 62, 64 = 2.0 mm; 66 = 5.0 mm.)



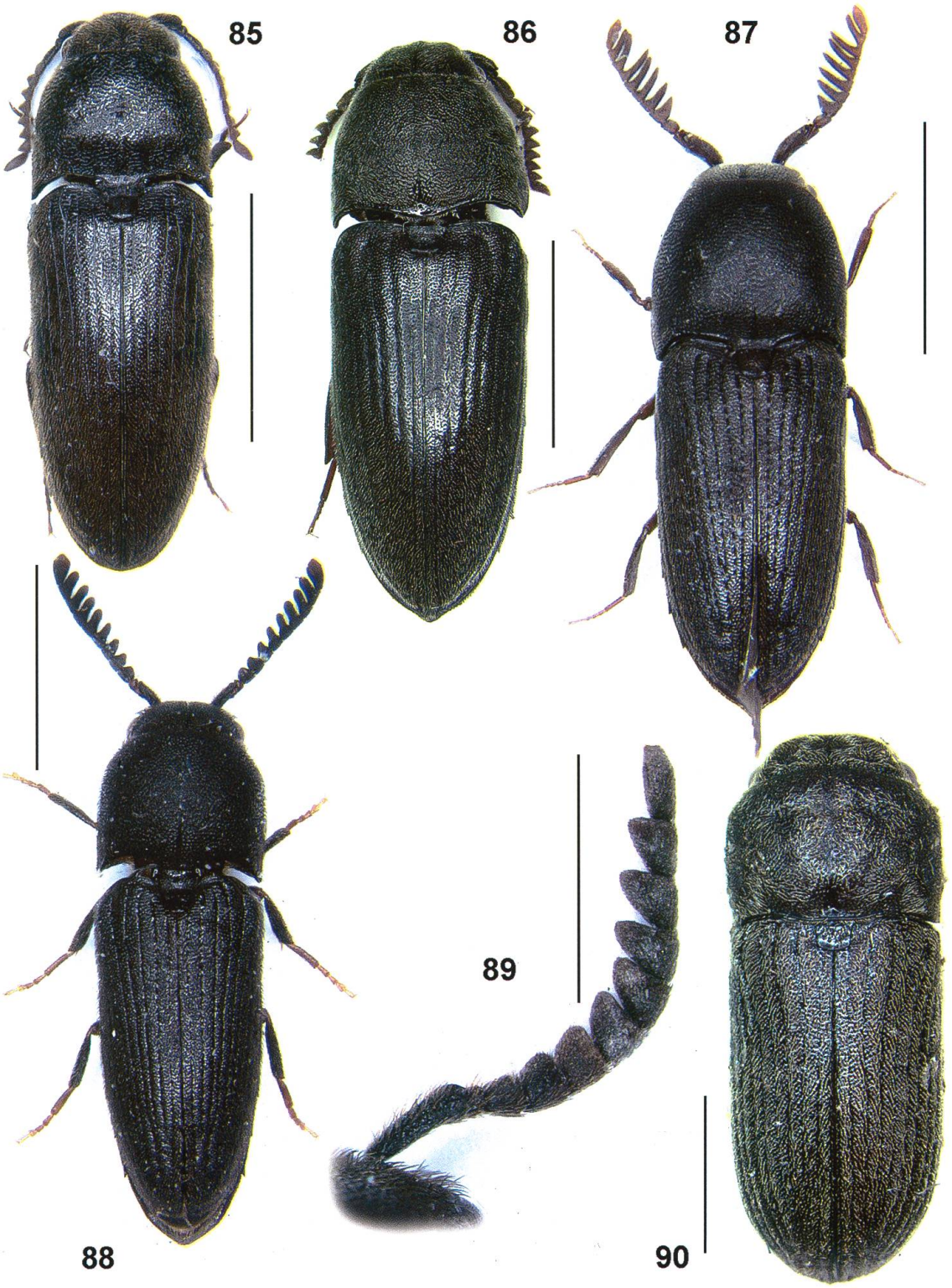
Figs 67–72. Eucnemidae from Laos: 67 – *Dirrhagofarsus foveicollis* ♀ holotype NHMB; 68–69 – *Rhacopus olexai* ♂ non type NHMB; 70 – *Cafolus crassus* ♂ non type NHMB; 71–72 – *Prodirhagus kresli* ♂ holotype JMC. Dorsal habitus: 68, 70, 71. Lateral view: 67, 69, 72. (Scale 67, 69, 72 = 1.0 mm; 68, 70–71 = 5.0 mm.)



Figs 73–78. Eucnemidae from Laos: 73–74 – *Prodirhagus subparallelus* ♀ non type NHMB; 75 – *Sarpedon apicalis* ♂ holotype BMNH; 76 – *Sarpedon bipectinatus* ♂ non type BMNH; 77 – *Scopulifer asiaticus* ♂ paratype JMC; 78 – *Scopulifer atkinsoni* ♀ non type NHMB. Dorsal habitus: 73, 75–78. Lateral view: 74. (Scale 74 = 1.0 mm; 73, 75, 78 = 2.0 mm; 76–77 = 5.0 mm.)

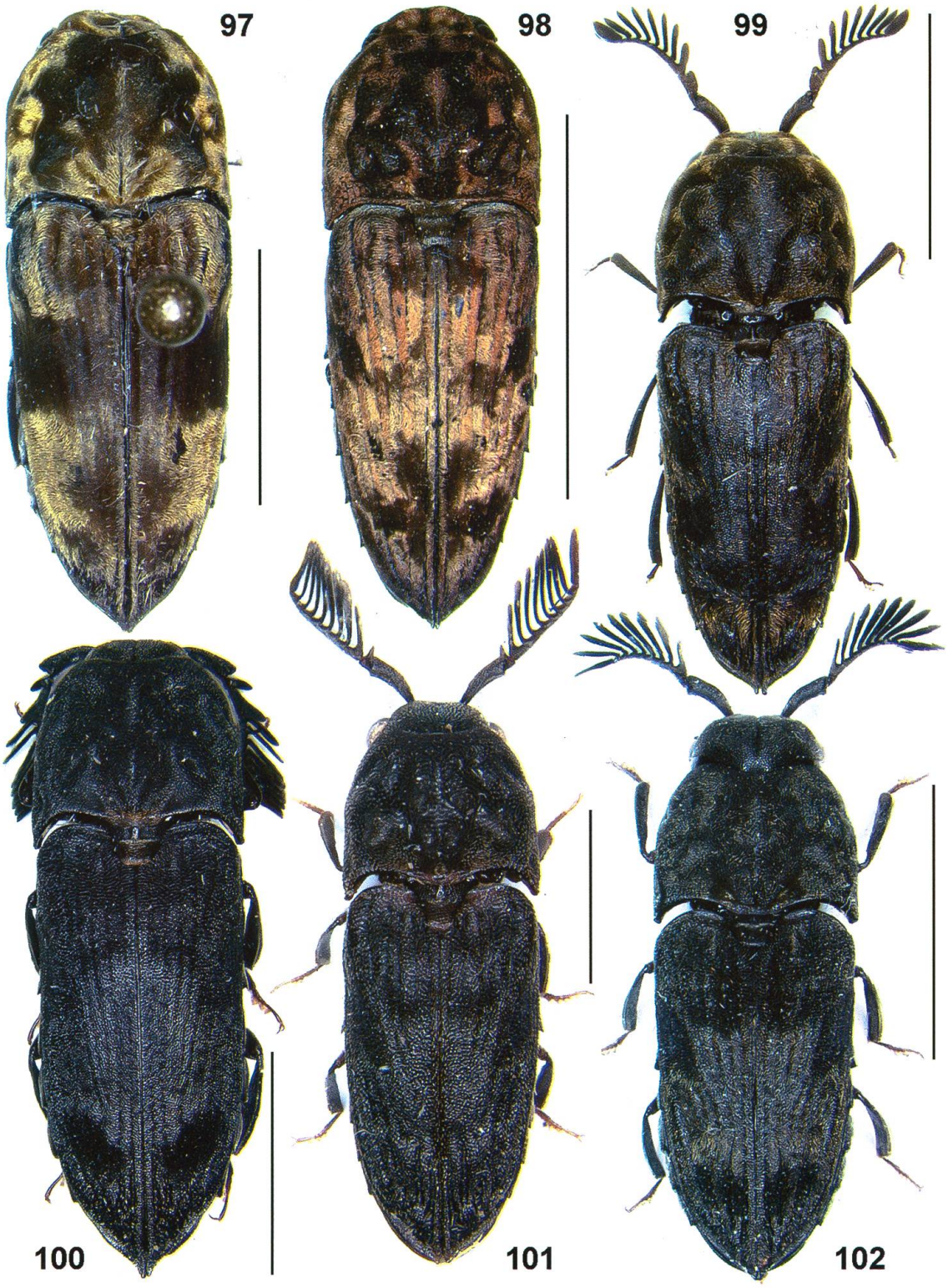


Figs 79–84. Eucnemidae from Laos and Southeast Asia: 79 – *Scopulifer laosianus* ♀ holotype JMC; 80 – *Dendrocharis intermedia* non type BMNH; 81 – *Dendrocharis rouyeri* non type JMC; 82 – *Arisus bituberculatus* non type NHMB; 83 – *Arisus castelnaui* holotype MNHM; 84 – *Arisus orientalis* non type NHMB. Dorsal habitus: 79–84. (Scale 79–82, 84 = 5.0 mm; 83 = 10.0 mm.)

