昆 蟲 学 評 論

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A New Species of *Bembidion* from North Japan, with the Description of a New Subgenus (Coleoptera, Carabidae)

By Akinobu Habu

Laboratory of Insect Identification and Taxonomy, National Institute of Agricultural Sciences, Nishigahara II, Kita-ku, Tokyo-114

Recently I have had an opportunity for examining two specimens of a species of Bembidion collected by Mr. K. Shimoyama in Aomori Prefecture, Northern Honshu, Japan. It has hitherto been unknown in our fauna; its subgeneric position, according to Müller's key (Müller, 1918) comes to an impasse before Talanes Motschulsky and Emphanes Motschulsky, and is brought to a standstill before Omotaphus Netolitzky in the key made by Netolitzky (1942). Although the key given by Jeannel (1941) indicates that the Japanese species almost falls in with Emphanes Motschulsky, it has the elytra with an apical striole (Fig. 2) and the subapical pore (Fig. 2, sp.) not isolated, and the left paramere with three, instead of four, setae at the apex. It appears to come also near Necpericompsus Netolitzky, but its anterior supraorbital pores are normal in size and not "auffallend groß". I establish, therefore, a new subgenus for the Japanese species before describing it.

Before going further my sincere thanks are offered to Mr. K. $S_{\mbox{\scriptsize HIMOYAMA}}$ for his tendering the specimens.

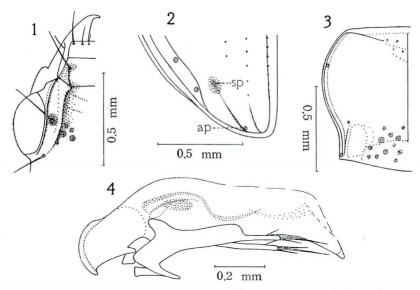
Subgenus Neoemphanes nov.

Type-species: Bembidion shimoyamai sp. nov. from Japan.

Description. Dorsal side without distinct microsculpture. Head (Fig. 1) with some punctures between eyes; eyes large and convex; posterior supraorbital setae on level of hind margin of eyes; frontal impressions distinct, almost parallel, extending onto clypeus, reaching clypeal setae,

outer raised area parallel, simple, terminating at apical angle of frons on either side. Pronotum (Fig. 3) cordate, base not well sinuate on either side; median line normal; basal foveae with outer carina. Wings developed. Elytra with lateral border rounded and terminating at shoulder opposite stria 5; striae not all complete; apical striole (Fig. 2) present, not carinate outside, subapical pore at anterior termination of apical striole in depression; interval 3 with two pores between striae 2 and 3; anterior four pores of marginal series distant from one another. Metasternal process completely bordered, border thick; metepisterna fully longer than wide; sternites not pubescent, without additional setae. Parameres (Fig. 4) with three setae at apex.

Range. Asia (Japan).



Figs. 1-4. Bembidion (Neoemphanes) shimoyamai sp. nov. (holotype).

- 1. Head. 2. Left elytron at apical part. ap: apical pore. sp: subapical pore.
- 3. Pronotum. 4. Male genitalia.

Bembidion (Neoemphanes) shimoyamai sp. nov.

"Shimoyama-mizugiwa-gomimushi"

Description. Length 4.4-4.6 mm. Width 1.8-2.0 mm.

Head, pronotum and elytra dark blue, shiny; labrum reddish black, mandibles dark reddish brown, palpi, basal two segments and basal area of segments 3 and 4 of antennae, femora and tibiae reddish-brownish

yellow¹⁾, penultimate segment of maxillary palpi, remaining part of antennae and tarsi dark reddish brown, tibiae dark at basal area, a little paler at median area; ventral side black.

Head (Fig. 1) gently convex, with a few punctures (larger in Oirase ex.) behind mid-eye level on either side; microsculpture absent; tempora well oblique behind eyes, oblique part one-fourth to -third as long as eye; width of head/width of narrowest part of frons between eyes 1.69, 1.67 in one $\, \, ^{\circ} \,$ and one $\, ^{\circ} \,$ respectively; frontal impressions moderately deep, slightly curved inward behind fronto-clypeal suture, somewhat uneven in Oirase ex., outside area longitudinally convex, carinate only inside anterior supraorbital setae.

Pronotum (Fig. 3) well convex, depressed along median line, widest at two-fifths, one and one-fifth times as wide as head, one and onefourth times as wide as long (width of pronotum/width of head 1.19, 1.19, width of pronotum/length of pronotum 1.22, 1.26, width of pronotum/ width of base of pronotum 1.24, 1.22, in one 3 and one 9 respectively), base wider than apex (width of base/width of apex 1.13, 1.15); surface with a few punctures at median apical area (punctures not distinct in Jûniko ex.), with several large punctures at basal area between basal foveae; microsculpture hardly visible or traces of transverse meshes indistinctly visible; apical sulci distinct, well distant from apex inward, evanescent at median area; apical angles not protrudent but obtuse and dull; base fairly rounded in Oirase ex., gently rounded in Jûniko ex., at median area, a little oblique at lateral areas; basal angles rectangular (Oirase ex.) or a little more than 90° (Jûniko ex.); lateral margins finely bordered, fairly rounded at greatest width, distinctly sinuate before basal angles, very slightly diverging (Oirase ex.) or slightly contracted (Jûniko ex.) from sinuation to basal angles; lateral furrows distinct; basal carinae distinct; basal foveae deep.

Elytra convex, widest at middle, one and three-fourths times as wide as pronotum (width of elytra/width of pronotum 1.72, 1.75 in one $\$ 3 and one $\$ 4 respectively), one and one-half times as long as wide; microsculpture hardly discernible; clavicular carina on shoulder obscure; striae (except stria 8 and apical half of stria 1 deep) shallow, distinctly punctate in Jûniko ex., indistinct, replaced with row of distinct punctures in Oirase ex., striae and punctures becoming indistinct posteriorly at apical third, stria 2 rather distinctly reappearing at apical area (Fig. 2), striae 6 and 7 effaced at apical third; intervals almost flat, interval 3 with two pores at or before one-third and at five-eighths.

Hind tarsi with segment 1 more than twice as long as segment 2

¹⁾ Dark reddish brown in Jûniko ex., but it seems to be caused by discolouration.

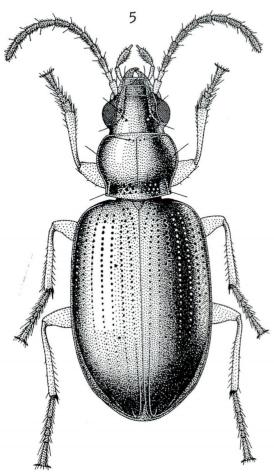


Fig. 5. Bembidion (Neoemphanes) shimoyamai sp. nov., 3.

Ventral side not punctate.

Aedeagus (Fig. 4) rather slender, gently curved; parameres equal in length, with one long and two rather short setae at apex, with one short seta at subapical area.

Distribution. Japan: N. Honshu.

Type-series. Holotype: ③, VIII. 10, 1973, Oirase, Fukaura, Nishitsugaru-gun, Aomori Pref., K. Shimoyama leg., deposited in Nat. Inst. Agr. Sci. Paratype: 1♀, VI. 21, 1964, Jüniko, Nishitsugaru-gun, Aomori Pref., K. Shimoyama leg.

Remarks. The aedeagus has inside a mass behind the middle and one long stripe and one short stripe as in Fig. 4.

Literature cited

JEANNEL, R., 1941: Faune de France, 39: 443-444, 457-458.

Müller, J., 1918: Bestimmungstabelle der *Bembidion*-Arten Europas und des Mittelmeergebietes. Kol. Rundschau, 7: 48-53.

Netolitzky, F., 1942: Bestimmungstabelle europäischer Käfer. (9. Stück) II. Fam. Carabidae. Subfam. Bembidiinae. 66. Gattung: *Bembidion* Latr. Bestimmungstabelle der *Bembidion*-Arten des paläarktischen Gebietes. Kol. Rundschau, 28: 41-44.

Notes and Descriptions of Formosan Carabidae Taken by Dr. S.-I. UÉNO in 1961 (Coleoptera, Carabidae)

VII. Pterostichini

By Akinobu Habu

Laboratory of Insect Identification and Taxonomy, National Institute of Agricultural Sciences, Nishigahara II, Kita-ku, Tokyo-114

The population of the Pterostichini is remarkably and singularly sparse in Formosa as contrasted with that of the Platynini, and several specimens of the following only four species were collected by Dr. S.-I. Uéno in 1961. One of them, *Caelostomus picipes* MacLeay, is widely distributed in Southeast Asia, but the remaining three, two of which are new, are indigenous to Formosa.

Supplement to abbreviations in Part I¹: WAP: width of apex of pronotum. WBP (s): width of base of pronotum measured on level of posterior marginal setae. WF: width of narrowest part of frons between eyes.

Caelostomus picipes MacLeay

Caelostomus picipes MACLEAY, 1825, Ann. Jav.: 24 (Java)2).

Stomonaxus japonicus Tschitschérine, 1898, Horae Soc. Ent. Ross., 32: 14 ("Japon"). Junior synonym, designated here.

10 ex., VII. 10, 1961, Shui-she-liao.

STRANEO (1938)³⁾ regards *C. japonicus* as the subspecies of *C. picipes* owing to the frons distinctly punctate. Some of the above specimens, however, have also dense large punctures on the frons between eyes, and therfore the specimens densely punctate on the frons are not geographical variation but merely individual.

Pterostichus distinctissimus Jedlička

Pterostichus distinctissimus Jedlicka, 1940, Neue Carab. Ostasiens, 13: 13 (For-

¹⁾ Trans. Shikoku Ent. Soc., 11: 71 (1972).

²⁾ Concerning the synonymy, see Straneo, 1938, Ann. Mus. Civ. Stor. Nat. Giacomo Doria, 60: 64.

³⁾ Cf. footnote 2.

mosa: "Arisan" and "Teiheizan"); Jedlička, 1962, Entom. Abh. Ber. Mus. Tierk. Dresden, 26: 182, 292-293, fig. 101.

1 \circ , VI. 18, 1961, Mt. Shinbajin; 2 \circ \circ , 3 \circ \circ , VI. 30, 1961, 1 \circ , VII. 4, 1961, Chaop'ing, Mts. A-li; 2 \circ \circ , VII. 4, 1961, 1 \circ , VII. 5, 1961, Mt. Wan-sui (at alt. 2300–2330 m), Mts. Ali-san.

This species is characteristic in having the antennae with the third segment pubescent at the apical area though the second segment without any additional setae, the elytra transversely rugose or striate on the intervals, with a distinct isodiametric microsculpture in the male and female, with (or without) a rudimental scutellary striole and with the continuous marginal series composed of numerous (about thirty-five) pores, and the sixth sternite of the male with a longitudinal convex part, or a

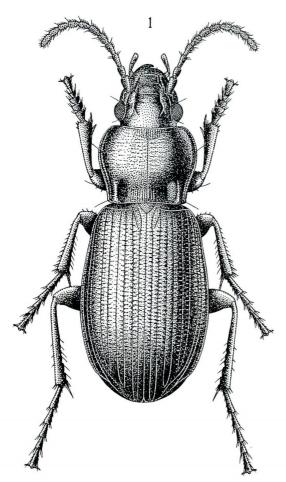


Fig. 1. Myas asperipennis sp. nov., 3.

dully carinate part, at the median area and with a longitudinal depression on either side of the median convex part.

Myas asperipennis sp. nov. (Figs. 1, 2, 5)

Description. Length 16.0-17.0 mm. Width 6.2 -6.7 mm.

Black, dark purplishcoppery, rather mat, elytra matter than head and pronotum; labrum reddish black, mandibles, palpi (apical segment reddish at apical half), antennae and legs black; ventral side black, epipleurae somewhat coppery.

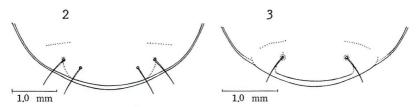
 $\ensuremath{\circ}$ $\ensuremath{\circ}$; frontal impressions deep, with two branches, anterior branch transverse, posterior branch extending in posterior inner direction and frontal impressions therefore inversed y-shaped, or frontal impressions obliterate at posterior branch and $\ensuremath{\langle}\ \ensuremath{\rangle}$ in form, outside area of frontal impressions well convex, with rather shallow, short, longitudinal sulcus near anterior supraorbital setae; antennae with segment 3 one and one-seventh to -sixth times as long as segment 4.

Pronotum gently convex, widest before two-fifths, one and threesevenths times as wide as head, one and two-fifths times as wide as long (in two ♦ ♦ and seven ♀ ♀ WP/WH 1.38-1.51, mean 1.44, WP/LP 1.34-1.45, mean 1.39, WP/WBP 1.15-1.26, mean 1.21, WBP/WAP 1.15-1.27, mean 1.20); surface rather distinctly, transversely rugose on disc, distinctly, longitudinally rugose or sulcate at median apical and median basal areas; apex shallowly emarginate at median area; apical angles hardly protrudent; base shallowly emarginate at median area; basal angles almost 90° or a little more than 90°, rounded at apex; lateral margins almost similar to those of *cuprescens*, rather distinctly sinuate before basal angles, crenatus at most at posterior one-third; lateral borders not fully thick posteriorly; anterior marginal setae at or before one-third, posterior setae in basal angles, fully distant (more distant than in *cuprescens*) from lateral margins; posterior transverse impression somewhat deep; basal foveae deep, outer and inner impressions not well defined, outer impression curved inward before base, reaching base of inner impression, outside area of outer impression well convex.

Hind tibiae of \circ with six distinct incisions on inner side; hind tarsi with segment 1 one and one-half times as long as segment 2 in \circ , one and one-half to one and four-sevenths times in \circ , segment 5/segment

1 = 0.89 - 0.90 in \Diamond , 0.85 - 0.89 in \Diamond .

Ventral side not punctate; L/W of metepisterna 1.19–1.31, mean 1.25, in one \Diamond and three \Diamond \Diamond ; sternite 6 (Fig. 2) with marginal border generally complete, bisetose on either side in \Diamond and \Diamond .



Figs. 2, 3. Sternites 6 of 3. 2. Myas asperipennis sp. nov. 3. M. uenoi sp. nov.

Aedeagus (Fig. 5) well bent behind middle, ventral side shallowly depressed at subapical area, right apicolateral margin well sinuate; apical lamella a little narrower than in *cuprescens*, apex rather narrowly rounded; right paramere fairly bent before middle.

Distribution. Formosa.

Remarks. The present new species is easily distinguishable from the known Asian species by the elytra shagreened and uneven. It may be characteristic that this species together with the following new one has not a basal pore near the scutellum on the elytra. I do not know whether M. formosanus (Jedlička) is also without a basal pore or not. The two species distributed in Japan, M. cuprescens (Motschulsky) and M. coreanus (Tschitschérine), have a distinct basal pore on the elytra.

Myas uenoi sp. nov. (Figs. 3, 4, 6)

Description. Length 12.2-12.5 mm. Width 4.8 mm.

Head a little convex, with minute dense punctures and some faint transverse rugae in \circ ex., punctures and rugae hardly visible in \circ ex.; microsculpture rather faint, almost isodiametric; eyes large and convex, WH/WF 1.38, 1.36 in one \circ and one \circ respectively; frontal impressions

deep, but less deep than in preceding sp., with only one anterior transverse branch, outside area fairly convex; antennae with segment 3 more than one and one-third to one and two-fifths times as long as segment 4.

Pronotum fairly convex, widest at threeeighths, WP/WH 1.38, 1.43, WP/LP 1.27, 1.34, WP/WBP(s) 1.26, 1.34, WBP(s)/WAP 1.11, 1.07, in one ♂ and one ♀ respectively: surface densely, microscopically punctate in & ex., transversely rugose on disc, sparsely, longitudinally rugose on median basal area: microsculpture rather faint, forming transverse meshes; apex shallowly emarginate at median area in ô ex., hardly emarginate in ♀ ex.; apical angles not or hardly protrudent; base somewhat emarginate at median area; basal

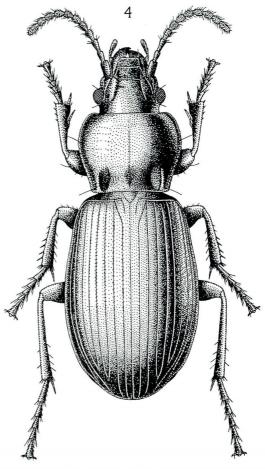


Fig. 4. Myas uenoi sp. nov., ♀.

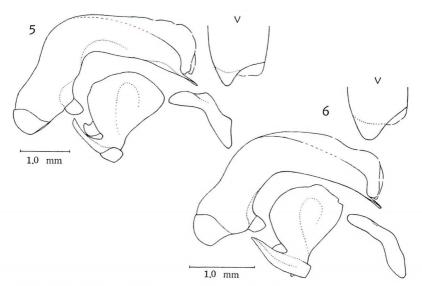
angles obtuse (ca. 115°), rounded at apex; lateral margins distinctly crenatus throughout, not sinuate (in \circ ex.) or slightly sinuate (in \circ ex.) before basal angles; lateral borders not fully thick posteriorly; anterior marginal setae before to behind one-third, posterior setae in basal angles, moderately distant from lateral margins; posterior transverse impression obscure; median pre-basal area rather deeply depressed on median line; basal foveae fully deep, outer and inner impressions well impressed, outer impression obscurely reaching inner impression at base in \circ ex., not reaching in \circ ex., outside area of outer impression

carinate.

Wings reduced. Elytra fully fused at suture, fairly convex, ovate, widest at middle, WE/WP 1.38, 1.29 in one \lozenge and one \lozenge respectively, one and three-sevenths (\lozenge) or one and one-half (\lozenge) times as long as wide; dorsal side with short, faint (fainter in \lozenge ex.), transverse rugae; microsculpture distinct, isodiametric; basal border almost level and straight, forming wide obtuse angle at shoulder opposite interval 7; apical sinuation rather shallow (shallower than in *cuprescens*); striae moderately deep, indistinctly punctate, stria 8 deeper at apical third, but not so deep as in preceding sp.; scutellary striole short, on interval 1; intervals moderately or fairly convex, intervals 3, 5 and 7 almost as wide as or a little wider than other intervals; basal pore absent; marginal series continuous, pores eighteen or nineteen.

Hind tibiae of \lozenge with four distinct incisions on inner side; hind tarsi with segment 1 one and three-sevenths (\lozenge) to less than one and one-half (\lozenge) times as long as segment 2, segment 5 relatively long, segment 5/segment 1=1.05 (\lozenge), 0.94 (\lozenge).

Ventral side not punctate; L/W of metepisterna 1.32, 1.33 in one $\mbox{$\Diamond$}$ and one $\mbox{$\varphi$}$ respectively; sternite 6 (Fig. 3) with marginal border interrupted at subapical area on either side, with one seta in $\mbox{$\Diamond$}$, two setae in $\mbox{$\varphi$}$, on either side.



Figs. 5, 6. Male genitalia. v: apical part of aedeagus in ventral view. 5. Myas asperipennis sp. nov. 6. M. uenoi sp. nov.

Aedeagus (Fig. 6) less bent than in preceding sp., a little curved ventrally at subapical area, right apicolateral margin shallowly sinuate; apical lamella wider than in *cuprescens*, widely rounded at apex; right paramere gently bent at about middle.

Distribution. Formosa.

Type-series. Holotype: \Diamond , VI. 23, 1961, Mt. Hsüeh. Paratype: $1 \circ$, VI. 22, 1961, Mt. Hsüeh (Mt. T'zu-kao), at alt. 3400-3600 m.

Remarks. It is easily discriminated from M. formosanus (Jedlicka) by the dorsal side of the body purplish and shiny—"dunkel kupferig, wenig glänzend" in formosanus—and the pronotum with the basal angles obtuse—"in der Anlage rechteckig" in formosanus. It is also distinguished from M. cuprescens (Motschulsky) of Japan by the frontal impressions without a posterior branch, and the elytra without a basal pore. The sixth sternite with a single seta on either side in the male is peculiar, but I cannot decide whether this characteristic is specific or individual because of a single specimen; the sixth sternite is bisetose on either side in the male and female in M. asperipennis sp. nov., M. coreanus (Tschitschérine), and M. cuprescens (Motschulsky).

Revisional Study on the Japanese Species of Genus *Hemipyxis* DEJEAN (Coleoptera, Chrysomelidae, Alticinae)

By Shinsaku Kimoto

Biological Laboratory, Department of General Education, School of Medicine, Kurume University, Kurume

The Japanese species of genus *Hemipyxis* were studied by Kimoto in 1965. During these ten-odd years, our knowledges on the *Hemipyxis* species occurring in Taiwan and the Ryukyu Archipelago have been progressed. This is a result of the revisional works on the Japanese species of genus *Hemipyxis* Dejean.

Genus Hemipyxis Dejean

Hemipyxis Dejean, 1837, Cat. Col., ed. 3, 411 (type species: Altica troglodytes Olivier; monotypic). —Monrós & Bechyné, 1956, Ent. Arb. Mus. Frey, 7: 1134 (nomenclature). —Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1B: 746, 837 (key to Chinese species). —Kimoto, 1965, J. Fac. Agr. Kyushu Univ., 13 (3): 403, 448 (key to Japanese species). —Kimoto & Gressitt, 1966, Pacif. Ins., 8 (2): 482, 549 (key to Ryukyu species).

Sebaethe Baly, 1864, Ann. Mag. Nat. Hist., ser. 3, 14: 438 (type species: Haltica badia Erichson; Philippines; monobasic). —Chapuis, 1875, In Lacordaire, Gen. Col., 11: 75, 79 (key to genera). —Heikertinger, 1924, Kol. Rundsch., 11 (1/2): 35; 1925, loc. cit., 53 (key to Palaearctic genera). —Maulik, 1926, Fauna India, Chrys. & Halt., 285, 382 (key to genera and species of India, Burma, Ceylon). —Chen, 1933, Sinensia, 3 (9): 226 (key to Chinese genera); 1934, loc. cit., 5 (3/4): 299 (key to Chinese species). —Chûjô, 1935, Trans. Nat. Hist. Soc. Formosa, 25: 357 (key to Japanese genera). —Chen, 1936, Sinensia, 7 (6): 637 (key to Oriental genera). —Chûjô, 1937, Trans. Nat. Hist. Soc. Formosa, 27: 43 (key to Japanese, Taiwan and Korean species). —Scherer, 1961, Ent. Arb. Mus. Frey, 12: 272 (key to African genera); 1969, Pacif. Ins. Monogr., 22: 6, 15, 184 (key to SE Asian species).

Epiotis Solsky, 1872, Horae Soc. Ent. Ross., 8: 259 (type species: Oedionychis plagioderoides Motschulsky; Japan).

Key to Japanese species of genus Hemipyxis Dejean

1. Head with vertex distinctly punctured; surface of frontal tubercle

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 13-21, pls. 1-2, June, 1978]

	somewhat wrinkled 2
_	Head with vertex smooth, shining, impunctate, except for one or
	two distinct foveae behind frontal tubercle; surface of frontal tuber-
	cle smooth. · · · · · 4
2.	Head with vertex somewhat closely punctate, interspaces of punc-
	tures finely granulate 3
_	Head with vertex sparsely punctate or nearly impunctate; largely
	black, mouthparts and two or three basal segments of antenna paler;
	elytron reddish brown; length 3.5-5.0 mm.·····flavipennis
3.	Pronotum not granulate; abdomen entirely black; general color
	black, with lower part of head, basal segments of antenna more or
	less pale, elytron blue; length 3.8-5.0 mmplagioderoides
—	Pronotum finely granulate; abdomen entirely yellowish brown;
	general color black, with basal segments of antenna more or less
	pale, elytron blue; length 6.0-6.3 mmflaviabdominalis
4.	Frontal tubercles separated by a median groove, foveae behind them
	rather conspicuous 5
_	Frontal tubercles fused, not separated by a groove; foveae not con-
	spicuous; body pale with three pitchy spots on elytron; antenna
	black with basal segments brownish; length 3.0 mm.····takarai
5.	Eye narrower than interocular space 6
_	Eye as wide as interocular space in female and distinctly wider in
	male; foveae behind frontal tubercle large; body pale, in male
	specimens with vague darkened areas at base and side of elytron;
	length 3.8-5.0 mm. ·····shirakii
6.	Vertex with two large foveae on each side
_	Vertex with one large fovea on each side
7.	Elytral disc entirely yellowish brown; yellowish brown, antenna
	pitchy black with basal segments brownish; length 3.0-4.0 mm
	Floral die land with the land
	Elytral disc largely pitchy black with apex and outer margin broad-
	ly yellowish brown; yellowish brown, antenna pitchy black with basal segments brownish; length 3.5 mm
8.	Body length longer; elytron at least in part brownish; length 3.5-
٠.	5.8 mm
_	Body length shorter; head, pronotum and scutellum shining black,
	elytron blackish blue; ventral surfaces entirely pitchy black; antenna
	dark brown with four basal segments much paler; legs dark reddish
	brown; length 2.0-2.8 mm
9.	Elytron with margins pale10
_	Elytron largely pitchy black with a large median and a distinct sub-

apical markings yellowish brown; yellowish brown, antenna pitchy black with basal segments brownish; length 4.2-5.0 mm.....balyi yaeyamana n. subsp.

10. Elytron mainly bluish to pitchy black with apex of outer margin broadly ochraceous; ochraceous, antenna pitchy black with basal segments brownish; length 3.5-5.8 mm......cinctipennis cinctipennis
 — Elytron mainly black with suture and margins pale; ochraceous, antenna pitchy black with basal segments brownish; length 3.5-5.5 mm......cinctipennis okinawana

Hemipyxis flavipennis (Baly)

Sebaethe flavipennis Baly, 1874, Trans. Ent. Soc. London, 1874: 194 (Japan: Nagasaki, Hiogo). —Chûjô, 1937, Trans. Nat. Hist. Soc. Formosa, 27: 43, 45 (Kyushu).

Hemipyxis flavipennis: Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1В: 838, 840 (Japan, S. China). —Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 448, 499 (Yakushima). —Кімото & Gressitt, 1966, Pacif. Ins., 8: 482, 549 (Yakushima).

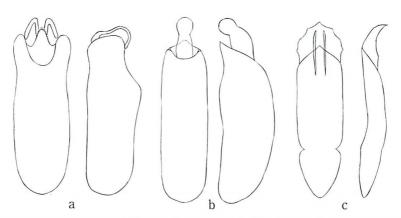


Fig. 1. Male genitalia. a, Hemipyxis shirakii NAKANE & KIMOTO; b, H. flavipennis (BALY); c, H. changi KIMOTO (after specimen from Taiwan, China).

Distribution: S. China, Japan Proper (Hokkaido, Honshu, Sado I., Shikoku, Kyushu, Yakushima).

Host: Ligustrum japonicum (Japanese name: Nezumi-mochi).

Hemipyxis plagioderoides (Motschulsky)

Oedionychis? plagioderoides Motschulsky, 1860, Etud. Ent., 9: 27 (Japan).

Sebaethe plagioderoides: Chûjô, 1937, Trans. Nat. Hist. Soc. Formosa, 27: 43, 44 (Honshu, Kyushu, Formosa).

Hemipyxis plagioderoides: Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1В: 837, 844 (Japan). —Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 448, 449 (Japan).

Distribution: Burma, Indo-China, Manchuria, Korea, E. Siberia, Japan Proper (Honshu, Shikoku, Kyushu, Tsushima).

Hosts: Callicarpa japonica (Japanese name: Murasakishikibu); Plantago asiatica (Japanese name: Oobako).

Hemipyxis flaviabdominalis Chûjô, New Status

Sebaethe plagioderoides: Chen, 1934, Ann. Soc. Ent. France, 103: 178, 183 (Taiwan). Hemipyxis plagioderoides flaviabdominalis Chûjô, 1965, Spec. Bull. Lep. Soc. Japan, 1: 100 (Taiwan).

Hemipyxis plagioderoides: Kimoto, 1966, Pacif. Ins., 8: 482, 550 (Iriomote); 1966, Esakia, 5: 35 (Taiwan); 1970, Kontyû, 38: 216 (Taiwan).

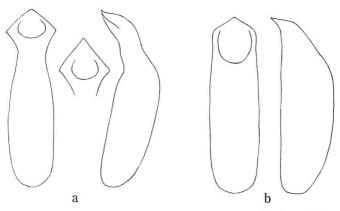


Fig. 2. Male genitalia. a, Hemipyxis flaviabdominalis Chûjô (after specimen from Taiwan, China); b, H. plagioderoides (Μοτschulsky).

Distribution: Ryukyu Is. (Ishigaki, Iriomote), Taiwan.

Specimen examined from Ishigaki Is.: Mt. Omoto (1 ex., 9. iv. 1974, H. Makihara leg.). This species is here recorded for the first time from Ishigaki Is. Chûjô (1965) described *flaviabdominalis* as a subspecies of *plagioderoides* Motschulsky. However, *flaviabdominalis* should be treated as a distinct species.

Hemipyxis takarai Kimoto & Gressitt

Hemipyxis takarai Kimoto & Gressitt, 1966, Pacif. Ins., 8: 482, 551 (Iriomote). Distribution: Ryukyu Is. (Iriomote).

Hemipyxis shirakii Nakane & Kimoto

Hemipyxis shirakii Nakane & Kimoto, 1961, Kontyû, 29: 108 (Mt. Yonehara in Okinawa). —Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 448, 450 (Okinawa, Iriomote). —Кімото & Gressitt, 1966, Pacif. Ins., 8: 483, 549 (Okinawa, Iriomote).

Distribution: Ryukyu Is. (Okinawa, Ishigaki, Iriomote).

Specimens examined from Ishigaki Is.: Omotodake (1 ex., 14. iv. 1974, H. Makihara leg.; 4 exs., 16. vii. 1976, S. Kimoto leg.). Mt. Banna (1 ex., 7-9. ix. 1969, 1 ex., 25. vi. 1974, at light, H. Makihara leg.). Botanical Garden, Banna (1 ex., 13. iv. 1974, H. Makihara leg.). This species is here recorded for the first time from Ishigaki Is.

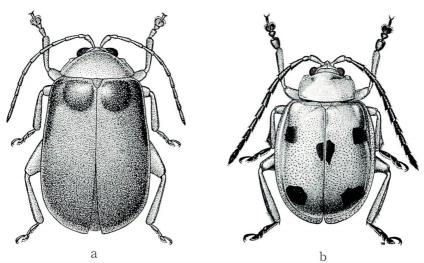


Fig. 3. a, *Hemipyxis shirakii* Nakane & Kimoto; b, *H. takarai* Kimoto & Gressitt.

Hemipyxis foveolata foveolata (Chûjô)

Sebaethe foveolata Chûjô, 1958, Mem. Fac. Lib. Arts & Educ. Kagawa Univ., 2 (64): 17 (Yurudji in Okinawa).

Hemipyxis foveolata: Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 448, 450 (Ататі-Oshima). —Кімото & Gressitt, 1966, Pacif. Ins., 8: 483, 549 (Ататі-Oshima, Okinawa).

Distribution: Ryukyu Is. (Amami-Oshima, Okinawa).

Host: Ilex liukiuensis (Japanese name: Ryukyu-mochi).

The records of *Hemipyxis foveolata* (Chûjô) from Taiwan should be corrected as *H. nigricornis* (Baly). This species seems to be endemic to the Ryukyu Archipelago.

