

## Study of Asian Strongyliini (Coleoptera, Tenebrionidae)

### XI. Ten New Small-sized Species of the Genus *Strongylium* from Southeast Asia

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**Abstract** This is the eleventh part of the study of the Asian Strongyliini and deals with 10 new species of the genus *Strongylium* from Southeast Asia, which are described under the following names: *Strongylium modiglianii* sp. nov., *S. nagaii* sp. nov., *S. notsui* sp. nov., *S. walshae* sp. nov., *S. muloti* sp. nov., *S. sirambense* sp. nov., *S. moerianum* sp. nov., *S. tsuyukiellum* sp. nov., *S. nagaiellum* sp. nov., and *S. dolokense* sp. nov.

This paper is the eleventh part of my study of the Asian Strongyliini and deals with ten new species of the genus *Strongylium* from various areas of Southeast Asia. All the species to be described is small in body size (less than 10 mm), so that only a few members have been historically recognized. PIC described less than five species. GEBIEN prepared to describe more than ten species, but he did not finish it because of the World War II and the confusion followed it. I am going to describe ten new species, including GEBIEN's invalid ones.

The specimens examined are submitted to me for taxonomic study from the collections of the Muséum National d'Histoire Naturelle, Paris, and the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw. Other materials, besides the specimens in my collection, are also submitted to me personally from Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart, Ing. Stanislav BEČVÁŘ, Institute of Entomology, Czech Academy of Sciences, Dr. Masataka SATŌ, Nagoya Women's University, Messrs. Shigeo TSUYUKI, Zushi City, and Minoru TAO, Yokohama City.

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Depositories of the holotypes to be designated are given in each description. The abbreviations used herein are as follows: NSMT – National Science Museum (Nat. Hist.), Tokyo; MNHNP – Muséum National d'Histoire Naturelle, Paris; NHMB – Natural History Museum, Basel; SMNS – Staatliches Museum für Naturkunde, Stuttgart.

*Strongylium modiglianii* sp. nov.

(Figs. 1, 11–12)

Brown, head and pronotum blackish brown with feeble dark greenish lustre, scutellum and elytra partly with feeble golden lustre, head and pronotum weakly, sericeously shining, scutellum, elytra and ventral surface slightly alutaceously shining, legs moderately shining; almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in medio-basal halves of elytra.

Head transversely elliptical, very feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus somewhat transversely hexagonal, flattened in basal part, gently inclined forwards, truncate at apex, fronto-clypeal border gently curved and indistinctly sulcate; genae oblique, raised outwards, with rounded outer margins; frons rather wide, gently inclined anteriorly, diatone 1.2 times the width of transverse diameter of an eye, with an impunctate area at the middle of posterior part. Eyes medium-sized, subreniform, convex laterad, triangularly, shallowly inlaid into head. Antennae reaching humeri of elytra, ratio of the length of each segment from base to apex: 0.32, 0.2, 0.59, 0.39, 0.32, 0.27, 0.23, 0.26, 0.23, 0.25, 0.29.

Pronotum widely hexagonal, 1.36 times as wide as long; apex sublinear, finely rimmed on each side, vaguely margined in middle; base gently sinuous on each side, bordered and weakly ridged in middle; sides steeply declined to lateral margins, which are produced and entirely finely ridged, each with a tooth slightly behind the middle; front angles rounded, hind angles obtusely angulate; disc gently convex, weakly impressed close to base on each side, weakly depressed in medio-basal parts, very feebly covered with isodiametric microsculpture, rather closely punctate. Scutellum triangular with rounded sides, feebly elevated, very weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures.

Elytra elongated subovate, 1.7 times as long as wide, 3.65 times the length and 1.30 times the width of pronotum; dorsum longitudinally convex, though flattened in medio-basal part, weakly depressed in area along scutellar stria; disc punctate grooved, 5th groove deepened and touching base, the punctures small, rather closely set, becoming smaller posteriorly; intervals gently convex, flattened posteriorly, very weakly covered with isodiametric microsculpture, sparsely scattered with shallow microscopic punctures, very feebly, rather transversely wrinkled; humeri gently swollen;

apices roundly produced.

Male anal sternite weakly, subelliptically depressed in apical part. Legs rather slender, no special modification; ratios of the lengths of pro-, meso- and metatarsomeres: 0.27, 0.24, 0.22, 0.23, 1.2; 1.2, 0.56, 0.52, 0.29, 1.27; 2.39, 0.62, 0.32, 1.22.

Male genitalia subfusiform, 1.65 mm in length and 0.3 mm in width, feebly curved in lateral view with basal piece subovate and distinctly wider than lateral lobes; fused lateral lobes elongated triangular, 0.7 mm in length with rounded, somewhat spatulate apices.

Body length: 7.7 mm.

Holotype: ♂, "SUMATRA/SIBOGA/X. 90 e III. 91/E. MODIGLIANI//MUSÉUM PARIS/1952/COLL. R. OBERTUR" (MNHNP). Paratypes: 1 ex., same data as for the holotype; 1 ex., "SUMATRA, MEDAN/Env. De Dolok-Baros/2<sup>e</sup> semestre 1905".

*Notes.* This new species somewhat resembles *Strongylium diversicolor* PIC, 1940, from Tonkin, but can be distinguished from the latter by the larger and wider body, with different coloration (wholly dark greenish in *S. diversicolor*).

