

New Species of the Genus *Onthophagus* (Coleoptera, Scarabaeidae) from Thailand

Part 2. Fifteen New *Onthophagus* from Various Areas of Thailand

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Abstract This is the second part of the study of the Thai *Onthophagus* and deals with 15 new species from various areas of Thailand. They are described under the following names: *Onthophagus* (*Gibbonthophagus*) *penmani* sp. nov., *O.* (*Indachorius*) *maesaensis* sp. nov., *O.* (*Indachorius*) *lannamiibun* sp. nov., *O.* (*Indachorius*) *nongkaiensis* sp. nov., *O.* (*Indachorius*) *tongbantumi* sp. nov., *O.* (*Indachorius*) *phetchabumensis* sp. nov., *O.* (*Indachorius*) *scotti* sp. nov., *O.* (*Parascatonomus*) *yukae* sp. nov., *O.* (*Parascatonomus*) *piyawati* sp. nov., *O.* (*Phanaeomorphus*) *zetteli* sp. nov., *O.* (s. str.) *tumami* sp. nov., *O.* (s. str.) *namnaoensis* sp. nov., *O.* (s. str.) *yamaokai* sp. nov., *O.* (s. str.) *chaiyaphumensis* sp. nov., *O.* (s. str.) *doitungensis* sp. nov.

This is the second part of the study of the Thai *Onthophagus*. The authors take up 15 new species from various areas of Thailand.

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Onthophagus (Gibbonthophagus) penmani sp. nov.

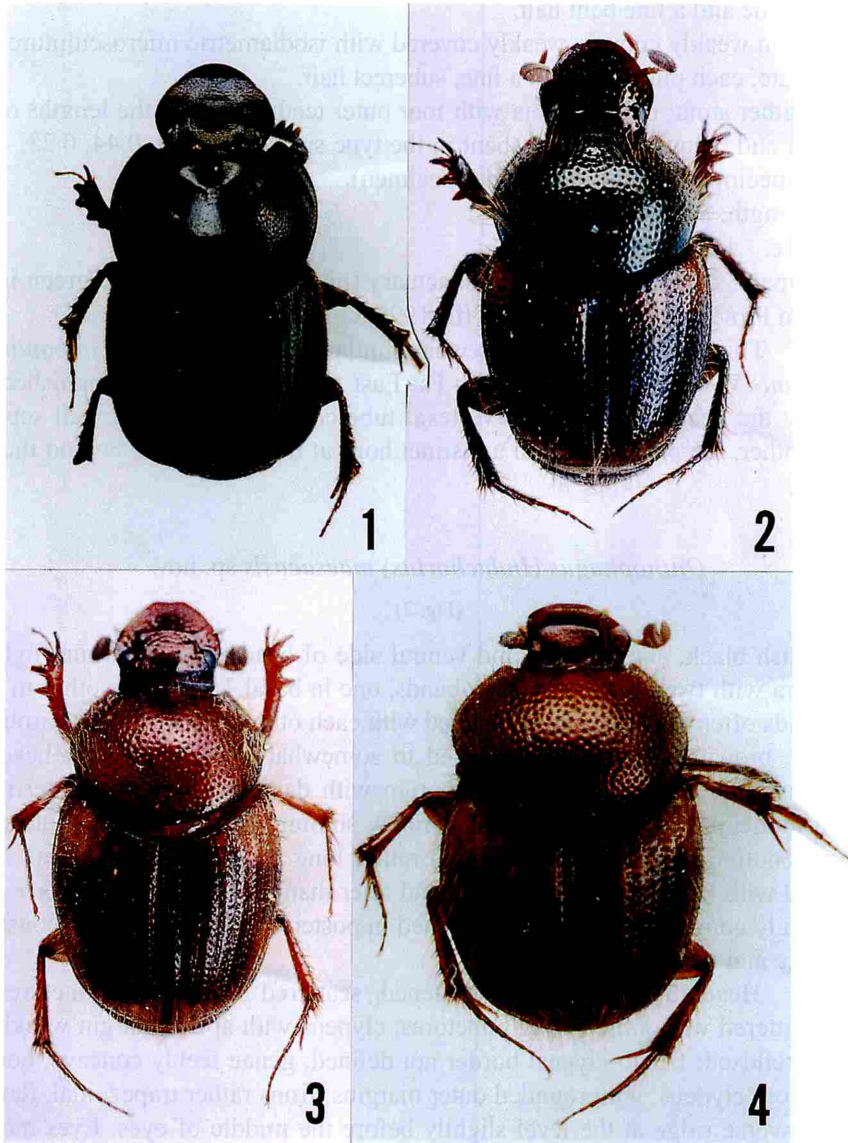
(Fig. 1)

Piceous with feeble coppery tinge, anterior and ventral parts of head, mouth parts and antennal funicles dark reddish brown, gula brown, harris on surfaces pale yellowish brown; head weakly shining with anterior part rather alutaceous, pronotum weakly shining with antero-medial part moderately shining; elytra weakly shining and sericeous; ventral surface weakly alutaceous, except for the metasternal shield, which is moderately shining; head and antero-medial part of pronotum almost glabrous, lateral and posterior parts of pronotum indistinctly, finely haired, elytra finely haired, the hairs becoming longer and more distinct laterad; prepisterna and metepisterna haired, metasternal shield glabrous except for lateral parts, abdomen with rows of short setae. Body ovate, convex though gently flattened in posterior part and moderately constricted between fore and hind parts.

Male. Head broad, somewhat triangular though each angle is rounded, rather flat, very weakly microsculptured, rather closely finely rugoso-punctate; clypeus gently inclined anteriorly from fronto-clypeal border, with apex produced and rather strongly reflexed; ocular lobes weakly depressed, bordered by sulci from clypeus and frons, with rounded outer margins, posterior parts of geno-frontal borders ridged and forming conical horns close to vertex; frons weakly raised in antero-medial part, feebly depressed in posterior part, the border of vertex not defined. Eyes rather small, narrowed in posterior parts in dorsal view.

Pronotum wider than long (5:4); apex gently emarginate, though weakly produced in middle; front angles feebly acute; lateral margins gently rounded laterad; base widely triangular; disc strongly convex, weakly micro-sculptured, rather closely, finely punctate except for antero-medial part, where the punctures are sparse and minute, each puncture with a microscopic, suberect hair, noticeably declivous in anterior 3/5 of the middle, the declivity with a horn at the middle of apical margin, whose apical part is slightly curved backwards, also with a pair of slightly subparallel-sided gibbositities slightly behind the middle of the declivity, whose interior sides are very steeply inclined and exterior sides a little mildly so.

Elytra shallowly punctato-striate, punctures in the striae rather closely set with one another, rounded and notching intervals; intervals feebly convex, covered with isodiametric microsculpture, scattered with small punctures, each with a small granule at



Figs. 1–4. Habitus of *Onthophagus* from Thailand. — 1, *O. (Gibbonthophagus) penmani* sp. nov., holotype, ♂; 2, *O. (Indachorius) maesaensis* sp. nov., holotype, ♂; 3, *O. (Indachorius) lannamiibun* sp. nov., holotype, ♂; 4, *O. (Indachorius) nongkaiensis* sp. nov., holotype, ♂.

the anterior side and a fine bent hair.

Pygidium weakly convex, weakly covered with isodiametric microsculpture, shallowly punctate, each puncture with a fine, suberect hair.

Legs rather stout; each protibia with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: – (bent in the type specimen); 1.0, 0.44, 0.23, – (bent in the type specimen), – (lost in the type specimen).

Body length: 8.3 mm.

Female. Unknown.

Holotype: ♂, Phu Khieo Wildlife Sanctuary (pig dung trap, hill evergreen forest), Chaiyaphum Prov., NE. Thailand, 31–VIII–1998, C. DICKINSON leg. (NSMT).

Notes. This new species is somewhat similar to *Onthophagus (Gibbonthophagus) atripennis* WATERHOUSE, 1875, from Far East Asia, but can be distinguished from the latter by the head with a pair of vertexal tubercles very small and well separated from each other, the pronotum with a distinct horn at the middle just behind the anterior margin.

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

(Fig. 2)

Brownish black, anterior part and ventral side of head and prosternum lighter in colour, elytra with two brownish yellow bands, one in basal 1/4 and the other in apical 1/5, the bands often widened and connected with each other in interior parts around intervals 1–3, brownish black parts reduced to somewhat triangular patch; head with coppery tinge and strongly shining, pronotum with dark greenish, partly ferriferous tinge and moderately shining, elytra moderately shining, ventral surface alutaceously shining; pronotum and elytra clothed with rather long suberect hairs, ventral surface also clothed with hairs, which are shorter and finer than those on dorsal surface. Body ovate, strongly convex dorsad, gently flattened in posterior part, moderately constricted between fore and hind parts.

