

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

Part 1. New *Onthophagus* from the Sakaerat Biosphere Reserve in Northeast Thailand

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Abstract As the first part of the present study on the Thai species of the scarabaeid genus *Onthophagus*, new species from the Sakaerat Biosphere Reserve in Northeast Thailand are dealt with. Seven new species are described under the following names: *Onthophagus* (s. str.) *embersoni* sp. nov.; *O.* (s. str.) *sakaeratensis* sp. nov.; *O.* (s. str.) *ratchasimaensis* sp. nov.; *O.* (s. str.) *wangnamkhieoensis* sp. nov.; *O.* (*Indachorius*) *mongkhoni* sp. nov.; *O.* (*Micronthophagus*) *gigantivigilans* sp. nov.; *O.* (*Parascatonomus*) *damaki* sp. nov.

Introduction

The members of the genus *Onthophagus* consist of more than two thousand species and are broadly distributed on the earth except for the arctic regions. Diversity of the species is seen particularly in the tropical areas including Southeast Asia. In spite of its richness in the *Onthophagus* fauna, only a few species have been recorded and described from Thailand until now. SHARP (1875) described *Onthophagus rudis* from “Siam”. BOUCOMONT (1923) described *O. siamensis*, but it is regarded at present as a junior synonym of *O. dayacus* BOUCOMONT. ARROW (1931) listed Siam as the distributional area of less than ten species. PAULIAN (1945) recorded four *Onthophagus*

(*O. discedens* SHARP, *O. bonasus* FABRICIUS, *O. pacificus* LANSBERGE and *O. taurinus* WHITE) from this area. BALTHASAR (1963) described *O. aerumonosus*, and ZUNINO (1976) described *O. bonarae*.

In his detailed survey concerning the coprophagous beetles from northern Thailand, MASUMOTO (1987–1996) described more than 30 new species from northern Thailand, but still a large number of unknown species remain in his collection. KABAKOV (1994) described *O. thai* from Thailand, and he and NAPOLOV (1999) recorded 43 *Onthophagus* species. HANBOONSONG *et al.* (1999) listed 42 named and 60 undetermined species from Northeast Thailand.

The present authors have decided to start in a more detailed study of Thai *Onthophagus*. As the first step of the present study, they are dealing with new species of the genus *Onthophagus* from the Sakaerat Biosphere Reserve in Northeast Thailand.

The Sakaerat Biosphere is one of the five UNESCO designated biosphere reserves in Thailand and located in the south of Nakhon Ratchasima Province, Northeast Thailand, with some part connected with Chachoengsao Province. It covers a forest reserve of approximately 78.08 km² in area situated at 14°30'N, 101°55'E with an altitude between 280 and 762 metres above sea-level. Rainfalls in the area average 1,260 mm per year, and average temperature is 26°C. The two major natural vegetation types, which once covered the whole area, are dry evergreen and dry dipterocarp forests. Besides, over 300 species of wild life of both mammals and birds are found inside the biosphere. Every year the forest communities and ecological system inside the Sakaerat biosphere are disturbed both by such natural incidents as forest fires and by human activities. These environmental changes have certainly had an impact on animal and insect diversity as well as on ecology. Dung beetles are known to be strongly influenced by vegetation cover and soil type. Therefore, the dung beetle species diversity in different habitat types in the Sakaerat Biosphere Reserve were also investigated. These acquired information will be crucial to the conservation, land-use management and utilization of the Sakaerat Biosphere Reserve in Thailand.

Acknowledgement

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Depositories of the holotypes of the new species to be described are given in the

text with the following abbreviations: NSMT (=National Science Museum (Nat. Hist.), Tokyo, Japan) and EKKU (=Entomology Department Museum, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand).

Description of New Species

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

(Fig. 1)

Piceous, head and pronotum with brownish tinge, elytra yellowish brown with broad black medial band whose front and hind margins are wavy or strongly curved, basal and anterior parts of outer margins and 1st intervals of elytra finely black; antennae, mouth parts and gula yellowish brown; legs dark reddish brown; hairs on surfaces pale yellow; head and pronotum coppery shining, elytra moderately shining, prepiternum alutaceous; metasternum, abdomen and pygidium gently shining; surfaces moderately covered with short suberect hairs. Body oval, convex though the elytra are gently depressed.

