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Notes on the Chrysomelidae from Taiwan, VIII.

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Subfamily **Clytrinae**Smaragdina miyakei n. sp.

Body relatively small, elongate ovale. In male, head bluish black with frons and mouth part reddish brown, pronotum reddish brown with a pair of black markings on middle, elytron bluish black with an ill-defined longitudinal brownish stripe which interrupted at subbasal and medio-posterior portions in most cases, antenna blackish brown with three basal segments paler, ventral surface bluish black with prothorax reddish brown; legs reddish brown. In female, a pair of blackish markings of pronotum disappeared in most specimens, and elytron reddish brown with sutural, humeral and latero-subapical markings together with sutural, basal and basal % of lateral margins bluish black.

Head with vertex convex, distinctly and sparsely punctate, interocular area slightly depressed, rugose, thickly pubescent-punctate. Antenna short, robust, with third segment small, hardly thickened apically, fourth distinctly widened apically but clearly narrower and shorter than fifth, fifth strongly widened and thickened, and nearly 1½ times as wide as long, fifth to tenth subequal to each other in length and shape, eleventh 1½ times as long as tenth and its apex pointed. Prothorax transverse, nearly twice as wide as long, anterior and posterior margins nearly straight, lateral margin rounded, widest slightly before base and strongly narrowed anteriorly and less strongly so posteriorly, surface convex side to side,

with a faint transverse furrow slightly behind anterior margin and a pair of oblique impressions laterally, distinctly but not closely punctate. Scutellum convex, subtriangular, finely sparsely punctate. Elytron elongate, subparallel-sided. rounded apex, surface convex, thickly strongly and punctate.

Length: 2.8-3.8 mm. Holotype: Jiuyuehtan, Nantou Hsien (31. III. 1972,

Fig. 1. Smaragdina miyakei Кімото, n. sp.; a: male, b: female.

Y. MIYAKE) (Type No. 2048, Kyushu Univ.).

Paratopotypes: 11 exs., same data as the holotype.

Paratypes: Nanshanchi, Nantou Hsien (2 exs., 5. IV. 1973, 1 ex., 7. IV. 1973, 1 ex., 10. IV. 1973, S. TAKEDA).

Distribution: Taiwan.

This new species most closely resembles *Smaragdina scaralis* Pic, from Yunnan, but is separable from it in having the humeral and the latero-subapical markings, in stead of the humeral, the latero-median and the latero-subapical markings.

Smaragdina nomurai n. sp.

Body small, short ovale. Yellowish brown, antenna pitchy black with four or five basal segments brownish, legs yellowish brown with tarsi pitchy black.

Head with vertex convex, smooth, shining, interocular space sparsely impressed by fine punctures. Antenna short, robust, with third segment small, narrowest, hardly thickened apically, fourth nearly as long as third in length but distinctly widened apically, fifth strongly widened and thickened, slightly longer than fourth in length but slightly shorter than sixth, sixth slightly wider than long, sixth to tenth subequal to each other in length and shape, eleventh subequal to tenth in length but its apex pointed. Prothorax transverse, nearly twice as wide as long, anterior margin nearly straight, posterior margin slightly produced posteriorly at middle, lateral margin rounded, widest slightly before base and narrowed anteriorly and posteriorly, surface convex side to side, without any furrow or depression, impressed by very minute punctures.

Scutellum relatively long, subtriangular, impressed by extremely minute punctures. Elytron relatively short, convex, distinctly widened posteriorly and rounded at apex, surface impressed by two kinds of large and small punctures on whole surface and their interstices smooth.

Length: 3.0-3.2 mm.

Holotype: Nanshanchi, Nantou Hsien (4. IV. 1970, H. Nomura) (Type No. 2049, Kyushu Univ.).

Paratypes: Junghua, Taoyuan Hsien (1 ex., 7. IV. 1971, B.-S. Chang). Nanshanchi, Nantou Hsien (1 ex., 3. IV. 1970, T. Kobayashi). Wushe (=Musha), Nantou Hsien (1 ex., 21. IV. 1973, S. Takeda). Jiuyuehtan, Nantou Hsien (4 exs., 31. III. 1972, Y. Miyake). Chuchi (=Takezaki), Chiayi Hsien (3 exs., 10. IV. 1938, Y. Yano). Liukuei, Kaohsiung Hsien (6 exs., 20. III. 1973, Y. Kiyoyama). Kenting Park, Pingtung Hsien (7 exs., 1. IV. 1972, Y. Miyake).

Distribution: Taiwan.

This new species somewhat resembles *Smaragdina fulveola* Jacoby, in having the entirely yellowish dorsal surface, but is separable from it in having the body much robuster and scutellum more elongate.

Smaragdina miyatakei n. sp.

Body relatively small, elongate ovale. Reddish brown, elytron bluish black with epipleuron reddish brown, antenna pitchy black with four or five basal segment brownish, legs reddish brown with tarsi pitchy brown.

Head with vertex convex, smooth, shining, interocular space sparsely impressed by fine punctures. Antenna short, robust, with third segment small, narrowest, hardly thickened apically, fourth distinctly widened apically but clearly narrower and shorter than fifth, fifth strongly widened and thickened, slightly wider than long, fifth to tenth subequal to each other in length and shape, eleventh slightly longer than tenth and its apex pointed. Prothorax transverse, nearly twice as wide as long, anterior margin nearly straight, posterior margin slightly produced posteirorly at middle, lateral margin rounded, widest slightly before base and narrowed anteriorly and posteriorly, surface convex side to side, without any furrow or depression, impressed by very minute punctures. Scutellum subtriangular, impressed by extremely minute punctures. Elytron elongate, subparallel-sided, rounded at apex, surface convex, impressed by two kinds of large and small punctures on whole surface and their interstices smooth.

