

Dung Beetles (Coleoptera, Scarabaeoidea) Collected from Sabah, Borneo (II)¹⁾

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Abstract Eighteen species of dung beetles, collected by the Kyoto University Expeditions to Sabah, Borneo (1985, 1987), are recorded. Of these, *Onthophagus* (*Onthophagus*) *angustatus* BOUCOMONT is recorded for the first time from Borneo. In addition, three new species of the genus *Onthophagus* are described from Sabah, Borneo, under the names of *O. (Gibbonthophagus) fujiii* sp. nov., *O. (Paronthophagus) hidakai* sp. nov. and *O. (Onthophagus) ishiii* sp. nov.

In the present part, we are going to record 15 species of dung beetles (Coleoptera, Scarabaeoidea) and to describe three new species of the genus *Onthophagus* from Sabah, Borneo.

Onthophagus (Gibbonthophagus) fujiii sp. nov.

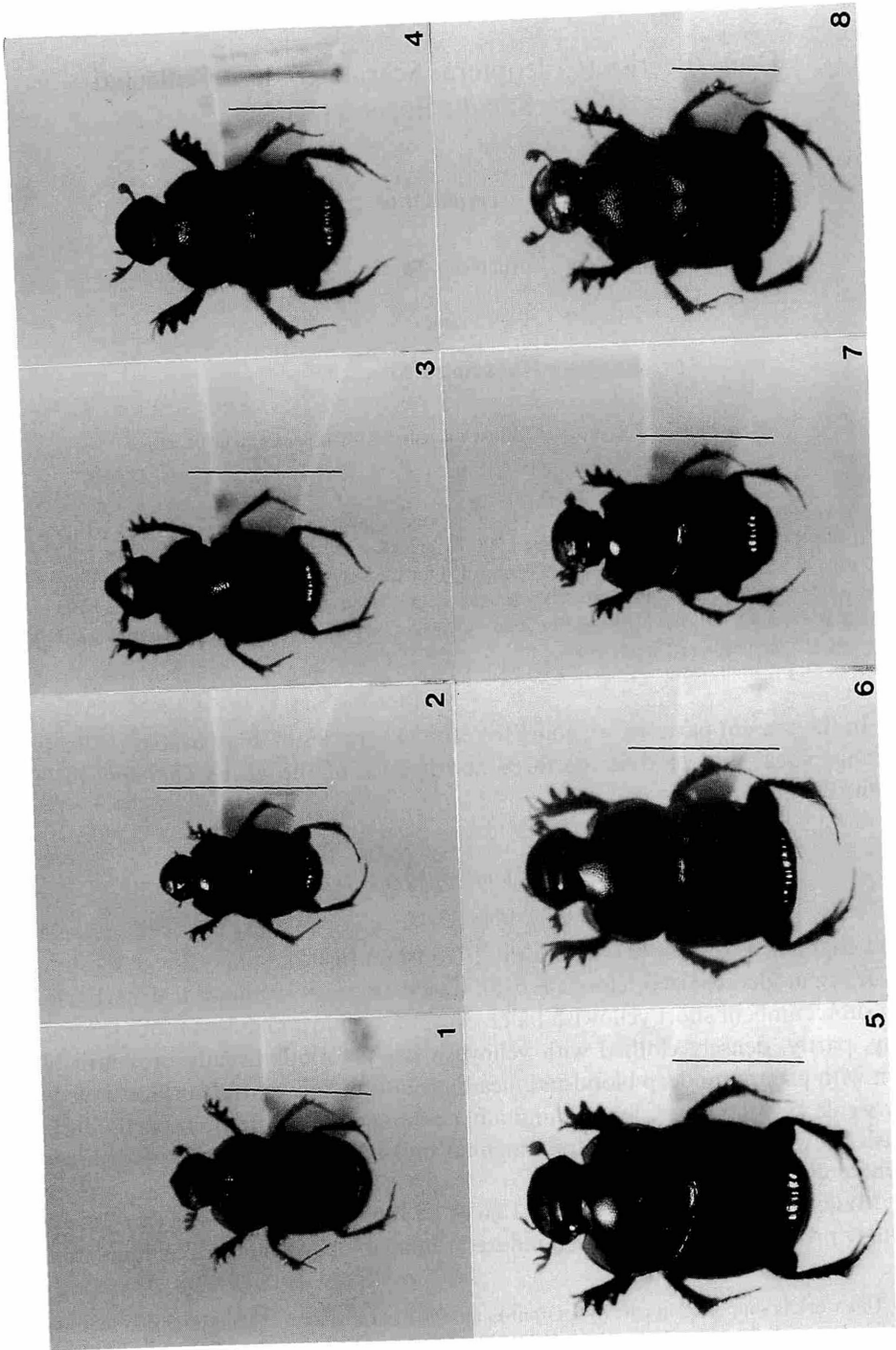
(Figs. 17–19)