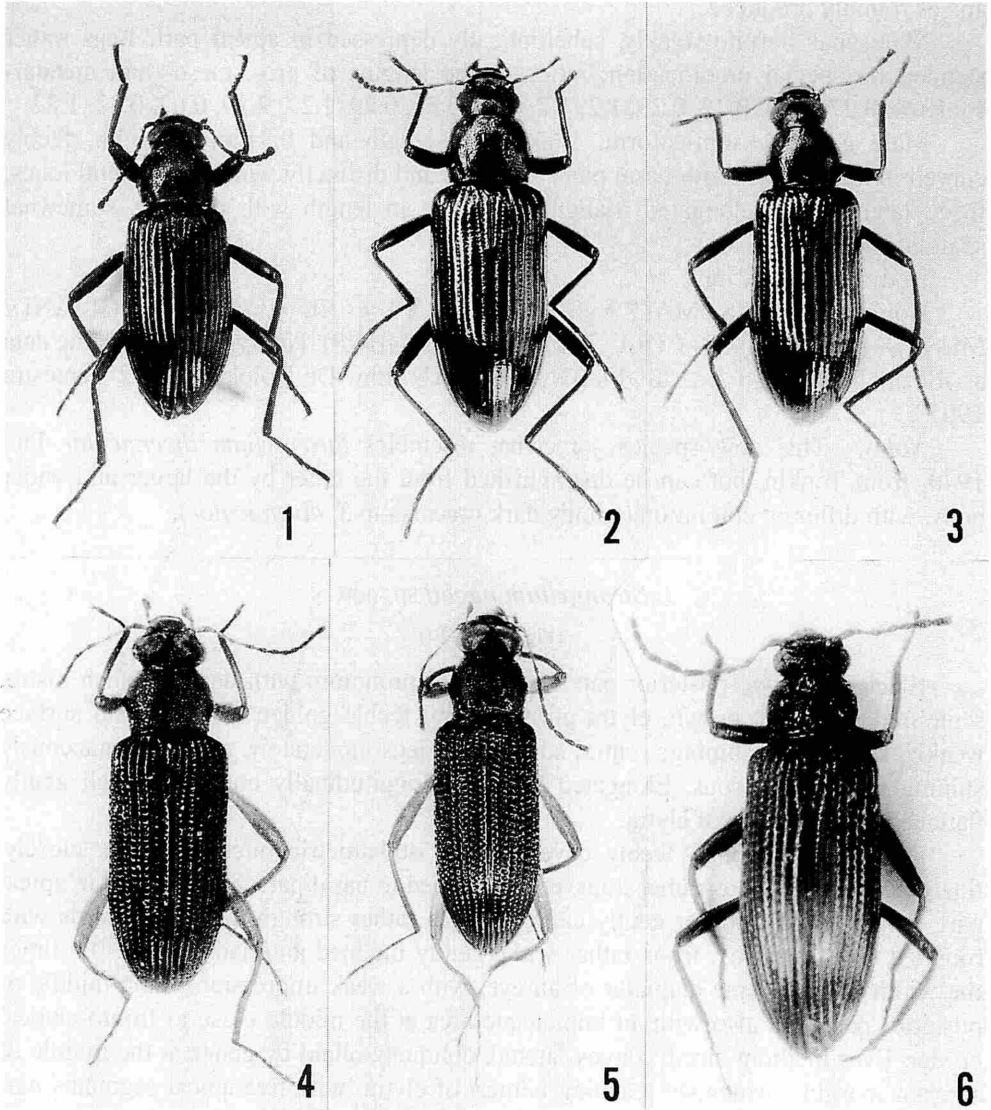
### *Strongylium nagaii* sp. nov.

(Figs. 2, 13–14)

Blackish brown, posterior part of head and pronotum with dark greenish lustre, scutellum chocolate brown, elytra purplish with feeble golden lustre; dorsal surface weakly, sericeously shining; ventral surface and legs moderately, slightly alutaceously shining; almost glabrous. Elongated fusiform, longitudinally convex, though gently flattened in basal parts of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather transverse, flattened in basal part, bent ventrad in apical part, fronto-clypeal border gently curved; genae rather strongly raised outwards with rounded outer margins; frons rather wide, gently inclined anteriorly, diameter 0.9 times the width of transverse diameter of an eye, with a weak impression at the middle of posterior part, and also with an impunctate area at the middle close to fronto-clypeal border. Eyes medium-sized, convex laterad, obliquely inlaid by genae at the middle of anterior margins. Antennae reaching humeri of elytra, with five apical segments narrowed at each base, ratio of the length of each segment from base to apex: 0.39, 0.2, 0.72, 0.62, 0.43, 0.36, 0.26, 0.27, 0.24, 0.23, 0.32.

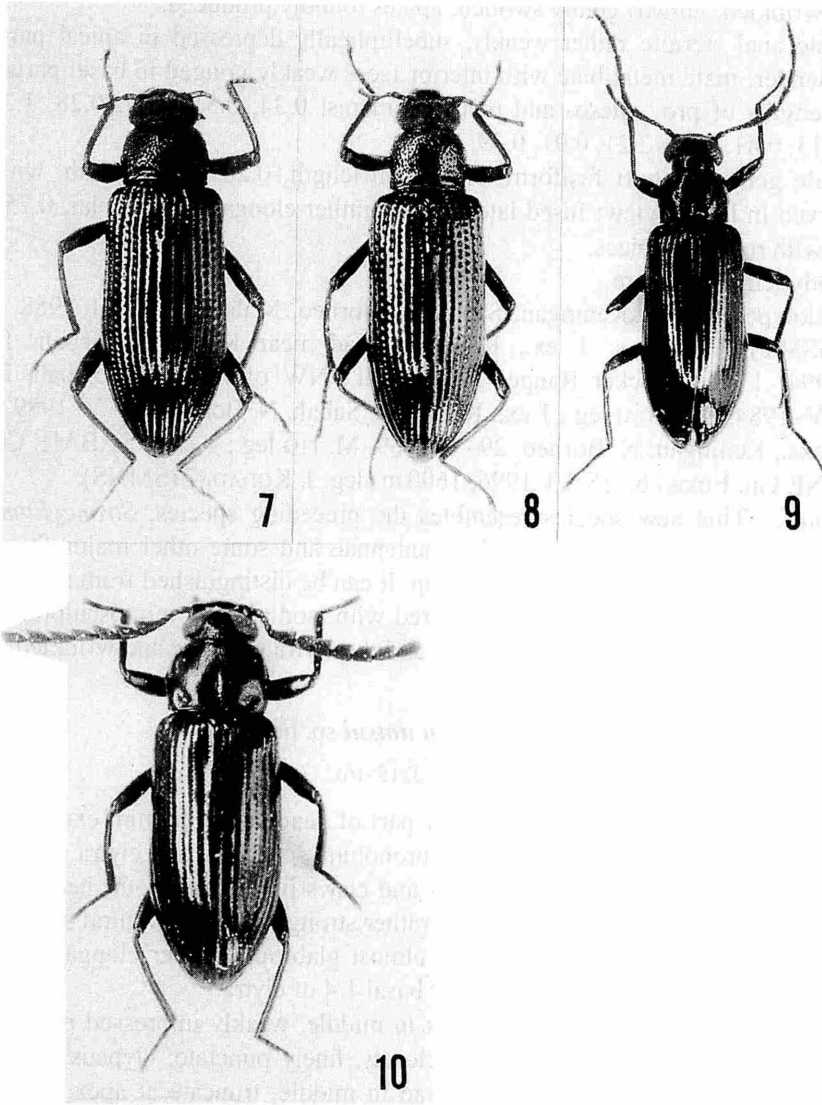
Pronotum widely hexagonal, 1.3 times as wide as long; apex sublinear, finely rimmed on each side; base slightly sinuous on each side, bordered and weakly ridged widely in middle; sides rather steeply declined to lateral margins, which are entirely finely rimmed, each with crenulations in medial part; front angles rounded though feebly produced, hind angles obtusely angulate; disc gently convex, weakly, vaguely obliquely impressed in baso-lateral parts, and also more clearly impressed close to base on each side, covered with isodiametric microsculpture, rather closely punctate,