Length: 3.0-3.5 mm.

Holotype: Taotsua, nr. Hotso, Nantou Hsien (27. VI. 1971, Y. MIYATAKE) (Osaka Mus. Nat. Hist.).

Paratopotypes: 2 exs., same data as the holotype. Paratype: Puli, Nantou Hsien (1 ex., Native Collector).

Distribution: Taiwan.

This new species resembles *Smaragdina semiaurantiaca* Fairmaire, but is separable in having the body smaller and its coloration of the ventral surface entirely yellowish brown. Also from *S. apiciflava* Chûjô, in having the body larger and the ventral surface reddish brown.

Subfamily Galerucinae

Pyrrhalta aurata (Maulik)

1936, Fauna India, Col. Chrysom., Gal.: 217, 219 (Galerucella) (India: Nilgiri Hill). Specimens examined: Kueishan—Wulai, Taipei Hsien (2 exs., 5. VI. 1970, Y. HORI).

This species is here recorded for the first time from Taiwan.

Distribution: India, Taiwan.

Pyrrhalta meifena n. sp.

Yellowish brown, antenna pitchy black with ventral surface of four or five basal segments brownish, legs yellowish brown with apex of femora, entire tibiae and tarsi black.

Head with vertex slightly wrinkled, sparsely impressed by large but shallow punctures and covered with fine pubescence, and with a short longitudinal median furrow which deep on anterior portion; frontal tubercle distinct, smooth, impunctate, subquadrate, contiguous, anterior angle arcute, inserted between antennal insertion; labrum with a transverse row of six to eight setigerous pores. Antenna rather slender, nearly % as long as body length, first segment robust, somewhat clubshaped, second shortest, much slenderer and slightly shorter than first, third subequal to second in length but slenderer, fourth slightly longer than third and subequal to first in length, fifth slightly longer than fourth and nearly 11/4 times as long as third, fifth to seventh subequal to each other in length and shape, eighth slightly shorter than seventh and subequal to fourth in length, eighth to tenth subequal to each other in length and shape, eleventh longest, nearly 1 1/3 times as long as ninth and its apex pointed. Pronotum transverse, nearly 2 ½ times as wide as long, anterior margin slightly emarginate, sides rounded, widest at middle, narrowed anteriorly and posteriorly, basal margin slightly emarginate at middle, and turned obliquo-forwardly at lateral area, anterior and posterior corners each with a setigerous pore; dorsal surface distinctly and closely punctate, entirely covered with fine pubescence, and with an anterior and a posterior median depressions shallower and a pair of lateral depressions deeper. Scutellum distinctly convex, covered with fine pubescence, subtriangular, and its apex truncate. Elytron broader than thorax at base, slightly widened posteriorly and rounded at apex,

finely and closely punctate, and closely covered with fine pubescence; elytral epipleuron distinct only on basal half.

Length: 5.0-6.0 mm.

Holotype: Meifeng, Nantou Hsien (26. VI. 1971, Y. MIYATAKE) (Osaka Mus. Nat. Hist.).

Paratopotypes: 3 exs., same data as the holotype.

Paratype: Wushe, Nantou Hsien (1 ex., 30. V. 1965, B.-S. CHANG).

Distribution: Taiwan.

This new species closely resembles *P. kobayashii* Kimoto from Taiwan, but is separable from it in having the punctures of pronotum stronger, elytral epipleuron distinct only on the basal half, and elytron entirely yellowish brown.

Genus Cneoranidea CHEN

1942, Notes Ent. Chinoise, 9: 31 (Type species: Cneoranidea signaticeps CHEN, 1942, monobasic).

=Neocrane Chûjô, 1962, Philippine J. Sci., 91: 207 (Type species: Neocrane bicoloripes Chûjô, 1962, monobasic). New Synonym

Cneoranidea signatipes CHEN

1942, Notes Ent. Chinoise, 9: 31 (China).

=Neocrane bicoloripes Chûjô, 1962, Philippine J. Sci., 91: 210 (Taiwan). New Synonym

Distribution: China, Taiwan.

According to the study on the type of *Neocrane bicoloripes* Chûjô, preserved in the Taiwan Agricultural Research Institute, Taipei, *Neocrane bicoloripes* Chûjô seems to be a synonym of *Cneoranidea signatipes* Chen. Thus, the genus *Neocrane* becomes a synonym of *Cneoranidea* Chen.

Monolepta leechi Jacoby

1890, Entomologist, 23: 216 (China); GRESSITT & КІМОТО, 1963, Pac. Ins. Mon., 1В: 605, 618 (S. China).

Specimens examined: Nanshanchi, Nantou Hsien (1 ex., 5. IV. 1973, S. Takeda). Sungkang, Nantou Hsien (3 exs., 1. VI. 1965, T. Shirôzu). Sungkang—Tsifeng, Nantou Hsien (1 ex., 29. VI. 1965, Y. Kurosawa).

This species is here recorded for the first time from Taiwan.

Distribution: S. China, Taiwan.

Monolepta maana Gressitt & Кімото

1963, Pac. Ins. Mon., 1B: 605, 621 (SE. China).

Specimens examined: Sungkang, Nantou Hsien (1 ex., 1. VI. 1965, T. Shirôzu). Yushih, Nantou Hsien (1 ex., 26. VI. 1971, Y.-I. Chu).

This species is here recorded for the first time from Taiwan.

Distribution: S. China, Taiwan.