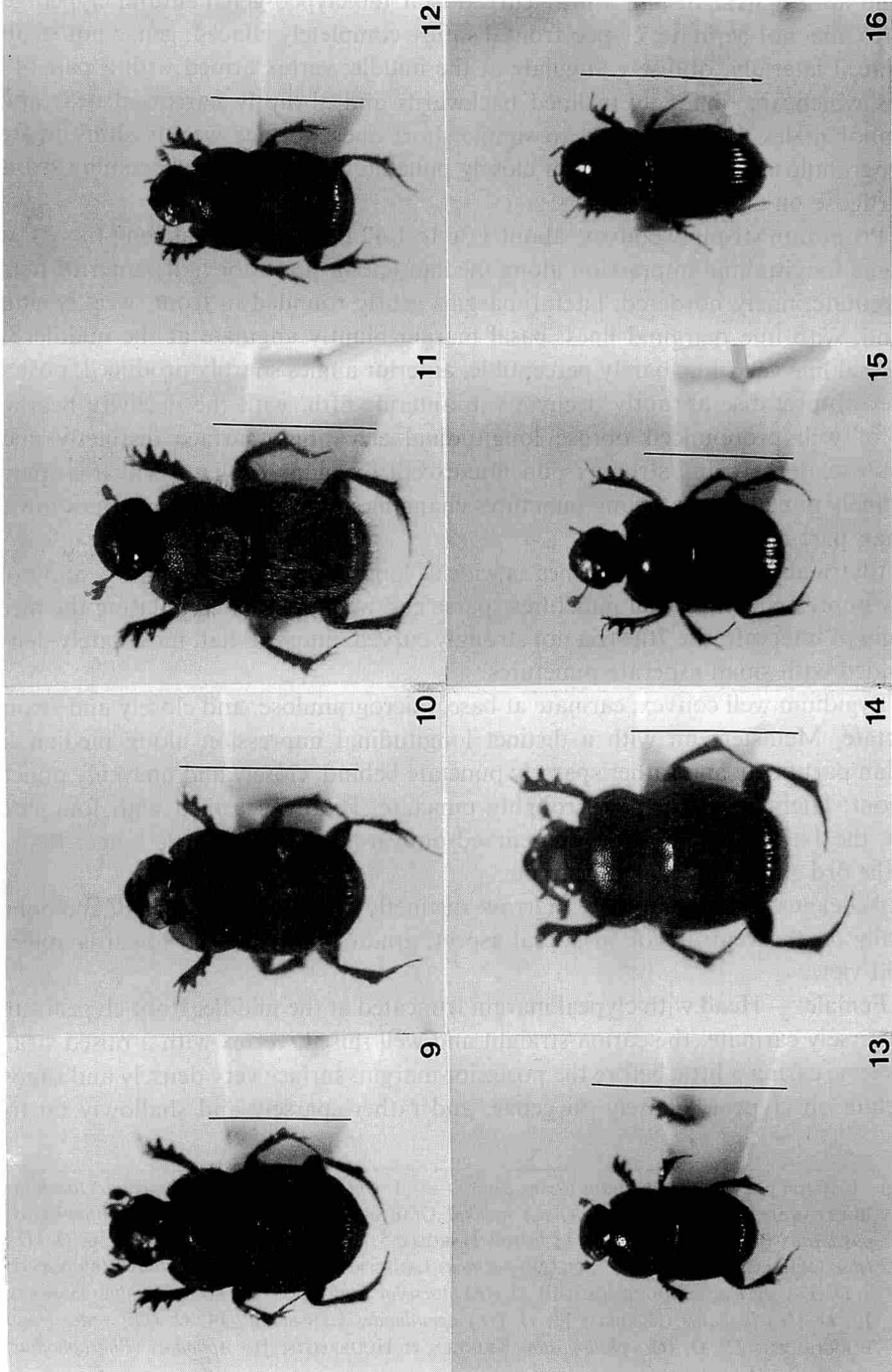
Length: 7.0–7.9 mm (n = 5); width: 2.7–3.0 mm (n = 5).

Body moderate-sized, elongate oval; dorsal side mat, somewhat densely clothed with subrecumbent short yellowish hairs, except for almost glabrous head; ventral side shiny, partly, densely clothed with yellowish hairs. Colour usually brownish black, often with pronotum deep blood-red; head, pronotum and ventral surface tinged with very weak metallic lustre; femora and anterior angles of prosternum partly dark yellowish brown; mouth parts, palpi, antennal foot-stalks and protarsi reddish brown; antennal clubs yellowish brown.

Male: — Head almost flat, about 1.26 to 1.28 times as wide as long (n = 3); clypeus strongly produced forwards, with a reflexed rounded lobe at the middle, the remaining

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margin almost straight and a little curved near the clypeo-genal suture; clypeo-genal sutures fine, not carinate; clypeo-frontal suture completely effaced; genae not strongly produced laterally, obtusely angulate at the middle; vertex armed with a pair of flat horns which are obliquely inclined backwards and abruptly narrowed near apices; in minor males, horns reduced to simple short ones; surface weakly shiny in front, microgranulose behind, and rather closely punctate, the punctures becoming stronger and rugose on clypeus.

Pronotum strongly convex, about 1.36 to 1.42 times as wide as long ($n=3$), with a vague longitudinal impression along median line in posterior half; anterior margin emarginate, finely bordered; lateral margins gently rounded in front, weakly sinuate behind, with fine marginal lines; basal margin bluntly angulate at the middle, with marginal line very fine, barely perceptible; anterior angles sharply produced; posterior angles obtuse; disc abruptly declivous in anterior fifth, with the declivity bearing a pair of well pronounced obtuse longitudinal elevations; surface distinctly microgranulose, densely and strongly punctate except for shiny declivity which is sparsely and finely punctate, the strong punctures changing into shallow ocellate ones towards median part of the base.

Elytra about 1.33 to 1.41 times as wide as long ($n=3$); striae shallowly and rather finely impressed, with stria punctures sparse and weak, faintly crenulating the medial margin of intervals; the 7th stria not strongly curved; intervals flat, moderately densely provided with small asperate punctures.