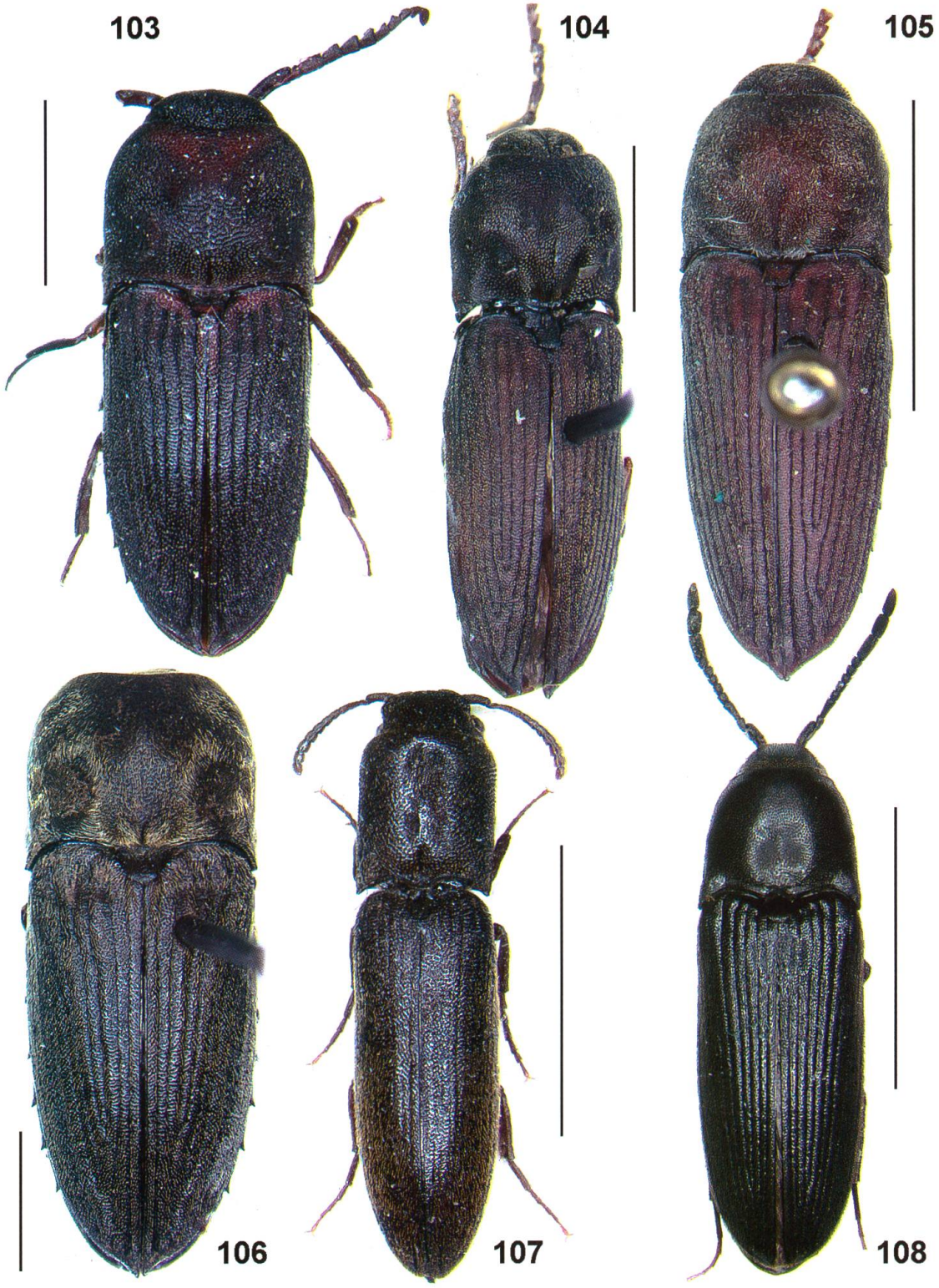


Figs 85–90. Eucnemidae from Laos: 85 – *Arisus wicardi* non type NHMB; 86 – *Euryostus asiaticus* ♂ holotype BMNH; 87 – *Vitellius singularis* non type NHMB; 88–89 – *Feaia geiseri* (♂ holotype NHMB; ♀ allotype BMNH); 90 – *Mesogenus harmandi* non type NHMB. Dorsal habitus: 85–88, 90. Antenna: 89. (Scale 89 = 1.0 mm; 87–88, 90 = 2.0 mm; 85–86 = 5.0 mm.)

Figs 91–96. Eucnemidae from Laos and Southeast Asia: 91 – *Mesogenus siamensis* ♀ (allotype of *Mesogenus laosianus*) (image provided by Mercedes París of Museo Nacional de Ciencias Naturales in Madrid, Spain (MNCN)); 92 – *Poecilochrus cordieri* non type BMNH; 93 – *Poecilochrus piceus* non type NHMB; 94 – *Poecilochrus striatus* non type NHMB; 95 – *Agastocerus frontalis* non type NHMB; 96 – *Galbites albiventris* non type NHMB. Dorsal habitus: 91–96. (Scale 93, 95 = 2.0 mm; 92, 94, 96 = 5.0 mm.)

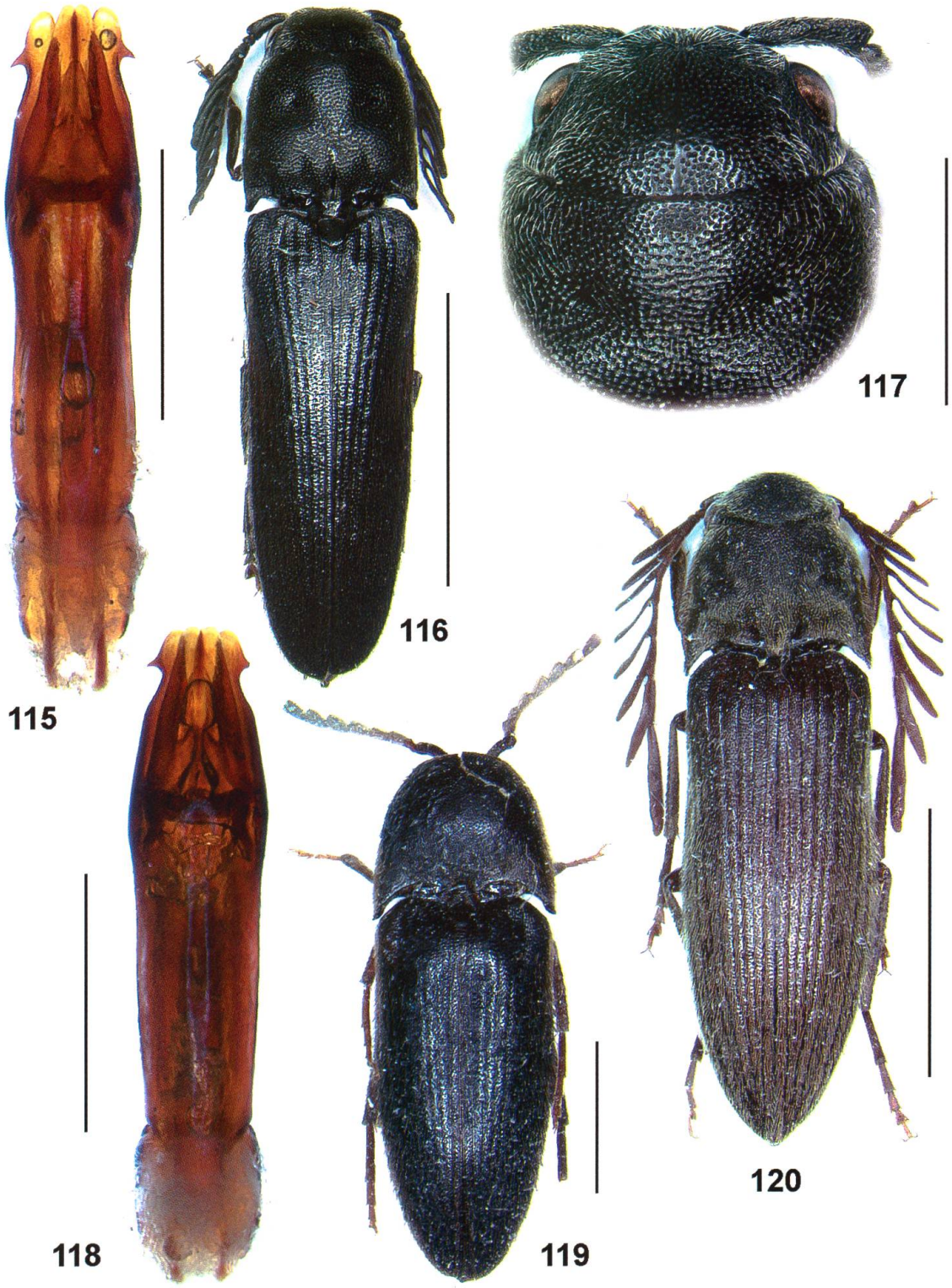


Figs 97–102. Eucnemidae from Laos and Southeast Asia: 97 – *Galbites australiae* non type GERP; 98 – *Galbites chrysocoma* non type GERP; 99 – *Galbites fulva* non type GERP; 100 – *Galbites funebris* non type NHMB; 101 – *Galbites nigrita* non type NHMB; 102 – *Galbites tuberculata* non type NHMB. Dorsal habitus: 97–102. (Scale 101 = 2.0 mm; 97, 99–100, 102 = 5.0 mm; 98 = 10.0 mm.)