Male. Head rather noticeably flattened, scattered with small punctures, and sparsely scattered with large strong punctures; clypeus with apical margin weakly produced and reflexed; fronto-clypeal border not defined; genae feebly concave, bordered by ridges from clypeus, with rounded outer margins; frons rather trapezoidal, flattened, with a transverse ridge at the level slightly before the middle of eyes. Eyes medium-sized, crescent-shaped.

Pronotum wider than long (6:5); apex gently emarginate, slightly produced in middle, with a short transverse membranous part in medial 1/5; base weakly triangular; front angles subrectangular; lateral margins roundly produced; disc rather strongly convex, rather closely, strongly punctate, with impunctate areas in postero-lateral parts.

Elytra shallowly punctato-striate, punctures in the striae roundly notching intervals; intervals very slightly raised and rugulose, with rows of rather strong haired punctures, which are larger and more closely set than those in striae.

Pygidium gently convex, rather closely punctate and haired, not margined at base.

Protibia with four strong outer teeth, in spite of belonging to the subgenus *Indachorius*; terminal spur of protibia stout and acute, of two basal segments and a half of the third of protarsus combined in length, gently curved ventrad; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.96; 1.0, 0.37, 0.26, 0.21, 0.34.

Female. Clypeus transversely rugulose, fronto-clypeal border ridged; frons with a feebly arcuate ridge at the mid-eye level, each lateral end of the ridge armed with a triangular acumination, and connected with fronto-clypeal ridge; pronotum more strongly punctate than in male; protibia with four more strongly projected outer teeth.

Body length: 4.3–5.4 mm.

Holotype: ♂, Mae Sa Vill., Chiang Mai Prov., N. Thailand, 11–V–1996, K. MASUMOTO leg. (NSMT). Paratypes: 1 ex., same data as for the holotype (EKKU); 7 exs., same data as for the holotype; 3 exs., Soppong, Pai Dist., Mae Hon Song Prov., N. Thailand, 16–V–2000, K. MASUMOTO leg.; 1 ex., Doi Suthep–Doi Pui, Chiang Mai Prov., N. Thailand, 11–XII–1989, M. YIMYAEM leg.; 1 ex., Doi Pui–Doi Suthep, Chiang Mai Prov., 26–VII~1–VIII–1987, K. MASUMOTO leg.; 1 ex., Ban Angkhai, Chiang Mai Prov., 20–V–1997, K. MASUMOTO leg.

Notes. The present new species has no similar relative in the Indochinese *Indachorius*, possessing the protibiae with four outer teeth and a long transverse carina on the posterior part of the head in both sexes.

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

(Figs. 3, 16, 20–21)

Dark reddish brown, head and pronotum with coppery tinge, gula and ventral surfaces of meso- and metafemora lighter in colour, elytra with very vague yellowish patches in antero- and postero-lateral portions; head and pronotum rather metallicly shining, elytra moderately, somewhat vitreously shining, ventral surface moderately shining; pronotum, elytra and ventral surface covered with relatively long yellowish hairs. Body ovate, moderately convex, gently flattened in middle.

Male. Head subparabolical, gently inclined anteriorly, rather closely punctate, sparsely intermixed with larger punctures; clypeus slightly rugulose in anterior part, produced apically and truncate at apex, with outer margin gently reflexed, fronto-clypeal border ridged and feebly curved; genae weakly depressed medially, feebly rounded laterally, bordered from clypeus by low ridges; frons somewhat inverted triangular, almost flat, bordered from genae by sulci in anterior part; vertex with a horn directed obliquely backwards, of which the basal part is flattened, middle and apical portions are slender, and the apex is pointed.

Pronotum wider than long (5:4); apex slightly, widely emarginate, with medial part feebly produced; front angles rather acutely produced; lateral margins obliquely sublinear in anterior halves, obtusely projected in middle, sublinearly narrowed in pos-

terior halves; base gently rounded; disc rather strongly convex, rather closely punctate except for a widely triangular anterior declivity, each puncture with a rather long hair; area behind the cephalic horn not concave.

Elytra shallowly punctato-striate, the punctures in striae a little large and sparsely set; intervals feebly convex, with rows of haired, feebly granular punctures along striae, which are often connected with one another and rugulose.

Pygidium gently convex in middle, rather closely punctate, each puncture somewhat ocellate with a fairly long hair.

Legs medium-sized; each protibia with three outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.65; 1.0, 0.27, 0.19, 0.12, 0.34.

Female. Head not produced apicad but rounded, with fronto-clypeal border noticeably ridged and curved, clypeo-genal and fronto-genal borders ridged, with a pair of tubercles at the mid-eye level.

Body length: 5.0–5.3 mm.

Holotype: ♂, Doi Suthep–Doi Pui, Chiang Mai Prov., N. Thailand, 11–XII–1989, M. YIMYAEM leg. (NSMT).

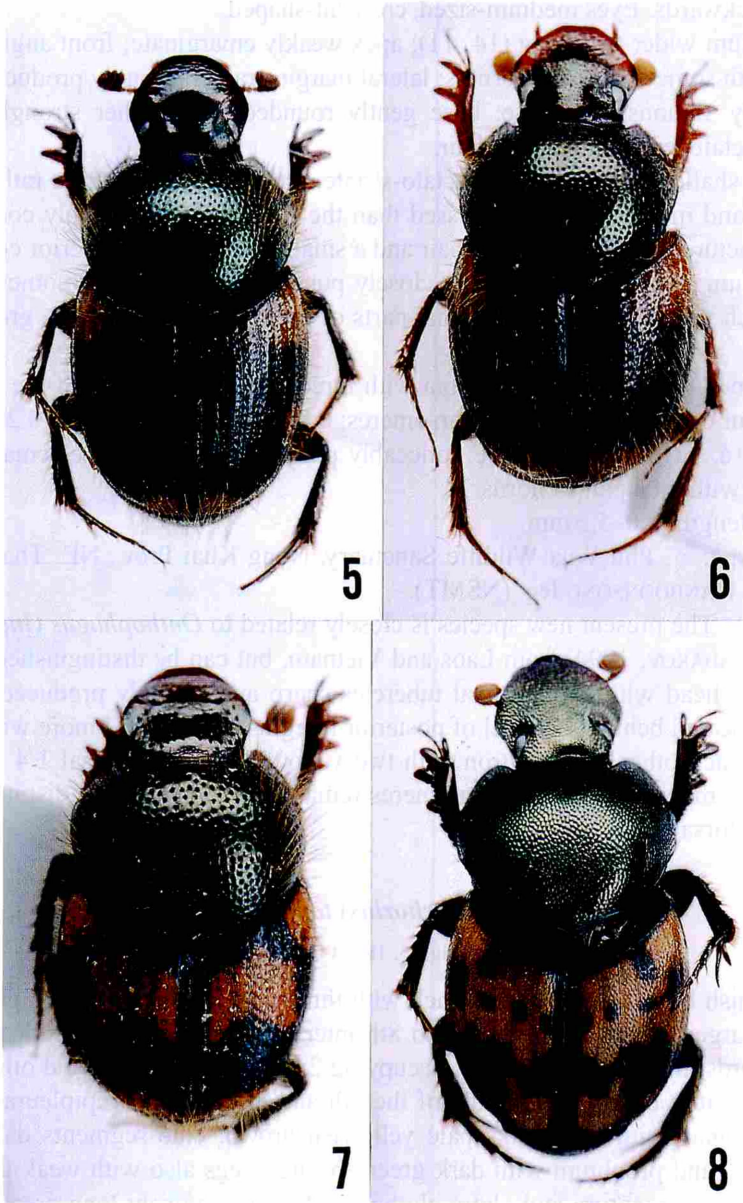
Notes. This new species is closely related to *Onthophagus (Indachorius) doisuthepensis* MASUMOTO, 1989, from Thailand, but can be distinguished from the latter by the head shining and not entirely micro-granulose, with coarse punctures on the vertex sparser and larger, eyes a little but obviously larger, the punctures on elytral intervals a little larger, and the pygidium more closely and coarsely punctate.

Onthophagus (Indachorius) nongkaiensis sp. nov.

(Figs. 4, 17, 22–23)

Dark brown, head and pronotum with weak coppery tinge, pronotum and elytra lighter in colour, the latter with a vague yellowish band in basal 1/4, and also with a band in apical part in some individuals, ventral side of head, prepisterna, femora and tibiae yellowish brown, antennal clubs darkened, hairs on surfaces pale yellowish brown; apical part of head and major posterior part of pronotum moderately shining, medial and posterior parts of head, anterior part of pronotum, and elytra weakly, somewhat alutaceously to sericeously shining, prepisterna rather alutaceous, metathorax and abdomen moderately shining; each surface rather noticeably clothed with long hairs. Body ovate, rather strongly convex, though flattened in posterior part, well constricted between fore and hind parts.

