

## Study of Asian Strongyliini (Coleoptera, Tenebrionidae)

### V. Twenty New Species of the Genus *Strongylium* from East Asia

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**Abstract** This is the fifth part of the study of the Asian Strongyliini and deals with 20 new species of the genus *Strongylium* from East Asia. They are described under the following names: *S. phedongense* sp. nov., *S. kambaitiense* sp. nov., *S. birmanicum* sp. nov., *S. kingdonwardi* sp. nov., *S. cicindeliforme* sp. nov., *S. lumulumuense* sp. nov., *S. itoi* sp. nov., *S. kenokokense* sp. nov., *S. trifasciatum* sp. nov., *S. pilifasciatum* sp. nov., *S. pici* sp. nov., *S. yai* sp. nov., *S. moritai* sp. nov., *S. nangbangense* sp. nov., *S. kohanemum* sp. nov., *S. kanchanaburiense* sp. nov., *S. akitai* sp. nov., *S. tabanai* sp. nov., *S. tanikadoi* sp. nov. and *S. merkli* sp. nov.

This paper is the fifth part of my study concerning the Asian Strongyliini and deals with twenty new species of the genus *Strongylium* from various areas of East Asia.

The specimens examined are submitted to me for taxonomic study mainly from the collections of the Muséum National d'Histoire Naturelle, Paris, the Natural History Museum, London, and Természettudományi Múzeum, Budapest. Other materials, besides the specimens in my collection, are submitted to me personally from Messrs. Stanislav BEČVÁŘ (Czech Academy of Sciences), Kiyoshi ANDO (Ehime University), Katsumi AKITA (Hisai City), Motohiko TANIKADO (Ibaraki City), Masakazu TABANA (Suita City), and Kazuyuki KAWADA (Kawasaki City).

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Depositories of the holotypes to be designated are given in each description.

*Strongylium phedongense* sp. nov.

(Figs. 1, 21, 22)

Brownish black, elytra, tarsi, 5th to 11th segments of antennae, etc., lighter in colour; dorsal surface moderately shining, ventral surface feebly alutaceous; each surface almost glabrous. Elongate and subcylindrical.

Head subdecagonal, very weakly micro-shagreened, rather closely punctate; clypeus transverse, flattened in basal portion, and rather strongly bent downwards in front, with fronto-clypeal border almost straight, very finely impressed; genae obliquely, moderately raised, with obtuse outer margins; frons somewhat T-shaped, gently inclined forwards; eyes large and subreniform, rather strongly convex laterad, obliquely, roundly inlaid into head, diameter about 1/10 times the width of an eye diameter; vertex with a vague impression at the middle. Antennae filiform, ratio of the length of each segment from basal to apical: 0.6, 0.2, 1.2, 0.92, 0.94, 0.88, —, —, —, —, —.

Pronotum subquadrate, 1.2 times as wide as long, widest slightly before the middle and also at base, sinuate before base; apex feebly produced and finely rimmed; base bordered and rimmed, slightly bisinuous; sides rounded and steeply declined to lateral margins, which are finely rimmed, though the rims are invisible from above; front angles rounded, hind angles acute; disc moderately convex, shallowly grooved in medial part, very weakly micro-shagreened, rather closely, irregularly scattered with small punctures, which are often connected with one another. Scutellum triangular, raised in posterior portion, very weakly micro-shagreened, sparsely scattered with microscopic punctures.

Elytra 2.5 times as long as wide, 4.9 times the length and 1.6 times the width of pronotum, slightly widened posteriad, widest at apical 1/3; dorsum rather strongly and longitudinally convex, weakly depressed in basal 1/4 around sutural striae, highest at basal 1/4; disc punctato-striate, the punctures small and somewhat longitudinal, often fused with one another, the striae forming short grooves, though the grooves are irregularly interrupted by ridges transversely connecting intervals; intervals gently convex, weakly micro-shagreened, scattered with microscopic punctures, somewhat transversely micro-aciculate.

Male anal sternite weakly depressed in linguiform; legs slender, not modified; ratios of the lengths of pro-, meso- and metatarsomeres: 0.32, 0.25, 0.23, 0.26, 1.22; 1.5, 0.79, 0.65, 0.52, 1.49; 2.12, 0.93, 0.71, 1.48.

Male genitalia short fusiform, 3.4 mm in length, 0.75 mm in width, rather noticeably curved in lateral view; fused lateral lobes 1.4 mm in length with weakly prolonged apex.

Body length: 20–22 mm.

Holotype: ♂, Phedong, R. P. DESGODINS leg. (MNHN). Paratypes: 1 ex., Lachen-Lachung, Sikkim, British India, VIII-1933; 1 ex., Padong, British Bootang, 1914, L. DUREL leg.; 1 ex., British Bootang, 1900, MARIN BASTI leg.; 1 ex., Gopldhara, Darjeel-

ing, 4,720–6,100 ft., 14–IX–1917, H. STEVENS (NHML).

*Notes.* This new species resembles *S. macrops* WIEDEMANN, 1823, originally described from Bengal, but can be distinguished from the latter by the dorsal surface more strongly shining, the head with more rounded eyes, the pronotum less closely, irregularly punctate, and the elytral intervals less distinctly punctate.

*Strongylium kambaitiense* sp. nov.

(Figs. 2, 23)

This new species closely resembles *S. phedongense* sp. nov., but can be distinguished from the latter by the following characteristics.

Body slightly bolder; head very weakly micro-shagreened, slightly more closely and coarsely punctate; clypeus more transverse, more noticeably flattened in basal portion, with fronto-clypeal border almost straight though not impressed; genae with outer margins more noticeably rounded and strongly raised; eyes more distinctly rounded laterad, diameter about 1/8 times the width of an eye diameter; vertex obviously with a longitudinal impression at the middle extending to occiput. Antennae filiform, ratio of the length of each segment from basal to apical: 0.6, 0.2, 1.2, 0.85, 0.85, 0.8, 0.75, 0.65, 0.65, 0.6, 0.75.

Pronotum almost trapezoidal, 1.3 times as wide as long, widest at base, feebly narrowed apicad, though slightly sinuous before base; apex almost straight, finely rimmed; base noticeably bisinuous, finely bordered and boldly rimmed; sides steeply declined to lateral margins, which are finely rimmed, though the rims are invisible from above; front angles rounded, hind angles slightly acute; disc very weakly micro-shagreened, more noticeably grooved on median line, more closely and irregularly scattered with small punctures, with three pairs of shallow impressions, one at apical 1/5, another at basal 1/4, and the other near base, and also with a somewhat triangular depression in medio-basal portion. Scutellum somewhat linguiform, feebly elevated, scattered noticeably, and closely with microscopic punctures in apical part.

Elytra 2.3 times as long as wide, 5.2 times the length and 1.8 times the width of pronotum, feebly widened posteriad, widest at apical 1/3; dorsum slightly less strongly convex, highest at basal 1/3; disc more noticeably punctato-striate, the punctures very small and longitudinally fused with one another, the striae rather bold and irregularly interrupted by ridges, which connect the intervals transversely; intervals more distinctly convex, feebly but more distinctly micro-shagreened and micro-aciculate, more sparsely scattered with microscopic punctures; humeri slightly more noticeably produced laterad; apices less distinctly produced.

Male anal sternite weakly and semicircularly depressed; legs less slender, not modified; ratios of the lengths of pro-, meso- and metatarsomeres: 0.5, 0.25, 0.26, 0.27, 1.2; 2.0, 0.8, 0.7, 0.5, 1.37; 2.25, 0.85, 0.65, 1.5.

Male genitalia in the holotype specimen almost lost (eaten by a dermestid) except for fused lateral lobes, which are about 2 mm in length and with slightly prolonged

apices. (The other four specimens are females.)

Body length: 19–22 mm.

Holotype: ♂, Kambaiti 7,000 ft. alt., NE Burma, 4–8–VI–1934, R. MALAISE leg. (NHML). Paratypes: 1 ex., same data as for the holotype; 3 exs., 22–VI–1934, same locality and collector.

*Strongylium birmanicum* sp. nov.

(Figs. 3, 24, 25)

Castaneous, with head more or less darkened; dorsal surface moderately, somewhat vitreously shining, ventral surface feebly alutaceous; each surface almost glabrous. Elongate and subcylindrical.

Head subdecagonal, very weakly micro-shagreened, rather closely punctate, the punctures fused with one another on vertex; clypeus transverse, gently depressed in basal portion, rather strongly bent downwards in front, with fronto-clypeal border arcuate and finely impressed; genae obliquely, rather strongly raised, with obtuse outer margins; frons rather wide, gently inclined forwards; eyes medium-sized for a member of the genus and subreniform, diameter almost of the same width as an eye diameter; vertex medially with an obsolete impression. Antennae filiform, ratio of the length of each segment from basal to apical: 0.5, 0.2, 0.95, 0.65, 0.6, 0.6, 0.55, 0.5, 0.5, 0.5, 0.6.

Pronotum rather quadrate, 1.17 times as wide as long, widest at the middle, slightly sinuate before base; apex gently produced and rimmed, the rim feebly thickened in middle; base bordered, thickly rimmed, feebly sinuous on each side; sides steeply inclined, almost evenly rounded laterad, with lateral margins finely rimmed, the rims in anterior halves visible from above; front angles obtuse, hind angles feebly projected; disc moderately convex, very weakly micro-shagreened, distinctly rugoso-punctate, with a pair of impressions at base on each side, and a shallow depression in postero-medial part close to base. Scutellum triangular with rounded apex, feebly elevated, very weakly micro-shagreened, closely scattered with microscopic punctures in lateral portions (impunctate in medio-longitudinal part).

Elytra 2.55 times as long as wide, 5.2 times the length and 1.66 times the width of pronotum, feebly widened posteriad, widest at apical 1/3; dorsum rather strongly convex longitudinally, highest at the middle; disc punctato-striate, the striae deeply incised though irregularly interrupted, three to ten punctures confluent and forming a section; intervals gently convex longitudinally and often transversely connected by ridges with one another, very weakly micro-shagreened and micro-aciculate, sparsely scattered with microscopic punctures.

Legs slender, not modified; ratios of the lengths of pro-, meso- and metatarsomeres: 0.35, 0.25, 0.25, 0.25, 1.2; 1.0, 0.6, 0.6, 0.4, 1.25; 1.35, 0.75, 0.45, 1.25.

Male genitalia fusiform, 2.75 mm in length, 0.4 mm in width, gently curved in lateral view; fused lateral lobes 1.25 mm in length with acute apex.

Body length: 14–17 mm.

