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New species of *Strongylium* W. Kirby, 1819 (Coleoptera: Tenebrionidae: Stenochiinae) from the Indo-Australian faunal transition zone

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In the present paper, the following six new species of the genus *Strongylium* s. str. W. Kirby, 1819 from Wallacea are described and illustrated: *S. bidens* sp. nov., *S. callainum* sp. nov., *S. gawu* sp. nov., *S. napolovi* sp. nov., *S. rufocaeruleum* sp. nov., and *S. suwawa* sp. nov.

Key words: Taxonomy, darkling beetles, Wallacea

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INTRODUCTION

Stenochiini W. Kirby, 1837, a worldwide tribe of stenochiine darkling beetles, comprises about 46 genera (Bouchard et al. 2021). *Strongylium* W. Kirby, 1819, cosmopolitan in the distribution but with most species in the tropical and subtropical regions, is the largest in its tribe and comprises two subgenera – *Strongylium* s. str. W. Kirby, 1819 and *Afrostrongylium* Robiche, 2019 (Bouchard et al. 2021) – and over 1000 species (Matthews et al. 2010). So far, only in the Palaearctic and Oriental realms nearly 600 species are attributed to *Strongylium* s. str. (K. Masumoto, unpublished checklist).

The faunal composition of *Strongylium* remains poorly known for Wallacea and, in particular, its main island – Sulawesi. Ten species are so far recorded for Sulawesi and

one another is likely to occur there since its distribution stretches from the Greater Sunda Islands to New Guinea (K. Masumoto, unpublished checklist). In the recent decades, seven *Strongylium* species from Sulawesi were described (Masumoto 1997, 1998, 2000; Masumoto & Akita 2011) from occasional material.

The aim of the present paper is to present descriptions of the following new species of *Strongylium* from Sulawesi: *S. bidens* sp. nov., *S. callainum* sp. nov., *S. gawu* sp. nov., *S. napolovi* sp. nov., *S. rufocaeruleum* sp. nov., and *S. suwawa* sp. nov.

MATERIAL AND METHODS

All taxa are listed in alphabetical order since a phylogenetic arrangement is not yet possible. Paired morphological structures are generally treated as singular in text. Labels, if more than one on the same specimen, are separated by a double slash. Author's comments are provided in square brackets. For morphological studies, a Leica S6D binocular stereomicroscope (Leica Microsystems, Wetzlar, Germany) was used. Habitus and genitalia images were produced with a Canon EOS 5D SLR camera (Canon Co., Tokyo, Japan) and a Canon MP-E 65 mm macro lens (Canon Co., Tokyo, Japan). Genitalia were relaxed in KOH solution, mounted on microscope slides, and fixed in dimethyl hydantoin formaldehyde (DMHF) for study and imaging; after the study, genitalia were mounted on separate card on same pin with corresponding specimen and fixed in DMHF. Helicon Focus 7 software (Helicon Soft, Kharkiv, Ukraine) was used for image stacking. Further image manipulations were done using GNU Image Manipulation Program (GIMP).

The type specimens of new species are provided with a black framed label on red paper with "HOLOTYPUS" or "PARATYPUS", respectively. Authors' comments given in square brackets.

Acronyms for material repositories:
BMNH – Natural History Museum (former British Museum, Natural History), London, United Kingdom;
DTC – Dmitry Telnov collection, Rīga, Latvia;
NME – Naturkundemuseum Erfurt, Germany.

RESULTS

Tenebrionidae Latreille, 1802
Stenochiinae W. Kirby, 1837
Stenochiini W. Kirby, 1837
Strongylium W. Kirby, 1819: 417 (original description).
Type species: *Strongylium chalconatum* W. Kirby, 1819, monotypy.

***Strongylium* (s. str.) *bidens* sp. nov.** (Figs 1, 7A–C)
urn:lsid:zoobank.org:act:F46A1DC9-9ED4-498D-9DE1-DB51088BD6C1

Type material designated. Holotype ♂ NME: INDONESIA, Sulawesi, South Sulawesi Prov., Makale 5 km SW, 3°08'S, 119°49'E, 01.I.2018, 1500 m, disturbed lowland rainforest, day collecting [printed]. Paratypes 3 specimens. 1♂ NME & 1♀ DTC: same label as holotype; 1♂ DTC: INDONESIA, Sulawesi, South Sulawesi Prov., Makale 6 km SSW, 3°08'S, 119°49'E, 10.I.2018, 1700 m, disturbed lowland rainforest, day collecting [printed].

Derivatio nominis. Named from Latin 'bidens' (bident), an apically bifurcate fishing tool, to point on the acutely bidentate elytral apex of this species. Noun in apposition.

Fig. 1. *Strongylium* (s. str.) *bidens* sp. nov., paratype ♂, habitus, dorsal view.

Measurements. Holotype male, total body length 10.7 mm; head length 1.4 mm, maximum head width across compound eyes 1.6 mm, pronotal length 1.7 mm, maximum pronotal width 2.5 mm, elytral length 7.6 mm, maximum combined width 3.4 mm. Female paratype 11.1 mm long.

Description. Holotype male. Dorsal and ventral forebody dark castaneous with weak khaki metallic reflection. Elytra with strong bronze-green, in part purple-reddish metallic reflection. Mouthparts and 3.5 basal antennomeres castaneous, terminal maxillary palpomere black-brown. Femora dark castaneous, distally with weak purple reflection. Tibiae dark castaneous in basal, blackish in distal portion. Tarsi blackish, pretarsal claws brown. Ventral pterothorax castaneous with khaki green metallic reflection, abdominal sternites khaki green metallic. Head trapezoid, slightly transverse, moderately glossy dorsally and ventrally. Labrum subtruncate at anterior margin. Epistoma truncate at anterior margin. Moderately deep, nearly straight to slightly concave impression at place of frontoclypeal suture. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, strongly emarginate at anterior margin at antennal insertion and genal canthus, broadly rounded at posterior margin, strongly protruding from lateral, moderately - from dorsal outline of head. Minimum interocular distance about 0.85× as wide as length of dorsal eye portion. Tempus very short. Head dorsum densely punctate with irregularly circular, deep punctures, corrugate at upper eye margin. Intervening spaces glossy and glabrous, generally narrower than to as wide as punctures but distinctly wider than those on vertex. Head dorsal setation inconspicuous. Antenna moniliform, slightly widened distally, reaches metacoxa when directed posteriorly. Basal antennomere about twice as long as antennomere two. Antennomere two small, hardly longer than wide. Antennomere three 4.5× as long as antennomere two, slightly shorter than antennomere four. Antennomeres 5–10 slightly thickened, 8–10 elongate cylindrical, not or hardly widened distally. Terminal antennomere rounded apically, about as long as penultimate antennomere. Terminal maxillary palpomere small, strongly triangular. Pronotum transverse, moderately glossy dorsally, widest in basal third, slightly converging anteriad, truncate at both anterior and posterior margin. Anterior pronotal edge finely margined, margin expanded medially forming poorly defined, broadly triangular flange. Posterior pronotal edge broadly margined. Anterolateral angles broadly rounded, posterolateral angles nearly right-angled in dorsal view. Lateral pronotal edge delicately