Monolepta sublata Gressitt & Kimoto

1963, Pac. Ins. Mon., 1B: 605, 635 (S. China).

Specimen examined: Sungkang, Nantou Hsien (1 ex., 24. VI. 1965, T. Shirôzu).

This species is here recorded for the first time from Taiwan.

Distribution: S. China, Taiwan.

Atrachya mediofasciata n. sp.

Body ovate. Head, pronotum and scutellum pale yellow; elytron black with a yellowish marking on middle; ventral surface yellowish brown with metathorax black; antenna pitchy black with two basal segments yellowish brown; legs yellowish brown with tibiae and tarsi black. In one specimen, yellowish marking on elytron expanded and covering nearly $\frac{2}{3}$ of entire surface, and in another specimen yellowish marking on elytron reduced and dorsal surface, including pronotum and scutellum, ventral surface of thorax, head, except for vertex yellowith, antenna and legs black to pitchy black.

Head very finely and sparsely punctate, interocular transverse impression distinct, frontal tubercle subtriangular and distinctly raised. Antenna slender, nearly as long as length of body, first segment long, second shortest, nearly $\frac{1}{3}$ as long as first, third $\frac{1}{3}$ times as long as second and much slenderer, fourth $\frac{1}{3}$ times as long as third, fifth slightly longer than fourth, fifth to seventh subequal to each other in

length and shape, eighth slightly shorter than seventh and subequal to fourth in length, ninth subequal to eighth in length and shape, tenth slightly shorter than ninth, eleventh subequal to ninth in length but its apex pointed. Pronotum transverse, 11/2 times as broad as long, anterior margin nearly straight, sides slightly rounded, widest at slightly before middle, slightly narrowed anteriorly and strongly so posteriorly, basal margin strongly rounded posteriorly, dorsal surface convex side to side, with a pair of shallow depressions laterally, sparsely impressed by fine punctures. Scutellum subtriangular, smooth, shining, impunctate. Elytron broader than prothorax, more strongly and closely punctate.

Male: Fifth abdominal segment trilobed. Female: Fifth abdominal segment entire.

Length: 4.5-5.0 mm.



Fig. 2. Atrachya mediofasciata Кімото, n. sp.

Holotype: Meifeng, Nantou Hsien (26. VI. 1971, Y. MIYATAKE) (Osaka Mus. Nat. Hist.).

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

Paratypes: Alishan, Chiayi Hsien (1 ex., 6. VII. 1965, Y. Kurosawa). Fenchihu, Chiayi Hsien (1 ex., 7. VII. 1965, Y. Kurosawa). Sungkang, Nantou Hsien (1 ex., 23. VIII. 1973, Y. KIYOYAMA).

Distribution: Taiwan.

This new species most closely resembles *Atrachya flavomaculata* Chûjô, in having the similar marking and the coloration of dorsal surface, but is separable from it in having pronotum with a pair of depressions laterally and femora entirely yellowish brown.

Subfamily Alticinae

Manobidia nipponica Снијо

1959, Mem. Fac. Lib. Arts & Educ., Kagawa Univ., 2 (81): 11 (Japan); Gressitt & Kimoto. 1963, Pac. Ins. Mon., 1B: 877, 878 (China).

Specimens examined: Liukuei, Kaohsiung Hsien (2 exs., 18. VI. 1971, Y. MIYATAKE).

This species is here recorded for the first time from Taiwan.

Distribution: Japan, China, Taiwan.

Taiwanohespera sasajii Кімото

1970, Kontyû, Tokyo, 38: 300 (Taiwan: Tsifeng).

= Taiwanohespera bicolor Кімото, 1970, ibid, 301 (Taiwan: Nanshanchi). New

Synonym

Specimens examined: Nanshanchi, Nantou Hsien (1 ex., 26. VI. 1971, Y. MAEDA; 2 exs., 7. VII. 1972, S. TAKEDA). Lishan, Taichung Hsien (1 ex., 12. VII. 1972, S. TAKEDA). Hotso (=Rozan), Nantou Hsien (4 exs., 19. IX. 1970, Y. KIYOYAMA). Loloshan (=Rarasan), Taipei Hsien (1 ex., 11. VIII. 1974, Y. KIYOYAMA).

Through the kindness of Mr. T. Shibata, Osaka, the author had an oppotunity to examine some additional specimens of the genus *Taiwanohespera*. As a result of the study on these specimens, the author came to the conclusion that *Taiwanohespera bicolor* Kimoto was nothing but a color variation of *T. sasajii* Kimoto.

Distribution: Taiwan.

Hemipyxis takedai n. sp.

Head, pronotum and scutellum reddish brown, elytron reddish brown with a large postmedian marking yellowish brown, in most specimens the marking bordered by a black margin in various degrees, ventral surface reddish brown, antenna pitchy black with two basal segments brownish, legs entirely reddish brown.