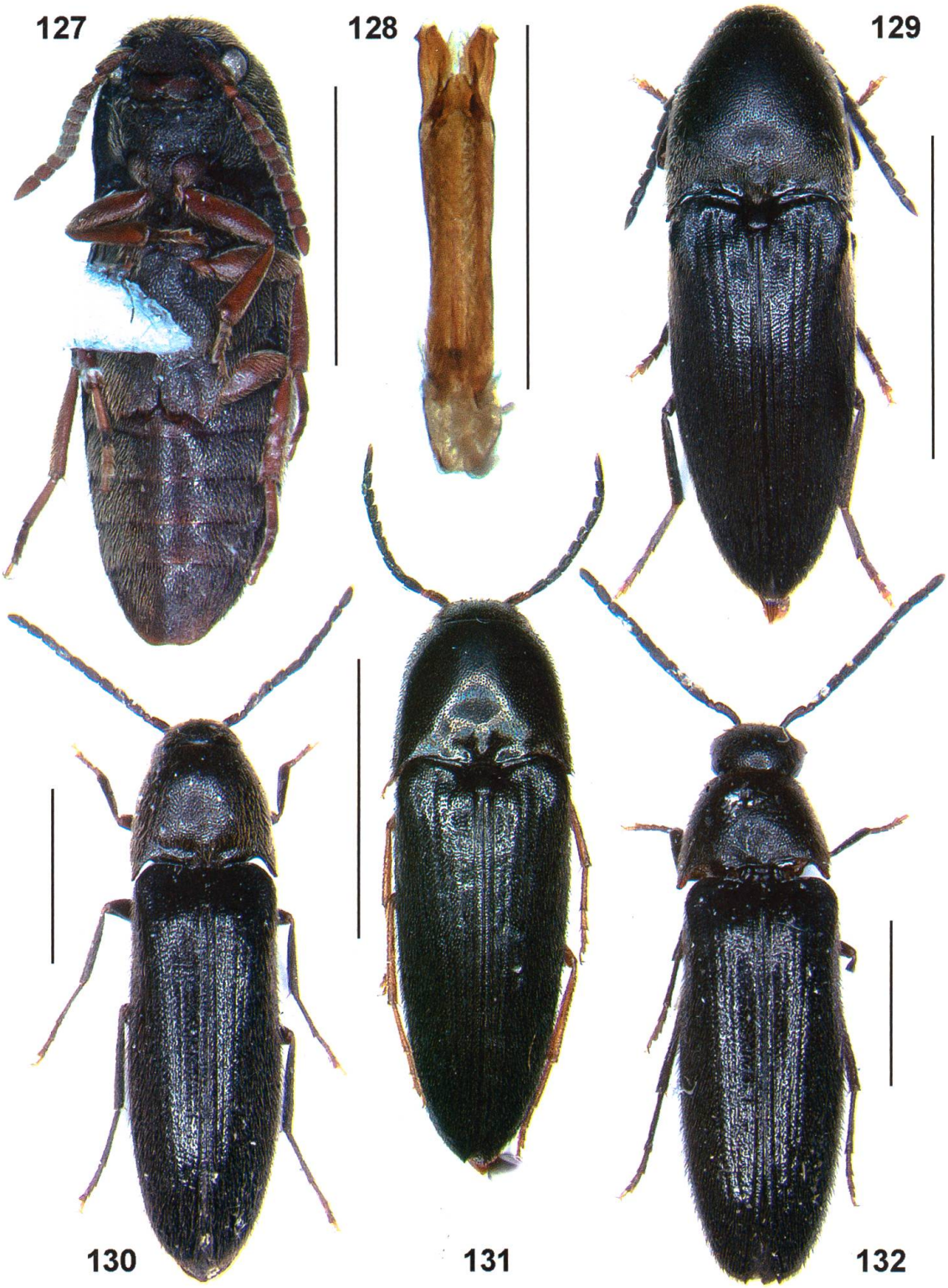
Figs 103–108. Eucnemidae from Laos and Southeast Asia: 103 – *Galbimorpha agasteceroides* ♂ non type BMNH; 104 – *Galbimorpha curta* ♀ holotype MNHN; 105 – *Galbimorpha ferruginea* ♀ lectotype MNHN; 106 – *Galbimorpha quadricollis* ♀ lectotype MNHN; 107 – *Henecocerus angusticollis* non type GERP; 108 – *Euryptychus pasteuri* ♂ non type BMNH. Dorsal habitus: 103–108. (Scale 103–104, 106 = 2.0 mm; 105, 107–108 = 5.0 mm.)

Figs 109–114. Eucnemidae from Laos and Southeast Asia: 109 – *Eudorus javanicus* non type BMNH; 110 – *Chapianus monilicornis* ♂ non type NHMB; 111 – *Heterotaxis elongata* ♀ holotype JMC; 112 – *Procladidus coomani* ♂ non type NHMB; 113–114 – *Semnodema harmandi* ♂ non type BMNH. Dorsal habitus: 109–113. Head (dorsal view): 114. (Scale 111 = 1.0 mm; 109–110, 114 = 2.00 mm; 112–113 = 5.0 mm.)