Figs. 1–6. Habitus of *Strongylium* spp. from East Asia. — 1, *S. modiglianii* sp. nov., holotype, ♂; 2, *S. nagaii* sp. nov., holotype, ♂; 3, *S. notsui* sp. nov., holotype, ♂; 4, *S. walshae* sp. nov., holotype, ♂; 5, *S. muloti* sp. nov., holotype, ♂; 6, *S. sirambense* sp. nov., holotype, ♂.

the punctures sparsely intermixed with smaller punctures. Scutellum subcordate, gently elevated posteriad, weakly ridged longitudinally at the middle, feebly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures.

Elytra elongated subovate, 2.1 times as long as wide, 3.83 times the length and



Figs. 7–10. Habitus of *Strongylium* spp. — 7, *S. moerianum* sp. nov., holotype, ♂; 8, *S. tsuyukiellum* sp. nov., holotype, ♂; 9, *S. nagaiellum* sp. nov., holotype, ♂; 10, *S. dolokense* sp. nov., holotype, ♂.

1.22 times the width of pronotum; dorsum longitudinally convex, weakly depressed in interior parts of basal 1/5; disc punctate grooved, 5th groove deepened close to base, the punctures small, rather closely set, becoming finer posteriad; intervals gently convex in major anterior parts, becoming lower posteriad, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures, feebly, rather trans-

versely wrinkled; humeri gently swollen; apices roundly produced.

Male anal sternite rather weakly, subelliptically depressed in apical part. Legs rather slender; male metatibiae with interior faces weakly gouged in basal parts; ratios of the lengths of pro-, meso- and metatarsomeres: 0.34, 0.31, 0.32, 0.28, 1.2; 1.73, 0.89, 0.73, 0.41, 1.29; 2.21, 0.91, 0.49, 1.29.

Male genitalia short fusiform, 1.3 mm in length, 0.28 mm in width, with basal part curved in lateral view; fused lateral lobes rather elongated triangular, 0.75 mm in length, with rounded apices.

Body length: 8.6 mm.

Holotype: ♂, near Keningau, Sabah, N. Borneo, Malaysia, 14-III-1988, M. ITO leg. (NSMT). Paratypes: 1 ex., Kimanis Road, near Keningau, Sabah, Borneo, 5-V-1994; 1 ex., Crocker Range, 1,400 m alt., NW of Keningau, Sabah, Borneo, 2~14-V-1984, S. NAGAI leg.; 1 ex., Keningau, Sabah, N. Borneo, 11-V-1989, M. ITO leg.; 2 exs., Keningau, N. Borneo, 29-V-1989, M. ITO leg.; 1 ex., "SABAH: Crocker/Range NP, Gn. Emas/6.-18. VI. 1996, 1600 m/leg. J. KODADA" (SMNS).

*Notes.* This new species resembles the preceding species, *Strongylium modiglianii* sp. nov., in having characteristic antennae and some other major features, so that these two species form a species-group. It can be distinguished from the preceding species by the dorsal surface rather covered with isodiametric microsculpture, lateral margins of pronotum crenulate in middle, and the elytra punctate and wrinkled.

### *Strongylium notsui* sp. nov.

(Figs. 3, 15-16)

Dark reddish brown, major posterior part of head and pronotum except for basal part with dark bluish lustre, basal part of pronotum, scutellum and elytra with coppery, partly slightly golden lustre, mouth parts and claws lighter in colour; head, pronotum and scutellum sericeously shining, elytra rather strongly shining, ventral surface somewhat alutaceously shining; each surface almost glabrous. Rather elongate, longitudinally convex, though weakly depressed at basal 1/4 of elytra.

Head nearly rounded, gently convex in middle, weakly impressed medially, covered with isodiametric microsculpture, closely, finely punctate; clypeus semicircular, gently flattened in basal part, bent ventrad in middle, truncate at apex, with a short transverse impression before fronto-clypeal border; genae somewhat obliquely rhombic, raised outwards, with obtuse outer margins; frons widely T-shaped, rather steeply inclined anteriorly, diatone 0.67 times the width of transverse diameter of an eye. Eyes medium-sized, subreniform, convex laterad, obliquely inlaid into head. Antennae missing four apical segments in the type specimen: ratio of the length of each segment from base to 7th segment: 0.38, 0.2, 0.6, 0.49, 0.41, 0.39, 0.31, —, —, —, —.

Pronotum somewhat transversely hexagonal, 1.33 times as wide as long; apex almost straight, finely bordered and rimmed on each side; base slightly sinuous on each side, clearly bordered and rimmed, the rim becoming bolder widely in middle; sides

steeply declined to lateral margins, which are separated from ventral parts by fine rims, roundly produced in middle and feebly sinuous before base in dorsal view; front angles nearly rounded, hind angles subrectangular; disc gently convex, covered with isodiametric microsculpture, moderately closely punctate, the punctures larger and sparser than those on head. Scutellum triangular, gently convex, covered with isodiametric microsculpture, sparsely scattered with very fine punctures.

Elytra elongated subfusiform, 2.31 times as long as wide, 4.5 times the length and 1.5 times the width of pronotum; dorsum longitudinally convex, though weakly flattened in areas around basal 1/5 and along scutellar striole; disc punctate grooved, 5th groove touching base, the punctures longitudinal and deep, becoming smaller and shallower posteriad; intervals gently convex, flattened posteriad, covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures, which are very sparsely intermixed with larger punctures; humeri weakly swollen; apices slightly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and microscopically punctate. Legs rather slender; male metatibiae with interior face weakly gouged at basal 1/4; ratios of the lengths of pro-, meso- and metatarsomeres: 0.35, 0.33, 0.31, 0.27, 1.2; 1.28, 0.79, 0.67, 0.39, 1.27; 1.91, 0.89, 0.41, 1.22.

