

A contribution to knowledge of the *Rhaphuma sulphurea* species group (Coleoptera: Cerambycidae: Cerambycinae: Clytini)

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Abstract. The genus *Rhaphuma* Pascoe, 1858 consists of almost 200 species inhabiting especially the regions in the East and Southeast of Asia. In this text we describe four new species, which are related to *R. sulphurea* Gressitt, 1941 - *R. boreolaosica* sp. nov. from northern Laos, *R. boreovietnamica* sp. nov. from northern Vietnam, *R. meridiosinica* sp. nov. from Southern China, and *R. meridiovietnamica* sp. nov. from southern Vietnam. Due to the morphological similarity of all these species, we create for them a compact group, which we call *R. sulphurea* species group.

INTRODUCTION

The subtropical regions in the East and Southeast of Asia have very high density of insect species, including Cerambycidae. While some species are widely distributed, others have distribution restricted to relatively small areas. During the last decades, the authors of the present text and their colleagues had opportunity to make several trips to various regions of Asia, which resulted in discovering many new and interesting species of Cerambycidae, especially of the tribe Clytini Mulsant 1839.

After careful examination of large number of yellow robust specimens with more or less clear black markings, which resemble *Rhaphuma sulphurea* Gressitt, 1941, we are hereby going to describe four additional species of Clytini. The first species is described under the name of *R. boreolaosica* sp. nov. from northeastern Laos and it almost lacks any blackish markings on elytra. The other three species are described from northern Vietnam (*R. boreovietnamica* sp. nov.), Guangxi province of southern China (*R. meridiosinica* sp. nov.), and Lam Dong province of southern Vietnam (*R. meridiovietnamica* sp. nov.). All these three species have very contrasting blackish markings on elytra and pronotum.

We proceed as follows. After brief description of the methods and statement of the acronyms for collections, in which the studied material is deposited, we focus on particular species in alphabetical order.

MATERIAL AND METHODS

The material examined during the study of the new species described below is deposited especially in private collections of the authors. Some other private collections were studied

as well. Moreover, the second author had recently a chance to visit BM (Bishop Museum, Honolulu, U.S.A.), BMNH (The Natural History Museum, London, U.K.), CAS (California Academy of Sciences, San Francisco, U.S.A.), IRSNB (Institute Royal des Sciences Naturelles de Belgique, Brussels, Belgium), IZAS (Institute of Zoology, Chinese Academy of Sciences, Beijing, China), MCSN (Museo Civico di Storia Naturale “Giacomo Doria”, Genova, Italy), MNHN (Muséum National d’Histoire Naturelle, Paris, France), NHMB (Naturhistorisches Museum Basel, Switzerland), NMFS (Natur-Museum und Forschungs-Institut Senckenberg, Frankfurt am Main, Germany), OMNH (Osaka Museum of Natural History, Osaka, Japan), RNHL (Rijksmuseum van Natuurlijke Historie, Leiden, the Netherlands), SMNH (Swedish Museum of Natural History, Stockholm, Sweden), USNM (National Museum of Natural History, Smithsonian Institution, Washington, U.S.A.), ZFMK (Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany), and ZSM (Zoologische Staatssammlung, München, Germany) and study their significant collections, including many specimens of Clytini and their types.

Type material will be deposited in the collections with the following acronyms:

- CPK private collection of Petr Kabátek, Praha, Czech Republic;
CPV private collection of Petr Viktora, Kutná Hora, Czech Republic;
CRH private collection of Roman Hergovits, Bratislava, Slovakia;
CTT private collection of Tomáš Tichý, Opava, Czech Republic;
NMPC National Museum, Praha, Czech Republic;
USNM National Museum of Natural History, Smithsonian Institution, Washington, U.S.A.
Slash (/) separates data in different rows on locality and determination labels.

TAXONOMY

Tribe Clytini Mulsant, 1839

Genus *Rhaphuma* Pascoe, 1858

Type species. *Clytus quadricolor* Castelnau et Gory, 1841.

The genus *Rhaphuma* Pascoe, 1858 is one of the most numerous and heterogeneous genera within the tribe Clytini and currently consists of almost 200 species with the highest density of species in the region of Southeast Asia. Its type species, *Clytus quadricolor* Castelnau et Gory, 1841, was described from the Philippines. On the other hand, *Rhaphuma histrio* (Chevrolat, 1863) was described from Java, Indonesia as *Acyphorus* Chevrolat, 1863, which is currently supposed to be synonymous with *Rhaphuma* Pascoe, 1858. Note also that the name *Rhaphuma* was used for the first time by Pascoe (1858) when describing *R. placida* from Macassar (Sulawesi, Indonesia), since the original name of the genus (*Rhaphium*) had already been in use (in Diptera). Despite the type localities of these three species, the centre of the distribution of the genus *Rhaphuma* lies in continental Southeast Asia and it penetrates into the Australian region by only a few species known from the Indonesian archipelago (see also Viktora, 2014). On the other hand, just one species penetrates across Siberia into Europe (*Rhaphuma gracilipes* (Faldermann, 1835)).