margined, not visible in dorsal view. Pronotal punctures circular, deep and dense. Intervening spaces glossy and glabrous, generally narrower than, at some parts of pronotal disc twice as wide as punctures. Dorsal pronotal setae inconspicuous, seta raises from centres of some punctures, directed anteriad to obliquely laterally, not surpass length of corresponding puncture. Scutellar shield small, triangular, acutely angulate at posterior margin, glossy and glabrous, minutely punctate. Elytra widest across humeri, glossy and shiny, slightly and gradually converging towards apex, dorsally somewhat humped in postbasal fourth, gradually declivous towards apex, inconspicuous transverse impression beyond humped portion (best visible in lateral view). Elytron apical sutural angle nearly right-angled (in dorsal view), apical outer angle produced into acute spine (Fig. 1). Elytral surface with deepened, punctured longitudinal striae (eight complete to nearly complete and one short scutellar stria visible in dorsal view) and elevated, rounded (in dorsal aspect) interstriae. Striae 4–5 shortest and conjoin preapically, striae 3–6 not reaching elytral apex, conjoin preapically. Punctures in striae significantly smaller on apical fourth and in striae 1–2, becoming large, deep, crateriform in outer striae. Intervening spaces glossy and glabrous, in part transversely wrinkled in part sparsely microscopically punctate, variably wide depending on size of punctures. Elytral lateral margin not visible in dorsal view. Elytron glabrous. Epipleuron complete, narrow, glabrous. Metathoracic wings fully developed (functional). Abdominal sternites minutely punctate with microscopic isodiametric intervening spaces, very shortly setose. Legs very long and slender, especially mesothoracic pair. Femur slender, slightly clavate, densely punctate. Tibia shorter than corresponding femur, nearly straight, hardly widens distally. Tarsus long, that of mesotibia slightly shorter than corresponding tibia. Terminal tarsomere of each leg longer than combined length of remaining correspondding tarsomeres. Male tergite VII and sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 7A–C.

Sexual dimorphism. Female antenna comparatively shorter, exceeds slightly beyond mesocoxa when directed posteriorly. Female tergite VII and sternite VII broadly rounded at posterior margin.

Differential diagnosis. No known congeners from Wallacea have bispinose elytral apex. The elytral punctures (much stronger in the outer elytral striae) in the combination with the dorsal sculpture of the forebody are additional distinguishing features of the new species. *Strongylium* (s. str.) *cuspidatum* Kaszab, 1977 from New Guinea has the elytral apex bidentate, but the elytra distinctly tuberculate and the pronotum with projecting anterolateral angles and a median angulation on the lateral margin.

Ecology. Diurnal species, sampled at 1500–1700 m in a disturbed mid-montane rainforest.

Distribution. Sulawesi (central part): South Sulawesi Province.

***Strongylium* (s. str.) *callainum* sp. nov.** (Figs 2, 7D–F)
urn:lsid:zoobank.org:act:0FAE756E-9166-4107-A97F-124892870AFE

Type material designated. Holotype ♂ NME: INDONESIA, Sulawesi, South Sulawesi Prov., Palopo 12 km NWW, Battang vill., 2°57’S, 120°05’E, 04.I.2018, 800–900 m, disturbed lowland rainforest, day collecting [printed]. The antennomeres 9–11 of the right antenna are missing.
Paratypes 1♂ DTC & 1♀ NME: same label as holotype.

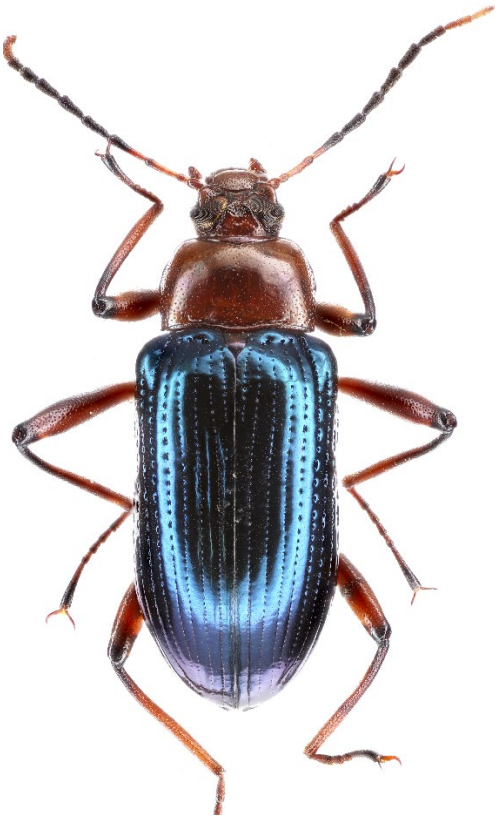

Fig. 2. *Strongylium* (s. str.) *callainum* sp. nov., paratype ♂, habitus, dorsal view.

Derivatio nominis. Named from Latin 'callainum' (turquoise, greenish blue) to point on the turquoise reflecting elytra of this new species. Neuter.

Measurements. Holotype male, total body length 10.7 mm; head length 1.5 mm, maximum head width across compound eyes 1.7 mm, pronotal length 1.7 mm, maximum pronotal width 2.8 mm, elytral length 7.5 mm, maximum combined width 3.7 mm. Male paratype 11.8 mm, female paratype 11.2 mm long.