Male. Head covered with isodiametric microsculpture and microscopic punctures, sparsely scattered with larger punctures, each with a long hair; clypeus rather broad, gently produced anteriorly and feebly truncate at apex, with outer margin rather noticeably reflexed, fronto-clypeal border feebly arcuate and clearly ridged; ocular lobes gently concave before eyes, with lateral margins roundly produced in anterior 2/3, then sublinearly narrowed basad; frons concave, with a pair of upright conical horns near the border of vertex (at the level of the posterior 1/4 of eyes); vertex simply



Figs. 5–8. Habitus of *Onthophagus* from Thailand. — 5, *O. (Indachorius) tongbantumi* sp. nov., holotype, ♂; 6, *O. (Indachorius) phetchabunensis* sp. nov., holotype, ♂; 7, *O. (Indachorius) scotti* sp. nov., holotype, ♂; 8, *O. (Parascatonomus) yucae* sp. nov., holotype, ♂.

inclined backwards. Eyes medium-sized, crescent-shaped.

Pronotum wider than long (14 : 11); apex weakly emarginate; front angles subrectangular with somewhat acute corners; lateral margins rather strongly produced laterad, very weakly sinuous near base; base gently rounded; disc rather strongly convex, closely punctate, each with a long hair.

Elytra shallowly and finely punctato-striate, punctures in the striae rather closely set, round, and more strongly impressed than the striae; intervals feebly convex, with rows of punctures, each with a long hair and a small granule at the anterior edge.

Pygidium weakly convex, rather closely punctate, the punctures somewhat ocellate and each with a long hair. Marginal parts of prepisterna with minute granules and asperate.

Legs medium-sized; male protibia with three outer teeth; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.8; 1.0, 0.37, 0.23, 0.13, 0.27.

Female. Head wider, more noticeably punctate; clypeus more remarkably rugose; frons without a pair of horns.

Body length: 5.0–5.5 mm.

Holotype: ♂, Phu Wua Wildlife Sanctuary, Nong Khai Prov., NE. Thailand, 14–X–2000, Y. HANBOONSONG leg. (NSMT).

Notes. The present new species is closely related to *Onthophagus (Indachorius) bonengus* KABAKOV, 1994, from Laos and Vietnam, but can be distinguished from the latter by the head with two vertexal tubercles sharp and strongly produced upwards, obviously located behind the level of posterior margins of eyes, and more widely separated from each other, each elytron with two yellowish bands in basal 1/4 and apical part, and the male genitalia with parameres remarkably elongate and distinctly asymmetrical in dorsal view.

Onthophagus (Indachorius) tongbantumi sp. nov.

(Figs. 5, 18, 24–25)

Brownish black, each elytron black with three dark yellowish brown patches, the basal one large, occupying from 2nd to 8th intervals and becoming gradually broadened outwards, the apical one small, occupying 2nd to 6th intervals, and other smaller round one a little behind the middle of the 7th and 8th intervals, epipleura yellowish brown, antennae with foot-stalks pale yellowish brown, club-segments dark reddish brown. Head and pronotum with dark greenish tinge, legs also with weak greenish to cupreous tinge; pronotum and elytra clothed with conspicuously long erect yellowish hairs; ventral side also partly clothed with similar hairs on dorsum.

Male. Head moderately sized, subhexagonal, distinctly alutaceous in the middle and weakly so in the remaining portions, weakly wrinkled along clypeal margin, rather sparsely punctate with small punctures, which are intermixed with larger punctures on genae and lateral parts of clypeus; clypeo-frontal suture distinctly carinate and well arcuate; clypeo-genal sutures weakly carinate, the carinae extending from margins

to a little before vertexal tubercles; vertex with a pair of small tubercles.

Pronotum strongly convex, wider than long (10:7); apex gently emarginate though almost straight in middle; lateral margins strongly produced laterad, almost straight in front, not distinctly sinuous behind; front angles rather acutely produced anteriorly, hind angles obtuse; base rounded; disc strongly convex, densely covered with strong punctures, each with a long suberect hair, hairs being sparse and fine in a weakly alutaceous area just behind anterior margin; median line not clearly impressed though distinctly impunctate.

Elytra shallowly and finely punctato-striate, punctures in the striae rather sparsely set, a little crenulating along either margin of intervals; intervals weakly convex, moderately shining and slightly wrinkled; 2nd to 7th intervals with double rows of small asperate punctures, each with a long suberect yellowish brown hairs; sutural intervals with a single row of similar punctures, 8th with 4 or 5 irregular rows of similar ones.

Pygidium weakly convex, moderately densely punctate, the punctures very slightly rugose and each with a similar hairs on elytra.

Legs medium-sized; male protibia with three outer teeth, ratios of the lengths of terminal spur of the metatibia and metatarsomeres: 0.79; 1.0, 0.3, 0.2, 0.12, 0.32.

Body length: 6.5 mm.

Female. Unknown.

Holotype: ♂, Mae Sa, Chiang Mai Prov., N. Thailand, 11-V-1996, K. MASUMOTO leg. (NSMT).

Notes. This new species is somewhat similar to *Onthophagus (Indachorius) octonaevus* KABAKOV, 1994, from Vietnam, but can be distinguished from the latter by the head more transverse, with the clypeal margin more widely truncate apicad, the genae more strongly protrudent laterad, vertexal tubercles smaller and more obsolete, the elytral intervals covered with much smaller punctures, and the male genitalia with parameres distinctly asymmetrical in dorsal view.

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

(Figs. 6, 19, 26–27)

Blackish brown, apical margin of head, apical and lateral margins and lateral swellings of pronotum, ventral side of head and legs reddish brown to dark brown, middle and posterior parts of head, major part of pronotum, and elytra except for basal and apical bands almost black, epimetasternum and abdomen brownish black, elytra with 1st intervals, lateral margins, and bands in basal and apical parts brownish yellow, middle and posterior parts of head, and pronotum with dark greenish tinge; hairs on surfaces pale yellowish brown; apical part of head gently shining, middle and posterior parts of head and anterior part of pronotum weakly sericeous, most of middle and posterior parts of pronotum rather strongly shining, elytra rather weakly shining, ventral surface except for metasternal shield weakly, partly alutaceously shining, metasternum rather strongly shining; each surface rather distinctly clothed with long hairs. Ovate,

convex though flattened in posterior part, gently constricted between fore and hind bodies.

Male. Head rather wide, weakly microsculptured, microscopically punctate, sparsely scattered with larger punctures, each with a seta; clypeus transversely rugose in anterior part, gently produced apicad with outer margin reflexed and truncate in middle; fronto-clypeal border arcuate and finely ridged; ocular lobes subrhombic, with outer margins roundly produced, fronto-genal border finely ridged; frons inclined forwards, with a pair of small, somewhat conical protuberances at the mid-eye level, feebly ridged between protuberances and lateral end of fronto-clypeal carina; vertex with a transverse impunctate area in the middle. Eyes medium-sized, subcrescent-shaped.

Pronotum wider than long (7 : 5); apex weakly emarginate, though major middle part is almost straight; front angles acute, feebly projected; lateral margins a little strongly produced laterad; base rounded, finely rimmed; disc rather strongly convex, fairly closely punctate, each puncture with a fine long hair.

Elytra shallowly punctato-striate, punctures in the striae round and slightly deeper than striae, notching intervals; intervals rather wide, very slightly raised, asperate and pubescent, each elytron with a basal band across 2nd interval to lateral margin; the parts of the 2nd and 3rd intervals very short, 4th elongate, interior part of 5th once shortened, and the remaining part reaching lateral margin elongate, and also with an apical band across 2nd interval to the lateral margins, the part from 2nd to 4th intervals bulged anteriorly.

Pygidium gently convex, rather closely punctate and pubescent.

Legs slender; male protibia with three outer teeth; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.79; 1.0, 0.32, 0.21, 0.13, 0.32.

Body length: 4.6 mm.

Female. Unknown.

Holotype: ♂, Tung Salaeng Luang (dry dipterocarp forest), Phetchabun Prov., N. Thailand, 8-VII-2000, M. PRAIKHIAW leg. (NSMT).

Notes. This new species is closely related to *Onthophagus (Indachorius) octonaevus* KABAKOV, 1994, from Vietnam, but can be distinguished from the latter by the head larger and fairly wide, with genal margins more strongly produced laterad, clypeal margin widely truncate apicad, the elytra with basal bands darker and indistinct, and the male genitalia with each paramere strongly produced apicad as a sharp point in lateral view and not widened laterad at the apex in dorsal view.

Onthophagus (Indachorius) scotti sp. nov.

(Fig. 7)

Piceous with feeble greenish reflection, anterior portion of head, mouth parts, gula, tibiae and tarsi dark reddish brown, elytron black with reddish yellow patches: a large patch in anterior part from 2nd interval to most of 5th, a small one at humeral part from 6th interval to close to lateral margin (lateral margin black), and an apical

one mainly lying from 3rd to 6th intervals, though slightly extending onto 1st interval and lateral margin; head and elytra weakly, somewhat sericeously shining, elytra somewhat alutaceously shining, ventral surface vitreously shining; dorsal surface densely clothed with long suberect hairs, ventral surface with rather short bent hairs, legs rather densely with long hairs or setae. Body ovate, gently convex dorsad, softly flattened in elytra, moderately constricted in middle.

