

Four new *Onthophagus* (Coleoptera: Scarabaeidae: Onthophagini) species and a new synonym from Thailand

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Abstract. Thai *Onthophagus* Latreille, 1802 were dealt with. Four new species were described: *Onthophagus* (*Onthophagus*) *namnaolekus* sp. nov., *O. (O.) chiangdaolekus* sp. nov., *O. (Indachorius) thungphraensis* sp. nov., *O. (Paraphanaeomorphus) miichunus* sp. nov. *Onthophagus* (*Onthophagus*) *khonmiinitnoi* Masumoto, 1990 was synonymized with *O. (O.) purpurascens* Boucomont, 1914.

Key words. Taxonomy, new species, new synonym, Coleoptera, Scarabaeoidea, Scarabaeidae, Onthophagini, *Indachorius*, *Onthophagus*, *Paraphanaeomorphus*, Thailand, Oriental Region.

INTRODUCTION

In our recent field researches concerning coprophagous beetles in Southeast Asia, we collected considerable unknown species. Among those, we have a chance to examine Thai species in detail. As the result, we found four new species to be new to science and will describe them as new species in this paper. Additionally, we propose a described species as a new junior synonym.

MATERIAL AND METHODS

Material specimens were collected by ourselves during our field surveys under the permission of local governments or by collaborative researchers of local universities or institutes.

External morphology and male genitalia were examined under an Olympus SZ60 and a Leica MS5 stereoscopic microscope. Pictures were taken using an Olympus PEN E-P3 digital camera equipped with an extension tube and a ZUIKO AUTO-MACRO 50 mm f 3.5 lens or a 80 mm f 4 lens, and stacked by using the free software Combine ZM from Alan Hadley.

The abbreviations for measurements (in mm) are as follows: Bl, body length in mm; Bw, body width in mm; Ed, eye diameter; We, width between eyes; Pw, pronotal width at the widest place; Pl, pronotal length along the midline; El, elytral length along the elytral suture; Ew, elytral width at the widest place; Phl, phallobase length in lateral view; Phw, phallobase width at the distal end in dorsal view; Prl, parameres length in lateral view.

The holotype label data are verbatimly cited between quotation marks, and a slash is used to separate lines of the data on the label, and a double slash separates the labels.

Concerning the terminologies on the aedeagus, we followed Ochi et al. (2017) and introduced them again herein (Fig. 13): (A) apico-lateral tooth: a well-developed tooth located on the apico-lateral portion of each paramere of aedeagus; (B) medio-lateral notch: a slight notch located behind the apico-lateral tooth.

TAXONOMY

Onthophagus (Onthophagus) namnaolekus sp. nov.

(Figs. 1, 5–7)

TYPE MATERIAL. Holotype, ♂, “Nam Nao, 900 m alt / Phetchabun Prov / Thailand / 19-V-1999 / K. Masumoto leg. // Coll. Masumoto / 2000”. Paratypes: 2 ♂♂, same data as for the holotype; 1 ♂, 1 ♀, “Nam Nao N.P., Phetchabun Prov, N.E. THAILAND, 20-V-1999, K. MASUMOTO leg. // Coll. Masumoto, 2000”.

TYPE DEPOSITORY. The holotype will be deposited in the Masumoto Collection of the National Museum of Nature and Science, Tsukuba, Japan.

DESCRIPTION OF HOLOTYPE (♂). Bl 5.4, Bw 2.8, subquadrate, rather strongly convex dorsally, gently flattened in medial portion; body mostly brownish black, with feeble coppery tinge; antennae slightly dark yellow, legs dark reddish brown, setae on lateral portions of body and setae on legs yellow with weakly brownish tinge; head with clypeus and genae moderately shining, major posterior portions rather mat, occiput shining, pronotum weakly, sericeously shining, elytra moderately, slightly sericeously shining; legs moderately shining, partly a little vitreous so; ventral surface mostly moderately shining. Head almost glabrous; pronotum clothed with fine suberect setae, which become longer and denser in lateral and posterior portions, lateral margins clothed with long setae; elytra fairly densely clothed with fine suberect setae, which become longer and bolder in posterior portions, exterior margins clothed with setae; ventral surface mostly clothed with fine decumbent setae; legs, particularly in medial and posterior legs, clothed with setae.