Male. Head rather broad and flattened, micro-shagreened, moderately covered with microscopic punctures, sparsely scattered with large punctures in lateral parts; clypeus feebly convex in middle, with apical margin produced and rather strongly reflexed, truncate at apex; ocular lobes rounded; frons gently inclined from ridged vertex, which is curved posteriad. Eyes fine and oblique in dorsal view.

Pronotum wider than long (6 : 5), micro-shagreened, rather closely punctate, each puncture with a short suberect hair; front angles subrectangular; lateral margins rounded in front and nearly straight behind; base roundly triangular; disc convex, steeply flattened in antero-medial part, which extends backwards beyond the middle and limited by an angular elevation.

Elytra finely punctato-striate, the punctures rather transverse and notching intervals; intervals very slightly convex, scattered with punctures which are somewhat ranged in rows, each puncture with a short suberect hair.

Pygidium gently convex, rather closely and strongly punctate, each puncture with a suberect hair.

Legs ordinary for a member of the genus; protibiae with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.63; 1.0, 0.26, 0.18, 0.14, 0.27.

Female. Head more strongly punctate, rugose in clypeal part; clypeal margin shallowly notched in the middle and slightly lobed on each side of the notch; fronto-clypeal suture curved anteriad and raised at the middle; vertex with a short transverse carina, which is a little longer than that on frons.

Body length: 5.5 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (dry dipterocarp forest), Nakhon Ratchasima Prov., NE. Thailand, 29-IV-2001, M. PRAIKHIAW leg. (EKKU). Paratypes:

1 ex., same data as for the holotype (NSMT); 6 exs., same data as for the holotype; 2 exs. (labeled "BEETLE_4315 and 4420"), Phu Khieo Wildlife Sanctuary, Chaiyaphum Prov., NE. Thailand, C. DICKINSON leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 29-IV-2001, Y. HANBOONSONG leg.

Notes. This new species belongs to the species-group of *Onthophagus deflexicollis*, whose members hitherto named are *O. deflexicollis* LANSBERGE, 1883, *O. bonorae* ZUNINO, 1976, and *O. aloysiellus* ZUNINO, 1977. In reality, the present new species is closely related to *O. aloysiellus* of the three species, but can be distinguished from it by the head and pronotum with stronger metallic lustre, the head distinctly narrowed with ocular lobes less produced laterad, each median portion on the head and pronotum almost impunctate and nearly smooth, the front angles of the pronotum rather strongly produced anteriad, and the elytral markings well developed.

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

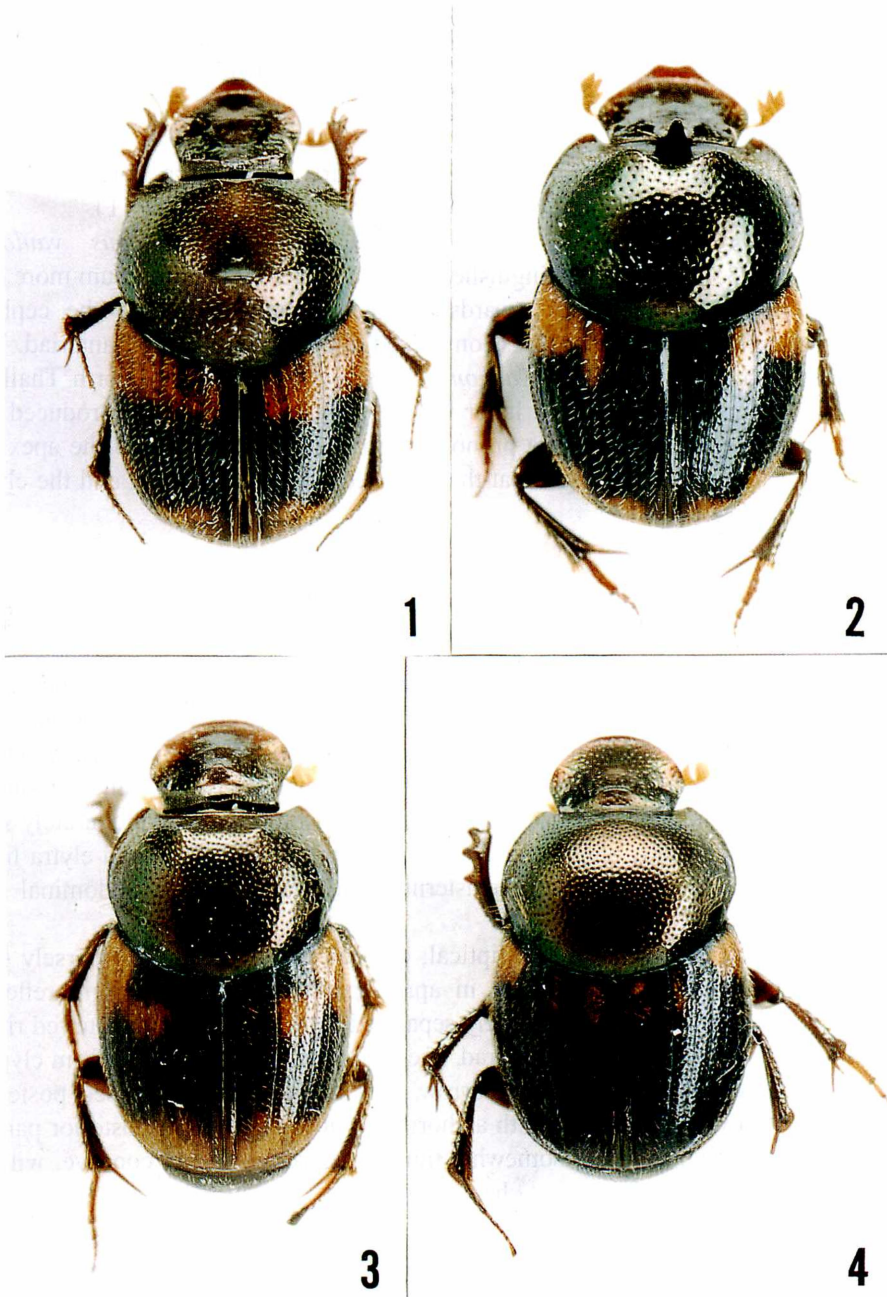
(Fig. 2)