Male. Head somewhat alutaceous; clypeus finely and weakly rugoso-punctate, sparsely scattered with coarse punctures in lateral parts, with apical margin weakly produced and noticeably reflexed, fronto-clypeal border not sulcate but feebly raised; genae somewhat elliptical, feebly concave, scattered with small and large punctures, bordered by fine ridges from clypeus, with roundly produced outer margins, interior parts of eyes with punctures, each with an erect hair; frons rather trapezoidal, with a transverse ridge at a level slightly before the middle of eyes, each end of the ridge angulate; vertex noticeably, closely punctate. Eyes medium-sized, rather narrowly crescent-shaped.

Pronotum wider than long (3 : 2); apex gently emarginate, with a rim along margin feebly widened in middle, and also with a short transverse membranous part in medial 1/5; base weakly triangular; front angles subtriangular; lateral margins roundly produced in anterior 2/3, then narrowed towards base and slightly sinuous; disc rather strongly convex, closely, strongly punctate, each puncture with a noticeably long and erect hair, with impunctate areas close to postero-lateral parts.

Elytra shallowly punctato-striate, the punctures in the striae roundly notching intervals; intervals rather wide, very slightly raised, with rows of rather strong haired punctures, which are smaller and more closely set than those in the striae; 1st intervals narrow and asperate.

Pygidium gently convex, rather closely punctate and haired.

Protibia with four strong outer teeth, terminal spur rather large and acute, gently curved ventrad; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.79; 1.0, 0.46, 0.32, 0.26, 0.34.

Female. Clypeus obviously transversely rugulose, fronto-clypeal border noticeably ridged; frons with a ridge slightly before the middle of eyes, whose lateral ends are conically acuminate.

Body length: 5.3–5.5 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (dry evergreen forest), Nakhon Ratchasima Prov., NE. Thailand, 29–IV–2001, Y. HANBOONSONG leg. (NSMT). Paratype: 1 ex., same data as for the holotype (EKKU).

Notes. This new species is somewhat similar at a glance to *Onthophagus (Indachorius) maesaensis* sp. nov., but can be distinguished from the latter by the eyes much smaller and more widely separated, the front angles of pronotum more strongly produced forwards and sharper, the asperity of the elytral intervals obviously coarser, particularly of the sutural ones, and the reddish yellow elytral patches very clear. Protibiae with four outer teeth in both sexes.

Onthophagus (Parascatonomus) yukae sp. nov.

(Figs. 8, 28–29)

Dark coppery brown, head and pronotum with feebly dark greenish tinge, elytra yellowish brown with vague black patches, nine basal segments of antennae, mouth parts, gula and hairs on legs and also on antero-lateral parts of metasternal shield reddish brown, two apical segments of antennae and hairs on major parts of body pale yellow, hairs on elytra rather blackish; head and pronotum feebly, metallicly shining, elytra weakly, somewhat sericeously shining, gula and prepisterna rather alutaceously shining, metasternal shield moderately shining, abdomen rather alutaceously shining. Body oval, fairly convex, constricted between fore and hind parts.

Male. Head subpentagonal and rather flattened, covered with isodiametric microsculpture, transversely rugoso-punctate in anteriormost part, finely punctate in posterior part; clypeus broad, with apical margin gently produced apicad, with apex feebly protruded, reflexed and truncate, fronto-clypeal part slightly raised, though it is not defined from frons because of lacking carina or sulcus; ocular lobes roundly produced laterad, bordered by fine sulci from clypeus, with outer margins continuous to those of clypeus; frons obliquely impressed on each side, gently depressed in posterior part; vertex with a ridge at the middle along the basal border, whose apex is rounded. Eyes crescent-shaped and slightly oblique in dorsal view.

Pronotum slightly wider than long (4:3); apex emarginate, with a medial half nearly straight; front angles obtusely produced anteriorly; lateral margins roundly produced laterad in anterior 2/3, then nearly straightly narrowed towards base; base widely triangular; disc weakly covered with isodiametric microsculpture, closely covered with granules, which are somewhat ovate, with a shallow triangular declivity at the middle of anterior margin. Scutellum very small but visible.

Elytra weakly covered with isodiametric microsculpture, finely punctato-striate, punctures in the striae small and round, and notching intervals; intervals feebly convex, raised in apical part of sutural intervals, rather closely punctate, each puncture with a seta.

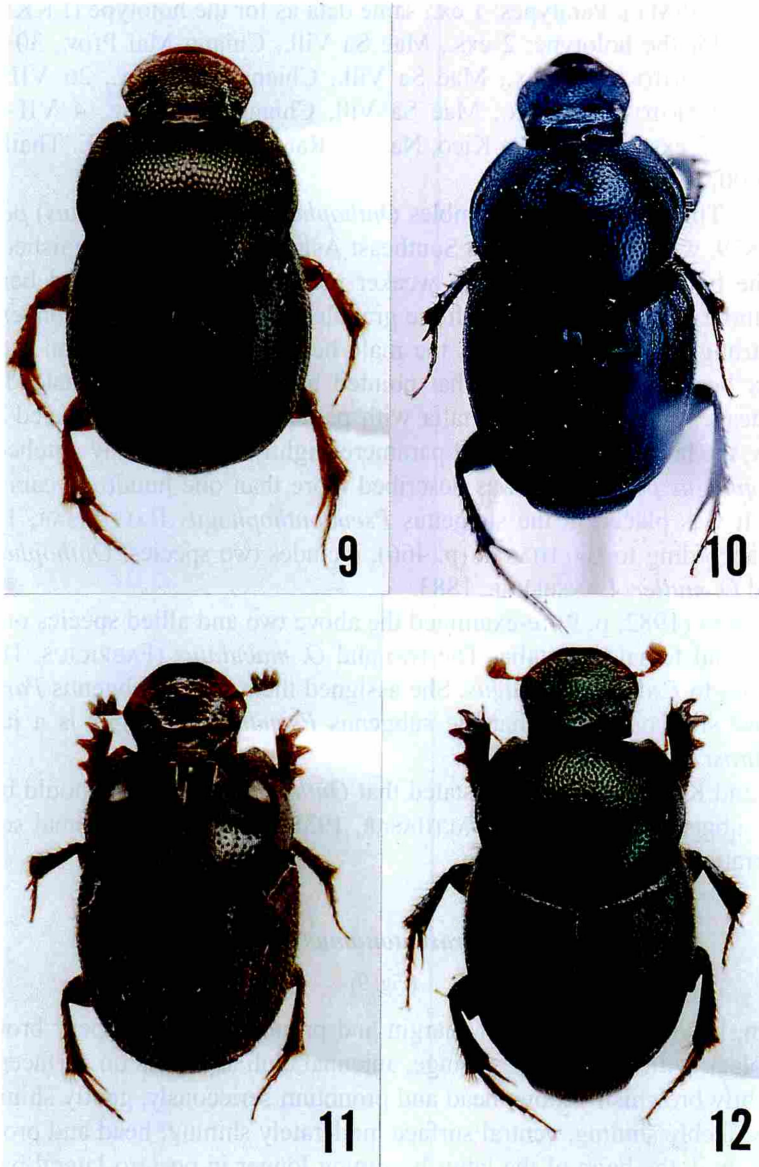
Pygidium moderately convex, covered with microscopic, isodiametric microsculpture and gently punctate, the punctures somewhat transverse in the medial part, each with a fine hair.

Legs rather stout; protibiae with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.6; 1.0, 0.2, 0.14, 0.1, 0.17.

Female. Head more distinctly rugoso-punctate, less produced anteriorly; clypeus less remarkably protruded at the middle of apical margin; vertex with a subconical upright horn, which is more distinct than in male, or with a ridge whose top is triangular in some individuals similarly to the male; 6th visible abdominal segment with a noticeable transverse rugose-groove.

Body length: 8.3–12.0 mm.

Holotype: ♂, Doi Inthanon, Chiang Mai Prov., N. Thailand, 5–IX–1990, M.



Figs. 9–12. Habitus of *Onthophagus* from Thailand. — 9, *O. (Parascatonomus) piyawati* sp. nov., holotype, ♂; 10, *O. (Phanaeomorphus) zetteli* sp. nov., holotype, ♂; 11, *O. (s. str.) tumami* sp. nov., holotype, ♂; 12, *O. (s. str.) namnaoensis* sp. nov., holotype, ♂.

YIMYAEM leg. (NSMT). Paratypes: 1 ex., same data as for the holotype (EKKU); 2 exs., same data as for the holotype; 2 exs., Mae Sa Vill., Chiang Mai Prov., 30~31-VII-1999, K. MASUMOTO leg.; 1 ex., Mae Sa Vill., Chiang Mai Prov., 26-VII~1-VIII-1987, K. MASUMOTO leg.; 1 ex., Mae Sa Vill, Chiang Mai Prov., 4-VII-1990, M. YIMYAEM leg.; 2 exs., Wang Nam Kieo, Nakhon Ratchasima Prov., NE. Thailand. 29~30-VIII-2000, Y. UTSUNOMIYA leg.