Head somewhat transversely elliptical, weakly raised medially, microsculptured; clypeus widely, roundly produced, very weakly inclined anteriorly and slightly concave, the apical margin slightly reflexed, sparsely scattered with round punctures, fronto-clypeal suture arcuate and weakly ridged; genal sutures bordered by fine grooves from clypeus; genae subrhombic, roundly produced laterad and roundly bordered from frons, surface microsculptured and sparsely scattered with round punctures; frons somewhat inverted trapezoidal, raised posteriorly, weakly microsculptured, very sparsely punctate; vertex with transverse, short ridge, which is fairly bold and almost impunctate, occiput mildly inclined, moderately, microsculptured and sparsely scattered with small punctures, the posterior end border with bisinuate ridge. Ed. 0.1, We 1.2.

Pronotum rather strongly convex above, weakly flattened in middle, with longitudinal median groove in basal 1/3, 1.4 times as wide as long (Pw 2.6 : Pl 1.9), anterior margin emarginate and slightly sinuous on both sides, wholly finely bordered; base roundly produced, hardly bordered in medial portion; sides fairly steeply inclined, particularly apically, with lateral margins wholly finely bordered, rather noticeably roundly produced in middle, and sinuous before base, with exterior margins furnished with a long setae; front angles subrectangular, directing anteriorly; hind angles inconspicuous; disc rather strongly convex, weakly microsculptured, rather closely punctate, the punctures with fine setae, minute in medial portion, and longer and conspicuous in lateral portions.

Elytra ca 1.3 times as wide as long (Ew : El=2.8 : 2.1), moderately convex, gently flattened antero-medial portion, slightly wider than pronotum, widest at the middle; striae clear, striae punctures closely set, small, and hardly notching margins of intervals; intervals rather wide, weakly convex, microsculptured, with some two rows of minute granulo-punctures, each puncture with a fine suberect seta.

Pygidium gently convex, not ridged at base, weakly microsculptured, densely punctulate, each puncture with a long, fine suberect seta.

Metaventricle shining, sparsely and rather coarsely punctate in basal half, smooth and impunctate in apical half, median longitudinal groove not developed and indistinct.



Figs. 1–4. Habitus of *Onthophagus* spp., males, scale 2 mm. 1 – *Onthophagus* (*Onthophagus*) *namnaolekus* sp. nov. (holotype). 2 – *Onthophagus* (*Onthophagus*) *chiangdaolekus* sp. nov. (holotype). 3 – *Onthophagus* (*Indachorius*) *thungpharensis* sp. nov. (holotype). 4 – *Onthophagus* (*Paraphanaeomorphus*) *miichunus* sp. nov. (holotype).

Protibiae stout with three distinct and one smaller external teeth, interspaces between first (apical) tooth and second one, and also between third and fourth ones with two minute teeth, interspace between second and third ones with a minute tooth; the remaining posterior part with small teeth and subcrenate; terminal spur strong, weakly curved exteriorly, length about three basal tarsomeres combined. Meso- and metatibiae rather densely clothed with long setae. Lengths of metatibial spur and metatarsomeres from I to V: 0.40; 0.60, 0.17, 0.12, 0.10, 0.18.

Aedeagus elongate. Phallobase 1.0 mm in length in dorsal view, strongly curved in lateral view. Parameres 0.6 mm in length in dorsal view, broad in basal half, and then strongly constricted toward apices in dorsal view; apices simply formed in dorsal and lateral views. Internal sac with copulatory lamella rather simply formed, composed of only one piece, trapezoidal in shape apically and sharply hooked basally.

VARIABILITY (n=4): Bl 5.0–5.4; Bw 2.6–2.8; Ed 0.09–0.10; We 1.1–1.2; Pw 2.5–2.6; Pl 1.8–1.9, Ew 2.6–2.8; El 1.8–2.1.

FEMALE. Head a little more closely punctate; frontal ridge wider, vertex with longer and straight ridge, eyes a little wider but shorter, Ed 1.4.