Pygidium well convex, carinate at base, microgranulose, and closely and strongly punctate. Metasternum with a distinct longitudinal impression along median line; median part finely and rather sparsely punctate behind, closely and unevenly punctate in front; lateral parts densely, roughly punctate. Protibiae armed with four lateral teeth; the 1st tooth sharp and well curved outwards, the 2nd a little longer than the 1st, the 3rd small, and the 4th minute.

Aedeagus robust. Parameres narrow, distinctly excavated in basal half and pointed apically on the ventral side in lateral aspect, gradually attenuated towards apices in dorsal view.

Female:—Head with clypeal margin truncated at the middle; front clypeal suture transversely carinate, the carina straight and well raised; vertex with a raised straight transverse carina a little before the posterior margin; surface very densely and rugosely punctate on clypeus, densely on genae, and rather sparsely and shallowly on frons

Figs. 1–16 (on pp. 44–45). Habitus (scale: 5 mm). — 1, *Onthophagus (Gibbonthophagus) taeniatus* BOUCOMONT; 2, *O. (Paronthophagus) hidakai* OCHI et KON, sp. nov.; 3, *O. (Onthophagus) pastillatus* BOUCOMONT; 4, *O. (O.) incisus* HAROLD; 5, *O. (O.) borneensis* HAROLD; 6, *O. (O.) ishiii* OCHI et KON, sp. nov.; 7, *O. (O.) pacificus* LANSBERGE; 8, *O. (O.) angustatus* BOUCOMONT; 9, *O. (O.) cervicapra* BOUCOMONT; 10, *O. (O.) obscurior* BOUCOMONT; 11, *O. (O.) vulpes* HAROLD; 12, *O. (G.) limbatus* (HERBST); 13, *O. (O.) aphodioides* LANSBERGE; 14, *O. (O.) waterstradti* BOUCOMONT; 15, *O. (O.) philipposum* KRICKEN et HUIJBREGTS; 16, *Aphodius (Pharaphodius) marginellus* (FABRICIUS).

Onthophagus (Onthophagus) limbatus: BALTHASAR, 1963, Monogr. Scarab., 2, p. 420.

Onthophagus (Gibbonthophagus) limbatus: KABAKOV & JANUSHEV, 1983, Fn. Ekol. Vietnama, Moscow, p. 159.

Copris nuchidens FABRICIUS, 1798, Ent. Syst. Suppl., p. 31.

Copris analis GERMAR, 1813, Mag. Ent. 1, p. 115.

Specimens examined. 1 ex., Keningau, 17–VIII–1987; 1 ex., Sungai Manila, 5–VIII–1987; 1 ex., ditto, 9–VIII–1987; 1 ex., Brumas, 25–VII–1987; 1 ex., ditto, 27–VII–1987.

Distribution. China, Vietnam, Laos, Sumatra, Java, Borneo.

***Onthophagus (Paronthophagus) hidakai* sp. nov.**

(Figs. 2, 20–25)

Length: 4.3–5.5 mm ($n = 14$); width: 2.3–3.1 mm ($n = 14$).

Body small-sized, oblong-oval, convex and distinctly constricted between pronotum and elytra; dorsal side shiny and sparsely clothed with subrecumbent yellowish hairs except for glabrous head and disc of pronotum, the hairs reflexed and longer near posterior angles of pronotum; ventral side also shiny, partly, rather sparsely clothed with yellowish hairs. Colour dark reddish brown to blackish brown; head and pronotum tinged with very weak metallic lustre; mouth parts, palpi and antennal footstalks reddish brown; antennal clubs yellowish brown.

Male: — Head 1.26 to 1.45 times as wide as long ($n = 4$); clypeus strongly produced forwards, subtrapezoidal in outline, with sides almost straight and reflexed, apex also reflexed, truncated or feebly rounded; fronto-clypeal suture barely recognized and not distinctly carinate; genal sutures weakly carinate before each junction of fronto-clypeal suture and genal one, and posterior part of genal suture not distinctly carinate; genae weakly produced laterally with margin broadly rounded; surface densely and rather unevenly punctate, the punctures becoming smaller on vertex and somewhat rugose on clypeus.

Pronotum strongly convex, about 1.30 to 1.39 times as wide as long ($n = 4$); anterior margin emarginate and bordered; lateral margins almost straight in front, slightly sinuate behind; basal margin obtusely angulate at the middle, without marginal line; anterior angles sharply produced forwards; posterior angles obtuse; surface moderately densely covered with strong punctures, the interspaces between punctures almost smooth and shiny.

Elytra about 1.44 to 1.55 times as wide as long ($n = 4$); striae strongly impressed, with strial punctures strong, distinctly crenulating intervals; the 7th striae almost parallel with the 6th; intervals feebly convex, shiny and weakly rugose on each side, with sutural interval bearing single, regularly arranged and longitudinal row of indefinite small punctures, the 2nd to 7th intervals bearing double similar longitudinal rows of small punctures, the 8th bearing three or four irregularly arranged and longitudinal rows of small punctures.

Pygidium strongly convex, carinate at base, densely punctate basally, sparsely so apically. Prothorax with anterior angles, not distinctly excavated beneath. Metasternum with a slight longitudinal impression along midline in posterior half, median part weakly elevated in a rhombic-shape posteriorly; median part sparsely and finely punctate behind, densely and strongly punctate in front; lateral parts densely, coarsely and ocellately punctate. Protibiae slender, well arcuate outwards, simple on inner margin, and roundly and weakly swollen near apical inner part, with four lateral teeth; the 1st tooth very sharp, the 2nd the largest, the 3rd a little smaller than the 3rd, and the 4th very small; the rest of outer margin denticulate. Mesotibiae slender and slightly incurved; mesotarsi with basal segment weakly arcuate, about 0.4 to 0.5 mm in length, and almost equal or a little shorter than the rest four segments combined; inner distal end of basal segment weakly produced into a sharp tooth. Metatibiae almost straight; metatarsi with basal segment strongly arcuate, about 0.7 to 0.8 mm ($n=4$) in length, 1.3 to 1.8 times as long as the rest four segments combined ($n=4$); inner distal end of basal segment slightly produced into a sharp tooth.

