

***Petraphuma*, a new genus of Clytini (Coleoptera, Cerambycidae, Cerambycinae)**

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Taxonomy, new genus, Coleoptera, Cerambycidae, Clytini, *Petraphuma*, Asia

Abstract. *Petraphuma*, a new genus of the tribe Clytini Mulsant, 1839 from Asia, is described. Species of the genus - *Petraphuma allegoria* (Viktora & Tichý, 2017) comb. nov., *Petraphuma boreolaosica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma boreovietnamica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma meridiosinica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma meridiovietnamica* (Viktora & Tichý, 2017) comb. nov. and *Petraphuma sulphurea* (Gressitt, 1941) comb. nov. are transferred from the genus *Rhaphuma* Pascoe, 1858. The new genus is compared with a similar genus *Rhaphuma* Pascoe, 1858. All known species of the genus *Petraphuma* gen. nov. are illustrated. *Petraphuma meridiosinica* (Viktora & Tichý, 2017) comb. nov. is firstly recorded from Hainan Island.

INTRODUCTION

The genus *Rhaphuma* Pascoe, 1858 is one of the most numerous and heterogeneous genera within the tribe Clytini Mulsant, 1839 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 *Arcyphorus* 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.

Viktora & Tichý (2017a) introduced a new species group in genus *Rhaphuma* (*Rhaphuma sulphurea* species group). Based on a study of more specimens of these group and a further study I suppose that the species *Rhaphuma allegoria* Viktora & Tichý, 2017, *Rhaphuma boreolaosica* Viktora & Tichý, 2017, *Rhaphuma boreovietnamica* Viktora & Tichý, 2017, *Rhaphuma meridiosinica* Viktora & Tichý, 2017, *Rhaphuma meridiovietnamica* Viktora & Tichý, 2017 and *Rhaphuma sulphurea* Gressitt, 1941 belong to the newly established genus *Petraphuma* gen. nov. as *Petraphuma allegoria* (Viktora & Tichý, 2017) comb. nov., *Petraphuma boreolaosica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma boreovietnamica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma meridiosinica* (Viktora & Tichý, 2017) comb. nov., *Petraphuma meridiovietnamica* (Viktora & Tichý, 2017) comb. nov. and *Petraphuma sulphurea* (Gressitt, 1941) comb. nov. Members of this new genus inhabit a relatively compact area consisting of Laos, Thailand, Vietnam, and several Chinese provinces.

Petraphuma, a new genus of the tribe Clytini from Asia, is described with type species *Rhaphuma sulphurea* Gressitt, 1941 and compared with a similar genus *Rhaphuma* Pascoe, 1858. All known species of the genus *Petraphuma* gen. nov. are illustrated.

Petraphuma meridiosinica (Viktora & Tichý, 2017) comb. nov. is firstly recorded from Hainan Island.

MATERIAL AND METHODS

The material examined during the study is deposited especially in the private collection of the author. Some other collections were studied as well.

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 lines on locality and determination labels.

The photographs of the habitus of all species were taken by the Canon EOS 350D digital camera with the Sigma 105 mm macro lens. Microstructures of dissected parts were observed under the DNT DigiMicro Profi USB microscope. Composite images were created using the software Image Stacking Software Combine ZP. The photographs were modified using Adobe Photoshop CC if needed.

TAXONOMY

Tribe Clytini Mulsant, 1839

Petraphuma gen. nov.

(Figs. 1-6)

Type species. *Rhaphuma sulphurea* Gressitt, 1941: 336.