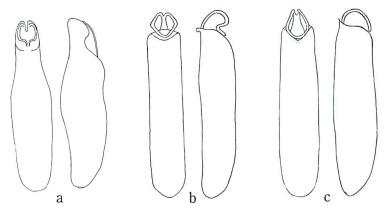


Fig. 4. Male genitalia. a, Hemipyxis nigricornis (Baly) (after specimen from Taiwan, China); b, H. foveolata foveolata (Chûjô) (after specimen from Okinawa Is.); C, H. foveolata miyakoana n. subsp.

Hemipyxis foveolata miyakoana n. subsp.

Yellowish brown, antenna pitchy black with basal segments brownish; elytral disc largely pitchy black with apex and outer margin broadly yellowish brown; length 3.5 mm.

Holotype: Gusukube, Miyako Is., Ryukyu Is., Japan (26. vi. 1974, S. Кімото leg.) (Туре No. 2100, Kyushu Univ.).

Distribution: Ryukyu Is. (Miyako).

This new subspecies is easily separable from the nominate subspecies in having the elytral disc pitchy black with margins brownish.

Hemipyxis changi Кімото

Hemipyxis changi Кімото, 1970, Kontyû, 38: 219 (Taiwan; Ryukyu: Ishigaki). Distribution: Taiwan, Ryukyu Is. (Ishigaki).

Hemipyxis balyi yaeyamana n. subsp.

Sebaethe balyi: Chûjô, 1935, Trans. Nat. Hist. Soc. Formosa, 25: 87 (Iriomote, Ishigaki).

Hemipyxis quadrimaculata: Кімото, 1964, Rep. Committee on Foreign Sci. Res. Kyushu Univ., 2: 154 (Iriomote).

Hemipyxis balyi: Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 449, 450.

Hemipyxis quadripustulata: Кімото & Gressitt, 1966, Pacif. Ins., 8: 483, 550 (Іshigaki, Ігіотоte, Yonaguni).

Yellowish brown, antenna pitchy black with basal segments brownish;

elytron largely pitchy black with a large median and a distinct subapical markings yellowish brown, in some cases median and subapical markings enlarged and united; length 4.2-5.0 mm.

Holotype: Yonaguni Is., Ryukyu Is., Japan (29. iii. 1974, K. Kusama leg.) (Type No. 2101, Kyushu Univ.).

Paratopotypes: 5 exs., same data as the holotype.

Paratypes: Yonaguni Is. (2 exs., 30. iii. 1974, 3 exs., 1. iv. 1974, 1 ex., 4. iv. 1974, 7 exs., 5. iv. 1974, K. Kusama leg.). Sonai, Yonaguni Is. (2 exs., 22. iii. 1972, S. Azuma leg.). Higawa, Yonaguni Is. (1 ex., 24. v. 1974, S. Azuma leg.). Ootomi, Iriomote Is. (1 ex., 26. iv. 1969, H. Makihara leg.). Mt. Goza, Iriomote Is. (2 exs., 15–21. iv. 1969, H. Makihara leg.). Oohara-Toyohara, Iriomote Is. (2 exs., 22. vi. 1974, H. Makihara leg.). Inaba, Iriomote Is. (3 exs., 10. iii. 1964, S. Kimoto leg.). Ushikumori, Iriomote Is. (1 ex., 11. iii. 1964, T. Shirôzu leg.; 1 ex., 11. iii. 1964, Y. Miyatake leg.). Shirahama, Iriomote Is. (2 exs., 7. iii. 1964, S. Higashihirachi leg.). Mt. Omoto, Ishigaki Is. (1 ex., 9. iv. 1974, 1 ex., 12. iv. 1974, H. Makihara leg.; 1 ex., 16. vii. 1976, S. Kimoto leg.). Bannadake, Ishigaki Is. (1 ex., 10. iv. 1974, K. Kusama leg.).

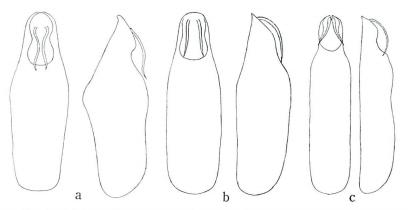


Fig. 5. Male genitalia. a, Hemipyxis balyi (BATES) (after specimen from Taiwan, China); b, H. cinctipennis (WEISE); c, H. quadripustulata (BALY) (after specimen from Taiwan, China).

Distribution: Ryukyu Is. (Ishigaki, Iriomote, Yonaguni).

The elytral marking of Yaeyama population resembles *Hemipyxis quadripustulata* (BALY), in having elytron with the ground color blackish and the anterior and posterior markings brownish. On the other hand, the male genitalia is exactly agreeing with *balyi* (BATES). Thus, the Yaeyama population constitutes a distinct subspecies of *balyi* (BATES), in having the peculiar elytral marking.

Hemipyxis cinctipennis cinctipennis (Weise), Good Species

Sebaethe cinctipennis Weise, 1890, In Schönfeldt, Ent. Nachr., 16: 174 (Loochoos: Oshima).

Sebaethe flavolimbata JACOBY, 1896, Entomologist, 29: 7 (Amami-Oshima).

Sebaethe balyi var. cinctipennis: Снџјо̂, 1935, Trans. Nat. Hist. Soc. Formosa, 25: 87.

Hemipyxis balyi cinctipennis: Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 449, 450 (Yakushima, Tokara). —Кімото & Gressitt, 1966, Pacif. Ins., 8: 483, 550 (Yakushima, Tokara, Amami-Oshima, Tokunoshima).

Distribution: Japan (Yakushima), Ryukyu Is. (Tokara, Amami-Oshima, Tokunoshima).

Hosts: Clerodendron trichotomum (Japanese name: Kusagi); Callicarpa japonica (Japanese name: Murasakishikibu); Plantago asiatica (Japanese name: Oobako); Scuterallia parvifolia (Japanese name: Kobano-tatsunamisô); Diplomorpha yakushimensis (Japanese name: Shimakoganpi).

This species has been treated as a subspecies of balyi (BATES). According to the characteristics of male genitalia, it becomes a conclusion that cinctipennis should be an independent species and okinawana becomes a subspecies of cinctipennis (WEISE).

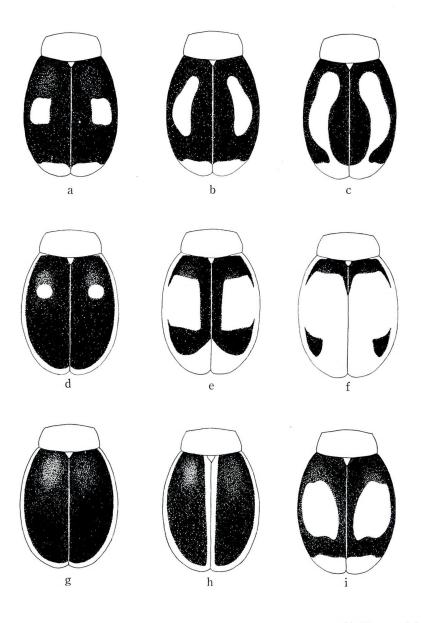
Hemipyxis cinctipennis okinawana Nakane & Kimoto, New Status

Hemipyxis balyi okinawana Nakane & Kimoto, 1961, Kontyû, 29: 108 (Okinawa).
—Кімото, 1965, J. Fac. Agr. Kyushu Univ., 13: 449, 450. —Кімото & Gressitt, 1966, Pacif. Ins., 8: 483, 550.

Distribution: Ryukyu Is. (Okinawa).

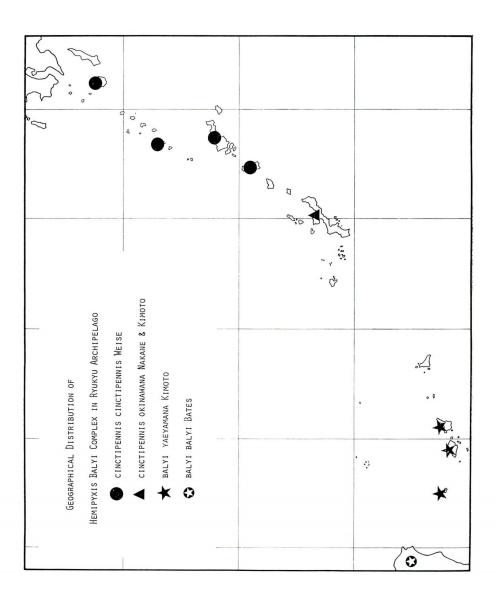
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Explanation of Plates 1-2.

- Plate 1. a-c, Hemipyxis quadripustulata (BALY).
 - d-f, H. balyi (BATES).
 - g, H. cinctipennis cinctipennis (Weise).
 - h, H. cinctipennis okinawana NAKANE & KIMOTO.
 - i, H balyi yaeyamana n. subsp.
- Plate 2. Geographical distribution of Hemipyxis balyi complex in Ryukyu Archipelago.

Reports of Anthribidae from Taiwan, I. (Coleoptera)

Ву Таісні Ѕнівата

In the present paper and the followings, I propose to introduce the several new species with some notes on Anthribidae as a trifling contributions for study of the fauna of Taiwan. I want to express my sincere gratitude to Mr. H. Ishida, Mr. T. Ochi, Dr. H. Ohira, Mr. M. Ohkura, Dr. T. Nakane, Dr. M. Hayashi, Mr. S. Hisamatsu, Mr. K. Matsuda, Mr. M. Miyatake, Dr. K. Morimoto, Mr. S. Takeda and the members of the Osaka Coleopterological Society, for their very kind help in literature and several ways.

Physopterus taiwanus sp. nov.

Evenly convex above, without tubercle but sometimes a little swollen before apical declivity of elytra. Black, spotted with clay and blackish pubescence, and with uniformly intermingled white hairs, the latter predominant on under surface.

Rostrum thinly clay, stout, thick, very compressed, a little wider at apex than long even in 3, roughly, rugosely punctate and slightly convex at major area in front of a basal transverse sulcus, which shortly divergent forward and forming Y-line together with a usual deep longitudinal median furrow runs from frons, its point of these lines often triangularly deepened. Head a little wider than rostrum, on vertex a clay elongate spot just close behind furrow, above and below eyes also clayish; frons feebly depressed before eyes, its interspace between eyes relatively wide, subequal to half the apical width of rostrum in \mathcal{P} , a little narrower in 3. Eyes oblong, entire, their upper edges margined by fine carinulate ridges, these ridges convergent forward and extended to rostral transverse sulcus; a usual ridge from centre of oblique-anterior side of eye and a lower one abbreviated, both ridges forming together lateral short carina of rostrum along upper side of antennal scrobe; front depression before eye limited its dorsal side by upper ridge and its latero-inferior side by lower two abbreviated ridges. Antennae longer in ♂, reaching to basal third of elytra, short in ♀ as usual and scarcely cross over base of pronotum, 7th and 8th joints entirely white, sometimes also apical part of 6th and basal part of 9th in 3, and apex or apical

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 23-28, June, 1978]

part of respective joint thinly white exclusive of 10th and 11th, 3rd a little longer than 4th, from 4th to 8th decreasing in length, last three forming a narrow club, whose 9th triangular, 10th shorter and 11th about as long as 9th with pointed tip. Antennal scrobe not clearly grooved, rather foveiform, but obliquely lengthened backward in a short distance, its process deep as a narrow sulcus, terminal end meeting with an extension of carinulate ridge, which obliquely prolonged downward from ventral edge of eye followed with sulcus beneath. False mentum (buccal plate) thinly white, coarsely sculptured as well as whole under head, its apical emargination (buccal sinus) shallow, not so deepened as in other species.

Pronotum subconical, transverse, its lateral sides rectilinear, convergent forward from maximum width at above dorsal carina, which is wider than long (3:2); disc moderately convex and feebly depressed along dorsal carina, with about ten clay spots: a widely interrupted median line, its apical part obsolete or vestigial, two subapical spots on each latero-dorsal side, whose inner spot near median line elongate, distinct (often broken up into two parts), and outer spot close to apical margin; a reduced spot behind inner elongate one at dorsal carina, a lateral postmedian spot placed just behind outer apical one, this spot continued to additional obscure spot upon carina and always curved latero-apicad along rounded angle making by dorsal and lateral carinae; a spot before lateral carina, and four spots on base, two of which in middle and two, quite lateral; dorsal carina uninterrupted in middle, slightly uneven, lateral carinae short, not extended to middle as a rule; basal longitudinal carinulae short, transverse carinulae incomplete and parallel with bases of elytra.

Elytra subquadrate, longer than wide (5:3.5), flattened or a little swollen before apical declivity, and then inclined down in a steep grade, depressed behind base but distinctly raised at post-scutellum between scutellary strioles, basal margins strongly, arcuately produced forward, the junction (before raised point) of both curvatures deeply and sharply incised, in that place basal margins embrace linear small scutellum between them; punctuations in rows deep and visible at basal half, of apical remainders vague as like as striae themselves; alternate interspaces tessellated with clay and blackish pubescence, clay spots partly elongate or well marked, especially on 3rd (wider than others) and 7th interspaces, and expanded on 1st at basal area besides raised point, a clay lateral spot occupying obliquely behind black shoulder callus and an apical median spot more markedly so alike those on 3rd interspace, some of clay spots generally confluent here and there, so that rather checkered pattern on elytra sometimes asymmetrical. Pygidium about

as long as wide, rounded or slightly truncate at apex in both sexes.

Under surface whitish for most part, all of clay spots laterally, in which a spot on propleuron, two or three spots on metasternum and a spot on each abdominal segment clearer, anal segment immaculate; prosternum flat, transversely, feebly elevated, close behind elevation slightly depressed in front of pro-coxae, the depression bisinuate, parallel with coxae, which widely separated as usual, prosternal process short, tongue-shaped, not triangular and ending between coxae; mesosternal process widely, a little arcuately truncate at apex; metasternum convex on each side of middle; abdomen depressed in \diamondsuit , a little swollen in \diamondsuit . Legs of moderate proportion and thickness; femora scantily white, tibiae obscurely bi-ringed, one near base and another behind middle, mid-tibiae in \diamondsuit slightly curved and thickened at inner extremity, tarsi white except apex of 1st joint, that of foretarsus as long as 4th.

Length (excl. head): 4.8-6.5 mm.

Holotype: \Diamond , Nanshanchi, Nantou Hsien, 20. IV. 1974, S. Takeda leg. (T. Shibata coll.); paratypes: $10 \Diamond \Diamond 10 \Diamond \varphi$, Nanshanchi and Lushan, Nantou Hsien, IV-VI, 1971-74, S. Takeda, Y. Kiyoyama, Y. Maeda, Y. Hayashi, T. Ochi and K. Matsuda leg.; $2 \varphi \varphi$, Liukuei, Kaohsiung Hsien, 27. V. 1970, Y. Kiyoyama leg.

Excepting the unusual antennal scrobes, the present species somewhat resembles *Physopterus pulcher* Jordan from Malaysia in similar checkered pattern on elytra, but the smaller body with much paler coloured pubescence and the compressed, wider rostrum, etc., especially of the latter in build, may be easily separable from *P. pulcher* and other allied species.

Sintor dorsalis intermedius Shibata, 1969

1969, Ent. Rev. Japan, 22 (1): 14.

Sintor pustulatus sp. nov.

Narrow in outline, upper surface flattened, black, pubescence dingy ochraceous above with black marks, greyish white beneath.

9. Rostrum parallel at sides or very feebly widened forward, three

carinae apically, two of which forming together rather distinct lateral carinae above antennal scrobes, and a median carina short, declining into basal groove, which deepened to frons, and bounded laterally by usual carinae run from near dorso-anterior edge of eyes, latter carinae slightly convergent to apical third and much more closely approximate to eyes than in related species (carinae almost close to eyes). Head shallowly depressed between eyes, with a median carina on vertex, carina short but distinct, close behind basal groove of rostrum and divided the shallow depression into two parts throughout to occiput; two dark linear spots remain on occiput as extension of dorsal markings of pronotum. Eyes normal in size. Antennae reddish brown with club darkened, joints slender, not markedly, rapidly thickened apically, but 2nd joint thicker than that of related species and nearly equal length to 1st or 4th, 3rd a little longer than 4th, from which diminishing ahead in respective length but gradually increasing so in thickness, last three club-joints plump, rather definitely link with each other, especially between 9th and 10th, not flattened and not so closely related as in other species, moreover 10th subcircular, about as long as wide, each length of club-joints subequal. Antennal scrobes nearly sulciform as those of Sintor dorsalis intermedius and S. bipunctatus. Under head black or very thinly white, strongly rather densely punctate, space between buccal fossa and ventral side of antennal groove parallel, feebly carinate at sides. False mentum normal, coarsely sculptured, median carina relatively weak.

Pronotum conical, wider than long (2:1.7), half as wide at apex as greatest expanded point upon lateral rounded angle of carinae, whence linearly constricted forward, with two latero-dorsal longitudinal weak elevations and a central hump on disc, longitudinal elevations surmounted with black stripes convergent apicad and surrounded median depression, central hump carinate, rounded, black at its summit, placed within median depression, which remarkably deepened before base and strongly punctate; black at lateral sides, longitudinal space between lateral side and dorsal stripe pale ochraceous, as if borders black stripes, its width narrower than that of lateral side but wider than that of stripe; base widely paler in colour and with two black linear spots on each side of middle, these spots prolonged forward across dorsal carina and a little entering the depression but never joined to dorsal stripes, the spots further prolonged backward beyond base to subbasal swellings of elytra; dorsal carina fine, not straight, gently divergent latero-apicad, a very little interrupted in middle and feebly sinuate halfway to sides.

Scutellum semicircular, whity. Central patch of elytra inverted V-form or almost conical, consisting of two black bold lines, occupies about one-quarter of sutural length, its summit placed at basal fourth on suture,

its base (hind side) between both 3rd interspaces and always deeply sinuate. Elytra visibly uneven, flat along suture, with tuberculate subbasal swellings, their oblique-anterior (inner shoulder) and hind areas depressed, hind depression deeper than flat sutural interspaces and welldefined its diagonal lines of central patch; basal margins reflex, slightly produced beside scutellum and again at shoulder, clearly bordered throughout even humeral angles; punctuations of striae strong, alternate interspaces bearing tubercles or black pustules and costate for major part as follows: sutural (1st) interspace merely pustulate here and there, and very slightly raised near apex; two tubercles on 3rd interspace, one in middle, black with black tuft, about as high as that of subbasal swelling, but inconspicuous, as it is in a corner of hind side of black central patch, another tubercle at apical fourth, a little lower than the former, black internally, the interspace costate only between these tubercles: 5th interspace slightly raised at subbasal and ante-apical parts, distinct, a few pustules on costate areas and two tubercles on ante-apical costa, anterior tubercle more elevated than posterior one, black externally, the interspace ending in posterior tubercle at apical declivous area; 7th interspace irregular, distinctly costate throughout from shoulder callus, with some black tuberculiform pustules, and ending in a small tubercle: 9th interspace joined basally to 7th upon shoulder, its hind half costate, bringing with some pustules, and incurved before apex, hind costa expanded laterally, so apparently it seems to be a part of lateral side of elytra when viewed from above. Pygidium a little longer than basal width.

Under surface strongly rather shallowly punctate, but punctuations on abdominal segments a little sparser and feebler than on others; prosternum slightly transversely depressed before and behind weak elevation, usual impression obliquely runs backward from apex of propleuron deep, prosternal and mesosternal processes normal as in the genus; mesopleuron thickly white, metasternum convex laterally, metepisternum quite pale ochraceous; ventral abdomen flat, anal segment declivous as usual, its apex dark, a little more thickened than that of *S. dorsalis intermedius*. Legs slender, largely reddish brown, femora thinly white beneath with a vague black ring in middle, tibiae speckled by black.

Length (excl. head): 5-6 mm.

Holotype: ♀, Funchifu, Chiai Hsien, 26. VII. 1974, Ү. КIYOYAMA leg. (Т. Shibata coll.); paratype, 1♀, Nanshanchi, Nantou Hsien, 6. V. 1971, Ү. Науаshi leg.

Sintor andrewesi JORDAN from India is an allied species in having the upper surface tuberculate, but distinguished by the normal sized eyes, without large anteapical tubercles and quite dissimilar pattern on the elytra, etc.

The present species may belong to the genus Rhinotropis Fairmaire, because

the dorso-lateral carinae of the head are almost close to the eyes and the 2nd segment of the antennae is thickened, long and forming a club. The terminal three segments of the antennae, though, are rather loosely articulated, which do not closely joint together, whose 10th segment is round and relatively long, so that they are subequal in length and thickness to each other. Concerning the above-mentioned structure of the antennal club, the present species is not admitted to either of both genera—Sintor or Rhinotropis.

Rawasia ritsemae Roelofs, 1880

1880, Notes Leyden Mus., 2: 204; Jordan, 1913, Rec. Ind. Mus., 9: 212; 1923, Opusc. Inst. Sci. Indochine, 1:24; Shibata, 1969, Ent. Rev. Japan, 22:30. Examined specimens: 1♦, Funchifu, Chiai Hsien, 29. V. 1970, Y. Kiyoyama leg.; 1♀, Liukuei, Kaohsiung Hsien, 13. VIII. 1972 and 1♀, Kentingkunyen, Pintung Hsien, 1. VIII. 1972, Y. Maeda leg.; 1♀, Lushan, Nantou Hsien, 4. V. 1974, S. Takeda leg. This widely distributed species occurs in southern Japan (Tokara Islands).

Apolecta tonkiniana JORDAN, 1904

1904, Nov. Zool., 11:236; 1916, ibid., 23:345.

Examined specimens: $3\, \diamondsuit\, \diamondsuit\, 1\, \diamondsuit$, Nanshanchi, Nantou Hsien, 22, 26. V. 1972, S. Takeda leg.

The examined specimens have much less scanty olivaceous tint than in the specimen from Tonkin according to the original description.

Notes on Staphylinidae from Taiwan, II. (Coleoptera)

By Yasuhiko $Hayashi^{1)}$

Agelosus ohkurai sp. nov.

Black, under head including mouth organs and prosternum dark reddish brown, antennae dark brown, but each peduncle of several segments and entire terminal one reddish as like as tarsi. Body subparallel-sided, lengthened, flattened above and densely covered with dark pubescence, head and pronotum weakly shining, but elytra and abdomen matt.

Pronotum subquadrate, about as wide as long, widest at middle of lateral sides, from which a little narrowed in front and behind, quite rounded at base, with a smooth middle line; punctures shallow, a little closer than on head, partly rugosed, coarser and more crowded at extreme sides than on other pronotal areas; lateral portion near imaginary apical angle of pronotum convex, protuberant forward and distinct, so lateral margin behind apex obliquely running downward, then continued to apical margin just under the protuberance (fig. 2) (therefore it seems to form a right apical angle of pronotum in dorsal view), moreover on ventro-lateral side of pronotum superior line (lateral margin) approaching inferior-lateral line (while in *carinatus* both lines more widely separated from one another as fig. 4).

Suimeidai 3-1-73, Kawanishi C., Hyogo Pref.
 Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 29-31, June, 1978

Elytra wider than pronotum, a little longer at suture than basal width of each elytron, slightly widened behind, weakly arcuate at lateral and shallowly emarginate at apical sides; blackish pubescence coarser and denser than on other portions; structure very rough, composed of very densely pitted sculpture with a fine microscopical granule; each elytron with a long characteristic secondary seta upon shoulder (it is lacking in *carinatus*).

Abdominal tergites sparingly finely granulate and covered with a dense imblicate microsculpture, granule bearing individually a short black hair; apical margin of 8th tergite slightly emarginate. The 8th abdominal sternite with a small excision in middle of apical margin in $\ensuremath{\circ}$, moderately arcuate in $\ensuremath{\circ}$.

Male genitalia (fig. 5) bilobed and well sclerotized; median lobe stout,

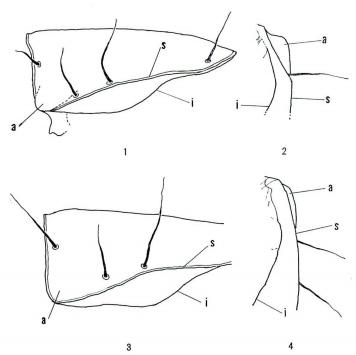


Fig. 1 & 3. Lateral view of pronotum. 2 & 4. Ventral view of pronotum. a: Apical angle. i: Inferior lateral line. s. Superior lateral line.

 $1\ \&\ 2$. Agelosus ohkurai sp. nov. $3\ \&\ 4$. A. carinatus (Sharp).

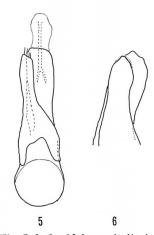


Fig. 5 & 6. Male genitalia in dorsal view. (6. Apical half.)
5. Agelosus ohkurai sp. nov.
6. A. carinatus (Sharp).

paralell-sided and rather truncate at tip in dorsal view; paramere obliquely truncate with four fine hairs at tip.

Length: 18-21 mm.

Holotype; ↑ Fungchiifo, Chiai Hsieng, Taiwan, 4. V. 1970, Y. Кіуоуама leg. (In coll. Т. Shibata); Paratype; ♀ Sungkang, Nantou Hsieng, Taiwan, 23. IV. 1973, S. Такеда leg. (In coll. Y. Науаshi).

The new species is readily distinguished from *A. carinatus* Sharp by entire black body with rather shining head and pronotum, by peculiar form of prothoracic latero-apical position and by different sculpture on pronotum and elytra, etc.

In carinatus the body entirely matt and covered with light coloured pubescence instead of black one, the elytra reddish, punctuations on the pronotum deeper and median lobe of the male genitalia rounded at apex and obtusely pointed at tip, the paramere somewhat acute at apex which with many ciliae (fig. 6), both apices not truncate as in the new species.

The present new species is dedicated to Mr. M. Ohkura, who kindly supported me in studying on Staphylinidae and gave me a chance of the publication.

Notes and Descriptions of Formosan Carabidae Taken by Dr. S.-I. UÉNO in 1961 (Coleoptera, Carabidae)

VIII. Synuchus spp.

By Akinobu Habu

Laboratory of Insect Identification and Taxonomy, National Institute of Agricultural Sciences, Nishigahara II, Kita-ku, Tokyo-114

There are abundant specimens of *Synuchus* spp. among those found by Dr. S.-I. Uéno in Formosa. I could classify them into at least thirteen species:—*S. robustus* sp. nov., *S. angustus* sp. nov. (with subsp. aliensis nov.), *S. longissimus* sp. nov., *S. taiwanus* sp. nov., *S. laticollis* Lindroth, *S. bellus* sp. nov., *S. rectangulus* Lindroth, *S. sinuaticollis* sp. nov., *S. microtes* sp. nov., *S. truncatus* sp. nov., *S. rufulus* sp. nov., *S. pallidulus* sp. nov. and *S. pulcher* sp. nov.

1. Synuchus (Synuchus) robustus sp. nov. (Figs. 1, 2, 3, 13, 19)

Description. Length 9.5-10.7 mm. Width 3.3-3.9 mm.

Black, rather mat, pronotum at apex and base and elytra faintly reddish under spotlight; labrum and mandibles dark reddish brown, palpi and antennae reddish brown, segments 1 to 4 of antennae somewhat dark, femora and tibiae reddish black, with apex more reddish, tarsi dark reddish brown; ventral side reddish black.

Head wide, gently or moderately convex; isodiametric microsculpture distinct; neck-constriction almost absent on dorsal side; tempora gently oblique, not tumid, oblique part four-sevenths to two-thirds as long as eye; eyes rather small, moderately convex, WH/WF 1.32–1.38, mean 1.35, in eight \Im and two \Im apparent ventral margin fully distant from buccal fissures; posterior supraorbital setae on level of hind margin of eyes, interspace slightly wider than interspace of anterior supraorbital setae; antennae relatively short and stout, reaching basal

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 33-67, June, 1978]

one-eighth or -seventh of elytra, segment 1 two and one-sixth to two and two-fifths times as long as wide, one and one-eighth to -fourth times as long as segment 3 which is slightly longer than segment 4, segment 2 with two secondary setae, each on dorsal and outer sides near apex, secondary setae shorter than width of segment 2; palpi stout, apical segment of maxillary palpi subcylindrical, one and three-sevenths to more than one and one-half times as long as penultimate segment which

is with two short but distinct setae on inner side near apex; labial palpi with apical segment (Fig. 1) three and one-fifth to three and two-fifths times as long as wide in δ , three and seven-tenths times in φ .

Pronotum (Fig. 3) gently convex, widest before middle, in eight $\circ \circ$ and two $\circ \circ WP/WH$ 1.38–1.43, mean 1.41 (\circ), 1.35, 1.39 (\circ), WP/LP 1.23–1.32, mean 1.28 (\circ), 1.24, 1.32 (\circ); surface not punctate, often transversely, more or less rugose on disc; microsculpture fully distinct, forming a little transverse meshes

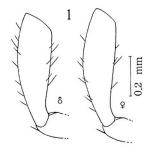
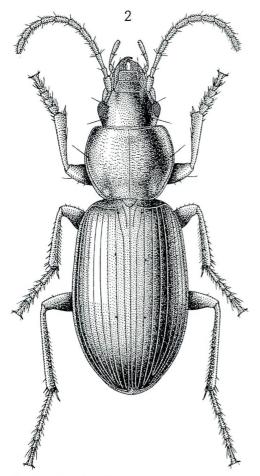


Fig. 1. Labial palpi (ventral view) of Synuchus (Synuchus) robustus sp. nov., ↑ and ♀.

on disc; apical border distinct, effaced at middle; apical angles gently to fairly protrudent, narrowly rounded; base distinctly emarginate at middle, rounded at lateral areas; basal angles rounded; lateral margins somewhat roundly or almost evenly, moderately contracted anteriorly, evenly, fairly contracted posteriorly, reflexed areas distinctly defined, a little dilated posteriorly, distinctly continuous to basal border; anterior marginal setae at two-fifths, posterior setae absent (in one of specimens from Mt. Hsüeh short crooked posterior setae present at twelve-thirteenths); lateral furrows rather narrow or somewhat wide, shallow, evanescent before or in basal angles, sometimes faint or almost absent; basal foveae shallow, not extending forward, obscurely reaching or not reaching basal border, with or without obscure convex area outside at basal half.

Wings fully reduced. Elytra gently convex, elliptic ovate, widest at middle, WE/WP 1.24–1.36, mean 1.32, in eight &&&, 1.34, 1.35 in two &&&, more than one and one-half to one and three-fifths times as long as wide in &&&, more than one and one-half to one and four-sevenths times in &&&&; microsculpture distinct, isodiametric; basal border moderately sinuate, forming wide obtuse angle at shoulder opposite interval 7 or 8; inner plica absent; apex rounded; striae distinct, stria 2 generally not reaching, sometimes reaching, stria 1 at base, stria 7 normal, not reaching



stria 2 at apical part, stria 8 not reaching apical pore, subapical pore on intervals 5+7, remote from striae 3+4; scutellary striole a little shortened, moderately deep; intervals rather convex, interval 3 with two pores at or before one-third and at or behind three-fifths (in one of Mt. Yü-shan specimens second pore absent on left elytron); marginal series sixteen to eighteen.