Piceous with coppery tinge, elytra black with orange yellow patches: one in basal part from 3rd to 8th (the outermost) intervals, and the other in apical part from 2nd to 8th intervals, though the black part extends close to the elytral apex in 5th intervals; outer margins of head and legs lighter in colour; antennae, mouth parts and gula yellowish brown, hairs on surfaces dusty yellow; head, pronotum and pygidium metallically shining, elytra, metastenum and legs moderately shining; ventral surface except for metasternum alutaceous; dorsal surface with short fine hairs, mese- and metepisterna, abdomen and legs covered with bent hairs. Body oval, rather strongly convex, gently constricted.

Male. Head somewhat wide pentagonal, gently inclined apicad, covered with microscopic isodiametric sculpture, sparsely scattered with rather distinct punctures in lateral parts; clypeus not separated from frons, with apical margin reflexed, the central part of the reflexed apex noticeably produced and bi-lobed; ocular lobes rounded, with outer margins smoothly continuing to that of clypeus; vertex with a backwardly curved horn, wide in the basal part and becoming narrower in middle and pointed at the apex. Eyes narrowly crescent-shaped in dorsal view.

Pronotum as wide as long, rather closely punctate, each puncture with a short suberect hair; front angles projected forwards; lateral margin gently roundly produced laterad in middle, slightly sinuate in area around hind angles; base rounded; disc strongly convex, steeply inclined and almost impunctate in front, with a depression behind the cephalic process, both sides of the depression being ridged and feebly produced anteriad.

Elytra shallowly punctato-striate, the punctures rounded and slightly notching intervals; intervals very slightly convex, with rows of punctures, one row in the first intervals, two in the others except for the 8th, about four in the 8th, each with small granules at the frontal edge, making the intervals somewhat asperate.



Figs. 1–4. Habitus of *Onthophagus* from the Sakaerat Biosphere Reserve, NE. Thailand. — 1, *Onthophagus* (s. str.) *embersoni* sp. nov., holotype, ♂; 2, *O.* (s. str.) *sakaeratenis* sp. nov., holotype, ♂; 3, *O.* (s. str.) *ratchasimaensis* sp. nov., holotype, ♂; 4, *O.* (s. str.) *wangnamkhieoensis* sp. nov., holotype, ♂.

Pygidium weakly convex, vitreous, rather closely punctate, each puncture with a fine suberect hair. Legs normal; protibiae with four outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 1.05; 1.0, 0.29, 0.16, 0.12, 0.36.

Female. Unknown.

Body length: 5.3 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (dry dipterocarp forest), Nakhon Ratchasima Prov., NE. Thailand, 29-IV-2001, M. PRAIKHIAW leg. (NSMT).