The genus is very diverse in its current treatment and many various groups within it can be defined. In this text we form the *R. sulphurea* Gressitt group, which is unique within the genus by rather stout and short body with yellowish elytra and more or less apparent black markings. Besides *R. sulphurea* itself the group consists of four further species described for the first time in the following lines. Members of this group inhabit relatively compact area consisting of Laos, Thailand, Vietnam, and several Chinese provinces (at least Guangxi and Yunnan).

All species belonging to this newly defined group have similar shape of male genitalia, especially very similar median lobes (laterally dilated; struts very long; apical part short, rounded, evenly and gently narrowed), though differences can be found in the shape of tegmen. However, in all cases the tegmen has generally thick and short lateral lobes, rounded at apex, well fused at base; ringed part roundly expanded, not projected laterally. Surprisingly, the shapes of genitalia of all species belonging to this group strongly resemble those of *Paraclytus* Bates, 1884 (see e.g. Viktora and Tichý, 2015), i.e. a genus of Anaglyptini Lacordaire 1868. The newly defined group seems to be related to the genus *Paraclytus* even more when the external similarities (rather short and stout elytra with partly convex body and sometimes apparent apical spine) are taken into account. However, since the differences between particular genera of Clytini as well as Anaglyptini are still not well defined and many authors consider them arbitrary (see relevant discussion e.g. in Niisato (2007), Miroshnikov (2014a,b), Huang and Chen (2016), Holzschuh (2016)), for this moment we prefer to leave this group of *R. sulphurea* inside *Rhaphuma* Pascoe, 1858. Only detailed analysis of various species groups of Anaglyptini and Clytini might suggest the final placement of *R. sulphurea* group.

Rhaphuma boreolaosica sp. nov.

(Figs. 1-2)

Type locality. Laos, Houaphan province, Ban Saluei vill. env., Mt. Phu Pane.

Type material. Holotype (♂): 'NE LAOS: Hua Phan prov.' / 'Ban Saluei vill. env.' / 'MT. PHU PANE, 1200-1800m' / '6. - 20. v. 2014' / 'P. Viktora et local coll. lgt.' (CPV); Paratypes: (17 ♂♂; 17 ♀♀): same data as holotype (CPV); (2 ♂♂; 2 ♀♀): 'NE LAOS, May 2007' / 'Hua Phan Prov.' / 'Mt. PHU PANE' / '1500-1900m' / 'Lao collector leg.' (CPV); (6 ♂♂; 3 ♀♀): 'LAOS-NE, Hua Phan prov.' / '20°12'N 104°01'E' / 'PHU PANE Mt., 1500-1900m' / '20. iv. - 15. v. 2007' / 'Lao collector leg.' (CPV); (1 ♂; 1 ♀): 'LAOS-NE, Houa Phan pr.' / 'Ban Saluei v. - Mt. Phou Pane' / '1920-1450m, 10. - 21. vi. 2010' / 'St. Jákł et local collectors lgt.', (CPV); (32 ♂♂; 30 ♀♀): 'NE LAOS' / 'Hua Phan Prov., MT. PHU PANE' / '1200-1600m, 10. - 22. v. 2011' / '20°12'N 103°59'E' / 'St. Jákł and Lao collectors lgt.' (CPV, CRH); (1 ♂; 1 ♀): 'NE LAOS: Huaphane prov.' / 'Ban Saluei vill. env.' / 'MT. PHU PANE, 1200-1600m' / '31. v. - 11. vi. 2011' / 'St. Jákł et local coll. lgt.' (CPV); (10 ♂♂; 6 ♀♀): 'LAOS-NE, Houa Phan prov.' / '20°12-13.5'N 103°59.5-104°01'E' / 'Ban Saleuy→Phou Pane Mt.,' / '1340-1870m, 2.-22.vi.2011' / 'Vít Kubáň & Lao coll. leg.' (NMPC); (1 ♂): 'NE LAOS' / 'Hua Phan Prov., MT PHU PANE' / '1200-1900m, 18. v. - 2. vi. 2012' / '20°12'N 103°59'E' / 'St. Jákł and Lao Collector lgt.' (CPV); (17 ♂♂): 'May 2012, Laos' / 'Hua Phan' / 'NE Laos' / 'Phu Pane' / 'local col.' (CTT); (12 ♂♂; 14 ♀♀): 'NE LAOS, Huaphanne Pr.' / 'MT. PHU PANE, 1200-1900m' / 'Ban Saluei v. env., 26. iv. - 10. v.' / '20°12'N 103°59'E 2013' / 'St. Jákł + lao collector leg' (CPV); (5 ♂♂): 'May 2014, Laos' / 'Hua Phan' / 'NE Laos' / 'Phu Pane' / 'local col.' (CTT).
The types are provided with a printed red label: 'Rhaphuma boreolaosica sp. nov.' / 'HOLOTYPUS (respective PARATYPUS)' / 'P. Viktora et T. Tichý det., 2016'.

Description of holotype. Habitus of male holotype as in Fig. 1a. Body black, rather stout, relatively short, punctate, with pubescence. Body length 10.6 mm (male paratypes from 6.9 to 12.7 mm), widest in humeral part of elytra (2.59 mm), approximately 4.1 times longer than wide.