Description. Holotype male. Dorsal and ventral forebody and scutellar shield pale rufous. Elytra with strong pale blue metallic reflection. Antennomeres 1–2 and 10 rufous, 3–4 yellowish rufous basally, blackish apically, 5–9 blackish, terminal antennomere yellowish rufous with darkened tip. Legs rufous with blackish knees and most of terminal tarsomere which is rufous only at base. Venter uniformly pale rufous. Head slightly trapezoid, transverse, moderately glossy dorsally and ventrally. Labrum subtruncate at anterior margin. Epistoma truncate at anterior margin. Deep, nearly straight impression at place of frontoclypeal suture. Frons slightly declivous in front of compound eyes. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, anterior margin strongly emarginate at antennal insertion and genal canthus, broadly rounded at posterior margin, strongly protruding from lateral, moderately from dorsal outline of head. Minimum interocular distance about 0.6× as wide as length of dorsal eye portion. Tempus very short. Head dorsum irregularly punctate, deep and denser on frons and along posterior eye margin, less dense and deep on vertex and epistoma. Intervening spaces glossy and glabrous, variably wide, generally wider than punctures except on frons between compound eyes. Head dorsal setation inconspicuous. Antenna moniliform, not widened distally, reaches metacoxa when directed posteriorly. Basal antennomere nearly twice as long as antennomere two. Antennomere two small, longer than wide. Antennomere three 3.5× as long as antennomere two, 0.8× as long as antennomere four. Antennomeres 4–7 slightly widened distally. Penultimate antennomere elongated, slender. Terminal antennomere elongate fusiform, shorter than penultimate antennomere. Terminal maxillary palpomere small, strongly triangular. Pronotum strongly transverse, moderately glossy dorsally, widest across midlength, slightly converging anteriad, truncate at anterior, slightly sinuous at posterior margin. Anterior pronotal edge finely margined, margin expanded medially

forming poorly defined, broadly triangular flange. Posterior pronotal edge broadly margined. Anterolateral angles broadly rounded, posterolateral angles nearly right-angled in dorsal view. Lateral pronotal edge delicately margined, not visible in dorsal view. Pronotal punctures small and sparse on most of pronotal disc, significantly larger and more dense on lateral sides. Intervening spaces glossy and glabrous, generally much wider than punctures, as wide as to narrower than those on lateral sides. Pronotal dorsum glabrous. Scutellar shield small, triangular, acutely angulate at posterior margin, glossy and glabrous, impunctate. Elytra widest across postmedium, dorsally moderately convex, glossy and strongly shiny. Elytral surface with punctured longitudinal striae (seven complete to nearly complete and one short scutellar stria visible in dorsal view) and barely elevated interstriae. Striae 4–5 shortest and nearly conjoin preapically. Punctures in striae significantly larger and deeper in outer striae 5–7 on basal portion of elytron. Intervening spaces glossy and glabrous, sparsely microscopically punctate and with microscopic isodiametric sculpture, variably wide. Elytral lateral margin not visible in dorsal view. Elytra glabrous. Epipleuron complete, narrow except at humerus, moderately glossy, glabrous. Metathoracic wings fully developed (functional). Abdominal sternites sparsely, flat punctate. Legs very long and slender, especially mesothoracic pair. Femur slender, slightly clavate, densely punctate. Tibia subequally long to corresponding femur, slightly arched (frontal) to nearly straight (middle and posterior), hardly widens distally. Terminal tarsomere of front leg longer than combined length of remaining protarsomeres. Male tergite VII and sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 7D–F.

Sexual dimorphism. Female antenna shorter, exceeds slightly beyond mesocoxae.

Intraspecific variability. One male paratype with castaneous dorsal forebody and venter.

Differential diagnosis. There is no species related to this new one known in the Oriental or Papuan region except for *S.* (s. str.) *rufocaeruleum* sp. nov. (described herein). See the differential diagnosis of the latter below.

Ecology. Diurnal species, sampled at 800–900 m in a disturbed lower montane rainforest. In diurnal species of *Strongylium* dorsal body colouration is usually bright and shiny or with special markings and the specimens usually dwell on leaves or various rainforest vegetation.

Distribution. Sulawesi (central part): South Sulawesi Province.

***Strongylium* (s. str.) *gawu* sp. nov.** (Figs 3, 8A–C)
urn:lsid:zoobank.org:act:92A2EBD2-3808-4EA0-A117-EFD96091EEE1

Type material designated. Holotype ♂ NME: INDONESIA, Sulawesi, South Sulawesi Prov., Palopo 9 km NW, Battang vill., 2°57'S, 120°07'E, 10.XII.2017, 420 m, disturbed lowland rainforest, day collecting [printed]. The right terminal antennomere is missing.

Derivatio nominis. Named from Buginese 'gawu' (blue) to point on the blue dorsum of this species. Bugis or Buginese is main language in South Sulawesi Province, especially in lowland areas. Noun in apposition.

Measurements. Holotype male, total body length 6.2 mm; head length 0.8 mm, maximum head width across compound eyes 1.2 mm, pronotal length 1.2 mm, maximum pronotal width 1.7 mm, elytral length 4.2 mm, maximum combined width 2.4 mm.

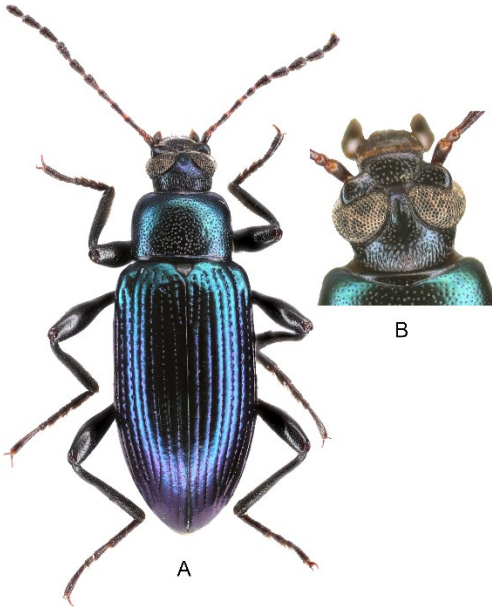

Fig. 3. *Strongylium* (s. str.) *gawu* sp. nov., holotype ♂. A – Habitus, dorsal view; B – Head, dorsal view [not to scale].