DIFFERENTIAL DIAGNOSIS. The present new species is very similar and closely related to *Onthophagus (Onthophagus) purpurascens* Boucomont, 1914 from Myanmar and Indochina. The former can be distinguished from the latter by the elytral intervals distinctly granulate (simply punctate in the latter), the ridge of vertex bold in both sexes (sharply defined in the latter), which is obviously shorter in the male and very distinct in the female (longer in the male and almost effaced in the female of the latter), the metaventrite shining, smooth and impunctate in apical half and sparsely and rather coarsely punctate in basal half (smooth, shining and almost impunctate in the latter), the aedeagus entirely differently shaped in dorsal and lateral view.

ETYMOLOGY. The specific name, *namnaolekus*, is given after the small (Thai language: lek) beetle collected from Nam Nao, where the type series was collected.

DISTRIBUTION. NE Thailand.

***Onthophagus (Onthophagus) chiangdaolekus* sp. nov.**

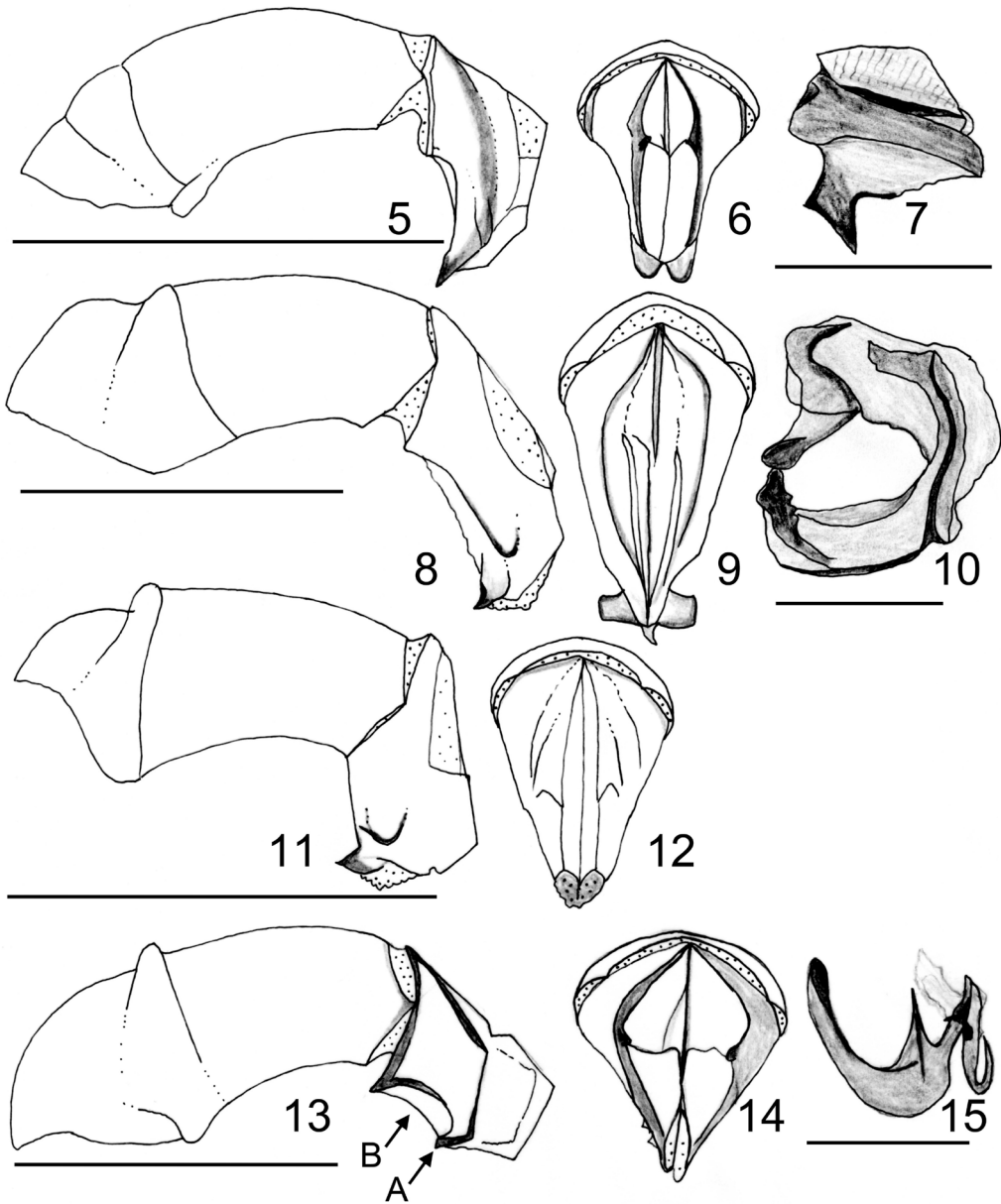
(Figs. 2, 8–10)