Aedeagus relatively large. Parameres subpentagonal from lateral aspect, strongly constricted before the middle, then gradually narrowing towards apices from dorsal aspect.

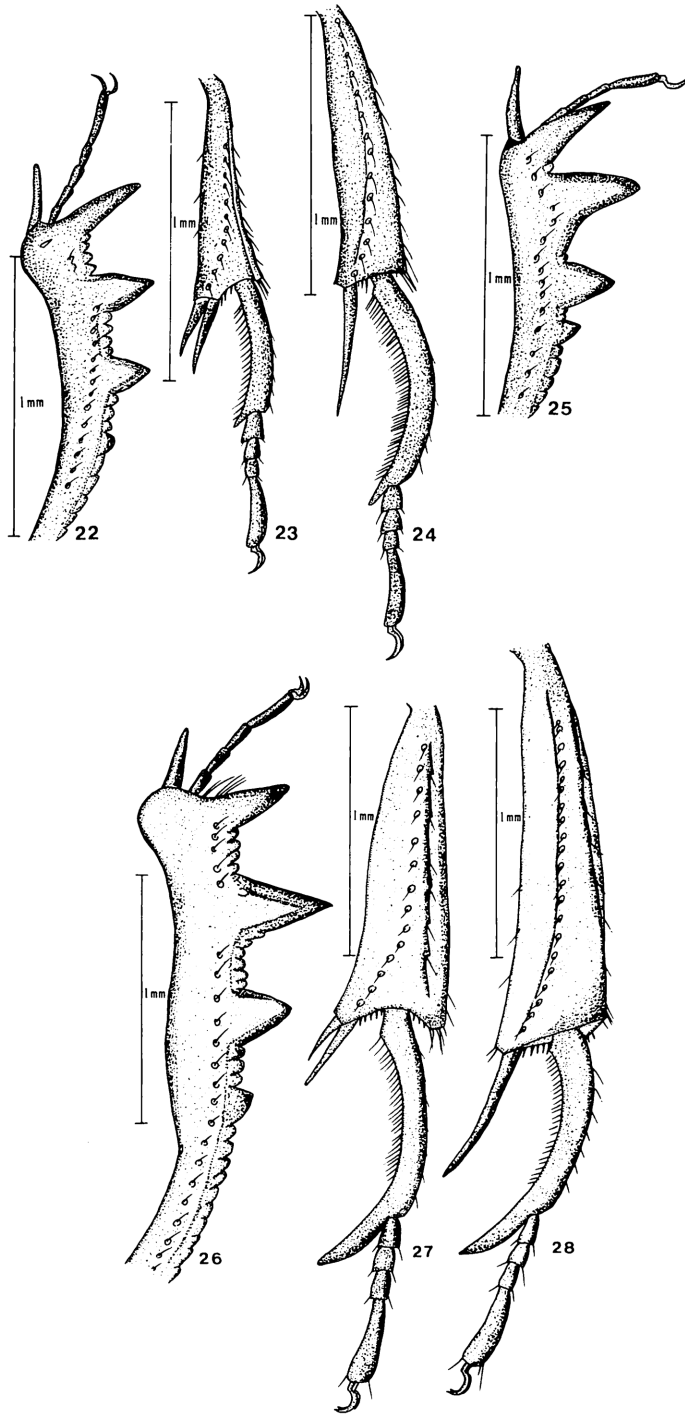
Female:—Head with clypeal margin sometimes weakly sinuate on each side; fronto-clypeal suture and genal ones more strongly carinate; clypeus more strongly rugose. Protibiae normal, with lateral four teeth stronger; the 1st tooth sharp and long, the 2nd almost the same as the 1st, but broader, the 3rd shorter than the 2nd, and the 4th minute.

Type series. Holotype: male, Brumas, Sabah, Borneo, 27-VII-1987, M. KON leg. Paratypes: 3 ♂♂, 7 ♀♀, same data as for holotype; 2 ♀♀, Sepilok, Sabah, Borneo, 4-VIII-1987, M. KON leg; 1 ♀, Sepilok, Sabah, Borneo, 5-VIII-1987, M. KON leg. The holotype is deposited in the collection of the Osaka Museum of Natural History, Osaka, Japan. One paratype (♀) is deposited in the collection of Museo Civico di Storia Naturale di Genova 'Giacomo Doria', one (♀) in the collection of the Muséum national d'Histoire naturelle, Paris, and eleven (3 ♂♂ and 8 ♀♀) in the private collection of OCHI.

Etymology. This species is named in honour of Prof. emer. T. HIDAOKA, Kyoto University, who gave us the opportunity of performing the researches on the Bornean dung beetles.