Notes. This new species somewhat resembles *Onthophagus vaulogeri* BOUCOMONT, 1923, but can be distinguished from the latter by the pronotum more convex and more steeply inclined forwards, strongly depressed behind the cephalic process, and both sides of the depression ridged and feebly produced anteriorly. This new species also resembles *O. kanyaayonus* MASUMOTO, 1992 from North Thailand, but can be distinguished from the latter by the clypeus less strongly produced and more strongly truncate in front, the pronotum more steeply declined to the apex and more distinctly sinuous on each side at the upper edge of the declivity, and the elytral patches differently shaped.

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

(Fig. 3)

Brownish black, outer margin of head and legs lighter in colour, head and pronotum with coppery tinge, elytra with humeral and apical portions yellowish brown, and with a pair of yellowish brown patches across middle of 2nd to 5th intervals, which are connected with humeral yellowish brown parts; antennal clubs and hairs on surface pale yellowish brown; head and pronotum metallicly shining, elytra moderately shining, ventral surface weakly shining; head almost glabrous, pronotum and elytra finely haired, prepisterna sparsely haired, metasternum moderately haired, abdominal sternites with setae along bases.

Male. Head transversely subelliptical; clypeus narrowed apically, sparsely scattered with punctures, feebly rugulose in apical part, with apical margin reflexed; fronto-clypeal part weakly raised, vaguely separated from frons by a low curved ridge; ocular lobes very weakly produced laterad, irregularly punctate, bordered from clypeus and frons by fine sulci; frons rather narrow, very feebly concave, raised posteriorly, sparsely scattered with punctures, with a short horn at the middle of posterior part (at the mid-eye level), whose tip is somewhat transverse; vertex feebly concave, without ridge. Eyes moderate-sized, crescent-shaped.

Pronotum wider than long (4:3); apex widely emarginate, almost straight widely in middle; front angles subrectangular, with rounded corners; lateral margin nearly straightly widened in anterior 2/5, roundly produced in middle, obliquely narrowed in posterior 3/5 and very feebly sinuous before base; base rounded; disc rather strongly convex, very weakly micro-sculptured, closely punctate, each puncture with a fine hair, the hairs becoming longer and distinct in lateral parts; upper edge of anterior declivity

with a pair of small tubercles.

Elytra shallowly punctato-striate, the punctures in striae small and sparsely set; intervals rather wide, very feebly micro-sculptured, weakly wrinkled, finely punctate, each puncture with a small granule with hair.

Pygidium moderately convex, rather closely punctate, each puncture with a fine decumbent hair.

Legs moderately sized; male protibiae quadridentate; ratios of the lengths of spur of metatibia and metatarsomeres: 0.8; 1.0, 0.38, 0.18, 0.12, 0.31.

Female. Head with apical part more noticeably rugulose, fronto-clypeal border with a curved ridge; vertex with a short transverse horn at the mid-eye level. Apical declivity of pronotum steeper, with two pairs of small tubercles at the upper edge.

Body length: 5.3–6.5 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (dry dipterocarp forest), Wangnamkhieo, Nakhon Ratchasima Prov., NE. Thailand, 18-IV-2000, Y. HANBOONSONG leg. (EKKU). Paratypes: 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), Wangnamkhieo, Nakhon Ratchasima Prov., 18-IV-2000, Y. HANBOONSONG leg. (NSMT); 3 exs., Sakaerat Biosphere Reserve (dry dipterocarp forest), 18-IV-2000, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (agroecosystem), 18-IV-2000, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (dry evergreen forest), 29-IV-2001, M. PRAIKHIAW leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 29-IV-2001, Y. HANBOONSONG leg.

Notes. This new species somewhat resembles small individuals of *Onthophagus* (*Paraphanaeomorphus*) *punneeae* MASUMOTO, 1989 from North Thailand, but can be distinguished from the latter by the head less punctate and less rugose, the pronotum with a pair of tubercles, front angles not angulate but rounded at the corners, and the fore body above with coppery lustre.

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

(Fig. 4)

Blackish brown, head and pronotum with feeble coppery tinge, elytra black, with orange patches on 2nd, 4th and 6th to 8th intervals close to base, pro- and metasterna and legs dark reddish brown, mouth parts and proximal parts of antennae lighter in colour; antennal club and hairs on surface pale yellowish brown; head and pronotum weakly metallicly shining, elytra gently, somewhat vitreously shining, major parts of ventral surface moderately shining, abdomen weakly so; dorsal surface indistinctly, finely haired, metepisterna and abdomen noticeably haired. Body ovate, convex though gently flattened in posterior part.