Description. Holotype male. Dorsum uniformly deep blue metallic, forebody with black background. Mouthparts, antenna, scutellar shield and legs black. Venter black, abdominal terminalia brownish. Head elliptical, transverse, slightly glossy dorsally and ventrally. Labrum subtruncate at anterior margin. Epistoma truncate at anterior margin. Deep, concave impression at place of frontoclypeal suture. Frons declivous in front of compound eyes. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, anterior margin strongly emarginate at antennal insertion and genal canthus, broadly rounded at posterior margin, strongly protruding from lateral, moderately from dorsal outline of head. Minimum interocular distance about 0.5× as wide as length of dorsal eye portion. Tempus very short. Inner and posterior eye margin furcate along. Short raised sulcus at inner edge of each compound eye at narrowest portion of frons; frons shortly cut-like impressed mediad to each sulcus, medially flattened and inconspicuously sulcate (Fig. 3B). Head dorsum irregularly, shallowly punctate, punctures smaller and denser on epistoma; frons medially impunctate. Intervening spaces moderately glossy and glabrous, with microscopic isodiametric microsculpture, variably wide. Head widely glabrous except on anterior portion. Antenna moniliform, hardly widened in distal half, exceeds beyond mesocoxa when directed posteriorly. Basal antennomere about 2.5× as long as antennomere two. Antennomere two small, slightly longer than wide. Antennomere three about 2.8× as long as antennomere two, slightly longer than antennomere four. Antennomeres 6–10 slightly widened, with large flat punctures. Penultimate antennamere elongated, longer than wide. Terminal antennomere irregularly fusiform, apically rounded, about 1.1× as long as penultimate antennomere. Terminal maxillary palpomere small, strongly triangular. Cranial 'neck' longitudinally strigose. Pronotum strongly transverse, moderately glossy dorsally and laterally, subparallel at lateral margins, truncate at anterior and posterior margin. Anterior pronotal edge finely margined, margin thickened medially. Posterior pronotal edge broadly margined. Anterolateral angles broadly rounded, posterolateral angles nearly right-angled in dorsal view. Lateral pronotal edge delicately margined, not visible in dorsal view. Pronotal punctures larger than those on head, neatly circular, moderately deep. Intervening spaces moderately glossy and glabrous, with microscopic isodiametric sculpture, narrower than (mainly) to 3× as wide (rarely) as punctures. Pronotal dorsum glabrous. Scutellar shield small, narrowly triangular, acutely angulate at posterior margin, glossy and glabrous, sparsely punctate. Elytra widest across midlength, dorsally slightly convex, glossy and shiny. Elytral surface with punctured longitudinal striae (seven complete to nearly complete and one short scutellar stria visible in

dorsal view) and flat interstriae. Striae 4–5 conjoin preapically. Punctures in striae moderately deep, rather small. Interstriae slightly convex, with microscopic isodiametric sculpture. Elytral lateral margin not visible in dorsal view. Elytra glabrous. Epipleuron complete, moderately wide and glossy. Metathoracic wings fully developed (functional). Abdominal sternites sparsely, flat punctate. Legs very long and slender, especially mesothoracic pair. Femur slender, clavate, moderately dense punctate. Tibia subequally long to corresponding femur, slightly widened distally. Mesotarsus as long as, metatarsus nearly as long as corresponding tibia. Male tergite VII and sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 8A–C.

Sexual dimorphism. Female is unknow.

Differential diagnosis. No similar species are known. An undescribed species from Borneo is slightly similar in having a small body with the dark greenish dorsum. The new species is easily distinguished from the Bornean in the subrectangular, only slightly convex pronotum (the pronotum constricted anteriorly, rather strongly convex in dorsal aspect and longitudinally impressed along the midline in the Bornean species), the elytra simply convex, with the moderately spaced punctures in striae (the elytra convex but weakly undulate in basal third with the closely punctate striae in the Bornean species).

Ecology. Diurnal. Sampled at 420 m in a degraded lowland rainforest.

Distribution. Sulawesi (central part): South Sulawesi Province.

***Strongylium* (s. str.) *napolovi* sp. nov.** (Figs 4, 9A–C)
urn:lsid:zoobank.org:act:CAACCAB9-C123-40EF-B265-98D7DD2E3F84

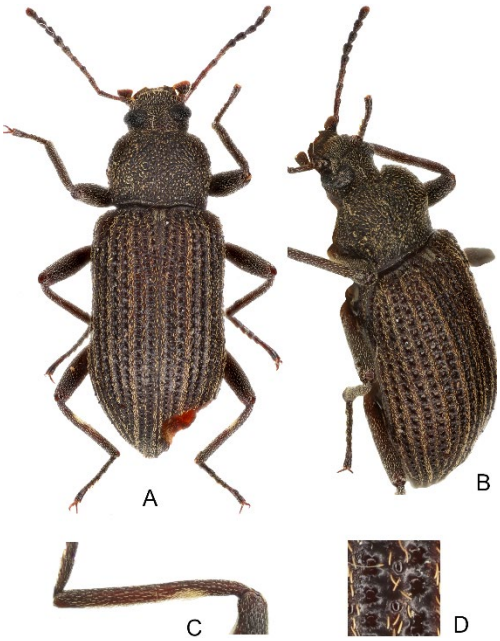

Fig. 4. *Strongylium* (s. str.) *napolovi* sp. nov., holotype ♂. A – Habitus, dorsal view; B – Habitus, latero-dorsal view; C – Left metatibia; D – Fragment of the elytral sculpture [not to scale].

Type material designated. Holotype ♂ NME: INDONESIA, Sulawesi, South Sulawesi Prov., Palopo 15 km NWW, Battang vill., 2°57'S, 120°03'E, 20.XII.2017, 1100 m, disturbed lowland rainforest, MV light [printed]. The right protarsal claws are missing, the apex of the right elytron and the abdomen are damaged by *Anthrenus* sp.

Derivatio nominis. Patronymic. Named for Alexander Napolov (Rīga National Zoo, Latvia) for his investment into the study of Sulawesi Coleoptera. Masculine.