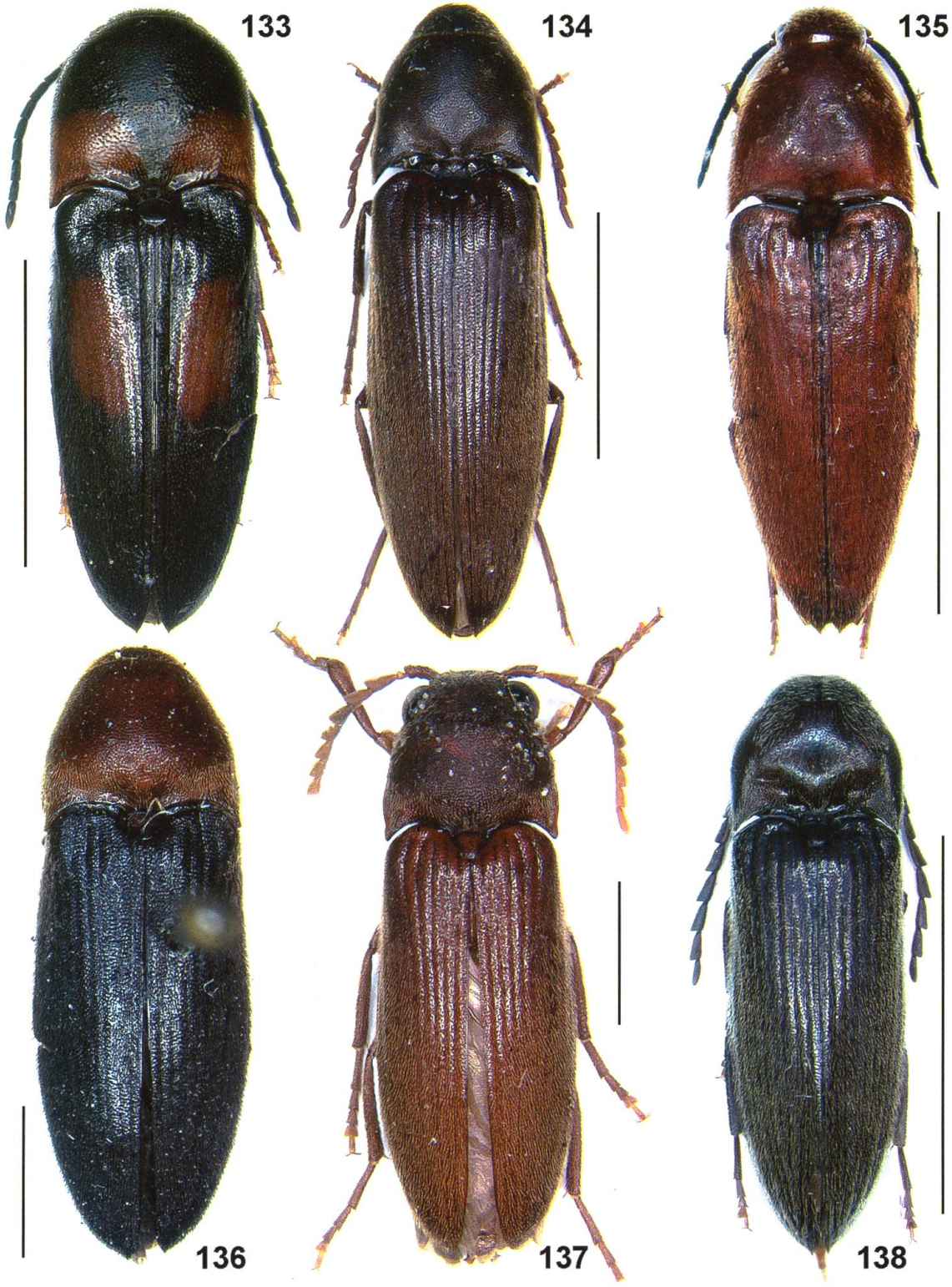


Figs 115–120. Eucnemidae from Laos: 115 – *Semnodema harmandi* ♂ non type BMNH; 116–118 – *Semnodema punctata* (116, 117 – ♂ holotype BMNH; 118 – ♂ paratype BMNH); 119 – *Hodocerus ceratoides* ♂ holotype BMNH; 120 – *Hodocerus malaisiensis* ♂ non type GERP. Dorsal habitus: 116, 119, 120. Head (dorsal view): 117. Aedeagus: 115, 118. (Scale 115, 118 = 1.0 mm; 117, 119 = 2.0 mm; 116, 120 = 5.0 mm.)

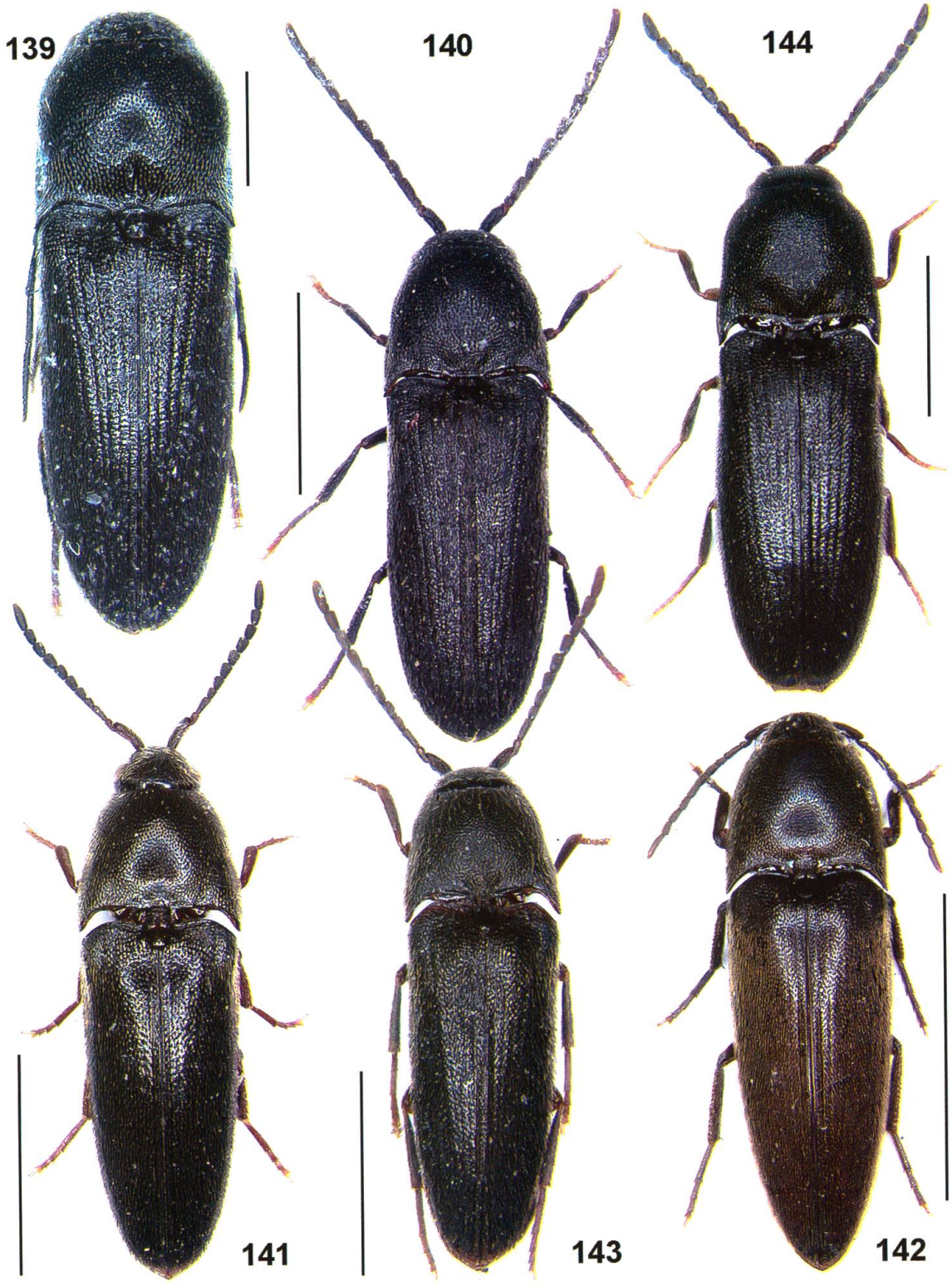
Figs 121–126. Eucnemidae from Laos: 121 – *Melanoscython monilicornis* ♂ holotype MNHN; 122 – *Melanoscython ohmomoi* ♀ non type GERP; 123 – *Scython apicalis* ♂ non type NHMB; 124 – *Macroscython coomani* ♂ non type JMC; 125 – *Macroscython granulosus* ♂ holotype NHMB; 126 – *Pseudoisarthrus annamensis* ♂ holotype BMNH. Dorsal habitus: 121–126. (Scale 121–122, 126 = 2.0 mm; 123, 125 = 5.0 mm.)



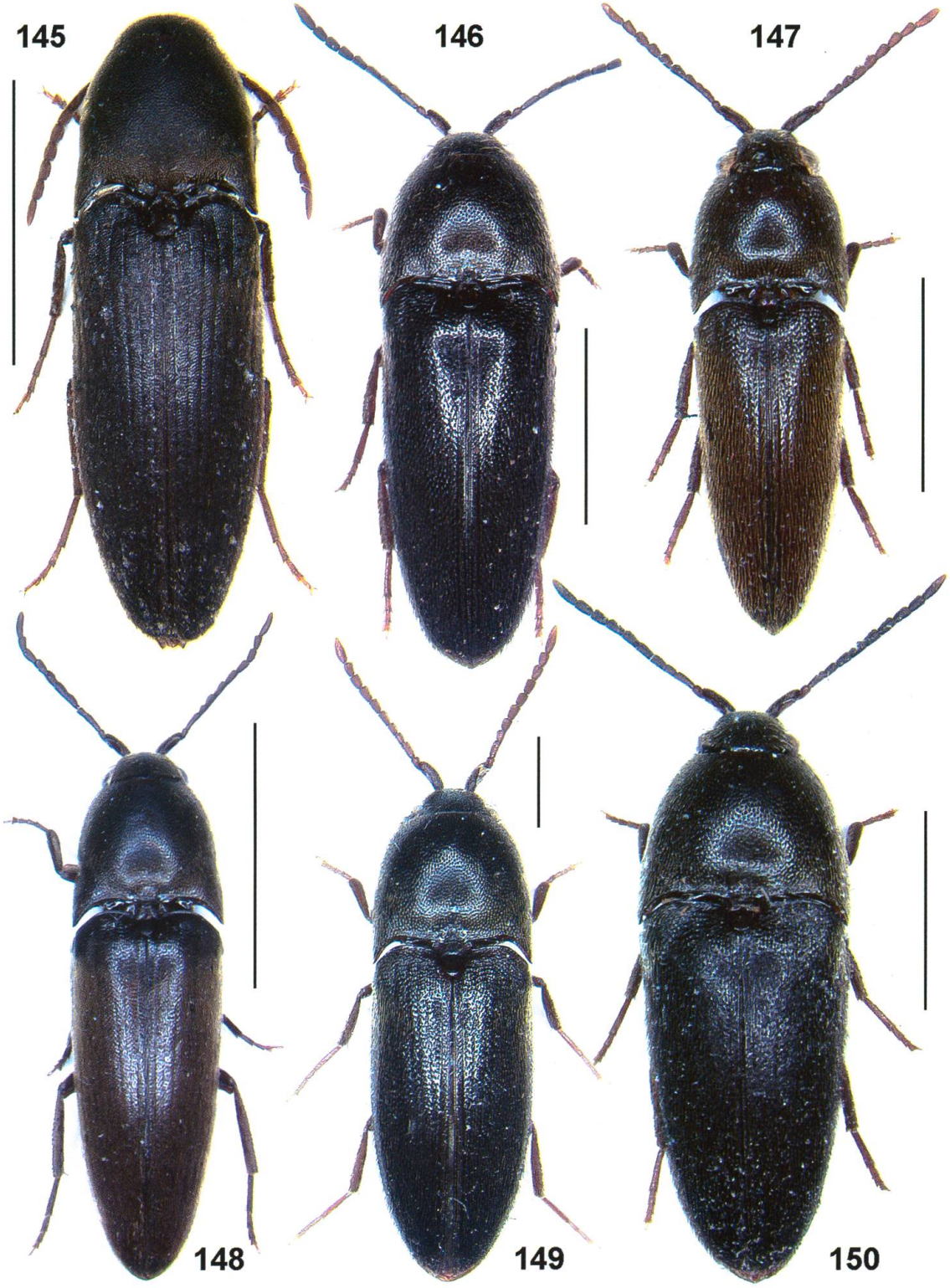
Figs 127–132. Eucnemidae from Laos: 127–128 – *Pseudoisarthrus annamensis* (127 – ♂ holotype BMNH; 128 – ♂ paratype GERP); 129 – *Spinifornax carissae* ♂ non type NHMB; 130 – *Spinifornax dubius* ♂ non type NHMB; 131 – *Spinifornax nigridorsus* ♂ holotype BMNH; 132 – *Spinifornax pacholatkoi* ♂ holotype NHMB. Dorsal habitus: 129–132. Ventral habitus: 127. Aedeagus: 128. (Scale 128 = 1.0 mm; 127, 130, 132 = 2.0 mm; 129, 131 = 5.0 mm.)