Male genitalia fusiform, 0.85 mm in length and 0.2 mm in width, weakly curved in lateral view; fused lateral lobes somewhat triangular, 0.35 mm in length, feebly depressed longitudinally in posterior part, scattered with microscopic and somewhat longitudinal punctures in apical halves.

Body length: 6.3 mm.

Holotype: ♂, Sabah, Borneo, 14-IV~19-V-1984, S. NAGAI leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 3 exs., 16 miles NW of Keningau, 1,400 m alt., Borneo, Malaysia, 12~19-VIII-1983, Y. NOTSU leg.; 1 ex., Crocker Range, 1,400 m alt., NW of Keningau, Sabah, Borneo, 12-V-1984, S. NAGAI leg.; 1 ex., Keningau, Sabah, N. Borneo, 10~20-X-1988, M. ITO leg.

*Notes.* This new species somewhat resembles *Strongylium modiglianii* sp. nov., but can be distinguished from the latter by the smaller and slenderer body, with elytra more deeply punctato-striate.

***Strongylium walshae* sp. nov.**

(Figs. 4, 17-18)

Yellowish brown, posterior part of head and elytra except for medio-basal part brownish black with dark greenish or blue lustre, apical margin and apico-medial part of pronotum brownish black, scutellum and medio-basal part of elytra chocolate brown; head and pronotum weakly, rather sericeously shining, scutellum vitreously shining, elytra feebly sericeously, somewhat metallicly shining, ventral surface and legs rather alutaceously shining; each surface almost glabrous. Elongated fusiform,

longitudinally convex, though weakly flattened in medial parts of elytra.

Head transversely elliptical, covered with isodiametric microsculpture, closely rugoso-punctate; clypeus semicircular, feebly depressed in basal part, gradually inclined forwards, gently bent and truncate in front, fronto-clypeal border gently curved and not clearly impressed; genae obliquely subrhombic, rather strongly raised outwards; frons rather finely T-shaped, steeply inclined anteriorly, diatone 1/8 times the width of transverse diameter of an eye, with a longitudinal impression at the middle of posterior part, weakly sulcate along the borders of eyes. Eyes noticeably large, subreniform, strongly convex laterad, approximate with each other. Antennae rather filiform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.64, 0.2, 0.81, 0.79, 0.61, 0.63, 0.62, 0.6, 0.58, 0.59, 0.63.

Pronotum widely subhexagonal, 1.33 times as wide as long; apex sublinear, rimmed, the rim thickened in middle; base slightly sinuous on each side, clearly bordered and rimmed; sides steeply declined to lateral margins, which are not defined from ventral parts, produced in middle, and gently sinuous before the base in dorsal view; front angles obtuse, hind angles subrectangular; disc gently convex, weakly depressed in medio-longitudinal part and deepened in apical and basal parts, weakly impressed close to base on each side, very feebly covered with isodiametric microsculpture, rather closely punctate, the punctures often fused with one another. Scutellum slightly elongated triangular, feebly convex, almost smooth, sparsely scattered with microscopic punctures.

Elytra elongated ovate, 2.18 times as long as wide, 4 times the length and 1.2 times the width of pronotum; dorsum longitudinally convex, though flattened in medial part; disc with rows of punctures, 5th row close to base, the punctures large and transverse, closely set, often somewhat hexagonal, becoming smaller posteriorly; intervals narrow and weakly convex, rather ridged in lateral parts, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures, with 2nd interval flattened; humeri weakly swollen; apices roundly produced.

Male anal sternite semicircularly depressed and pubescent in apical part. Legs medium-sized for a member of this genus, male metatibiae flattened in interior faces of basal halves, weakly twisted, with dorso-internal edges roundly produced; ratios of the lengths of pro-, meso- and metatarsomeres: 0.32, 0.23, 0.25, 0.22, 1.2; 1.96, 0.95, 0.77, 0.44, 1.32; 2.03, 0.69, 0.48, 1.28.

Male genitalia subfusiform, 1.5 mm in length and 0.3 mm in width, almost straight in lateral view; fused lateral lobes elongated triangular, 0.7 mm in length with slightly prolonged rather acute apices.

Body length: 6.32 mm.

Holotype: ♂, "SUMATRA/Reg. de Benkoelen/Moeara Tenam /M<sup>me</sup> M. E. WALSH/1935" (MNHNP).

*Notes.* This new species resembles *Strongylium benakatense* MASUMOTO, 1997, from South Sumatra in having modified male metatibiae, but can be distinguished from the latter by the differently colored body, with larger eyes, the longer elytra, and



the antennae and legs with different ratios of segment lengths.

*Strongylium muloti* sp. nov.

(Figs. 5, 19–20)

Yellowish brown, antennae, apical halves of tibiae and metepisterna darker in colour, head and pronotum blackish brown with weak dark bluish lustre, elytra in major parts with greenish blue lustre, those in antero-medial parts feebly with golden greenish lustre, and those in postero-lateral parts faintly with purple lustre; head and pronotum weakly, sericeously shining, scutellum vitreously shining, elytra metallicly and somewhat sericeously shining, ventral surface rather alutaceously shining, legs moderately shining; each surface almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in antero-medial parts of elytra.

Head transversely subelliptical, weakly covered with isodiametric microsculpture, closely, finely punctate; clypeus semicircular, gently inclined apicad, truncate in front, fronto-clypeal border curved and finely impressed; genae remarkably oblique, raised posteriad and outwards, with obtuse outer margins; frons rather T-shaped, steeply inclined anteriad, diatone  $1/9$  times the width of transverse diameter of an eye, with a medio-longitudinal impunctate impression at the level of the posterior parts of eyes. Eyes large, subreniform, convex laterad, obliquely inlaid into head. Antennae rather filiform, reaching basal  $1/4$  of elytra, ratio of the length of each segment from base to apex: 0.78, 0.2, 0.79, 0.72, 0.56, 0.55, 0.53, 0.56, 0.51, 0.53, 0.59.

Pronotum short barrel-shaped, 1.21 times as wide as long; apex very weakly produced, bordered and rimmed, the rim microscopically punctate and feebly thickened in middle; base slightly sinuous on each side, clearly bordered and rimmed, the rim noticeably smooth in middle; sides steeply declined to lateral margins, which are not defined from ventral parts, rounded in middle and gently sinuous before base in dorsal view; front angles obtuse, hind angles subrectangular; disc gently convex, weakly depressed in medio-basal part, very weakly impressed close to base on each side, weakly covered with isodiametric microsculpture, closely punctate, the punctures sometimes fused with one another. Scutellum triangular with rounded sides, almost smooth, sparsely scattered with microscopic punctures, sparsely somewhat longitudinally aciculate.