Head with vertex smooth, shining, nearly impunctate, except for a pair of large foveae situated near interior margin of eyes; frontal

tubercles convex, oblique, contiguous, distinctly separated from vertex by a distinct oblique groove, surface finely wrinkled. Antenna slender, long, nearly \(^2\)₃ as long as length of body, first segment long, robust, somewhat clubshaped, second nearly $\frac{2}{3}$ as long as first and slenderer; third nearly 1 ½ times as long as second, and much slenderer; fourth slightly longer than third, fifth subequal to fourth in length and shape, sixth slightly shorter than fifth and subequal to third in length, seventh subequal to sixth in length and shape; eighth slightly shorter than seventh and nearly 4/5 as long as fifth, eighth to tenth subequal to each other in length and shape, eleventh longest, nearly $1\frac{1}{2}$ times as long as tenth and its apex

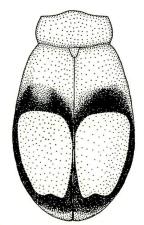


Fig. 3. Hemipyxis takedai Кімото, п. sp.

pointed. Pronotum transverse, nearly twice as wide as long, anterior margin almost straight, posterior margin rounded posteriorly, lateral margin rounded, widest almost at middle, narrowed anteriorly and posteriorly, anterior corner thickened, basal corner widely rounded, anterior and posterior corner each with a setigerous pore, dorsal surface distinctly but not closely punctate. Scutellum subtriangular, its apex rounded, surface nearly impunctate, smooth, shining. Elytron convex, lateral margin rounded, surface closely and distinctly punctate.

Length: 4.0-4.2 mm.

Holotype: Chihpen, Taitung Hsien (1. IV. 1974, S. Takeda) (Type No. 2050, Kyushu Univ.).

Paratypes: Kenting Park, Pingtung Hsien (1 ex., 16. III. 1968, T. OKADOME, 1 ex., 15. III. 1968, Y. Arita, 1 ex., 26. V. 1969, S. Hisamatsu, 1 ex., 16. III. 1970, T. Kobayashi). Chihpen, Taitung Hsien (1 ex., 12. VI. 1970, Y. Hori).

Distribution: Taiwan.

This new species somewhat resembles *Hemipyxis formosana* Chûjô, in having the postmedian marking of elytron, but is separable in having the frontal tubercle of head oblique and its surface wrinkled and the ground color of elytron brownish.

Subfamily Hispinae

Dactylispa excisa (Kraatz)

1879, Dtsch. Ent. Z., 23: 140, pl. 2, fig. 10 (Hispa) (Amur).

=Dactylispa excisa var. repanda Weise, 1922, Philip. J. Sci., 21 D: 81 (China: Kiautschau); Gressitt, 1950, Lingnan Sci. Jour., 23: 117 (China, Manchuria, Formosa).

= Dactylispa excisa: Medvedev, 1957, Zool. Zhurnal, 36: 294 (Taiwan, Ussuri,

Primorski, Kraj).

Specimens examined: Taotsua nr. Hotso, Nantou Hsien (1 ex., 27. VI. 1971, Y. MIYATAKE). Tatunshan, Taipei Hsien (7 exs., 11. VIII. 1974, N. Ito). Fenchihu, Chiayi Hsien (1 ex., 25. VII. 1973, Y. KIYOYAMA).

Distribution: E. Siberia, Manchuria, China, Taiwan.

Wallaceana dactyliferae (Maulik)

1919, Fauna India, Hispinae: 107 (Wallacea) (India).

= Wallaceana dactyliferae: Uhmann, 1958, Col. Cat. Junk, Suppl., 35 (2): 230 (India).

Specimens examined: Taitung, Taitung Hsien (9 exs., 10. VIII. 1973, Y. KIYOYAMA). Tanansha, Taitung Hsien (1 ex., 24. V. 1972, Y. KIYOYAMA). Chihpen (= Chipon), Taitung Hsien (1 ex., 27. III. 1970, H. NOMURA).

This species is here recorded for the first time from Taiwan.

Distribution: India, Taiwan.

The Taiwanese Species of *Amichrotus* SHARP, with Description of a New Species (Coleoptera, Staphylinidae)

Ву Үаѕитоѕні Ѕнівата

Amichrotus, a small genus of the subfamily Staphylininae, currently contains only six species distributed primarily in the Southeast Asia including Japan. They are A. apicipennis Sharp (1889, p. 114), A. excellens Bernhauer (1938, p. 100) from Japan, A. miwai Bernhauer (1943, p. 177) from Taiwan, A. merriti Bernhauer (1912, p. 253) from the Philippines, A. jacobsoni Bernhauer (1915, p. 231) from Java and A. sarawakensis Bernhauer (1915, p. 233) from Borneo. In the present paper one new species of this genus will be described from Taiwan.

Before going further, I wish to express my hearty thanks to Assist. Prof. Yasuaki Watanabe of the Tokyo University of Agriculture, for his constant guidance and helpful suggestions. I am also greatly indebted to Prof. Hiroshi Inoue, Otsuma Woman's University, for his kindness extended to me in various ways, and to Prof. Chong-zhi Kuan, Taiwan Provincial Chung-Hsieng University, for his valuable assistance during my collecting trip in Taiwan. Besides, deep gratitude is also due to Mr. Akinori Yoshitani for his assistance in preparing the habitus drawing shown in this paper.

Amichrotus miwai Bernhauer

Amichrotus miwai Bernhauer, 1943, Mitt. münch. ent. Ges., 33: 177; type-locality: Arisan.

Specimens examined: $1 \, \odot$, Fenchihu, about 1,400 m alt., Chiai Hsien, 9. VIII. 1970, Y. Shibata leg.; $2 \, \odot \, \odot$, same locality, 8. VII. 1971, Y. Shibata leg.; $2 \, \odot \, \odot$, same locality, 3-4. VIII. 1973, Y. Shibata leg.; $1 \, \odot$, same locality, 9. VIII. 1974, Y. Shibata leg.; $1 \, \odot$, Koantauchi, about 650 m alt., Nantou Hsien, 15. VIII. 1970, Y. Shibata leg.

Distribution: Known only from the mountainous districts of the middle parts of Taiwan.