Head semicircular, gently inclined anteriorly, rather closely finely punctate, sparsely intermixed with larger punctures; clypeus roundly produced and reflexed in front, rugoso-punctate in apical part, not defined from frons though slightly raised around the border; ocular lobes weakly depressed in antero-lateral parts of eyes, with

outer margins rounded and smoothly continuous with apical margin, the borders of clypeus and frons finely sulcate; frons with a transverse ridge at the mid-eye level, and about 1/5 times the width of diatone, though the ridge sometimes becomes reduced to a tubercle; vertex simply inclined basad. Eyes medium-sized, crescent-shaped.

Pronotum wider than long (5 : 4); apex feebly emarginate; front angles subrectangular; lateral margins roundly divergent in anterior 3/5, nearly straightly convergent in posterior 2/5; base rounded; disc moderately convex, micro-sculptured, closely punctate, each puncture with a short (in medial part) or long (in lateral parts) hair.

Elytra moderately punctato-striate, the punctures in striae notching intervals; intervals weakly convex, rather closely, irregularly punctate and partly rugulose, each puncture with a fine decumbent hair.

Pygidium gently convex, rather closely punctate, the punctures slightly umbilicate, each with a rather long fine hair.

Legs of medium size; male protibiae quadridentate; ratios of the lengths of terminal spur of metatibia and metatarsomeres: 0.67; 1.0, 0.32, 0.18, 0.13, 0.11, 0.36.

Female. Apical part of head rugoso-punctate, fronto-clypeal border with a curved ridge; posterior part of frons with a transverse, feebly curved ridge slightly before the middle of eyes; vertex with a vague transverse concavity. Pronotum without any modification.

Body length: 4.3–5.4 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (dry dipterocarp forest), Wangnamkhieo, Nakhon Ratchasima Prov., NE. Thailand, 18–IV–2000, Y. HANBOONSONG leg. (EKKU). Paratypes: 1 ex., same data as for the holotype (NSMT); 1 ex., same data as for the holotype; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 25–X–2000, M. PRAIKHIAW leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 29–IV–2001, Y. HANBOONSONG leg.; 2 exs., Sakaerat Biosphere Reserve (agroecosystem), 29–IV–2001, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (plantation), 25–VI–2000, M. PRAIKHIAW leg.; 1 ex., Sakaerat Biosphere Reserve (dry evergreen forest), 18–IV–2001, Y. HANBOONSONG leg.; 1 ex., Khao Ang Ru Nai Wildlife Sanctuary, Chachoengsao Prov., E. Thailand, 21–V–2000, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (replantation), 18–IV–2000, Y. HANBOONSONG leg.

Notes. The present new species rather resembles a small individual of *O. phrut-saphaakhomus* MASUMOTO, 1992, from North Thailand, but can be distinguished from the latter by the head less produced forwards, with clypeus more strongly punctured and more distinctly rugose, frons with a short transverse ridge in male, and a simply arcuate fronto-clypeal ridge and a feebly curved frontal ridge in female.

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

(Fig. 5)

Piceous, apical margin of head, mouth parts, gula, fore legs, middle and hind tibiae and tarsi, etc. dark reddish brown; hairs on surfaces and labrum pale yellow; head

and pronotum with feeble coppery tinge, humeral parts of elytra from middle of 5th intervals to the 8th and apical margins from sutural interval to the 8th dark reddish; head weakly sericeously shining, pronotum metallicly shining, elytra moderately shining, prepisternum covered with microsculpture and alutaceous, metasternum and abdomen moderately shining; dorsal and ventral surfaces moderately covered with fine hairs. Body ovate; compact, rather strongly convex, though flattened in middle.

Male. Head somewhat pentagonal, inclined forwards, covered with microscopic isodiametric sculpture, moderately closely scattered with large and small punctures; clypeus somewhat trapezoidal, bi-dentate and gently reflexed at apex, rugose in apical part, the area of the fronto-clypeal border raised and feebly ridged; ocular lobes rounded laterad, borders of clypeus and frons with low ridges; frons narrowed posteriorly, with a pair of obtuse gibbosities at hind margin; vertex inclined basad. Eyes medium-sized, crescent-shaped. Antennae normal.

Pronotum wider than long (5 : 4) and strongly convex, rather closely deeply punctate, each puncture with a long fine hair; front angles acutely projected anteriorly; lateral margins rounded in middle, posterior parts obliquely straight; base rounded.