Holotype: ♂, Kambaiti, NE Burma, 7,000 ft. alt., 22-VI-1934, R. MALAISE leg. (NHML). Paratypes: 2 exs., same data as for the holotype; 2 exs., 28-V-1934, 1 ex., 17-V-1934, 1 ex., 4~8-VI-1934, same locality and collector as for the holotype.

*Notes.* This new species resembles *S. interruptum* BLAIR, 1930, originally described from Darjeeling, but can be distinguished from the latter by the noticeably punctate pronotum with lateral margins clearly ridged in anterior halves, and front angles not rounded but obtusely angulate, and the elytral intervals transversely connected by the ridges with one another.

***Strongylium kingdonwardi* sp. nov.**

(Figs. 4, 26, 27)

This new species resembles *S. subaeneum* PIC, 1917, originally described from Yunnan, but can be distinguished from the latter by the following characteristics:

Body shape and coloration almost the same as those of *S. subaeneum*; dorsal surface less shining, distinctly alutaceous.

Head very weakly micro-shagreened, more strongly, coarsely punctate; clypeus slightly narrower, with fronto-clypeal border slightly arcuate, finely impressed; genae slightly more transverse, with rounded outer margins; frons somewhat T-shaped, slightly more steeply inclined; eyes more transverse, more deeply inlaid into head, diameter about 2/7 the width of an eye diameter; vertex medially with a longitudinal impression. Antennae filiform, reaching basal 1/3 of elytra, ratio of the length of each segment from basal to apical: 0.7, 0.2, 1.2, 1.0, 0.9, 0.85, 0.85, 0.85, 0.85, 0.8, 1.15.

Pronotum short barrel-shaped, 1.25 times as wide as long, widest slightly before the middle; apex almost straight, finely rimmed, the rim feebly thickened medially; base finely bordered, feebly sinuous on each side and rimmed, the rim thickened in middle; sides roundly produced laterad, more noticeably sinuate before base, finely rimmed, the rims almost invisible from above; front angles rounded, hind angles more acute; disc feebly micro-shagreened, closely rugoso-punctate, with an obsolete medial impression and also with a pair of somewhat comma-shaped impressions near base. Scutellum triangular, slightly convex, finely punctate, with an impunctate medial part.

Elytra 2.44 times as long as wide, 5.8 times the length and 1.8 times the width of pronotum, widest at apical 1/3; dorsum rather strongly convex longitudinally, highest at basal 1/4; disc finely punctato-striate, the punctures small, becoming larger and more elongate laterad, the striae often interrupted in lateral portions; intervals feebly convex, distinctly micro-shagreened and sculptured; humeri gently swollen; apices rounded.

Legs slender, without special modifications; ratios of the length of each segment from basal to apical: 0.35, 0.2, 0.23, 0.5, 1.2; 1.25, 0.7, 0.6, 0.4, 1.38; 1.6, 0.65, 0.55, 1.35.

Male genitalia somewhat elongated triangular, gently curved in lateral view, about 3.0 mm in length, 0.6 mm in width; fused lateral lobes about 1.45 mm in length with

slightly prolonged and sharply pointed apex.

Body length: 19–22 mm.

Holotype: ♂, Seinghku Valley, 6,000 ft. alt., Upper Burma, 10–VIII–1926, F. KINGDOM WARD leg. (NHML). Paratypes: 1 ex., same data as for the holotype; 1 ex., Nam Tamai Valley, 3,000 ft. alt., Upper Burma, 25–VII–1938, R. KAULBACK leg.; 1 ex., Hkamti Long, 4,000 ft. alt., 18–IX–1926, F. KINGDOM WARD leg.

*Strongylium cicindeliforme* sp. nov.

(Figs. 5, 28–30)

This new species resembles *S. tricondyloides* (WESTWOOD, 1875), originally described from Penang and Singapore, but can be distinguished from the latter by the following characteristics:

Body smaller (ca. 10.5 mm); head and pronotum obviously bluish; head with larger eyes, diatone less than 1/8 times the width of an eye diameter; antennae with ratio of the length of each segment from basal to apical: 0.5, 0.2, 0.8, 0.92, 0.72, 0.7, 0.7, —, —, —, —.

Pronotum more elongate, slightly less than 1.5 times as wide as long, more clearly punctate and depressed in a V-shape in posterior portion, with a pair of swellings more strongly convex at apical 1/8.

Elytra 3 times as long as wide, 3 times the length and 1.6 times the width of pronotum, more noticeably constricted at basal 1/3; disc more distinctly, transversely wrinkled in basal halves; apices more strongly produced apicad and more sharply prominent.

Male metatibiae slenderer, less strongly widened, flattened and twisted in middle; ratios of the lengths of pro-, meso- (lost in the type material) and metatarsomeres: 0.4, 0.29, 0.26, 0.25, 1.2; —, —, —, —, —; 3.4, 1.27, 0.79, 1.41.

Male anal sternite excavated somewhat in an  $\Omega$ -shape (inverted U-shape in *S. tricondyloides*), with apex truncate and weakly emarginate; male genitalia smaller and slenderer, subfusiform, 1.7 mm in length, 0.34 mm in width; fused lateral lobes 0.7 mm in length, with apices weakly prolonged and pointed.

Holotype: ♂, Bau, Sarawak, 27–IX~15–X–1909, C. J. BROOKS leg., B. M. 1936–681 (NHML). Paratype: 1 ex., Quop, W. Sarawak, 21–III–1914, G. E. BRYANT leg.; 1 ex., Pontianak, Borneo Occ., 1898 (TMB).

*Strongylium lumulumuense* sp. nov.

(Figs. 6, 31, 32)

Piceous, basal halves of femora and claws lighter in colour; dorsal surface rather strongly, metallicly shining, ventral surface feebly alutaceous; each surface almost glabrous. Subcylindrical, moderately convex longitudinally.

Head subdecagonal, almost vertical in front, closely, irregularly punctate; clypeus

semicircular, weakly depressed in basal portion, bent downwards in front, with frontoclypeal border widely arcuate and finely sulcate; genae strongly raised, with rounded outer margins; frons widely Y-shaped, steeply inclined; eyes rather large, subreniform, convex laterad, obliquely inlaid into head, sulcate along postero-internal margins, diameter about 2/7 times the width of an eye diameter; vertex medially with a longitudinal impression, extending to occiput. Antennae subfiliform, ratio of the length of each segment from basal to apical: 0.5, 0.2, 0.8, 0.55, 0.55, 0.4, 0.4, 0.35, 0.35, 0.35, 0.5.

Pronotum trapezoidal, 1.2 times as wide as long, widest at the middle, subparallel-sided in basal half, then rounded in apical half; apex almost straight and rimmed, the rim weakly thickened in middle; base bisinuous, bordered and rather thickly rimmed; sides steeply inclined, finely, somewhat triangularly rimmed, the rims invisible from above; front angles rounded; hind angles slightly obtuse; disc moderately convex, irregularly punctate, the punctures sparsely intermixed with smaller punctures, distinctly impressed in medial part, with a pair of rounded impressions at basal 1/3, also with a pair of oblique impressions close to hind corners. Scutellum short linguiform, elevated apicad, depressed in medio-basal part, scattered with minute punctures in lateral portions.

Elytra 2.1 times as long as wide, 4.75 times the length and 1.86 times the width of pronotum, gently widened posteriad, widest at apical 1/3; dorsum moderately convex, irregularly undulate, highest at basal 1/3; disc shallowly punctato-striate, the punctures rather small, elongate, 5th striae deepened near base; intervals scattered with microscopic punctures, sutural intervals weakly ridged in posterior portions, odd intervals distinctly convex, even intervals only feebly convex, intervals sometimes transversely connected with one another with ridges, 1st and 3rd intervals connected with each other at base, 9th very slightly expanding laterad in posterior halves; humeri moderately swollen; apices very feebly produced apicad.

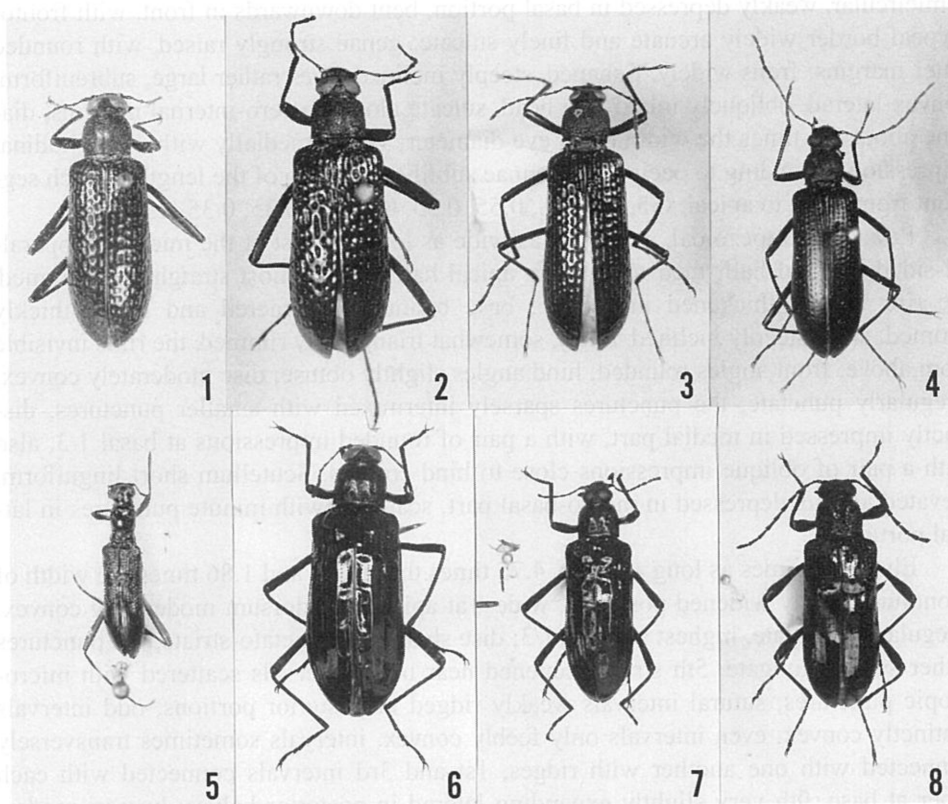
Legs slender, male mesotibiae weakly incurved; ratios of the lengths of pro-, meso- and metatarsomeres: 0.3, 0.2, 0.2, 0.2, 1.2; 0.9, 0.6, 0.55, 0.35, 1.25; 1.3, 0.65, 0.35, 1.35.

Male genitalia elongated fusiform, weakly curved in lateral view, 3 mm in length and 0.5 mm in width; fused lateral lobes somewhat nib-shaped, 1.25 mm in length, with acute apices.