Male genital organ almost symmetric and moderately sclerotized. Median lobe constricted at middle but strongly dilated towards apex, which is slightly sinuated to ventral side in profile; with basal part large and more or less globular and gently bent towards the ventral side. Style a little shorter than median lobe and broader than the latter at the apical part, and widely divided in apical half, nearly Y-shaped; each

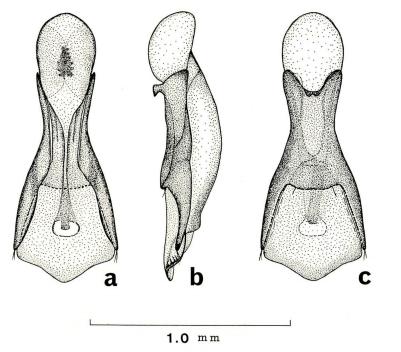


Fig. 1. Male genital organ of *Amichrotus miwai* Bernhauer, from Fenchihu in Taiwan; a, dorsal view; b, lateral view; c, ventral view.

apical lobe slender, and fringed with two setae near the extremity; internal face with a longitudinal series of minute and black sensorial tubercles along the inner margin and also with a short seta at each side of middle part of excised area.

In general appearance, this species is closely allied to *Anisolinus elegans* Sharp from Japan. And also this species is similar to *Amichrotus excellens* Bernhauer, but at once distinguished from the latter by the smaller size and slender body, entirely black pronotum and scutellum, etc. The specimens have been found in rotten fungi, in rotten bamboo-shoots and in wet leaf litter.

The position of this species is problematical in the following points: 1) the second segment of the maxillarly palpus is not extraordinarily dilated towards the distal end, more elongate and is slenderer than those of *Amichrotus* and *Anisolinus*, 2) mesosternum is without median carina, 3) male genital organ is unique in structure. These features are different from those of both *Amichrotus* and *Anisolinus*. However, I wish to retain to decide the adequate genus for its reception till a careful examination is made on the basis of dissection of numerous genera belonging to the subtribe Xanthopygi.

Amichrotus formosanus sp. nov.

Closely allied to *Amichrotus apicipennis* Sharp in general appearance, but easily separable from the latter by the entirely black elytra, wanting yellow pubescence at hind margin of elytra, the sparser punctures on the head and pronotum, almost reddish brown antennal segments, and round apical margin of style.

Body nearly parallel-sided and moderately depressed above. Color black and moderately shining; antennae, mouth parts, two terminal segments of abdomen, tibiae and tarsi reddish brown, excepting somewhat infuscate middle part of proximal antennal segment. Length: 11.5–12.5 mm.

suborbicular, slightly Head transverse and moderately broader than pronotum (1.25:1), with posterior region rounded and well contracted towards base, and nearly twice as long as longitudinal diameter of eye; disk gently elevated, closely and somewhat coarsely punctate but becoming sparser towards almost impunctate vertexal area, along the middle with a very narrow longitudinal smooth area; eyes rather large and somewhat prominent. Antennae rather slender, reaching backwards to the basal margin of pronotum and slightly thickend towards apex. proximal three or four segments polished and the remaining more or less opalescent; 1st segment robust and dilated apicad, 2nd short, about a half as long as 1st, 3rd 1.4 times as long as 2nd, 4th a little longer than 5th, 5th to 7th subequal in length to one another and a little broader than long in each, 8th to 10th slightly transverse, dilated apicad and subequal in length to one another, the apicalmost 1.7 times as long as 10th and subacuminate towards the tip.

Pronotum subcordate and well

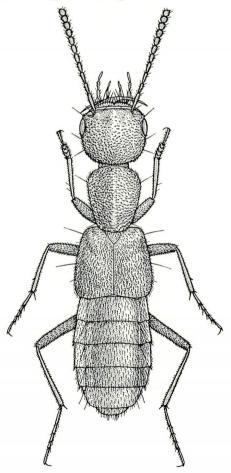


Fig. 2. Amichrotus formosanus sp. nov., \Diamond , from Tsifeng in Taiwan.

convex above, slightly longer than broad (1.08: 1), widest at about anterior one-fourth, abruptly contracted to base but gently so towards apex; anterior margin slightly emarginate, posterior margin broadly rounded and somewhat produced backwards; anterior angles rounded off and not visible from above, posterior angles broadly rounded; surface closely covered with somewhat coarse punctures, except for a very narrow longitudinal smooth median line which is clearly reaching posterior margin though anterior part becomes somewhat indistinct. Scutellum triangular, comparatively large, provided with several shallow but distinct punctures and with distinctly transverse lineate ground sculpture all over.

Elytra nearly quadrate and moderately flat, about twice as broad as length of suture, obviously broader than pronotum (1.14: 1), distinctly dilated behind, lateral sides almost straight, posterior angles broadly

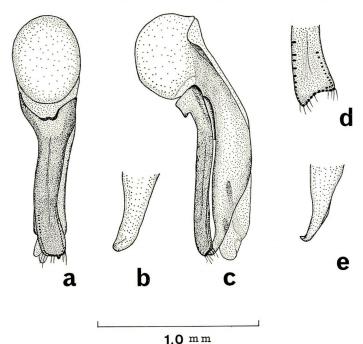


Fig. 3. Male genital organ of Amichrotus spp.—A. formosanus sp. nov., from Tsifeng in Taiwan (a-c); a, ventral view; b, apical part of median lobe (left lateral view); c, left lateral view.

—A. apicipennis Sharp, from Nikko in Japan (d-e); d, apical part of style (dorsal view); e, apical part of median lobe (left lateral view).

rounded off; surface closely covered with rather fine punctures, and with golden pubescence decumbent backwards.