Measurements. Holotype male, total body length 9.5 mm; head length 1.3 mm, maximum head width across compound eyes 1.7 mm, pronotal length 1.8 mm, maximum pronotal width 2.6 mm, elytral length 6.5 mm, maximum combined width 3.4 mm.

Description. Holotype male. Dorsum uniformly black-brown, venter brown. Head trapezoid, transverse, opaque dorsally and ventrally. Labrum subtruncate at anterior margin. Epistoma truncate at anterior margin. Moderately deep, nearly straight impression at place of frontoclypeal suture. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, anterior margin narrowly emarginate at antennal insertion and genal canthus, broadly rounded at posterior margin, strongly protruding from lateral and dorsal outline of head. Minimum interocular distance about 1.3× as wide as length of dorsal eye portion. Tempus short, slightly bulged. Head dorsum densely punctate with irregularly shaped, moderately deep punctures. Intervening spaces subopaque, microscopically punctate, generally narrower than punctures. Head dorsal setation dirty whitish, short, not fully appressed, setae slightly clavate apically. Antenna moniliform, not widened distally, exceeds level of mesocoxa when directed posteriorly. Basal antennomere about 2.3× as long as antennomere two. Antennomere two small, slightly transverse. Antennomere three 4.6× as long as antennomere two, 1.3× as long as antennomere four. Antennomeres 3–6 slender, 7–10 slightly widened distally, 8–11 with sensorial fields of punctures covered with dense short whitish setae. Terminal antennomere fusiform, rounded apically, about 1.2× as long as penultimate antennomere. Terminal maxillary palpomere small, strongly triangular. Pronotum strongly transverse, opaque dorsally and laterally, widest around midlength, slightly converging anteriad and posteriad (subparallel in front of posterolateral angles), truncate at anterior, slightly sinuous at posterior margin, strongly convex in dorsal aspect but flattened in front of base. Anterior pronotal edge finely margined, margin expanded medially. Posterior pronotal edge broadly margined. Anterolateral angles broadly rounded, posterolateral angles nearly right-angled in dorsal view. Lateral pronotal edge poorly defined as a carina (Fig. 4B), not margined, not visible in dorsal view, somewhat obtuse-angulate medially in dorsal view. Moderately deep median longitudinal impression on pronotal disc except at base; pronotal disc slightly bulged both sides of impression. Pronotal punctures irregularly shaped, large and moderately deep. Intervening spaces opaque, raised (corrugate), much narrower than punctures. Dorsal pronotal setae as those on head, seta does not surpass length of corresponding puncture. Scutellar shield small, narrow, rounded at posterior margin, opaque, minutely punctate and densely setose except for nearly glabrous midline. Elytra widest across postmedium, opaque, subparallel, dorsally convex. Elytral surface with deepened, punctured longitudinal striae (seven complete to nearly complete and one short scutellar stria visible in dorsal view) and distinctly elevated interstriae (except for interstria one which is only slightly elevated). Striae 4–5 shortest and conjoin preapically. Punctures in striae very deep, irregularly quatrefoil-shaped (Fig. 4D). Interstriae elevated, opaque microcorrugate, with sparse drop-like glossy tubercles (Fig. 4D). Elytral lateral margin not visible in dorsal view. Elytral setae dirty yellowish, thickened, appressed, arranged in longitudinal rows on interstriae, not present in striae. Epipleuron complete, moderately wide, opaque, corrugate and with sparse dirty yellowish appressed setae. Metathoracic wings fully developed (functional). Meso-, metathorax and abdomen glossy. Abdominal sternites minutely punctate, delicately setose. Legs very long and slender, especially mesothoracic pair. Femur slender, slightly clavate, densely punctate. Tibia shorter than corresponding femur, nearly straight, hardly widens distally. Metatibia shallowly impressed on inner basal edge, provided with patch of long yellowish setae (Fig. 4C). Tarsus long, shorter than corresponding tibia, underside

with long yellowish setae. Terminal tarsomere of pro- and mesothoracic leg about as long as combined length of remaining corresponding tarsomeres. Male sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 9A–C (basale is *Anthrenus*-destroyed).

Sexual dimorphism. Female is unknown.

Differential diagnosis. This new species is unique among other congeners due to the setose dorsum, the modified male metatibia and the deeply punctured elytral striae. No similar species are known in the Oriental and Papuan Region except for *S.* (s. str.) *suwawa* sp. nov. which is described herein. See the diagnosis of the latter. *Strongylium napolovi* sp. nov. somewhat resembles some species placed in *Hexarhopalus* Fairmaire, 1891 by Bečvář & Purchart (2008) but is different in the non-clavate antenna and the hardly clavate femora, the absence of the prebasal indentation at the lateral margin of pronotum, the lateral outline of the pronotum not depressed posterolaterally.

Ecology. Sampled at 1100 m at light in a disturbed lower montane rainforest.

Distribution. Sulawesi (central part): South Sulawesi Province.

***Strongylium* (s. str.) *rufocaeruleum* sp. nov.** (Figs 5, 8D–F)
urn:lsid:zoobank.org:act:40507975-1ED1-4B01-AD6D-43347EF95978

Type material designated. Holotype ♂ NME: INDONESIA, Sulawesi, South Sulawesi Prov., Palopo 12 km NWW, Battang vill., 2°57'S, 120°05'E, 04.I.2018, 800–900 m, disturbed lowland rainforest, day collecting [printed]. The antennomeres 9–11 of the right antenna are missing, the right mesofemur is damaged by *Anthrenus* sp.

Fig. 5. *Strongylium* (s. str.) *rufocaeruleum* sp. nov., holotype ♂, habitus, dorsal view.

Paratypes 2 specimens. 1♀ NME: same label as holotype; 1♀ DTC: INDONESIA, Sulawesi, South Sulawesi Prov., Palopo 12 km NWW, Battang vill., 2°57'S, 120°05'E, 11.XII.2017, 770 m, disturbed lowland rainforest, MV light [printed].

Derivatio nominis. Named from Latin 'rufum' (rufous) + 'caeruleum' (blue, caeruleus) to point on the castaneous forebody in the combination with the dark blue elytra of this new species. Neuter.