Elytra elongated subfusiform, 2.04 times as long as wide, 3.8 times the length and 1.4 times the width of pronotum; dorsum longitudinally convex, though flattened in medio-longitudinal part; disc with rows of punctures, the punctures large, transverse and closely set, sometimes rather hexagonal, becoming smaller posteriad; intervals narrow and convex, ridged in lateral parts, with 2nd interval flattened, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures; humeri not so distinct; apices roundly produced.

Male anal sternite weakly depressed and pubescent in apical part. Legs medium-sized for a member of this genus, male protibiae curved ventrad; male metatibiae flat-

tened in interior faces of basal halves, weakly twisted, with the dorsal edges roundly produced; ratios of the lengths of pro-, meso- and metatarsomeres: 0.27, 0.22, 0.24, 0.26, 1.2; 2.05, 0.96, 0.82, 0.6, 1.42; 2.18, 0.86, 0.59, 1.37.

Male genitalia subfusiform, 1.7 mm in length and 0.3 mm in width, weakly curved in lateral view; fused lateral lobes elongated triangular, 0.75 mm in length, depressed medio-longitudinally, with slightly prolonged, rather acute apices.

Body length: 5.5–6.5 mm.

Holotype: ♂, “Bornéo occ./Goenong Ampar/Mulot 1897//Museum Paris/ex Coll./R. OBERTHUR” (MNHNP). Paratypes: 1 ex., “Bornéo Occ./Pontianak/1901”; 3 exs., “Est Borneo/Batanbessi/M<sup>e</sup> M. E. WALSH/1937”; 1 ex., Keningau, Sabah, 7–V–1981, M. TAO leg.; 1 ex., nr. Kpg. Poring, Sabah, Borneo Is., Malaysia, 4–I–1985, M. NISHIKAWA leg.; 2 exs., BORNEO: SABAH/Bingkor N Keningau/400–500 m, 19.20. XI. 1996/leg. W. SCHAWALLER” (SMNS).

*Notes.* This new species closely resembles *Strongylium benakatense* MASUMOTO et MAKIHARA, 1997, from South Sumatra in having modified male metatibiae, but can be distinguished from the latter by the differently colored body, with eyes larger and closer to each other, pronotum more convex laterad and elytra shorter.

This and the preceding new species are the members of the species-group of *S. benakatense*, whose males are characterized by modified legs.

### *Strongylium sirambense* sp. nov.

(Figs. 6, 21–22)

Dark yellowish brown, elytra, basal parts of antennae and tibiae lighter in colour, dorsal surface moderately, vitreously shining, ventral surface somewhat alutaceously shining, six apical segments of antennae not shining; each surface almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in antero-medial parts of elytra.

Head transversely subelliptical, very weakly micro-shagreened, closely, finely punctate, the punctures lightly fused with one another in area between posterior parts of eyes; clypeus semicircular, rather steeply inclined apicad, truncate in front, frontoclypeal border curved and rather strongly impressed; genae oblique, raised posteriad and outwards, with obtuse outer margins; frons finely T-shaped, steeply inclined anteriorly, diatone 1/12 times the width of transverse diameter of an eye, with an indistinct impression at the middle of posterior part of eyes. Eyes large, approximate to each other, convex laterad, rather broadly inlaid into head. Antennae subfiliform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.41, 0.2, 0.59, 0.45, 0.41, 0.6, 0.59, 0.62, 0.61, 0.60, 0.79.

Pronotum subquadrate, 1.3 times as wide as long; apex almost straight, entirely bordered and rimmed, the rim sparsely scattered with microscopic punctures; base slightly sinuous on each side, clearly bordered and rimmed, the rim bolder than that of apex and almost impunctate; sides steeply declined to lateral margins, which are sepa-

rated from ventral parts by fine rims, rounded in middle and gently sinuous before base in dorsal view; front angles nearly rounded, hind angles subrectangular; disc gently convex, moderately but noticeably depressed transversely in basal 1/4, weakly impressed close to base on each side, moderately closely punctate. Scutellum triangular with rounded sides, feebly convex, almost smooth, sparsely scattered with microscopic punctures.

Elytra elongated subfusiform, 2.17 times as long as wide, 4.38 times the length and 1.51 times the width of pronotum; dorsum longitudinally convex, though feebly flattened in area around scutellar striole; disc punctate grooved, the grooves shallow, 5th groove deepened close to base, the punctures rounded with transversely quadrate shadows, those in posterior parts becoming smaller and shallower; intervals gently convex, vitreously smooth, very sparsely scattered with microscopic punctures; humeri weakly swollen; apices slightly roundly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and microscopically punctate. Legs rather slender, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.38, 0.28, 0.25, 0.23, 1.2; 0.8, 0.4, 0.23, 0.21, 1.22; 0.81, 0.41, 0.38, 1.28.

Male genitalia elongate, 1.3 mm in length and 0.17 mm in width, very weakly curved in lateral view; fused lateral lobes somewhat elongated triangular, 0.65 mm in length, depressed medio-longitudinally, with rather remarkably prolonged subparallel-sided apices.

Body length: 5.7–6.3 mm.

Holotype: ♂, "SUMATRA/SI-RAMBE/XII. 90–III. 91/E. MODIGLIANI//MUSÉUM PARIS/1952/COLL R OBERTHÜR" (MNHNP). Paratypes: 1 ex., "SUMATRA/SI-RAMBE/XII. 90–III. 91/E. MODIGLIANI//Muséum Paris/ex Coll./R. OBERTHÜR/1952"; 1 ex., "SUMATRA/MEDAN//Muséum Paris/Coll. M. PIC".

Notes. No *Strongylium* resembling this new species has hitherto been known. It somewhat resembles an alleculid species.

### *Strongylium moerianum* sp. nov.

(Figs. 7, 23–24)

Dark yellowish brown, tarsi, claws and hairs lighter in colour; major basal part of head, pronotum except for apical and basal parts somewhat sericeously shining; apical part of head, apical and basal parts of pronotum, scutellum and elytra rather strongly vitreously shining; ventral surface alutaceously or sericeously shining; each surface almost glabrous. Rather elongated fusiform, convex longitudinally, though weakly depressed in areas across basal 1/7 and around scutellar striae.