Abdomen elongate and nearly parallel-sided, about as wide as elytra, widest at the third visible segment and gradually narrowed towards both basal segment and anal end; basal three visible tergites each with a broad, deep, transverse impression near the base and with a pair of very small carinae at base; surface moderately closely covered with fine punctures and fine golden pubescence. In male, last abdominal sternite with a small arcuate emargination at middle of hind margin, and penultimate sternite furnished at middle with a patch of dense, elongate and decumbent golden pubescence. In female, the sternites are simple. Legs relatively slender, front tarsi are moderately widened in the male, though slightly so in the female.

Male genital organ moderately sclerotized. Median lobe slender and nearly parallel-sided, with apical part asymmetric, inclined to the right and produced as a short, somewhat compressed beak; viewed laterally, dorsal side of median lobe slightly arcuate and gradually tapering towards somewhat pointed apex. Style asymmetrical, almost as long as median lobe, inclined to the right, nearly parallel-sided, and provided with seven or so setae at apex; small and black sensorial tubercles on the internal face distributed in a continuous group and showing a U-shaped pattern along the lateral and apical margins.

Type-series. Holotype: \lozenge , allotype: \lozenge , Near Tsifeng, about $2,200\,\mathrm{m}$ alt., Nantou Hsien, $28.\,\mathrm{VII}.\,1974,\,\,\mathrm{Y}.\,\,\mathrm{Shibata}$ leg. Paratypes: $1\,\lozenge$, same data as the holotype, $1\,\lozenge$, same locality as above, $28.\,\,\mathrm{VIII}.\,\,1974,\,\,\mathrm{Y}.\,\,\mathrm{Shibata}$ leg.

Holo- and allotypes are preserved in the collection of the Entomological Laboratory of the Tokyo University of Agriculture and the paratypes are in my collection. All the specimens of the type-series were found under loose bark of large, rotten, fallen trees lying in a broad-leaved forest.

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

VI. A New Species of $Rupa^{1)}$

By Akinobu Habu

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Rupa japonica Jedlička is distributed in mountainous regions of the Kii Peninsula, Honshu, and an isolated species, none of the allied species having been known. There are two specimens of a new pubescent species of the Platynini in Dr. S.-I. Uéno's collection. Although I propose a new subgenus to it inasmuch as it is fairly different from Rupa japonica, the essential characteristics are almost same in the Formosan and Japanese species. Before describing the new subgenus, Rupa being not distinctly defined by Jedlička, I redescribe the genus in this place.

Genus Rupa Jedlička

Type-species: Rupa japonica Jedlička from Japan (monotypic).

Rupa Jedlička, 1935, Acta Soc. Ent. Čsl., 32: 32.

Description. Body punctate and pubescent, elytra not metallic. Head (Figs. 1, 2) with neck-constriction distinct on dorsal side; tempora developed; eyes small though convex, sparsely pubescent or glabrous, ventral margin well distant from buccal fissures; two pairs of supraorbital setae present, posterior setae fully distant from eyes, but less distant from eye than from neck-constriction; antennae rather slender, densely pubescent from segment 4, segment 1 not elongate, with some short hairs at apical half, segment 2 sparsely pubescent, with several short verticillate hairs or setae at apex, segment 3 rather sparsely pubescent or setose; palpi slender, not pubescent, penultimate segment of maxillary palpi with one very short seta at apex inside; ligula and paraglossae similar to those of *Platynus*; mentum tooth simple; submentum bisetose on

¹⁾ Part I to Part V were published in Trans. Shikoku Ent. Soc., Vols. 11, 12 (1972-1975).

[[]Ent. Rev. Japan, Vol. XXIX, Nos. 1/2, pp. 15-20, Aug., 1976]

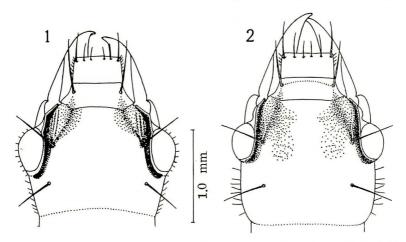
either side. Pronotum (Fig. 6) not fully transverse; basal angles defined; lateral margins unbordered, rather narrowly explanate-reflexed, bisetose or posterior setae absent. Wings well reduced. Elytra with apex not truncate nor dentate; shoulder not distinct; basal pore present; scutellary striole somewhat shortened; interval 3 with three pores. Legs slender, hind tarsi distinctly longer than head width; hind femora with several setae; fore tibiae sulcate; tarsi not wide, mid and hind tarsi bisulcate; segment 4 of fore and mid tarsi well bilobed, lobes at least as long as median length of segment 4 excluding lobes, almost equal or somewhat unequal in fore tarsi, rather unequal in mid tarsi, segment 4 of hind tarsi (Fig. 7) with neither apical nor subapical setae, moderately to fully bilobed, outer lobe fairly longer than inner lobe, tapering apically, not truncate at apex in lateral view; tarsal segment 5 setose or glabrous ventrally; claws simple. Prosternal process pubescent or setose, carinate or rather dull behind; metepisterna short; sternites densely pubescent or setose, sternite 6 with one seta in 3, two setae in 9, on either side. Parameres glabrous. Apical segment of styluses with simple spine on dorsal side, with generally three spines on ventral side.

Range. Asia.

Subgenus Taiwanorupa nov.

Type-species: Rupa uenoi sp. nov. from Formosa.

Description. Hypomera and epipleurae pubescent and pubescence visible in dorsal view beneath lateral margins of pronotum and of elytra.



Figs. 1-2. Heads of Rupa spp. (dorsal pubescence and punctures eliminated).