Measurements. Holotype male, total body length 9 mm; head length 1.2 mm, maximum

head width across compound eyes 1.7 mm, pronotal length 1.7 mm, maximum pronotal width 2.3 mm, elytral length 6.1 mm, maximum combined width 3.2 mm. Female paratypes 9.4–11.3 mm long.

Description. Holotype male. Dorsal and ventral forebody pale castaneous. Scutellar shield castaneous medially, lateral margins black. Elytra dark blue, apex yellow. Antennomeres 1–2 brown, 3–10 black, terminal antennomere rufous. Legs rufous with blackish knees and most of terminal tarsomere which is rufous at base and tip. Venter uniformly pale castaneous. Head slightly trapezoid, strongly transverse, moderately glossy dorsally and ventrally. Labrum subtruncate at anterior margin. Epistoma truncate at anterior margin. Deep, concave impression at place of frontoclypeal suture. Frons declivous in front of compound eyes. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, strongly emarginate in anterior margin at antennal insertion and genal canthus, broadly and shallowly emarginate to subtruncate at posterior margin, strongly protruding from lateral, moderately from dorsal outline of head. Minimum interocular distance about 1.4× as wide as length of dorsal eye portion. Tempus very short. Head dorsum irregularly, delicately and shallowly punctate, somewhat denser on epistoma, less dense on median portion of frons. Intervening spaces glossy and glabrous, variably wide, generally wider than punctures with some exceptions. Head dorsal setation inconspicuous. Antenna moniliform, widened in distal half, nearly reaches metacoxa when directed posteriorly. Basal antennomere about 1.5× as long as antennomere two. Antennomere two small, longer than wide. Antennomere three twice as long as antennomere two, 0.9× as long as antennomere four. Antennomeres 5–10 widened distally and flattened dorso-ventrally. Penultimate antennomere elongated, longer than wide. Terminal antennomere fusiform, apically rounded, about as long as penultimate antennomere. Terminal maxillary palpomere small, strongly triangular. Pronotum strongly transverse, glossy dorsally, widest in anterior portion, slightly converging in posterior, convex in dorsal aspect on anterior portion, truncate at anterior, slightly sinuous at posterior margin. Anterior pronotal edge finely margined, margin expanded medially forming poorly defined, broadly triangular flange. Posterior pronotal edge broadly margined. Anterolateral angles broadly rounded, posterolateral angles subacute in dorsal view. Shallow median longitudinal sulcus present on anterior portion of pronotal disc. Lateral pronotal edge delicately margined, visible in dorsal view in basal portion of pronotum. Pronotal punctures small and sparse on anterior and median, larger on basal and lateral portions of pronotal disc. Intervening spaces glossy and glabrous, generally much wider than punctures, smaller than those on base and at posterolateral angles. Pronotal dorsum glabrous. Scutellar shield small, narrowly triangular, acutely angulate at posterior margin, glossy and glabrous, impunctate. Elytra widest across postmedium, dorsally moderately convex, glossy and strongly shiny. Elytral surface with punctured longitudinal striae (eight complete to nearly complete and one short scutellar stria visible in dorsal view) and flat interstriae. Striae 4–5 conjoin preapically. Punctures in striae significantly larger and deeper on basal and lateral portion of elytron, smaller on rest of elytral disc. Intervening spaces glossy and glabrous, sparsely microscopically punctate, variably wide. Elytral lateral margin visible in dorsal view except at humeral portion. Elytra glabrous. Epipleuron complete, moderately wide and glossy, glabrous. Metathoracic wings fully developed (functional). Abdominal sternites sparsely, shallowly punctate. Legs very long and slender, especially mesothoracic pair. Femur slender, not clavate, densely punctate. Tibia

subequally long to corresponding femur, slightly curved and distally thickened (frontal) to nearly straight (middle and posterior), mesotibia somewhat thickened. Meso- and metatarsus as long as corresponding tibia. Terminal tarsomere of front leg longer than combined length of remaining protarsomeres. Male tergite VII and sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 8D–F.

Sexual dimorphism. Female antenna shorter, exceeds slightly beyond mesocoxa, metatarsus shorter than corresponding tibia.

Differential diagnosis. The new species appears similar to *S.* (s. str.) *callainum* sp. nov. (Sulawesi, described above), but the antenna differently coloured, the pronotum convex in dorsal aspect and longitudinally sulcate on the anterior portion (not sulcate, dorsally flattened pronotum in *S.* (s. str.) *callainum* sp. nov.), the interocular distance 0.6× as wide as length of dorsal eye portion (about 1.4× as wide in *S.* (s. str.) *callainum* sp. nov.), the meso- and metathoracic tarsus about as long as the corresponding tibia in *S. rufocaeruleum* sp. nov. (shorter than the corresponding tibia in *S.* (s. str.) *callainum* sp. nov.), and the comparatively slender apex of the aedeagus.

Ecology. Sampled at 770–900 m in a disturbed lower montane rainforest and was also attracted to light.

Distribution. Sulawesi (central part): South Sulawesi Province.

***Strongylium* (s. str.) *suwawa* sp. nov.** (Figs 6, 9D–F)
urn:lsid:zoobank.org:act:6DE02CB0-0A6F-41A0-86A4-43E6CEB3CECA

Type material designated. Holotype ♂ BMNH: INDONESIA: SULAWESI UTARA, Dumoga–Bone N.P. March 1985. [printed] // 'Clarke' Camp Lower montane forest, 1140 m. [printed] // R.Ent.Soc.Lond. PROJECT WALLACE B.M. 1985–10 [printed] // 013663806 [printed, supplemented with QR code]. The right antenna is completely missing.
Paratypes 2 specimens. 1♂ BMNH: same labels as holotype but 013663804; 1 BMNH [not sexed, presumably a female]: INDONESIA : SULAWESI UTARA, Dumoga–Bone N.P. March 1985. [printed] // 'Clarke' Camp Lower montane forest, 1140 m. [printed] // At light [printed] // R.Ent.Soc.Lond. PROJECT WALLACE B.M. 1985–10 [printed] // 123 51 [printed, label pink] // not Bradymerus [handwritten, in part underlined] det. SCHAWALLER 2008 [printed] // ? Hexarhopalus n. sp. [handwritten] det. SCHAWALLER 2009 [printed]; 013663805 [printed, supplemented with QR code].