Notes. The present new species is closely related to *Onthophagus falculatus* BOUCOMONT, 1914, from Java, but differs from it in the following characteristics: 1) body distinctly smaller; 2) clypeus not very broad, while in *O. falculatus*, it is fairly transverse; 3) meso- and metatarsi with basal segments weakly produced into a slight

Figs. 22–28. — 22–25. *Onthophagus (Paranthophagus) hidakai* OCHI et KON, sp. nov.; protibia, dorsal view, ♂ (22); mesotibia, dorsal view, ♂ (23); metatibia, dorsal view, ♂ (24); protibia, dorsal view, ♀ (25). — 26–28. *Onthophagus falculatus* BOUCOMONT; protibia, dorsal view, ♂ (26); mesotibia, dorsal view, ♂ (27); metatibia, dorsal view, ♂ (28).



tooth at the inner distal end; 4) in male, protibia with inner margin simple and well arcuate, while in *O. falculatus*, especially in major male, it is not simple and broadened near the middle.

***Onthophagus (Onthophagus) pastillatus* BOUCOMONT**

(Fig. 3)

Onthophagus pastillatus BOUCOMONT, 1920, Anns. Soc. ent. Fr., **88** [for 1919], p. 318; 1921, Bull. Soc. ent. Fr., 1921, p. 92; 1924, Philip. J. Sci., **24**, p. 679. — HANSKI, 1983, Acta zool. fenn., **167**, p. 45.
Onthophagus (Onthophagus) pastillatus: BALTHASAR, 1963, Monogr. Scarab., **2**, p. 469.

Specimens examined. 1 ex., Sepilok, 6–VIII–1985; 1 ex., ditto, 8–VIII–1987.

Distribution. Borneo, Philippines.

***Onthophagus (Onthophagus) incisus* HAROLD**

(Fig. 4)

Onthophagus incisus HAROLD, 1877, Anni. Mus. civ. Stor. nat. Genova, **10**, p. 52. — LANSBERGE, 1883, Not. Leyden Mus., **5**, p. 59. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 301. — HANSKI, 1983, Acta zool. fenn., **167**, p. 45.

Onthophagus (Onthophagus) incisus: BALTHASAR, 1963, Monogr. Scarab., **2**, p. 390.

Onthophagus buffalo ARROW, 1907, Ann. Mag. nat. Hist., (7), **19**, p. 437. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 301.

Specimens examined. 1 ex., Sepilok, 31–VII–1987; 2 exs., ditto, 4–VIII–1987; 2 exs., ditto, 5–VIII–1987; 3 exs., ditto, 6–VIII–1987; 4 exs., ditto, 7–VIII–1987.

Distribution. Sumatra, Mentawai Is., Borneo.

***Onthophagus (Onthophagus) borneensis* HAROLD**

(Fig. 5)

Onthophagus borneensis HAROLD, 1877, Anni. Mus. civ. Stor. nat. Genova, **10**, p. 57. — LANSBERGE, 1883, Not. Leyden Mus., **5**, p. 61. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 273. — HANSKI, 1983, Acta zool. fenn., **167**, p. 45.

Onthophagus (Onthophagus) borneensis: BALTHASAR, 1963, Monogr. Scarab., **2**, p. 297.

Onthophagus borneensis ab. *rutilicollis* BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 274. — BALTHASAR, 1963, Monogr. Scarab., **2**, p. 297.

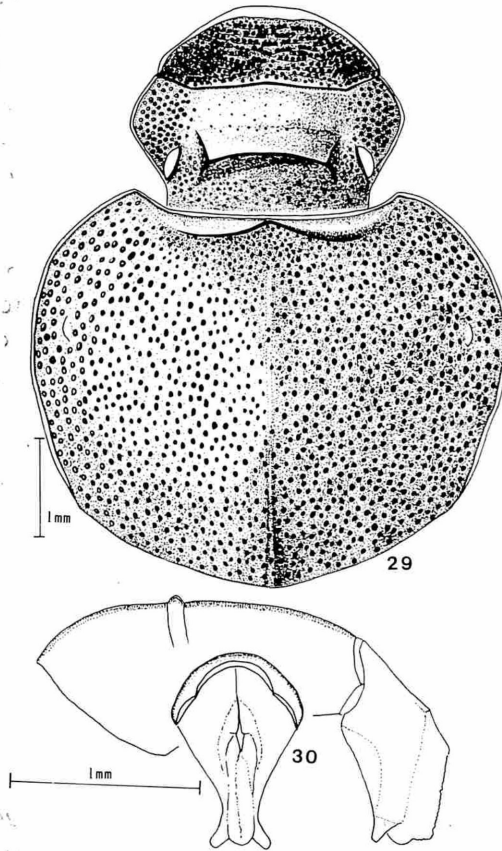
Specimens examined. 1 ex., Sepilok, 31–VII–1987; 3 exs., ditto, 2–VIII–1987; 12 exs., ditto, 4–VIII–1987; 2 exs., ditto, 5–VIII–1987; 3 exs., ditto, 6–VIII–1987; 2 exs., ditto, 7–VIII–1987; 3 exs., ditto, 8–VIII–1987.

Distribution. Sumatra, Nias Is., Java, Borneo.

***Onthophagus (Onthophagus) ishiii* sp. nov.**

(Figs. 6, 29, 30)

Length: 9.3 mm (n = 1); width: 5.2 mm (n = 1).



Figs. 29–30. *Onthophagus (Onthophagus) ishii* OCHI et KON, sp. nov., ♂; head and pronotum, dorsal view (29); aedeagus, lateral and dorsal views (30).

Male:—Body moderate-sized, oblong-oval, strongly convex and constricted at the waist; dorsal side less shiny, almost glabrous; ventral side partly, densely clothed with yellowish hairs. Colour black, with pronotum having not very strong cupreous lustre; mouth parts, palpi and antennae reddish brown.