Head black, relatively short, widest through the eyes, approximately as wide as pronotum in the widest place (near the middle), with fine punctuation, with long and recumbent yellow pubescence. Clypeus partly pale reddish brown with a few long pale setae. Eyes strongly longitudinally emarginate, between roots of antennae with one distinct tubercle from both sides. Dorsal surface of mandibles partly glabrous. Maxillary palpus pale reddish brown, palpomeres short, with long pale setae. Ultimate palpomere longest, widest at apex, axe shaped.

Antennae filiform, pale brown, with fine punctuation, with short pale pubescence and long pale setae on inner side of antennomeres 2-8. Antennomeres without spines. Antennomere 2 the shortest. Antennae slightly exceeding elytral apex. Ratios of relative lengths of antennomeres 1-11 equal to: 0.80 : 0.30 : 1.00 : 0.97 : 1.11 : 1.13 : 1.17 : 0.93 : 0.93 : 0.79 : 0.87.

Pronotum black, slightly convex, with distinctly arcuate lateral margins, 1.21 times longer than wide at the widest point (near the middle of pronotum). Dorsal surface with distinct punctuation, punctures large, with long and recumbent yellow pubescence (as in Fig. 1a). Lateral margins with a few long pale setae. Anterior margin arcuate, base straight.

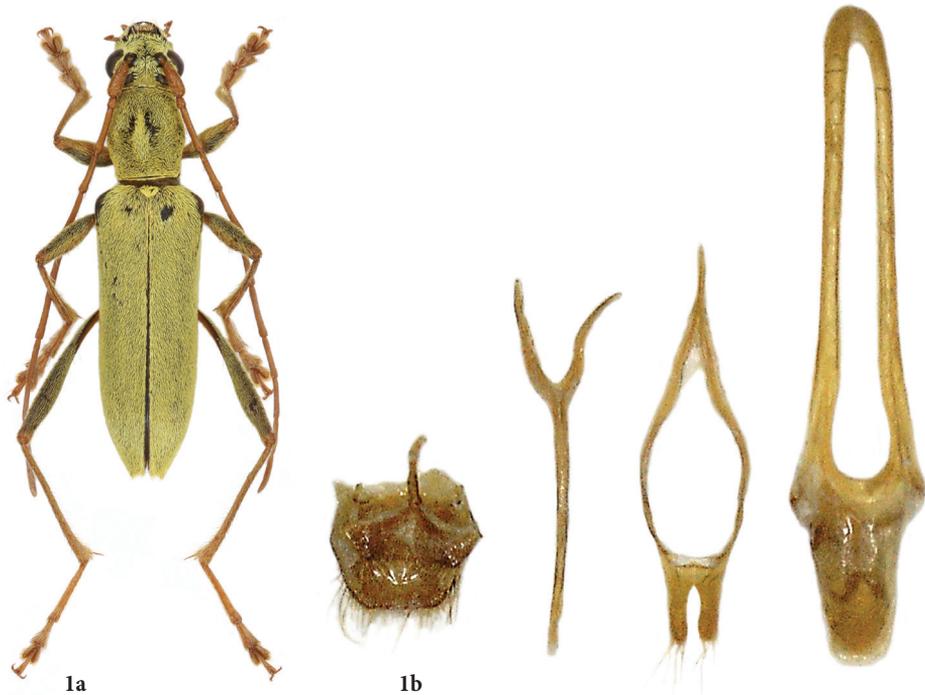
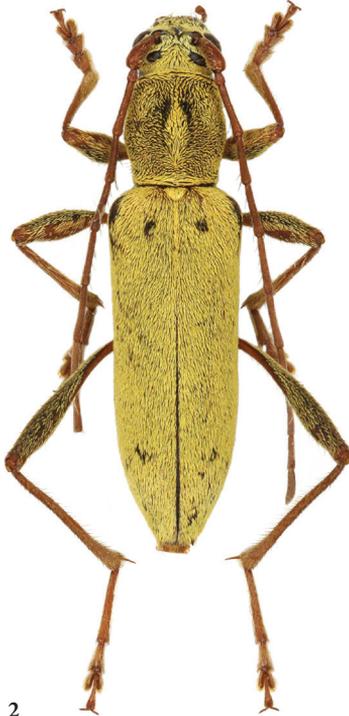


Fig. 1: *Rhaphuma boreolaosica* sp. nov.: a- male holotype; b- male genitalia.

Fig. 2: *Rhaphuma boreolaosica* sp. nov.: female paratype.



2

Females without distinct differences, body slightly wider, antennae slightly shorter than in males (clearly not reaching elytral apex). Body length (female paratypes) from 6.9 to 14.3 mm.