Body length: 16.5–18.5 mm.

Holotype: ♂, Mt. Kinabaru, Sabah, N Borneo, 1–IV–1981, K. SUGIYAMA leg. (NSMT). Paratypes: 2 exs., Lumu Lumu, 5,500 ft. alt., Mt. Kinabalu, N Borneo, 13–IV–1929, H. M. PENDLEBURY, (NHML); 1 ex., 6–IV–1929, 1 ex., 8–VI–1929, 1 ex., 15–V–1929, same locality and collector as for the holotype; 1 ex., Headquarters, 1,500–1,700 m alt., Mt. Kinabalu, Sabah, 11–IV–1976, S. NAGAI leg. (MNHNP).

*Notes.* None of the previously described species have such elytra as are possessed by this new one. It is, however, related to the new species to be described on the following page.



Figs. 1-8. Habitus of *Strongylium* spp. — 1, *S. phedongense* sp. nov., holotype, ♂; 2, *S. kambaitiense* sp. nov., holotype, ♂; 3, *S. birmanicum* sp. nov., holotype, ♂; 4, *S. kingdonwardi* sp. nov., holotype, ♂; 5, *S. cicindeliforme* sp. nov., holotype, ♂; 6, *S. lumulumuense* sp. nov., holotype, ♂; 7, *S. itoi* sp. nov., holotype, ♂; 8, *S. kenokokense* sp. nov., holotype, ♂.

*Strongylium itoi* sp. nov.

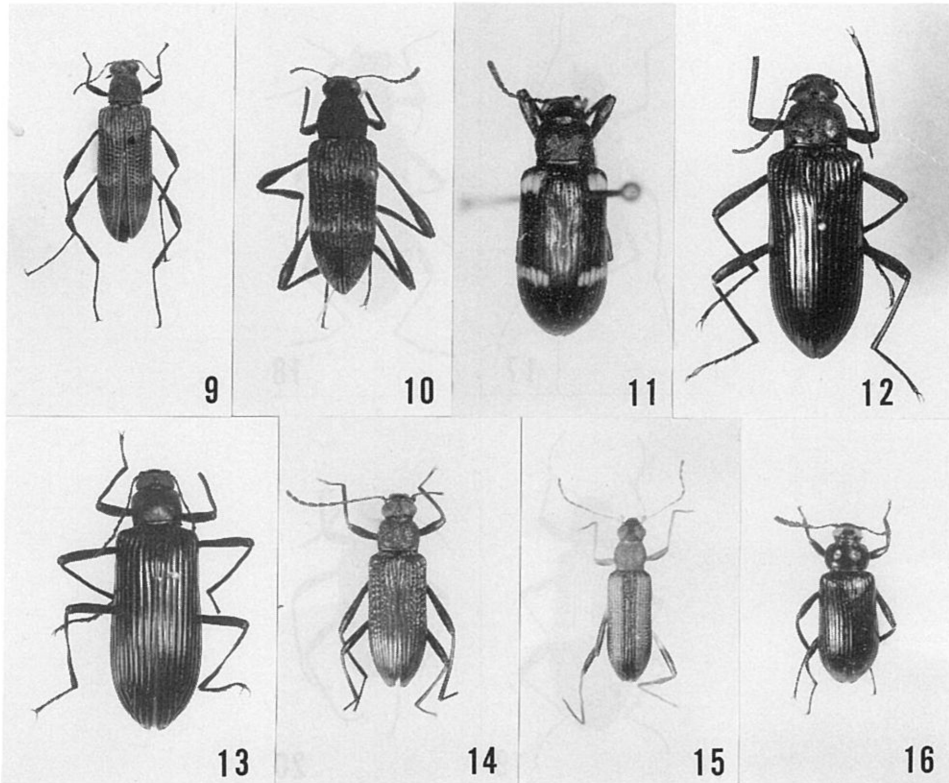
(Figs. 7, 33, 34)

This new species closely resembles the preceding new one, *S. lumulumuense* sp. nov., but can be distinguished from the latter by the following characteristics:

Body smaller and slenderer; coloration and lustre almost the same as in *S. lumulumuense*.

Head more closely and coarsely punctate; clypeus narrower, more noticeably flattened in basal part, more extended apicad, straight at apex, with fronto-clypeal border arcuate, more clearly impressed; genae with outer margins more strongly raised and angulate; frons shorter, somewhat T-shaped; eyes obviously larger, approximated to each other, rounded laterad, broadly inlaid into head, diatone 1/11 times the width of



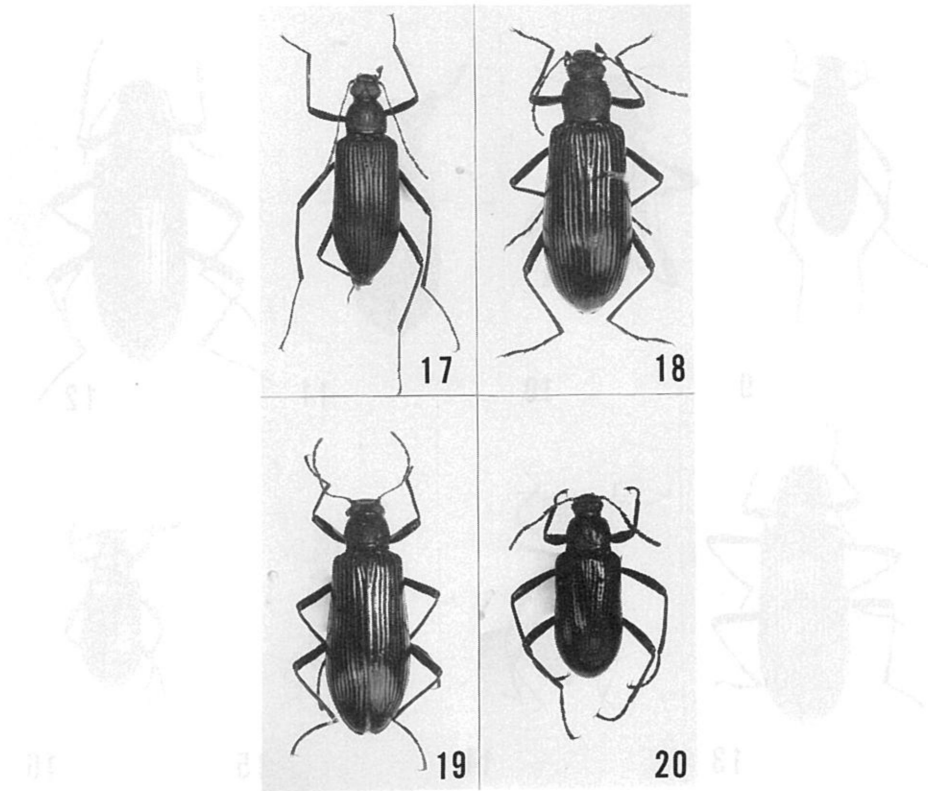


Figs. 9–16. Habitus of *Strongylium* spp. — 9, *S. trifasciatum* sp. nov., holotype, ♂; 10, *S. pilifasciatum* sp. nov., holotype, ♀; 11, *S. pici* sp. nov., holotype, ♀; 12, *S. yai* sp. nov., holotype, ♀; 13, *S. moritai* sp. nov., holotype, ♂; 14, *S. nangbangense* sp. nov., holotype, ♂; 15, *S. kohanenum* sp. nov., holotype, ♂; 16, *S. kanchanaburiense* sp. nov., holotype, ♂.

an eye diameter; vertex more raised, medially with a longitudinal impression; occiput more noticeably depressed on each side. Antennae slightly bolder, reaching basal 1/12, ratio of the length of each segment from basal to apical: 0.78, 0.2, 1.22, 0.83, 0.85, 0.88, 0.73, 0.68, 0.67, 0.65, 0.79.

Pronotum very similar in shape to that of *S. lumulumuense*, 1.18 times as wide as long, widest at the middle, hardly sinuate before base, with clearer medio-longitudinal impression; apex sublinear, more clearly bordered and finely rimmed; base bisinuous, more clearly bordered; sides gently rounded; front angles rounded, hind angles rectangular; disc rather closely punctate, the punctures slightly larger than those of *S. lumulumuense*, with impressions at the middle and basal 1/3 on each side. Scutellum sublinquiform, feebly micro-shagreened, more closely, finely punctate.

Elytra more elongate, 2.43 times as long as wide, 4.5 times the length and 1.56 times the width of pronotum, slightly narrowed at basal 1/3, widest at apical 1/3; dor-



Figs. 17–20. Habitus of *Strongylium* spp. — 17, *S. akitai* sp. nov., holotype, ♂; 18, *S. tabanai* sp. nov., holotype, ♂; 19, *S. tanikadoi* sp. nov., holotype, ♂; 20, *S. merkli* sp. nov., holotype, ♂.

sum more convex, undulate, highest at basal 2/9; disc almost similar to *S. lumulumuense*, with rows of punctures; intervals more noticeably scattered with microscopic punctures, odd intervals convex; sutural striae rather noticeably impressed; humeri almost of the same shape as in *S. lumulumuense*; apices more produced apicad.

Legs very slightly bolder; male metatibia slightly gouged at basal 1/4 of inner face; ratios of the lengths of pro-, meso- and metatarsomeres: 0.25, 0.21, 0.23, 0.22, 1.2; 1.2, 0.63, 0.59, 0.39, 1.28; 1.32, 0.68, 0.37, 1.26.

Male genitalia thinner, elongated fusiform, very weakly curved in lateral view, 3 mm in length, 0.48 mm in width; fused lateral lobes somewhat nib-shaped, 1.23 mm in length, flattened in apical half, with acute apices.

Body length: ca. 17 mm.

Holotype: ♂, nr. Keningau, Sabah, N Borneo, 19–IV–1989, M. Ito leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 2 exs., Sabah, Borneo, 14–IV~19–V–1984, S. NAGAI leg.; 2 exs., Crocker Range, 1,400 m alt., 16 miles NW of Keningau,

12-V-1984, S. NAGAI leg.; 1 ex., Tinanamantawaran, nr. Ranau, Sabah, 30~31-I-1984, S. NAGAI leg.; 1 ex., Crocker Range, 1,400 m alt., 16 miles NW of Keningau, 2~26-IV-1984, S. NAGAI leg.

*Strongylium kenokokense* sp. nov.