Head transversely subelliptical, micro-shagreened, closely, finely punctate; clypeus rather small and semicircular, strongly depressed in basal part, gently inclined anteriorly and truncate in front, fronto-clypeal border curved and impressed; genae rather transverse, gently raised outwards, with widely rounded outer margins; frons finely T-

shaped, rather steeply inclined anteriad, diatone about 1/23 times the width of transverse diameter of an eye. Eyes very large, approximate to each other, noticeably convex laterad, broadly, gently obliquely inlaid into head. Antennae missing eight apical segments in the type specimen, ratio of the length of each segment from base to 3rd segment: 0.32, 0.2, 0.53, —, —, —, —, —, —, —, —.

Pronotum transversely subhexagonal, 1.36 times as wide as long; apex almost straight, clearly bordered, ridged widely in middle, finely rimmed in lateral parts; base gently sinuous on each side, clearly bordered, rather boldly ridged in middle; sides produced slightly before the middle and sinuous before base in dorsal view, and steeply declined to lateral margins, which are separated from ventral parts by ridges, the ridges being weakly expanded laterad and visible from above; front angles nearly rounded, hind angles subrectangular; disc gently convex, covered with isodiametric microsculpture, closely punctate, the punctures small and closely set in medial part, obliquely impressed at basal 1/4 on each side. Scutellum triangular, feebly raised, smooth, sparsely scattered with very minute punctures.

Elytra elongated subfusiform, 2.1 times as long as wide, 4.1 times the length and 1.42 times the width of pronotum; dorsum longitudinally convex, though weakly flattened in areas around basal 1/5 and along scutellar striae; disc punctate grooved, 5th groove touching base, the punctures nearly rounded; intervals gently convex, very sparsely scattered with microscopic punctures; humeri gently swollen longitudinally; apices slightly produced.

Male anal sternite without any modification, alutaceous and haired. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.39, 0.33, 0.29, 0.38, 1.2; 0.77, 0.46, 0.41, 0.36, 1.26; 1.08, 0.58, 0.39, 1.29.

Male genitalia elongated fusiform, gently constricted between basal piece and lateral lobes, 1.4 mm in length and 0.24 mm in width, feebly curved near the base of basal piece and also curved in the middle of lateral lobes in lateral view; fused lateral lobes elongated triangular, 0.8 mm in length, scattered with microscopic punctures in apical halves, with prolonged apices.

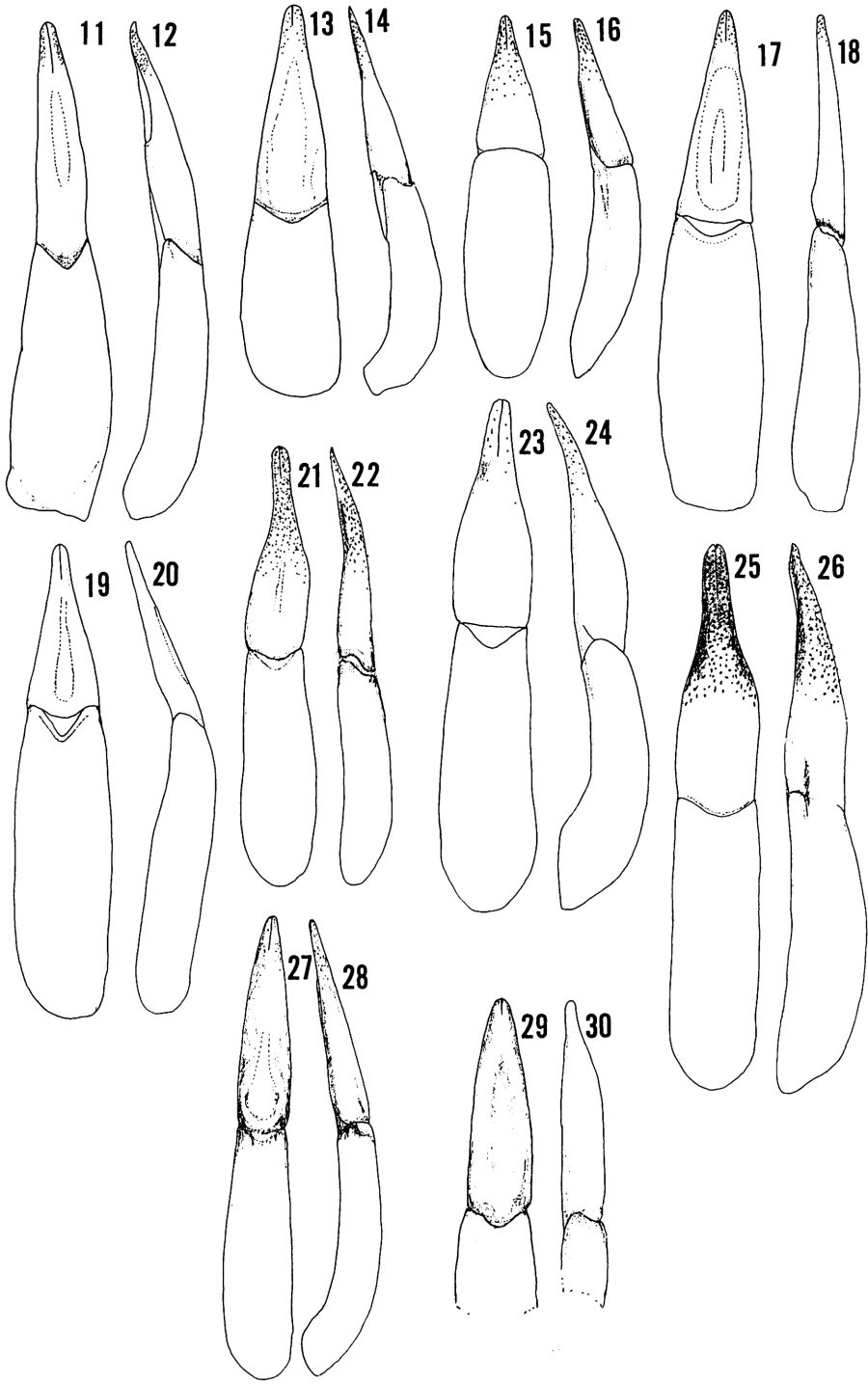
Body length: 6–7 mm.

Holotype: ♂, "Java/Mt. Moeria, 3–4000' // Muséum Paris/ex. Coll./R. OBERTHÜR" (MNHNP). Paratypes: 2 exs., same data as for the holotype; 2 exs., Java, Coll. PIC; 2 exs., Mt. Ijen, Java, 14–V–1982, M. TAO leg.