Differential diagnosis. *Rhaphuma boreolaosica* sp. nov. clearly differs from similar species *Rhaphuma boreovietnamica* sp. nov., *Rhaphuma meridiosinica* sp. nov. and *Rhaphuma meridiovietnamica* sp. nov. by longer and narrower elytra (ratio elytral length / elytral width in humeri 2.75), by dorsal surface of elytra (without significant black spots; as in Figs. 1-2) and by different shape of tegmen; *R. boreovietnamica*, *R. meridiosinica* and *R. meridiovietnamica* have shorter and wider elytra (ratio elytral length / elytral width in humeri from 2.25 to 2.45) and dorsal surface of elytra with black spots (as in Figs. 3-8). *Rhaphuma boreolaosica* sp. nov. differs from *Rhaphuma sulphurea* Gressitt, 1941 by dorsal surface of elytra without significant black spots, by shorter spines in outer sides of elytral apex and different shape of tegmen; *R. sulphurea* has elytra with black spots (as in Figs. 9-10) and longer spines in outer sides of elytral apex.

Variability. The vast majority of type specimens have monochromatic elytra (covered by yellow pubescence), sometimes with one black spot on each elytron near base, very rarely with additional black spot on each elytron near the apex.

Scutellum black, widely triangular, with long and recumbent yellow pubescence.

Elytra 7.13 mm long and 2.59 mm wide (2.75 times longer than wide); black, rather stout, with fine and dense punctation, covered by long and recumbent yellow pubescence. Humeri black, without recumbent yellow pubescence (as in Fig. 1a). Each elytron terminated by thorn on outer side, apex of each elytron slightly arcuate.

Legs long and narrow, pale reddish brown, pro- and mesofemora partly black, metafemora almost completely black. Legs with relatively dense yellow pubescence and long pale setae on inner side. Metatibiae and metafemora longer than pro- and mesotibiae and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere 1 1.47 times longer than metatarsomeres 2 and 3 together.

Ventral side of body black, completely covered by dense yellow pubescence.

Male genitalia as in Fig. 1b.

Female. Habitus of female paratype as in Fig. 2.

Etymology. Named after the area of discovery - north Laos.

Distribution. Laos (Houaphan province).

***Rhaphuma boreovietnamica* sp. nov.**

(Figs. 3-4)

Type locality. Vietnam, Vinh Phuc province, Tam Dao.

Type material. Holotype (♂): 'N VIETNAM, Tam Dao NP' / 'Tam Dao env.' / '900-1200m, 13. - 26. vi. 2011' / '21,27,38N 105,38,28E' / 'E. Jendek lgt.' (CPV); Paratypes: (1 ♀): same data as holotype (CRH); (1 ♀): 'N Vietnam; 21,27N 105,39E' / '70km NW Hanoi, Tam Dao' / '1.-8.6.1996; 900-1200m' / 'Pacholátko & Dembický leg.' (CPK); (1 ♀): 'Vietnam N, Vinh Phuc. Pr.' / 'Tam Dao NP, 1000 m' / 'N:21°27,577'E:105°38,489'' / 'vi. 2012' / 'M. Pejcha lgt.' (CPV); (2 ♀♀): 'N Vietnam, Cao Bang prov.,' / 'Phia-Oac Mts,Phia-Den env.' / 'N22°34'01", E105°52'14",900-1200m' / '29.iv.-5.v.2012, E. Jendek leg.' (CRH); (2 ♀♀): 'Vietnam, Vinh Phuc Prov.' / 'Tam Dao National Park' / '21°28.408'N; 105°38.816'E' / 'June 2011, 955m' (CTT, USNM). The types are provided with a printed red label: '*Rhaphuma boreovietnamica* sp. nov.' / 'HOLOTYPUS (respective PARATYPUS)' / 'P. Viktora et T. Tichý det., 2016'.

Description of holotype. Habitus of male holotype as in Fig. 3a. Body black, rather stout, relatively short, punctate, with pubescence. Body length 12.1 mm, widest in humeral part of elytra (3.24 mm), approximately 3.7 times longer than wide.

Head black, relatively short, widest through the eyes, approximately as wide as pronotum at widest place (near middle), with fine punctuation, with long and recumbent yellow