Description. Habitus of male as in Figs. 1a, 2a, 3a, 4a, 5a and 6a. Body rather stout, relatively short and wide, punctate, dorsal surface with pubescence, widest in humeral part of elytra, 3.7 - 4.2 times longer than wide. Head short and wide, widest through the eyes, approximately as wide as pronotum in the widest place (near the middle), with fine punctuation, with long and recumbent pubescence. Eyes strongly emarginate, between roots of antennae with one distinct tubercle on each side. Palpomeres short, ultimate palpomere longest, widest at apex. Antennae filiform, with very fine punctuation, short pubescence and long setae on inner side of antennomeres 2-8. Antennomeres without spines. Antennomere 2 the shortest, antennomere 3 longer than scape. Antennae approximately reaching elytral apex. Pronotum convex, with distinctly arcuate lateral margins. Pronotum slightly longer than wide, distinctly narrower than humeral part of elytra. Dorsal surface with distinct punctuation, with long and dense pubescence. Scutellum widely triangular, with long and recumbent pubescence. Elytra wide (2.25 - 2.76 times longer than wide), rather stout, with fine and dense punctuation, covered by long and dense recumbent pubescence. Each elytron terminated by thorn on outer side of apex. Legs long and narrow, with dense and long pubescence, femora rather stout. Pubescence of inner side of meso- and metatibiae and meso- and metafemora long. Metatibiae and metafemora longer than pro- and mesotibiae and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere 1 1.45 - 1.69 times longer than metatarsomeres 2 and 3 together. Ventral side of

body covered by dense pubescence. Male genitalia as in Figs. 1b, 2b, 3b, 4b, 5b and 6b.

Female. Habitus of female as in Figs. 1c, 2c, 3c, 4c, 5c and 6c. Females without distinct differences, antennae rather shorter than in males (almost not reaching elytral apex).

Differential diagnosis. Species of the new genus *Petraphuma* gen. nov. are similar to those of the genus *Rhaphuma* Pascoe, 1858 (compared with type species *Rhaphuma quadricolor* (Castelnau et Gory, 1841)). Species of *Petraphuma* gen. nov. differ from species of *Rhaphuma* mainly by wider and shorter body (3.7 - 4.2 times longer than wide), wider and shorter elytra (2.25 - 2.76 times longer than wide), by long pubescence on inner side of meso- and metatibiae and meso- and metafemora, by femora rather stout and by different shape of male genitalia (it is specific for new genus). Species of the genus *Rhaphuma* have longer and narrower body (4.6 times longer than wide in *R. quadricolor*), longer and narrower elytra (3.0 times longer than wide in *R. quadricolor*), meso- and metatibiae and meso- and metafemora without long pubescence, femora distinctly narrower. All species belonging to *Petraphuma* gen. nov. have similar shapes of male genitalia, especially very similar median lobes (laterally dilated; struts very long; apical part short, rounded, evenly and gently narrowed), but differences can be found in the shape of the 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 *Petraphuma* gen. nov. resemble those of *Paraclytus* Bates, 1884 (see Viktora & Tichý, 2017a; 2017b), i.e. a genus of Anaglyptini Lacordaire, 1868.

Etymology. This new genus is dedicated to my daughter Petra. The compound name consisting of the her name - "Petra" and ending - "phuma" indicating affinity to the genus *Rhaphuma* Pascoe, 1858. Gender feminine.

Distribution. China, Laos, Vietnam, Thailand.

Species

***Petraphuma allegoria* (Viktora & Tichý, 2017) comb. nov.**

(Fig. 1)

Rhaphuma allegoria Viktora & Tichý, 2017b: 233.

Type material examined. Holotype (♂): 'vi. 2016; Vietnam' / 'Kon Tum' / 'Ngoc Linh, 1700m' / 'TayNguyen/CentHigh.' (CTT); Paratypes (1 ♀): same data as the holotype (CPV); (1 ♀): same data as the holotype, but v. 2017 (CTT).

Remark. The species *Rhaphuma allegoria* Viktora & Tichý, 2017 distinctly belongs to the genus *Petraphuma* gen. nov. based on these characters: wider and shorter body (4.2 times longer than wide), wider and shorter elytra (2.66 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. Vietnam (Kon Tum province).

***Petrphuma boreolaosica* (Viktora & Tichý, 2017) comb. nov.**
(Fig. 2)

Rhaphuma boreolaosica Viktora & Tichý, 2017a: 221.