TYPE SERIES. Holotype, ♂, “Thailand, / Chiang Mai, / Chiang Dao Hill Resort, / 30 V. – 2. VI 2017, / K. Takahashi leg. // Coll. Masumoto / 2017”. Paratypes: 2 ♂♂, “Maesa Valley, Chiang Mai, Thailand, 3–6/V/1994, K. Masumoto leg. // Coll. Masumoto, 2001.”

TYPE DEPOSITORY. The holotype will be deposited in the Masumoto Collection of the National Museum of Nature and Science, Tsukuba, Japan.

DESCRIPTION OF HOLOTYPE (♂). Bl 5.4, Bw 3.0, subquadrate, rather strongly convex dorsally, very weakly flattened in medial portion; body almost black, with feeble brownish tinge; antennae slightly dark yellow, legs dark reddish brown, setae on lateral portions of body and setae on legs yellow with weakly brownish tinge; clypeus, genae and basal portion of head moderately shining, major central portions of head weakly shining, occiput rather strongly shining, pronotum weakly, sericeously shining, elytra moderately, slightly sericeously shining; legs moderately shining, partly a little vitreous so; ventral surface mostly moderately shining. Head almost glabrous, sparsely furnished with rather long setae along exterior margins; pronotum almost glabrous, lateral margins clothed with rather long setae near basal portions; elytra almost glabrous; ventral surface partly clothed with fine decumbent setae; legs, particularly in medial and posterior legs, clothed with setae.

Head somewhat transversely elliptical, weakly raised medially, microsculptured; clypeus widely, roundly produced, very weakly inclined anteriorly and slightly concave, closely shallowly



Figs. 5–15. Details of *Onthophagus* spp.: aedeagus: 5, 8, 11, 13 in lateral view; 6, 9, 12, 14 in dorsal view; copulatory lamella of internal sac: 7, 10, 15. 5–7 – *Onthophagus (Onthophagus) namnaolekus* sp. nov., (holotype). 8–10 – *Onthophagus (Onthophagus) chiangdaolekus* sp. nov., (holotype). 11–12 – *Onthophagus (Indachorius) thungphraensis* sp. nov., (holotype). 13–15 – *Onthophagus (Paraphanaeomorphus) miichunus* sp. nov., (holotype). Scale: 1 mm for 5, 6, 8, 9, 11, 12, 13, 14, scale 0.5 mm for 7, 10, 15.

punctate, slightly forming transversely wrinkles in medial part, the apical margin slightly reflexed, rather noticeably incised at middle, both sides of the incision roundly produced, external margin sparsely furnished with fine setae; fronto-clypeal suture arcuate and clearly ridged; genal sutures bordered by fine grooves from clypeus; genae subrhombic, weakly concave, microsculptured and closely punctate, with external angle a little angulate; frons rather narrow, slightly concave, weakly microsculptured, rather closely, shallowly punctate; vertex with transverse, slightly curved ridge, which is longer than the fronto-clypeal ridge, only microsculptured and without puncture; the area behind the ridge rather closely punctate; occiput mildly swollen and impunctate in medial portion, the remaining portions rather closely punctate. Ed 0.2, We 11.0.