Elytra shallowly punctato-striate, the punctures in striae slightly wide, notching intervals; intervals feebly convex, with rows of punctures, which possess fine suberect hairs, and are often connected with one another by shallow wrinkles.

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

Legs medium-sized; protibiae with three outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.68; 1.0, 0.26, 0.13, 0.12, 0.31.

Female. Similar to male in general features, but the fronto-clypeal ridge is obviously longer than in male.

Body length: 3.5 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (plantation), Nakhon Ratchashima, NE. Thailand, 25-VI-2000, M. PRAIKHIAW leg. (EKKU). Paratypes: 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 29-IV-2001, Y. HANBOONSONG leg. (NSMT); 3 exs., same data as above; 4 exs., Sakaerat Biosphere Reserve (plantation), 29-IV-2001, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 1-VI-2001, Y. HANBOONSONG leg.; 1 ex., Sakaerat (Agroecosystem), 1-VI-2001, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 18-IV-2000, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (dry evergreen forest), 18-IV-2000, Y. HANBOONSONG leg.; 1 ex., Sakaerat Biosphere Reserve (dry dipterocarp forest), 30-VIII-2000, Y. HANBOONSONG leg.

Notes. This new species somewhat resembles *Onthophagus phuquoci* PAULIAN, 1945, from "Ile Phu Quoc", but can be distinguished from the latter by the head and pronotum less noticeably haired, the head less acutely toothed at the apex, the pronotum neither strongly widened nor closely punctate, and the elytral intervals simply punctate (asperate in *O. phuquoci*).

Onthophagus (Micronthophagus) gigantivigilans sp. nov.

(Figs. 6 & 7)

Brownish black, outer margins of head and legs lighter in colour, hairs on surfaces brownish yellow; dorsal surface moderately, slightly vitreously shining, ventral surface weakly shining; each surface covered with rather long hairs. Body oblong-ovate, rather strongly convex above, gently flattened posteriorly.

Male. Head rather rounded, very feebly microsculptured, irregularly punctate, the punctures intermixed by large and very small ones, weakly raised in middle along fronto-clypeal border; clypeus rugoso-punctate in anterior part, with outer margin rounded, gently reflexed, and feebly truncate at apex, clypeo-frontal border weakly, obtusely triangularly ridged; ocular lobes weakly depressed in intero-posterior parts (before eyes), with outer margins roundly produced, clypeo-genal borders sulcate; frons somewhat triangular, weakly raised towards fronto-clypeal border, diameter about 2.5 times the width of diameter of an eye in dorsal view; vertex with a large, oblong, flattened horn, whose upper edge is pointed at the corners, and armed with an elongated triangular, backwardly curved horn at the middle. Eyes very large, subovate, about 1/3 times the length of head.

Pronotum wider than long (5 : 4), feebly microsculptured, rather closely punctate, each puncture with a long hair; apex widely, shallowly emarginate; front angles rather acute and projected anteriorly; lateral margins nearly straightly widened in anterior 2/5, roundly produced in middle, almost straightly narrowed posteriorly; base gently rounded; disc strongly convex, noticeably declivous antero-medially behind cephalic horn, the declivity almost smooth and finely punctate and glabrous.

Elytra finely punctato-striate, the punctures in striae rather sparse and notching intervals; intervals feebly convex, with rows of punctures, which are rather closely set and haired.

Pygidium weakly convex in middle, rather closely punctate, each puncture slightly umbilicate and with a long hair.