Type material examined. 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. Jákl 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. Ják 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. Jákl 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' / 'Vit 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. Ják 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. Ják + lao collector leg' (CPV); (5 ♂♀): 'May 2014, Laos' / 'Hua Phan' / 'NE Laos' / 'Phu Pane' / 'local col.' (CTT).

Remark. The species *Rhaphuma boreolaosica* Viktora & Tichý, 2017 distinctly belongs to the genus *Petrphuma* gen. nov. based on the following characters: wider and shorter body (4.1 times longer than wide), wider and shorter elytra (2.75 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. Laos (Houaphan province).

***Petrphuma boreovietnamica* (Viktora & Tichý, 2017) comb. nov.**
(Fig. 3)

Rhaphuma boreovietnamica Viktora & Tichý, 2017a: 224.

Type material examined. 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).

Remark. Species *Rhaphuma boreovietnamica* Viktora & Tichý, 2017 distinctly belongs to the genus *Petrphuma* gen. nov. based on the following characters: wider and shorter body (3.7 times longer than wide), wider and shorter elytra (2.45 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. Vietnam (Vinh Phuc province).

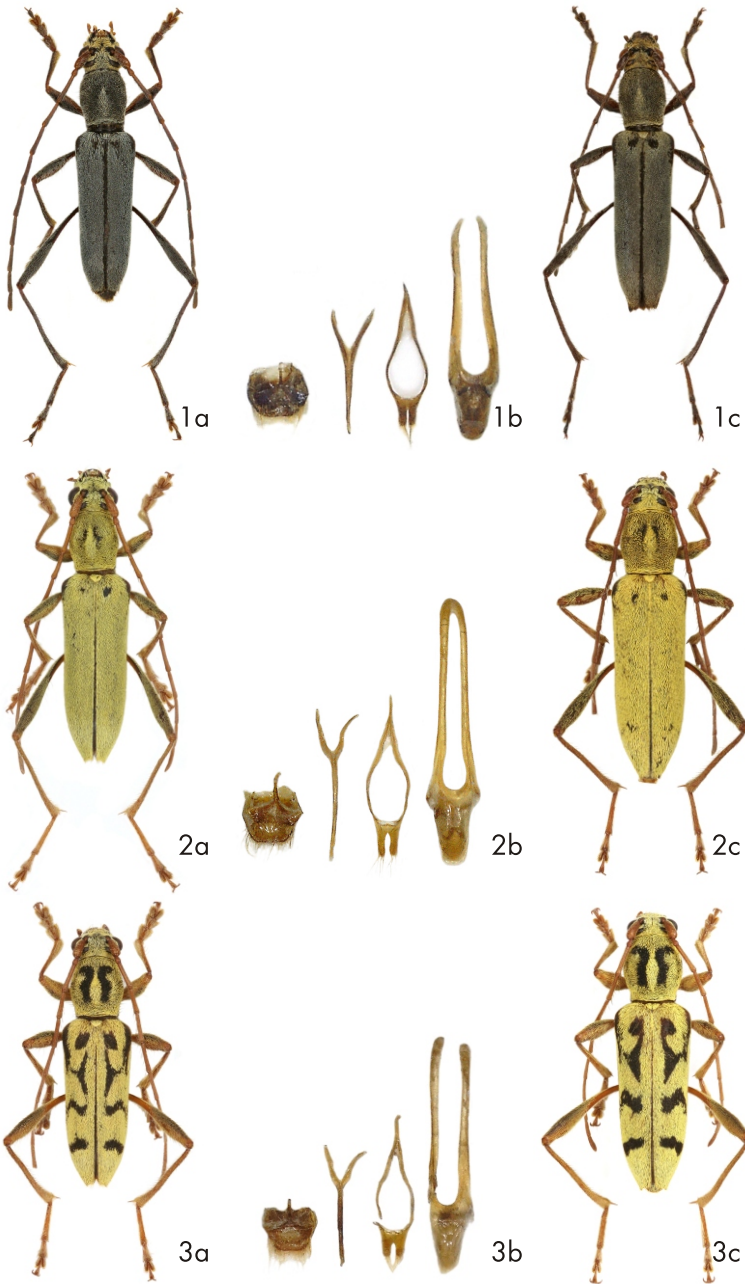


Fig. 1. *Petraphuma allegoria* (Viktora & Tichý, 2017) comb. nov.: a- male holotype; b- male genitalia; c- female paratype.
Fig. 2. *Petraphuma boreolaosica* (Viktora & Tichý, 2017) comb. nov.: a- male holotype; b- male genitalia; c- female paratype.
Fig. 3. *Petraphuma boreovietnamica* (Viktora & Tichý, 2017) comb. nov.: a- male holotype; b- male genitalia; c- female paratype.