Pronotum transverse and rather strongly convex dorsad, 1.4 times as wide as long (Pw 2.8 : Pl 2.0); anterior margin bisinuous, wholly finely bordered; base roundly produced, wholly bordered; sides fairly steeply inclined, with lateral margins wholly finely bordered, with exterior margins sparsely furnished with long setae; front angles subrectangular, directing anteriorly; hind angles inconspicuous; disc rather strongly convex, microsculptured, closely punctate, the punctures small.

Elytra ca. 1.3 times as wide as long (Ew : El=2.3 : 3.1), moderately convex, gently flattened antero-medial portion, slightly wider than pronotum, widest at the middle; striae fine, strial punctures moderate-sized and notching margins of intervals; intervals rather strongly convex, weakly microsculptured and micro-aciculate, with some two rows of minute punctures along striae.

Pygidium gently convex, not ridged at base, weakly microsculptured, rather densely punctate.

Metaventrite weakly shining, partly microsculptured, rather closely punctate in basal half, sparsely so in apical half, with median longitudinal groove in posterior 2/3, and becoming deeper in apical part.

Protibiae stout with three distinct and one smaller external teeth, interspaces between first (apical) tooth and second one, and also between second and third ones with a minute tooth, interspace between third and fourth ones with two minute teeth; the remaining posterior part with minute subquadrate teeth; terminal spur bold, weakly curved ventrad, length about two basal and half third tarsomeres combined. Meso- and metatibiae clothed with long setae. Lengths of metatibial spur and metatarsomeres from I to V: 0.40; 0.50, 0.24, 0.15, 0.17, 0.23.

Aedeagus with phallobase 1.4 mm in length in dorsal view. Parameres relatively large and elongate, 1.0 mm in length in dorsal view, rather wedge-shaped and gradually constricted toward apices in dorsal view, with apico-lateral tooth well developed, strongly produced laterad though both teeth only slightly asymmetrical in dorsal view. Internal sac with copulatory lamella looking roughly "C-shaped" and apparently composed of two pieces, with the large one almost evenly curved, the smaller one sigmoidally curved.

VARIABILITY. Males (n=3): Bl 4.9–5.4; Bw 2.6–3.0; Ed 0.17–0.20; We 0.8–1.2; Pw 2.5–2.8; Pl 1.8–2.0, Ew 2.1–2.3; El 2.8–3.1.

FEMALE. Unknown.

DIFFERENTIAL DIAGNOSIS. The present new species is somewhat related to *Onthophagus (Onthophagus) coracinooides* Kabakov, 1994 from Yunnan, China. The former can be distinguished from the latter by the clypeal margin distinctly emarginate at the middle and bi-lobate on each side of the emargination in the male (scarcely emarginate and not bi-lobed in the latter), the cephalic surface densely and strongly punctate in the male (rather sparsely and more finely punctate in the latter), the fronto-clypeal carina fairly strongly ridged in the male (weakly ridged in the latter) and the apico-lateral tooth of parameres stronger and more strongly produced laterad in dorsal view.

Type specimens compared by the photograph: ♂, China, Yunnan, 2000 m alt., 22. IV. 1957 (holotype).

ETYMOLOGY. The specific name, *chiangdaolekus*, is given after the small (Thai: lek) beetle collected from Chiang Dao, where the type series was collected.

DISTRIBUTION. NE Thailand.

***Onthophagus (Indachorius) thungphraensis* sp. nov.**

(Figs. 3, 11–12)

TYPE MATERIAL. Holotype, ♂, “THAILAND / CHAIYAPHUM, Khon San, / Thung Phra / 16–18 XI 2019 / Canine feces / T.HIGURASHI leg.”. Paratypes: 2 ♂♂, 2 ♀♀, same data as for the holotype; 2 ♀♀, same data as for the holotype except bait material, human feces; 1 ♂, 1 ♀, “THAILAND, PHETCHABUN, Nam Nao, Wang Kwang, Pt. 1b, 17–18 XI 2019, Canine feces, T.HIGURASHI leg.”; 1 ♂, “THAILAND, PHETCHABUN, Nam Nao, Wang Kwang, Pt. 2b, 17–18 XI 2019, Canine feces, T. HIGURASHI leg.”; 1 ♂, “Nam Nao, Phetchabun Prov., NE Thailand, 24–25. XII. 2001, K. Masumoto // Coll. Masumoto, 2013”; 3 ♀♀, “THAILAND, Phetchabun, Nam Nao, 4–6. V. 2019, HD, K. Masumoto leg. // Coll. Masumoto, 2019”.