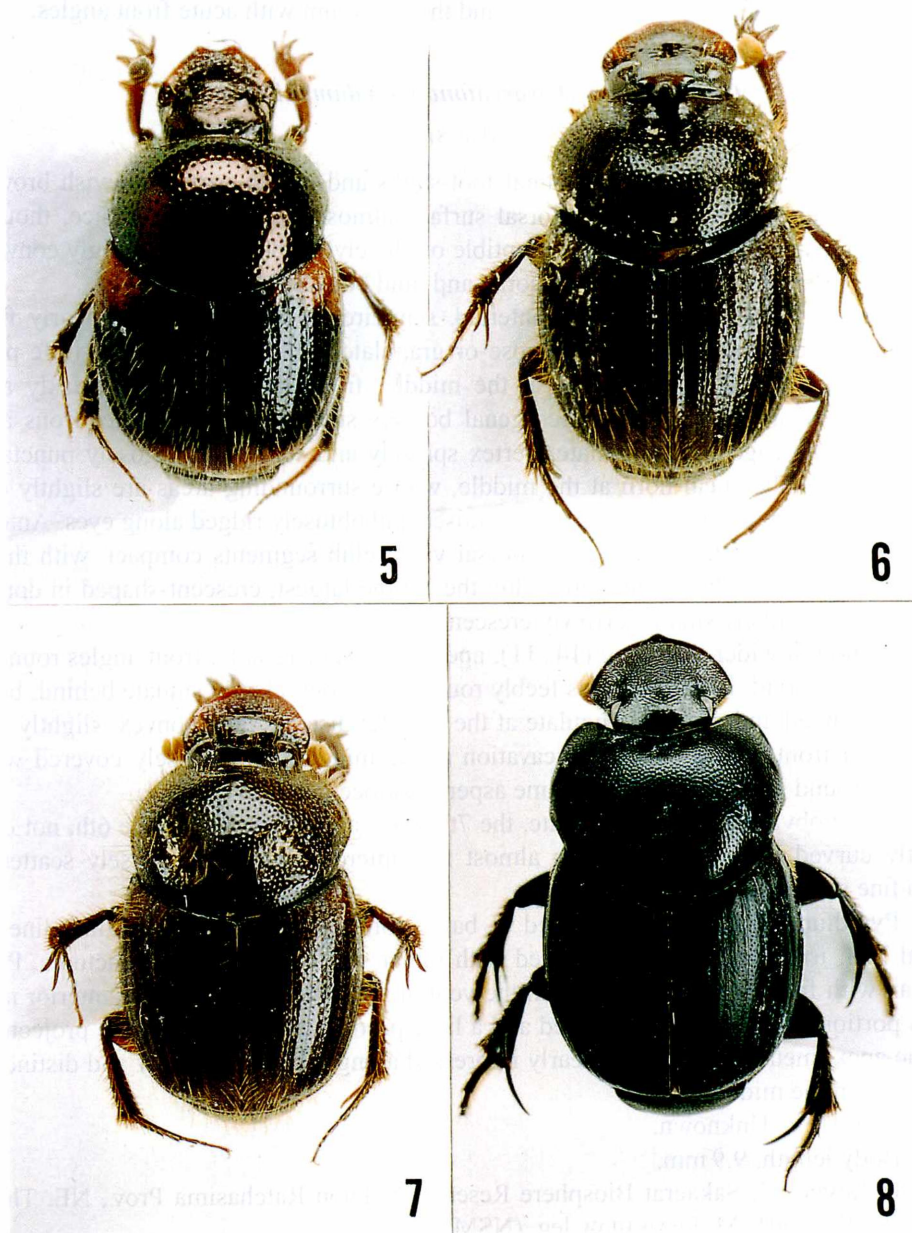
Legs rather slender; male protibiae with three outer teeth; ratios of the lengths of spur of metatibia and metatarsomeres: 0.68; 1.0, 0.35, 0.18, 0.11, 0.32.

Female. Head less strongly produced apically than in male, with apical part more noticeably rugoso-punctate, fronto-clypeal border more strongly ridged; vertex with a transverse lamina at the level of posterior part of eyes, each side of the apex bluntly pointed. Apical declivity of pronotum with a small swelling at the middle.

Body length: 6.3–6.5 mm.

Holotype: ♂, Sakaerat Biosphere Reserve (plantation), Nakhon Ratchasima Prov., NE. Thailand, 29–IV–2001, M. PRAIKHIAW leg. (EKKU). Paratypes: 1 ex., Sakaerat Biosphere Reserve (agroecosystem), 29–VI–2001, Y. HANBOONSONG leg. (NSMT); 1 ex., Sakaerat Biosphere Reserve (plantation), 25–VI–2000, M. PRAIKHIAW leg.

Notes. This new species resembles *Onthophagus (Micronthophagus) grandivigilans* MASUMOTO, 1995, but can be distinguished from the latter by the head with the



Figs. 5–8. Habitus of *Onthophagus* from the Sakaerat Biosphere Reserve, NE. Thailand. — 5, *O. (Indachorius) mongkhoni* sp. nov., holotype, ♂; 6–7, *O. (Micronthophagus) gigantivigilans* sp. nov., 6, holotype, ♂, 7, paratype, ♀; 8, *O. (Parascatonomus) damaki* sp. nov., holotype, ♂.

fronto-clypeal border ridged, the diatone wider (twice in *O. grandivigilans*), the cephalic horn gently curved backwards, and the pronotum with acute front angles.