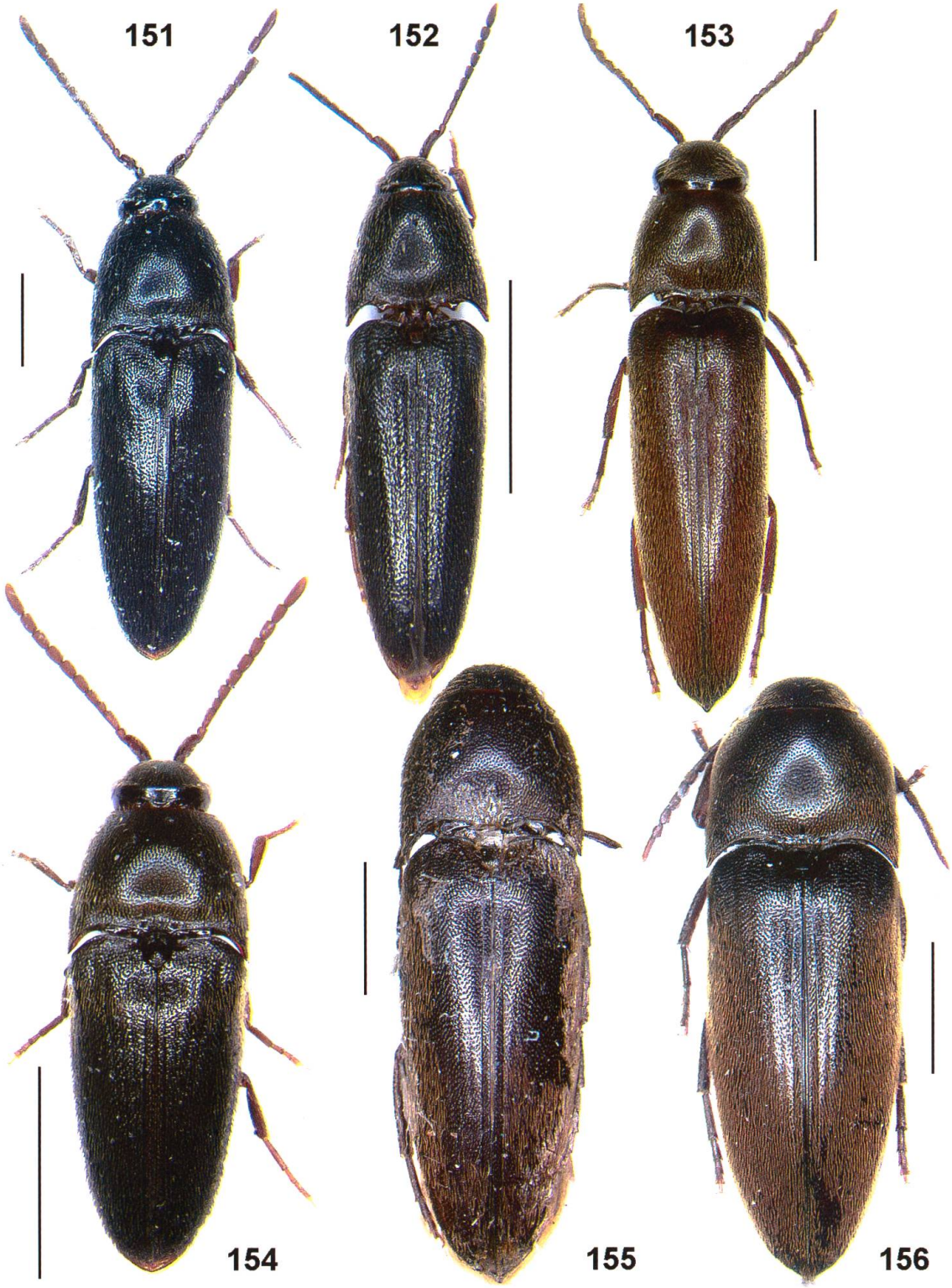
Figs 133–138. Eucnemidae from Laos: 133 – *Spinifornax salvazai* ♂ non type BMNH; 134 – *Spinifornax striatus* ♀ holotype NHMB; 135 – *Spinifornax superbus* ♀ non type NHMB; 136 – *Spinifornax vitalisi* ♀ holotype MNHN; 137 – *Serrifornax brevicollis* ♂ non type NHMB; 138 – *Serrifornax tumidicollis* non type WSC. Dorsal habitus: 133–138. (Scale 136–137 = 2.0 mm; 133–134 = 5.0 mm; 135, 138 = 10.0 mm.)



Figs 139–144. Eucnemidae from Laos: 139 – *Ceratus antennatus* ♂ non type JMC; 140 – *Ceratus phoupaniensis* ♂ holotype NHMB; 141 – *Fornax astriatus* ♂ paratype NHMB; 142 – *Fornax attenuatus* ♀ non type BMNH; 143 – *Fornax brancuccii* ♂ holotype NHMB; 144 – *Fornax carinicollis* ♀ holotype NHMB. Dorsal habitus: 139–144. (Scale 139 = 1.0 mm; 140–141, 143–144 = 2.0 mm; 142 = 5.0 mm.)