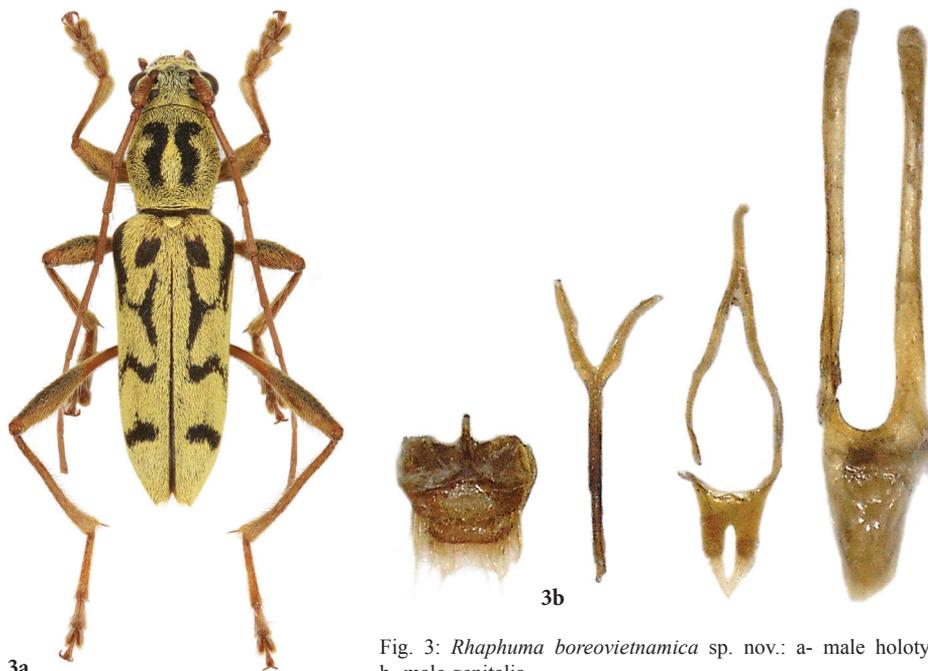


Fig. 3: *Rhaphuma boreovietnamica* sp. nov.: a- male holotype; b- male genitalia.



Fig. 4: *Rhaphuma boreovietnamica* sp. nov.: female paratype.

pubescence. Clypeus partly pale reddish brown with a few long pale setae. Eyes strongly longitudinally emarginate, between roots of antennae with one distinct tubercle on each side. Dorsal surface of mandibles partly glabrous. Maxillary palpus pale reddish brown, palpomeres short, with long pale setae. Ultimate palpomere longest, widest at apex, axe shaped.

Antennae filiform, pale reddish brown, with fine punctuation, with short pale pubescence and long pale setae on inner side of antennomeres 2-8. Antennomeres without spines. Antennomere 2 the shortest. Antennae reaching elytral apex. Ratios of relative lengths of antennomeres 1-11 equal to: 0.63 : 0.21 : 1.00 : 0.91 : 1.02 : 1.03 : 0.96 : 0.84 : 0.72 : 0.75 : 0.77.

Pronotum black, convex, with distinctly arcuate lateral margins, 1.12 times longer than wide at the widest point (near the middle of pronotum). Dorsal surface with distinct punctuation, punctures large and

coarse, with long and recumbent yellow pubescence (as in Fig. 3a). Lateral margins and disc with a few long pale setae. Anterior margin arcuate, base straight.

Scutellum black, widely triangular, with long and recumbent yellow pubescence.

Elytra 7.97 mm long and 3.24 mm wide (2.45 times longer than wide); rather stout, with fine and dense punctuation. Elytra bicolor (as in Fig. 3a), black, partly brown (under yellow pubescence). Humeral part of elytra with a few long pale setae apparent from the lateral view. Each elytron terminated by thorn on outer side, apex of elytra slightly arcuate.

Legs long and narrow, pale reddish brown, femora with narrow black stripe on upper side. Legs with relatively dense yellow pubescence and long pale setae. Metatibiae and metafemora longer than pro- and mesotibiae and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere 1 1.46 times longer than metatarsomeres 2 and 3 together.

Ventral side of body black, completely covered by dense yellow pubescence (pubescence distinctly paler than those in elytra).

Male genitalia as in Fig. 3b.

Female. Habitus of female paratype as in Fig. 4. Females without distinct differences, body slightly wider, antennae shorter than in males (clearly not reaching elytral apex). Body length (female paratypes) from 12.0 to 13.7 mm.

Differential diagnosis. *Rhaphuma boreovietnamica* sp. nov. clearly differs from similar species *Rhaphuma sulphurea* Gressitt, 1941 and *Rhaphuma boreolaosica* sp. nov. by shorter

and wider elytra (ratio elytral length / elytral width in humeri 2.45); *R. sulphurea* and *R. boreolaosica* have longer and narrower elytra (ratio elytral length / elytral width in humeri about 2.75). *Rhaphuma boreovietnamica* sp. nov. differs from similar species *Rhaphuma meridiosinica* sp. nov. and *Rhaphuma meridiovietnamica* sp. nov. by the shape of colour pattern of dorsal surface of elytra (as in Figs. 3-4), by different shape of tegmen and by metafemora in main part reddish brown; *R. meridiosinica* and *R. meridiovietnamica* have different shape of colour pattern of dorsal surface of elytra (as in Figs. 5-8) and metafemora almost completely black.

Etymology. Named after the area of discovery - North Vietnam.

Distribution. Vietnam (Vinh Phuc province).

***Rhaphuma meridiosinica* sp. nov.**

(Figs. 5-6)

Type locality. China, Guangxi, Dayaoshan.

Type material. Holotype (♂): '1. - 15. vi. 2014; China' / 'Dayaoshan, 1200m' / 'Pingban, Jinxiu' / 'local collector' / 'Guangxi', (CTT); Paratypes: (1 ♂; 1 ♀): '5. - 13. iv. 2015; China' / 'Dayaoshan, 1000m' / 'Pingzhao, Jinxiu' / 'local collector' / 'Guangxi' (CPV, CTT); (2 ♀♀): 'May 2016; China' / 'Guangxi' / 'Pingban, Jinxiu' / 'Dayaoshan, 1100m' / 'local collector' (CTT, USNM).