*Notes.* This new species somewhat resembles *Strongylium nigroannulipes* PIC,

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Figs. 11–30. Male genitalia. — 11–12, *Strongylium modiglianii* sp. nov., 11, dorsal view, 12, lateral view; 13–14, *S. nagaii* sp. nov., 13, dorsal view, 14, lateral view; 15–16, *S. notsui* sp. nov., 15, dorsal view, 16, lateral view; 17–18, *S. walshae* sp. nov., 17, dorsal view, 18, lateral view; 19–20, *S. muloti* sp. nov., 19, dorsal view, 20, lateral view; 21–22, *S. sirambense* sp. nov., 21, dorsal view, 22, lateral view; 23–24, *S. moerianum* sp. nov., 23, dorsal view, 24, lateral view; 25–26, *S. tsuyukiellum* sp. nov., 25, dorsal view, 26, lateral view; 27–28, *S. nagaiellum* sp. nov., 27, dorsal view, 28, lateral view; 29–30, *S. dolokense* sp. nov., 29, dorsal view, 30, lateral view.



1926, originally described from Tonkin, but can be distinguished from the latter by the smaller body, with the pronotum not longitudinally grooved.

*Strongylium tsuyukiellum* sp. nov.

(Figs. 8, 25–26)

Dark dusty brown, clypeus, antennae, basal parts of femora, tibiae, tarsi, claws and hairs on legs lighter in colour; dorsal surface strongly, vitreously shining, ventral surface moderately and rather vitreously shining; each surface almost glabrous. Rather elongated fusiform, longitudinally convex, though weakly depressed in medio-basal parts of elytra.

Head somewhat transversely elliptical, very feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather small and trapezoidal, narrowed in areas bordered from genae, feebly depressed in basal part, gently inclined anteriorly and truncate in front, fronto-clypeal border curved and impressed widely in middle, strongly bent and sinuous in lateral parts; genae gently oblique, raised outwards and posteriorly, with widely rounded outer margins; frons finely T-shaped, rather steeply inclined anteriorly, diameter about 1/23 times the width of transverse diameter of an eye. Eyes very large, approximate to each other, noticeably convex laterad, broadly, somewhat obliquely inlaid into head. Antennae missing six apical segments in the type specimen; ratio of the length of each segment from base to 5th segment: 0.39, 0.2, 0.38, 0.36, 0.34, —, —, —, —, —, —.

Pronotum subquadrate, 1.32 times as wide as long; apex almost straight, grooved and finely ridged, the groove becoming bolder in middle; base gently sinuous on each side, clearly bordered and rimmed, the rim becoming bolder in middle; sides roundly produced slightly before the middle and sinuous before base in dorsal view, and steeply declined to lateral margins, which are separated from ventral parts by very fine ridges visible from above; front angles nearly rounded, hind angles subrectangular; disc gently convex, very feebly covered with isodiametric microsculpture, rather closely punctate, transversely impressed at basal 2/7 on each side. Scutellum triangular with rounded sides, feebly raised, smooth, very sparsely scattered with microscopic punctures.

Elytra elongated subfusiform, 2.22 times as long as wide, 4.35 times the length and 1.43 times the width of pronotum; dorsum moderately convex longitudinally, though weakly depressed in basal 1/7; disc punctate grooved, 5th groove touching base, the punctures nearly rounded; intervals gently convex, feebly ridged along suture (=1st interval), punctures on the interval hardly visible even under a high magnification; humeri weakly, longitudinally swollen; apices slightly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and haired. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.38, 0.31, 0.26, 0.33, 1.2; 0.79, 0.47, 0.39, 0.28, 1.29; 0.96, 0.49, 0.37, 1.33.

Male genitalia elongated fusiform, 1.7 mm in length and 0.3 mm in width, gently curved in middle in lateral view; fused lateral lobes elongated triangular, 0.7 mm in length, weakly depressed medio-longitudinally, with weakly prolonged apices.

Body length: 6–7 mm.

Holotype: ♂, Bandar Baru, Sumatra Utara, Indonesia, 5–V–1999, S. TSUYUKI leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 2 exs., Bandar Baru, Sumatra Utara, 3–V–1999, S. TSUYUKI leg.; 1 ex., Bandar Baru, nr. Berastagi, N. Sumatra, 19–IV–1994, S. NIRASAWA leg.; 1 ex., “Sumatra / Coll. GEBIEN” (NHMB).

*Notes.* This new species closely resembles the preceding in general characteristics, but can be distinguished from the latter by the slenderer body, with head and pronotum more strongly shining, eyes more rounded, pronotum less closely punctate, and elytral grooves less closely punctate. This new species is “*Strongylium kaestneri* i. l.” of the GEBIEN collection preserved in the Naturhistorisches Museum, Basel.

***Strongylium nagaiellum* sp. nov.**

(Figs. 9, 27–28)

Blackish brown, apical parts of 11th antennal segments, mouth parts, terminal segments of tarsi and claws lighter in colour; dorsal surface and prosternum dark coppery, partly feebly greenish golden and strongly shining, ventral surface moderately, rather alutaceously shining; each surface almost glabrous. Rather elongate, convex longitudinally, though weakly flattened in medio-longitudinal part of pronotum and medio-basal part of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather small and semicircular, depressed in basal part, steeply inclined anteriorly and truncate in front, fronto-clypeal border curved and finely impressed; genae gently oblique, raised outwards and posteriorly, with obtuse outer margins; frons finely T-shaped, rather steeply inclined anteriorly, diatone about 1/9 times the width of transverse diameter of an eye. Eyes large, convex laterad, broadly, obliquely inlaid into head. Antennae reaching basal 1/3 of elytra, with four basal segments small and more or less cylindrical, 5th–11th segments large and flattened, 5th–10th widened to each apex, with interior face rather serrate, ratio of the length of each segment from base to apex: 0.34, 0.2, 0.21, 0.23, 0.58, 0.54, 0.52, 0.49, 0.48, 0.41, 0.6.

Pronotum subquadrate, 1.25 times as wide as long; apex almost straight, finely bordered and ridged on each side, the ridge becoming bolder in middle; base gently sinuous on each side, ridged widely in middle; sides roundly produced slightly before the middle and sinuous before base in dorsal view, and rather steeply declined to lateral margins, which are separated from ventral parts by very fine ridges, the ridges being visible from above; front angles rounded, hind angles subrectangular; disc gently convex, feebly covered with isodiametric microsculpture, rather closely, finely punctate, obliquely impressed along base on each side and noticeably impressed close to base in lateral parts, with a weak medio-longitudinal impression. Scutellum triangular,

weakly elevated, feebly covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures.