TYPE DEPOSITORY. The holotype will be deposited in the collection of the Masumoto Collection of the National Museum of Nature and Science, Tsukuba, Japan.

DESCRIPTION OF HOLOTYPE (♂). Bl 4.8, Bw 2.8. Body subovate, rather strongly convex dorsad, flattened in posterior portion; body almost brownish black, with feeble coppery tinge; antennae with funicle brownish yellow and club weakly dark yellow, legs dark reddish brown, setae on body mostly brownish yellow, humeral portions of elytra with dark reddish subtriangular patches; dorsal surface moderately, sericeously shining, major portions of ventral surface and legs moderately shining; head almost glabrous, sparsely furnished with fine setae along lateral margins; pronotum finely setaceous, the setae in lateral and posterior portions become longer and distinct, elytra clothed with rather long suberect setae: ventral surface mostly clothed with fine suberect setae; legs, particularly in medial and posterior legs, clothed with fine and long setae and also with bolder and shorter setae.

Head somewhat semicircular, weakly raised in posterior portion, weakly microsculptured; clypeus gently produced, very weakly inclined anteriad, closely shallowly punctate, weakly, subradially wrinkled in basal part, apical margin weakly reflexed, slightly truncate in medial part; fronto-clypeal suture arcuate and clearly ridged; genal sutures ridged; genae moderately dilated laterad, slightly concave, scattered with larger and smaller punctures, with external margin rounded; frons rather narrow, somewhat triangular, rather closely, shallowly punctate, bordered from lateral parts of head by fine impression and low ridge; vertex scattered with a little small punctures, bordered from frons by very weak ridge, whose medial part is interrupted; occiput mildly inclined and sparsely punctate. Ed 0.25, We 0.7.

Pronotum transverse and rather strongly convex dorsad, 1.6 times as wide as long (Pw 2.6 : Pl 1.6); anterior margin very weakly produced in medial part, sinuous on both sides, wholly finely bordered; base roundly produced, wholly, finely bordered; sides fairly steeply inclined, particularly apicad, with lateral margins wholly finely bordered and sparsely furnished with long setae; front angles acutely directing anteriad; hind angles inconspicuous; disc rather strongly convex, weakly microsculptured, closely punctate, each puncture with a fine erect seta.

Elytra ca. 1.3 times as wide as long (Ew : El=2.9 : 2.2) moderately convex, gently flattened antero-medial portion, slightly wider than pronotum, widest at basal 1/3; striae clear, strial punctures rather small and notching margins of intervals; intervals weakly convex, slightly microsculptured, with some two rows of minute punctures along striae, each puncture with a rather long, subdecumbent seta.

Pygidium gently convex, not ridged at base, weakly microsculptured, rather densely punctate, each puncture with a suberect seta.

Metaventricle shining, partly microsculptured, rather closely punctate in basal part, the punctures becoming larger and sparser posteriorly, with median longitudinal groove in posterior 2/5, and becoming deeper in apical part.

Protibiae with three distinct external teeth, interspaces between first (apical) tooth and second one with three minute teeth, and also between second and third ones with four minute teeth; the remaining posterior part with small teeth like crenation; terminal spur bold, weakly curved ventrad, length about three basal tarsomeres combined. Meso- and metatibiae clothed with long and short setae. Lengths of metatibial spur and metatarsomeres from I to V: 0.40; 0.60, 0.24, –, –, – (three apical tarsomeres lacking in the holotype).

Aedeagus with phallobase rather robust, 0.9 mm in length in dorsal view. Parameres 1.1 mm in length in dorsal view, distinctly wedge-shaped and monotonously constricted toward apices in dorsal view, with apico-lateral tooth a little developed, well visible in lateral view, but not entirely visible in dorsal view.