1. R. (Rupa) japonica Jedlička. 2. R. (Taiwanorupa) uenoi sp. nov.

Head (Fig. 2) with tempora well tumid, almost parallel behind eyes, thence roundly contracted towards neck-constriction; eyes glabrous; mandibles elongate, porrect part of left mandible fully longer than labrum. Pronotum (Fig. 6) without posterior marginal setae. Hind femora with rather numerous short setae near hind margin; mid tibiae of \circ hardly crenate inside; tarsal segment 5 glabrous ventrally.

Range. Asia (Formosa).

Remarks. It is easily distinguishable from the subgenus Rupa of Japan by the well tumid tempora, glabrous eyes, elongate mandibles and the fifth tarsal segment without setae on the ventral side.

Rupa (Taiwanorupa) uenoi sp. nov.

Description. Length 10.0–10.7 mm. Width 3.4–3.8 mm. Pubescence on body a little longer but less dense than in japonica.

Black, half-shiny; labrum and mandibles dark reddish brown. palpi and antennal segments 1 and 2 reddish brown, remaining segments of antennae pale reddish brown, lateral margins of pronotum and lateral margin of elytra black, apical margin of elytra brownish, femora dark reddish brown, apical area less dark, tibiae and tarsi light yellowish brown; ventral side black, reddish in part.

Head (Fig. 2) fairly convex, with shallow depression between eyes on either side; clypeus

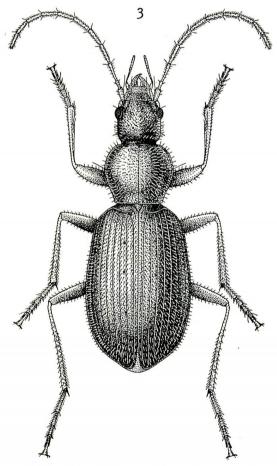
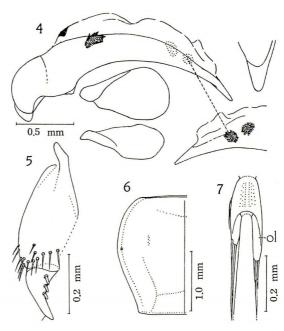


Fig. 3. Rupa (Taiwanorupa) uenoi sp. nov., 3.

not punctate nor pubescent; microsculpture distinct, isodiametric; neck-constriction deep on dorsal side; tempora one and two-thirds to one and three-fourths times as long as eyes; eyes well convex, smaller than in japonica (WH/WF²) =1.40, 1.45 in one $\,^{\circ}$ and one $\,^{\circ}$ respectively); interspace of posterior supraorbital setae slightly narrower than to as wide as interspace of anterior supraorbital setae; frontal impressions deep, distinctly reaching anterior supraorbital setae; frontal lateral furrows fully deep; antennae slenderer than in japonica, reaching basal one-third of elytra, segment 1 two and three-fifths times as long as wide, two-thirds as long as segment 4 which is slightly longer than segment 3, pubescence of segments 1 to 3 longer and harder than in japonica; palpi slenderer than in japonica, apical segment in maxillary palpi four-fifths as long as penultimate segment which is fairly curved; mentum tooth pointed at apex.

Pronotum (Fig. 6) subcordate, well convex, with faint longitudinal

impression at apical twofifths midway between lateral margin and median line on either side in widest before ô ex.. middle, one and threesevenths times as wide as head, one and one-sixth times as wide as long (WP/WH=1.41, 1.44, WP)/LP = 1.16, 1.17,WBP=1.48, 1.54, WBP/ WAP=1.08, 1.09 in one ↑ and one ♀ respectively): punctures larger and denser in and near basal foveae: microsculpture rather faint or somewhat distinct, forming fully transverse meshes, but isodiametric at apical and basal areas; apex truncate, border plete in & ex., indistinct at middle in ♀ ex.; api-



Figs. 4-7. Rupa (Taiwanorupa) uenoi sp. nov. 4. Male genitalia. 5. Female genitalia. 6. Pronotum (pubescence and punctures eliminated). 7. Segment 4 of right hind tarsus. ol: outer lobe.

²⁾ WF: width of narrowest part of frons between eyes.

cal angles not or hardly protrudent, obtuse and rounded; base even and faintly bordered at median area, weakly oblique at lateral areas; basal angles obtuse, slightly dull at apex; lateral margins moderately rounded anteriorly, straightly contracted posteriorly, slightly sinuate before basal angles in \$ ex., not sinuate in \$ ex.; anterior marginal setae at three-sevenths; anterior transverse impression shallow, posterior transverse impression somewhat deep; basal foveae deep, obscurely extending forward up to middle parallel with lateral margins.

Hind coxae without inner seta; hind tibiae fairly curved; fore tarsi distinctly bisulcate on segments 1 and 2 in \$ and \$, less distinctly on segment 3, segment 1 of \$ a little more than twice as long as wide, one and one-seventh times as long as segment 2; mid and hind tarsi deeply bisulcate on segments 1 to 3, interspace of both sulci and interspaces of lateral margins and sulci finely, sharply carinate, segment 4 faintly bisulcate; segment 4 of fore and mid tarsi with fully longer lobes than in *japonica*, lobes at least one and one-half times as long as median length of segment 4 excluding lobes, segment 4 of hind tarsi (Fig. 7) with outer lobe one and one-half times as long as median length of segment 4, one and one-half times as long as median length of segment 4, one and one-half times as long as inner lobe; hind tarsi one and two-sevenths times in \$, one and two-fifths times as long as segment 2, segment 5 four-fifths to six-sevenths as long as segment 1.