(Figs. 8, 35, 36)

The new species somewhat resembles *S. lumulumuense* sp. nov., but can be distinguished from the latter by the following characteristics:

Body slightly more elongate; each surface more metallicly shining. Head wider, obviously strongly, less closely punctate; clypeus narrower, with fronto-clypeal border arcuate and indistinctly sulcate; genae more transverse, with obtuse outer margins; frons shorter, more steeply inclined; eyes somewhat securiform, shorter, more noticeably convex laterad, rather noticeably sulcate along postero-internal margins, diameter 1/3 times the width of an eye diameter; vertex less strongly raised, medially with an impression. Antennae longer, reaching basal 1/5 of elytra, ratio of the length of each segment from basal to apical: 0.6, 0.2, 0.58, 0.55, 0.72, 0.63, 0.62, 0.62, 0.61, 0.61, 0.73.

Pronotum short bell-shaped, 1.1 times as wide as long, widest at base, feebly sinuous before base; apex almost straight, more finely, though clearly rimmed; base bisinuous, bordered, rather thickly rimmed; sides steeply inclined, finely, triangularly bordered, the margins almost invisible from above; front angles rounded; hind angles slightly acute; disc noticeably convex, longitudinally impressed in middle, with a large rounded depression in anterior half, a somewhat triangular depression at base, and also with a vague oblique impression close to base on each side; surface very strongly, irregularly punctate, the punctures often fused with one another. Scutellum triangular with rounded sides, sparsely scattered with minute punctures.

Elytra 2.34 times as long as wide, 4.18 times the length and 1.57 times the width of pronotum, gently widened posteriad, widest at apical 1/3; dorsum moderately convex, weakly, irregularly undulate, with a pair of low gibbosities slightly behind basal 1/10; disc with rows of slightly elongate punctures, which are larger and sparser than those in *S. lumulumuense*; intervals more sparsely scattered with microscopic punctures, each interval almost flat, 9th less distinctly expanded laterad in posterior halves; humeri gently swollen; apices moderately rounded.

Legs shorter, more noticeably punctate; tibiae clavate; ratios of the lengths of pro-, meso- and metatarsomeres: 0.29, 0.25, 0.23, 0.24, 1.2; 1.0, 0.6, 0.5, 0.4, 1.36; 1.2, 0.6, 0.37, 1.33.

Male genitalia short fusiform, weakly curved in lateral view, 2.48 mm in length, 0.5 mm in width; fused lateral lobes nib-shaped, 1 mm in length, with pointed apex.

Body length: 16.0–16.5 mm.

Holotype: ♂, nr. Keningau, Sabah, N Borneo, 19-IV-1989, M. ITO leg. (NSMT). Paratypes: 1 ex., Kenokok, 3,300 ft., Mt. Kinabalu, N Borneo, 22-IV-1929, H. M.

PENDLEBURY (NHML); 1 ex., Sarawak, N Borneo, Coll. HOSE, no further data (MNHNP).

*Strongylium trifasciatum* sp. nov.

(Figs. 9, 37, 38)

Dark yellowish brown, feebly with reddish tinge, hairs on surfaces gray; head, pronotum and scutellum weakly shining though rather densely clothed with bent hairs, elytra moderately shining, with three fasciae of hairs at basal, middle and apical parts, ventral surface alutaceous. Elongate, gently convex longitudinally.

Head somewhat hexagonal; closely and rugosely punctate; clypeus semicircular, weakly micro-shagreened, gently bent in front, with fronto-clypeal border widely arcuate and sulcate; genae obliquely raised, with rounded outer margins; frons moderately inclined forwards, somewhat T-shaped; eyes subreniform, noticeably convex laterad, obliquely inlaid into head, diatone about 1/3 times the width of an eye diameter; vertex with a longitudinal impression. Antennae slightly clavate, ratio of the length of each segment from basal to apical: 0.45, 0.2, 0.6, 0.6, 0.26, 0.25, 0.25, 0.25, 0.24, 0.24, 0.26.

Pronotum trapezoidal, 1.19 times as wide as long, widest at base, gently narrowed anteriorly in middle, rather noticeably so in apical portions; apex almost straight, thinly ridged; base noticeably ridged and widely bisinuous; front angles rounded, hind angles subrectangular; sides steeply inclined, with lateral borders not remarkable; disc gently convex, impressed close to base on each side, shallowly and longitudinally grooved in medial part, wholly closely punctate, each puncture somewhat umbilicate and with a long bent hair. Scutellum subcordate, micro-shagreened, closely punctate, and densely clothed with bent hairs.

Elytra 2.65 times as long as wide, 4.74 times the length and 1.48 times the width of pronotum, widest at base, with three remarkable fasciae of hairs, one being slightly oblique and located at basal 1/5, another transverse and at apical 4/9, and the other somewhat triangular in apical 2/7; dorsum longitudinally convex, gently flattened in antero-medial part, with a pair of indistinct gibbosities at basal 1/9; disc with rows of rather large punctures, each with small granules on both sides of upper edge; 1st (sutural), 8th and 9th intervals clothed with bent hairs; humeri and apices without modification.

Male anal sternite slightly truncate at apex; legs rather slender; male protibia slightly thickened apicad, with ventral face weakly gouged in apical 2/5; male mesotibia slightly thickened apicad, weakly bent at basal 2/5; male metatibia slightly thickened apicad, feebly curved in middle; ratios of the lengths of pro-, meso- and metatarsomeres: 0.2, 0.16, 0.17, 0.17, 1.2; 2.75, 1.22, 0.98, 0.67, 1.44; 3.3, 1.22, 0.7, 1.58.

Male genitalia rather elongate, gently curved in lateral view, 2 mm in length, 0.32 mm in width, slightly constricted between basal piece and lateral lobes; fused lat-

eral lobes fusiform, about 1 mm in length, with nib-shaped apices.

Body length: ca. 11 mm.

Holotype: ♂, Sumatra, "vidit" 1885, RITSEMA coll. (MNHNP).

*Notes.* The new species resembles *S. griseifasciatum* PIC, 1917, from Nias Is., Indonesia, in having fasciae of hairs on the elytra, but can be distinguished from the latter by possession of three, not two, fasciae. The new one is obviously a member of the species-group to which *S. cultellatum* MÄKLIN, 1864, *S. costipenne* MÄKLIN, 1864, etc., belong, because of the rows of elytral punctures obviously granulated.

*Strongylium pilifasciatum* sp. nov.

(Fig. 10)

Dark reddish brown, major portion of head, and apical margin of pronotum brownish black; hairs on surfaces pale yellow; head and pronotum alutaceous, sparsely clothed with hairs, scutellum densely clothed with hairs, elytra weakly, vitreously shining, with 3 bands of hairs, legs weakly shining and haired, ventral surface somewhat alutaceous, though noticeably clothed with hairs. Elongate, gently convex longitudinally, though flattened in middle.

*Female.* Head somewhat rhombical, partly micro-shagreened, closely, irregularly rugoso-punctate; clypeus trapezoidal, gently widened and inclined apicad, with fronto-clypeal border finely sulcate, almost straight in middle, bent forwards in lateral portions; genae obliquely raised, with rounded outer margins; frons gently inclined forwards; eyes subreniform, convex laterad, obliquely inlaid into head, diatone 0.4 times the width of an eye diameter; vertex medially with a vague longitudinal impression. Antennae subclavate, reaching base of pronotum, ratio of the length of each segment from basal to apical: 0.43, 0.2, 0.74, 0.61, 0.37, 0.35, 0.34, 0.37, 0.37, 0.38, 0.4.

Pronotum 1.22 times as wide as long, widest at the middle; apex almost straight, thickly rimmed; base slightly sinuous on each side, ridged; sides steeply declined to lateral margins, which are moderately produced laterad, and bidenticulate; front angles rounded and hind angles obtuse in dorsal view; disc weakly convex, weakly depressed longitudinally along median line, obliquely impressed close to base on each side, whole surface of pronotum closely punctate, the punctures finely ocellate and often irregularly fused with one another. Scutellum short linguiform, rather closely punctate and densely haired.

Elytra 2.25 times as long as wide, 4 times the length and 1.37 times the width of pronotum, widest near base, with 3 remarkable bands of hairs, one being transverse and located at basal 1/5, another also transverse at apical 4/9, the other obliquely crescent-shaped in apical 1/4; dorsum moderately convex, weakly depressed in antero-internal part, with a pair of low gibbosities at basal 1/9; disc with rows of rather large punctures, whose bottoms are rounded and flattened, and whose upper edges possess four tubercles, two larger ones on respective sides and the two smaller ones in front and behind; intervals sparsely scattered with small, haired punctures, the inner two in-

tervals moderately elevated, those in lateral portions noticeably ridged; humeri only slightly, longitudinally swollen; apices slightly projected.

Legs rather slender; femora and tibiae of middle and hind legs thickened apicad; ratios of the lengths of pro-, meso- and metatarsomeres: 0.3, 0.2, 0.2, 0.2, 1.2; 2.8, 1.04, 0.96, 0.68, 1.76; 3.24, 1.3, 0.72, 1.64.

Body length: ca. 11.5 mm.

Holotype: ♀, Pontianak, West Borneo, 1901, Coll. Oberthur (MNHNP).

*Notes.* The new species rather closely resembles the preceding new species, *S. trifasciatum* sp. nov., but can be distinguished from the latter by the robuster body with wider and distinctly denticulate pronotum, elytra with rows of larger punctures, and femora and tibiae more noticeably thickened.

### *Strongylium pici* sp. nov.

(Fig. 11)

Blackish brown, antennae, elytra, and apical portions of femora piceous, two pairs of elytral patches and anal sternite yellow; head and pronotum weakly, sericeously shining, scutellum and elytra gently, somewhat vitreously shining; dorsal surface almost glabrous, ventral surface sparsely haired. Oblong-ovate, moderately convex above.

Female. Head subhexagonal, partly micro-shagreened, irregularly rugoso-punctate; clypeus somewhat trapezoidal, widely depressed in basal portion, rather strongly bent downwards in front, with fronto-clypeal border widely arcuate and grooved; genae somewhat obliquely rhombical and rather distinctly raised, with obtuse outer margins; frons gently inclined forwards, though becoming steeper close to fronto-clypeal border; eyes subreniform, gently convex laterad, somewhat obliquely in-laid into head, diatone about 1.6 times the width of an eye diameter; vertex medially with a vague impression. Antennae clavate, reaching basal part of elytra, ratio of the length of each segment from basal to apical: 0.36, 0.2, 0.6, 0.37, 0.33, 0.35, 0.36, 0.37, 0.32, 0.33, 0.42.