Hind coxae without inner seta; fore tarsi of stout, not sulcate. segment 1 slightly shorter to slightly longer than wide, a little longer than segment 2 which is a little wider than long; fore tarsi of a shallowly or rather distinctly bisulcate on segment 1, obscurely bisulcate on segment 2; mid and hind tarsi with segments 1 to 4 well bisulcate, inner sulcus as deep as outer sulcus, interspace of sulci fairly convex or somewhat

carinate, segment 5 faintly in mid tarsi, rather distinctly bisulcate in hind tarsi at basal half; segment 4 of hind tarsi with inner and outer subapical setae generally fairly short; tarsal segment 5 with three setae on either ventrolateral margin; hind tarsi one and one-sixth times as long as head width in \$, one and one-tenth to -fifth times in \$, segment 1 one and seven-tenths to one and five-sixths times as long as segment 2 in \$, one and seven-tenths to one and three-fourths times in \$, segment 5/segment 1=0.76–0.83 in \$, 0.73–0.77 in \$; claws with four or five denticles.

Metepisterna fully short, L/W 0.97-1.08, mean 1.03, in three ⋄ ⋄

and two 9, outer border evanescent at front outer area.

Aedeagus (Fig. 13) rather slender, gently curved, slightly twisted to right side near apex, somewhat depressed on dorsal side at basal fourth, gently convex on ventral side at basal third; dorsal orifice terminating at middle; basal bulb well delimited, basal area membranous, left ventral margin hardly sinuate; apical lamella fully short, more than three times as wide as long, apex rounded; right paramere relatively wide, well bent, ventral margin somewhat convex at subapical area, dorsal side with distinct chitinized projection at middle, apex somewhat pointed though dull.

Styluses (Fig. 19) rather wide, apical segment with trunk part one and three-fifths to one and four-fifths times as long as wide, gently to fairly contracted apically, base not protrudent outward, digitate part five-eighths as long as trunk part, not tapering, apex rounded, ventral spine moderately long and stout.

Distribution. Formosa.

Type-series. Holotype: \lozenge , VII. 1, 1961, Mt. Yü-shan. Paratypes: $4 \lozenge \lozenge \lozenge$, same as holotype; $1 \lozenge$, VI. 22, 1961, Mt. Tz'u-kao-tung; $3 \lozenge \lozenge$, $2 \lozenge \lozenge$, VI. 23, 1961, Mt. Hsüeh.

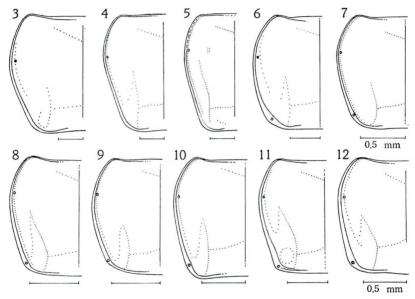
Remarks. It is probably allied to S. formosanus Lindroth, but easily distinguished from this by the elytra with two dorsal pores on the third interval. The Japanese S. callitheres (Bates) has also the mid and hind tarsi with the bisulcate fifth segment as S. robustus, but this Formosan species has not a close relationship to S. callitheres.

2. Synuchus (Synuchus) angustus sp. nov. (Figs. 4, 14, 20)

Description. Length 10.3-11.7 mm. Width 3.3-3.9 mm.

Depigmented, reddish brown, rather dark, shiny; ventral side dark reddish brown.

 than penultimate segment, labial palpi with apical segment subcylindrical. Pronotum (Fig. 4) gently convex, widest at or behind one-third, generally a little wider than long, in six \$\$ and four \$\$\pi\$ WP/WH 1.24-1.31 mean 1.27 (\$\$) 1.21-1.27 mean 1.25 (\$\$) WP/IP 1.02-1.06 mean 1.04



Figs. 3-12. Pronota of Synuchus (Synuchus) spp., \lozenge except Figs. 5 and \lozenge (\lozenge). 3. S. robustus sp. nov. 4. S. angustus angustus sp. et subsp. nov. 5. S. longissimus sp. nov. \lozenge 6. S. taiwanus sp. nov. 7. S. microtes sp. nov. \lozenge 8. S. truncatus sp. nov., holotype. 9. Do., paratype. 10. S. rufulus sp. nov. 11. S. pulcher sp. nov. 12. S. pallidulus sp. nov.

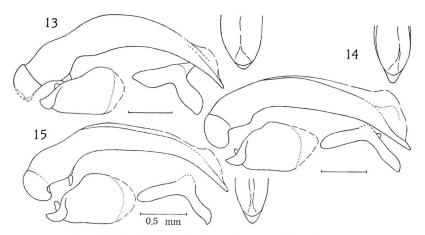
margins moderately rounded anteriorly, evenly or slightly sinuately, fairly contracted posteriorly, reflexed areas rather defined and slightly dilated at posterior half, continuous to basal border; anterior marginal setae behind one-third, posterior setae absent; lateral furrows fully narrow, arising from before marginal setae, evanescent before basal angles; basal foveae rather shallow, reaching basal border, extending forward a little beyond middle parallel with lateral margins, without convex area outside.

	15 ex.		7 ex.		0		0		1 ex.		1 ex.	
	left	right	left	right	left	right	left	right	left	right	left	right
1st pore	0	0	×	0	0	×	×	×	0	×	×	×
2nd pore	0	0	0	0	0	0	0	0	0	×	0	×

Legs slender; hind coxae without inner seta; fore tarsi of $\ \, \circ \ \,$ with segment 1 one and one-sixth to -third times as long as wide, a little shorter than segment 2 which is one and three-sevenths times as long as wide; fore tarsi of $\ \, \circ \ \,$ shallowly bisulcate on basal two or three segments; segments 1 to 4 of mid and hind tarsi moderately bisulcate, inner sulcus almost as deep as or a little shallower than outer sulcus, interspace of sulci somewhat carinate; segment 4 of hind tarsi with rather short to somewhat long inner and outer subapical setae; tarsal segment 5 with three setae in fore, four in mid, four or five in hind tarsi, on either ventrolateral margin; hind tarsi one and five-eighths to one and seventenths times as long as head width in $\ \, \circ \ \,$, one and one-half times in $\ \, \circ \ \,$, segment 1 one and two-thirds to one and five-sixths times as long as segment 2 in $\ \, \circ \ \,$, one and four-fifths to one and six-sevenths times in $\ \, \circ \ \,$, segment 5/segment 1 = 0.55-0.63 in $\ \, \circ \ \,$, 0.58-0.67 in $\ \, \circ \ \,$; claws with five or six denticles.

Metepisterna fully short, L/W 0.93–1.03, mean 0.98, in three $\, \lozenge \, \, \lozenge \,$ and three $\, \lozenge \, \, \lozenge \,$, outer border obscure or effaced at front outer area.

Aedeagus (Fig. 14) narrow, gently curved, weakly bent ventrally at subapical area; dorsal orifice ending at basal one-third; basal bulb well delimited, left ventral margin deeply emarginate; apical lamella rather



Figs. 13-15. Male genitalia of Synuchus (Synuchus) spp.

- 13. S. robustus sp. nov. 14. S. angustus angustus sp. et subsp. nov.
- 15. S. angustus aliensis sp. et subsp. nov.

short, twice as wide as long, apex well rounded; right paramere moderately or fairly bent, narrow.

Styluses (Fig. 20) slender, apical segment with trunk part long, two and one-third to two and five-sixths times as long as wide at base, weakly contracted apically, base not protrudent outward, digitate part slender, four-sevenths to two-thirds as long as trunk part, acute (Tz'u-kao-tung ex.) or dull (Yü-shan ex.) at apex, ventral spine moderately long, not stout.

Distribution. Formosa.

Type-series. Holotype: \lozenge , VII. 1, 1961, Mt. Yü-shan. Paratypes¹): $1 \, \lozenge$, VI. 22, 1961, Mt. Tz'u-kao-tung; $9 \, \lozenge \, \lozenge$, $1 \, \lozenge$, same as holotype, $4 \, \lozenge \, \lozenge$, $2 \, \lozenge \, \lozenge$, VII. 2, 1961, do. (at alt. 3400-3500 m); $5 \, \lozenge \, \lozenge$, VII. 2, 1961, Hsi Hsin-kao.

Remarks. The new species almost agrees with the description of S. rufofuscus (Jedlicka), but in this species the length is "9 mm" and the hind tarsi are "nur aussen gefurcht". It has the pronotum without posterior marginal setae like in S. formosanus and robustus, but it is far distant from those species.

Subsp. aliensis nov.

(Figs. 15, 16)

Description. Length 10.0-10.6 mm. Width 3.3-3.4 mm. Pigmented, black, shiny, elytra faintly reddish under spotlight; antennal segments

 $^{^{1)}}$ $1\,\circ$, VIII. 16, 1973, Mt. Yü-shan, Chen Wen Long leg., through Mr. S. Nakamura.

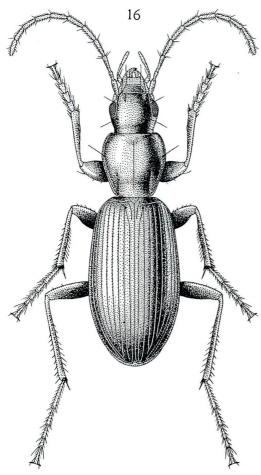


Fig. 16. Synuchus (Synuchus) angustus aliensis sp. et subsp. nov., \Diamond .

1 to 4 darker than in nominate subsp., femora black, with apex reddish, tibiae dark reddish brown to reddish black, tarsi reddish brown; ventral side reddish black.

Head with eyes a little more convex than in nominate subsp., WH /WP 1.39, 1.40, 1.44 in three & &. Pronotum (WP/WH 1.25, 1.29, 1.30, WP/LP 1.03, 1.00, 1.04, in three & & respectively) similar to that of nominate subsp. Elytra (WE /WP 1.39, 1.40, 1.43) with intervals moderately convex, interval 3 with or without pores as in following table.

Hind tarsi one and five-eighths to one and four-fifths times as long as head width in \Im , segment 1 more than one and three-fourths to one and four-fifths times as long as segment 2 in \Im , segment 5/segment 1=0.53-0.60 (\Im). Male genitalia (Fig. 15) almost same as in nominate

	ô, Mt.	Wan-sui otype)	♂, Mt.	Wan-sui	ô, Chao-p'ing		
	left	right	left	right	left	right	
1st pore	×	×	0	0	×	×	
2nd pore	0	×	0	0	\circ	0	

subsp., but aedeagus a little more curved in one 3 examined.

Type-series. Holotype: \lozenge , VII. 3, 1961, Mt. Wan-sui, Mts. A-li, at alt. 2300 m. Paratypes: $1 \lozenge$, VII. 4, 1961, same as holotype; $1 \lozenge$, VII. 4, 1961, Chao-p'ing, Mts. A-li, at alt. 2200 m.

Remarks. It is easily distinguishable from the nominate subspecies, by the pigmented black body.

3. Synuchus (Synuchus) longissimus sp. nov. (Figs. 5, 17)

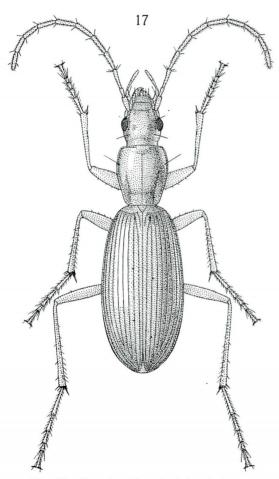


Fig. 17. Synuchus (Synuchus) longissimus sp. nov., φ .

Description. Body fully slender. Length 11.2 mm. Width 3.2 mm.

Dark brown (teneral), shiny.

Head moderately convex, with one pair of shallow depressions at mid-eye level: isodiametric microsculpture well visible: neck-constriction moderately deep on dorsal side: tempora developed, less oblique than in angustus, fairly tumid, oblique part three-fourths as long as eye; eyes rather small, gently convex, WH/WF 1.44 in one ♀, apparent ventral margin well distant from buccal fissures: posterior supraorbital setae fairly behind level of hind margin of eyes, left anterior supraorbital seta and pore abnormally absent in single specimen; antennae fully slender, reaching middle of elytra, segment 1 three and one-sixth times as long as wide, a little shorter than segment 4, segment 3 longest, a little longer than segment 4, segment 2 without secondary seta; palpi with apical segment subcylindrical, a little longer than penultimate segment in maxillary palpi.

Pronotum (Fig. 5) moderately convex, widest before two-fifths, fully longer than wide, WP/WH 1.27, WP/LP 0.87, in one \mathfrak{P} ; surface not punctate; microsculpture distinct, forming fairly transverse meshes on disc; apical border distinct, obscure at middle; apical angles not protrudent but obtuse and somewhat rounded; base slightly emarginate at middle, roundly oblique at lateral areas; basal angles well rounded; lateral margins moderately rounded anteriorly, evenly or very slightly sinuately, moderately contracted posteriorly, reflexed areas rather defined, becoming obscure before basal angles, obscurely continuous to basal border; anterior marginal setae at one-third, posterior setae absent; lateral furrows fully narrow, arising from apical angles, effaced before basal angles; basal foveae somewhat deep, long, extending up to two-fifths parallel to lateral margins, almost reaching basal border, without convex area outside.

Elytra (incomplete in single $\mathfrak P$) long, widest a little behind middle, less than twice as long as wide; microsculpture faint, forming indistinct transverse meshes; basal border moderately sinuate, gently oblique outward, forming obtuse angle at shoulder opposite interval 7; shoulder slanting, indistinct; epipleurae narrowly visible from above at subapical area; inner plica absent; apex rounded; striae distinct, stria 2 reaching stria 1 at basal pore, stria 7 reaching stria 2 at apex on right elytron, not reaching stria 2 but reaching apex on left elytron, stria 8 reaching apical pore, subapical pore on intervals 5+7, adjoining striae 3+4; scutellary striole somewhat shortened, distinct; intervals rather convex, interval 3 with two pores at three-eighths to three-sevenths and two-thirds to three-fourths; marginal series seventeen.

Legs fully slender; hind coxae without inner seta; fore tarsi of \mathsepsilon with segment 1 faintly sulcate at inner area; segments 1 and 2 of mid tarsi and segments 1 to 3 of hind tarsi moderately bisulcate, inner sulcus a little shallower than outer sulcus, interspace of sulci fairly convex or obscurely carinate; segment 4 of hind tarsi with inner and outer subapical setae very short and fine; tarsal segment 5 with four setae in fore and mid tarsi, four to six in hind tarsi, on either ventrolateral margin; hind tarsi fully twice as long as head width in $\mbox{\ensuremath{\wpmargin}}$, segment 1 a little less than one and three-fourths times as long as segment 2, segment $5/\text{segment}\ 1=0.62\ (\mbox{\ensuremath{\wpmargin}}$); claws with five or six denticles.

Metepisterna partly hidden under epipleurae and not well observable in single specimen.

Distribution. Formosa.

Type-specimen. Holotype: $\mbox{$\wp$}$, VII. 5, 1961, Mt. Wan-sui, Mts. A-li, at alt. 2320 m, teneral.

Remarks. The new species is allied to *S. angustus*, but at once distinguishable by the distinctly longer antennae, pronotum, elytra and legs.

4. Synuchus (Synuchus) taiwanus sp. nov. (cf. Addendum) (Figs. 6, 18, 21)

Description. Length 8.3 mm. Width 3.3 mm.

Black, rather mat; labrum and mandibles reddish brown, palpi pale reddish brown, somewhat vellowish, antennae and legs light reddish brown, lateral margins and base of pronotum and lateral to apical margin of elytra yellowish brown, elytral base, interval 1 and interval 9 reddish; ventral side black, faintly reddish, hypomera and epipleurae reddish vellow.

Head fairly convex; isodiametric microsculpfully distinct: ture neck-constriction absent on dorsal side; tempora moderately oblique, not tumid, oblique part onehalf as long as eye; eyes somewhat small, rather convex, WH/WF 1.45 in one 9, apparent ventral margin moderately separated from buccal fissures: supraorbital setae rather bristle-like, posterior setae on level

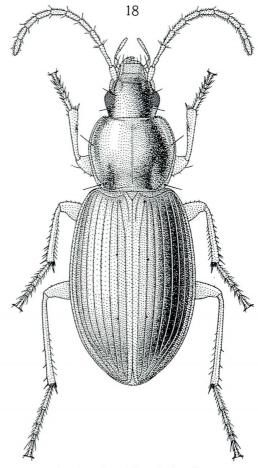


Fig. 18. Synuchus (Synuchus) taiwanus sp. nov., \circ .

of hind margin of eyes, interspace as wide as interspace of anterior supraorbital setae; antennae reaching basal one-fifth of elytra, segment 1 two and five-eighths times as long as wide, as long as segment 4 which is slightly longer than segment 3, segment 2 without secondary seta; apical segment of palpi rather fusiform, one and one-third times as long as penultimate segment in maxillary palpi.

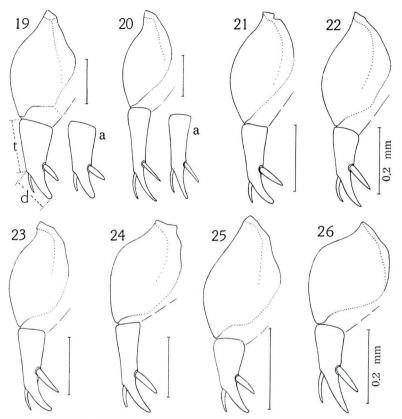
Pronotum (Fig. 6) fairly convex, widest behind two-fifths, WP/WH 1.58, WP/LP 1.20, WP/WBP (s) 1.26, WBP (s)/WAP 1.28 in one \$\phi\$; surface faintly, transversely rugose; microsculpture fully distinct, almost iso-diametric on disc; apical border distinct, effaced at middle; apical angles a little protrudent, rounded; base even at median area, somewhat roundly, moderately oblique at lateral areas; basal angles widely rounded; lateral margins fairly rounded anteriorly, less rounded posteriorly, reflexed areas defined, dilated posteriorly, distinctly continuous to basal border; marginal setae rather bristle-like, anterior setae behind one-third, posterior setae at ten-elevenths, distinctly separated from lateral margins; lateral furrows faint, fairly dilated posteriorly, evanescent at two-thirds; basal foveae rather shallow, reaching base, faintly extending up to middle parallel to lateral margins, obscurely convex outside at anterior half.

Wings half-reduced, one-third as long as elytra. Elytra weakly convex, widest at middle, WE/WP 1.45 in one $\,^\circ$, one and one-half times as long as wide; microsculpture distinct, isodiametric; basal border distinctly sinuate, well oblique outward, forming obtuse angle at shoulder opposite interval 7; inner plica absent; apex rounded; striae moderately impressed, stria 2 separated from stria 1 at base, stria 7 normal, not reaching stria 2 at apex, stria 8 not reaching apical pore, subapical pore on intervals 5+7, not adjoining striae 3+4; scutellary striole moderately long, similar to striae; intervals gently convex, interval 3 with two pores at one-third and two-thirds; marginal series sixteen.

Hind coxae without inner seta; fore tarsi of $\[Phi]$ somewhat distinctly bisulcate on segments 1 and 2; segments 1 to 3 of mid and hind tarsi well bisulcate, inner sulcus as deep as outer sulcus, interspace of sulci fairly carinate; segment 4 of hind tarsi with inner and outer subapical setae vestigial; tarsal segment 5 bisetose on either ventrolateral margin; hind tarsi one and one-third times as long as head width in $\[Phi]$, segment 1 one and three-fourths times as long as segment 2, segment 5/segment 1=0.65 ($\[Phi]$); claws with two or three denticles.

Metepisterna rather long, L/W 1.30 in one $\,^{\,\circ}$, outer border effaced at front outer area.

Styluses (Fig. 21) with apical segment rather slender, not protrudent outward at base, trunk part a little more than twice as long as wide



Figs. 19-26. Left styluses of Synuchus (Synuchus) spp.

19. S. robustus sp. nov. a. apical segment of another specimen. t: length of trunk part. d: length of digitate part. 20. S. angustus angustus sp. et subsp. nov. a. apical segment of another specimen. 21. S. taiwanus sp. nov. 22. S. laticollis LINDROTH. 23. S. rectangulus LINDROTH. 24. S. sinuaticollis sp. nov. 25. S. microtes sp. nov. 26. S. rufulus sp. nov.

at base, gently contracted apically, digitate part five-eighths as long as trunk part, hardly tapering, rounded at apex, ventral spine fully long and stout.

Distribution. Formosa.

Type-specimen. Holotype: ♀, VII. 8, 1961, Ha-li-wei, near Fen-ch'i-hu.

Remarks. This Formosan species is fully allied to S. shibatai HABU from Satsunans, Japan, but is smaller, with the antennae longer, the fore tarsi bisulcate in the female, the sulci of the mid and hind tarsi deeper, the hind tarsi fully longer even in the female and the proportion of the fifth segment to the first segment in the hind tarsi fairly smaller—the hind tarsi are only one and one-sixteenth times as long

as the head width, segment 5/segment 1 = 0.83 in the holotype (9) of S. shibatai.

5. Synuchus (Synuchus) laticollis Lindroth (Fig. 22)

The supraorbital setae of the head and the marginal setae of the pronotum are thick and acicular.

The apical segment of the styluses (Fig. 22) is moderately long, the trunk part is less than twice as long as wide, somewhat sinuately, gently contracted apically, the digitate part is rather slender, a little shorter than the trunk part, tapering apically and acuminate at the apex, the ventral spine being fully long and stout.

6. Synuchus (Synuchus) bellus sp. nov. (Figs. 27, 30, 32, 35)

Description. Length 6.7 mm. Width 2.6 mm.

Black, head and pronotum rather mat, elytra faintly reddish under spotlight, half-shiny; labrum and mandibles reddish brown, palpi and antennae brownish yellow, apical and basal areas and lateral margins of pronotum, base, lateral to apical margin and interval 1 of elytra somewhat reddish, legs pale reddish brown; ventral side dark reddish brown, hypomera and epipleurae faintly yellowish.

Head moderately convex; isodiametric microsculpture fully distinct; neck-constriction absent on dorsal side; tempora gently oblique, slightly tumid, oblique part four-sevenths as long as eye; eyes rather convex, somewhat small, WH/WF 1.43 in one $\, \circ$, apparent ventral margin narrowly separated from buccal fissures; supraorbital setae thick, curved, posterior setae behind level of hind margin of eyes, interspace one and one-tenth times as wide as interspace of anterior supraorbital setae; frontal lateral furrows shallower and narrower than usual; antennae reaching one-fifth of elytra, segment 1 two and one-third times as long as wide, as long as segment 3 which is a little shorter than segment 4, segment 2 without secondary seta; apical segment rather fusiform, one and one-third times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. 30) moderately convex, widest at two-fifths, WP/WH 1.56, WP/LP 1.27, WP/WBP 1.25, WBP/WAP 1.27 in one &; surface not punctate, faintly rugose; microsculpture fully distinct, forming somewhat to moderately transverse meshes (partly almost isodiametric at central area near median line); apical border distinct, effaced at middle; apical angles rather protrudent, narrowly rounded; base slightly emarginate at median area, somewhat rounded-oblique at lateral areas; basal angles rather defined, obtuse, dull at apex; lateral margins somewhat

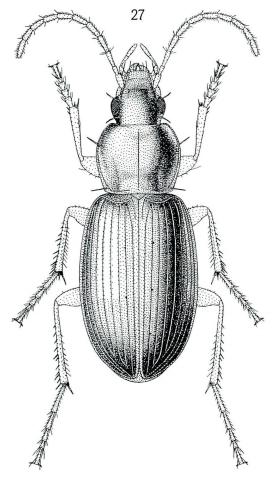


Fig. 27. Synuchus (Synuchus) bellus sp. nov., 3.

roundly, fairly contracted anteriorly, evenly, moderately contracted posteriorly, reflexed areas defined. dilated posteriorly, tinctly continuous to basal border: marginal setae stout, straight, acicular. anterior setae at one-third, posterior setae a little before basal angles, fairly separated from lateral margins; lateral furrows faint, rather wide, arising from before anterior marginal setae, reaching basal foveae: basal foveae rather shallow, diverging forward up to two-fifths, reaching basal border. hardly convex outside.

Wings fully reduced. Elytra weakly convex, elliptic, widest a little before middle, WE/WP 1.39 in one &, one and one-half times as long as wide; microsculpture distinct, but less strong than on pronotum and head, isodiametric or forming slightly transverse meshes; basal

border well sinuate, fairly oblique outward, forming obtuse but distinct angle at shoulder opposite interval 7; inner plica absent; apex widely rounded; striae moderately deep, stria 2 almost reaching stria 1 at basal pore, stria 7 (Fig. 32) reaching stria 2 at apex, stria 8 not reaching apical pore, apical pore isolated, subapical pore on intervals 5+7, adjoining striae 3+4; scutellary striole moderately long, deep; intervals gently convex, interval 3 with two pores at two-sevenths and behind middle on left elytron, with unusually three pores on right elytron in single \$, interval 6 a little narrowed at basal one-fourth, interval 7 raised and somewhat carinate at basal area; marginal series fourteen, hindermost

pore (Fig. 32) removed more apically than usual.

Hind coxae without inner seta; fore tarsi of \circ with segment 1 relatively long, one and two-thirds times as long as wide, more than one and one-third times as long as segment 2 which is more than one and one-fourth times as long as wide; segments 1 to 3 of mid and hind tarsi distinctly bisulcate, inner sulcus almost similar to outer sulcus, interspace of sulci rather carinate; segment 4 of hind tarsi with outer and inner subapical setae very short and fine; tarsal segment 5 with two (two or three in hind tarsi) setae on either ventrolateral margin; hind tarsi one and one-half times as long as head width (\circ), segment 1 one and four-sevenths times as long as segment 2, segment 5/segment 1 = 0.60 (\circ); claws with three or four small denticles.

Metepisterna as long as wide (L/W 1.00 in one $\, \Im \,$), outer border almost complete.

Aedeagus (Fig. 35) slightly tilted to right side, gently curved at middle, fairly curved ventrally at about apical one-sixth, ventral side normal; dorsal orifice longer and wider than usual, ending fairly before basal bulb; basal bulb obscurely delimited, left ventral margin shallowly sinuate, basal orifice extending more basally than usual; apical lamella less than twice as wide as long, lateral margins slightly sinuate, apex moderately rounded; right paramere moderately bent, narrow, apex somewhat pointed, left paramere wider than usual, dorsal margin well sinuate near middle.

Distribution. Formosa.

Type-specimen. Holotype: ©, VII. 6, 1961, Mt. Tui-Kao (at alt. 2300 m), Mts. A-li. Remarks. It is allied to S. laticollis Lindroth, but is smaller, having the pronotum smaller, with the apical angles less protrudent, the basal angles and the lateral-marginal reflexed areas more defined, and the elytra fairly wider, with the microsculpture almost isodiametric and with the characteristic sixth and seventh intervals.

The aedeagus singularly contains at the basal part a long filiform object, a part of which protrudes outside from the basal orifice as in Fig. 35, but I cannot make out whether it is a copulatory piece or not owing to a single specimen; the inner sack is more chitinized than usual.

7. Synuchus (Synuchus) rectangulus Lindroth (Fig. 23)

The supraorbital setae and the prothoracic marginal setae are not so stout as in S. laticollis and bellus.

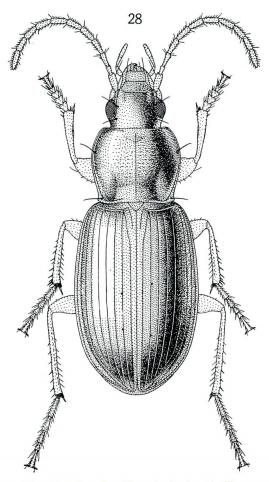
The apical segment of the styluses (Fig. 23) has the trunk part long, more than twice as long as wide at the base, gently contracted apically, the digitate part three-

fifths as long as the trunk part, hardly tapering, rounded at the apex, and the ventral spine fully long and stout.

8. Synuchus (Synuchus) sinuaticollis sp. nov. (Figs. 24, 28, 29, 31, 33, 34)

Description. Length 7.3-8.0 mm. Width 2.8-3.2 mm.

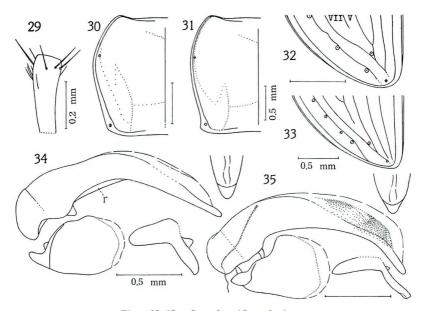
Dark reddish brown to reddish black, half-shiny; labrum and mandibles reddish brown, palpi, antennae and legs light reddish brown,



lateral margins of pronotum and lateral to apical margin of elytra dark yellowish brown, elytral intervals 1 and 9 somewhat reddish; ventral side dark reddish brown, hypomera and epipleurae reddish brown, somewhat light.

Head moderately or fairly convex: isodiametric microsculpture distinct: neck-constriction absent on dorsal side: tempora oblique. gently tumid, oblique part threesevenths to less than one-half as long as eye; eyes gently convex, rather small, WH/WF 1.50, 1.51 in two ♂ ♂, 1.42–1.46, mean 1.44, in six 9, apparent ventral margin rather widely distant from buccal fissures; supraorbital setae somewhat thick, posterior setae on level of hind margin of eyes, interspace as wide as to a little wider than interspace of anterior supraorbital setae; antennae reaching basal onesixth or -fifth of elytra, segment 1 two and three-sevenths to two and four-sevenths times as long as wide, as long as to a little longer than segment 4 which is longer (at most one-fifth) than segment 3, segment 2 with one short (fully shorter than width of segment 2) seta near apex on outer side, segment 3 (Fig. 29) with a few or some secondary setae before apex; apical segment of palpi rather fusiform, one and two-fifths to one and one-half times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. 31) moderately convex, widest at two-fifths, in two \$ and six \$ \$ WP/WH 1.43, 1.46 (\$), 1.47–1.50, mean 1.49 (\$), WP/LP 1.20, 1.22 (\$), 1.19–1.24, mean 1.22 (\$), WP/WBP 1.16–1.22, mean 1.19, WBP/WAP 1.15–1.24, mean 1.22; surface not punctate, with faint transverse rugae; microsculpture distinct, almost isodiametric on disc; apical border distinct, evanescent at middle; apical angles gently protrudent, narrowly rounded; base shallowly emarginate at median area, gently rounded-oblique near basal angles; basal angles well angulate, a little protrudent laterally though not acute at apex; lateral margins almost evenly or somewhat roundly, gently contracted anteriorly, less contracted



Figs. 29-35. Synuchus (Synuchus) spp.

29. Segment 3 of left antenna. 30, 31. Pronota. 32, 33. Left elytra at apical part. V, VII: interval 5, interval 7. 34, 35. Male genitalia. r: raised and carinate area. 29, 31, 33, 34. S. sinuaticollis sp. nov. 30, 32, 35. S. bellus sp. nov.

posteriorly, distinctly sinuate before basal angles, reflexed areas well defined, narrow, a little dilated posteriorly, distinctly continuous to basal border; marginal setae somewhat thick, anterior setae at or behind one-third, posterior setae before basal angles, well separated from lateral margins; lateral furrows very narrow at apical third, dilated posteriorly, effaced before basal angles; basal foveae somewhat deep, reaching basal border, not or slightly convex outside.