Notes. This new species resembles *Onthophagus (Parascatonomus) penicillatus* HAROLD, 1879, widely distributed in Southeast Asia, but can be distinguished from the latter by the body less shining, with weaker metallic lustre above and beneath, the pronotum more strongly convex, with the granules stronger and more convex, the elytra more strongly micro-shagreened, the male head distinctly rugose on the clypeus, with vertex bearing a short somewhat pointed horn at the middle instead of being clearly concave, and the male genitalia with parameres strongly produced laterad in dorsal view, the lateral lobe of the left paramere slightly but obviously notched.

Onthophagus penicillatus was described more than one hundred years ago from Myanmar. It was placed in the subgenus *Pseudonthophagus* BALTHASAR, 1959. This subgenus, according to BALTHASAR (p. 466), includes two species, *Onthophagus penicillatus* and *O. mulleri* LANSBERGE, 1883.

PALESTRINI (1982, p. 9) re-examined the above two and allied species on the basis of the male and female genitalia. The two and *O. maculatus* (FABRICIUS, 1801) from Africa belong to *Pseudonthophagus*. She assigned them to the subgenus *Parascatonomus* because she considered that the subgenus *Pseudonthophagus* is a junior synonym of *Parascatonomus*.

OCHI and KON (1994, p. 295) stated that *Onthophagus mulleri* should be a member of the subgenus *Serrophorus* BALTHASAR, 1935, because the antennal scape bears distinct serration on the anterior side.

Onthophagus (Parascatonomus) piyawati sp. nov.

(Fig. 9)

Brown, head except for outer margin and pronotum dark coppery brown, elytra brownish black with feeble reddish tinge, antennal club and hairs on surfaces pale yellow to slightly brownish yellow; head and pronotum sericeously, gently shining; elytra sericeously, feebly shining, ventral surface moderately shining; head and pronotum indistinctly haired, the hairs of the latter becoming longer in postero-lateral parts, elytra moderately covered with fine decumbent hairs, ventral surface rather distinctly haired, above all in metepisterna and abdomen. Body ovate, moderately convex, weakly flattened in postero-medial part, and gently constricted.

Male. Head subtrapezoidal though the apical margin is rounded, rather flattened, noticeably closely rugoso-punctate, covered with microsculpture in postero-lateral parts; clypeus gently convex in the area around fronto-clypeal border, with outer margin moderately reflexed, clypeo-genal borders finely sulcate; ocular lobes some-

what rhombic, feebly depressed, with outer margins smoothly continuous with apical margin, obtusely angulate laterad; frons weakly depressed in middle; vertex with a low, transverse, feebly bilobed ridge. Eyes medium-sized, subcrescent-shaped in dorsal view.

Pronotum slightly wider than long (5:4); apex gently emarginate and widely straight in middle; front angles gently, roundly produced apicad; lateral margins roundly widened in anterior halves, then substraightly narrowed posteriad, and feebly sinuous before base; base rather triangular; disc covered with fine microsculpture and dense ovate granules, finely punctate among granules, each puncture with a decumbent hair.

Elytra moderately punctato-striate, punctures in the striae more deeply impressed than the striae, feebly notching intervals; intervals rather wide and weakly convex, noticeably micro-granulate, scattered with haired small punctures, each with an oblong granule pointing backwards at the anterior edge.

Pygidium moderately convex, microsculptured, rather closely and shallowly punctate, the punctures irregularly shaped, often connected with one another, and finely haired.

Legs rather bold; protibia widened apicad, with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.95; 1.0, 0.37, 0.22, 0.16, 0.34.

Body length: 4.8 mm.

Female. Unknown.

Holotype: ♂, Kao Ang Ruenai Wildlife Sanctuary (dry evergreen forest), Chachoengsao Prov., E. Thailand, 21-IX-2000, M. PRAIKHIAW leg. (NSMT).

Notes. This new species belongs to the species-group of *Onthophagus* (*Parascatonomus*) *rudis*, and somewhat resembles *O. (P.) shizumui* OCHI et ARAYA, 1992, but can be distinguished from the latter by the body much smaller, the head with a distinct transverse carina on the vertex, and the elytra with granules clearly sparser and smaller.

Onthophagus (Phanaeomorphus) zetteli sp. nov.

(Fig. 10)

Piceous, apical part of head, prepisterna, apical parts of tibiae, and tarsi lighter in colour, elytra black, mouth parts, gula and antennal funicles dark reddish brown, antennal clubs and hairs on surfaces pale brownish yellow, metasternal shield with bronzy or coppery tinge; dorsal surface gently, rather sericeously shining, metasternal shield moderately shining, gula rather vitreously shining, other parts of ventral surfaces weakly, somewhat alutaceously shining; head almost glabrous, pronotum and elytra indistinctly haired, metepisterna rather noticeably haired, abdomen with a row of short setae along each base. Ovate, rather strongly convex, gently flattened posteriorly.

Male. Head subpentagonal, rather flattened, covered with weak isodiametric microsculpture, closely punctate, the punctures often fused with one another and becoming rugulose in anterior, lateral and posterior parts; clypeus somewhat trapezoidal though the fronto-clypeal border is not defined, weakly inclined apicad, apex noticeably reflexed above and nearly straight; ocular lobes somewhat ovate, with outer mar-

gins weakly rounded, smoothly continuing into apical margin; frons with a pair of rather transverse ridges at a level slightly before the middle of eyes, area between ridges and vertex transversely concave, and noticeably covered with isodiametric microsculpture and fine sparse punctures; vertex with a transverse low ridge in middle, whose width is about 1/3 the width of the neck. Eyes medium-sized, crescent-shaped.

Pronotum transverse (10:7); apex weakly emarginate though moderately produced in medial part; front angles rather acute and slightly produced; lateral margins roundly produced laterad, very slightly sinuous before base; base widely triangular; disc strongly convex, covered with isodiametric microsculpture, rather closely and shallowly punctate, the punctures ocellate, and each with a microscopic short hair at the centre; discal centre slightly before the middle with a blunt conical swelling, whose anterior foot is provided with two shallow depressions extending to apical margin.

Elytra shallowly punctato-striate, punctures in the striae slightly deeper than the striae and slightly transverse, each puncture consisting of a pair of small punctures close to each other; intervals weakly convex, covered with isodiametric microsculpture, rather sparsely scattered with microscopic punctures, each with a minute suberect hair.

Pygidium weakly convex, covered with isodiametric microsculpture, moderately closely and shallowly punctate, each puncture with a fine seta, which is short in the basal part and becomes longer apicad.

Legs medium-sized, protibiae not so strongly widened apicad, with four outer teeth; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.79; 1.0, 0.41, 0.23, 0.12, 0.43.

Female. Fronto-clypeal border with a gently curved transverse ridge, reaching the outer margins laterally; frons with a sublinear carina, which is feebly interrupted at the middle and curved posteriad at each lateral end; vertex with an almost indistinct ridge; pronotum without distinct swelling and declivity.

Body length: 6.7–7.3 mm.

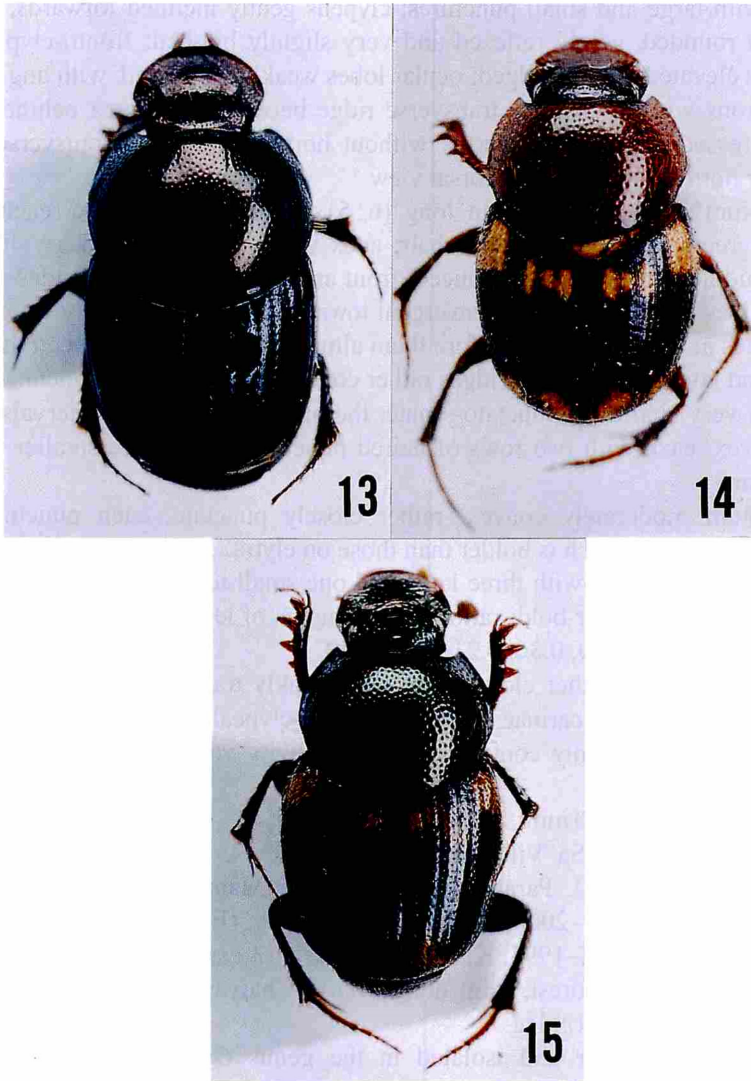
Holotype: ♂, Phu Khieo Wildlife Sanctuary (pig dung, hill evergreen forest), Chaiyaphum Prov., NE. Thailand, 9–III–1999, C. DICKINSON leg. (NSMT). Paratypes: 7 exs., same data as for the holotype (NSMT & EKKU).