Elytra elongate, 2.14 times as long as wide, 4.02 times the length and 1.52 times the width of pronotum; dorsum moderately convex longitudinally, though feebly depressed at basal 1/4 of interior parts; disc punctato-striate, 3rd–5th striae close to base, 5th deepened near base, the punctures small, ovate and closely set; intervals gently convex, though flattened in posterior parts, feebly covered with isodiametric microsculpture, scattered with microscopic punctures; humeri gently swollen longitudinally; apices moderately produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and scattered with microscopic punctures. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.29, 0.24, 0.21, 0.23, 1.2; 0.81, 0.48, 0.36, 0.27, 1.22; 1.04, 0.48, 0.32, 1.24.

Male genitalia elongate, weakly constricted in the bordering area of basal piece and lateral lobes, 1.73 mm in length and 0.24 mm in width, gently curved medially in lateral view; fused lateral lobes elongated triangular, 0.78 mm in length, noticeably gouged medio-longitudinally, with acute apices.

Body length: 7.5 mm.

Holotype: ♂, Sabah, Borneo, 14–IV~19–V–1984, S. NAGAI leg. (NSMT).

*Notes.* No species resembling this new species has hitherto been known. See the notes in the description of the following species.

### *Strongylium dolokense* sp. nov.

(Figs. 10, 29–30)

Blackish brown, four basal segments and apical parts of the 11th of antennae, mouth parts, apical parts of terminal segments of tarsi and claws lighter in colour; most posterior parts of head and pronotum gently with dark bluish lustre, elytra with weak coppery, or greenish blue lustre, ventral surface moderately, rather alutaceously shining; each surface almost glabrous. Rather elongate, convex longitudinally, gently depressed in posterior part of pronotum and along scutellar striole and 1st groove of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus inverted subtrapezoidal, strongly depressed in basal part, steeply inclined anteriorly, truncate in front, fronto-clypeal border weakly curved and clearly impressed, obliquely bent anteriorly on each side; genae gently oblique, raised outwards and posteriorly, with rounded outer margins; frons widely T-shaped and raised, impressed medio-longitudinally, steeply inclined anteriorly, depressed in areas before eyes, diatone about 0.55 times the width of transverse diameter of an eye. Eyes subreniform, convex laterad, obliquely inlaid into head. Antennae reaching basal 2/7 of elytra, with 1st–4th segments small, more or less cylindrical, 5th–11th large and flattened, 5th–10th widened to each apex, rather serrate in interior faces, ratio of the



length of each segment from base to apex: 0.42, 0.2, 0.26, 0.21, 0.78, 0.68, 0.79, 0.77, 0.74, 0.72, 0.81.

Pronotum subquadrate, 1.47 times as wide as long; apex almost straight, finely rimmed on each side; base gently sinuous on each side, finely bordered widely in middle, ridged; sides gently produced laterad, and rather steeply declined to lateral margins, which are separated from ventral parts by very fine ridges, the ridges being weakly expanded laterad, toothed at the middle, and visible from above; front angles rounded, hind angles subrectangular; disc weakly convex, feebly covered with isodiametric microsculpture, rather closely, finely punctate, obliquely impressed in lateral parts near base and triangularly so in basal 3/5 of the middle. Scutellum triangular with rounded sides, feebly elevated, weakly covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures.

Elytra elongate, twice as long as wide, 3.53 times the length and 1.27 times the width of pronotum; dorsum moderately convex longitudinally, though feebly depressed in areas around scutellar striole and basal part of the 1st groove; disc punctate grooved, 3rd–5th grooves reaching base, 5th deepened close to base, the punctures small, ovate and closely set; intervals gently convex, feebly covered with isodiametric microsculpture, scattered with microscopic punctures; humeri gently swollen; apices moderately produced.

Male anal sternite without any modification. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.24, 0.23, 0.26, 0.24, 1.2; 0.82, 0.39, 0.35, 0.28, 1.27; 0.98, 0.39, 0.32, 1.23.

Male genitalia elongated fusiform, total length unclear because those of the type specimen are broken in the basal part, 0.26 mm in width, gently curved in middle in lateral view; fused lateral lobes elongated triangular, 0.75 mm in length, noticeably gouged medio-longitudinally, with rather acute apices.

Body length: 7.6 mm.

Holotype: ♂, “16.–20. I. 1972 / Dolok-Merangeir / NORD SUMATRA / Dr DIEHL leg. // MUSEUM PARIS / COLL. P. ARDOIN / 1978” (MNHNP).

*Notes.* This new species resembles the preceding species in having serrate male antennae and some other characteristics, but can be distinguished from the latter by the stouter body, with eyes more widely separated from each other, pronotal punctures denser, and elytral punctures in grooves sparser. This and the preceding new species form the species-group of *S. nagaiellum*.

## 要 約

益本仁雄：アジア産ナガキマワリ族 (*Strongyliini*) の研究。XI. 東南アジア産キマワリ属 (*Strongylium*) の小型種 10 新種。—— アジア産ナガキマワリ族 (*Strongyliini*) 研究の第 11 回として、東南アジア産のキマワリ属 (*Strongylium*) の小型種 10 種を新種記載した。それらは、*Strongylium modiglianii* sp. nov., *S. nagaii* sp. nov., (以上 2 種は *modiglianii* 種群), *S. notsui* sp. nov. (*modiglianii* 種群に近い), *S. walshae* sp. nov., *S. muloti* sp. nov. (以上 2 種は *benaketense* 種群), お

よび *S. sirambense* sp. nov., *S. moerianum* sp. nov., *S. tsuyukiellum* sp. nov., さらに *S. nagaiellum* sp. nov., *S. dolokense* sp. nov. (前種とともに *nagaiellum* 種群) である。

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## A New Record of *Phyllopertha intermixta* (Coleoptera, Scarabaeidae) from Kunashir Island of the Kurils

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*Phyllopertha intermixta* ARROW, 1913, has been recorded from Hokkaido, Honshu, Shikoku and Kyushu, Japan. Recently, we examined 5 specimens of this species collected by A. BARKALOV from Ivanovsky Cape of Kunashir Island of the Kuril Islands. We are going to record it for the first time from Kunashir Island.

*Specimens examined.* 2♂♂, 3♀♀ (preserved in the collection of the Siberian Zoological Museum), Ivanovsky Cape, Kunashir Island (Kuril Islands), 9~15-VII-1989, A. BARKALOV leg.

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