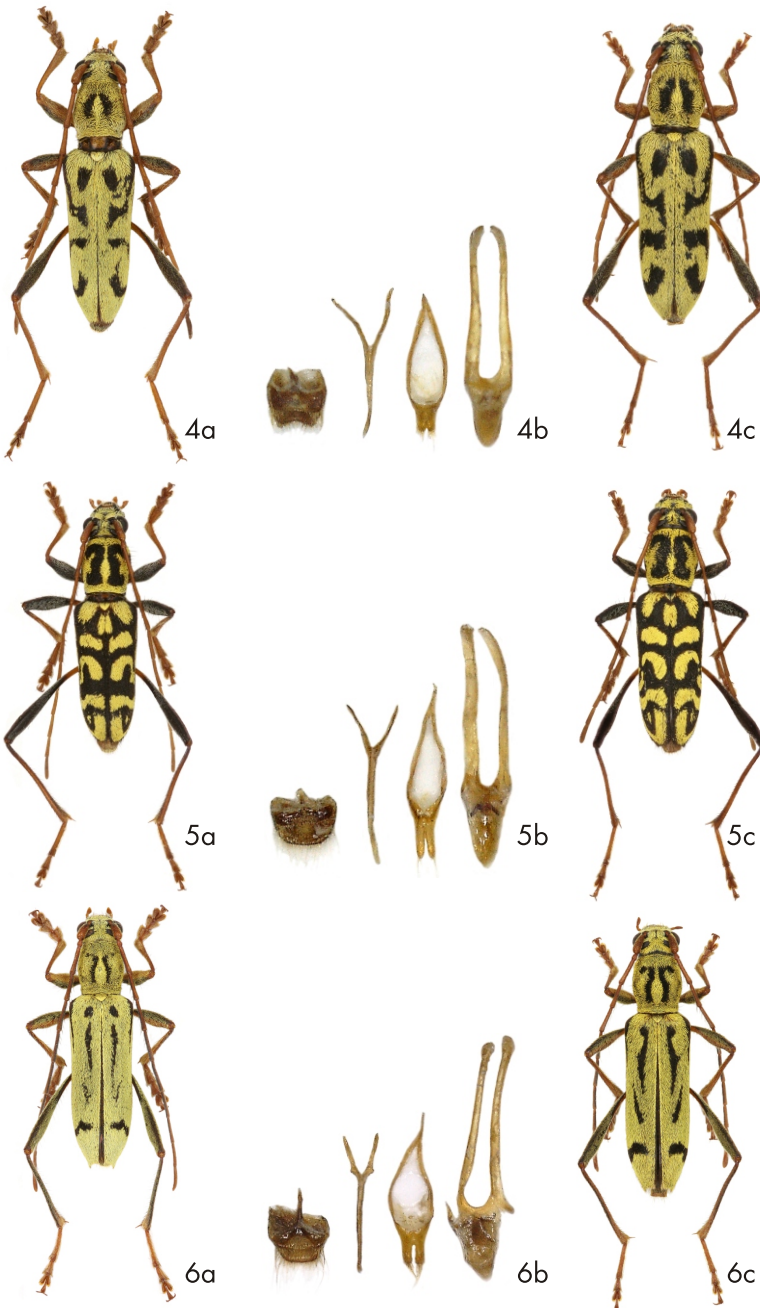


Fig. 4. *Petraphuma meridiosinica* (Viktora & Tichý, 2017) comb. nov.: a- male holotype; b- male genitalia; c- female paratype.
 Fig. 5. *Petraphuma meridiovietnamica* (Viktora & Tichý, 2017) comb. nov.: a- male holotype; b- male genitalia; c- female paratype.
 Fig. 6. *Petraphuma sulphurea* [Gressitt, 1941] comb. nov.: a- male; b- male genitalia; c- female.