Notes. The present new species is somewhat similar to *Onthophagus* (*Phanaeomorphus*) *cernyi* BALTHASAR, 1935, from China and Taiwan, but can be distinguished from the latter by the head with three transverse ridges, the tubercle on the pronotum differently shaped, and the intervals of the elytra evidently covered with isodiametric microsculpture.

Onthophagus (s. str.) *tumami* sp. nov.

(Fig. 11)

Dark reddish brown, with areas around eyes, base of pronotum and elytra darker in colour, ventral sides of head and prosternum lighter in colour, antennal club yellow-



Figs. 13–15. Habitus of *Onthophagus* from Thailand. — 13, *O.* (s. str.) *yamaokai* sp. nov., holotype, ♂; 14, *O.* (s. str.) *chaiyaphumensis* sp. nov., holotype, ♂; 15, *O.* (s. str.) *doitungensis* sp. nov., holotype, ♂.

ish gray; dorsal surface rather strongly, vitreously shining, ventral surface weakly, alutaceously shining; each surface moderately covered with golden hairs. Body small, oblong-ovate, rather strongly convex dorsad though flattened in posterior portion, and moderately constricted between fore and hind bodies.

Male. Head subhexagonal, rather flattened, feebly raised posteriad, moderately

scattered with large and small punctures; clypeus gently inclined forwards, with apex moderately rounded, gently reflexed and very slightly bilobed; fronto-clypeal border very feebly elevated but not ridged; ocular lobes weakly depressed, with angulate outer margins; frons with a very low transverse ridge between eyes, area behind the ridge feebly depressed and smooth; vertex without horns but slightly transversely raised. Eyes rather noticeably narrow in dorsal view.

Pronotum slightly wider than long (6:5), moderately punctate, each puncture with a suberect and slightly hooked hair; apex widely emarginate, very slightly produced in middle; base roundly produced; front angles subrectangular; sides rounded in anterior halves, then sublinearly convergent towards base; disc strongly convex, with a pair of ridges at apical 1/4, area before them almost vertical, area between them deeply grooved, and lateral parts of the ridges rather concave and almost impunctate.

Elytra very shallowly punctato-striate, the punctures notching intervals; intervals feebly convex, each with two rows of haired punctures, which are smaller than those on pronotum.

Pygidium moderately convex, rather closely punctate, each puncture with a slightly hooked hair, which is bolder than those on elytra.

Legs stout; protibia with three large and one small teeth along outer edge, terminal spur of protibia rather bold; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.96; 1.0, 0.36, 0.21, 0.13, 0.40.

Female. Head rather closely punctate, weakly transversely rugulose in apical part, with two transverse carinae, one along fronto-clypeal border, the other at the mid-eye level. Pronotum evenly convex; anterior declivity very slightly impressed at the middle.

Body length: 3.6–4.0 mm.

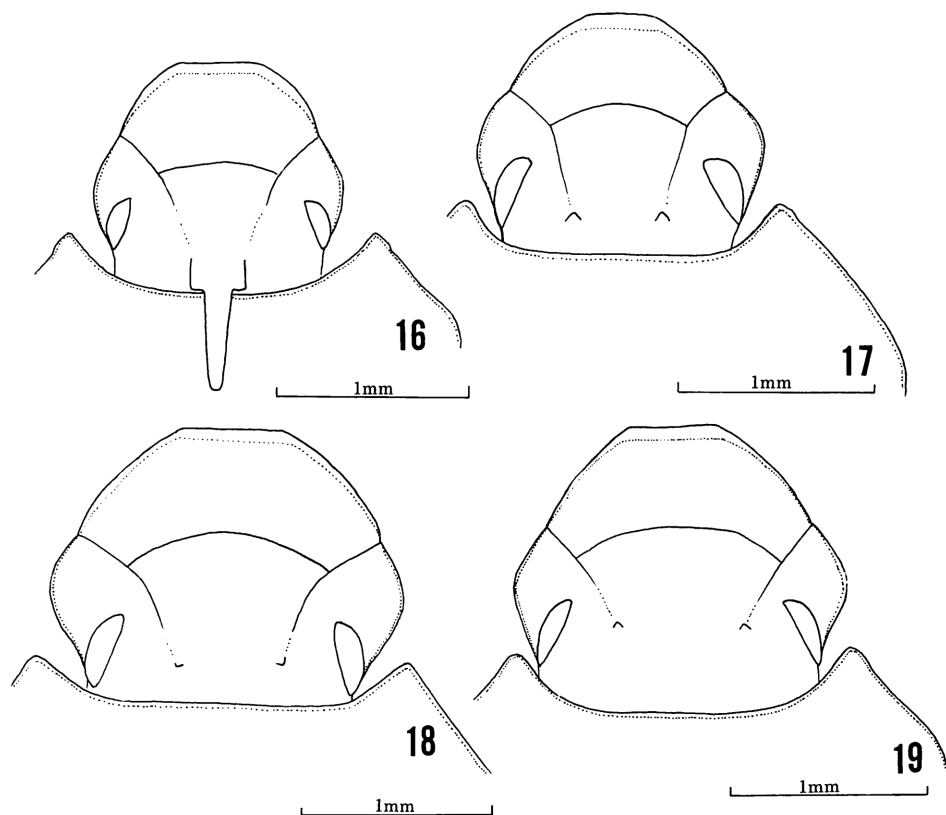
Holotype: ♂, Mae Sa Vill., Chiang Mai Prov., N. Thailand, 14–VIII–1994, K. MASUMOTO leg. (NSMT). Paratypes: 1 ex., Nong Mamna (grassland), Phetchabun Prov., N. Thailand, 28–V–2000, Y. HANBOONSONG leg. (EKKU); 2 exs., Mae Sa Vill., Chiang Mai Prov., 12–XI–1995, K. MASUMOTO leg.; 3 exs., Phu Khieo Wildlife Sanctuary (hill evergreen forest, pig dung trap), Chaiyaphun Prov., NE. Thailand, 10–III–1999, C. DICKENSON leg.

Notes. So peculiar and isolated in the genus *Onthophagus* that no similar species has hitherto been known.

***Onthophagus* (s. str.) *namnaoensis* sp. nov.**

(Fig. 12)

Piceous, dorsal surface almost dark greenish or bronzy under certain light, cephalic carina with deep purple reflection, anterior part of pronotum darkened under certain light, antennal funicles and mouth parts yellowish brown, gula dark brown, antennal club and hairs on surfaces pale brownish yellow, metasternum, femora and tibiae dark greenish; head and pronotum gently shining, elytra weakly, feebly sericeously



Figs. 16–19. Heads of *Onthophagus* from Thailand. — 16, *O. (Indachorius) lannamiibun* sp. nov.; 17, *O. (Indachorius) nongkaiensis* sp. nov.; 18, *O. (Indachorius) tongbantumi* sp. nov.; 19, *O. (Indachorius) phetchabunensis* sp. nov.

shining, prepisterna and abdomen alutaceous, metasternum moderately shining; head almost glabrous, pronotum and elytra moderately covered with fine decumbent hairs, ventral surface noticeably covered with longer hairs than those on dorsal surface, and rather setigerous in abdomen. Body ovate, moderately convex, gently flattened in posterior part, and gently constricted between fore and hind parts.

Male. Head slightly wider than long, weakly raised posteriad, closely and coarsely punctate, very weakly microsculptured, scattered with microscopic punctures among larger punctures; clypeus gently inclined apicad, rugoso-punctate, with apical margin rather noticeably reflexed, gently truncate in middle; fronto-clypeal border not defined from frons but with a short curved carina; ocular lobes oblique and feebly depressed, with outer margins smoothly continuous to apical margin and rounded, clypeo-genal and fronto-genal borders ridged; frons defined by a distinct, feebly bilobed ridge; vertex with a transverse, impunctate, slightly swollen area. Eyes cres-

cent-shaped in dorsal view.