Pronotum subquadrate, 1.19 times as wide as long, widest at the middle and base; apex straight, ridged in a wide V-shape; base bordered and rimmed, weakly sinuous on each side; sides gently produced, weakly sinuate before base, steeply declined to lateral margins, which are finely rimmed, the rims hardly visible from above; front angles rounded, hind angles slightly acute; disc with a pair of swellings, which are divided by a wide longitudinal groove; surface very weakly micro-shagreened, coarsely and irregularly punctate, each puncture with a fine hair at each centre. Scutellum linguiform, slightly convex, micro-shagreened, sparsely scattered with microscopic punctures in lateral portions.

Elytra 2.09 times as long as wide, 3.59 times the length and 1.46 times the width of pronotum, feebly widened posteriad, widest at apical 3/8, narrowed at basal 1/3, with two pairs of patches, ones at basal 1/9 narrower and thicker, the others at apical

3/8 wider and thinner, each margin of patches more or less sinuous; dorsum moderately convex, weakly depressed at basal 3/8, highest at basal 1/4; disc with rows of fine punctures, which are slightly longitudinal and closely set, those in lateral portions becoming larger and sparsely set; intervals almost flattened, very weakly micro-shagreened, scattered with microscopic punctures, often finely, transversely aciculate; humeri gently swollen; apices rounded.

Legs medium-sized, without peculiarities; ratios of the lengths of pro-, meso- and metatarsomeres: 0.24, 0.16, 0.16, 0.17, 1.2; 0.49, 0.25, 0.23, 0.25, 1.22; 0.59, 0.33, 0.31, 1.21.

Body length: 9.5–11 mm.

Holotype: ♀, Tonkin, Montes Mauson, IV–V., 2–3,000', H. FRUHSTORFER coll. (MNHN). Paratypes: 2 exs., same data as for the holotype (TMB); 1 ex., Tonkin, Than Moi, VI–VII, FRUHSTORFER coll. (TMB).

*Notes.* The present new species resembles *S. bourcieri* PIC, 1917, originally described from Tonkin, in having 4 remarkable patches on the elytra, but can easily be distinguished from the latter by the smaller body with elytral patches differently shaped and located. In the case of *S. bourcieri*, the anterior patches are located at basal 1/3.

This species resembles *S. gibbosipenne* NAKANE, 1963, in general features, and also *S. pseudogibbosipenne* MASUMOTO, 1981. Though lacking in the elytral patches, these species might be the relatives of the present new one and form a species-group of their own.

### *Strongylium yai* sp. nov.

(Fig. 12)

Dark coppery brown with brassy tinge, antennae and tarsi piceous, head, pronotum, scutellum and ventral surface weakly shining, elytra gently and metallicly shining; each surface almost glabrous. Subcylindrical.

*Female.* Head subrhombical, closely punctate; clypeus semicircular, gently inclined forwards, moderately bent downwards, with fronto-clypeal border arcuate and finely sulcate; genae somewhat obliquely rhombical, weakly raised outwards; frons rather wide and short, gently inclined forwards, with an impunctate area at the middle; eyes transversely ovate, distinctly convex laterad, obliquely inlaid into head, diatone about 2/5 times the width of an eye diameter; vertex very softly impressed and impunctate in middle. Antennae subfiliform, reaching basal 1/9 of elytra, ratio of the length of each segment from basal to apical: 0.8, 0.23, 1.12, 0.96, 0.8, 0.78, 0.76, 0.75, 0.73, 0.68, 0.72.

Pronotum trapezoidal, 1.3 times as wide as long, widest at base; apex very slightly produced forwards in medial portion, finely rimmed, bordered on each side; base clearly bordered and ridged, gently sinuous on each side; sides moderately produced laterad, feebly sinuate before base, steeply declined to lateral margins, which are

finely rimmed, the rim invisible from above; front angles rounded, hind angles slightly angulate; disc moderately convex, longitudinally and shallowly depressed in medial part, rather closely though irregularly scattered with shallow punctures, with a pair of impressions close to base. Scutellum triangular with rounded sides, feebly convex, scattered with fine punctures in postero-lateral portions.

Elytra 2.4 times as long as wide, 4.5 times the length and slightly less than 1.5 times the width of pronotum, narrowest at basal 1/3 and widest at apical 4/9; disc rather strongly convex, highest at basal 1/6, very weakly depressed between sutural striae; disc punctato-striate, the punctures rather closely set and somewhat rhombical at upper edges, those in inner portion small, becoming finer apicad, those in antero-lateral portions comparatively large; 1st and 2nd, and 3rd and 4th striae united and impressed close to base; intervals gently convex, sparsely scattered with microscopic punctures; humeri rather distinctly swollen; apices without peculiarities.

Legs rather slender; ratios of the lengths of pro-, meso- and metatarsomeres: 0.5, 0.39, 0.3, 0.35, 1.95; 1.68, 0.79, 0.77, 0.75, 2.23; 1.8, 0.81, 0.78, 2.26.

Body length: 30 mm.

Holotype: ♀, Ban Nang Bang, nr. Sai Yok National Park, Kanchanaburi Pref., W Thailand, 13-V-1985, M. SAWAI leg. (NSMT).

*Notes.* This new species somewhat resembles *S. orientale* MÄKLIN, 1864, originally described from Java and Borneo, but can be distinguished from the latter by the robuster body, with dorsal surface coppery brown with brassy tinge, wider pronotum, triangular scutellum, and elytra with striae punctures rounded and closely set.

### *Strongylium moritai* sp. nov.

(Figs. 13, 39, 40)

This new species is also a member of the species-group of *S. orientale*, and resembles the preceding new one, *S. yai* sp. nov., but can be discriminated from the latter by the following characteristics:

Smaller (27–30 mm) and slenderer; wholly black; elytra shiny not metallicly but lacquer-like. Head slightly more convex, more noticeably though weakly micro-shagreened, more finely punctate; clypeus more strongly dilated apicad, more strongly bent downwards, with fronto-clypeal border linearly impressed; genae more strongly raised towards outer margins, which are triangular; frons obviously steeply inclined forwards; eyes obviously large, noticeably convex laterad and obliquely inlaid into head, diatone 1/11 times the width of an eye diameter; vertex somewhat rhombically impressed in middle. Antennae subfiliform, ratio of the length of each segment from basal to apical: 0.8, 0.2, 1.2, 1.17, 1.0, 0.84, 0.81, 0.78, 0.76, 0.74.

Pronotum slightly wider, 1.26 times as wide as long, widest at basal 2/5, more noticeably sinuate before base; apex slightly produced (almost straight in *S. yai*), more clearly bordered and rimmed, the rim feebly thickened in middle; base bisinuous, narrower, more clearly bordered, and slightly more thickly rimmed; sides slightly more



rounded; front angles rounded, hind angles more acute; disc gently convex, hardly grooved in medial part, impressed at basal 2/5 on each side, weakly micro-shagreened, rather closely, irregularly punctate, the punctures obviously smaller than those in *S. yai*. Scutellum slightly elongated triangular and flattened (slightly wide-based triangular and feebly convex in *S. yai*), very weakly micro-shagreened, scattered with fine punctures.

Elytra more elongate, 2.33 times as long as wide, 5.15 times the length and 1.73 times the width of pronotum, widest at apical 2/5; dorsum more convex, highest at basal 2/5; disc obviously more finely punctato-striate, 4th and 5th striae connected with each other, the connection more anteriorly located; intervals more convex, more finely aciculate and punctate, the sutural ones not flattened but convex; basal parts of elytra not so depressed as in *S. yai*; humeri and apices almost of the same shape as in *S. yai*.

Legs slightly slenderer; protibia in male with ventral side weakly gouged in apical 3/5; mesotibia in male gently curved; metatibia in male remarkably compressed and slightly constricted in middle; ratios of the lengths of pro-, meso- and metatarsomeres: 0.39, 0.23, 0.22, 0.25, 1.49; 2.1, 0.72, 0.63, 0.59, 1.81; 2.38, 0.8, 0.67, 1.78.

Male genitalia short fusiform, 4.1 mm in length, 0.9 mm in width, gently curved in lateral view; fused lateral lobes about 1.7 mm in length, with elongate and acute apex.

Holotype: ♂, Gngong Jasar, West Malaysia, 2-IV-1976, Y. MIYAKE leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 5 exs., 19 miles from Tapha, W Malaysia, 31-III-1976, Y. MIYAKE leg.; 1 ex., Cameron Highlands, W Malaysia, 23-IV-1974, C. C. CHUA leg. (MNHNP); 1 ex., Cameron Highlands, VI-1981, no collector's name.

### *Strongylium nangbangense* sp. nov.

(Figs. 14, 41-43)

Blackish brown, with pronotum, elytra, mouth parts, gula, etc., yellowish brown, each surface almost glabrous and weakly bearing greenish metallic reflection. Elongate fusiform, rather strongly convex above.

Head transversely elliptical, moderately convex above, rather closely punctate; clypeus oblong, weakly depressed in basal portion, gently bent downwards in front, clearly bordered from frons by widely arcuate sulcus; genae oblique, moderately raised, with rounded outer margins; frons somewhat T-shaped, gently inclined forwards; eyes large, rounded convex laterad, broadly inlaid into head, diameter about 1/8 times the width of an eye diameter. Antennae reaching basal 1/5 of elytra, 7 apical segments weakly flattened and more or less dilated to each apex, ratio of the length of each segment from basal to apical: 0.5, 0.2, 0.7, 0.65, 0.6, 0.6, 0.55, 0.6, 0.55, 0.5, 0.55.

Pronotum quadrate, slightly less than 1.4 times as wide as long, widest at the mid-

dle; apex triangularly and widely ridged, the ridge almost smooth though sparsely scattered with minute punctures; base very feebly bisinuous and ridged, the ridge becoming thicker in middle, smooth and sparsely scattered with minute punctures; sides rather steeply declined to finely ridged lateral margins, which are gently arcuate laterad and barely visible from above; front angles rounded, hind angles rectangular; disc gently convex, longitudinally grooved in middle, the groove forming an I-shape, obliquely impressed at base on each side, whole surface very weakly micro-shagreened, rather closely and coarsely punctate, bottom of each puncture micro-granulate. Scutellum triangular and feebly convex above, very weakly micro-shagreened, scattered with a few small punctures.

Elytra 2.33 times as long as wide, 4.4 times the length and 1.3 times the width of pronotum, very feebly widened posteriad and widest at apical 3/7; dorsum rather strongly convex though very feebly flattened in middle, weakly tri-undulate, though the posterior undulation is indistinct; disc punctato-striate, the striae in antero-lateral portions interrupted, the punctures longitudinally fused with one another, becoming larger, forming coarse foveae; intervals very weakly micro-shagreened, sparsely scattered with microscopic punctures, the intervals in inner portion gently convex, those in lateral portions ridged; apices roundly produced posteriad and feebly dehiscent.