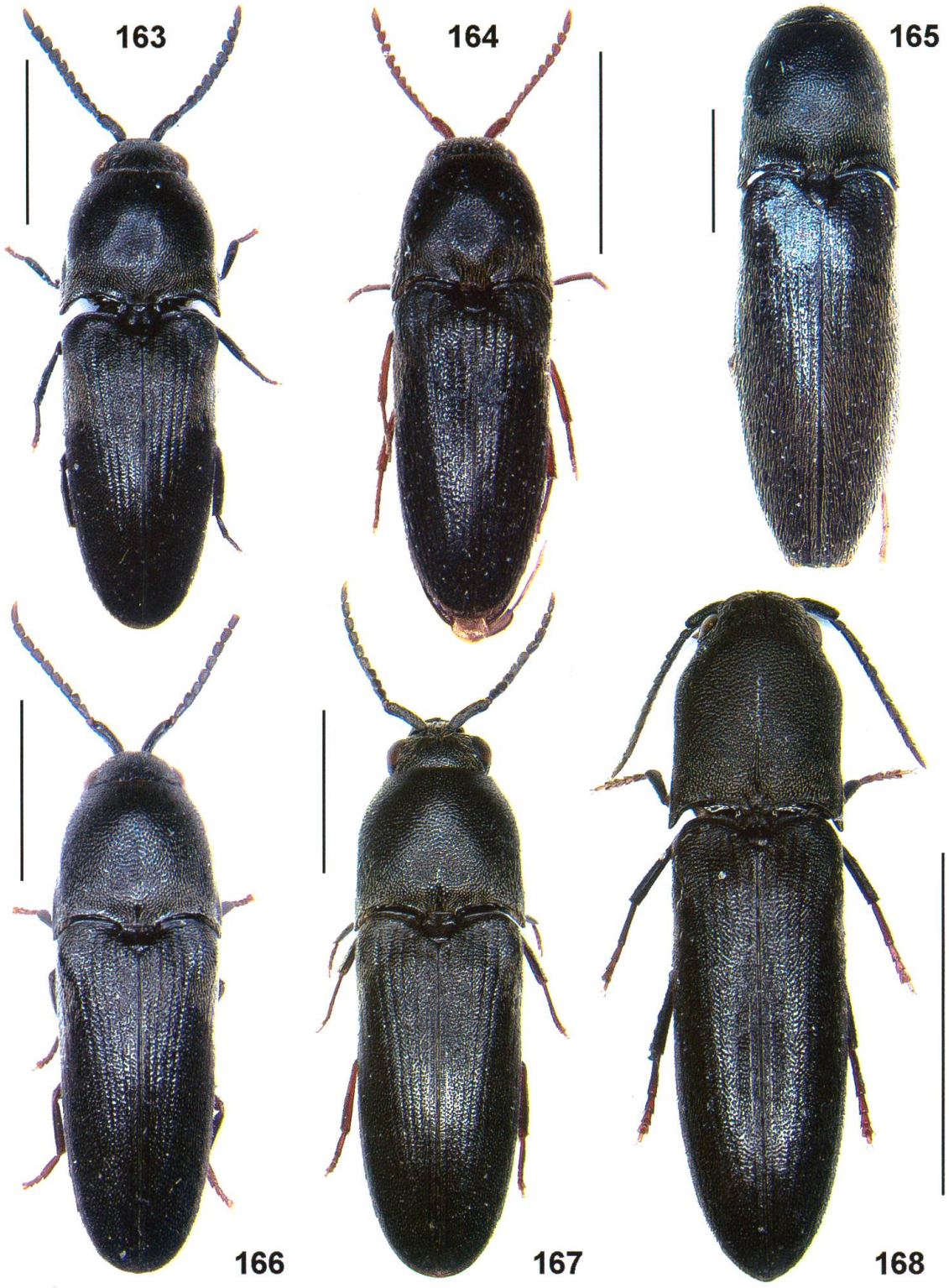


Figs 145–150. Eucnemidae from Laos: 145 – *Fornax collega* ♀ non type NHMB; 146 – *Fornax concolor* non type GERP; 147 – *Fornax differens* ♀ non type NHMB; 148 – *Fornax incisus* ♀ non type NHMB; 149 – *Fornax morosus* ♀ non type JMC; 150 – *Fornax nicotianae* ♀ non type NHMB. Dorsal habitus: 145–150. (Scale 149 = 1.0 mm; 146–147, 150 = 2.0 mm; 145, 148 = 5.0 mm.)

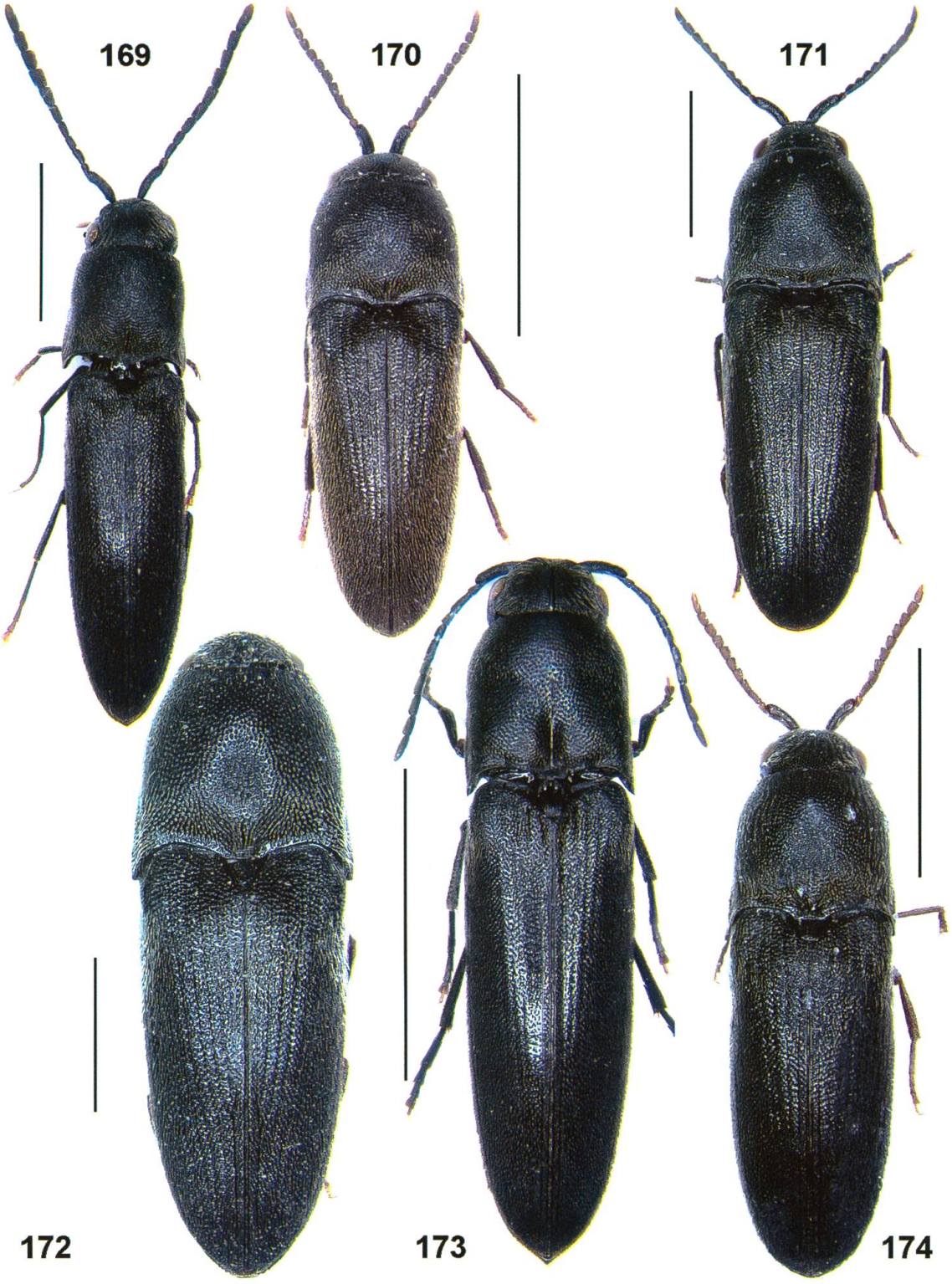


Figs 151–156. Eucnemidae from Laos: 151 – *Fornax oudomxaiensis* ♂ holotype JMC; 152 – *Fornax phoupaniensis* ♂ holotype NHMB; 153 – *Fornax rotundicollis* ♀ non type BMNH; 154 – *Fornax rufoantennatus* ♂ holotype NHMB; 155 – *Fornax subacuminatus* ♂ non type BMNH; 156 – *Fornax vestitus* ♀ non type NHMB. Dorsal habitus: 151–156. (Scale 151 = 1.0 mm; 152–156 = 2.0 mm.)