***Onthophagus (Parascatonomus) damaki* sp. nov.**

(Fig. 8)

Black, less shining, with antennal foot-stalks and mouth parts yellowish brown, antennal clubs yellowish brown; dorsal surface almost glabrous at a glance, though very minute and sparse hairs are perceptible on the elytra. Body oval, strongly convex, moderately constricted between prothorax and hind body.

Male. Head well produced anteriorly, semicircular in outline, and nearly flat; clypeus densely and transversely rugose or granulate, with outer margin a little produced as a reflexed short process at the middle; fronto-clypeal border weakly and briefly ridged at the middle, clypeo-genal borders smooth, finely sulcate; frons and genae densely rugose to granulate; vertex sparsely and somewhat rugosely punctate, with a short subconical horn at the middle, whose surrounding areas are slightly depressed; lateral portions of vertex clearly raised and obtusely ridged along eyes. Antennae with scape short, invisible from dorsal view; club segments compact, with three segments successively lessened in width, the 1st the largest, crescent-shaped in dorsal view. Eyes relatively small, narrowly crescent-shaped.

Pronotum wider than long (14 : 11); apex widely emarginate; front angles roundly produced anteriorly; lateral margins feebly rounded in front, clearly sinuate behind; base gently rounded and obtusely angulate at the middle; disc strongly convex, slightly declivous in front with a shallow excavation at the middle, very densely covered with ovate to round granules, which become asperate or ocellate near the base.

Elytra obviously punctato-striate, the 7th striae almost parallel to the 6th, not distinctly curved near base; intervals almost flat, micro-shagreened, sparsely scattered with fine setiferous punctures.

Pygidium feebly convex, ridged at base, obtusely raised along median line in basal half, irregularly densely covered with rather shallow transverse punctures. Prothorax with front angles excavated on the ventral side. Metasternum with anterior median portion subtriangularly elevated and a little produced as a boss like the projection at the apex; metasternal shield clearly impressed along midline, sparsely and distinctly punctate in the middle.

Female. Unknown.

Body length: 9.9 mm.

Holotype: ♂, Sakaerat Biosphere Reserve, Nakhon Ratchasima Prov., NE. Thailand, 29-IV-2001, M. PRAIKHIAW leg. (NSMT).

Notes. This new species is closely related to *Onthophagus tricornis* (WIEDEMANN, 1823), but can be distinguished from the latter by the distinctly smaller body, the head with single cephalic horn, with lateral portions of the vertex raised towards the eyes, the pronotum without pointed process at the middle of the apical declivity, and the

metasternal shield obviously punctate in the middle.

要 約

益本仁雄・Y. HANBOONSONG・越智輝雄：タイのエンマコガネ属 (*Onthophagus*) について。
 1. サケラート自然保護地区のエンマコガネの新種。—— タイの食糞性コガネムシのエンマコガネ属 (*Onthophagus*) についての研究シリーズの第1回として、サケラート自然保護地区 (タイ東北部ナコンラーチャシーマー県) のエンマコガネの新種を7種記載した。 *Onthophagus* (s. str.) *embersoni* sp. nov.; *O.* (s. str.) *sakaeratenis* sp. nov.; *O.* (s. str.) *ratchasimaensis* sp. nov.; *O.* (s. str.) *wangnamkhieoensis* sp. nov.; *O.* (*Indachorius*) *mongkhoni* sp. nov.; *O.* (*Micronthophagus*) *gigantivigilans* sp. nov.; *O.* (*Parascatonomus*) *damaki* sp. nov. である。

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New Record of *Onthophagus semiaureus* LANSBERGE from Thailand

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Onthophagus semiaureus LANSBERGE, 1883 is widely distributed in the Sunda Islands, Sulawesi and the Philippines. In the course of the detailed study of Thai dung beetles, I found a series of specimens of this species in my collection. BALTHASAR (1963) regarded it as a member of the subgenus *Onthophagus*, but it obviously belongs to the *Parascatonomus*.

Onthophagus (Parascatonomus) semiaureus LANSBERGE, 1883

Onthophagus semiaureus LANSBERGE, 1883, *Not. Leyden Mus.*, **5**: 75.

Specimens examined. 7 exs., Wang Nam Kieo, Nakhon Ratchasima Prov., NE. Thailand, 29~30–VIII–2000, K. MASUMOTO leg.; 5 exs., same locality and data, Y. UTSUNOMIYA leg. (in the collection of the National Science Museum (Nat. Hist.), Tokyo).

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