Wings fully reduced. Elytra weakly or gently convex, ovate, widest at middle, WE/WP 1.39, 1.40 in two % %, 1.37-1.44, mean 1.41, in six % %, one and one-half times as long as wide in % and %; microsculpture distinct, forming moderately transverse meshes; basal border rather shallowly sinuate, gently or moderately oblique outward, forming obtuse angle at shoulder opposite interval 7 or 8; inner plica absent; apex narrowly rounded; striae rather shallow, stria 2 reaching stria 1 at basal pore, striae 3 and 4 (Fig. 33) generally not united at apex, stria 4 often reaching stria 7, stria 7 normal, reaching apical pore, not reaching stria 2, stria 8 not reaching apical pore, subapical pore on intervals 5+7, adjoining or not adjoining stria 4; scutellary striole moderately long or slightly abbreviate, rather shallow; intervals flat or slightly convex, interval 3 with two pores at two-fifths to before middle and at two-thirds to three-fourths; marginal series generally sixteen.

Hind coxae without inner seta; fore tarsi of \Im with segment 1 slightly longer than wide, a little longer than segment 2 which is a little wider than long; fore tarsi of \Im faintly bisulcate on segments 1 and 2; segments 1 to 3 of mid tarsi and segments 1 to 4 of hind tarsi distinctly bisulcate, inner sulcus almost similar to outer sulcus, interspace of sulci rather carinate; segment 4 of hind tarsi with short inner and outer subapical setae; tarsal segment 5 bisetose on either ventrolateral margin; hind tarsi one and one-fourth times as long as head width in \Im , one and one-seventh to -sixth times in \Im ; segment 1 one and three-sevenths to more than one and one-half times as long as head width in \Im , one and three-fifths to one and two-thirds times in \Im , segment 5/segment 1 =0.80-0.82 (\Im), 0.76-0.81 (\Im); claws with three or four small denticles.

Aedeagus (Fig. 34) rather slender, moderately curved, not twisted, ventral side longitudinally, distinctly raised and carinate from before basal bulb to middle, both ventral margins distinct at carinate area, apical part somewhat prolonged though not tapering, apex well rounded; dorsal orifice terminating beyond middle; basal bulb delimited, left ventral margin deeply sinuate; apical lamella distinct, one and two-fifths to more than one and one-half times as wide as long, apex fairly rounded;

right paramere moderately bent, wide at apical half.

Styluses (Fig. 24) well curved before base, apical segment long, trunk part more than twice as long as wide, base not dilated outward, inner and outer sides somewhat sinuate, digitate part rather narrow, two-thirds as long as trunk part, apex not acute but narrowly rounded, ventral spine fully long, moderately to fairly stout.

Distribution. Formosa.

Type-series. Holotype: \lozenge , VI. 22, 1961, Mt. Hsüeh (Mt. Tz'u-kao) (at alt. 3400–3600 m). Paratypes: $5 \Leftrightarrow \diamondsuit$, VI. 22, 1961, $1 \diamondsuit$, $1 \Leftrightarrow$, VI. 23, 1961, same as holotype.

Remarks. It is probably allied to S. rectangulus LINDROTH, but its third antennal segment is unusually with a few secondary setae besides verticillate setae, the pronotum is narrower, with the lateral margins distinctly sinuate before the basal angles, not broken at the posterior marginal setae, the third and fourth striae are generally not united at the apex, and the aedeagus is less curved, with a raised and carinate part on the ventral side—concave instead in rectangulus.

The third antennal segment and the ventral side of the aedeagus of *S. sinuati-collis* are unusual among the Japanese and Formosan species so far as I have examined.

9. Synuchus (Synuchus) microtes sp. nov. (Figs. 7, 25, 36, 38)

Description. Length 5.2-6.1 mm. Width 2.0-2.3 mm.

Rather depigmented, dark brown, head and pronotum mat, elytra half-shiny; frons reddish black to black, tempora more reddish, clypeus, labrum and mandibles light reddish brown, antennae, palpi and legs pale yellowish brown, pronotum yellowish at margins, elytra darker than pronotum, basal area and interval 1 fairly reddish, interval 9 and lateral explanate part brownish yellow; ventral side of head dark brown, prothorax yellowish brown, meso- and metathorax and sternites brown, partly dark, partly yellowish, hypomera and epipleurae brownish yellow.

Head large, fairly convex; isodiametric microsculpture fully distinct and surface shagreened; neck-constriction absent on dorsal side; tempora moderately oblique, not or slightly depressed, oblique part three-sevenths to more than one-half as long as eye; eyes somewhat small, rather convex, WH/WF 1.35–1.44, mean 1.41, in five $\mbox{$\circ$}$ and five $\mbox{$\circ$}$, apparent ventral margin well distant from buccal fissures; supraorbital setae bristle-like, posterior setae on level of hind margin of eyes, interspace a little wider than interspace of anterior supraorbital setae; antennae rather short, somewhat stout, reaching basal one-ninth of elytra, segment 1 two and one-fourth to two and three-sevenths times as long as wide, one and one-fourth times as long as segment 4 which is slightly longer than segment 3, segment 1 with one short and fine secondary seta at

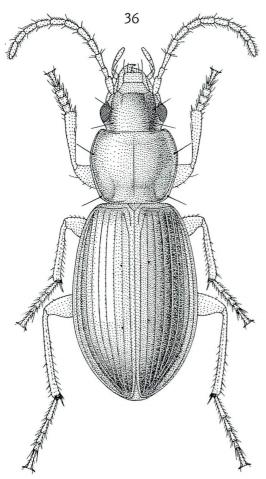


Fig. 36. Synuchus (Synuchus) microtes sp. nov., 3.

apex on dorsal side, segment 2 with two or three short secondary setae near apex, setae shorter than width of segment 2; apical segment of palpi rather fusiform, less than one and one-half times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. moderately convex, widest at or behind one-third, in five $\Im \Im$ and five $\Im \Im WP/$ WH 1.30-1.38, mean 1.34 (\$), 1.34-1.39, mean 1.37 WP/LP 1.19 - 1.26, (우). mean 1.22 (3), 1.21-1.33, mean 1.25 (♀), WP/WBP (s) 1.24-1.35, mean 1.27, WBP(s)/WAP1.06 - 1.17, mean 1.10; surface faintly, transversely rugose, not punctate; microsculpture strongly sculptured, isodiametric; apical border distinct, widely evanescent at middle; apical angles gently protrudent, rounded; base even or slightly emarginate at middle, roundly, fairly oblique at

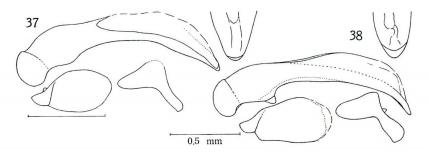
lateral areas; basal angles rounded; lateral margins almost evenly to somewhat roundly, gently to moderately contracted anteriorly, almost evenly, gently to moderately contracted posteriorly, reflexed areas fairly defined, somewhat dilated posteriorly, distinctly continuous to basal border; marginal setae bristle-like, anterior setae at one-fourth to -third, posterior setae at seven-eighths to nine-tenths, slightly separated from and not breaking lateral margins; lateral furrows fully narrow, running from apical angles to basal angles; basal foveae somewhat deep, fully narrow, curved, with distinct convex area outside, convex area almost reaching (though declined) or slightly separated from basal border.

Wings fully reduced. Elytra moderately convex, ovate, widest at or behind middle, WE/WP 1.40-1.49, mean 1.45, in five 3.6, 1.39-1.46, mean 1.43, in five 4.6, one and one-half to one and four-sevenths times as long as wide in 3.6, one and three-sevenths to one and one-half times in 4.6; microsculpture fairly distinct, forming moderately transverse meshes; basal border shallowly sinuate, slightly oblique outward, forming wide indistinct angle or rounding at shoulder opposite interval 7; inner plica absent; apex rounded; striae rather shallowly impressed, obscurely crenulate, stria 2 generally reaching stria 1 at basal pore, stria 7 not reaching stria 2 at apex, stria 8 not reaching apical pore, subapical pore on intervals 4.6; adjoining striae 4.6; scutellary striole a little shortened, shallower than striae; intervals somewhat convex, interval 3 with two pores at one-fourth to -third and before one-half to behind three-fifths; marginal series fourteen in general.

Hind coxae without inner seta; fore tarsi of $\$ with segment 1 as long as wide, as long as segment 2 which is as long as wide; fore tarsi of $\$ not sulcate; segments 1 and 2 of mid tarsi and segments 1 to 3 of hind tarsi moderately or rather shallowly bisulcate, inner sulcus shallower, interspace of sulci hardly or obscurely carinate; segment 4 of hind tarsi with rather developed inner and outer subapical setae; tarsal segment 5 bisetose on either ventrolateral margin; hind tarsi one and one-fifth to -fourth times as long as head width in $\$, shorter, at most one and one-twelfth times in $\$; segment 1 one and one-half to one and five-eighths times as long as segment 2 in $\$, one and five-eighths to one and four-fifths times in $\$, segment 5/segment $\$ 1 = 0.81-0.87 in $\$ 3, 0.81-0.90 in $\$ 9; claws with three or four denticles.

Metepisterna generally shorter than wide, L/W 0.93-1.00, mean 0.96, in three \lozenge \lozenge and three \lozenge \lozenge , outer border complete.

Aedeagus (Fig. 38) rather slender, almost straight at basal two-



Figs. 37, 38. Male genitalia of Synuchus (Synuchus) spp. 37. S. truncatus sp. now. 38. S. microtes sp. nov.

thirds, thence gently curved, fairly bent ventrally at subapical area, dorsal side distinctly depressed behind middle, ventral side longitudinally concave, both ventrolateral margins well defined; dorsal orifice terminating a little behind middle (not well visible); basal bulb delimited, left ventral margin moderately sinuate; apical lamella short, fully more than twice to less than three times as wide as long, apex widely rounded; right paramere fairly bent, wide at apical half.

Styluses (Fig. 25) somewhat wide, apical segment with trunk part one and two-fifths to one and one-half times as long as wide, fairly contracted apically, base not protrudent outward, digitate part three-fourths to five-sixths as long as trunk part, somewhat slender, apex almost pointed or somewhat dull, ventral spine moderately long and stout.

Distribution. Formosa.

Remarks. The present new species appears to have a close relationship to S. minimus Lindroth, but is smaller, depigmented, without a tubercle in the basal foveae of the pronotum, and with the microsculpture forming moderately transverse meshes on the elytra.

10. Synuchus (Synuchus) truncatus sp. nov. (Figs. 8, 9, 37, 39, 40)

Description. Length 5.3-5.4 mm. Width 2.0-2.1 mm.

Colour almost same as in *microtes*, but elytra shinier, slightly iridescent.

Pronotum (Figs. 8, 9) moderately convex, widest at one-third to two-fifths, WP/WH 1.41, 1.44, WP/LP 1.20, 1.21, WP/WBP(s) 1.28, 1.25,

WBP(s)/WAP 1.14, 1.18 intwo & & (paratype and holotype) respectively; surface faintly, transversely rugose on disc. not punctate: microsculpture fully distinct, almost isodiametric or forming somewhat transverse meshes in two Mt. Hsi Hin-kao ex., forming a little more transverse meshes on disc in one Mt. Tui-kao ex. (holotype): apical border evanescent at middle: apical angles somewhat or gently protrudent, rounded: base very slightly rounded at median area. roundly oblique at lateral areas; basal angles rounded: lateral margins moderately rounded anteriorly. roundly, moderately contracted (less roundly in holotype) posteriorly, reflexed areas defined, a little dilated posteriorly, distinctly continuous to basal border: marginal setae bristle-like, anterior setae before one-third, posterior

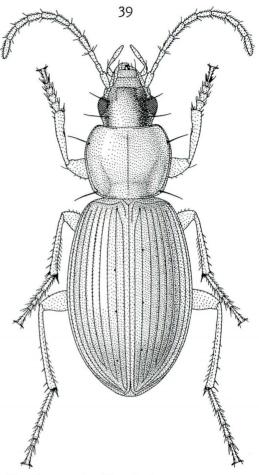
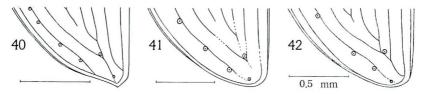


Fig. 39. Synuchus (Synuchus) truncatus sp. nov., 3.

setae at seven-eighths to eight-ninths, a little separated from (holotype) or almost touching (paratypes) but not breaking lateral margins; lateral furrows fully narrow, from apical angles to basal angles; basal foveae somewhat deep, reaching basal border, a little extending forward, not reaching middle in paratypes, fairly diverging forward, fully beyond middle in holotype, longitudinally convex outside, convex area not reaching basal border.

Wings fully reduced. Elytra moderately convex, ovate, widest at middle, WE/WP 1.45, 1.52 in two & &, one and one-half times as long as wide; microsculpture less distinct than in *microtes*, forming fully

transverse meshes; basal border shallowly sinuate, gently oblique outward, forming wide obtuse angle at shoulder opposite interval 7 or 8; inner plica absent; apex (Fig. 40) with short but distinct oblique truncation, outer apical angle slightly dentate in holotype, somewhat dull in paratypes, apical margin slightly sinuate outside outer apical angle; striae moderately impressed, stria 2 not reaching or reaching stria 1 at basal pore, stria 7 (Fig. 40) not reaching stria 2 at apex, stria 8 not reaching apical pore, subapical pore on intervals 5+7, adjoining striae



Figs. 40-42. Left elytra at apical part in Synuchus (Synuchus) spp. 40. S. truncatus sp. nov. 41. S. pallidulus sp. nov. 42. S. pulcher sp. nov.

 $3\!+\!4\,;$ scutellary striole somewhat shortened, similar to striae; intervals rather convex, interval 3 with two pores (abnormally three in holotype); marginal series fourteen or fifteen.

Hind coxae without inner seta; fore tarsi of & with segment 1 as long as wide to a little longer than wide, as long as to a little longer than segment 2 which is as wide as long to a little wider than long; segments 1 and 2 of mid tarsi and segments 1 to 3 of hind tarsi moderately or rather shallowly bisulcate, inner sulcus shallower, interspace of sulci obscurely carinate; segment 4 of hind tarsi with short inner and outer subapical setae; tarsal segment 5 bisetose on each ventrolateral margin; hind tarsi one and two-sevenths times as long as head width in holotype (&), segment 1 one and four-sevenths to one and five-eighths times as long as segment 2, segment 5/segment 1 = 0.84, 0.92 in two & &; claws with two denticles.

Metepisterna as long as wide, L/W 0.99, 1.00 in two $\mbox{$\circ$}$, outer border indistinct at front outer area.

Aedeagus (Fig. 37) rather slender, gently curved, somewhat twisted to left side at apical third, dorsal side fairly depressed at basal third, ventral side depressed longitudinally at middle, depression occupying median one-third portion, ventral margins defined at depression, lateral sides relatively narrow; dorsal orifice wider than usual, terminating behind middle, termination distinct; basal bulb defined, left ventral margin moderately sinuate; apical lamella very short, fully wider than long, apex widely rounded; right paramere moderately bent, wide at apical

half.

Distribution. Formosa.

Type-series. Holotype: ③, VII. 6, 1961, Mt. Tui-kao (at alt. 2300 m), Mt. A-li. Paratypes: 2 ⊙ ⊙, VII. 2, 1961, Mt. Hsi Hsin-kao (one ⊙ fairly teneral, damaged).

Remarks. This new species is allied to S. microtes, from which it is discriminated by the elytra obliquely truncate at the apex, with the microsculpture forming fully transverse meshes—therefore the elytra are shinier, slightly iridescent—and the aedeagus with a wider dorsal orifice and the ventral depression which is visible in the lateral view.

The Japanese S. dulcigradus (BATES) and S. tokararum LINDROTH have also the elytra obliquely truncate at the apex, but they are fairly distant from S. truncatus.

11. Synuchus (Synuchus) rufulus sp. nov.

(Figs. 10, 26, 43, 46)

Description. Length 6.2-7.0 mm. Width 2.3-2.7 mm.

Depigmented, reddish brown, head rather mat, pronotum less mat, elytra shiny, often slightly iridescent; frons rather dark except at anterior area, labrum and mandibles light reddish brown, palpi, antennae and legs light yellowish brown, femora somewhat reddish, pronotum yellowish at marginal areas, elytra faintly dark, basal and apical areas, intervals 1 and 9 and lateral reflexed area yellowish; ventral side reddish brown, often somewhat dark, yellowish in part, hypomera and epipleurae yellowish.

Head large, gently convex; isodiametric microsculpture fully distinct. but surface less shagreened than in *microtes*; neck-constriction almost absent or obscurely visible on dorsal side; tempora more oblique than in microtes, oblique part shorter, two-fifths as long as eye; eyes a little larger and more convex than in microtes, WH/WF 1.38-1.47, mean 1.43, in five ♦ ♦ and five ♀♀, apparent ventral margin widely distant from buccal fissures; supraorbital setae finer than in microtes, posterior setae on level of hind margin of eyes, interspace a little wider than interspace of anterior setae; antennae reaching one-eighth to -sixth of elytra, segment 1 two and one-fifth to -third times as long as wide, as long as to a little longer than segment 4 which is one and one-eighth to -seventh times as long as segment 3, segment 1 with one short fine seta at apex on outer dorsal area, segment 2 with two secondary setae near apex, outer seta somewhat developed, but shorter than width of segment 2; apical segment of palpi fusiform, one and three-sevenths to one and one-half times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. 10) gently convex (less convex than in *microtes*), widest at two-fifths, in six && and four && WP/WH 1.37–1.41, mean 1.39 (&&), 1.39–1.43, mean 1.41 (&&), WP/LP 1.21–1.27, mean 1.24 (&&), 1.22–

1.24, mean 1.23 (♀), WP/ WBP(s) 1.17-1.28, mean 1.21, WBP(s)/WAP 1.15-1.31, mean 1.23; surface impunctate, transversely, more or less rugose; microsculpture distinct, forming somewhat to moderately transverse meshes on disc; apical border distinct, effaced at middle; apical angles somewhat or gently protrudent, narrowly rounded; base somewhat emarginate at median area, rounded or roundly oblique at lateral areas; basal angles rounded: lateral margins roundly or rather evenly, moderately contracted anteriorly, evenly, gently contracted posteriorly, reflexed areas defined. a little fairly dilated posteriorly, tinctly continuous to basal border; marginal setae finer than in microtes, anterior setae before to behind one-third, posterior setae at eight-ninths to ten-elevenths, a little sep-

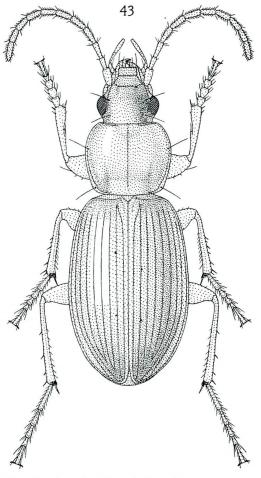


Fig. 43. Synuchus (Synuchus) rufulus sp. nov., \Diamond .

arated from and not breaking lateral margins; lateral furrows fully narrow, obscure, from apical angles to basal angles; basal foveae rather shallow to somewhat deep, reaching basal border, extending up to or behind middle, faintly convex outside, convex area separated from basal border.

Wings fully reduced. Elytra gently convex, ovate, widest at middle, WE/WP 1.38–1.46, mean 1.42, in six $\circ \circ$, 1.48–1.52, mean 1.50, in four $\circ \circ$, more than one and one-half to one and three-fifths times as long as wide in \circ , one and three-sevenths to less than one and one-half times in $\circ \circ$; microsculpture less distinct than in *microtes*, forming fully

transverse meshes or consisting of transverse close lines; basal border shallowly sinuate, somewhat oblique outward, forming wide obtuse angle or rounding at shoulder opposite interval 7 or 8; inner plica absent; apex widely rounded (more rounded than in *microtes*); striae rather shallow, faintly crenulate, stria 2 reaching stria 1 at or behind basal pore, apical part of striae often irregular, stria 7 not reaching stria 2 at apex, stria 8 generally not reaching apical pore, subapical pore on intervals 5+7 or interval 3, adjoining or not adjoining striae 3+4; scutellary striole a little shortened, fairly shallow; intervals almost flat or slightly convex, interval 3 with two pores at one-fourth to behind one-third and at three-fifths to five-sevenths; marginal series fifteen or sixteen.

Hind coxae generally with inner seta; fore tarsi of $\$ with segment 1 as long as to slightly longer than wide, slightly shorter than to as long as segment 2 which is slightly longer than wide; fore tarsi of $\$ not sulcate; basal two segments of mid tarsi and basal three segments of hind tarsi moderately or rather shallowly bisulcate, inner sulcus similar to or shallower than outer sulcus, interspace of sulci faintly to somewhat distinctly carinate; segment 4 of hind tarsi with inner and outer subapical setae variable, short to rather long; tarsal segment 5 with two (two or three in hind tarsi) setae on either ventrolateral margin; hind tarsi one and three-eighths to one and three-sevenths times as long as head width in $\$, one and one-fifth times in $\$, segment 1 one and two-thirds to one and four-fifths times as long as segment 2 in $\$, more than one and three-fourths to one and nine-tenths times in $\$, segment 5/ segment 1=0.65-0.76 in $\$, 0.71-0.75 in $\$; claws with three or four denticles.

Metepisterna fully short, L/W 0.99-1.08, mean 1.03, in four \Diamond \Diamond and two \Diamond \Diamond , outer border complete or indistinct at front outer area.

Aedeagus (Fig. 46) less slender than in *microtes*, moderately curved, slightly tilted to right side, dorsal side somewhat depressed at basal third, ventral side not depressed but flat, not margined; dorsal orifice terminating at basal third; basal bulb faintly delimited, left ventral margin moderately sinuate; apical lamella short, more than twice as wide as long, apex moderately rounded; parameres relatively large, right paramere fairly bent, distinctly narrower than in *microtes* and *truncatus*.

Styluses (Fig. 26) fairly curved before base, basal segment shorter and wider, apical segment longer than in *microtes*, trunk part less than to more than one and one-half times as long as wide, gently contracted apically, base not protrudent outward, digitate part as long as to a little longer than trunk part, tapering, acuminate at apex, ventral spine fully long and stout.

Distribution. Formosa.

Type-series. Holotype: \lozenge , VI. 22, 1961, Mt. Hsüeh (Mt. Tz'u-kao) (at alt. 3400-3600 m). Paratypes: $11 \lozenge \lozenge$, $6 \lozenge \lozenge$, same as holotype, $3 \lozenge \lozenge$, $1 \lozenge$, VI. 23, 1961, do.; $1 \lozenge$, VI. 22, 1961, Mt. Tz'u-kao-tung. Some of paratypes are teneral.

Remarks. The new species is also allied to *S. microtes*, differing from this by the larger body, the microsculpture of the elytra forming fully transverse meshes (the elytra are therefore somewhat iridescent), the longer hind tarsi, the aedeagus not concave nor margined on the ventral side, with the parameres larger, the right one narrower, and the styluses curved before the base, with the apical segment longer.

12. Synuchus (Synuchus) pallidulus sp. nov. (Figs. 12, 41, 44, 45)

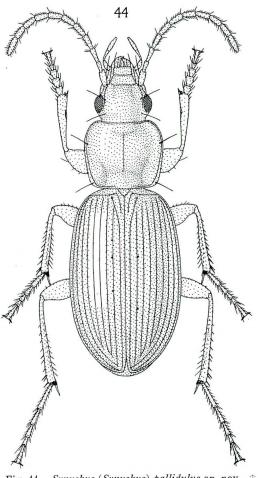
Description. Length 6.4 mm. Width 2.3 mm.

Depigmented, pale reddish brown, faintly yellowish, head half-shiny, pronotum and elytra shiny; head and mandibles more reddish, palpi, antennae and legs a little paler than pronotum and elytra; ventral side similar to dorsal side.

Head moderately convex; isodiametric microsculpture fully distinct; neck-constriction faint on dorsal side; oblique part of tempora one-half as long as eye; eyes similar to those of *rufulus*, WH/WF 1.42 in one %; supraorbital setae similar to those of *rufulus*, posterior setae a little behind level of hind margin of eyes, interspace as wide as interspace of anterior supraorbital setae; antennae reaching basal one-fifth of elytra, segment 1 two and three-eighths times as long as wide, a little longer than segment 4 which is slightly longer than segment 3; palpi with apical segment fusiform, one and three-sevenths times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. 12) moderately convex, somewhat rectangular, widest at one-third, WP/WH 1.37, WP/LP 1.21, WP/WBP(s) 1.21, WBP(s)/WAP 1.24; surface not punctate; microsculpture fully distinct, forming moderately transverse (slightly transverse at central area) on disc; apical border distinct, effaced at middle; apical angles gently protrudent, rounded; base a little rounded at median area, roundly, moderately oblique at lateral areas; basal angles rounded; lateral margins roundly, gently contracted anteriorly, straightly, gently contracted posteriorly, reflexed areas rather defined, dilated posteriorly, distinctly continuous to basal border; marginal setae similar to those of rufulus, anterior setae a little before one-third, posterior setae at nine-tenths, a little separated from and not breaking lateral margins; lateral furrows rather narrow, running from apical angles to basal angles; basal foveae rather deep, reaching basal border, faintly diverging forward up to middle, indistinctly convex outside at anterior third, with indistinct round convex area inside basal angles.

Wings fully reduced. Elytra moderately convex, elliptic, widest at middle, WE/WP 1.41 in one 3, four-sevenths and one times as long as wide; microsculpture distinct, forming well transverse meshes; basal border shallowly sinuate, almost level outward, inner end a little before level of outer end which forms wide indistinct angle at shoulder opposite interval 7; inner plica finely visible; apex rounded: striae rather shallow, stria 2 reaching stria 1 behind basal pore on left elytron (evanescent at basal area on right elytron), stria 7 (Fig. 41) reaching stria 2 (stria 2 obliterate at apical part and stria 7 reaching stria 1 on right elytron) at apex, not reaching apical pore, stria 8 obscurely reaching apical pore, subapical pore on interval 3, not adjoining (on left elytron) or adjoining striae

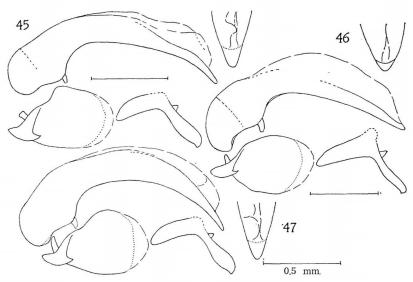


3+4; scutellary striole hardly shortened, rather shallow; intervals feebly convex, interval 3 with unusually three pores on left elytron, with two pores at one-third and five-eighths on right elytron; marginal series fourteen, hindmost pore (Fig. 41) removed more apically than usual.

Hind coxae without inner seta; fore tarsi of \circ with segment 1 as long as wide, a little shorter than segment 2 which is a little longer than wide; mid and hind tarsi with segments 1 to 3 moderately bisulcate, inner sulcus almost similar to outer sulcus, interspace of sulci rather carinate; segment 4 of hind tarsi with rudimental inner and outer subapical setae; tarsal segment 5 bisetose on either ventrolateral margin;

hind tarsi less than one and one-half times as long as head width (\$), segment 1 one and three-fifths times as long as segment 2, segment 5/segment 1=0.73 (\$); claws with three denticles smaller than usual.

Metepisterna longer than in other spp. of this group, L/W 1.20 in one $\,$ 0, outer border indistinct.



Figs. 45-47. Male genitalia of Synuchus (Synuchus) spp. 45. S. pallidulus sp. nov. 46. S. rufulus sp. nov. 47. S. pulcher sp. nov.

Aedeagus (Fig. 45) rather slender, moderately arcuate, slightly tilted to right side, ventral side almost straight at median one-third portion, not concave nor depressed, not margined, apical part prolonged; dorsal orifice terminating behind middle; basal bulb faintly delimited, left ventral margin shallowly sinuate; apical lamella relatively long, as long as wide (base not distinctly delimited), lateral margins evenly contracted apically, apex distinctly rounded; parameres large, right paramere moderately bent, rather narrow.

Distribution. Formosa.

Type-specimen. Holotype: 8, VII. 2, 1961, Mt. Hsi Hsin-kao.

Remarks. This new species is distinguishable from S. rufulus by the narrower head, the elytra not iridescent, with the seventh stria reaching the second stria at the apex, but not reaching the apical pore, with the marginal series composed of only fourteen pores, the longer metepisterna and the aedeagus prolonged at the apical part in the lateral view, with the apical lamella longer.

13. Synuchus (Synuchus) pulcher sp. nov. (Figs. 11, 42, 47, 48)

Description. Length 6.6 mm. Width 2.4 mm.

Depigmented, reddish brown, faintly dark, head and pronotum half-shiny, elytra shiny; mandibles reddish brown, palpi pale brownish yellow, labrum, antennae and legs pale brown, somewhat yellowish, lateral margins of pronotum and lateral to apical margin of elytra brownish yellow; ventral side reddish brown, hypomera and epipleurae yellowish.

Head moderately convex; isodiametric microsculpture fully distinct; neck-constriction faint on dorsal side; oblique part of tempora five-eighths as long as eye; eyes a little less convex than in rufulus, WH/WF 1.35 in one $\,$ 6; supraorbital setae a little thicker than in rufulus, posterior setae fairly behind level of hind margin of eyes, interspace as wide as interspace of anterior setae; antennae reaching basal one-fifth or-fourth of elytra, segment 1 less than two and one-half times as long as wide, slightly longer than segment 4 which is one and one-sixth times as long as segment 3, segment 2 without secondary seta; palpi with apical segment fusiform, one and one-half times as long as penultimate segment in maxillary palpi.

Pronotum (Fig. 11) gently convex, widest before two-fifths, WP/WH 1.47, WP/LP 1.18, WP/WBP(s) 1.30, WBP(s)/WAP 1.17 in one &; surface not punctate; microsculpture fully distinct, forming rather to moderately transverse meshes (slightly transverse at central area) on disc; apical border distinct, effaced at middle; apical angles slightly protrudent, rounded; base even at median area, somewhat oblique at lateral areas; basal angles obtusely defined though narrowly rounded; lateral margins rather roundly, gently contracted anteriorly, evenly, gently contracted posteriorly, slightly sinuate at basal one-fifth, reflexed areas rather defined, fairly dilated before basal angles, distinctly continuous to basal border; marginal setae a little thicker than in rufulus, anterior setae a little before onethird, posterior setae situated more posteriorly than in other spp. of this group, at thirteen-fourteenths, rather separated from lateral margins; lateral furrows rather narrow, obscure, arising from behind apical angles, obliterate at two-thirds; basal foveae rather deep, reaching basal border, diverging forward beyond middle, somewhat convex outside at anterior half, with round, somewhat convex area outside before basal angles.