The types are provided with a printed red label: '*Rhaphuma meridiosinica* sp. nov.' / 'HOLOTYPUS (respective PARATYPUS)' / 'P. Viktora et T. Tichý det., 2016'.

Description of holotype. Habitus of male holotype as in Fig. 5a. Body black, rather stout, relatively short, punctuate, with pubescence. Body length 10.14 mm (male paratype 9.1 mm), widest in humeral part of elytra (2.74 mm), approximately 3.7 times longer than wide.

Head black, relatively short, widest through the eyes, approximately as wide as pronotum in widest place (near middle), with very fine punctuation, with long and recumbent yellow pubescence. Clypeus partly pale reddish brown with a few long pale setae. Eyes strongly longitudinally emarginate, between roots of antennae with one distinct tubercle on each side. Dorsal surface of mandibles partly glabrous. Maxillary palpus pale brown, palpomeres short, with long pale setae. Ultimate palpomere longest, widest at apex, axe shaped.

Antennae filiform, pale reddish brown, with very fine punctuation, with short pale pubescence and long pale setae on inner side of antennomeres 2-9. Antennomeres without spines. Antennomere 2 the shortest. Antennae slightly exceeding elytral apex. Ratios of relative lengths of antennomeres 1-11 equal to: 0.60 : 0.26 : 1.00 : 0.78 : 0.92 : 0.94 : 0.92 : 0.75 : 0.68 : 0.59 : 0.61.

Pronotum black, slightly convex, with distinctly arcuate lateral margins, 1.12 times longer than wide at the widest point (near the middle of pronotum). Dorsal surface with distinct punctuation, punctures medium-size and coarse, with long and recumbent yellow pubescence (as in Fig. 5a). Disc with a few long pale setae. Anterior margin arcuate, base straight.

Scutellum black, roundly triangular, with long and recumbent yellow pubescence.

Elytra 6.62 mm long and 2.74 mm wide (2.41 times longer than wide); black, rather stout,

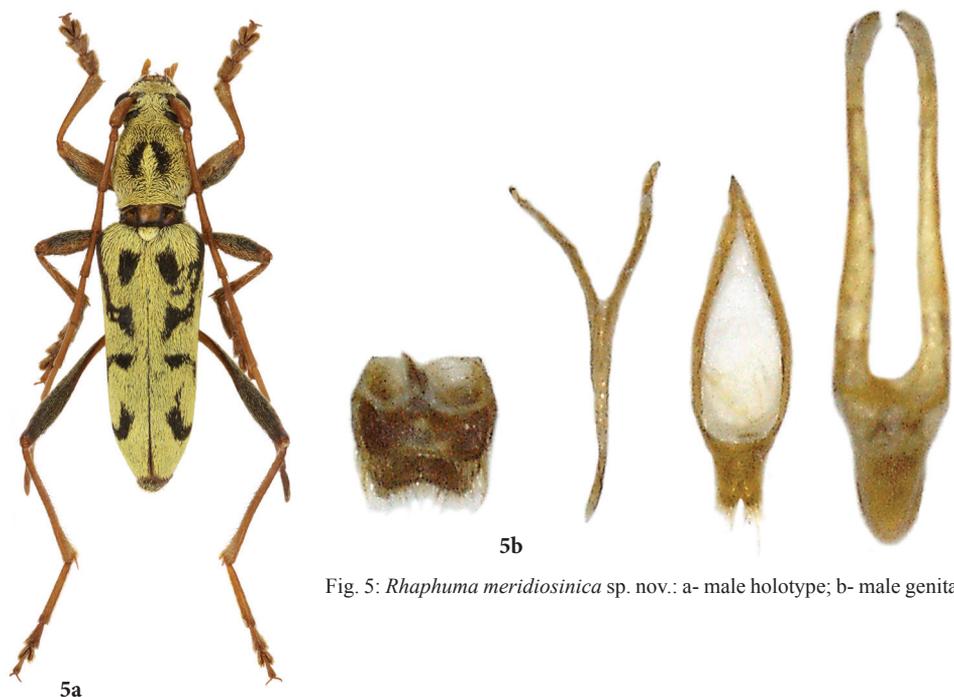


Fig. 5: *Rhaphuma meridiosinica* sp. nov.: a- male holotype; b- male genitalia.

with fine and dense punctuation, covered by long and recumbent yellow pubescence (as in Fig. 5a). Basal part of elytra with a few long pale setae. Each elytron terminated by small thorn on outer side of apex, apex of elytra slightly arcuate.

Legs long and narrow, pale reddish brown, pro- and mesofemora partly black, metafemora almost completely black (base reddish brown). Legs with relatively dense yellow pubescence and long pale setae on inner side. Metatibiae and metafemora longer than pro- and mesotibia and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere 1 1.69 times longer than metatarsomeres 2 and 3 together.

Ventral side of body black, completely covered by dense yellow pubescence (pubescence distinctly paler than those in elytra).

Male genitalia as in Fig. 5b.