VARIABILITY (n=6). Bl 4.7–4.8; Bw 2.6–2.8; Ed 0.23–0.30; We 0.5–0.8; Pw 2.4–2.6; Pl 1.4–1.6, Ew 2.6–2.9; El 2.0–2.2.

FEMALE. Head a little produced apicad; clypeus more rugulose, vertex with a pair of obsolete tubercles instead of weak ridge; eyes a little wider but shorter, Ed 13; protibiae with sharper teeth.

VARIABILITY (n=8). Bl 4.2–5.3; Bw 2.3–3.1; Ed 0.22–0.25; We 0.7–1.3; Pw 1.8–2.7; Pl 1.4–1.6, Ew 2.3–3.1; El 2.0–2.4.

DIFFERENTIAL DIAGNOSIS. The present new species is closely related to *Onthophagus (Indachorius) semiworaoe* Ochi, Kon et Masumoto, 2014, from the Malay Peninsula. The former can be distinguished from the latter by the shining pronotum (distinctly opaque and microgranulose in the latter), the smaller body, 4.2–5.3 mm (distinctly larger, 5.3–7.1 mm in the latter), the vertexal carina poorly developed and indistinct (weakly so in the male and strongly so in the female of the latter), the shining elytral interval (microgranulose in the latter), the three-toothed female protibia (four-toothed in the female of the latter), the differently shaped aedeagus, especially the apico-lateral tooth invisible in dorsal view (the tooth developed, strongly projected laterally and well visible in dorsal view the latter).

ETYMOLOGY. The specific name, *thungpharensis*, is given after the name of the place, where the holotype was collected.

DISTRIBUTION. NE Thailand.

***Onthophagus (Paraphanaeomorphus) miichunus* sp. nov.**

(Figs. 4, 13–15)

TYPE SERIES. Holotype, ♂, “Thailand / Chiang Mai, / Doi Suthep, 26. IV – / 1. V. 2013, / K. Masumoto leg., // Coll. Masumoto 2013”.

TYPE DEPOSITORY. The holotype will be deposited in the collection of the K. Masumoto Collection in the National Museum of Nature and Science, Tsukuba, Japan.

DESCRIPTION OF HOLOTYPE (♂). Bl 5.6, Bw 3.6. Body subovate, rather strongly convex dorsad, flattened in posterior portion; brownish black with feeble coppery tinge, head and pronotum dark greenish tinge, elytra slightly brownish yellow with blackish patches, antennae brownish yellow, setae on body mostly brownish yellow; head and pronotum feebly sericeously, moderately shining, elytra weakly vitreously, moderately shining, major portions of ventral surface and legs moderately shining; head almost glabrous, sparsely furnished with short, fine setae along external margin; pronotum finely setaceous, the setae in lateral and posterior portions becoming longer and distinct, elytra fairly densely clothed with suberect setae: ventral surface clothed with

subdecumbent setae; legs, particularly in medial and posterior legs, clothed with fine and long setae and also with bolder and shorter setae.

Head rather semicircular, slightly raised posteriad, weakly microsculptured; clypeus roundly, gently produced, weakly inclined anteriad, rather closely punctate, with apical margin weakly reflexed, very slightly truncate in medial part; fronto-clypeal suture arcuate and inconspicuously ridged; genal sutures finely grooved; genae moderately dilated laterad, slightly inclined and concave, scattered with larger and smaller punctures, with external margin rounded; frons rather narrow, somewhat triangular, bordered from lateral parts of head by fine impressions, gently raised posteriad, scattered with smaller punctures than those on clypeus; vertex scattered with small punctures, with a conical tubercle at the middle of the border of frons; occiput steeply inclined and irregularly punctate. Ed 0.25, We 1.1.

Pronotum transverse and rather strongly convex dorsad, about 1.4 times as wide as long (Pw 3.3 : Pl 2.3); anterior margin widely, weakly emarginate, very weakly sinuous on both sides, wholly finely bordered; base roundly produced, wholly, finely bordered; sides fairly steeply inclined latero-apicad, with lateral margin wholly bordered, the borders becoming bolder in medial parts, sparsely furnished with long setae; front angles a little acute and directing anteriad; hind angles inconspicuous; disc rather strongly, slightly transversely convex, weakly microsculptured, closely punctate, each puncture with a fine erect seta; apical edge rather abruptly inclined and slightly bi-concave.