Male anal sternite semicircularly depressed in apical 2/3, with apex truncate and slightly, widely emarginate; legs rather slender, male metatibia twisted, with inner margin weakly gouged in basal half; ratios of the lengths of pro-, meso- and metatarsomeres: 0.3, 0.25, 0.25, 0.2, 1.2; 2.15, 1.2, 0.8, —, —; 1.8, 0.7, 0.55, 1.4.

Male genitalia slender, 3.35 mm in length and 0.5 mm in width, gently constricted near basal portion of lateral lobes, almost straight in lateral view; fused lateral lobes 1.5 mm in length, with prolonged apex.

Body length: ca. 9 mm.

Holotype: ♂, Ban Nang Bang, nr. Sai Yok National Park, Kanchanaburi Pref., W Thailand, 12-V-1985, M. SAWAI leg. (NSMT). Paratypes: 4 exs., Koh Anem Vill., Ban Rai, Kanchanaburi Pref., W Thailand, 14-V-1985, M. SAWAI leg.

Notes. This new species resembles *S. azuripes* ARDOIN, 1967, originally described from Laos and should be a relative of it, but can be easily distinguished from the latter by the smaller body in different colour, with the male metatibia less strongly twisted.

### *Strongylium kohanemum* sp. nov.

(Figs. 15, 44, 45)

Pale yellowish brown, with head, apical halves of antennae, sutural and marginal portions of elytra, and apical halves of meso- and metafemora brownish black, pronotum and scutellum slightly reddish; head except for clypeus and pronotum feebly, somewhat sericeously shining, clypeus and elytra moderately, somewhat alutaceously shining, ventral surface feebly so; each surface almost glabrous, rather elongate, gently

convex longitudinally.

Head somewhat triangular, gently convex above, weakly micro-shagreened, irregularly punctate, the punctures often fused with one another in middle part; clypeus short, flattened in basal half, gently inclined in middle part and bent downwards in front, bordered from frons by widely arcuate fine sulcus; genae obliquely raised, with obtusely angulate outer margins; frons gently inclined forwards; eyes large, roundly convex laterad, obliquely and roundly inlaid into head, diatone about 1/2 times the width of an eye diameter. Antennae filiform, reaching basal 1/3 of elytra, ratio of the length of each segment from basal to apical: 0.35, 0.2, 0.65, 0.55, 0.5, 0.45, 0.4, 0.4, 0.35, 0.35, 0.35.

Pronotum rather barrel-shaped, 1.2 times as wide as long, widest at the middle; apex sublinearly, finely rimmed, though slightly thickened in middle, scattered with microscopic punctures; base almost straightly, clearly bordered, more boldly rimmed than apex, scattered with microscopic punctures; sides steeply inclined laterad, without marginal ridges; front angles obtuse, hind angles subrectangular; disc gently convex, medially with a longitudinal groove, whole surface weakly micro-shagreened, rather closely, coarsely punctate, the punctures often fused with one another. Scutellum sublinguiform, weakly micro-shagreened, scattered with a few shallow punctures.

Elytra 2.75 times as long as wide, 4.1 times the length and 1.4 times the width of pronotum, subparallel-sided though weakly widened posteriad, widest at 1/3; dorsum rather strongly convex, slightly flattened in middle part; disc punctato-striate, the punctures rather large, rounded at bottoms and subquadrate at upper edges, areas between punctures often feebly, transversely ridged; intervals very weakly micro-shagreened and ridged; humeri without peculiarities; apices slightly dehiscent.

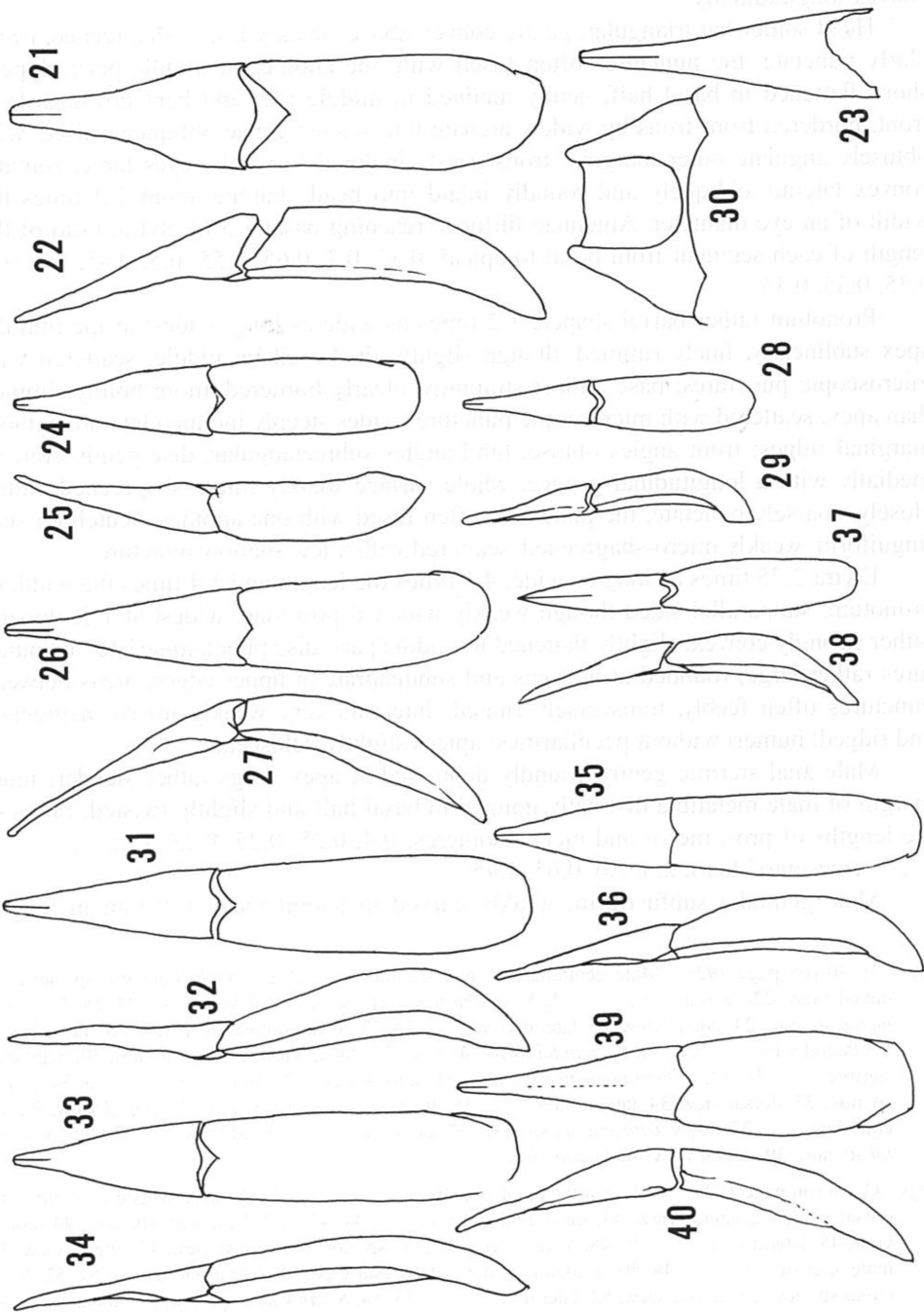
Male anal sternite gently, roundly depressed at apex. Legs rather slender; inner margin of male metatibia distinctly gouged in basal half and slightly twisted; ratios of the lengths of pro-, meso- and metatarsomeres: 0.4, 0.25, 0.25, 0.25, 1.2; —, —, —, —, — (mesotarsi lost); 2.8, 1.0, 0.65, 1.45.

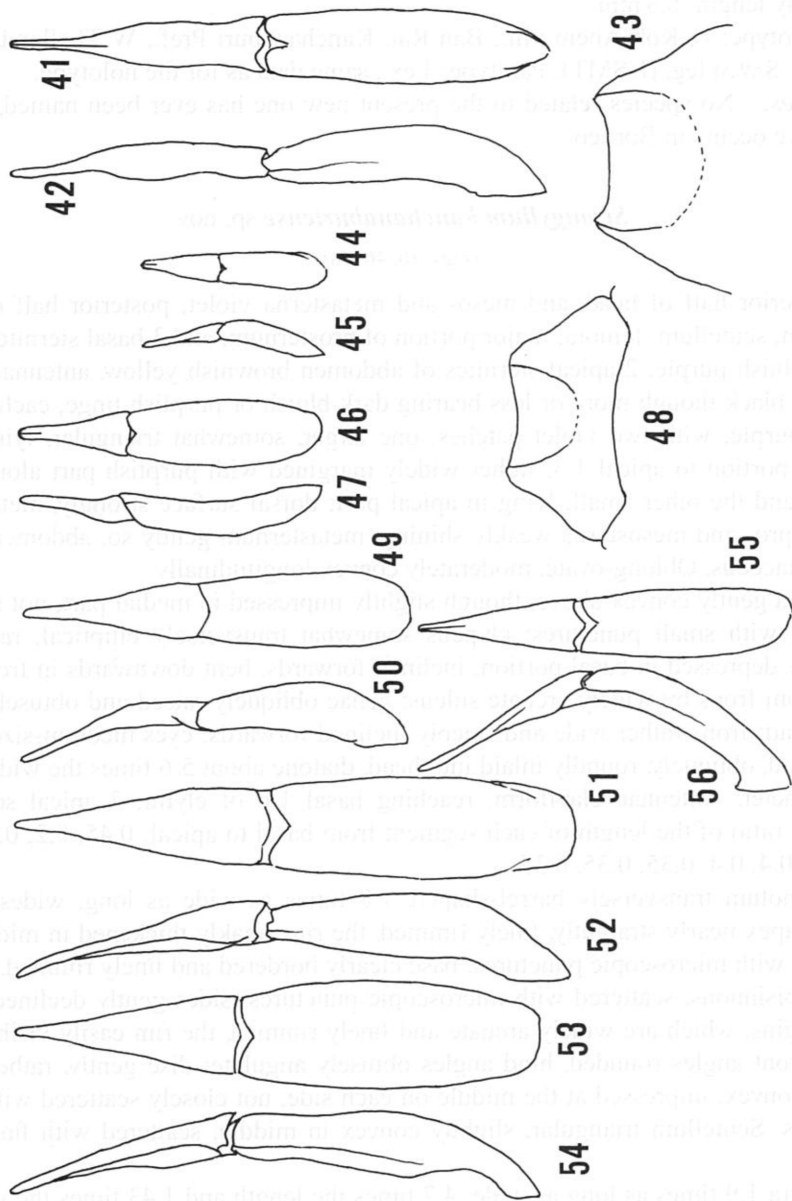
Male genitalia subfusiform, weakly curved in lateral view, 1.25 mm in length,

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Figs. 21–40 (on page 192). Male genitalia and anal sternite. — 21–22, *S. phedongense* sp. nov., 21, dorsal view, 22, lateral view. — 23, *S. kambaitiense* sp. nov., dorsal view. — 24–25, *S. birmanicum* sp. nov., 24, dorsal view, 25, lateral view. — 26–27, *S. kingdonwardi* sp. nov., 26, dorsal view, 27, lateral view. — 28–30, *S. cicindeliforme* sp. nov., 28, dorsal view, 29, lateral view, 30, male anal sternite. — 31–32, *S. lumulumuense* sp. nov., 31, dorsal view, 32, lateral view. — 33–34, *S. itoi* sp. nov., 33, dorsal view, 34, lateral view. — 35–36, *S. kenokokense* sp. nov., 35, dorsal view, 36, lateral view. — 37–38, *S. trifasciatum* sp. nov., 37, dorsal view, 38, lateral view. — 39–40, *S. moritai* sp. nov., 39, dorsal view, 40, lateral view.