Head about 1.45 times as wide as long ($n=1$); clypeus widely truncated in the middle, with sides almost straight and a little curved near clypeo-genal sutures; clypeal suture with genal and also frontal section strongly carinate; genae well produced laterally, with genal margin bluntly angulate at the middle; vertex with a strongly elevated transverse carina which is well arcuate forwards, sharp at the summit and about 1 mm in height; surface densely and strongly punctate, the punctures becoming smaller and sparser on frons and weakly rugose on clypeus.

Pronotum strongly convex, about 1.38 times as wide as long ($n=1$), with a weak longitudinal impression along midline in posterior two-thirds; anterior margin

emarginate, finely bordered; lateral margins widely rounded and sinuate near posterior angles, with fine marginal lines; basal margin obtusely angulate at the middle, with marginal border effaced throughout; anterior angles well produced forwards, rounded apically; posterior angles obtuse; disc briefly declivous just behind anterior margin, with the upper edge of the declivity forming a slight broad triangular projection; surface densely covered with a little coarse and shallow punctures, the punctures becoming deeper and denser towards sides, the interspace between punctures feebly microgranulose.

Elytra about 1.55 times as wide as long ($n = 1$); striae shallowly and rather widely impressed and finely ridged on each side, with stria punctures dense and distinct, slightly crenulating the intervals; intervals weakly convex, strongly microgranulose except for shiny humeral callus, closely and very indefinitely punctate; the 7th striae almost parallel with the 6th.

Pygidium well convex, microgranulose, densely and strongly punctate. Metasternum with a median longitudinal impression along median line; median part densely and finely punctate behind, the punctures very fine and sparse in the middle, coarse on apical side; lateral parts irregularly and strongly punctate. Protibiae stout, armed with four lateral teeth; the 1st tooth sharp, the 2nd the longest of the four teeth, the 3rd a little shorter than the 2nd, and the 4th short but very wide, about twice as wide as the 3rd.

Aedeagus robust. Parameres narrow basally and pointed apically from lateral aspect, gradually and strongly attenuate in basal four-fifths, and divergent apically as strong projections from dorsal aspect.

Female unknown.

Type series. Holotype: male, Brumas, Sabah, Borneo, 24-VII-1987, M. KON leg. The holotype is deposited in the collection of the Osaka Museum of Natural History, Osaka, Japan.

Etymology. The specific name is dedicated to Dr. M. ISHII, Osaka Prefectural University, who gave the junior author field assistance and warm companionship during the survey in Sabah, Borneo.

Notes. The present new species is closely related to *Onthophagus usurpator* BALTHASAR, 1960, from India, but can be distinguished from it by the following characteristics; 1) head with a strongly elevated transverse carina on vertex whose summit is sharply edged and simple, while in *O. usurpator*, it is distinctly pointed on each side of the summit; 2) pronotum with a broad triangular projection just behind anterior margin, while in *O. usurpator*, it is narrowly but distinctly truncated at apex.

Onthophagus (Onthophagus) pacificus LANSBERGE

(Fig. 7)

Onthophagus pacificus LANSBERGE, 1885, Not. Leyden Mus., 7, p. 17. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., 83, p. 280. — BOUCOMONT & GILLET, 1921, Fn. ent. Indoc. fr. Scarab., p. 53. — ARROW,

- 1931, Fn. Brit. Ind., Coleopt. Lamellic., **3**, p. 172. — HANSKI, 1983, Acta zool. fenn., **167**, p. 45.
Onthophagus (Onthophagus) pacificus: PAULIAN, 1945, Fn. Emp. fr., **3**, p. 112. — BALTHASAR, 1963, Monogr. Scarab., **2**, p. 465.
Onthophagus pacificus var. *peguanus* BOUCOMONT, 1914, Annli. Mus. civ. Stor. nat. Genova, **46**, p. 215. — BOUCOMONT & GILLET, 1921, Fn. ent. Indoc. fr. Scarab., p. 53. — BALTHASAR, 1935, Fol. zool. hydrob., **8**, p. 339. — PAULIAN, 1945, Fn. Emp. fr., **3**, p. 112. — BALTHASAR, 1963, Monogr. Scarab., **2**, p. 465.
Onthophagus (incertae sedis) pacificus: KABAKOV & JANUSHEV, 1983, Fn. Ekol. Vietnama, Nauka, Moscow, p. 162.

Specimens examined. 1 ex., Sepilok, 30–VII–1985; 2 exs., ditto, 30–VII–1987; 20 exs., ditto, 1–VIII–1987; 3 exs., ditto, 2–VIII–1987; 45 exs., ditto, 4–VIII–1987; 2 exs., ditto, 5–VIII–1987; 10 exs., ditto, 6–VIII–1987; 50 exs., ditto, 7–VIII–1987; 20 exs., ditto, 8–VIII–1987.

Distribution. India, Myanmar, Thailand, Laos, Vietnam, Malay Peninsula, Sumatra, Java, Borneo.

Onthophagus (Onthophagus) angustatus BOUCOMONT

(Fig. 8)

- Onthophagus angustatus* BOUCOMONT, 1914, Annls. Soc. ent. Fr., **83**, p. 301.
Onthophagus (Onthophagus) angustatus: BALTHASAR, 1963, Monogr. Scarab., **2**, p. 275.

Specimens examined. 1 ex., Sepilok, 2–VIII–1985; 1 ex., ditto, 30–VII–1987; 1 ex., ditto, 1–VIII–1987; 2 exs., ditto, 4–VIII–1987.

Distribution. Sumatra, Borneo (new record).