Derivatio nominis. Named after Suwawa, the Philippine language spoken in North Sulawesi in Bogani Nani Wartabone (Dumoga Bone) National Park, where the new species was found. Noun in apposition.

Measurements. Holotype male, total body length 11.8 mm; head length 1.5 mm, maximum head width across compound eyes 1.9 mm, pronotal length 2.1 mm, maximum pronotal width 4 mm, elytral length 8.2 mm, maximum combined width 4.4 mm. Paratypes 10.8–12.2 mm long.

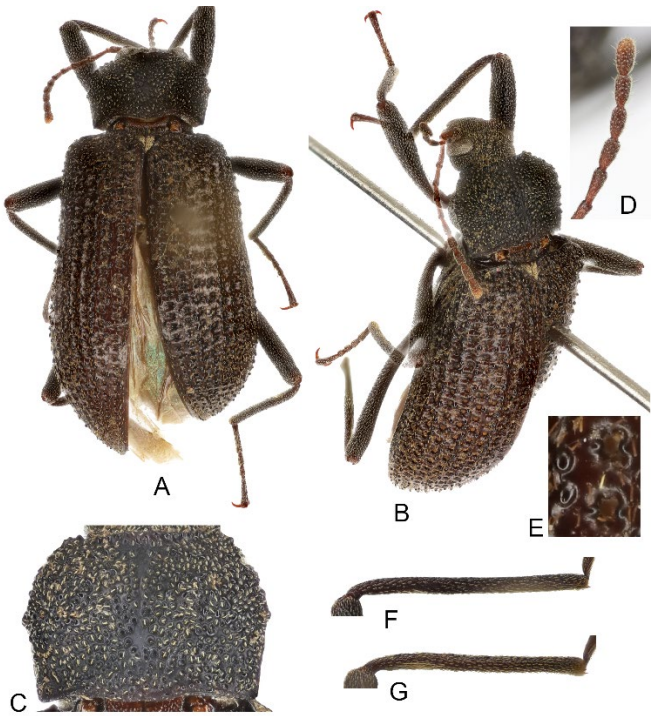

Fig. 6. *Strongylium* (s. str.) *suwawa* sp. nov. A – Holotype ♂, habitus, dorsal view; B – ditto, latero-dorsal view; C – ditto, pronotum, dorsal view; D – ditto, antennomeres 7–10; E – ditto, fragment of elytral sculpture; F – ditto, metatibia; G – Paratype, metatibia [not to scale].

Description. Holotype male. Forebody uniformly black-brown dorsally and ventrally. Elytra and abdomen brown. Head trapezoid, transverse, subopaque dorsally and ventrally. Labrum truncate at anterior margin. Epistoma truncate at anterior margin. Moderately deep, concave impression at place of frontoclypeal suture. Antennal insertion concealed in dorsal view beneath raised gena. Compound eye large, anterior margin broadly emarginate at antennal insertion and genal canthus, subtruncate at posterior margin, strongly protruding from lateral, moderately - from dorsal outline of head. Minimum interocular distance about 2.1–2.2× as wide as length of dorsal eye portion. Tempus short, subparallel, about as long as shortest eye length. Head dorsum densely punctate with irregularly shaped, moderately deep punctures. Intervening spaces subopaque, smooth, in par elevated, much narrower than punctures. Head dorsal setation dirty whitish, short and strongly C-like curved posteriorly, suberect, setae slightly clavate apically. Antenna moniliform, slightly widened distally, exceeds level of mesocoxa when directed posteriorly. Basal antennomere about 3–3.3× as long as antennomere two. Antennomere two small, slightly transverse. Antennomere three 4.7× as long as antennomere two, 1.3–1.4× as long as antennomere four. Antennomeres 3–6 slender, antennomere 7 widened distally, antennomeres 8–10 widened, 7–11 with sensorial fields of punctures covered with dense short whitish setae (Fig. 6D). Terminal antennomere cylindrical, rounded apically, about 0.8× as long as penultimate antennomere. Terminal maxillary palpomere

small, strongly triangular. Pronotum strongly transverse, opaque dorsally and laterally, widest across midlength, converging anteriad and posteriad (nearly subparallel in front of posterolateral angles), broadly emarginate at anterior, sinuous at posterior margin, strongly convex in dorsal aspect but flattened in front of base. Anterior pronotal edge not margined, somewhat raised-deflected medially, tuberculate. Posterior pronotal edge not margined, irregularly punctate, somewhat raised at some places. Anterolateral angles obtuse angulate, posterolateral angles nearly right-angled in dorsal view, tip rounded. Lateral pronotal edge poorly defined as a carina, not margined, not visible in dorsal view, somewhat obtuse-angulate medially in dorsal view, in lateral view only distinct in basal half of pronotum, irregular and interrupted in anterior half. Moderately deep median longitudinal impression on pronotal disc except at base, disc bulged in dorsal aspect both sides of impression, shallowly impressed beyond each bulge near base. Pronotal punctures irregularly shaped, large, shallow. Intervening spaces opaque, raised (corrugate), much narrower than punctures except at sparser punctured median impression area. Bulges of pronotal disc particularly dense punctate-corrugate, with glossy and glabrous irregularly shaped and sized drop-like tubercles (Fig. 6C). Dorsal pronotal setae as those on head, seta does not surpass length of corresponding puncture. Scutellar shield small, narrow, rounded at posterior margin, opaque, minutely punctate and densely setose except for narrowly subglabrous midline. Elytra widest across postmedium, moderately glossy, subparallel, dorsally convex. Elytral surface with deepened, punctured longitudinal striae (eight complete to nearly complete and one short scutellar stria visible in dorsal view) and slightly elevated interstriae. Striae 4–5 shortest and conjoinning in apical fourth. Punctures in striae very deep, irregularly quatrefoil-shaped (Fig. 6E). Interstriae slightly elevated, opaque microcorrugate, with numerous small drop-like glossy tubercles (Fig. 6E). Elytral lateral margin not visible in dorsal view. Elytral setae dirty yellowish, sparse, apically slightly clavate, C-like curved posteriorly, suberect, also present in striae. Epipleuron complete, moderately wide, opaque, corrugate and with sparse dirty yellowish appressed setae. Metathoracic wings fully developed (functional). Meso-, metathorax and abdomen opaque. Abdominal sternites densely punctate, delicately setose. Legs very long and slender. Femur slender, not clavate, densely punctate. Tibia shorter than corresponding femur, nearly straight, not widens distally. Metatibia shallowly on inner basal edge with patch of short yellowish setae (Fig. 6F). Tarsus long, shorter than corresponding tibia, underside with moderately long yellowish setae. Terminal tarsomere of pro- and mesothoracic leg about as long as combined length of remaining corresponding tarsomeres. Male sternite VII broadly rounded at posterior margin. Aedeagus as in fig. 9D–F.