Pronotum wider than long (4:3); apex slightly emarginate, though most of the medial parts are feebly produced; front angles rather acutely produced apicad; lateral margins roundly widened in anterior halves, then nearly straightly narrowed posteriad, and feebly sinuous before base; base very widely triangular; disc moderately convex, closely punctate, each puncture with a decumbent hair, with a pair of oblique impunctate or glabrous areas near base, whose anterior parts are clothed with distinctly long hairs.

Elytra finely but clearly punctato-striate, punctures in the striae deeper than the striae, feebly notching intervals; intervals rather wide and slightly raised, partly microsculptured, rather closely and coarsely rugoso-punctate, each puncture with a bent hair.

Pygidium moderately convex, very slightly microsculptured, rather closely punctate, the punctures somewhat transversely ovate, each with a rather long bent hair.

Legs rather stout; male metafemur with a blunt tooth at apical 1/3 on posterior edge; protibia widened apicad with three large and one small outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.81; 1.0, 0.35, 0.26, 0.21, 0.39.

Body length: 6.3 mm.

Female. Unknown.

Holotype: ♂, Nam Nao, Phetchabun Prov., NE. Thailand, 28-V-2000, M. PRAIKHIAW leg. (NSMT).

Notes. This new species is very peculiar in having the male metafemur with a blunt tooth at apical 1/3 on the posterior edge.

***Onthophagus* (s. str.) *yamaokai* sp. nov.**

(Fig. 13)

Piceous, head and pronotum with dark coppery tinge, elytra black, mouth parts, gula, antennal funicles and tarsi dark reddish brown, antennal clubs and hairs on surfaces somewhat brownish yellow; head and anterior declivity of pronotum weakly, somewhat sericeously shining, most part of pronotum strongly, vitreously shining, elytra moderately shining, ventral surface moderately shining in medial part (metasternal shield), weakly so or rather alutaceous in anterior (prepisterna), lateral (metepisterna) and posterior (abdomen) parts; dorsal surface almost glabrous, lateral margins of prothorax with a row of long setae; metepisterna haired, abdominal segments with a row of setae along basal borders. Body oval, convex, and feebly constricted.

Male. Head broad and subelliptical, closely, finely punctate, the punctures often connected with one another in anterior and lateral parts; clypeus short, with gently rounded, rather distinctly reflexed apical margin, separated from frons by a feebly curved carina, which is about 2/5 times the width of fronto-clypeal border; ocular lobes somewhat rhombic, weakly depressed, with outer margins smoothly continuous with clypeal margin, obtusely produced laterad; frons gently concave in middle, sepa-

rated from vertex by an upright bilobed carina; vertex steeply inclined basad. Eyes medium-sized, crescent-shaped in dorsal view.

Pronotum wider than long (5 : 4); apex weakly emarginate, though most of middle parts are very feebly produced; front angles subrectangular; lateral margins gently rounded laterad; base almost rounded; disc fairly strongly convex, rather closely, finely punctate, the punctures becoming closer and smaller laterad; apical margin steeply inclined anteriorly, with a blunt, feebly bi-swollen ridge at the centre of the upper edge.

Elytra moderately punctato-striate, punctures in the striae slightly transverse, notching intervals; intervals rather wide and gently convex, smooth, sparsely scattered with small punctures.

Pygidium weakly convex, very slightly microsculptured, rather closely punctate, the punctures often connected with one another, each with a very short bent hair.

Legs rather bold; protibiae widened apicad, with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.88; 1.0, 0.41, 0.29, 0.18, 0.40.

Female. Almost of the same outline as in male, except for the clypeus which is more distinctly rugoso-punctate, and the shorter fronto-clypeal carina.

Body length: 6.7–7.3 mm.

Holotype: ♂, Phu Khieo Wildlife Sanctuary (hill evergreen forest, pig dung trap), Chaiyaphum Prov., NE. Thailand, 10–III–1999, C. DICKINSON leg. (EKKU). Paratype: 1 ex., same data as for the holotype (NSMT); 1 ex., same data as for the holotype.

Notes. This new species somewhat resembles *Onthophagus* (s. str.) *pacificus* LANSBERGE, 1885, but can be distinguished from the latter by the carinae on the fronto-clypeal and fronto-vertexal borders obviously shorter, and the pronotum with apical margin steeply inclined anteriorly with a slightly bi-swollen ridge at the centre of the upper edge.

***Onthophagus* (s. str.) *chaiyaphumensis* sp. nov.**

(Fig. 14)

Dark reddish brown, hind marginal part of head, basal margin of pronotum, and elytra brownish black with pale yellow patches on 2nd, 3rd and 4th intervals and also with a pale yellow patch from 6th interval to lateral margin in basal part, though the humeral part (base of 8th interval) is brownish black, and with a little vague brownish yellow patches from 2nd to 3rd interval, and also with a more clear one from 6th interval to lateral margin in apical part, hairs on surfaces pale yellow; head weakly shining, pronotum rather strongly, a little vitreously shining, pronotum moderately shining, prepisterna alutaceous, metasternum and medio-basal part of abdomen moderately shining, lateral and apical parts of abdomen rather weakly shining; each surface moderately covered with hairs. Body ovate, convex though gently flattened in posterior part, gently constricted.

Male. Head gently flattened, weakly microsculptured, scattered with small shallow punctures; clypeus noticeably produced apicad, not defined from frons, with apical

margin reflexed and incised at the middle; ocular lobes weakly depressed in middle, feebly produced laterad, with outer margins smoothly continuous to apical margin of clypeus, the borders of clypeus slightly ridged; frons rather narrow, somewhat trapezoidal, raised towards a vague ridge at the mid-eye level; vertex with a short transverse impression. Eyes medium-sized, narrowly crescent-shaped.

Pronotum wider than long (6:8); apex weakly emarginate, though most part of the middle is very slightly produced; front angles acute; lateral margins roundly produced in anterior 2/3, then nearly straightly narrowed towards base, very feebly sinuous before base; base rounded; disc moderately convex, rather closely punctate, each puncture with a fine suberect hair, which becomes longer laterad, and sparsely scattered with microscopic punctures among the punctures; latero-basal parts with somewhat oblong, glabrous, sparsely punctate areas, whose anterior margins are clothed with longer hairs.

Elytra shallowly punctato-striate, punctures in the striae somewhat closely set, round, and notching intervals; intervals very feebly raised, weakly microsculptured and with rows of haired small punctures in each lateral part along striae.

Pygidium moderately convex, scattered with small punctures, each with a rather long seta. Legs rather slender.

Protibia with three outer and one small teeth; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.79; 1.0, 0.32, 0.21, 0.12, 0.33.

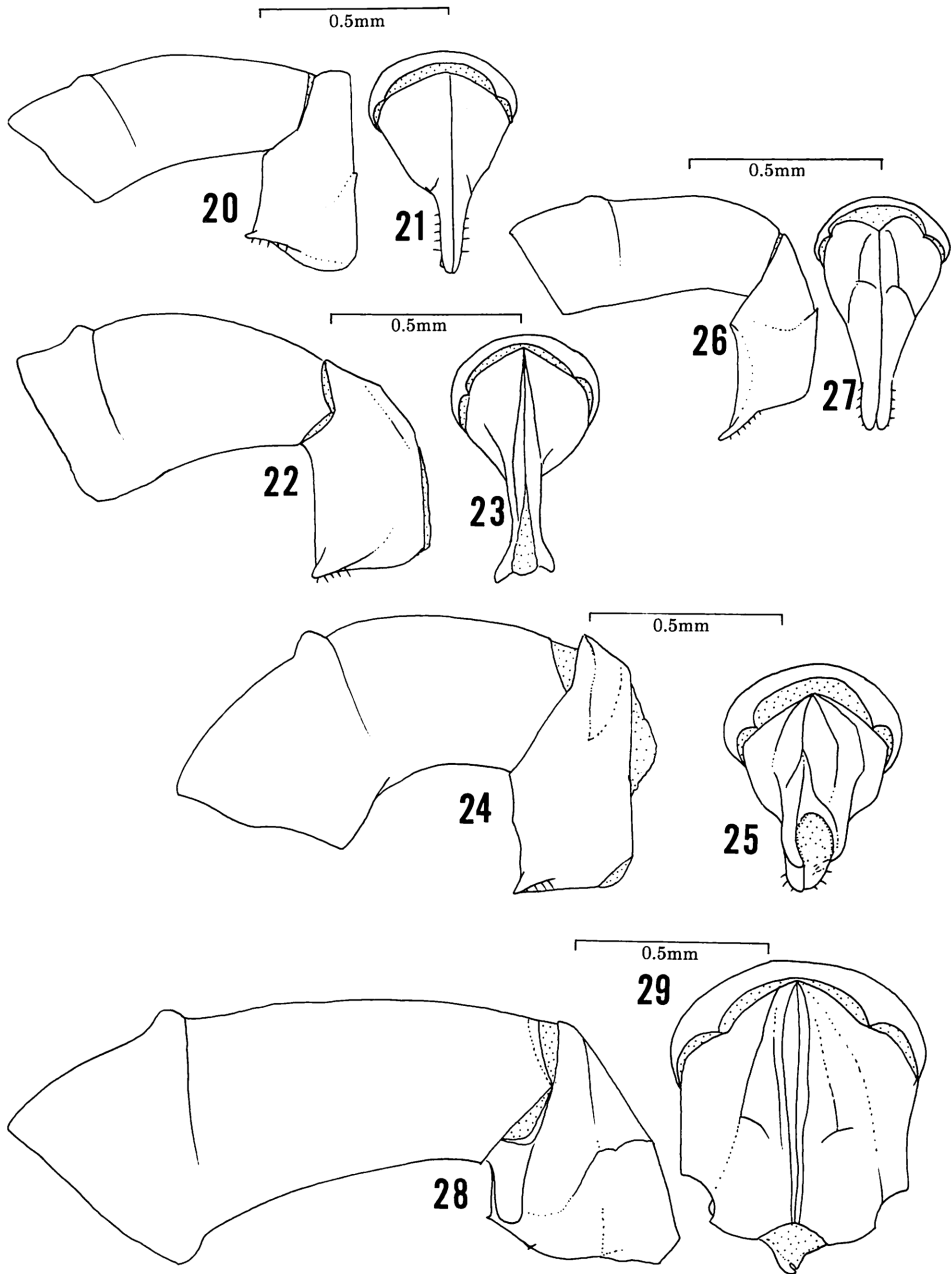
Female. Head more distinctly rugoso-punctate, with fronto-clypeal border arcuate and ridged; pronotum more strongly punctate; protibia with outer margin more strongly four-toothed.