Onthophagus (Onthophagus) cervicapra BOUCOMONT

(Fig. 9)

- Onthophagus cervicapra* BOUCOMONT, 1914, Annls. Soc. ent. Fr., **83**, p. 294.
Onthophagus (Onthophagus) cervicapra: BALTHASAR, 1963, Monogr. Scarab., **2**, p. 306.
Onthophagus verecundus BOUCOMONT, 1921, Bull. Soc. ent. Fr., **1921**, p. 89; 1924, *ibid.*, **1924**, p. 114.

Specimens examined. 13 exs., Sepilok, 30–VII–1985; 15 exs., ditto, 30–VII–1987; 6 exs., ditto, 31–VII–1987; 32 exs., ditto, 1–VIII–1987; 3 exs., ditto, 2–VIII–1987; 58 exs., ditto, 4–VIII–1987; 13 exs., ditto, 5–VIII–1987; 1 ex., ditto, 6–VIII–1987; 6 exs., ditto, 7–VIII–1987; 1 ex., ditto, 8–VIII–1987; 4 exs., Keningau, 17–VIII–1987; 2 exs., ditto, 18–VIII–1987; 1 ex., Brumas, 23–VII–1987; 1 ex., ditto, 25–VII–1987; 2 exs., ditto, 26–VII–1987; 13 exs., ditto, 27–VII–1987.

Distribution. Sumatra, Java, Borneo, Philippines.

Onthophagus (Onthophagus) obscurior BOUCOMONT

(Fig. 10)

- Onthophagus babirusa* var. *obscurior* BOUCOMONT, 1914, Annls. Soc. ent. Fr., **83**, p. 294.

Onthophagus (Onthophagus) obscurior: BALTHASAR, 1963, Monogr. Scarab., 2, p. 457.

Onthophagus obscurior: HANSKI, 1983, Acta zool. fenn., 167, p. 45.

Specimens examined. 16 exs., Sepilok, 30–VII–1985; 40 exs., ditto, 30–VII–1987; 24 exs., ditto, 31–VII–1987; 209 exs., ditto, 1–VIII–1987; 58 exs., ditto, 2–VIII–1987; 214 exs., ditto, 4–VIII–1987; 45 exs., ditto, 5–VIII–1987; 31 exs., ditto, 6–VIII–1987; 62 exs., ditto, 7–VIII–1987; 49 exs., ditto, 8–VIII–1987; 148 exs., Keningau, 17–VIII–1987; 31 exs., ditto, 18–VIII–1987; 25 exs., Brumas, 23–VII–1987; 2 exs., ditto, 24–VII–1987; 7 exs., ditto, 25–VII–1987; 4 exs., ditto, 26–VII–1987; 13 exs., ditto, 27–VII–1987.

Distribution. Borneo.

Onthophagus (Onthophagus) vulpes HAROLD

(Fig. 11)

Onthophagus vulpes HAROLD, 1877, Anni. Mus. civ. Stor. nat. Genova, 10, p. 54. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., 83, p. 300. — HANSKI, 1983, Acta zool. fenn., 167, p. 45.

Onthophagus (Onthophagus) vulpes: BALTHASAR, 1963, Monogr. Scarab., 2, p. 587.

Specimens examined. 1 ex., Sepilok, 7–VIII–1987.

Distribution. Malay Peninsula, Sumatra, Java, Borneo, Sulawesi.

Onthophagus (Onthophagus) aphodioides LANSBERGE

(Fig. 13)

Onthophagus aphodioides LANSBERGE, 1883, Not. Leyden Mus., 5, p. 63. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., 83, p. 278. — HANSKI, 1983, Acta zool. fenn., 167, p. 45.

Onthophagus (Onthophagus) aphodioides: BALTHASAR, 1963, Monogr. Scarab., 2, p. 276.

Specimens examined. 4 exs., Sepilok, 31–VII–1987; 2 exs., ditto, 4–VIII–1987; 2 exs., ditto, 5–VIII–1987; 1 ex., ditto, 6–VIII–1987; 6 exs., ditto, 7–VIII–1987.

Distribution. Java, Borneo, Sulawesi.

Onthophagus (Onthophagus) waterstradti BOUCOMONT

(Fig. 14)

Onthophagus waterstradti BOUCOMONT, 1914, Anns. Soc. ent. Fr., 83, p. 291. — HANSKI, 1983, Acta zool. fenn., 167, p. 45.

Onthophagus (Onthophagus) waterstradti: BALTHASAR, 1963, Monogr. Scarab., 2, p. 589.

Specimens examined. 1 ex., Sepilok, 30–VII–1987; 22 exs., ditto, 1–VIII–1987; 34 exs., ditto, 3–VIII–1987; 26 exs., ditto, 4–VIII–1987; 26 exs., ditto, 5–VIII–1987; 4 exs., ditto, 6–VIII–1987; 21 exs., ditto, 7–VIII–1987; 14 exs., ditto, 8–VIII–1987; 1 ex., ditto, 16–VIII–1987; 6 exs., Keningau, 17–VIII–1987; 1 ex., Brumas, 25–VII–1987; 1 ex., ditto, 27–VII–1987.

Distribution. Borneo.

***Onthophagus (Onthophagus) philipposum* KRIKKEN et HUIJBREGTS**

(Fig. 15)

Onthophagus philipposum KRIKKEN et HUIJBREGTS, 1987, Zool. Med., Leyden, **61**, p. 132.*Specimens examined.* 6 exs., Sepilok, 2–VIII–1987; 1 ex., ditto, 4–VIII–1987; 1 ex., ditto, 7–VIII–1987; 1 ex., Keningau, 17–VIII–1987; 1 ex., ditto, 18–VIII–1987.*Distribution.* Borneo.