Figs. 41–56 (on page 193). Male genitalia and anal sternites. — 41–43, *S. nangbangense* sp. nov., 41, dorsal view, 42, lateral view, 43, male anal sternite. — 44–45, *S. kohanemum* sp. nov., 44, dorsal view, 45, lateral view. — 46–48, *S. kanchanaburiense* sp. nov., 46, dorsal view, 47, lateral view, 48, male anal sternite. — 49–50, *S. akitai* sp. nov., 49, dorsal view, 50, lateral view. — 51–52, *S. tabanai* sp. nov., 51, dorsal view, 52, lateral view. — 53–54, *S. tanikadoi* sp. nov., 53, dorsal view, 54, lateral view. — 55–56, *S. merkli* sp. nov., 55, dorsal view, 56, lateral view.





0.25 mm in width; fused lateral lobes rather nib-shaped, 0.45 mm in length, with dorsal surface microscopically punctate, and acute apex.

Body length: 6.5 mm.

Holotype: ♂, Koh Anem vill., Ban Rai, Kanchanaburi Pref., W Thailand, 14-V-1985, M. SAWAI leg. (NSMT). Paratype: 1 ex., same data as for the holotype.

*Notes.* No species related to the present new one has ever been named, though its relative occurs in Borneo.

*Strongylium kanchanaburiense* sp. nov.

(Figs. 16, 46-48)

Anterior half of head, and meso- and metasterna violet, posterior half of head, pronotum, scutellum, femora, major portion of prosternum, and 3 basal sternites of abdomen bluish purple, 2 apical sternites of abdomen brownish yellow, antennae, tibiae and tarsi black though more or less bearing dark bluish or purplish tinge, each elytron golden purple, with two violet patches, one larger, somewhat triangular, lying from humeral portion to apical 1/3, rather widely margined with purplish part along inner margin, and the other small, lying in apical part; dorsal surface strongly, metallicly shining, pro- and mesosterna weakly shining, metasternum gently so, abdomen somewhat alutaceous. Oblong-ovate, moderately convex longitudinally.

Head gently convex above, though slightly impressed in medial part, not sparsely scattered with small punctures; clypeus somewhat transversely elliptical, rather remarkably depressed in basal portion, inclined forwards, bent downwards in front, bordered from frons by widely arcuate sulcus; genae obliquely raised and obtusely angulate laterad; frons rather wide and steeply inclined forwards; eyes medium-sized, convex laterad, obliquely, roundly inlaid into head, diatone about 5/6 times the width of an eye diameter. Antennae claviform, reaching basal 1/6 of elytra, 7 apical segments widened, ratio of the length of each segment from basal to apical: 0.45, 0.2, 0.65, 0.5, 0.5, 0.4, 0.4, 0.4, 0.35, 0.35, 0.35.

Pronotum transversely barrel-shaped, 1.8 times as wide as long, widest at the middle; apex nearly straightly, finely rimmed, the rim weakly thickened in middle and scattered with microscopic punctures; base clearly bordered and finely rimmed, the rim slightly bisinuous, scattered with microscopic punctures; sides gently declined to lateral margins, which are widely arcuate and finely rimmed, the rim easily visible from above; front angles rounded, hind angles obtusely angulate; disc gently, rather transversely convex, impressed at the middle on each side, not closely scattered with small punctures. Scutellum triangular, slightly convex in middle, scattered with fine punctures.

Elytra 1.9 times as long as wide, 4.7 times the length and 1.43 times the width of pronotum, slightly widened posteriad, widest at apical 1/3; dorsum gently convex, thickest at basal 1/3; disc punctato-striate, the striae sometimes interrupted, the punctures rather closely set; intervals feebly elevated, scattered with microscopic punctures;

humeri gently swollen; apices feebly produced.

Male anal sternite truncate and slightly emarginate, semicircularly depressed in apical portion. Legs slightly thickened; male protibia curved ventrad, with ventral side weakly gouged and haired in apical 3/5; male metatibia with inner side distinctly gouged and twisted, and apical portion somewhat spatulate; ratios of the lengths of pro-, meso- and metatarsomeres: 0.3, 0.2, 0.25, 0.25, 1.2; 1.85, 0.85, 0.75, 0.5, 1.4; 1.25, 0.7, 0.4, 1.25.

Male genitalia fusiform, only feebly curved in lateral view, 1.8 mm in length, 0.33 mm in width; fused lateral lobes 0.7 mm in length, with dorsal surface minutely punctate and apex weakly prolonged.

Body length: 7.5 mm.

Holotype: ♂, Ban Nang Bang, nr Sai Yok National Park, Kanchanaburi Pref., 14-V-1985, H. AKIYAMA leg. (NSMT).

*Notes.* The new species closely resembles *S. chiangdaoense* MASUMOTO, 1997, from N Thailand, but can be easily distinguished from the latter by the larger and more solid body, with pronotum obviously wider, and elytra distinctly patched.

### *Strongylium akitai* sp. nov.

(Figs. 17, 49, 50)

Dark reddish brown, head, disc of pronotum, apical portions of femora, metasternum, inner parts of abdomen, etc., brownish black; each surface sericeous; almost glabrous. Elongate, rather strongly convex.

Head subdecagonal, convex in middle, weakly micro-shagreened, rather closely, finely punctate; clypeus semicircular, flattened in basal portion, gently inclined and haired in front, with fronto-clypeal border widely V-shaped and rather noticeably grooved; genae rather strongly, obliquely raised, with rounded outer margins; frons somewhat Y-shaped, gently inclined forwards, finely ridged; eyes distinctly large, convex laterad, rather broadly, somewhat obliquely inlaid into head, diameter about 1/12 times the width of an eye diameter; vertex medially with a vague longitudinal impression. Antennae subfiliform, reaching basal 1/3 of elytra, ratio of the length of each segment from basal to apical: 0.5, 0.2, 1.23, 1.12, 0.83, 0.8, 0.68, 0.56, 0.51, 0.49, 0.53.

Pronotum somewhat trapezoidal, 1.13 times as wide as long, widest at the middle, rounded apicad and weakly narrowed basad; apex feebly produced, finely, bisinuously bordered, rimmed, the rim thickened in middle; base bisinuously ridged, slightly produced in middle; front angles rounded, hind angles subrectangular; sides steeply declined to lateral margins, which are finely rimmed and hardly visible from above; disc gently convex, weakly micro-shagreened, rather closely punctate, the punctures sparsely intermixed with smaller ones, with a vague medial groove, which is longitudinally, finely impressed in the anterior portion in the holotype. Scutellum triangular with gently rounded sides, flattened, very weakly micro-shagreened, scattered with microscopic punctures.

Elytra subfusiform, 2.22 times as long as wide, 4.1 times the length and 1.61 times the width of pronotum, widest at apical 4/9; dorsum rather strongly convex, though antero-internal portion less strongly so, highest at basal 1/3; disc grooved and punctate, the punctures small, haired, rounded at each bottom, transversely, somewhat elliptically notching intervals at upper edges; marginal groove not interrupted by small prominence; intervals gently convex, micro-shagreened, very weakly micro-reticulate and scattered with microscopical punctures; humeri weakly swollen; apices slightly projected.

Male anal sternite semicircularly depressed in apical 2/3, with truncated apex. Legs slender, male protibia almost straight with ventral side very feebly gouged in apical 3/4; male mesotibia gently curved inwards; male metatibia almost straight, with inner side very weakly gouged in basal 4/7; ratios of the lengths of pro-, meso- and metatarsomeres: 0.69, 0.37, 0.36, 0.24, 1.2; 2.27, 1.22, 0.91, 0.53, 1.30; 2.38, 1.12, 0.58, 1.32.

Male genitalia subfusiform, weakly curved in lateral view, 2.3 mm in length, 0.48 mm in width; fused lateral lobes 1.23 mm in length, with prolonged apex.

Body length: 13–14.5 mm.

Holotype: ♂, Funcha-rindô, Amami-oshima Is., Kagoshima Pref., 28–VIII–1985, K. KAWADA leg. (NSMT). Paratype: 1 ex., nr. Nagakumo Pass, 290–310 m alt., Tatsugô, Amami-oshima Is., 29–VIII–1985, K. AKITA leg.

*Notes.* This new species closely resembles *S. kawadai* MASUMOTO, 1981, originally described from Ishigaki Is., but can be distinguished from the latter by the slenderer body, with larger eyes, pronotum more finely, not rugosely punctate, scutellum not elevated but flattened, elytra with the grooved punctures not ovate but rounded, intervals neither ridged nor wrinkled, marginal grooves not interrupted by the swelling, and slenderer legs.

### *Strongylium tabanai* sp. nov.

(Figs. 18, 51, 52)

Piceous, with mouth parts, apical parts of 11th antennal segments, basal parts of tarsi, claws, membranous parts between abdominal sternites, etc., more or less lighter in colour; head and pronotum weakly shining, elytra rather strongly, vitreously shining, ventral surface except for metasternum feebly alutaceous, metasternum moderately shining; each surface except for antennae and tarsi almost glabrous, antennae and tarsi haired. Elongate, convex longitudinally, feebly widened posteriad.