Female. Habitus of female paratype as in Fig. 6. Females without distinct differences, body slightly wider, antennae slightly shorter than in males (not reaching elytral apex), protarsi narrower than in male. Body length (female paratypes) from 8.3 to 10.9 mm.

Differential diagnosis. *Rhaphuma meridiosinica* sp. nov. clearly differs from *Rhaphuma sulphurea* Gressitt, 1941 and *Rhaphuma boreolaosica* sp. nov. by shorter and wider elytra (ratio elytral length / elytral width in humeri 2.41); *R. sulphurea* and *R. boreolaosica* have longer and narrower elytra (ratio elytral length / elytral width in humeri about 2.75). *Rhaphuma meridiosinica* sp. nov. differs from similar species *Rhaphuma boreovietnamica*

Fig. 6: *Rhaphuma meridiosinica* sp. nov.: female paratype.



sp. nov. and *Rhaphuma meridiovietnamica* sp. nov. by the shape of the colour pattern of dorsal surface of elytra (as in Figs. 5-6), by ultimate tergite distinctly arcuate and different shape of tegmen; *R. boreovietnamica* and *R. meridiovietnamica* have different shape of colour pattern of dorsal surface of elytra (as in Figs. 3-4, 7-8) and ultimate tergite straight.

Etymology. Named after the area of discovery - south China.

Distribution. China (Guangxi).

***Rhaphuma meridiovietnamica* sp. nov.**
(Figs. 7-8)

Type locality. Vietnam, Lam Dong province, Da-Ton, Bao Lam.

Type material. Holotype (♂): 'Da-Ton, Bao Lam' / 'Lam Dong, Vietnam' / 'v. 2016, local collector' (CPV); Paratype: (1 ♀): same data as holotype (CTT).

The types are provided with a printed red label: '*Rhaphuma meridiovietnamica* sp. nov.' / 'HOLOTYPUS (respective PARATYPUS)' / 'P. Viktora et T. Tichý det., 2016'.

Description of holotype. Habitus of male holotype as in Fig. 7a. Body black, rather stout, relatively short, punctuate, with pubescence. Body length 9.41 mm, widest in humeral part of elytra (2.54 mm), approximately 3.7 times longer than wide.

Head black, relatively short, widest through the eyes, approximately as wide as pronotum in widest place (near middle), with fine punctuation, with long and recumbent yellow pubescence. Clypeus partly pale reddish brown with a few long pale setae. Eyes strongly longitudinally emarginate, between roots of antennae with one small tubercle from both sides. Dorsal surface of mandibles partly glabrous. Maxillary palpus pale reddish brown, palpomeres short, with long pale setae. Ultimate palpomere longest, widest in apex, axe shaped.

Antennae filiform, pale reddish brown, with fine punctuation, with short pale pubescence and long pale setae on inner side of antennomeres 2-8. Antennomeres without spines. Antennomere 2 shortest. Antennae distinctly exceeding elytral apex. Ratios of relative

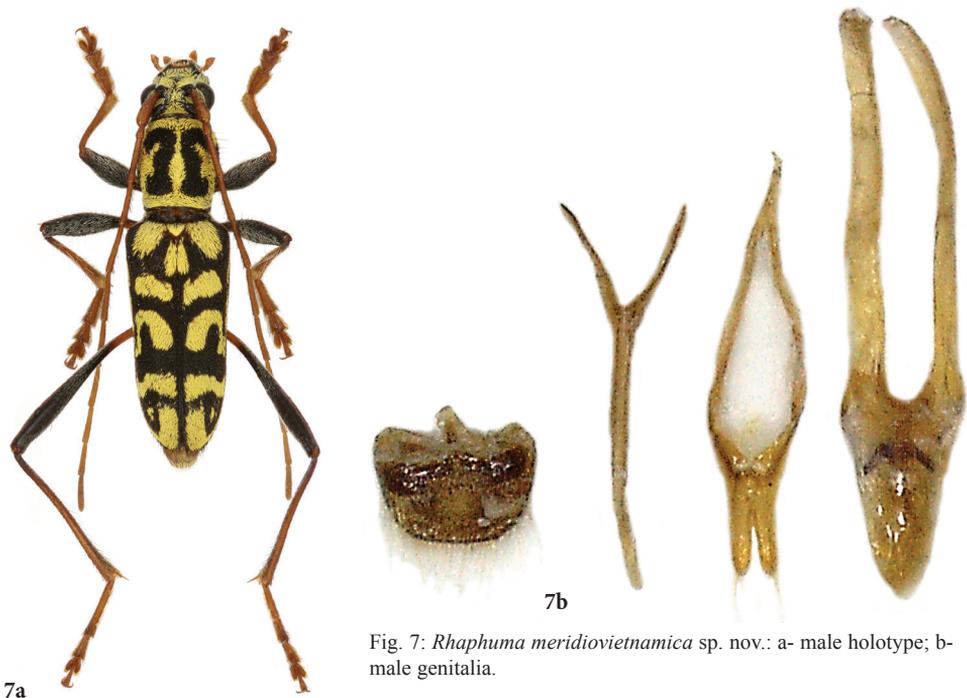


Fig. 7: *Rhaphuma meridiovietnamica* sp. nov.: a- male holotype; b- male genitalia.

lengths of antennomeres 1-11 equal to: 0.77 : 0.26 : 1.00 : 1.11 : 1.13 : 1.16 : 1.07 : 0.92 : 0.87 : 0.76 : 0.81.