Wings fully reduced. Elytra somewhat convex, elliptic, widest at middle, WE/WP 1.42 in one $\, \circ \,$, one and four-sevenths times as long as wide; microsculpture somewhat distinct, forming fully transverse meshes; basal border slightly sinuate, somewhat oblique outward, forming wide obtuse angle at shoulder opposite interval 7; inner plica finely visible;

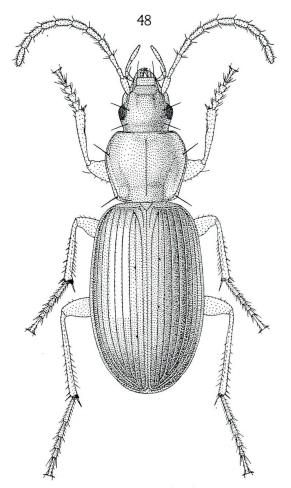


Fig. 48. Synuchus (Synuchus) pulcher sp. nov., $\hat{\circ}$.

apex well rounded; striae moderately impressed. stria 2 reaching stria 1 at or behind basal pore, stria 7 (Fig. 42) reaching stria 2 at apex, not reaching apical pore, stria 8 reaching apical pore, subapical pore on interval 3, adjoining (on right elytron) or separated from striae 3+4 (on left elytron); scutellary striole hardly shortened, moderately deep; intervals very weakly convex, interval 3 with two pores at or before one-third and behind middle (right elytron) or at seven-tenths elytron); marginal series thirteen (right elytron) or fourteen (left elytron), hindmost pore (Fig. 42) similar in position to that of pallidulus.

Hind coxae without inner seta; fore tarsi of \circ with segment 1 a little longer than wide, as long as segment 2 which is a little longer than wide; mid and hind tarsi dis-

tinctly bisulcate (faintly on segment 4) on segments 1 to 3, inner sulcus as deep as outer sulcus, interspace of sulci well carinate; segment 4 of hind tarsi with rudimental outer seta (inner seta fallen off?); tarsal segment 5 bisetose on each ventrolateral margin; hind tarsi one and three-sevenths times as long as head width (&), segment 1 one and two-thirds times as long as segment 2, segment 5/segment 1 = 0.73 (&).

Metepisterna fully short, $L/W\ 1.05$ in one $\ensuremath{\circ}$, outer border effaced at front outer area.

Aedeagus (Fig. 47) rather slender, fully curved, slightly tilted to right side, ventral side not concave nor depressed, ventral margins not

defined, apical part prolonged; dorsal orifice terminating at basal one-third; basal bulb hardly delimited, left ventral margin rather shallowly sinuate; apical lamella and parameres similar to those of *pallidulus*.

Distribution. Formosa.

Type-specimen. Holotype: 3, VII. 2, 1961, Mt. Hsi Hsin-kao.

Remarks. It is distinguishable from the preceding speies by the head with the eyes less convex, the posterior supraorbital setae placed more posteriorly, the pronotum with lateral margins more contracted posteriorly, the basal angles distincter, the posterior marginal setae transferred more backward, the shorter metepisterna and the aedeagus more curved.

14. Synuchus (Synuchus) spp.

The following depigmented specimens being teneral or incomplete, I have left them undetermined.

- 1 ♦, VI. 15, 1961, Mt. Ho-huan, Nan-t'ou Hsien.
- 13, VI. 22, 1961, Mt. Tz'u-kao-tung.
- 1 ♦, 1 ♀, VII. 2, 1961, Mt. Yü-shan.

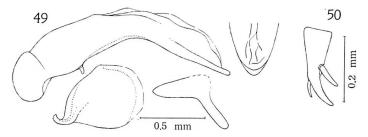
ADDENDUM

Synuchus (Synuchus) taiwanus sp. nov. (Figs. 49, 50)

After sent the typescript to the editorial staff, I have received three specimens $-2~ \diamondsuit ~ \diamondsuit ~$ and 1 ϕ —thanks to Mr. K. Terada. I supplement several characteristics and variation here.

Supplemental description. Length 8.2-8.6 mm. Width 3.1–3.4 mm. Head obliquely rugose; oblique part of tempora one-third to less than one-half as long as eye; WH/WF 1.50, 1.53, in two ♂ ♂, 1.43 in one ♀; interspace of posterior supraorbital setae a little wider than interspace of anterior supraorbital setae; antennae with segment 1 two and threesevenths to two and four-sevenths times as long as wide, segments 1, 3 and 4 almost equal in length; apical segment of maxillary palpi one and two-sevenths to a little more than one and one-third times as long as penultimate segment. Pronotum transversely, distinctly rugose; WP/WH 1.51, 1.56, 1.60, WP/LP 1.22, 1.21, 1.26, WP/WBP(s) 1.24, 1.25, 1.26, WBP(s)/WAP 1.27, 1.21, 1.27, in two $\Diamond \Diamond$ and one \Diamond respectively; basal angles obscurely or hardly defined, well rounded; lateral margins evenly contracted posteriorly; anterior marginal setae at three-eighths, posterior setae at ten-elevenths to twelve-thirteenths; lateral furrows indistinctly fused into basal foveae.

Wings about one-half as long as elytra. Elytra one and one-half to one and four-sevenths times as long as wide in \$, WE/WP 1.42, 1.44, 1.43 in two \$ \$ and one \$ respectively; interval \$ with two pores behind one-third to two-fifths and at two-thirds to seven-tenths; marginal series fifteen to seventeen. Fore tarsi of \$ with segment 1 shallowly bisulcate, one and two-fifths to more than one and one-half times as long as wide, one and three-eighths to one and three-sevenths times as long as segment 2 which is slightly longer than wide; hind tarsi one and one-fourth (\$) to -third (\$) times as long as head width, segment 1 one and three-fifths (\$) or one and two-thirds (\$) times as long as segment 2, segment 5/segment 1 = 0.69 (\$), 0.72, 0.73 (\$ \$); claws with two to four denticles. L/W of metepisterna 1.21, 1.28, 1.21 in two \$ \$ and one \$ respectively.



Figs. 49, 50. Synuchus (Synuchus) taiwanus sp. nov. 49. Male genitalia. 50. Apical segment of left stylus.

Aedeagus (Fig. 49) rather slender, moderately curved, fairly bent (or ventral margin fairly sinuate) before middle, apical part a little prolonged, ventral side somewhat tumid at apical fourth, distinctly concave and both ventral margins well defined from basal third to beyond middle; dorsal orifice terminating behind middle; basal bulb distinctly delimited, left ventral margin deeply sinuate; apical lamella short, three times as wide as long, apex rounded; right paramere moderately bent, apex obscurely pointed though dull. Apical segment (Fig. 50) of styluses with trunk part one and four-fifths times as long as wide, digitate part five-sevenths as long as trunk part, somewhat tapering, dull at apex.

Type-series. Paratypes: $2 \, \% \, \%$, $1 \, \%$, V. 30, 1977, Chitou, Nantou Hsien (at alt. 1300 m), K. Terada leg.

Notes on the Chrysomelidae from Taiwan, China, IX.

By Shinsaku Kimoto

Biological Laboratory, Department of General Education, School of Medicine, Kurume University, Kurume

Subfamily **Alticinae**Hemipyxis lineata n. sp.

Reddish brown, elytron with sutural margin and lateral stripe blackish and median stripe and lateral margin widely ochraceous, antenna pitchy black with one or two basal segments brownish; legs reddish brown.

Head with frontal tubercle distinctly raised; subquadrate, contiguous, surface smooth, shining, impunctate; vertex smooth, nearly impunctate, except for a large fovea situated near postero-lateral part of frontal tubercle and another smaller one near interior margin of eye. Antenna slender, long, nearly 3/4 as long as length of body; first segment long, robust, club-shaped; second nearly 2/5 as long as first and much slenderer; third nearly 21/3 times as long as second; fourth 11/3 times as long as third; fourth to sixth subequal to each other in length and shape; seventh slightly shorter than sixth; eighth slightly shorter than seventh and nearly $\frac{4}{5}$ as long as sixth; ninth subequal to eighth in length and shape; tenth slightly shorter than ninth; eleventh 11/3 times as long as tenth and its apex pointed. Pronotum transverse, nearly twice as wide as long, widest almost near base and gradually narrowed anteriorly, anterior margin distinctly concave, posterior margin rounded posteriorly, anterior and posterior corners slightly thickened, and each with a setabearing pore: dorsal surface smooth, shining, impressed with minute punctures. Scutellum trigonal, its apex pointed, surface smooth, nearly impunctate. Elytron convex, lateral margin rounded, surface closely and finely punctate and their interstices smooth and shining.

Length: 3.5-4.5 mm.

Holotype: Lushan Wenchuan, Nantou Hsien, Taiwan, China (7. vi. 1976, H. Makihara leg.) (Type No. 2097, Kyushu Univ.).

Paratopotype: 1 ex., same data as the holotype.

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 69-74, June, 1978]

Paratypes: Pahsienshan, Taichung Hsien, Taiwan, China (3 exs., 29. v. 1971, K. Kanmiya leg.). Fenchihu, Chiayi Hsien, Taiwan, China (1 ex., 26. iii. 1970, T. Kobayashi leg.).

Distribution: Taiwan.

This new species closely resembles *Hemipyxis quadripustulata* Bally but differs in having the elytron with a broad longitudinal yellowish stripe and the male genitalia slightly constricted subapically. Also from *H. rusca* (Fabricius) and its allies, this new species differs in having the elytral punctures much finer.

Hemipyxis flavipes n. sp.

Hemipyxis plagioderoides: Кімото, 1970, Kontyû, 38: 216 (Taiwan; in part).

Head dark reddish brown to pitchy black with vertex black; pronotum and scutellum black, elytron greenish to bluish black; antenna pitchy black with two or three basal segments more brownish; ventral surfaces of thorax blackish, abdomen yellowish brown; legs yellowish brown with tarsi, dorsal surfaces of anterior and middle femora and apical portion of posterior femur blackish.

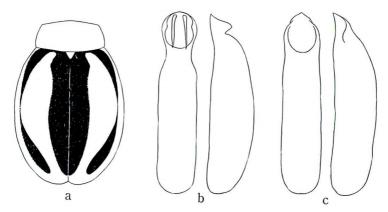


Fig. 1. a, Hemipyxis lineata n. sp.; b, ibid., male genitalia; c, H. flavipes n. sp., male genitalia.

Head with frontal tubercle distinctly raised, subquadrate, contiguous, surface somewhat wrinkled, not distinctly punctate; vertex wrinkled, somewhat closely and distinctly punctate. Antenna slender, long, nearly $\frac{3}{4}$ as long as length of body; first segment long, robust, club-shaped; second nearly half as long as first and much slenderer; third nearly twice as long as second and much slenderer than second at basal portion; fourth nearly $\frac{11}{3}$ times as long as third in length; fifth subequal to fourth in length and shape; sixth slightly shorter than fifth; seventh

subequal to sixth in length and shape; eighth slightly shorter than seventh, and eighth to tenth subequal to each other in length and shape; eleventh 1½ times as long as tenth and its apex pointed. Pronotum transverse, nearly twice as wide as long, widest almost at basal margin and gradually narrowed towards anterior margin, anterior margin distinctly concave, posterior margin strongly rounded posteriorly, anterior and posterior corners slightly thickened and pointed laterally, and each with a seta-bearing pore; dorsal surface impressed with stronger punctures not so closely and their interstices with finer punctures more closely. Scutellum trigonate, its apex rounded, surface smooth, shining, impunctate. Elytron convex, lateral margin rounded, surface closely and distinctly punctate and their interstices closely impressed with minute punctures.

Length: 4.8-5.8 mm.

Holotype: Fenchihu, 1400 m, Chiayi Hsien, Taiwan, China (13. iv. 1965, T. Shirôzu leg.) (Type No. 2098, Kyushu Univ.).

Paratopotypes: 8 exs., same data as the holotype.

Paratypes: Alishan, 2300 m, Chiayi Hsien, Taiwan, China (1 ex., 6. vii. 1965, T. Nakane leg.; 1 ex., 6. vii. 1965, S. Kimoto leg.).

Distribution: Taiwan.

This new species closely resembles Hemipyxis plagioderoides (Motschulsky) and H. flaviabdominalis $Ch\hat{\mathbb{U}}\hat{\mathbb{U}}$, but is clearly separable from them in having the legs mostly brownish and the characteristic feature of the male genitalia.

Hemipyxis nigricornis (Baly)

Sebaethe nigricornis Baly, 1877, Trans. Ent. Soc. London, 1877: 164 (Cambodia).

—Duvivier, 1892, Ann. Soc. Ent. Belg., 36: 425 (India: Kurseong).—Weise, 1922, Tijdschr. Ent., 65: 112 (Fokien).—Maulik, 1926, Fauna India, Chrys. & Halt., 386, 403 (India, Mentawei Is.).—Scherer, 1969, Pacif. Ins. Monogr., 22: 187, 192 (S. India).

Sebaethe sulphurea: Chen, 1933, Peking Nat. Hist. Bull. 8 (1): 56 (Kwangtung). Hemipyxis nigricornis: Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1B: 838, 844 (S. China).

Hemipyxis foveolata: Снûjô, 1963 (nec 1958), Ann. Hist.-Natur. Musei Nation. Hungarici (pars Zool.) 55: 398 (Taiwan).—Кімото, 1970, Kontyú, 38: 218 (Taiwan).

Distribution: India, Mentawei Is., Indo-China, S. China, Taiwan.

The records of *Hemipyxis foveolata* (Chūjô, 1958) from Taiwan by Chūjô (1963) and Kimoto (1970) should be corrected as *H. nigricornis* (Baly).

Subfamily Hispinae

Dactylispa chiayiana n. sp.

Body oblong. Head and antenna reddish brown; ground color of pro-

thorax reddish brown with a pair of markings on each side of middle blackish, thoracic spines entirely reddish brown; ground color of elytron reddish brown, and most of discal spines together with their basal portions of elytral surfaces pitchy black; except for a long, latero-apical spine pitchy, entire marginal spines and two of latero-basal (humeral) spines reddish brown; ventral surfaces yellowish to reddish brown with their lateral portions of thorax blackish; legs entirely reddish brown.

Head slightly broader than neck; frons convex and rough; vertex with a short, fine ridge between antennal insertions and grooved medi-

anly; collar broad, smooth, shining, impunctate. Antenna slender, nearly 3/4 as long as body, first to sixth segments sparsely covered with fine hairs but seventh to eleventh very thickly covered; first segment slightly robust, somewhat club-shaped, longest; second nearly 2/5 as long as first; third nearly 21/4 times as long as second; fourth slightly shorter than third; fifth subequal to fourth in length and shape: sixth slightly shorter than fifth; seventh slightly shorter than sixth and subequal to $\frac{4}{5}$ as long as fifth; eighth nearly \(\frac{3}{4} \) as long as seventh; ninth slightly shorter than eighth; tenth subequal to ninth in length and shape; eleventh $1\frac{3}{5}$ times as long as tenth and its apex pointed. Prothorax transverse, 11/3 times

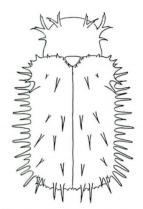


Fig. 2. Dactylispa chiayiana n. sp.

as broad as long; anterior margin with two spines, standing on common base, and each with one or two very minute spines subapically in most specimens, and posterior spine slightly longer than anterior one; lateral margin with three spines, and of which anterior two standing on common base and posterior one slightly isolated from anterior two, and first and second spines subequal in length and each with one or two very minute spines subapically in most specimens, third short, nearly half as long as second; surface rugosely punctate, and with an anterior and a posterior transverse depressions. Scutellum trapezoid in form, surface very finely sculptured. Elytron not expanded at side, but very slightly broadened posteriorly; lateral margin with about 17 long and short spines and apical margin with about 8 short spines; disc with 13 long and short spines, exclusive of 5 relatively long humeral spines and 5 relatively short basal and parascutellar spines.

Length: 5.0 mm.

Holotype: Fenchihu, Chiayi Hsien, Taiwan, China (6. v. 1970, Y. Kiyoyama leg.) (Type No. 2099, Kyushu Univ.).

Paratypes: Fenchihu, Chiayi Hsien, Taiwan, China (1 ex., 24. vi. 1972, Y. KIYOYAMA leg.; 1 ex., 18. vi. 1971, Y. MAEDA leg.). Nanshanchi, Nantou Hsien, Taiwan, China (1 ex., 3. iv. 1973, S. TAKEDA leg.).

Distribution: Taiwan.

This new species somewhat resembles *Dactylispa sjostedti* Uhmann from China, but differs from it in having elytron in part reddish brown and in part blackish, and with entirely brownish long and short marginal spines, instead of the ground color of elytron entirely brownish and with 12 to 13 long and nearly equal length of the marginal spines.

Subfamily Cassidinae

Cassida (Taiwania) rati Maulik

Cassida rati Maulik, 1923, Proc. Zool. Soc. London, 1923: 605 (Manipur).—Spaeth, 1938, Ent. Tidskr., 59: 236 (Burma, Hangchow, Taiwan: Arisan).

Metriona rati: Spaeth, 1928, Sbornik Ent. Odd. Nar. Mus. Praze, 6: 46.

Cassida (Taiwania) rati: Gressitt, 1952, Proc. Calif. Acad. Sci., ser. 4, 27: 500 (China).—Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1B: 973 (China).

Distribution: India (Manipur), Burma, S. China, Taiwan.

Specimens examined: Fenchihu, 1400 m, Chiayi Hsien, Taiwan, China (1 ex., 22. vii. 1966, 1 ex., 28. vii. 1966, H. KAMIYA).

Aspidomorpha indica Вонеман

Aspidomorpha indica Вонеман, 1854, Mon. Cass., 2: 318 (India).—Spaeth, 1913, Ann. Mus. Nat. Hungarici, 11: 46 (Formosa); 1914, Suppl. Ent., 3: 15 (Formosa).
—Maulik, 1919, Fauna India, Hisp. & Cass., 327 (India: Sikkim, Madras).—Chûjô, 1934, Sylvia, 5: 153 (Formosa).—Gressitt, 1939, Pan-Pac. Ent., 15: 140 (Indochina: Annam); 1952, Proc. Calif. Acad. Sci., ser. 4, 27 (17): 465 (China).
—Gressitt & Kimoto, 1963, Pacif. Ins. Monogr., 1B: 952 (Yunnan).—Кімото, 1970, Kontyû, 38: 180 (Taiwan).

Aspidomorpha egena Вонеман, 1854, Mon. Cass., 2: 318 (India: Bengal).—Машық, 1919, Fauna India, Hisp. & Cass., 327 (=indica).

Deloyala difformis Motschulsky, 1860, Etud. Ent. 9: 27 (Amur). New Synonym. Aspidomorpha difformis: Baly, 1874, Trans. Ent. Soc. London, 1874: 211 (Japan). —Kraatz, 1879, Dtsch. Ent. Zeits., 23: 270 (Japan).—Gorham, 1885, Proc. Zool. Soc. London, 1885: 280 (Japan).—Spaeth, 1914, Verh. Zool.-Bot. Ges. Wien, 64 (Sitzb.): (129) (Japan & Korea); 1926, Best.-Tab. Eur. Col., 95: 10 (Korea, Japan, Ussuri; ab. japonica Spaeth).—Chûjô, 1934, Sylvia, 5: 152 (Japan).—Gressitt, 1939, Pan-Pac. Ent., 15: 139 (S. China).—Spaeth, 1942, Arb. Morph. Taxon. Ent. Berlin-Dahlem, 9: 12 (China: Manchuria; ab. japonica).—Gressitt, 1952, Proc. Calif. Acad. Sci., ser. 4, 27: 462 (S. China, Japan).—Medvedev, 1957, Beitr. Ent., 7: 554 (Formosa: Tainan).—Gressitt & Kimoto, 1963, Pacif. Ins. Monogr. 1B: 950 (China).—Kimoto, 1966, J. Fac. Agr. Kyushu Univ., 13 (4): 644 (Japan). Distribution: India, Indo-China, China, Taiwan, ? Ryukyu Is., Japan Proper,

Distribution: India, Indo-China, China, Taiwan, ? Ryukyu Is., Japan Proper, Korea, Siberia.

The materials taken from India, Indo-China and Taiwan have been identified as *Aspidomorpha indica* Boheman and ones from E. Siberia, Manchuria, Korea, Japan and S. China as *A. difformis* Motschulsky. However, those should be the same and *difformis* becomes a junior synonym of *indica* Boheman.

Thlaspida cribrosa (BOHEMAN)

- Coptocycla cribrosa Вонеман, 1855, Mon. Cass., 3: 404 (Assam).
- Coptocycla biramosa: Kraatz, 1879, Dtsch. Ent. Zeits., 23: 272 (Japan).—Gorham, 1885, Proc. Zool. Soc. London, 1885: 283 (Japan).—Spaeth, 1914, Suppl. Ent., 3: 17 (corrected as japonica).
- Thlaspida biramosa: Weise, 1899, Arch. f. Naturg., 65 (1): 273 (China).—Spaeth, 1914, Suppl. Ent., 3: 17 (corrected as japonica).
- Thlaspida cribrosa: Weise, 1899, Arch. f. Naturg. 65 (1): 273.—Spaeth, 1914, Suppl. Ent. 3: 17 (Birma).—Maulik, 1919, Fauna India, Hisp. & Cass., 428 (Assam, Burma, Laos).—Medvedev, 1957, Beitr. Ent., 7 (5/6): 554 (Formosa: Tainan).
- Thlaspida formosae Spaeth, 1913, Ann. Mus. Nat. Hungarici, 11: 46 (Formosa); 1914, Suppl. Ent., 3: 16 (Formosa).—Chûjô, 1934, Sylvia, 5 (3): 157 (Formosa; with ab. immaculatipennis Chûjô).—Gressitt, 1952, Proc. Calif. Acad. Sci., ser. 4, 27 (17): 474, 476 (Taiwan).—Gressitt & Kimoto, 1963, Pacif. Ins. Monogr. 1B: 958 (Taiwan). New Synonym.
- Thlaspida japonica Spaeth, 1914, Suppl. Ent., 3: 17 (Japan, N. China); 1926, Best.-Tab. Eur. Col., 95: 64 (Japan, China).—Снûjô, 1934, Sylvia, 5: 155, 156 (Japan). New Synonym.
- Thlaspida chinensis Spaeth, 1926, Best.-Tab. Eur. Col., 95: 64 (China). New Synonym.
- Thlaspida biramosa chinensis: GRESSITT, 1952, Proc. Calif. Acad. Sci., ser. 4, 27: 474 (China, Hainan).—GRESSITT & KIMOTO, 1973, Pacif. Ins. Monogr., 1B: 958 (China).
- Thlaspida biramosa japonica: GRESSITT, 1952, Proc. Calif. Acad. Sci., ser. 4, 27 (17): 475 (Japan, China).—GRESSITT & KIMOTO, 1963, Pacif. Ins. Monogr., 1B: 958 (Korea).
- Thlaspida biramosa formosae: Кімото & Gressitt, 1966, Pacif. Ins., 8 (2): 487, 572 (Ryukyu Is.).—Кімото, 1970, Kontyů, 38 (2): 180 (Taiwan).
- Distribution: India, Burma, Indo-China (Laos), China, Hainan, Taiwan, Ryukyu Is., Japan Proper, Korea.

The populations taken from China, Korea, Japan Proper, Ryukyu Is. and Taiwan seem to be conspecific, and *Thlaspida japonica* Spaeth and *T. chinensis* Spaeth become junior synonyms of *formosae* Spaeth. Moreover, *Thlaspida cribrosa* Boheman is identical with *Thlaspida formosae* Spaeth ab. *immaculatipennis* Chûjô.

Notes on Taiwanese Chrysomelid Larvae, V.

By HARUO TAKIZAWA

Biological Research Center, Japan Tobacco and Salt Public Corporation, Hatano, Kanagawa, Japan 257

Podontia lutea (OLIVIER, 1790)

Last (4th) instar larva. Body 20 mm in length and 5.5 mm in breadth in alcoholic specimens, large, fleshy and subparallel-sided; yellowish white with head, legs and tubercles including large pronotal D-DL-EPa black; setae extremely short and sparse; pseudopod and pygidium absent; sucking disk well developed on 10th abdominal segment; anus opened dorsally on 10th segment; legs stout, strongly chitinized with long setae. Head round, strongly chitinized; frontal sutures arised near middle of head-capsule, strongly curved laterally at interior 3rd; endocarina distinct for full length; from with 3 pairs of short setae, gently emarginate and raised at anterior margin, with 3 pairs of short setae; labrum acutely and deeply incised medially at anterior margin; antenna 1-segmented, which is long cylindrical and bears a small sensory appendix at top: lower mouth-parts well chitinized; submentum and mentum fused and chitinized, with 3 pairs of setae; maxillary palpus 3-segmented, with the 2nd long cylindrical; galea with 7 or 8 broad spines; lacinia developed, with 3 or 4 broad spines; mandible palmate with 5 obscure teeth. Prothorax dorsally covered by D-DL-EPa (7-8S, 8-10M1); EPp (1M) small; P (1S); ES-SS (2S) large. Meso- and metathorax: dorsum divided into 3 transverse folds, of which the middle bears only a few pairs of micro setae; Da (1M) situated on anterior fold which bears about 6 pairs of micro setae; Dpi (1M) smaller than Dpe (1M), both situated on posterior fold which bears about 10 pairs of micro setae; DL (3-4S) elongate; EPa (1M) small and round; EPp (1S) as large as EPa; spiracle distinctly larger than EPa; a few micro setae present exterior to DL; P (1S); ES (1S) as large as SS (1S); intersegmental area weakly chitinized

 $^{^{1)}}$ Numerals in parenthesis show average number of setae occurring on the tubercle, L, S and M signifies long, short and micro setae respectively.

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 75-84, June, 1978]

anteriorly to ES. Abdomen dorsally as on meso- and metathorax except that DL is disappeared and represented by a few short setae; EP may be represented by 2 short setae, situated just posteriorly to large spiracle; P (1S) small and round; PS (1S); SS (1S); ES (1S); posterior segments with dorsal tubercles smaller and ventral ones larger.

First instar larva. Body 3.5 mm in length and 1.2 mm in breadth; yellowish white with head, legs and tubercles dark brown to black. Head as in last instar larva except for setae longer, antenna shorter, maxillary palpus with 2nd segment shorter and mandible distinctly 5-dentate. Prothorax: D-DL-EPa (7-8L, 2-3S); EPp represented by a seta; meso- and metathorax dorsally divided into two transverse folds; Da, Dpi and Dpe represented each by a long seta; Dpe on mesothorax large and served as egg-burster; DL represented by about 4 long setae; EPa and EPp, each represented by a short seta; mesothoracic spiracle larger than abdominal ones; P (1S); ES (1S) and SS (1S) very small; abdominal segments dorsally as metathorax except for a micro seta situated behind Da; DL represented by 2 long and 2 short setae; EP represented by a micro seta posteriorly to spiracle; P (1S) weakly tuberculate; PS (1S); SS (1S); ES (1S); 7th and 8th segments with ventral tubercles distinctly chitinized.

Specimens examined. 2 full grown and 10 younger larvae, feeding on Rhus suc-

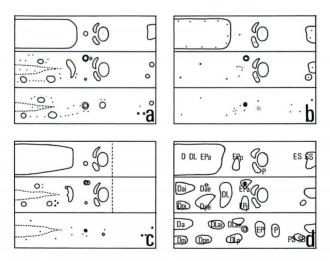


Fig. 1. Tubercle patterns of: a, Podontia lutea (last instar larva); b, ditto (1st instar larva); c, Blepharida rhois (last instar larva: rewritten from Peterson, 1951); d, Altica birmensis (last instar larva).

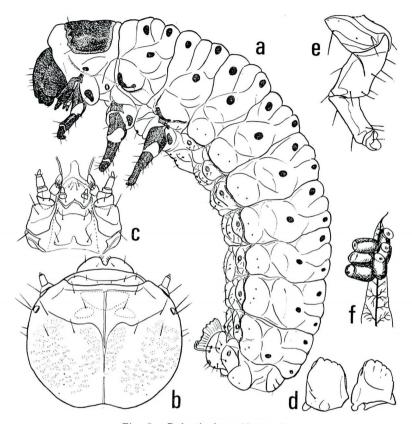


Fig. 2. Podontia lutea (OLIVIER)

Last instar larva: a, lateral view; b, head-capsule; c, lower mouthparts; d, mandible (left: lateral view, right: buccal view); e, mesothoracic leg; f, egg mass on a host leaf.

cedanea L. (Anacardiaceae)²⁾, Yangmingshan, Taipei Hsien, 11. VII. 1976, H. Takizawa leg.; 1 full grown and 16 younger larvae and eggs on the same host, Tongpo, Nantou Hsien, 5-9. VII. 1977, H. Takizawa leg.

Notes. Adults, larvae and eggs were found simultaneously on leaves of the host plant. Eggs are light brownish, long barrel-shaped and about 2.5 mm in height. They were laid down in a mass of 5 to 10 apically on the undersurface of host leaves. Larvae were dorsally covered with their excrements and cast larval skins. They molted thrice to attain full growth. The later 3 instar larvae show basically same tubercle pattern. Two 3rd instar larvae collected at Tongpo, however, are character-

²⁾ Determined by Dr. S. Hatusima in Kagoshima, to whom I wish to express my hearty thanks.

istic in having all dorsal tubercles but for pronotal D-DL-EPa and thoracic DL not chitinized as in the 1st instar larva. Based on scattered biological notes on *Podontia quatuordecimpunctata* Linné and *affinis* Gröndal, larvae of the genus feed on leaves of Anacardiaceae-plants, such as *Rhus* sp. and *Spondias* sp. They cover themselves dorsally with their excrement, giving a slimy appearances. When fully grown, they enter the soil and make coarse cell and pupate within it. The larva of *Podontia* is morphologically characterized by: The body stout and fleshy, with anus opening dorsally on 10th segment; sucking disk well developed ventrally on the same segment; dorsal side divided into 3 transverse folds; tubercle pattern consisted of D-DL-EPa and EPp on prothorax; Da, Dpi, Dpe and DL on meso- and metathorax; abdomen with DL and EP represented by a few setae.

The above morphological and biological characters of the genus Podontia DALMAN are also shared with Blepharida rhois BALY or B. dorothea MIGNOT described by BÖVING and CRAIGHEAD, PETERSON and by FROST. These two species feed on Rhus spp. and the latter also on Schinus erebinthifolius (Anacardiaceae). Larvae have no tubercle at least on abdomen, but short setae corresponding to the tubercles. While these 2 genera are commonly characterized on adult morphology by: Body large and glabrous; head with inter-antennal area broad; pronotum with fossettes, lacking ante-basal transverse impressions; elytron distinctly punctate-striate; anterior coxal cavities closed behind; mid and hind tibiae normal, the latter with normal apical spine; claws bifidate. They are grouped as the tribe Blepharidini, together with the genus Ophrida Chapuis. Although the genus Ophrida is unknown of its larval stages, O. hirsuta Stebbing feeds on Boswellia serrata (Burseraceae) and O. marmorea WIEDEMANN on Holarrhena antidysenterica (Apocynaceae). Thus the Blepharida-group seems well characterized from both adult and larval characters, yet the group is so different from all the known larvae of Alticinae that its relationship to other genusgroup is unknown.