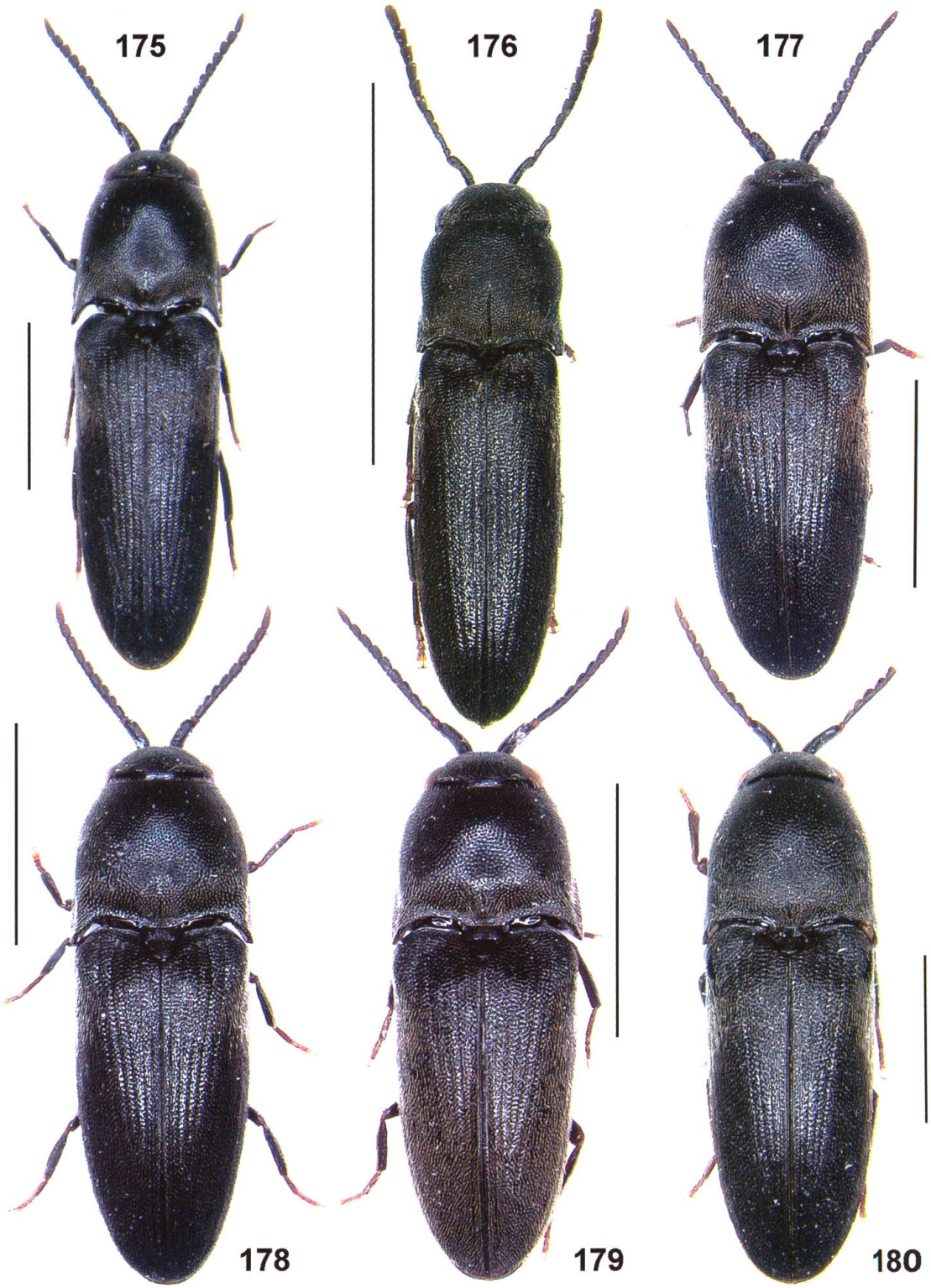
Figs 157–162. Eucnemidae from Laos: 157 – *Raapia sauteri* ♂ non type NHMB; 158 – *Dorsifornax borikhamxaiensis* ♀ holotype NHMB; 159–161 – *Xylofornax dromaeoloides* ♀ holotype JMC; 162 – *Xylofornax piceus* ♀ holotype JMC. Dorsal habitus: 157–159, 162. Antenna: 160. Venter: 161. (Scale 159–162 = 1.0 mm; 157 = 2.0 mm; 158 = 5.0 mm.)



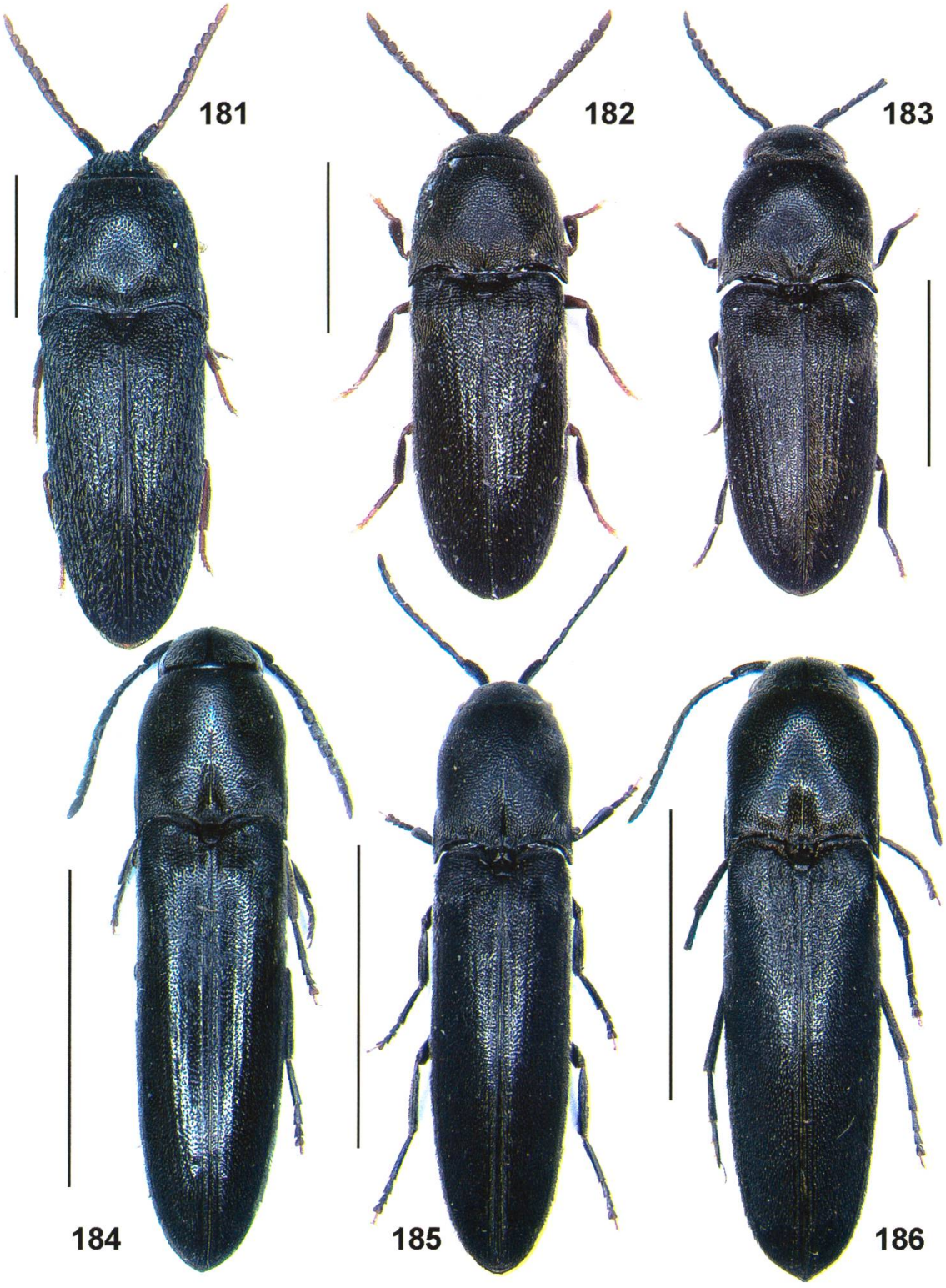
Figs 163–168. Eucnemidae from Laos: 163 – *Dromaeolus amicus* ♀ non type NHMB; 164 – *Dromaeolus assamensis* ♀ non type NHMB; 165 – *Dromaeolus bolavenensis* ♀ holotype JMC; 166 – *Dromaeolus confusus* ♀ non type NHMB; 167 – *Dromaeolus congener* ♂ non type BMNH; 168 – *Dromaeolus coomani* ♀ non type BMNH. Dorsal habitus: 163–168. (Scale 165 = 1.0 mm; 163–164, 166–167 = 2.0 mm; 168 = 5.0 mm.)