Sexual dimorphism. Unknown.

Intraspecific variability. The setose patch at inner basal edge of metataibia is not present (worn?) in one of the paratypes, but the setae are significantly longer in another paratype (Fig. 6G) than in the holotype.

Differential diagnosis. This new species is unique among other congeners but strongly resembles *S.* (s. str.) *napolovi* sp. nov. (described above). The main distinguishing features of *S. suwawa* sp. nov. are the elytral setae not arranged into longitudinal rows on the elytral interstriae, the pronotum with glossy and glabrous tubercles on its highest portions, the interocular distance much wider (2.1–2.2× as wide as length of dorsal eye portion *versus* about 1.3× in *S. napolovi* sp. nov.), the comparatively longer antenna, the less strongly elevated elytral interstriae and the denser drop-like tubercles on them.

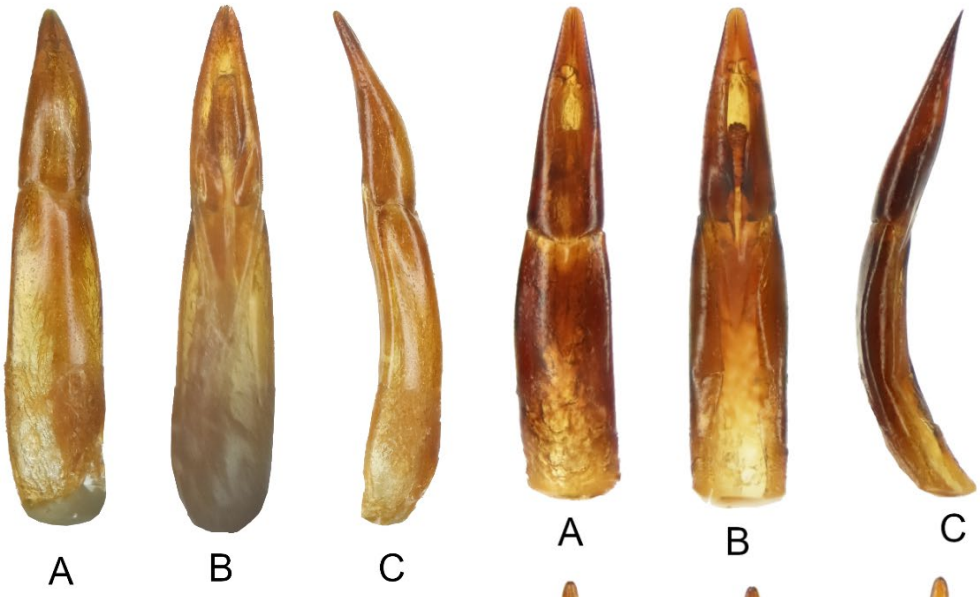

Fig. 7. Wallacean *Strongylium* (s. str.) species, aedeagi in dorsal (A, D), ventral (B, E) and lateral (C, F) view. A–C – Holotype *S.* (s. str.) *bidens* sp. nov.; D–F – Holotype *S.* (s. str.) *callainum* sp. nov. [not to scale].

Fig. 8. Wallacean *Strongylium* (s. str.) species, aedeagi in dorsal (A, D), ventral (B, E) and lateral (C, F) view. A–C – Holotype *S.* (s. str.) *gawu* sp. nov.; D–F – Holotype *S.* (s. str.) *rufocaeruleum* sp. nov. [not to scale].

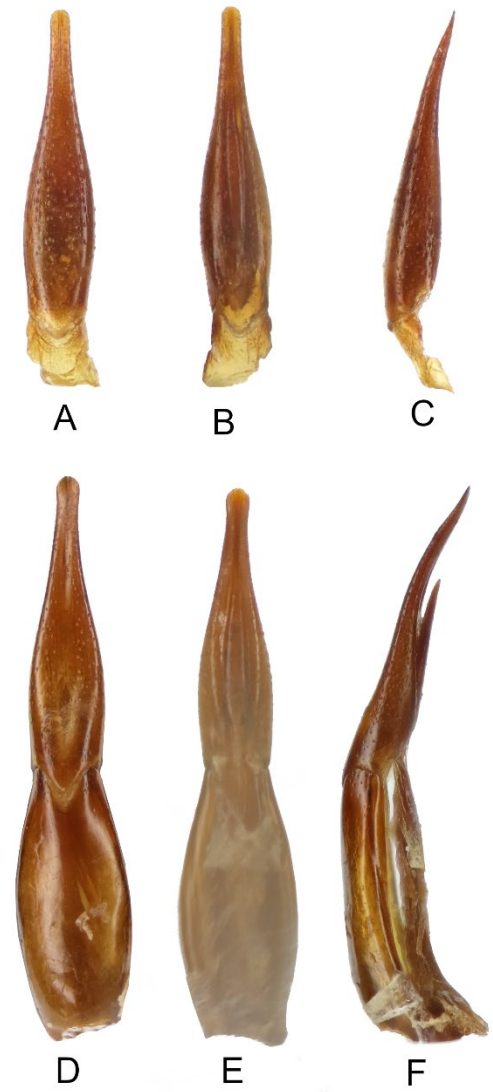

Fig. 9. Wallacean *Strongylium* (s. str.) species, aedeagi in dorsal (A, D), ventral (B, E) and lateral (C, F) view. A–C – Holotype *S.* (s. str.) *napolovi* sp. nov. (the basale is *Anthrenus*-damaged); D–F – Holotype *S.* (s. str.) *suwawa* sp. nov. [not to scale].

Ecology. Possibly nocturnal species. Sampled at 1140 m at light in a primary lower montane rainforest.

Distribution. Sulawesi (central part): North Sulawesi Province.

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