Altica birmensis (Jacoby, 1896)

Last instar larva. Body subcylindrical and subparallel-sided, 8–9 mm in length and 1.8–2.0 mm in breadth in alcoholic specimen; yellowish white with head except for clypeus anteriorly and behind antennae, setae and tubercles dark brown to blackish; dorsum somewhat brownish with dense, small chitinous platelets. Head round with cordal suture very short, frontal sutures nearly straight; endo-carina distinct; vertex with about 5 pairs of long setae; frons medially depressed, with 3 pairs of long setae; ocellus absent; antenna 2-segmented; clypeus and labrum each with 2 pairs of setae, the latter acutely incised medially at apical margin; mentum weakly chitinized, with 2 pairs of setae; lacinia well developed, with about 7 stout spines; galea represented by several stout spines interiorly to galea; mandible 4-dentate. Prothorax dorsally covered by a large D-DL-EPa (9L, 1S) which is marked with sagittal line; EPp (1L) larger than P (1L); ES-SS (2S) large, united with ES-SS on the other side; 2 weakly chitinized tubercles present anteriorly to trochantin

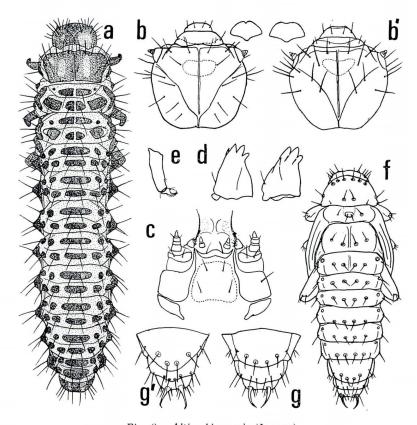


Fig. 3. Altica birmensis (JACOBY)

Last instar larva: a, dorsal view; b, head-capsule with outline of labrum (b' for last instar larva of *A. cyanea* (Weber)); c, lower mouth-parts; d, mandible (left: lateral view, right: buccal view); e, mesothoracic tibia. Pupa: f, dorsal view; g, 7th to 9th abdominal segments (g' for *cyanea*).

and sometimes to ES-SS on intersegmental area. Meso- and metathorax: Dai (1L) larger than Dpi (1L), both separated from corresponding one on the other side; Dpe (2L) larger than Dpi; Dae (0) extremely small and weakly chitinized; DL (3L, 1S) largest; EPa (1L) smaller than EPp (1L); mesothoracic spiracle situated on EPa; P (1S); SS (1S) smaller than ES (1S) which unites with ES on the other side; a weakly chitinized tubercle present anteriorly to ES. Abdomen: Da (1L) larger than Dpi (1L), both united with corresponding one on the other side; Dpe (1L) as large as Dpi; DLai (1L) as large as Dpi; DLae (1L) closely situated to

spiracle, of which peritreme is largely chitinized; DLp (1L) as large as DLai; EP (2L) laterally produced and larger than P (2S); PS-SS (2S) smaller than P; ES (2S) on both sides united; 8th segment with Dpi and Dpe united into Dp (2L) which united with Dp on the other side; 9th segment with well-chitinized pygidium (10L) and a transverse ventral tubercle (4L).

Pupa. Body orange-yellow, 5.5 mm in length and 2.2 mm in breadth in alcoholic specimen; setae, tubercles, spiracles and apical projections of 9th abdominal segment dark brown; head with 3 to 4 pairs of setae along eye, and a pair on clypeus; labrum entire at apical margin; pronotum with 6 to 8 pairs of long setae, which situate on round tubercles; meso- and metathorax each with 2 pairs of setae dorsally; first 5 abdominal segments each with 2 pairs of setae dorsally and a pair on lateral projection; each of 6th to 8th segments sometimes with an additional pair of setae on dorsal side; spiracle present on first 6 abdominal segments; 9th segment with 3 pairs of setae, and with a pair of apical projections which are strongly curved inwardly and acuminate at apex.

Specimens examined. A lot of larvae, feeding on *Polygonum* sp. (Polygonaceae), Yangmingshan, Taipei Hsien, 28. VI. 1975; 1 pupa, Tongpo, Nantou Hsien, 5. VII. 1977, H. TAKIZAWA leg.

Notes. Adults, larvae and eggs were found simultaneously on a *Polygonum*-weed. Eggs are flat and ellipsoidal in outline, and were laid singly on leaf-surfaces with a streak of excretions on their surfaces. Though exact number of larval instars are unknown for this species, larvae of the genus are known to pass through 3 instars. The 2nd (?) instar larva looks like the last (3rd?). Larvae are quite similar to each other in appearances in the present genus and sometimes it is difficult to distinguish species on larval morphology alone. *A. birmensis* is distinguished from *A. cyanea* (Weber) in the last instar larva and pupa as follows:—

Head: Cordal suture longer; frontal sutures divergent very widely near base; labrum roundly produced and with a distinct incision medially at apical margin; mandible with distinct first tooth. Mesothoracic Dae small but distinct; metathoracic Dae distinctly larger than peritreme of first abdominal segment; thoracic EPp distinctly larger than EPa. Abdomen with DLai larger than, or subequal to DLp on first 3 segments.

Pupa: 9th abdominal segment with apical projections curved inwardly. Furthermore the host plants of *cyanea* are *Oenothera* sp. in Okinawa, Ryukyu Is. and *Ludwigia* spp. in Japan (Onagraceae).

Cassida (Taiwania) sauteri (Spaeth, 1913)

Last instar larva. Body flat, long oval and narrowed posteriorly with 16 pairs of long lateral projections in addition to a supra-anal projection; pale green with blackish supra-anal projection; 8-9 mm in length and 3.5-4 mm in breadth in alcoholic specimens; body surface slightly

granulate; spiracle brownish, distinctly elevated as high as their diameters; lateral projection covered with many spinules. Head widened anteriorly, weakly chitinized; 5 pairs of large, black ocelli present, of which 4 are lined straightly; cordal suture connected with endo-carina; frontal suture obscure and straight; vertex with about 3 pairs of short

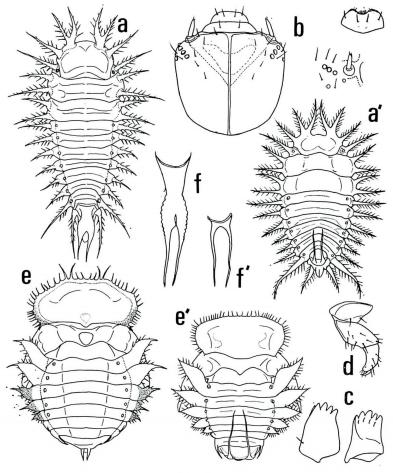


Fig. 4. Cassida (Taiwania) sauteri (Spaeth)
Last instar larva: a, dorsal view (a' for C. versicolora (Boheman));
b, head-capsule with outline of labrum and arrangement of ocelli;
c, mandible (left: lateral view, right: buccal view); d, mesothoracic leg; f, supra-anal projection (f' for versicolora). Pupa: e, dorsal view (e' for versicolora).

setae; frons medially depressed with about 3 pairs of setae; antenna apparently 1-segmented, with basal segment almost de-chitinized; 2nd long, cylindrical with 2 minute appendices apically; clypeus with a pair of setae; labrum semi-circularly produced at apical margin but distinctly emarginate at median portion; lower mouth-parts almost de-chitinized; maxillary palpus not well delimited from palpiger, with 3 segments almost fused together; lacinia well developed, with about 7 spines; cardo fused with stipes; labral palpus with basal segment indistinct; mandible 5-dentate. Prothorax dorsally with a trace of somewhat hexagonal shield, with 3 pairs of long projections, of which the 2 anterior are united at base; 1st projection (numbered from the innermost to the lateral and then backwardly), shorter than 2nd or 3rd; 2nd slightly longer than 3rd; 2nd or 3rd projection with about 7-8 or 11-13 long spinules respectively; about 6 micro setae present between lateral projection and leg. Mesothorax with 3 pairs of lateral projections; 4th projection (numbered from the prothoracic ones) situated on a distinct lobe, which is produced anteriorly to the lateral side of prothorax and bears mesothoracic spiracle; dorsal surface divided into 2 transverse folds; about 7 or 12 pairs of micro setae present on anterior or posterior fold respectively; mesothoracic spiracle distinctly larger than abdominal ones; 5th lateral projection distinctly shorter than 4th or 6th; metathorax with 2 pairs of lateral projections; 7th as long as 5th, and 8th as long as 6th; dorsal surface with about 6 pairs of micro setae on anterior fold, 7-10 pairs on posterior fold. Each abdominal segment with a pair of lateral projections; 9th projection almost as long as metathoracic 7th; 10th subequal to 11th in length, 12th subequal to 14th in length, each shorter than 10th; 13th shortest; 15th subequal to 16th in length; 9th and 10th, each with about 10 long spinules; 11th to 16th each with about 7 long ones; dorsal surface slightly granulate, divided into 2 transverse folds; anterior fold with 6 to 8 pairs of micro clubate setae, posterior one with 4 pairs; ventral surface with about 20 pairs of micro setae; 9th segment with strongly chitinized supra-anal projection, which has a few micro setae ventrally; the projection dilated medially and thence tapering off to the apex; anal process long conical, about half as long as supra-anal projection.

Pupa. Body glabrous, oval and flat, 8 mm in length and 5 mm in breadth, excluding cast skin of last instar larva; fresh pale green with latero-basal area of pronotum and lateral projections of 3rd to 5th abdominal segments more or less dark brownish; head with 3 pairs of setae; pronotum flat with a distinct baso-median depression, with about 45 to 50 marginal spinules; 2 pairs of anterior spinules distinctly longer than others; 2 or 3 basal-most spinules fused together at base; abdomen

with broad, well-developed lateral projections on first 5 segments; each projection acuminate distally, with about 6 to 10 spinules; 6th with short, slender lateral projections; 7th with slender ones; 8th without lateral projection; 9th segment with a pair of slender apical projection, which are shorter than 7th; 1st to 5th abdominal segments with spiracles not produced.

Specimens examined. 2 larvae, Yangmingshan, Taipei Hsien, 11. VII. 1976, feeding on *Achyranthes japonica* (MIQ.) NAKAI (Amaranthaceae); 2 larvae and 1 pupa, Chitou, Chushan Hsien, 14. VII. 1976, on the same host, H. TAKIZAWA leg.

Notes. Adults and larvae were found on hosts growing on shady road-sides. Though at Yangmingshan (ca. 400-500 m) the hosts are commonly attacked by adults of Cassida piperata HOPE and by this species, neither at Chitou (ca. 1200-1300 m) nor at Tongpo (ca. 1200-1500 m) the former was observed. Eggs were laid on leafsurfaces in an ootheca, which includes 3 to 4 eggs. Larvae bear on the supra-anal projection cast larval skins which are commonly covered with excrements, but they retain only the last instar larval skin when pupating. While C. versicolora (BOHEMAN) or C. circumdata Herbst of the same subgenus pupate with all the cast larval skins. This species is very characteristic in the shape of the supra-anal process, which has a long common basal projection instead of a pair of separate slender processes. The former type of supra-anal process is shared by no other known species. except that Oocassis cruenta Fabricius has very extremely elongated stem. pupal stage, sauteri differs from known species by the shape of paired apical processes of 9th abdominal segment, which are very short and close to each other, in contrast to the long and widely separated condition of the known species. (Cassida) piperata Hope, however, the process becomes a pair of tubercles.

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Studies on Asian Cerambycidae, II. (Coleoptera)

By Masao Hayashi

In the present paper, six species and a subspecies of Lepturinae, Cerambycinae and Lamiinae are newly described from Japan and Taiwan. Additionally, a Malaysian Callichromine species is systematically discussed and another South Chinese *Oberea* species is firstly recorded from Taiwan.

The interesting materials used in the present study are sent to the present author from Messrs. K. Akiyama, S. Imasaka, H. Irie, M. Kubota, Dr. Y. Kurosawa, T. Mizunuma, H. Nara and T. Shibata for identification, to whom the present author would like to express his hearty thanks for their kindness and generosity.

Lepturinae

Stenocorini

Pidonia (Pidonia) atripennis sp. nov.

Body largely black, head (excepting pale yellow clypeus, black sides of occiput and neck, and entire temples), prothorax and first to fourth abdominal segments reddish fulvous, and coxae, trochanters and bases of femora pale fulvous. Body covered with sparse yellow pubescence.

Head (incl. well developed eyes) broader than prothoracic base, abbreviated in front and narrowed posteriorly from eyes for a short distance, then abruptly constricted, forming a distinct neck, finely closely punctured, frons short, transverse, separating finely sparsely punctured clypeus by a dull deep transverse impression at apex, with a narrow median longitudinal impression extending backward through dully triangularly concave vertex to a small impunctate triangle at base of occiput, gena short, one third as long as eye diameter, temples narrowed behind forming dull angle to neck. Antennae inserted just before frontal margin of eyes, weakly raised. Eyes large, emarginate internally. Antennae a little longer than body, scape weakly thickened to apex and arched, finely closely punctulate; relative length of each joint is as follows:— 3:0.7:3.5:3.2:4.7:3.8:3.7:3.3:3.2:3:3.2. Prothorax slightly longer than the basal width (ratio, 5.2:5), narrowly margined at apex and base, strongly constricted behind apex and weakly so medioposteriorly, dully angulately produced laterally just behind middle; disc strongly convex

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along midline, subfinely subclosely rugulose punctate. Scutellum triangular, finely punctulate. Elytra fairly broader than prothorax, 2.6 times as long as the basal width, gradually narrowed posteriorly to the first one third, then very shallowly narrowed to narrowly transversely truncate apices; disc convex, coarsely very closely punctured, partly forming transverse rugae. Prosternum transversely finely rugulose, the rest of breast and abdomen finely closely punctured. Legs slender, femora weakly thickened, hind pair arriving at abdominal apex, first hind tarsal joint longer than the following two united together. Last joint of maxillary palpus gradually widened apically to obliquely truncate apex.

Length, 6.7 mm., width, 1.8 mm.

Holotype (Hayashi Coll.), \Diamond , Mt. Paoshan, Liukuei, Kaohsiung Hsien, Taiwan, May 1, 1976, W. Chen leg.

This new species is easily separated from all the known congeners from Taiwan by the entirely black elytra.

Lepturini

Idiostrangalia akiyamai sp. nov.

Body black, subnitid; decorated with a pair of light fulvous subquadrate markings occupying more than basal quarter of elytra, not touching suture and far to margins (in paratypes, the light fulvous markings developed still on epipleurae, leaving a narrow black vitta on humerus extending to the apex). Body covered with sparse fulvous pubescence in general.

Head as broad as prothoracic base, abbreviated in front, and distinctly constricted at a short distance behind eyes; frons subvertical or inclined, transverse, finely closely punctured, excepting apical impunctate shining area, with a median longitudinal fine furrow extending backward through very narrow, triangularly concave vertex to broad occiput, vertex and occiput finely closely punctured, gena one third as long as eye diameter, short and temples narrowed posteriorly, arcuately from eyes to distinct neck. Eyes large, emarginate; antennae inserted just inside or frontal margins of eyes. Antennae in male fairly shorter than body, scarcely arriving at just before elytral apices, scape arched and weakly thickened, fifth to ninth slightly dilated apically and sixth to eleventh weakly impressed preapically on dorsum; relative length of each joint is as follows: - 3.5 : 0.7 : 5.5 : 4.3 : 5 : 4 : 3.7 : 3.5 : 3 : 3 : 4. Prothorax campanuliform, narrowly weakly constricted behind apex, then roundly expanded premedially at sides, once narrowed just behind middle and again widened posteriorly to strongly bisinuate base, with weakly produced hind angles; disc convex, finely densely punctured, with a narrow longitudinal impression at middle. Scutellum tongue-shaped. Elytra broader than pronotal base, 2.35 times as long as the basal width, only covering basal three abdominal segments, distinctly narrowed posteriorly to middle and then gradually so to narrowly obliquely truncate apices with sharp marginal angles and a little dehiscent at apical one seventh of suture; disc convex, finely sparsely punctured. Body beneath densely micropunctulate, fifth abdominal sternite broadly strongly concave. Legs long and slender, femora weakly thickened, hind pair surpassing third abdominal segment, hind tibia longer than the corresponding femur, fore and mid tarsi broadened and hind tarsus slender, first hind tarsal joint scarcely longer than the following two joints united together.

Length, 13 mm., width, 2.7 mm.

Female paratype: Antennae only arriving at middle of elytra, elytra uncovering only an apical abdominal segment, fore and mid tarsi narrower than those of male, and fifth abdominal sternite simple.

Holotype (Hayashi Coll.), \Diamond , Nishudan, near Paoshan, Liukuei, Kaohsiung Hsien, Taiwan, May 10, 1976, K. Akiyama leg.; paratypes, $1 \Diamond$ & $1 \Diamond$, Mt. Paoshan, May 13, K. Akiyama leg. (Kurosawa & Hayashi Coll.)

This new species is somewhat allied to *I. vittatipennis* (Pic) from Taiwan, however, body relatively slenderer, especially on head, prothorax and base of elytra, elytra more finely punctured and gradually narrowed posteriorly and with different black and pale fulvous markings.

Necydalini

Necydalis (Necydalis) giganteus Kano subsp. akiyamai subsp. nov.

This new subspecies differs from the nominate subspecies from Japan main lands, in having sharper lateral tubercles of prothorax, shallower rugulate punctation on elytra, slenderer and longer first to third antennal joints and shallower concavity of fifth abdominal sternite in male, than those of the nominate subspecies.

Length, 30 mm., width, 5 mm.

Holotype (Начаsні Coll.), \Diamond , Shiratani, Yakushima Island, Kagoshima Pref., Japan, July 22, 1975, H. Акіуама leg.

Cerambycinae

Methiini

Tetraommatus taiwanus sp. nov.

Body light fulvous brown, paler on elytra, antennae and legs, only excepting eyes blackish brown and mandibles infuscated at apices; furnished with sparse yellow hairs.

Body slender, depressed and almost parallel-sided; head small, abbreviated in front, frons short, transverse, with a deep median longitudinal furrow extending backward to plane vertex, sparsely punctured, vertex rather broad, a little concave, occiput a little coarsely punctured, narrowed behind, gena very short; eyes divided, each rounded, coarsely faceted. Antennae slender, a little longer than body, scape thickened to apex, relative length of each joint is as follows: - 2:1:4.6:4.4: 3.5 : 2.8 : 2.6 : 2.4 : 2.3 : 1.9 : 2.3. Prothorax 1.5 times as long as wide, shallowly constricted behind apex and strongly so before base, gradually broadened posteriorly from apical constriction to just before basal constriction, then forming a broad basal collar behind; disc depressed plane, densely granulate with two traces of coarser granulations-rows longitudinally set at sides of a median even broad space. Scutellum elongate trigonate, micropunctulate. Elytra a little broader than prothorax, four times as long as the basal width, gradually broadened posteriorly to before apex, then narrowed to separately rounded apices; disc depressed plane, coarsely sparsely punctured throughout. Femora depressed, thickened, tibiae slender, first hind tarsal joint slightly more than twice as long as the following two joints united together.

Length, 6 mm., width, 1 mm.

Holotype (Nara Coll.), $\,^{\circ}$, Nanshanchi, Nantou Hsien, Taiwan, July 21, 1975, H. Nara leg.

This new species belongs to the third group of Pascoe's division and differs from *T. ocularis* Pascoe from Morty in having smaller upper eye lobes, light fulvous brown body with paler elytra, antennae and legs, instead of totally testaceous and densely granulate prothorax and coarsely sparsely punctured elytra, etc.

Molorchini

Epania atra sp. nov.

Body pitchy black, antennae and legs dark brownish black; antennal scapes and legs shining, second and the succeeding antennal joints mat, peduncles of femora pale yellow. Body furnished with long white hairs chiefly on body beneath and legs, and covered with somewhat dense white pubescent markings at latero-anterior corners and sides of basal constriction of prothorax, apex of metasternum, and sides of second and fourth abdominal segments.

Head a little narrower than prothorax, frons coarsely sparsely punctured, vertex and occiput coarsely closely punctured, eyes large, emarginate, finely faceted, antennae in male about 1.4 times as long as body, scape and second joint coarsely sparsely punctured, third and the succeeding joints finely closely granulate, relative length of each joint is as follows:— 2.7:0.5:2.5:3.5:4.3:4.7:4.5:4.5:4.7:4 (appendix)

diculate and curved). Prothorax 1.4 times as long as the maximum width at behind middle, narrower at base than at apex (ratio, 4.5:5.2); disc coarsely reticulately punctured, the punctures counted about 13 in numbers along midline. Scutellum tongue-shaped, deeply impressed along median line. Elytra 1.2 times as short as the basal width (2.5:3), fairly developed at humeri, very gradually narrowed posteriorly and broadly rounded at apices; disc sparsely punctured and obliquely impressed. Body beneath finely sparsely punctured. Legs of moderate length, femora pedunculate and clavate gradually, tibiae compressed and curved.

Length, 7.5 mm., width, 1.5 mm.

Holotype (Hayashi Coll.), \odot , Nanshanchi, Nantou Hsien, Taiwan, April 28, 1972, Т. Міzunuma leg.

This new species belongs to *dilaticornis* group and differs from a close ally, *E. dilaticornis* Hayashi in having the relative values of length and width of prothorax and elytra and punctation on pronotum.

Callichromini

Euchitonia menzelii Ritsema

RITSEMA, 1911, Notes from Leiden Museum, 34: 123 (West Sumatra: Loeboe Bankon; ô, ♀).

Euchitonia malayana Podany, 1968, Ent. Abh. Mus. Tierk. Dresden, 36 (3): 102, 103, Abb. 9, fig. 2 & Tafel II, 3 (Malay Peninsula: Skeap; actually \$\parphi\$, the original \$\parphi\$ designation is an error). —syn. nov.—

Judging from the original description and and illustration of *E. malayana* Podany, *E. malayana* is quite identical with the female (Holotype) of *E. menzelii*, only excepting slight difference of colouration, viz. larger black elytral markings and yellow seventh antennal joint instead of black. The examined female of Malaysian couple before the present author is also quite identical with the heading species contrarily having smaller black markings on elytra. The black markings on elytra of this species seem to be individually variable. Further, the examined male is also quite identical with the original description of male of *menzelii*, only excepting less developed yellow markings on elytra, viz. the basal bands reduced and the median outer pale yellow markings lacking. The male designation of *E. malayana* is fairly an error of female.

Material examined: 1 % & 1 %, Cameron Highlands, Tanah Rata, Pahang, Malaysia, Sept. 1976, local collector leg. (Kurosawa Coll.). New to Malaysian fauna.

Distribution: Sumatra, Malaysia.

Lamiinae

Saperdini

Glenea (Glenea) nanshanchiana sp. nov.

Body black, covered with fine dark brown to black pubescence in

general and with long black hairs sparsely in general and densely at apical halves of tibiae, and also decorated with dense white pubescence as the following manner:— Head entirely covered excepting three rather short dark vittae on occiput; prothorax with a narrow basal band and five longitudinal vittae, median one of which narrow, lateral pair on disc broad, latero-inferior pair broadest; scutellum almost entirely covered only excepting a narrow median denuded black line; elytra with a narrow sutural vitta and a rather ill-defined apical band and four white markings, first of which oblong behind base on disc, second small round lateral one at apex of basal quarter, third transverse band at middle, touching suture and leaving a broad space to margin, and fourth short transverse band at side on disc of apex of apical one third, but not touching margin; and body beneath largely covered with white pubescence, leaving black portions on inferior half of metepisterna, posterior half of metasternum, basal sides of first, and basal centers of second to fifth abdominal sternites.

Head slightly broader than prothorax, finely densely punctured, frons somewhat broader than long, with a fine longitudinal furrow from apex to vertex, vertex broad, very shallowly concave at middle, occiput convex at middle of base, gena fairly shorter than inferior eyelobe (ratio, 2:3.5). Antennae slender, fairly longer than body, relative length of each joint is as follows: - 5:1.5:7.3:5:5:4.7:4.7:4.5:4.5:4:5. Prothorax as long as broad, narrowly margined just inside of apex and base, constricted before base, almost parallel-sided at apical half and narrowed from behind middle; disc convex, densely finely punctured. Scutellum pentagonal. Elytra broader than prothorax at base, 2.5 times as long as the basal width, narrowed posteriorly and rather broadly obliquely truncate at apices with minute marginal spines; disc coarsely punctured, sparsely at base and densely at apical half, with lateral carinae incomplete, vanished before apices. Breast finely sparsely punctured and abdomen micropunctulate. Legs rather slender, femora weakly thickened, tibiae dilated, tarsi relatively short, first hind tarsal joint shorter than the following two united together. Fifth abdominal sternite in male minutely triangularly concave at middle of apex.

Length, 10.7 mm., width, 3 mm.

Holotype (Shibata Coll.), \Diamond , Nanshanchi, Nantou Hsien, Taiwan, July 21, 1974, Y. Кіуоуама leg.

This new species is somewhat allied to G. (G.) suturata Gressitt from South China, however it differs from the latter in having the white pubescent markings of quite different shape, instead of pale greenish white.

Glenea (Glenea) hamabovola sp. nov.

Head pitchy brownish black, prothorax blackish brown and the others brown; decorated with fulvous yellow pubescence, densely on head, with seven longitudinal vittae on prothorax, one median, a pair on disc, lateral pair and latero-inferior pair related each other, leaving a small elongate brown spot at middle, and with narrow transverse bands at apex and base; scutellum entirely covered with pubescence; elytra with four pairs of longitudinal vittae, first sutural, second slightly oblique and discal, third along humeral carina and fourth narrow on dull subhumeral costa, and apex broadly fulvous adjoining all the apices of the four vittae. Body beneath entirely covered with pale fulvous pubescence, leaving posterior central portion of metasternum blackish brown. Legs pale brownish yellow. Antennae brown.

Head a little broader than prothorax, finely sparsely punctured, from almost quadrate in male with a fine median longitudinal furrow to vertex, vertex very shallowly concave, occiput weakly convex at middle of base, gena shorter than inferior eyelobe (in 3, ratio, 1,5 : 3,5; in 9, 2: 3.5). Antennae fairly (♦) and a little (♀) longer than body, slender, relative length of each joint is as follows: - 5:1:6.5:5:4.5:4:4: 3.8: 4: 3.5: 4(8). Prothorax a little broader than long (ratio, 7: 7.5), almost parallel-sided for apical half and weakly narrowed at apex of basal quarter, narrowly margined at apex and base; disc convex, finely densely punctured. Scutellum trapezoidal. Elytra broader than prothorax, 2.58 times as long as the basal width in male, almost straightly narrowed posteriorly to the point of a short distance before apices, then fairly narrowed to obliquely truncate apices, with minute sutural and marginal spines; disc coarsely closely punctured at base and the punctures becoming finer and sparser apically. The each anterior (of the sense of Gahan, 1897) claw of all tarsi has a well-developed tooth, or bifurcate.

Length, 7.5 mm., width, 2.2 mm. (♦); 8 mm., 2.4 mm. (♀).

Holotype (Hayashi Coll.), &, Yoshihara-Yonehara, Ishigakijima, Yayeyama Group, Okinawa, Japan, April 20, 1973, H. Irie leg.; paratypes, $1\,\&$, the same data as holotype; $1\,\&$, Sonai, Iriomotejima, Yayeyama Group, Okinawa, March 31, 1973, collected in the stage of nymph from a hole tunneled in *Hibiscus Hamabo* (Sieb. et Zucc.) Maxim. and emerged on April 9, 1973, S. Imasaka leg.; $1\,\&$, Sonai, March 31, 1973, in a log of *H. Hamabo*, by S. Imasaka. (Hayashi Coll.)

This new species is somewhat allied to G. (G.) lineata GAHAN from Okinawa Archipelago, however, it differs from the latter in having brown body decorated with fulvous yellow vittae, shallow and small body, having different tarsal claws.

Oberea walkeri Gahan f. latipennis Gressitt

Oberea latipennis Gressitt, 1939, Lingnan Sci. Jl., 18: 99, 104, pl. III, fig. 9 (N. Kwangtung, S. China); Gressitt, 1951, Longicornia 2: 587, 597.

Oberea walkeri Gahan v. latipennis: Breuning, 1962, Frustula Entomologica, 5 (4): 37, 184 (n. comb.).

Material examined: 3 exs., Jiuyuehtan, Nantou Hsien, Taiwan, June 10, 1976, M. Kubota leg. (Hayashi Coll.). New to Taiwanese fauna.

Additions and Corrections

Demonax ohbayashii Samuelson

1965, in Samuelson et Gressitt, Pacif. Ins., 7 (1): 79, fig. 4 (Ishigaki). Demonax masatakai: Начазні (пес Онвачазні), 1968, Ent. Rev. Japan, 21 (1): 14, partim.

Pterolophia (Pterolophia) subleiopodina Breuning et Ohbayashi

Breuning et Ohbayashi, 1964, Bull. Japan Ent. Acad., 1 (4): 16 (Ishigaki). *Pterolophia (Pterolophia) kaleea*: Hayashi (nec Bates), 1968, Ent. Rev. Japan, 21 (1): 18.

Anoplodera (Pseudalosterna) aritai (Ohbayashi et N. Ohbayashi)

HAYASHI, 1974, Ent. Rev. Japan, 26 (1/2): 11, 12.

The redescription of the above-identified species by the present author should read; page 11, line 26 and page 12, line 10 to 11:—

cal in scape, tapering to apical joints,....
in having longer and tapering antennae,....

Studies on Cerambycidae from Japan and its Adjacent Regions (Col.), XX, 1974, Ent. Rev. Japan, 26 (1/2): 11-17.

Page 17, between lines 20 and 21, insert Saperdini.

Page 17, line 3 from bottom, should read *Paranaspia yayeyamensis* HAYASHI et YOKOYAMA.

The numerals in Plate 3, in Bull. Osaka Jonan Women's Junior College, Vol. 10 should read from left to right in order in second column, Fig. 22, 23 and 24 and third column Fig. 25, 26 and 27. 24(not 26) 25(not 24), 26(not 25) and 27.

Studies on Japanese Anthribidae, IV. (Coleoptera)

Ву Таісні Ѕнівата

Sympaector rugirostris (Sharp, 1891) comb. nov.

Tropideres rugirostris Sharp, 1891, Trans. ent. Soc. London: 302; Shibata, 1969, Ent. Rev. Japan, 22 (1): 20.

The species is transferred from *Tropideres* to *Sympaector* in compliance with K. Morimoto's suggestion of his very valuable essay on the Oriental Anthribidae (Bull. Govt. Forest Exp. Sta., Japan, 1972, No. 246: 37-41).

Rhaphitropis midori sp. nov.

Small, not cylindrical, rather flat above, recalled a Dissoleucas species. Derm dark brown, but elytra more or less reddish, mouth parts, antennae and legs testaceous, antennae gradually becoming darker ahead and last three club-joints almost black. Pubescence in various colour as: Rostrum densely covered with snow-white for major part and fringed by golden yellow along apical side, especially in front of eyes, where white hairs much thickened as their anterior tasselled border, which being shaded into more yellowish inside; vertex surmounted with a golden creamy yellow haired tuft, generally these hairs on rostrum and head thicker than pubescence of other portions, particularly of the ornate vertical one, which being a little longer, slightly curled and remarkable as a tuft of grass; pronotum with a sulfur yellow pubescence for major dorsal area, the colour gradated into greyish white laterally or basally, elytral pubescence similar on pronotum but less in growth and a little more greyish throughout, therefore upperside of body appearing olivaceous green on brownish derm; underside almost grevish white.