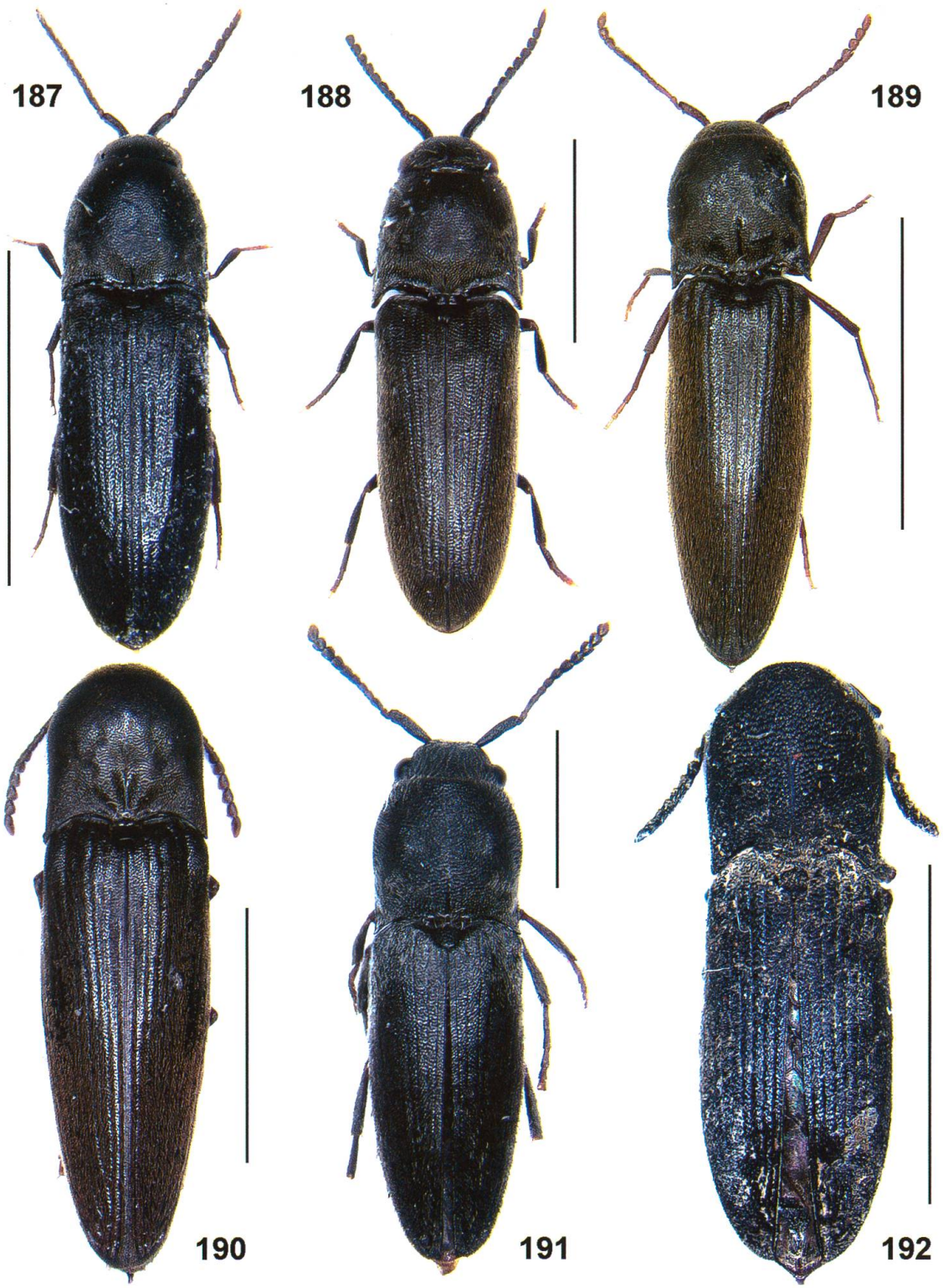
Figs 169–174. Eucnemidae from Laos: 169 – *Dromaeolus cylindricus* ♂ non type BMNH; 170 – *Dromaeolus depressifrons* ♂ holotype NHMB; 171 – *Dromaeolus dissimilis* ♀ non type NHMB; 172 – *Dromaeolus divergentus* ♂ holotype JMC; 173 – *Dromaeolus exilis* ♂ non type BMNH; 174 – *Dromaeolus ferruginipes* ♀ non type NHMB. Dorsal habitus: 169–174. (Scale 172 = 1.0 mm; 169–171, 174 = 2.0 mm; 173 = 5.0 mm.)



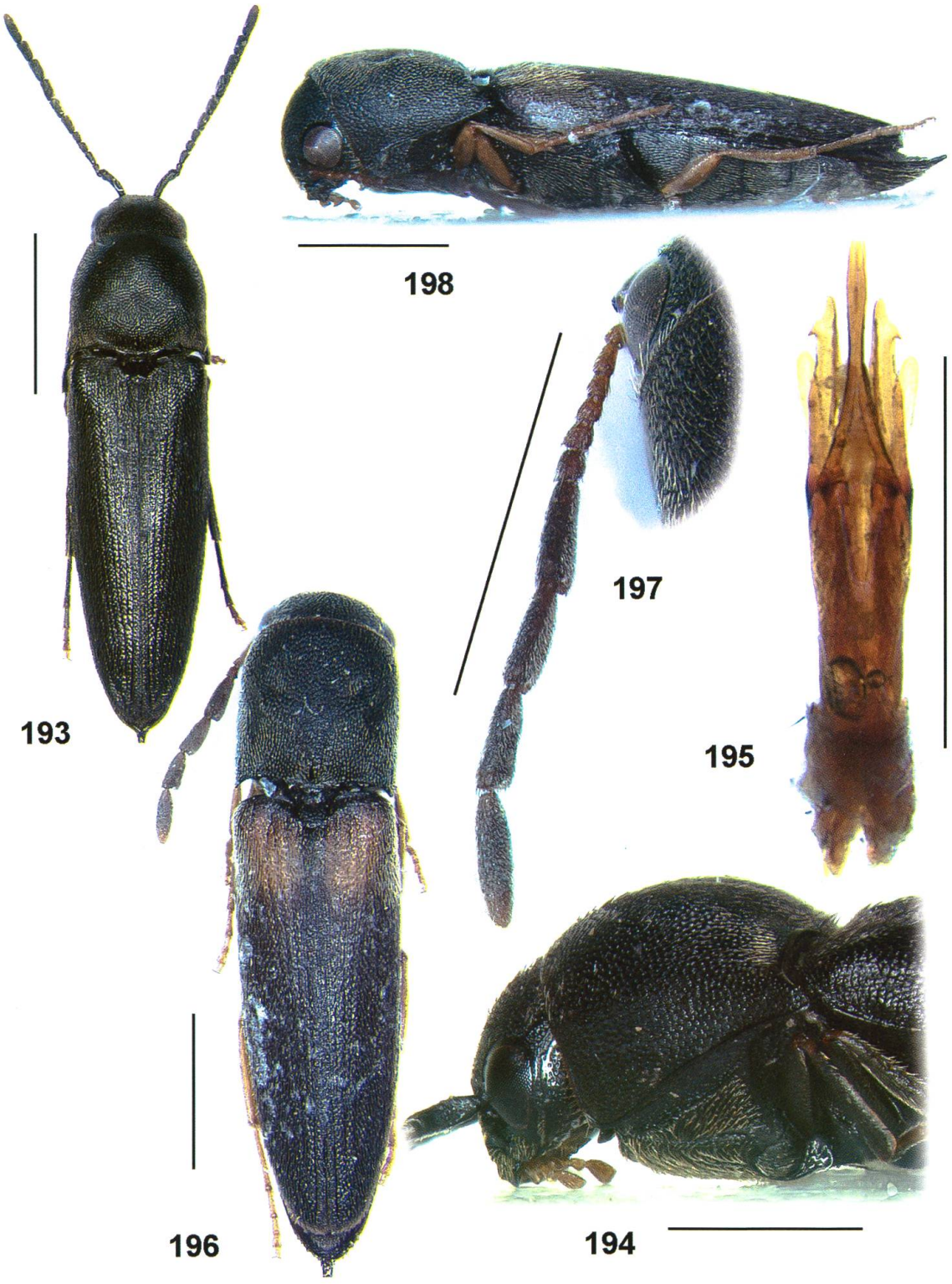
Figs 175–180. Eucnemidae from Laos: 175 – *Dromaeolus foveatus* ♀ non type BMNH; 176 – *Dromaeolus granosus* ♀ non type BMNH; 177 – *Dromaeolus indicus* ♂ non type NHMB; 178 – *Dromaeolus kubani* ♀ holotype NHMB; 179 – *Dromaeolus laosianus* ♂ holotype NHMB; 180 – *Dromaeolus longicollis* ♂ non type BMNH. Dorsal habitus: 175–180. (Scale 175, 177–180 = 2.0 mm; 176 = 5.0 mm.)



Figs 181–186. Eucnemidae from Laos: 181 – *Dromaeolus minimus* ♂ non type JMC; 182 – *Dromaeolus modiglianii* ♀ non type NHMB; 183 – *Dromaeolus phonsavanicus* ♀ holotype NHMB; 184 – *Dromaeolus semigriseus* ♂ non type BMNH; 185 – *Dromaeolus simplicifrons* ♂ holotype NHMB; 186 – *Dromaeolus sulcicollis* ♀ non type BMNH. Dorsal habitus: 181–186. (Scale 181 = 1.0 mm; 182–183 = 2.0 mm; 184–186 = 5.0 mm.)



Figs 187–192. Eucnemidae from Laos: 187 – *Dromaeolus vicinus* ♀ non type NHMB; 188 – *Dromaeolus xiengkhouangiensis* ♀ holotype NHMB; 189 – *Nematodes feai* ♀ non type BMNH; 190 – *Nematodes lateralis* ♀ holotype BMNH; 191 – *Nematodes suturalis* ♀ non type BMNH; 192 – *Coomanius lugubris* ♀ non type ZSM. Dorsal habitus: 187–192. (Scale 188, 191 = 2.0 mm; 187, 189–190, 192 = 5.0 mm.)



Figs 193–198. Eucnemidae from Laos: 193–195 *Graciliforma rufoapicalis* ♂ holotype BMNH; 196–198 *Miruantennus basalis* ♂ holotype JMC. Dorsal habitus: 193, 196. Hypomeron: 194, 198. Aedeagus: 195. Antenna: 197. (Scale 194–198 = 1.0 mm; 193 = 2.0 mm.)