Family Aphodiidae

Tribe Aphodiini

***Aphodius (Pharaphodius) marginellus* (FABRICIUS)**

(Fig. 16)

Scarabaeus marginellus FABRICIUS, 1781, Spec. Ins., **1**, p. 21.*Aphodius marginellus*: HAROLD, 1862, Berl. ent. Z., **6**, p. 141. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 340.*Aphodius (Pharaphodius) marginellus*: SCHMIDT, A., 1913, Arch. Naturg., **79**, p. 125; 1922, Das Tierreich, **45**, p. 63. — BALTHASAR, 1941, Atti Soc. ital. Sci. nat., **80**, p. 142. — PAULIAN, 1941, Fn. Fr., **38**, p. 153. — BALTHASAR, 1964, Monogr. Scarab., **3**, p. 66. — MASUMOTO, 1977, Elytra, Tokyo, **5**, p. 3. — STEBNICKA, 1986, Stuttg. Beitr. Naturk., (A), 397, p. 11. — DELLACASA, M., 1987, Mem. Soc. ent. ital., **66**, p. 392. — ISHIDA & FUJIOKA, 1988, List Lamel. Japan, p. 20. — MASUMOTO, DELLACASA & KIUCHI, 1990, Ent. Rev. Japan, **45**, p. 153.*Aphodius attritus* BALTHASAR, 1933, Ent. NachrBl., **7**, p. 55. — STEBNICKA, 1986, Stuttg. Beitr. Naturk., (A), (397), p. 11.*Specimens examined.* 205 exs., Sungai Manila, 5–VIII–1987; 17 exs., ditto, 7–VIII–1987; 620 exs., ditto, 9–VIII–1987; 46 exs., Keningau, 18–VIII–1987.*Distribution.* India, Indochina, China, Taiwan, Japan, Malay Peninsula, Sumatra, Borneo, Philippines, New Guinea.***Aphodius (Trichaphodius) reichei* HAROLD***Aphodius reichei* HAROLD, 1859, Berl. ent. Z., **3**, p. 210. — BOUCOMONT, 1914, Anns. Soc. ent. Fr., **83**, p. 340.*Aphodius (Trichaphodius) reichei*: SCHMIDT, A., 1913, Arch. Naturg., **79**, p. 136; 1922, Das Tierreich, **45**, p. 132. — BALTHASAR, 1943, Mitt. Münch. ent. Ges., **33**, p. 117. — PAULIAN, 1945, Fn. Emp., fr., **3**, p. 102. — OCHI, 1986, Ent. Rev. Japan, **41**, p. 57. — DELLACASA, M., 1987, Mem. Soc. ent. ital., **66**, p. 399.*Specimens examined.* 1 ex., Sungai Manila, 5–VIII–1987.*Distribution.* India, Indochina, China, Taiwan, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, New Guinea, Australia.**Type Specimens Examined for Comparison**

The acronyms for the collection of the Museo Civico di Storia Naturale di

Genova 'Giacomo Doria' and that of the Muséum national d'Histoire naturelle, Paris, are MSNG and MNHN, respectively: *Gymnopleurus maurus* SHARP (MNHN); *G. planus* SHARP (MNHN); *G. sparsus* SHARP (MNHN); *G. stipes* SHARP (MNHN); *Onthophagus andonarensis* BOUCOMONT (MNHN); *O. banguyensis* BOUCOMONT (MNHN); *O. cervicapra* BOUCOMONT (MNHN); *O. dayacus* BOUCOMONT (MNHN); *O. eschsoltzi* BOUCOMONT (MNHN); *O. falcuratus* BOUCOMONT (MNHN); *O. foedus* BOUCOMONT (MNHN); *O. kangeanus* PAULIAN (MNHN); *O. laevis asiaticus* BOUCOMONT (MNHN); *O. mentaveiensis* BOUCOMONT (MNHN); *O. neervoorti* BOUCOMONT (MNHN); *O. pacificus peguanus* BOUCOMONT (MNHN); *O. pastillatus* BOUCOMONT (MNHN); *O. pavidus* HAROLD (MNHN); *O. sarawacus* HAROLD (MSNG); *O. semicupreus* HAROLD (MSNG); *O. subcornutus* BOUCOMONT (MNHN); *O. taeniatus* BOUCOMONT (MNHN); *O. tagal* BOUCOMONT (MNHN); *O. waterstradti* BOUCOMONT (MNHN).

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Correction for Part I

p. 295, l. 5, "Borneo (new record)" → "Borneo", p. 293, l. 11, *yamacuhii* → *yamauchii*

要 約

越智輝雄・近 雅博：ボルネオ，サバ州で採集された糞虫。——ボルネオ，サバ州への，京都大学の学術調査（1985，1987）において採集された糞虫34種を記録した。これらのうちエンマコガネ属の1種，*Onthophagus (Onthophagus) angustatus* BOUCOMONTはボルネオから初めて記録された。それに加えてエンマコガネ属の4新種を記載し，それぞれ*O. (Phanaeomorphus) johkii* OCHI et KON, sp. nov., *O. (Gibbonthophagus) fujiii* OCHI et KON, sp. nov., *O. (Paronthophagus) hidakai* OCHI et KONおよび*O. (Onthophagus) ishiii* OCHI et KON, sp. nov.と名づけた。さらに，これまでタイワンダイコク *Catharsius (Catharsius) molossus* (LINNÉ)の低位同物異名とされていた*C. (C.) dayacus* LANSBERGEを有効な種である

と見なし、今回の調査で採集された個体に基づいて再記載した。

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