Rostrum short, twice as wide long, subparallel-sided or a little dilated upon antennal foveae, carinate barely above foveae, very feebly transversely depressed near apex and finely granulate, but sculpture quite hidden by clothing. Head with narrow frons, distance between eyes as wide as length of rostrum, sculpture like rostrum but well visible excepting on vertex. Antennal foveae normal in form. Eyes feebly emarginate at anterior side. Antennae short in \Im , scarcely attained to

[[]Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 93-101, June, 1978]

elytral base, 1st and 2nd joints clavate, 3rd hardly longer than 4th, 4th to 7th gradually shortened, 8th a little longer than 7th and both gently slightly dilated toward apex, last three joints rather widely clavate, subequal in length to each other and respectively about as long as wide and as long as 3rd, with close dark pubescence beneath, of 1st joint triangular, truncate at apex, of 2nd with rounded sides and almost straight apex, terminal one widely oval, quite rounded. Underside of head whitely pubescent and coarsely sculptured. Buccal plate apparently smooth.

Pronotum transverse, hexagonal, apex more than half as wide as greatest width upon dorsal carina, from the point lateral sides narrowing gradually in front and more strongly so behind, actual base somewhat narrower than apex; disc finely granulate alike on head, almost flat or very feebly depressed along dorsal carina, from carina rather gently inclined back to base, especially near basal longitudinal carinulae, therefore basal declivous area at outer sides not so sleeply incised as in other Japanese species; dorsal carina shallowly emarginate in middle and moderately angulate near lateral sides, basal longitudinal carinulae well developed, entire, inferior basal angle sharp, acute and a little protuberant outward. Scutellum whity grey.

Elytra subquadrate, one and a half times as long as wide, base truncate, apex rounded, sides parallel, subbasal swelling vestigial, scarcely traceable, shoulder callus distinct, dark brown; disc flat, punctate-striate, punctures strong, comparatively large, partly confused, irregular and intermixed with a very fine granule, inner striae obscure, unconfirmed at basal half, because their seriate punctures difficult to discern owing to punctures of same size on their adjacent intervals, punctures on intervals becoming sparser laterad or apicad, so external and inner apical striae barely perceptive; intervals flat, only two to three intervals (possibly 3rd, 5th or 7th) feebly raised. (Pronotum and elytra have vaguely ill-defined marked areas, however, they are probably denuded in single specimen). Pygidium a little longer than basal width, narrowing toward rounded apex, coarsely sculptured.

Underside finely granulate, sculpture of prosternum almost concealed by thick pubescence, mesosternal coxae widely separate, mesosternal process truncate, meso- and metaepisterna thickly pubescent, metasternum moderately convex on each side of middle and deeply sulcate beneath, granules of meso- and metasternites more or less larger than those of prosternum or lateral sides of ventral abdomen, but those on middle of latter also larger and somewhat bright, mainly scattered along or upon each apical edge of segments. Abdominal segments thickly pubescent along middle and laterally, in \circ strongly contracted,

but not very deeply and longitudinally depressed. Legs usual in build and proportion, without any secondary sexual feature of male.

Length (excl. head): 2 mm.

Holotype, ∂, Mt. Kasuga, Nara Pref., 26. VI. 1959, Т. Shibata leg. (Shibata coll.)

This new species closely resembles a *Dissoleucas* in profile, but has no tubercle on elytra and elongate fore tarsal 1st segment, which is evidently longer than the succeedings together. Unfortunately the author remains ignorant of similar *Rhaphitropis* species to this.

Rhaphitropis japonicus sp. nov.

Dark brown, mouth parts, antennae and legs (excluding femora) more or less reddish, antennae sometimes paler distally. Upperside covered with grey pubescence, with which a sulfur yellow tint on head, then gradually fading a yellow colour toward hind half of body. Underside uniformly grey.

Rostrum twice as wide as long, slightly expanded on antennal foveae, moderately depressed in front and finely granulate; thick pubescence covers sculpture and sharply defined naked area at apical third, where rather rugosely, somewhat coarsely granulate along truncate apical margin; lateral sides distinctly carinate from above antennal foveae to apex. Head similarly pubescent and sculptured on rostrum, a vague dark spot on occiput; frons in a half width of rostrum and a little wider than in 3. Eyes almost straight at anterior side. Antennae relatively long, from 7th joint gently incrassate apicad; in 8 arrived at middle of elytra, 3rd as long as basal two clavate joints together and a little longer than 4th, 4th a trifle shorter than 5th or subequal in length to each joint of succeedings, in which 8th at least as long as 4th, last three joints forming a slender elongate club, of 9th and 10th narrowly conical, 11th oblong, extreme two joints equal in length to each other and individually a little shorter than 9th; in \$\open\$, fully cross over base of pronotum, 3rd evidently longer than 4th, from which gradually shortened to 8th, 8th more than half length of 3rd, club usually wider than in 3,9th about as long as 5th and a little longer than 10th or 11th; 9th joint clearly shorter than 3rd in both sexes. False mentum (buccal plate) rather thickly pubescent.

Pronotum nearly trapezoidal, widest upon dorsal carina, at the point a very little wider than elytral base and about one and a half times as wide as long (1.4:1), whence lateral side arcuate-convergent anteriorly and distinctly incurved posteriorly by rounded short course; disc slightly transversely depressed at apical third and in front of dorsal carina, finely granulate, in \mathfrak{P} , granules coarser than in \mathfrak{P} and sparsely inter-

mixed with larger ones; ill-defined brown mark placed on middle before dorsal carina, transverse and subquadrate in original form, but variable, sometimes occupies for most part of disc leaving constantly grey lateral sides, or bearing a transverse grey band on subapical depression, moreover accompanied with occasional short longitudinal grey spot at middle (in the case it appears to be a cruciform spot on brown area); basal area behind dorsal carina grey at middle and lateral sides, and distinctly declined down to actual base near lateral angle of carinae; dorsal carina feebly emarginate in middle and rather sharply angulate at lateral third, and a little prolonged laterally by round angle, longitudinal carinulae entire, followed basal declivity. Scutellum semicircular, grey.

Elytra subquadrate, about half longer than wide (2:1.3), parallel-sided, base almost straight or slightly arcuate toward scutellum, apex rounded; disc evenly flattened, shoulder callus barely distinct, punctate-striate, intervals convex, sculpture likewise on pronotum, pattern alike as in R. oxyacanthae or antennatus, shoulder callosities, reduced subbasal swellings and obscure areas at apical half always dark brown. Pygidium as long as basal width, rounded at apex, sculpture coarser and granules sparser, larger than those of other upperside and enlarged apicad in size, especially in φ , of pygidium more thinly pubescent, granules a little larger and more distinct than in \Im and gradually gathered to apical edge as well as anal sternite. (Such a character in \Im is a general feature in R haphitropis, R atinellia and/or R or R is a general

Underside including head thickly pubescent laterally, sculpture coarser than the above, granules in $\mathfrak P}$ a little larger than in $\mathfrak P}$ and intermixed with much larger granules, latter ones rather scattered throughout but gathered on median portions and much more distinctly so at apex of anal segment; prosternum transversely convex before procoxae, mesosternal process truncate, metasternal convexity moderate and sulcus behind it deep, more distinct in $\mathfrak P$; ventral abdomen in $\mathfrak P$ slightly swollen, in $\mathfrak P$ strongly contracted and 1st to 3rd or 4th segments clearly impressed along middle, the impression somewhat various, often deeply grooved and enfeebled distally. Legs robust, usual in proportion, femora thick, mid femur in $\mathfrak P$ bearing a glossy carina at middle along outer ventral side and a bundle of grey hairs beside carina near base, sometimes carina hidden by hairs.

Length (excl. head): 2-3 mm.

The specimens from Mt. Kasuga were obtained on Quercus glauca Thunberg (Jap. name: Arakashi).

The present species belongs to R. oxyacanthae group in quite similar pattern and shape, in which R. elusus Jordan from Tonkin and antennatus Wolfrum from China are closely related with each other and lacking distinction between them exclusive of the antennal proportion. The present species may possibly be separated from the latter two species by the following points as regard the antennae: from elusus, 3rd joint in \lozenge less than half length of 4th, 4th a little shorter than or at least as long as 5th, 9th subequal in length to 8th and a little longer than 11th, in \lozenge 8th somewhat shorter than or as long as 9th; from antennatus, 3rd evidently longer than 9th in both sexes, in \lozenge 10th and 11th clearly shorter than and 8th about as long as 3rd. Mesothoracic femur in \lozenge of the present species provides a carina on the middle of outer ventral side, but without such a secondary sexual feature in both related species according to the description.

Dendrotrogus ohkurai sp. nov.

Dark brown, spotted by ochraceous hairs and uniformly clothed with short greyish hairs on upperside, covered with rather soft greyish pubescence on underside.

Rostrum and head coarsely rugate-punctured, ochraceous on lateral sides except apical part of former, with a spot on occiput. Rostrum parallel-sided, in large & proportionately long, a little shorter than its apical width, in and small a wider than long as usual, excised at apex and depressed at middle from apex to frons, the excision a little shallower but the depression somewhat deeper in large 3 than those in 9 and small 8. Eyes slightly truncate at apex and a little distant Antennae in large & long, fully cross over from antennal scrobes. base of elytra and reaching near middle, 1st and 2nd joints thick, 3rd longer than 2nd but a little shorter than 4th, 4th to 7th subequal in length to each other, 8th a little shorter than precedings and as long as 3rd, from 6th gradually dilated to 8th, terminal three clavate, 9th triangular, subequal in length to 8th, 10th shorter than 9th, as long as wide at apex and rounded at sides, 11th irregularly oval, longer than 10th but a little shorter than 9th, apex of 6th to 11th underside with dark hairs, especially of club distinct; in small & like those of & in form and proportion, short, scarcely touching base of pronotum, 3rd as long as 2nd and clearly shorter than 4th, from which gradually shortened and thickened to 8th, 8th nearly equal in length and thickness to 2nd, 9th triangular, as long as 10th, both as wide at their apical width as long, and a little shorter than 11th, which is longest, irregularly oval, slightly pointed at apex, these three club joints much less distinctly hairy beneath than in large \circ ; in \circ short, 3rd somewhat longer than 2nd and hardly shorter than 4th. False mentum in large \circ lengthened, well suitable to its rostral length.

Pronotum closely resembles D. angustipennis Jordan in pattern, outline and sculpture, but dorsal spots more elongate, in large \circ a little longer than its median greatest width (4:3.3) (while they are about as long as wide in \circ and small \circ and in both sexes of D. angustipennis), therefore lateral sides less arcuate than in latters; dorsal carina interrupted in middle.

Elytra about twice as long as wide, subparallel-sided, strongly punctate-striate, punctures gradually enfeebled toward apex, intervals flat, distinctly and rugosely sculptured on basal half, each alternate interval with six to seven elongate spots (it appears that elytra being tessellated by ochre and dark brown), these spots partly confluent together, and always much smaller or shorter on sutural intervals than others. Pygidium semicircular, usual in build, convex, almost glabrous and smooth in δ , shallowly depressed, coarsely sculptured in δ .

Prosternum almost flat, strongly punctured and partly reticulate. Punctures on metasternum large, deep, but those on metepisternum smaller. Ventral abdomen finely pilose-punctured, 1st and 2nd segments in \circ with fairly haired patch on middle, and apex of anal segment thickly haired. Legs concolorous, without sexual appendix.

Holotype, &, Mt. Mikazuki, Chichijima Is., Ogasawara Islands (Bonin Islands), 12. VII. 1972, Y. Kusui leg. (Shibata coll.).

Paratypes: $1 \oplus 1$, same as holotype.

The present species is peculiar owing to the elytral pattern and rather sexually dimorphic feature of the developed male, whose rostrum, antennae and pronotum are unusually long. The last character is not found among other known *Dendrotrogus* species. *D. angustipennis* JORDAN is somewhat related to the present species, but it can be recognized from the former by the absence of fascia or patch on the elytra, which being apparently tessellated on alternate interstices.

The present species is named in honour of Mr. Masafumi Ohkura who is one of the most excellent editor in Japan.

Japanthribus gen. nov.

\$\varphi\$. Head with rostrum vertically declining down from vertex in a rounded right angle, porrected, flat dorsally, forming a plate from frons to rostral apex if viewed from lateral side, subparallel-sided and sharply carinate laterally (lateral fascial carinae) from before antennal scrobe to apex of rostrum, not cylindrical throughout, space between eyes

more than half as wide as their total length. Rostrum rather thick. seemingly long but essentially short (on underside buccal plate short, not proportionately prolonged with its superficial dorsal length of rostrum and separated from head by half distance of its upper length). Head thick, with vertical weak impression laterally in front of antennal scrobe as a groove for reception of antennae (impression closely situated at external side of lateral carina). Eyes reniform, coarsely facetted. convex, vertical, a little more obliquely placed than the impression, rather deeply sinuate at inner side and rounded at outer side, its upper lobe as large as lower one, top of eyes situated just at corner of head. Antennal scrobes tuberculiform, convex, rounded and very close to frontal edge of upper lobe of eye. Antennae short, hardly reaching to middle of elytra, 1st joint slender, very long, about as long as 2nd and 3rd together, 1st and 2nd thickened at apex, 3rd longer than 2nd, as long as or a trifle longer than 4th or 5th, 6th and 7th somewhat shorter than 4th, a little longer than 8th and about as long as 2nd, last three thick, forming a slender elongate club, of which 9th narrowly triangular, as long as 3rd and a little longer than 10th or 11th, 10th triangular, subequal in length to 11th, 11th narrow, elliptic and twice as long as wide at middle, all joints (exclusive of 1st) finely rather densely haired with exception of longer hairs at each apex. False mentum (buccal plate) transverse, alike as in Mauia, but fully bilobed, well rounded at sides, buccal sinus deep, ligula rather small and labial palpi very slender. Ventro-lateral sides of head feebly angulate, running obliquely downward from middle of outer edge of eyes and meeting with terminal point of the impression near boundary of shallow depression between rostrum and head, but the sides not carinate against sharp latero-dorsal carinae (lateral fascial carinae).

Pronotum quite like that of *Proscopus*, transverse, dorsal carina ante-basal, lateral carinae short, scarcely reaching to middle, angle of carinae rounded off, basal longitudinal carinulae absent. Scutellum visible, semicircular. Elytra parallel at sides, flattened. Underside almost like those of *Proscopus* and its allied genera.

Legs stout, femora clavate, of front one distinct, tibiae cylindrical, rather thick, 1st tarsal joints stout, obconical, almost as long as 2nd and 3rd together, 2nd short, triangular and separated into two acute parts at apex with setae at extreme tip, 3rd developed, clearly deeply bifid, twice as wide at apical width as length of 1st, as long as 2nd, with dense brushy hairs beneath, claw subbasally dentate.

Type-species: Japanthribus kusuii sp. nov.

The present genus very closely resembles *Proscopus* and its allied genera because of well lengthened proboscis, peculiar antennal scrobes and various points,

however, it may be separable by the followings: from *Proscopus*, 1st antennal joint elongate, about as long as 2nd and 3rd together (while in *Proscopus*, *Dinema* and *Noseonus* decidedly much shorter than 3rd, in *Jordanthribus* similar in this respect but has nothing of lateral fascial carinae and quite different in profile), lateral carinae of pronotum short, scarcely reaching to middle, not continuous to or near apex; from *Dinema*, eyes very widely distant, not approaching each other; from *Noseonus*, lateral fascial carinae fairly sharp throughout and eyes vertical.

Japanthribus kusuii sp. nov.

\$\varphi\$. Yellowish brown to reddish brown, covered with whity grey hairs and marked with dark pubescence, former hairs much thicker than latter.

Rostrum carinate at slightly trisinuated apical side (carina continuous to lateral ones), a little triangularly dilated laterally (outside from lateral carinae) behind apex as inserted foveae for mandibles, and with head entirely flat above, roughly densely but shallowly punctured, a large dark mark occupying from vertex midway to rostral apex. Head depressed in a semicircular form on vertex, its upper arcuate side placed at top of head, just applied to corner bending down from occiput; pubescence scanty as well as rostrum except below eyes.

Pronotum transverse, almost twice as wide at greatest width behind middle as long, from widest point feebly arcuate and gently narrowed forward; disc coarsely punctured but a little feebler than on head, slightly transversely depressed near middle and along dorsal carina, with three dark patches, one at middle and another at each lateral side, middle patch large, quite circular, lateral patch forming an inverted L but its corner not angulate, well rounded, its inner side fitting with curvature of middle patch, and its external part a little incurved; dorsal carina almost straight.

Elytra a little more than twice as long as its basal width or median length of pronotum, feebly emarginate at base and truncate at apex, punctate-striate, seriate punctures large, gradually diminishing in size toward apex and partly invaded their adjacent intervals at basal half, intervals almost flat; disc patterned by scanty dark pubescence, in which two rounded spots on 3rd or 4th intervals, anterior spot before middle and posterior one just at middle, a common large ill-defined patch on apical declivity, variable in form, sometimes asymmetrical on each elytron, and obscurely darkened laterally from shoulder to middle, these markings or areas prominent by more thickened whity hairs. Pygidium as wide at base as long, rounded, sculpture finer than that on pronotum.

Underside uniformly greyish white, punctures alike on head but a

little shallower. Prosternum flat, mesosternal process wide, truncate at apex, metacoxal cavity transverse and large as usual. Ventral abdomen scarcely swollen.

Length (excl. head): 2.5 mm.

Excluding the generic character, the present species is similar to *Proscopus veitchi* Jordan from Polynesia in prothoracic pattern and manner of pubescence, but the pronotum is more transverse and its central mark is hardly at all divided by grey median line, as though the pattern of pronotum of the present species appears to drawing a white ring on dark derm encircling the central mark.

Notes on the Carabid-beetles of Japan, II. (Coleoptera)

Ву Таісні Ѕнівата

9. Endynomena pradieri Fairmaire, 1849

Fairmaire: Rev. Mag. Zool., (2) I, 1849, p. 34. Chaudoir: Ann. Soc. ent. Belg., IX, 1872, p. 186. Andrewes: Ins. Samoa, IV, Col. I, 1927, p. 12, f. 9.

JEDLIČKA: Ent. Abh. Ber. Mus. Tierk. Dresden, XXVIII, (7), 1963, p. 308, f. 42.

The widely distributed species occurs in Ryukyu Islands, Japan.

 $3 \odot \odot 3 \odot \odot$, Iriomote Is. (Ryukyu), 27. VII. 1962; Ishigaki Is. (Ryukyu), 29. VII. 1962 & 19. IV. 1963; Mt. Omoto, Ishigaki Is., 6. VII. 1964, leg. Yasuo Нама and Ніреуо Nomura.

10. Planetes ruficollis NIETNER, 1857

NIETNER: Journ. Asiat. Soc. Bengal, XXVI, 1857, p. 144. Andrewes: Ann. Mag. nat. Hist., (9), XIX, 1927, p. 106.

JEDLIČKA: Ent. Abh. Ber. Mus. Tierk. Dresden, XXVIII, (7), 1963, p. 465.

This is a new record for Ryukyu Islands in Japan.

 $1\, \mbox{\ensuremath{\uprighta}}$, Tonoshiro, Ishigaki Is. (Ryukyu), 9. VII. 1976, leg. T. Takahashi (through the kindness of Mr. H. Miyazaki).

Two New Oxycentrus Species from Formosa (Coleoptera, Carabidae)

By Akinobu Habu

Laboratory of Insect Identification and Taxonomy, National Institute of Agricultural Sciences, Nishigahara II, Kita-ku, Tokyo-114

So far as I am aware, eleven species of Oxycentrus are described from Asia, but none have been known from Formosa. Thanks to Messrs. Y. MIYAKE and S. NAKAMURA I have studied two Formosan species belonging to this genus. As they are more or less different from the descriptions of the known eleven species 1), I describe them as new in this paper.

Formerly ²⁾ I regarded the third elytral interval with one dorsal pore as a generic characteristic of Oxycentrus, but it is of no generic value. It is either with a single pore as in O. parallelus Chaudoir, the type-species of Oxycentrus, from India and O. argutoroides (Bates) from Japan and China, or without any pore as in O. nitidus Andrewes and O. striolatus Andrewes from Sumatra and O. micros Schauberger from Celebes, or with plural pores—O. omaseoides Bates from Burma and O. horni Schauberger from Celebes. It is, however, of even no specific value in O. changi, one of the two new species described in the present paper: one of the two specimens examined has only a single pore on the third interval, while the other has at least three pores.

The number of the dorsal pore or pores is, so far as I have known, of generic value in *Trichotichnus* Morawitz and *Harpaliscus* Bates which are allied to *Oxycentrus*:— a single dorsal pore is always present in the former, while plural pores exist in the latter.

Before going further I wish to express my heartfelt thanks to Messrs. Y. MIYAKE and S. NAKAMURA for their kindness. The holotypes are deposited in Nat. Inst. Agr. Sci.

Oxycentrus changi sp. nov.

Description. Length 7.4-7.5 mm. Width 2.6-2.7 mm. Black, shiny, elytra somewhat iridescent; labrum and mandibles

¹⁾ The description of O. angustus Bates distributed in Burma, Thailand and Indo-China is brief, and so the differentiation is not certain.

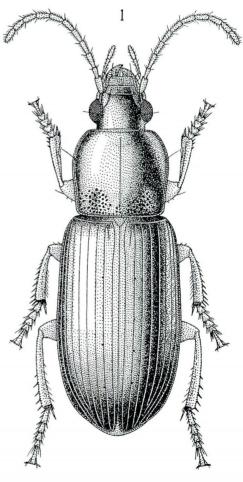
Fauna Japonica. Carabidae: Harpalini, p. 220 (1973).
 [Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 103-109, June, 1978]

dark reddish brown, palpi yellowish brown, antennae reddish brown, segments 1 to 3 somewhat dark, legs reddish brown, faintly dark, lateral margins and median apical and median basal areas of pronotum and posterior part of lateral margin to apical margin of elytra reddish; ventral side black, faintly reddish in part.

Head (Fig 2) gently convex, with several very minute punctures; microsculpture indistinct, traces of isodiametric microsculpture partly visible; eyes moderately large and convex, WH/WF 1.60, 1.62 in two

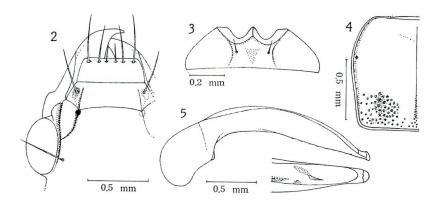
\$ \$. genuine ventral margin almost touching buccal fissures, disparity between genuine and apparent ventral margins very small; frontal impressions moderately deep. distinctly reaching frontal lateral furrows. foveolate just behind fronto-clypeal suture, shallowly extending onto clypeus, not reaching but terminating inside clypeal setae: clypeal seta in somewhat large fovea on either side, antennae a little extending beyond shoulder: labrum hardly emarginate at apex; mandibles similar to those of argutoroides; mentum (Fig. 3) with median tooth wide, pointed at apex, carinate in middle, setae relatively short, widely distant from each other.

Pronotum (Fig. 4) fairly convex, widest at or behind two-fifths, one and one-half times as wide as head, one and one-eighth times as wide as long (WP/WH 1.50, 1.52, WP/LP 1.13, 1.12, WP/WBP 1.14, 1.16 (approx.) in two $\Diamond \Diamond$, base a little narrower than base of elytra; surface



distinctly, densely punctate at basal area (punctures sparse near basal angles and median line), faintly punctate in lateral furrows and basal third of median line; microsculpture almost absent; apex very slightly rounded at median area, border complete; apical angles not protrudent but widely rounded; base almost even, gently rounded-oblique near basal angles, border complete; basal angles obtuse, fairly rounded; lateral margins distinctly bordered, moderately rounded anteriorly, weakly contracted posteriorly, with faint sinuation at basal one-fourth; lateral furrows fairly narrow, becoming indistinct before basal angles; marginal setae at or behind one-third; median line moderately impressed, slightly deeper and wider at basal one-fourth, not reaching apical border, not or faintly reaching basal border; anterior and posterior transverse impressions indistinct or almost absent; basal foveae rather shallow or somewhat deep, outside area hardly convex in one ex., gently convex in other ex.

Wings developed. Elytra fairly convex, rather cylindrical, widest at middle, one and one-fourth times as wide as pronotum (WE/WP 1.24, 1.28 in two & &), at least one and seven-tenths times as long as wide; surface not punctate, hardly in one ex., faintly in other ex., transversely striate; microsculpture hardly discernible; basal border level at inner half, gently oblique at outer half, forming distinct angle (ca. 120–130°) at shoulder; shoulder hardly or faintly dentate; lateral margin slightly dilated towards middle; apical sinuation faint; apex rounded; striate deep, not punctate; scutellary striole rather short in paratype, rather long on right elytron, shorter on left elytron in holotype; intervals somewhat or gently convex, interval 3 with single pore at four-



Figs. 2-5. Oxycentrus changi sp. nov. 2. Head. 3. Mentum. 4. Pronotum. 5. Aedeagus (paratype).

fifths in paratype, with three pores behind one-fourth, at three-fifths and four-fifths on left elytron, with four pores (first pore invisible owing to pinhole) on right elytron in holotype, pore or pores adjoining stria 2; marginal series widely interrupted at middle, 8+(8-10).

Fore tibiae distinctly, longitudinally carinate and sulcate, with three spines on anterior outer margin; in mid tarsi of \circ segment 1 without adhessive hairs ventrally; hind tarsi relatively wide, segment 1 one and four-sevenths times as long as segment 2, segment 5 fully longer than segment 1 (proportion 1.26, 1.28 in two $\circ \circ$); tarsal segment 5 with two or three setae on either ventrolateral margin.

Mesosternum, pro-, meso- and metepisterna and lateral areas of metasternum distinctly punctate, sternites 2 and 3 with several small punctures at median area, epipleurae not punctate; metepisterna fully long, L/W 1.82, 1.97 in two $\circ \circ$; sternite 6 of \circ bisetose on either side.

Aedeagus (Fig. 5) moderately curved, almost straight at apical half, somewhat tilted to left side; surface not rugose, without microsculpture, ventral side somewhat serrate at apical third; apical orifice long, almost on dorsal side, terminating a little before basal bulb; apical lamella a little wider than long, reflexed and deflexed at apex, reflexed part twice as wide as long.

Distribution. Formosa.

Type-series. Holotype: \Diamond , VI. 1, 1966, Xin po, B.-S. Chang leg. (through Mr. S. Nakamura). Paratype: $1 \Diamond$, IV. 10, 1966, do.

Remarks. This new species is allied to O. argutoroides (BATES), but is easily distinguishable from it by the clypeus with the extension of the frontal impressions terminating inside the clypeal setae instead of reaching them as in O. argutoroides, the mentum with the setae shorter and fully remote from each other, the pronotum with the basal angles more rounded, and the hind tarsi with the fifth segment fully longer than the first segment—only a little longer than the first segment in O. argutoroides. The inner sack of the aedeagus has two stripes than which are observable in a dorsal view.

Oxycentrus miyakei sp. nov.

Description. Length 14.8 mm. Width 5.0 mm.

Black, less shiny than in *argutoroides*; labrum dark reddish brown, mandibles reddish black, palpi light reddish brown, antennae reddish brown, basal three segments faintly dark, legs reddish brown, rather dark, lateral margins of pronotum and lateral margin of elytra hardly reddish, apical margin of elytra somewhat reddish; ventral side black, sternites slightly reddish.

Head (Fig. 7) fully convex, with minute scattered punctures on disc, with several rather small but distinct punctures on laterodorsal areas

behind supraorbital frons with three, somewhat deep, transverse impressions on either side. anterior impression deeper than others, before level of front margin of eyes inside frontal impressions, median impression on mid-eye level, posterior impression on level of hind margin of eyes; microsculpture rather faint, isodiametric: neck relatively long; eyes rather small, but fully prominent, WH/WF 1.35 in one ♀, genuine ventral margin well separated from buccal fissures, disparity between genuine and apparent ventral margin distinct: frontal lateral furrows deeper and wider than usual; frontal impressions very deep, distinctly reaching frontal lateral furrows; clypeus on either side with two sulci besides extension of frontal impressions which reaches clypeal seta; antennae not reaching base of pronotum; labrum shallowly emarginate at apex: mandibles longer

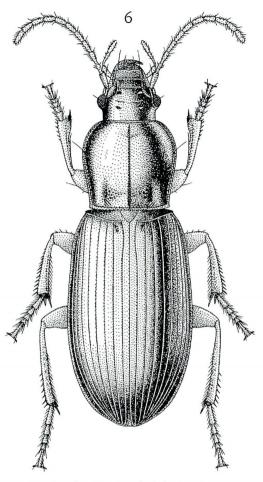


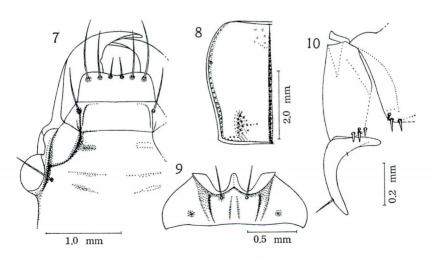
Fig. 6. Oxycentrus miyakei sp. nov., ♀.

and more curved than in *argutoroides*; mentum (Fig. 9) with round small impression on either side, with one longitudinal impression and one deep longitudinal sulcus between round impression and seta on either side, with one pair of shallow longitudinal impressions (interspace longitudinally convex behind median tooth) between setae, median tooth narrower than in *argutoroides*, narrowly rounded at apex, hardly carinate at middle, setae fairly separated from each other, moderately long.

Pronotum (Fig. 8) well convex, widest behind one-third, one and one-half times as wide as head, a little wider than long (WP/WH 1.48, WP/LP 1.07, WP/WBP 1.19 in one \S), base distinctly narrower than

base of elytra; surface obscurely punctate at median apical area, with some large distinct punctures in basal foveae, rather distinctly punctate in median line, lateral furrows and basal sulcus; microsculpture rather distinct, forming fully transverse meshes; apex truncate, border complete; apical angles not protrudent but widely rounded; base slightly emarginate at median area, somewhat roundly, gently oblique near basal angles, border complete; basal angles obtusely angulate, a little protrudent laterally at apex; lateral margins well bordered, moderately rounded anteriorly, more contracted posteriorly than in *argutoroides*, with long shallow sinuation before basal angles; lateral furrows fairly narrow; marginal setae a little behind one-third; median line fully deep, relatively wide, reaching apical and basal borders, indistinctly extending onto basal border; anterior and posterior transverse impressions indistinct; basal foveae rather deep, outside area distinctly convex.

Wings fully short. Elytra fairly convex, elongately elliptic-ovate, widest at middle, one and one-third times as wide as pronotum (WE/WP 1.32 in one $\ \ \ \ \ \$), one and five-sevenths times as long as wide ($\ \ \ \ \ \ \ \$); surface not punctate except for rather dense punctures on interval 9 between anterior and posterior groups of pores; microsculpture well visible, distincter at apical half, forming moderately transverse meshes; basal border more oblique outward than in argutoroides, forming distinct angle (a little more than 90°) at shoulder; shoulder dentate; lateral margin more dilated towards middle than in argutoroides; apical



Figs. 7-10. Oxycentrus miyakei sp. nov. 7. Head. 8. Pronotum. 9. Mentum. 10. Left stylus.

sinuation shallow; apex rounded; striae moderately deep, not punctate; scutellary striole fully short; intervals gently convex, interval 3 without dorsal pore; marginal series widely interrupted at middle, 8 ± 12 .