Head subdecagonal, slightly micro-shagreened, closely punctate; clypeus semicircular, flattened in basal portion, gently bent downwards and truncate in front, with a short transverse impression in middle, fronto-clypeal border fine and arcuate; genae obliquely rhombical, noticeably raised outwards, with rounded outer margins; frons rather wide though short; eyes subreniform, convex laterad, somewhat triangularly in-laid into head, grooved along inner margins, diatone 0.6 times the width of an eye di-



ameter; vertex weakly raised, shallowly and widely grooved in middle. Antennae subfiliform, reaching basal 1/6 of elytra, ratio of the length of each segment from basal to apical: 0.47, 0.2, 0.8, 0.58, 0.58, 0.55, 0.52, 0.49, 0.45, 0.42, 0.58.

Pronotum somewhat barrel-shaped, 1.25 times as wide as long, widest at apical 2/5, rather noticeably sinuous before base; apex almost straight, thinly though clearly rimmed, the rim finely punctate; base bisinuous, thickly rimmed, the rim finely punctate; sides gently convex laterad, with lateral margins finely bordered; front angles obtuse, hind angles acute; disc gently convex, very shallowly impressed in medio-posterior part and at basal 1/3 on each side, very slightly micro-shagreened, closely and irregularly punctate, the punctures sometimes connected to one another, their bottoms microscopically granulate. Scutellum triangular, remarkably concave in medio-basal portion, irregularly scattered with fine punctures.

Elytra 2.15 times as long as wide, 4.35 times the length and 1.79 times the width of pronotum, widest at apical 1/3; dorsum rather strongly convex, highest at basal 4/5; disc finely punctato-striate, sutural striae and basal parts of 5th striae rather noticeably deepened; intervals moderately convex, ridged in 1st intervals, surface of disc very slightly micro-shagreened, scattered with microscopic punctures, finely, transversely aciculate; humeri gently swollen; apices rounded.

Legs slender; male protibiae slightly bent dorsad at basal 1/3; ratios of the lengths of pro-, meso- and metatarsomeres: 0.5, 0.28, 0.32, 0.35, 1.2; 1.4, 0.8, 0.7, 0.6, 1.28; 1.7, 0.88, 0.7, 1.33.

Male genitalia subfusiform, 2.9 mm in length, 0.6 mm in width, gently curved in lateral view; fused lateral lobes 1.5 mm in length, with acute apex.

Body length: 18.5 mm.

Holotype: ♂, Luoji Shan, 2,900 m alt., Puge Xian, Sichuan Sheng, SW China, 22-X-1996, M. TABANA leg. (NSMT).

*Notes.* This new species resembles *S. chinense* FAIRMAIRE, 1891, originally described from "Tchang-Yang", but can be distinguished from the latter by the larger body, with wider pronotum more strongly and closely punctate, elytra more shiny, more finely punctato-striate, and intervals less strongly convex.

### *Strongylium tanikadoi* sp. nov.

(Figs. 19, 53, 54)

This new species closely resembles the preceding new one, *S. tabanai* sp. nov., but can be distinguished from the latter by the following characteristics:

Body smaller (14–16 mm), shortened; darker in colour, slightly more shiny.

Head slightly wider though more distinctly constricted at neck, more finely punctate, longitudinally with an impunctate part in middle; clypeus shorter, smooth, devoid of short transverse impression, with fronto-clypeal border more clearly impressed and roundly arcuate; genae less noticeably raised, with obtuse outer margins; frons more steeply inclined forwards; eyes more transverse, more convex laterad, roundly inlaid

into head, not grooved along eyes, diatone obviously narrower, 0.48 times the width of an eye diameter; vertex longitudinally, shallowly grooved in middle. Antennae slightly shorter, reaching basal 1/10 of elytra, ratio of the length of each segment from basal to apical: 0.37, 0.2, 0.72, 0.6, 0.58, 0.55, 0.53, 0.47, 0.46, 0.41, 0.47.

Pronotum wider, 1.25 times as wide as long, widest at the middle, less noticeably sinuous before base; apex very slightly sinuous at the middle; base more noticeably bisinuous, rimmed, the rim becoming thinner in lateral portions; lateral margins more finely bordered; front angles more obtuse, hind angles more acute; disc hardly micro-shagreened but smooth, less closely punctate, the punctures slightly smaller and hardly connected with one another, with an oblique impression at base on each side. Scutellum triangular, obviously not concave but flat, slightly micro-shagreened, rather closely scattered with fine punctures in lateral portions.

Elytra 2.17 times as long as wide, 4.5 times the length and 1.84 times the width of pronotum, more widened posteriad, widest at apical 1/3; dorsum less strongly convex, highest at basal 2/5; disc finely punctato-striate, sutural striae less noticeably deepened, basal parts of 2nd and 3rd striae more clearly so; intervals less strongly convex, less remarkably ridged in 1st intervals, less noticeably micro-shagreened, less so punctate and less so aciculate.

Legs slightly shorter; ratios of the lengths of pro-, meso- and metatarsomeres: 0.57, 0.37, 0.35, 0.32, 1.2; 1.3, 0.72, 0.7, 0.49, 1.23; 1.73, 0.8, 0.62, 1.26.

Male genitalia subfusiform, slightly bolder than those of *S. tabanai* sp. nov., 2.85 mm in length, 0.6 mm in width, gently curved in lateral view; fused lateral lobes shorter, 1.25 mm in length.

Holotype: ♂, Rekejue Xiang, 2,500 m alt., Jinyang Xian, Sichuan Sheng, SW China, 16-X-1996, M. TANIKADO leg. (NSMT). Paratypes: 2 exs., 17-X-1996, same locality and collector as for the holotype.

### *Strongylium merkli* sp. nov.

(Figs. 20, 55, 56)

This new species resembles *S. varians* (PASCOE, 1883), originally described from "Gilolo, Penang", but can be distinguished from the latter by the following characteristics:

Body obviously larger (12–13 mm in length; 9.5–10 mm in *S. varians*) and robust; head, pronotum except for medial part, scutellum and ventral surface almost dark violet, elytra purplish, pronotum medially with purplish tinge; head and elytra metallicly shining, pronotum feebly sericeous, ventral surface weakly shining; each surface almost glabrous.

Head wider, more distinctly grooved in medial portion, more coarsely, irregularly punctate; clypeus semicircular, more noticeably dilated apicad, with fronto-clypeal border more clearly impressed; genae more elongate, with more obtuse outer margins; frons wider; eyes more noticeably convex laterad, diatone 0.8 times (0.7 times in *S.*

*varians*) the width of an eye diameter; vertex longitudinally ridged in medial portion, weakly depressed on each side. Antennae reaching basal 1/7, slightly thickened apicad, with 7 apical segments flattened and dilated towards each apex, ratio of the length of each segment from basal to apical: 0.78, 0.2, 0.62, 0.58, 0.68, 0.65, 0.67, 0.66, 0.65, 0.63, 0.73.

Pronotum slightly wider, 1.24 times as wide as long (1.19 times in *S. varians*), widest at the middle; apex almost straight, more thickly rimmed in middle; base bisinuous, more thickly rimmed; sides slightly more produced laterad, more sinuate before base; front angles obtuse with rounded corners; hind angles acute, slightly more projected; disc less strongly convex, feebly micro-shagreened (almost smooth in *S. varians*), scattered with obviously larger punctures. Scutellum subcordate, wider, flattened, more closely scattered with small punctures (feebly convex and sparsely scattered with finer punctures in *S. varians*).

Elytra wider, 1.95 times (2.4 times in *S. varians*) as long as wide, 3.6 times the length and 1.6 times the width of pronotum, widest at apical 1/3, very slightly narrowed in basal 1/3; dorsum slightly more convex, highest at basal 3/8; disc with rows of punctures, which are closer, stronger and somewhat rectangular (oblong-ovate in *S. varians*); intervals slightly convex (almost flat in *S. varians*), very weakly micro-shagreened, aciculate, more frequently scattered with microscopic punctures; humeri more noticeably swollen; apices more noticeably rounded.

Legs slightly more elongate, without special features; ratios of the lengths of pro-, meso- and metatarsomeres: 0.26, 0.21, 0.22, 0.25, 1.2; 0.95, 0.5, 0.5, 0.45, 1.3; 1.02, 0.6, 0.41, 1.35.

Male genitalia fusiform, robust, 2.3 mm in length, 0.5 mm in width (1.35 mm in length, 0.4 mm in width in *S. varians*), gently curved in lateral view; fused lateral lobes 1 mm in length, with acute apex.

Holotype: ♂, Bac thai, 300 m alt., ca. 50 km NE of Thai-nguen, Vietnam, 16-V-1963, O. KABAKOV leg. (TMB). Paratype: 1 ex., Mt. Mauson, Tonkin, IV-V, 2-3,000", H. FRUHSTORFEER leg. (MNHNP).

## 要 約

益本仁雄：アジア産ナガキマワリ族 (*Strongyliini*) の研究. V. 東アジアのナガキマワリ属の20新種について. — アジア産ナガキマワリ族の研究の第5回として, 東アジアに分布するナガキマワリ属 (*Strongylium*) の20新種を記載した. 今後, 種群ごとにまとめることを考慮して, 各種の近似種をノートや記載文中に可能なかぎり明記した. 新たに与えた新名は, 次のとおりである. *Strongylium phedongense* sp. nov., *S. kambaitiense* sp. nov., *S. birmanicum* sp. nov., *S. kingdonwardi* sp. nov., *S. cicindeliforme* sp. nov., *S. lumulumuense* sp. nov., *S. itoi* sp. nov., *S. kenokokense* sp. nov., *S. trifasciatum* sp. nov., *S. pilifasciatum* sp. nov., *S. pici* sp. nov., *S. yai* sp. nov., *S. moritai* sp. nov., *S. nangbangense* sp. nov., *S. kohanemum* sp. nov., *S. kanchanaburiense* sp. nov., *S. akitai* sp. nov., *S. tabanai* sp. nov., *S. tanikadoi* sp. nov., *S. merkli* sp. nov.

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### New Synonymy in the Genus *Strongylium* (Coleoptera, Tenebrionidae, Strongyliini)

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Through the courtesy of Dr. Claude GIRARD of the Muséum National d'Histoire Naturelle, Paris, I had the opportunity of examining type specimens of the species described by FAIRMAIRE and PIC. The following new synonyms were found in the course of my study on the Asian *Strongyliini*.

#### *Strongylium westermanni* MÄKLIN, 1864

*Strongylium westermanni* MÄKLIN, 1864, Mon. *Strongylium*, 341.

*Strongylium cariosipenne* FAIRMAIRE, 1896, Notes Leyden Mus., **18**: 112. [*Syn. nov.*]

#### *Strongylium villosum* MÄKLIN, 1864

*Strongylium villosum* MÄKLIN, 1864, Mon. *Strongylium*, 341.

*Strongylium rufotinctum* PIC, 1917, Mél. exot.-ent., (23): 18. [*Syn. nov.*]