***Petrphuma meridiosinica* (Viktora & Tichý, 2017) comb. nov.**

(Fig. 4)

Rhaphuma meridiosinica Viktora & Tichý, 2017a: 226.

Type material examined. 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).

Other material examined. (1 ♂): 'Guangxi, CHINA' / 'Mts. Dayaoshan, Pingbantun, Daojiang Village,' / 'Changdong Township, Jinxiu Yao Autonomous County' / 'Laibin City, Guangxi Zhuang Autonomous Region' / '27-iv-2015, 1338m, 24°6'14.45"N, 110°10'52.28"E' / 'Sweep Flower, coll. Jinteng ZHAO' (CPV); (1 ♂; 1 ♀): 'Hainan, CHINA' / 'Mt. Jianfengling, Main peak' / 'Jianfeng Township, Ledong Li Autonomous County' / '20-iv-2017' / '1412m, 18°43'0.85"N, 108°52'17.74"E' / 'coll. Bin LIU' (CPV). **New record from Hainan Island.**

Remark. Species *Rhaphuma meridiosinica* Viktora & Tichý, 2017 distinctly belongs to the genus *Petrphuma* gen. nov. based on the following characters: wider and shorter body (3.7 times longer than wide), wider and shorter elytra (2.41 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. China (Guangxi), new record from Hainan Island.

***Petrphuma meridiovietnamica* (Viktora & Tichý, 2017) comb. nov.**

(Fig. 5)

Rhaphuma meridiovietnamica Viktora & Tichý, 2017a: 228.

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

Remark. Species *Rhaphuma meridiovietnamica* Viktora & Tichý, 2017 distinctly belongs to the genus *Petrphuma* gen. nov. based on the following characters: wider and shorter body (3.7 times longer than wide), wider and shorter elytra (2.25 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. Vietnam (Lam Dong province).

***Petrphuma sulphurea* (Gressitt, 1941) comb. nov.**

(Fig. 6)

Rhaphuma sulphurea Gressitt, 1941: 336.

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); (1 ♂): 'Yunnan, CHINA' / 'Mt. Gaoligongshan, Shimenguan' / 'Bingzhongluo Town, Gongshan County' / '29-vii-2017' / '2017m, 28°2'2.85"N, 98°34'51.81"E' / 'Sweep Flower, Yinghui LI' (CPV); (1 ♀): same data, but 22-vii-2017 (CPV).

Remark. Species *Rhaphuma sulphurea* Gressitt, 1941 distinctly belongs to the genus *Petraphuma* gen. nov. based on the following characters: wider and shorter body (3.93 times longer than wide), wider and shorter elytra (2.76 times longer than wide), long pubescence on inner side of meso- and metatibiae and meso- and metafemora, femora rather stout and specific shapes of male genitalia (see Differential diagnosis).

Distribution. Thailand, China (Yunnan).

A LIST OF THE SPECIES OF THE GENUS *PETRAPHUMA* GEN. NOV.

| | |
|---|------------------------------|
| <i>Petraphuma allegoria</i> (Viktora & Tichý, 2017) | Vietnam (Kon Tum province) |
| <i>Petraphuma boreolaosica</i> (Viktora & Tichý, 2017) | Laos (Houaphan province) |
| <i>Petraphuma boreovietnamica</i> (Viktora & Tichý, 2017) | Vietnam (Vinh Phuc province) |
| <i>Petraphuma meridiosinica</i> (Viktora & Tichý, 2017) | China (Guangxi, Hainan) |
| <i>Petraphuma meridiovietnamica</i> (Viktora & Tichý, 2017) | Vietnam (Lam Dong province) |
| <i>Petraphuma sulphurea</i> (Gressitt, 1941) | Thailand, China (Yunnan) |

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