Fore tibiae longitudinally carinate and sulcate, with five spines on anterior outer margin; hind tarsi with segment 1 long, less than twice as long as segment 2, segment 5 a little shorter than segment 1 (proportion 0.94 in one \mathfrak{P}); tarsal segment 5 with two or three setae on either ventrolateral margin.

Ventral side of head with several distinct rugae, prosternum (except median area), mesosternum, apical and lateral areas of metasternum, pro-, meso- and metepisterna distinctly punctate, lateral areas of sternites 1 to 4 with some punctures, epipleurae rather faintly punctate, sternites 2 and 3 with several small pubescent punctures at median area; metepisterna long, L/W 1.58 in one \S ; sternite 6 (\S) bisetose on either side.

Basal segment of styluses (Fig. 10) with four short stout setae at apical area, apical segment slender, with one fine short seta on ventral outer margin at about basal third; hemisternites with three rather short stout setae at apex, apex not reaching base of apical segment.

Distribution. Formosa.

Type-specimen. Holotype: ♀, VII. 27, 1973, Tachen, Y. MIYAKE leg.

Remarks. It is the largest among the eleven Asian species, and characteristic in having a longer neck, the frons and clypeus trisulcate on either side, smaller prominent eyes and the deeper and wider punctate median line of the pronotum. I do not know any allied species to compare with this new one.



Descriptions of Two Larvae of the Genus *Chrysolina*MOTSCHULSKY in Japan (Coleoptera, Chrysomelidae)

By HARUO TAKIZAWA

Biological Research Center, Japan Tobacco and Salt Public Corporation, Hatano, Kanagawa, Japan 257

In Japan the genus *Chrysolina* Motschulsky is represented by 13 species, of which 9 were described of their larval stages in my previous paper. Two hitherto unknown larvae, *C. virgata* (Motschulsky) and *C. nikkoensis* (Jacoby), are described in this paper and the life-history of the genus in Japan is briefly summerized.

I wish to express my hearty thanks to Mr. M. Kato in Totigi, Mr. Y. HIRANO in Kanagawa and Dr. M. MIYAZAKI of National Grassland Research Institute for their kind help in various ways.

Chrysolina nikkoensis (JACOBY, 1885)

Last instar larva. Body strongly convex dorsally, 6.5 mm in length and 3.2 mm in breadth in alcoholic specimens; yellowish white with head dark brownish, prothoracic shield, legs and tubercles light brownish; practically glabrous, with setae extremely sparse; chitinous platelets small and round, very weakly chitinized. Head rather weakly chitinized; cordal suture very short, about 1/9 of head-capsule; frontal suture weakly impressed, widely divaricate near posterior $\frac{1}{3}$ of headcapsule; endo-carina distinct for full length; vertex with about 5 pairs of short setae; frons largely concave at anterior margin, transversely depressed with about 4 pairs of short setae; labrum rather straight and shallowly incised at anterior margin; lower mouth-parts weakly chitinized; mandible 5-dentate. Prothorax with D-DL-EP (6-7M)*; P (2S) weakly chitinized; ES-SS (2S) on both sides united. Meso- and metathorax dorsally divided into 2 transverse folds; the anterior with about 8 and the posterior about 10 pairs of micro setae; DLe (4M) weakly chitinized; EPa and EPp represented by a few setae respectively; P (3-4M) weakly chitinized; a few setae present anteriorly to SS (1S); ES

^{*} Numerals in parenthesis show average numbers of setae occurring on the tubercle, L, S, and M signifies long, short or micro setae respectively.

[Ent. Rev. Japan, Vol. XXXI, Nos. 1/2, pp. 111-117, June, 1978]

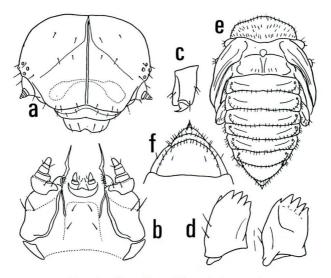


Fig. 1. Chrysolina nikkoensis (JACOBY)

Last instar larva: a, head-capsule; b, lower mouth-parts; c, mesothoracic tibia; d, mandible (left: lateral view, right: buccal view). Pupa: e, dorsal view: f, 7th to 9th abdominal segments.

(1S) on both sides united. Abdominal segment with 9 to 12 pairs of micro setae on anterior or posterior fold respectively; EP and P represented by 4 or 2 short setae respectively; PS-SS $(3S)\,;$ ES (2S) on both sides united; PS-SS and ES sometimes not chitinized; 8th and 9th segments not chitinized dorsally.

First instar larva. Body 1.8 mm in length and 0.7 mm in breadth in alcoholic specimens; pale yellowish orange with head, prothoracic shield, egg-bursters, spiracles and legs dark brownish; chitinous platelets weakly chitinized, small yet dense; almost glabrous, with setae extremely short and sparse, and slightly clubate at apex; prothoracic D-DL-EP (8M) well chitinized; ES and SS weakly chitinized; meso- and metathorax with 4 micro setae corresponding to Dai, Dae, Dpi and Dpe; mesothoracic egg-burster (DLi) larger than metathoracic or 1st abdominal one; DLe (2-3M) weakly chitinized; abdomen dorsally with 7 micro setae corresponding to 7 primary tubercles; EP (2M), P (1M), PS-SS (3M) and ES (1M) weakly chitinized; 8th and 9th segments only slightly chitinized on dorsal side.

Pupa. Body 6 mm in length and 3.5 mm in breadth in alcoholic specimens; yellowish orange; setae short and fairly dense; head with about 7 pairs of short setae; pronotum with about 70 setae; mesothorax

dorsally without setae; metathorax with 3 pairs of setae dorsally; each abdominal segment with 8 to 12 pairs of short setae; spiracle weakly chitinized; 9th abdominal segment with an apical process which is short conical and weakly chitinized.

Host plants. Hypericum sp. (Guttiferae).

Specimens examined. 5 full grown and 6 younger larvae and 3 pupae, Mt. Sumon-dake, Niigata, 26. VI. 1972, H. TAKIZAWA leg.

Notes. Adults, larvae and eggs are found simultaneously on host plants growing along & dump roadside. Some larvae grew into the pupal stages and emerged on July 17th in laboratory. The 2nd and 3rd instar larvae look like the 4th (last). This species in the larval stages resembles to C. yezoensis (Matsumura) very closely. The full grown larva of the latter is slightly larger, with chitinous platelets, head-capsule and lower mouth-parts very strongly chitinized. The head-capsule of the latter is about 1.2 times as broad as the former in measured specimens. The pupa is slightly larger in the latter. Chûjô and Kimoto cited Kalimerus yomena (Compositae) as a host of this species. As the members of the subgenus Hypericia Bedel are known to feed generally on Hypericum spp., their record seems erroneous.

Chrysolina virgata (Motschulsky, 1860)

Last instar larva. Body strongly convex dorsally, broadened posteriorly, 9 mm in length and 4.5 mm in breadth in alcoholic specimens; distinctly bicolored, head except for brownish anterior area, legs and dorsal tubercles of last 2 abdominal segments dark brown to black; brownish on account of dense polygonal chitinous platelets except for pronotum, mesothorax on epipleural regions, dorsum behind middle of 2nd or 3rd abdominal segment, epipleural regions of 4th and the following segments and venter of last 2 or 3 segments dirty yellowish white; dorsum lacking tubercles except for large ones on last 2 abdominal segments. Head with cordal suture short: frontal sutures arised near posterior 1/6 of head-capsule, widely divaricate near posterior 1/3; endo-carina distinct for full length; vertex covered with small round patches, with extremely short setae; from strongly depressed medially and triangularly raised near straight anterior margin, with 5 pairs of short setae; clypeus largely de-chitinized; labrum broadly incised at anterior margin; submentum-mentum well chitinized: mandible 5dentate. Prothorax: D-DL-EP scattered with micro setae; P (1S); ES-SS (2S) large and united with ES-SS on the other side; sternal region with several short setae near ES-SS; around the bases of these setae weakly chitinized. Meso- and metathorax: dorsal side divided into two transverse folds; several micro setae present on each fold; DLe represented by about 8 micro setae; EPa and EPp, each represented

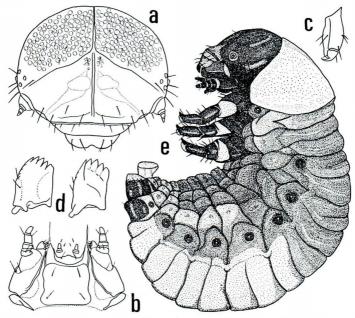


Fig. 2. Chrysolina virgata (Motschulsky)

Last instar larva: a, head-capsule; b, lower mouth-parts; c, mesothoracic tibia; d, mandible (left: lateral view, right: buccal view); e, lateral view.

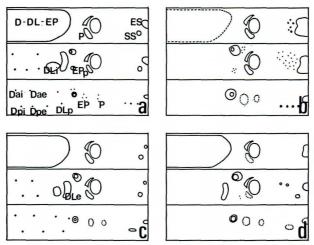


Fig. 3. Schematic presentation of tubercles on pro- and mesothorax and 2nd abdominal segment.

Chrysolina virgata. a, 1st instar larva; b, last instar larva.

Chrysolina nikkoensis. c, 1st instar larva; d, last instar larva.

by a few micro setae; mesothoracic spiracle situated near EPa, with large peritreme; spiracle on metathorax vestigial with smaller peritreme; P (1S); ES-SS (2S 6-8M) large and united with ES-SS on the other side; sternal region with a lot of micro setae, around the bases of which is weakly chitinized; metathorax with these small tubercles fused with ES-SS. Abdominal segments dorsally divided into two transverse folds, each of which bears some 11 pairs of micro setae; spiracle with large peritreme; EP represented by about 5 micro setae; P (2S 1M); PS represented by 2 small tubercles; SS (1S); ES (1S) on both sides united; 8th segment dorsally covered with large D-DL (7S) which is united with D-DL on the other side; EP (4S 7-8M); P (4S); ES-SS (5S); 9th with large D-DL-EP (10S) united with D-DL-EP on the other side; P (3S); ES-SS (4S 2M).

First instar larva. Body 2.5 mm in length and 1.3 mm in breadth in alcoholic specimens; yellowish white with head, prothoracic shield, egg-bursters, spiracles, legs and dorsal tubercles of last 2 abdominal segments dark brown to blackish; densely covered with small round chitinous platelets on dorsal side; prothoracic D-DL-EP (11L) well chitinized; ES-SS (2S) weakly chitinized; meso- and metathorax with 5 short setae on dorsal region, which may represent Dai, Dae, Dpi and Dpe; mesothoracic egg-burster larger than metathoracic one; DLe (2-3S) weakly chitinized; mesothoracic spiracle situated near EPa (2S); EPp (2S); P (1S); SS (1S); ES (1S); these 5 tubercles weakly chitinized; abdominal segment dorsally with 7 short setae corresponding to 7 primary tubercles; one or two micro setae present anteriorly to spiracle; EP (4-5S); P (3S); SS-ES (3S); ES (1S) on both sides united; these 4 tubercles slightly chitinized; egg-burster on 1st segment much smaller than thoracic ones.

Host plants. Lycopus sp. (Labiatae).

Specimens examined. 2 fully grown and 4 younger larvae, Otawara, Totigi, IX. 1977, collected by M. Miyazaki.

Notes. The 2nd instar larva is dark brownish in appearances by dense chitinous platelets. The 3rd one is also dark brownish after molt, but becomes pale yellowish on prothoracic shield and abdomen dorsally as it grows. This change of the coloration is due to the progressive de-chitinization of the prothoracic shield and chitinous platelets. The young 4th larva looks like the full grown 3rd and becomes much bleached, with epipleural regions dirty yellowish white. All the abdominal segments are dirty yellowish white on dorsal side in a specimen. Near Otawara City in Totigi, the newly emerged adults were observed on hosts and nearby plants in middle June. In middle September larvae were found, and they became full grown late in the same month and entered into the soil (observed by M. Miyazaki). At Sengoku-hara in Kanagawa adults were caught from middle June to late August (observed by Y. Hirano). This species passes the winter as a full grown larva in the soil and pupates early in the spring.

S	pecies	Month	I	II	III	IV	v	VI	VII	VIII	IX	х	XI	XII	Observed are	Hosts a
1,	aeruginosa														Honshu Kyushu	
2,	aurichalcea														Hokkaido	Arctium, Artemisia Kalimerus, Petasites
3,	watanabei								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						Hokkaido	Aster
4,	aino							-	D	. "					Hokkaido	Petasites (4,5,6)*; Eupatorium (4,5);
5,	angusticollis								ш	. '					Hokkaido	Artemisia, Aster, Cirsium, Senecio,
6,	porosirensis														Hokkaido	Solidago, Astilbe (4)
7,	virgata							_		Ī			,,,,,,,,,,		Honshu	Lycopus
8,	nikkoensis										_				Honshu	Hypericum
9,	yezoensis														Hokkaido	nypericum
10,	exanthematica							-	m						Hokkaido	Mentha, Isodon
11,	nikolskyi														Hokkaido	Artemisia
12,	pirka									**					Hokkaido	Pedicularis
13,	brunneipennis	lamii													Hokkaido	Lamium

Fig. 4. Life-history pattern of Japanese Chrysolina.

Observations in field are indicated by bars, whereas inferences by broken lines. white bar: egg stage, striped bar: larval and pupal stages, black bar: adult stage.

- * Numerals in parenthesis refer to the species number.
- ** Ovoviviparous.

Life-history patterns of the genus in Japan:-

The genus Chrysolina includes some 400 species distributed on the Holarctic and Ethiopean Regions. The genus is divided into about 45 subgenera and seems to be heterogenous. Though the larval morphology is useful for a phylogenetic consideration, only about a third of these subgenera are known of their larval While the host selection among the subgenera is reviewed recently by JOLIVET and PETITPIERRE. As a possible source of further dicussion on the genus, life-history patterns of the genus are given for the Japanese species. The genus is divided into 3 groups. 1) Species overwintering in the egg-stage: aurichalcea watanabei TAKIZAWA (subgenus Anopachys); (FALDERMANN), aino angusticollis (Motschulsky) (subgenus Caudatochrysa); exanthematica (WIEDEMANN), nikolskyi (Jacobson) (subgenus Lithoptheroides). 2) Species overwintering in the adult stage: nikkoensis (JACOBY), yezoensis (MATSUMURA) (subgenus Hypericia); pirka TAKIZAWA (subgenus Pleurosticha); brunneipennis lamii TAKIZAWA (subgenus undeter-3) Species overwintering in the larval stage: virgata (Motschulsky) (subgenus Euchrysolina).

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北日本に分布している Amara (Pseudobradytus) majuscula CHAUDOIR について

土 生 昶 申

農業技術研究所昆虫同定分類研究室

On Amara (Pseudobradytus) majuscula Chaudoir found in North Japan

By AKINOBU HABU

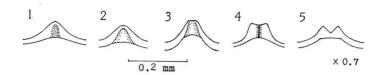
北海道十勝農業試験場の井上寿氏を初め、 $2\sim3$ の方々から同定の依頼を受けていた日本からは知られていないマルガタゴミムシの1種が、北海道にみられる。また、青森県りんご試験場の川嶋浩三氏から同定の依頼を受けた、黒石市にあるりんご試験場内のりんご園で採集されたゴミムシ類のなかに、1頭だけではあるがこのマルガタゴミムシがみられた。この種は頭部の形などは Bradytus 亜属のものを思わせるが、3の後脚胫節の内側に同亜属の特徴である密な細毛がなく(第14図)、この点は Pseudobradytus 亜属に相当する。この亜属にはヨーロッパ産の A. crenata Dejean 1種しか含まれていないので、標本を入手して比べて見たが、体形に著しい相異があり、また下唇基節の中央突起が日本産の種では浅く二裂していて異なる。

久留米大学の中尾舜一博士から以前いただいた, 旧満州琿春産の ゴミムシ類の 標本の中に,この種の標本が 2 頭あるので,中国北部から東シベリアにかけて分布している種とは想像できるが,シベリアのマルガタゴミムシについては全くわからないので,長い間不明のままにしてあった.しかし,世界のマルガタゴミムシ族を専門に研究しているベルリンのフンボルト大学の F. Hieke 博士に,最近ついでがあったので,北海道産の標本をお送りして調べていただいたところ,東シベリアから中国北部にかけて分布している A. (Bradytus) majuscula Chaudoir E のご教示を得て,同定を依頼された方々に Amara (Subg.?) Sp. としかお答えできなかったこの種の名前が判明した.

JEANNEL¹⁾のフランス産マルガタゴミムシ類の検索表によれば、Bradytus では下唇基節には二裂した中央突起があり、 $^{\circ}$ の後脚胫節には内側に密な細毛群があるが、Pseudobradytus では下唇基節の中央突起は単純で、 $^{\circ}$ の後脚胫節の内面には、通常の数本の剛毛以外には細毛がないとされている。日本には Bradytus は従来3種知られていて、確かに A. ampliata (BATES) や A. macros (BATES) では下唇基節の中央突起は第5図のように二裂しているが、

¹⁾ IEANNEL, 1942, Faun, France, 40:940.

[[]昆虫学評論, 第31巻, 第1/2号, 119-126頁, 1978年, 6月]



第1-5 図. Pseudobradytus 亜属と Bradytus 亜属の種類の下唇基節中央突起 (Mentum teeth of Amara (Pseudobradytus) and A. (Bradytus) spp.).

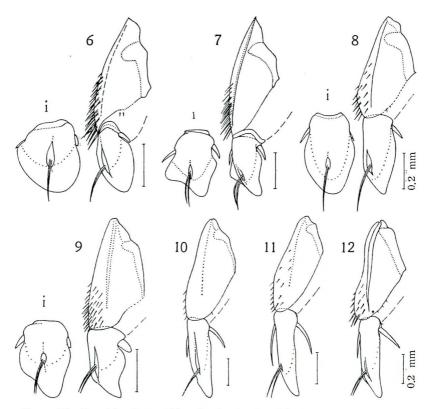
1. A. simplicidens Morawitz. 2. A. crenata Dejean (ユーゴスラビア産) (from Yugoslavia). 3. A. apricaria (Paykull) (チェッコスロバキア産) (from Czechoslovakia). 4. A. majuscula Chaudoir. 5. A. ampliata (Bates).

A. simplicidens Morawitz (第1図) では A. crenata Dejean (第2図) のように先端が丸くなっている。手もとにあるヨーロッパ産の A. fulva (DeGeer) では中央突起は二裂しているが、A. apricaria (Paykull) (第3図) では先端が切断されてはいるが、二裂してはいない。それゆえ、この特徴は両亜属を分けるのに適しているとは思えないし、また3の後脚胫節の特徴とは必ずしも両立しない。

令の後脚胫節内側の細毛群の有無は、従来 Amara 属の亜属の重要な特徴として使われていて、日本産のものでは Amara と Bradytus にはこの細毛群があるが、Celia、Zezea と Curtonotus にはない. しかし、Hieke 博士からの私信によれば、A. (Leiocnemis) sikkimensis Andrewes、A. (Amara) birmana Baliani や A. (Amara) biarticulata Motschulsky ではこの細毛群は一定していなく、また Bradytus の大半の種ではこの細毛群が無いとのことである.

A. majuscula の♀の交尾器を調べたところ,尾状突起の先端節の両縁が広がり,異常に幅広いことに注意を引かれた(第7図). 日本産の§3種について調べた結果,§A. simplicidens では第§8図のように先端節が幅広くなっているが,§A. macros と §A. ampliata では第§10、11図のように明らかに細長く,§2本のとげも太くはないがよく発達している. Bradytus の模式種である §A. fulva (DeGeer) では第§12図のように,§A. macros や §A. ampliata と同じ型である. 一方,§9回、§0、本の上が産の §0、本の上が産の §0、本の上が産の §0、本の上が上のでは近く別論文に登載)や,§1、Pseudobradytus の模式種の §1、Crenata DeJean (第6図) では広く短い.

筆者の調べた種類数は少ないので、中間型の存在も十分考えられるが、ここでは試みに尾状突起が細長く、先端節は長く、長さは幅の 3 倍内外で、とげがよく発達した A. macros と A. ampliata を Bradytus 亜属、尾状突起は広く、 先端節は広く短く、長さは幅のたかだか $1\frac{1}{2}$ 倍で、とげも余り長くはない A. simplicidens, A. majuscula, A. batesi, および A. apricaria を Pseudobradytus に入れてみた.



第6-12図. Pseudobradytus 亜属と Bradytus 亜属の種類の♀交尾器左尾状突起. i: 先端節内面図 (Left styluses of Amara (Pseudobradytus) and A. (Bradytus) spp. i: apical segment in inner view).

6. A. (Pseudobradytus) crenata Dejean (ドイツ産) (from Germany). 7. A. (P.) majuscula Chaudoir. 8. A. (P.) simplicidens Morawitz. 9. A. (P.) apricaria (Paykull) (チェッコスロバキア産) (from Czechoslovakia). 10. A. (Bradytus) macros (Bates). 11. A. (B.) ampliata (Bates). 12. A. (B.) fulva (DeGeer) (ドイツ産) (from Germany).

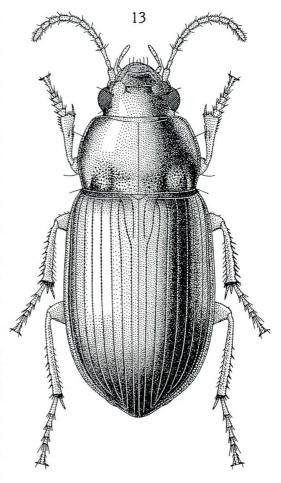
Amara (Pseudobradytus) majuscula Chaudoir シベリアマルガタゴミムシ

記載: 体長 7.7-9.0 mm. 体幅 3.3-3.9 mm.

黒色で、スポットライトの下ではやや赤味を帯び、光沢があり、翅鞘には弱い銅色光沢があるが、頭部や前胸背板よりはやや光沢が鈍い;上唇と大腮は赤味がかった黒色、前胸背板側縁は赤かっ色、翅鞘の側・前縁は弱く赤味を帯び、両鬚は淡赤かっ色、触角・脚は赤かっ色で、時として弱く暗色を帯びる;体腹面は赤かっ色で、多少とも暗色を帯びる。

頭部は隆起し, 点刻されない(まれにまばらな 小点刻 がある); 網目状 印刻は 明りょうで、 等径 状;側面は複眼の後方で強く斜め となるが、斜めの部分は短い;複 眼は適度に 隆起し大きく, WH/ WF 1.38-1.45, 平均 1.42 (5頭の 令と5頭の♀による測定);前頭 の2対の剛毛は正常;前頭溝は適 度に深く,外方に向かい,しばし ば内方に1分枝を持つが,分枝は 浅いことも深いこともある;頭楯 は前縁にて適度にえぐられ, 剛毛 間にはやや深い溝があり, 前縁の 縁取りは不明りょう;触角第3節 は比較的長く,第4節の1%-1%倍 の長さである;下唇基節中央突起 (第4図) は広く, 前縁はえぐら れて、2本の鈍歯を形成する.

前胸背板は適度に隆起し、中央か中央やや後方で最も広く、頭幅の1½倍、幅は長さの1%倍(5頭の含と5頭の早において、WP/WH 1.45-1.53、平均1.48、WP/LP 1.56-1.63、平均1.60、WP/WBP 1.06-1.11、平均1.09、WBP/WAP 1.30-1.41、平均1.34);表面は基部に大きな密な点刻があり(後縁角内方および中央線付近に



第13図. Amara (Pseudobradytus) majuscula Chaudoir, 含.

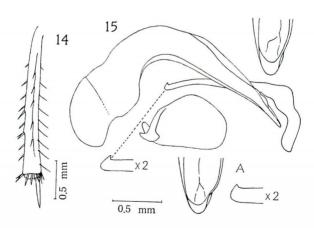
は点刻を欠く), 中央部に弱いまたは幾分明りょうな 横しわがある;網目状印刻は明りょうで,等径状;前縁は直線状で,縁取りは中央で消失する;前縁角は突出せず,鈍角状で丸みを帯びる;後縁は中央でやや丸くなり,側方では直線状で,ほぼ水平またはわずかに斜めとなり,縁取りは中央で消失する;後縁角は鈍角状で,先端には側方に向かった小歯がある;側縁は後半部で縁取られ,前方にゆるく丸みを帯びて明りょうにせばまり,後方には直線状にやや弱くせばまり,通常後縁角前に小さな弱い切れ込みがある;側縁に沿った溝は非常に狭い;前方の剛毛は払または払の後方にあり,後方の剛毛は後縁角の内方にあって,側縁と後縁とから等しく離れている;中央線は細く,前縁には達しないが,後縁には達する;前方

の横溝は浅いか、あるいは無く、後方の横溝はやや深い;基部の外方のへこみは適度に深く、後縁の縁取りに達し、内方のへこみは外方のものより浅く、内方と外方のへこみの間はやや隆起し、外方のへこみの外側は明らかに隆起はするが、はっきりとした隆起線状とはならない。

後翅は発達する。翅鞘はよく隆起し、だ円形に近い卵形(A. simplicidens よりは少し細い)で、中央または中央より少し前方で最も広く、前胸背板のたかだか 1½ 倍の幅で(5 頭の 6 と 5 頭の 2 で WE/WP 1.19-1.26、平均 1.22)、長さは幅の1%-1½倍;表面は点刻されない;網目状印刻は頭部や前胸背板におけるよりも強く、等径状;基縁は水平で直線状か、わずかに傾斜し、肩部で強く斜めとなり、側縁と 90度または90度より少し 広い角度で合する;肩部の歯は小さいが明りょう;側縁はほとんど直線状に、あるいはわずかに丸みを帯びて、ゆるやかに中央に向かって広がる;先端近くのえぐられた部分は浅い;条溝は適度に深く、点刻され、第 $1\cdot2$ 条溝は基縁後方で合する;基部の短条溝は長く、第1間室にあり、先端は第1条溝に接するか、あるいは離れている;基部に点孔を欠く;間室は扁平;側縁に沿った点孔列は中央で広く中断され、点孔数は 6+8.

後脚腿節の剛毛は 2 本;前脚胫節の形はほぼ A. simplicidens と同じで,外方の前縁角は突出せず,側縁前方には 4 本のとげがある;中・後脚胫節はあまり弯曲せず,6 の中脚胫節内側には少数の小突起があり,6 の後脚胫節(第14図)には細毛群はない;跗節第 5 節腹面両側には通常 2 本,時として 3 本の剛毛がある;後脚跗節第 1 節は 第 2 節の $1\frac{1}{2}$ 倍の長さで,第 5 節は長く,第 5 節/第 1 節= 1.23 -1.29 (4 頭の6),1.29 -1.41 (4 頭の9).

中・後胸腹板側方と、中・後胸前側板は明りょうに点刻され、時として前胸腹板側方・前



第14,15 図 Amara (Pseudobradytus) majuscula Chaudoir.

14. ③ の左後脚胫節 (male left hind tibia). 15. 旭川産 ③ の交尾器、A. 札幌琴似産標本の陰茎先端部背面図と右側片先端部 (Genitalia of ⑤ from Asahikawa. A. apical part of aedeagus in dorsal view and apical part of right paramere in ⑥ from Kotoni, Sapporo).

胸前側板前方にも数個の点刻が見られ、基部の2または3腹節腹板側方はしわ状に点刻される; \circ の前胸腹板中央にはだ円形の点刻された部分があるが、この点刻された部分はへこまない;後胸前側板は長く、L/W 1.57-1.66、平均 1.61 (3頭の \circ と3頭の \circ);末端腹節腹板の左右に \circ では1本、 \circ では1本、 \circ では1年の剛毛がある.

陰茎(第15図)は中央後方にて強く弯曲し、それから先端近くまでほぼまっすぐで、先端付近は弱く下方に曲がり、腹面は先端の手前でややへこみ、背面からみて右側縁は先端の手



第16 図. 北日本におけるシベリアマルガタゴミムシの産地 (Map of North Japan showing localities of *Amara* (*Pseudobradytus*) majuscula Chaudoir).

前で明りょうにえぐられる;先端部は比較的短く,長さは幅の1½-2倍で,先端は広く丸くなる;右側片の先端は広く丸くなり,かぎ状部は通常より短く,かぎ状突起はやや小さい.

尾状突起(第7図)の基節の長さは先端節の 1%倍で,背面の先半分に密な毛がある;先端節の長さは幅の1%-1%倍で,両側縁が中央辺で伸びていてエイの形をしているが,背面の縁のほうが腹面の縁よりもより丸く突出していて,突出部と 先端の間でより 強くえぐられ,先端は A. simplicidens に比べると狭く丸くなっていて,2本のとげはあまり太くはない.

分布:日本一北海道:上川(保田信紀採集),旭川(井上寿採集),帯広(井上寿採集),石狩(寺田勝幸採集),札幌琴似(西尾美明採集);本州:黒石(川嶋浩三採集).中国北部.東シベリア.

備考:各地に普通のコマルガタゴミムシ A. (Pseudobradytus) simplicidens MORAWITZ に比べると体がやや細く,翅鞘に弱い銅色光沢があり,下唇基節中央突起は浅く二裂し,前胸背板は前縁近くでは点刻されず,後縁は側方でほぼ直線状でえぐられず,翅鞘の網目状印刻は等径状で,きわめて明りょうで, \Diamond の後脚胫節には細毛群はなく,尾状突起の先端節は特異な形をしていて,区別は容易である。

終りに臨み、ご援助いただいた F. HIEKE 博士、ならびに標本をご寄贈下さった方々に厚くお礼を申し上げる。

Summary

An unidentified species of *Amara* has hitherto been found in some places of North Japan as shown in Fig. 16. Thanks to Dr. F. Hieke of the Humboldt University it turned out to be *A. majuscula* Chaudoir distributed from East Siberia to North China. I redescribed it with some remarks concerning its subgeneric position.

This species is easily distinguishable from the common A. simplicidens Morawitz by the body somewhat narrower, the elytra faintly aeneous, with a fully distinct isodiametric microsculpture, the mentum tooth shallowly bifid (cf. Figs. 1, 4), the pronotum not punctate at the apical area, with the base not sinuate but straight at lateral areas, the male hind tibiae without a fringe of dense pubescence (Fig. 14), and the styluses with the apical segment singularly, well explanate at the dorsal and ventral outer margins and ray-shaped (cf. Figs. 7, 8).

According to Jeannel's key to the French Amarini given in 1942, the subgenus *Bradytus* has the mentum tooth bifid and the male hind tibiae with a fringe of dense pubescence on the inner side, while *Pseudobradytus* is with the mentum tooth simple and the male hind tibiae without dense pubescence inside. These two characteristics, however, are not always coexistent, and the mentum tooth does not seem to be available for distinguishing both the subgenera (cf. Figs. 1-5), and the fringe of dense pubescence of the male hind tibiae is, according to Dr. F. Hieke's information, variable in some species and absent in almost half of the known species of *Bradytus*.

I noticed that there were two types in the form of the styluses, and therefore, though it was possible that intermediate forms would occur, I tentatively classified the two subgenera as mentioned below.