Elytra ca 1.4 times as wide as long (Ew : El=3.4 : 2.4), moderately convex, gently flattened antero-medial portion, slightly wider than pronotum, widest at basal 1/6; striae fine, strial punctures rather small and weakly notching margins of intervals; intervals weakly convex, slightly microsculptured, fairly closely punctate, each puncture with a subdecumbent seta.

Pygidium gently convex, not ridged at base, weakly microsculptured, rather densely punctate, each puncture with a decumbent seta.

Metaventricle moderately shining, rather closely punctate and densely setaceous in basal part, the punctures becoming sparser a little larger posteriad, with median longitudinal groove in posterior 1/3, and becoming deeper in apical part.

Protibiae with three distinct external teeth and a small one, interspaces between first (apical) tooth and second one with minute teeth, and also between second and third ones with three minute teeth, further, between third and fourth with two small subquadrate teeth; the remaining posterior part with row of small subquadrate teeth; terminal spur bold, gently curved ventrad, length about that of basal and half of 2nd tarsomeres combined. Meso- and metatibiae clothed with long and short setae. Lengths of metatibial spur and metatarsomeres from I to V: 0.64; 0.79, 0.20, 0.12, 0.19.

Aedeagus with phallobase 1.3 mm in length in dorsal view. Parameres ordinary in size, 0.7 mm in length in dorsal view, broadly wedge-shaped and strongly constricted toward apices in dorsal view, with apico-lateral tooth very sharp in lateral view though not well visible in dorsal view, medio-lateral notch broad and deep. Internal sac with copulatory lamella looking roughly “W-shaped”, composed of two pieces, right one much larger than the left and three forked, and left one small, not developed.

FEMALE. Unknown.

DIFFERENTIAL DIAGNOSIS. The present new species is somewhat similar to *Onthophagus (Paraphanaeomorphus) wangnamkieous* Masumoto, Ochi et Hanboonsong, 2008 from Thailand. The former can be distinguished from the latter by the more densely and strongly punctate clypeus and vertex of head (very sparsely punctate there in the latter), the pronotum with three weak and traceable protuberances in front (a pair of strong and rather longitudinal prominences on upper portion of anterior declivity in the latter), the pygidium distinctly wrinkled and strongly puncta-

te (scarcely wrinkled and more weakly punctate in the latter), the aedeagus with medio-lateral notch deeper and apico-lateral tooth sharper.

ETYMOLOGY. The specific name, *miichunus*, is given after, miichun, “with a tubercle” (on the head) in Thai language.

DISTRIBUTION. NE. Thailand.

***Onthophagus (Onthophagus) purpurascens* Boucomont, 1914**

Onthophagus purpurascens Boucomont, 1914: 215.

Onthophagus (Onthophagus) khonmiinitnoi Masumoto, 1990: 48, **syn. nov.**

NOTE. *Onthophagus purpurascens* Boucomont, 1914 was described from “Burma, Tonkin and Annam”. On the other hand, *O. (O.) khonmiinitnoi* Masumoto, 1990 was described from Chiang Mai, North Thailand. In the course of our present study, we examined these two species on the basis of the external morphological and male genitalia characters and came to the conclusion that *O. khonmiinitnoi* is conspecific with *O. purpurascens*. Thus, we treated *O. khonmiinitnoi* as a junior synonym of *O. purpurascens* herein.

TYPE MATERIAL EXAMINED. 1 ♀, “Ouang tri // Typus // “Boucomont det / *Onthophagus purpurascens* sp. nov.” (MNHN).

ADDITIONAL SPECIMENS EXAMINED. 1 ♂, S. Vietnam (Cat Tien), 120 km NNE from Ho Chi Minh, Cat Tien Nat’l Park, 21. VI. 1995, A. Napolov leg., (*Onthophagus purpurascens* Boucomont, O. Kabakov det.) (the Ochi collection, Osaka, Japan).

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