Body length: 4 mm.

Holotype: ♂, Phu Khieo Wildlife Sanctuary (pig dung trap, pine dipterocarp forest), Chaiyaphum Prov., NE. Thailand, 10–III–1999, C. DICKINSON leg. (NSMT). Allotype: ♀, same data as for the holotype (EKKU).

Notes. The present new species is rather closely related to *Onthophagus* (s. str.) *rouyeri* BOUCOMONT, 1914, from the Sunda Islands, but the former can be distinguished from the latter by the body obviously smaller, the head entirely simple and flat, the elytra with distinct yellowish bands, and the metatibia with the basal segment much longer than the second.

Figs. 20–29. Male genitalia of *Onthophagus* from Thailand. — 20–21, *O. (Indachorius) lannamiibun* sp. nov., lateral view (20), frontal view (21); 22–23, *O. (Indachorius) nongkaiensis* sp. nov., lateral view (22), and frontal view (23); 24–25, *O. (Indachorius) tongbantumi* sp. nov., lateral view (24), and frontal view (25); 26–27, *O. (Indachorius) phetchabunensis* sp. nov., lateral view (26), and frontal view (27); 28–29, *O. (Parascatonomus) yukae* sp. nov., lateral view (28) and frontal view (29).



Onthophagus (s. str.) *doitungensis* sp. nov.

(Fig. 15)

Brownish black, antennae, mouth parts, gula and tarsi reddish brown, each elytron with yellowish orange patches; a basal patch extending across 2nd to 4th intervals, the part on the 4th obliquely extending posteriad to 5th and 6th intervals, a latero-basal patch across 6th to 8th intervals except for the humeral corner (8th interval), which is brownish black, and a posterior patch, which is often vague, covering from the middle part of 2nd interval to the middle of 5th; hairs on surfaces brownish yellow; head and pronotum with feebly coppery tinge and strongly, vitreously shining, ventral surface mostly moderately shining, metasternal shield and legs strongly, vitreously shining; head sparsely clothed with very short hairs, pronotum with bent hairs, which become longer and denser laterad, elytra with short suberect hairs, ventral surface rather closely clothed with bent hairs. Body ovate; moderately convex dorsad, gently flattened in posterior half, and moderately constricted.

Male. Head weakly raised in postero-medial part, irregularly covered with comparatively large and small punctures, which are often fused with one another and form shallow transverse rugulosity, also covered with isodiametric microsculpture; clypeus gently declined to feebly produced apical margin, which is reflexed dorsad; fronto-clypeal border vaguely defined from frons by an indistinctly curved ridge; clypeo-genal sutures bordered by sulci; genae somewhat oblique and rather large, gently inclined laterad, feebly concave in the areas before eyes, with outer margins obtusely produced; outer margins of clypeo-genal borders very slightly angulate; frons somewhat trapezoidal, inclined anteriorly, the anterior border wider than the posterior border, with a short transverse ridge at a level of the anterior part of eyes; vertex inclined basad, only sparsely and finely punctate, often with an impunctate part. Eyes medium-sized, crescent-shaped.

Pronotum wider than long (5:3); apex widely emarginate; front angles rather acute; lateral margins rather strongly produced laterad in basal halves, then narrowed towards base, and feebly sinuous before base; base rounded; disc fairly strongly convex, covered with weak isodiametric microsculpture in anterior part, densely covered with haired strong punctures, rather steeply inclined in the area along anterior margin, with a pair of somewhat oblong impunctate areas close to hind angles, whose interior margins are clothed each with a row of long hairs.

Elytra shallowly punctato-striate, punctures in the striae neither large nor strong; intervals rather wide, feebly convex, very weakly, irregularly microsculptured, scattered with small punctures, each with a small granule at the anterior upper edge and a bristle-like hair.

Pygidium weakly convex, covered with isodiametric microsculpture, rather closely punctate, each puncture with a fine but suberect bristly hair, which is longer than those on elytra.

Legs moderate in size; protibiae with four external teeth; ratios of the lengths of

terminal spur of metatibia and metatarsi: 0.79; 1.0, 0.33, 0.18, 0.12, 0.31.

Female. Head more coarsely rugoso-punctate; fronto-clypeal border obviously ridged; the ridge located between frons and vertex obviously wider; external teeth of protibiae stronger.

Body length: 4.8–5.2 mm.

Holotype: ♂, Doi Tung, Chiang Rai Prov., N. Thailand, 14/15–V–2000, K. MASUMOTO leg. (NSMT). Paratypes: 1 ex., same data as for the holotype (EKKU); 2 exs., same data as for the holotype.

Notes. This new species resembles *Onthophagus* (s. str.) *phrutsaphaakhomus* MASUMOTO, 1992, from North Thailand, but can be distinguished from the latter by the smaller (7.2–8.7 mm in *O. phrutsaphaakhomus*), darkened and shiny body, with the head bearing a short straight ridge in the posterior part, and the pronotum with front angles acute.

要 約

益本仁雄・越智輝雄・Y. HANBOONSONG：タイのエンマコガネ属 (*Onthophagus*) について。2. タイ産エンマコガネ属の新種15種。——タイの食糞性コガネムシのエンマコガネ属 (*Onthophagus*) に関する研究シリーズの第2回として、タイ各地のエンマコガネの新種を15種記載した。*Onthophagus* (*Gibbonthophagus*) *penmani* sp. nov., *O. (Indachorius) maesaensis* sp. nov., *O. (Indachorius) lannamiibun* sp. nov., *O. (Indachorius) nongkaiensis* sp. nov., *O. (Indachorius) tongbantumi* sp. nov., *O. (Indachorius) phetchabunensis* sp. nov., *O. (Indachorius) scotti* sp. nov., *O. (Parascatonomus) yukae* sp. nov., *O. (Parascatonomus) piyawati* sp. nov., *O. (Phanaeomorphus) zetteli* sp. nov., *O. (s. str.) tumami* sp. nov., *O. (s. str.) namnaoensis* sp. nov., *O. (s. str.) yamaokai* sp. nov., *O. (s. str.) chaiyaphumensis* sp. nov., *O. (s. str.) doitungensis* sp. nov.である。すべての正基準標本の背面写真を用意し、近縁種がある場合には頭部や雄の交尾器の図を提示した。

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New Status of *Copris tripartitus* var. *formosanus* GILLET (Coleoptera, Scarabaeidae)

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GILLET (1921) described *Copris formosanus* as a varietas of *C. tripartitus* WATERHOUSE, 1875, but it is obviously an independent species with the following characteristics:

Body smaller and slenderer (12–13 mm in length, 5–6 mm in width); male cephalic horn with a pair of teeth in basal part, pronotum with antero-lateral projections not so distinctly developed even in large specimens; female cephalic process simply acute, not bidentate as in *C. tripartitus*.

Copris formosanus MASUMOTO, sp. nov.

Copris tripartitus var. *formosanus* GILLET, 1921, Anns. Soc. Sci. Bruxel., **41**: 126. — BALTHASAR, 1963, Monographie der Scarabaeidae und Aphodiidae der palaearktischen und orientalischen Region, **1**: 348. Tschechoslowakischen Akademie der Wissenschaften, Prag.

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