Pronotum black, slightly convex, with slightly arcuate lateral margins, 1.12 times longer than wide at the widest point (near the middle of pronotum). Dorsal surface with distinct punctuation, punctures medium-sized, with long and recumbent yellow pubescence (as in Fig. 7a). Disc and lateral margins with long dark setae. Anterior margin slightly arcuate, base straight.

Scutellum black, widely triangular, with long and recumbent yellow pubescence.

Elytra 5.72 mm long and 2.54 mm wide (2.25 times longer than wide); black, rather stout, with fine and dense punctuation, covered by long and recumbent yellow pubescence (as in Fig. 7a). Basal part of elytra with some dark and some pale setae. Each elytron terminated by thorn on both sides of apex.

Legs long and narrow, pale reddish brown, femora black with pale reddish brown base. Legs with relatively dense yellow pubescence and long pale setae on inner side. Metatibiae and metafemora longer than pro- and mesotibiae and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere 1 1.47 times longer than metatarsomeres 2 and 3 together.

Ventral side of body black, completely covered by dense yellow pubescence in same hue as in elytra.

Male genitalia as in Fig. 7b.

Fig. 8: *Rhaphuma meridiovietnamica* sp. nov.: female paratype.



Female. Habitus of female paratype as in Fig. 8. Females without distinct differences, body slightly wider, antennae slightly shorter than in males (just reaching elytral apex). Body length 9.53 mm.

Differential diagnosis. *Rhaphuma meridiovietnamica* sp. nov. clearly differs from *Rhaphuma sulphurea* Gressitt, 1941 and *Rhaphuma boreolaosica* sp. nov. by shorter and wider elytra (ratio elytral length / elytral width in humeri 2.25); while *R. sulphurea* and *R. boreolaosica* have longer and narrower elytra (ratio elytral length / elytral width in humeri about 2.75). *Rhaphuma meridiovietnamica* sp. nov. differs from similar species *Rhaphuma boreovietnamica* sp. nov. and *Rhaphuma meridiosinica* sp. nov. by the shape of colour pattern of dorsal surface of elytra (as in Figs. 7-8) and by all femora almost completely black; while *R. boreovietnamica* and *R. meridiosinica* have different shape of colour pattern of dorsal surface of elytra (as in Figs. 3-6) and femora in main part reddish brown. Dorsal surface of elytra more black than those of other

species in this group.

Etymology. Named after the area of discovery - south Vietnam.

Distribution. Vietnam (Lam Dong province).

Rhaphuma sulphurea Gressitt, 1941 (Figs. 9-10)

Rhaphuma sulphurea Gressitt, 1941: 336.

Type locality. N Thailand, Khun Tan Mts. (Holotype studied by the second author during his visit to USNM.)

Material examined. (8 ♂♂; 9 ♀♀): 'Thailand NW' / 'Mae Hong Son prov.' / 'pass Soppong - Pai' / '20 km from Soppong' / '29. iv. - 17. v. 2007' / 'P. Viktora lgt.' (CPV); (3 ♂♂; 2 ♀♀): 'Thailand NW' / 'Mae Hong Son prov.' / 'Soppong vill. env.' / '29. iv. - 17. v. 2007' / 'P. Viktora lgt.' (CPV); (4 ♂♂; 4 ♀♀): 'N THAILAND' / 'Chiang Mai prov.' / 'Fang, vi. 2010' / 'local collector lgt.' (CPV, CTT); (1 ♀): 'Thailand NW' / 'Chiang Mai prov.' / 'Doi Suthep - Doi Pui' / '18. - 21. v. 2007' / 'P. Viktora lgt.' (CPV); (1 ♀): 'THAI 1. - 8. v. 1993' / 'SOPPONG PAI 1800 m' / 'Pacholátko & Dembický leg.' (CPV).

Measurements of one selected male. Body length 10.93 mm, widest in humeral part of



9a



9b

Fig. 9: *Rhapsoma sulphurea* Gressitt, 1941: a- male; b- male genitalia (Thailand, Mae Hong Son prov.; CPV).

elytra (2.78 mm), 3.93 times longer than wide. Pronotum 1.15 times longer than wide at the widest point (near the middle of pronotum). Elytra 7.67 mm long and 2.78 mm wide (2.76 times longer than wide). Antennae slightly exceeding elytral apex. Ratios of relative lengths of antennomeres 1-11 equal to: 0.63 : 0.24 : 1.00 : 1.00 : 1.15 : 1.14 : 1.13 : 1.04 : 1.02 : 0.74 : 0.85. Metatarsomere 1 1.45 times longer than metatarsomeres 2 and 3 together.

Distribution. Thailand, China (Yunnan).

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10

Fig. 10: *Rhapsoma sulphurea* Gressitt, 1941: female (Thailand, Mae Hong Son prov.; CPV).

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