Punctures on ventral side of head and thorax and lateral areas of sternite 1 distinct and larger than on sternites 2 to 6; prosternal process rather thick behind; metepisterna one and one-third times as long as wide (L/W=1.33, 1.37 in one \circ and one \circ respectively), front and outer borders complete; sternite 6 of \circ fairly rounded (less rounded than in

3) at apex, inner setae on level of outer setae.

Aedeagus (Fig. 4) four-fifths as long as genital segment, moderately curved, not twisted, apical part somewhat prolonged, apex a little dull; surface not rugose; dorsal fissure terminating a little before basal bulb; basal bulb delimited, with moderate-sized basal lobe; apical lamella one and one-fifth times as long as wide, evenly, gently contracted apically, apex well rounded; right paramere shorter than left paramere.

Basal segment of styluses (Fig. 5) with about fourteen, relatively long setae at apical area, apical segment³⁾ dilated outward at base, with three moderately stout but rather short spines on ventral side, basal one spine separated from outer margin.

Distribution. Formosa.

Type-series. Holotype: ↑, VII. 8, 1961, Fen-ch'i-hu, S.-I. Uéno leg. Paratype: 1♀, VII. 7, 1961, Sekitaku, near Fen-ch'i-hu, S.-I. Uéno leg.

Remarks. The aedeagus contains four, reddish black, dentate, moderate-sized copulatory pieces as shown in Fig. 4: the basal one is dorsal, at basal one-third, the second one is at two-fifths, the third is at apical one-third and the fourth is a little before the third one.

 $^{^{3)}}$ The apical segment of the right stylus is abnormally with a slender secondary spine besides the ordinary one.

Two *Helochares*-species from the Ryukyus (Hydrophilidae)

By Masataka Satô

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Helochares (Helochares) ohkurai M. Satô, sp. nov.

Body oval, moderately convex, polished above and subopaque beneath; dorsal surface brownish black with brownish peripheries, ventral surface dark reddish brown; legs reddish brown except the tarsi; mouth parts, maxillary palpi, tarsi and antennae testaceous, except for blackish antennal club.

Head about 1.5 times as broad as long; surface closely and finely punctate, punctual interspaces being about 1.5 to 2 times diameter of punctures on central portion and about equal to diameter on anterolateral portions, the distinct punctures scattered on antero-lateral portions and on Y-shaped line of the vertex in addition to general punctures; front clypeal suture slightly concave at middle; labrum transverse, closely and minutely punctate; eyes moderate, the distance between them about 3.7 times as broad as the breadth of an eye; maxillary palpi conspicuously long, relative length of three terminal joints as 4: 4: 3. Pronotum about 1.8 times as broad as long, broadest at basal third, thence somewhat distinctly narrowed anteriorly and slightly narrowed posterioly; each angle rounded; the punctures of surface slightly finer than those on the head and their interspaces being about 2 to 3 times own diameter, the distinct punctures systematically arranged as in C-shape on each antero-lateral side. Scutellum closely and finely punctate. Elytra a little broader than pronotum, about 1.3 times as long as broad, broadest at apical third, thence slightly narrowed anteriorly and somewhat distinctly rounded posteriorly; surface closely and finely punctate same as those on the pronotum, each elytron provided with two longitudinal rows of coarse punctures.

Ventral surface covered with aurocinereous, fine and close pubescence; mentum wrinkled on middle and rugosely punctate on lateral sides; submentum closely punctate; prosternum tectiform and triangular-

[[]Ent. Rev. Japan, Vol. XXIX, Nos. 1/2, pp. 21-24, Aug., 1976]

ly produced at posterior middle; mesosternum obtusely mucronate in middle; metasternum distinctly elevated at middle; integument of abdomen shagreened. Legs slender, femora shagreened and clothed with aurocinereous, fine and close pubescence except the knees, claws bent downwards with distinct basal lobe in fore and middle of male and without basal lobe in hind of male and all of female. Male genitalia as figured.

Length: 5.9-6.8 mm; breadth: 3.3 -3.7 mm.

Holotype: \lozenge and allotype: \lozenge , \lozenge hara- \lozenge tomi, Iriomotejima Is., Ryukyus, May 30-31, 1974, M. Sat \lozenge leg. Paratypes: $2 \, \lozenge$, same data as holotype; $1 \, \lozenge \, 1 \, \lozenge$, Mitara, Iriomotejima Is., Aug. 8, 1962, M. Sat \lozenge & Y. Arita leg.; $2 \, \lozenge$, Inaba, Iriomote-jima Is., Aug. 8, 1962, M. Sat \lozenge & Y. Arita leg.; $1 \, \lozenge$, ditto,

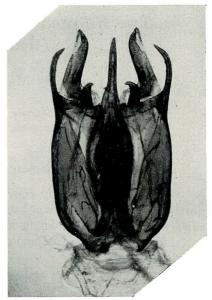


Fig. 1. Male genitalia of *Helochares* (*Helochares*) ohkurai M. Satô.

May 20, 1963, Y. Arita leg.; 1 \Diamond , Shirahama, Iriomote-jima Is., Apr. 7, 1962, S. Tamai leg.; 1 \Diamond 2 \Diamond , Sonai, Yonakuni-jima Is., Ryukyus, Aug. 1, 1962, M. Satô & Y. Arita leg.

Holo-, allo- and 2 paratypes are deposited in the collection of Entomological Laboratory, College of Agriculture, Ehime University and the rest of paratypes in the collection of M. Satò's Biological Laboratory, Nagoya Women's University.

The new species much resembles *Helochares* (*H.*) taprobanicus Sharp in general appearance, but the dorsal punctures are finer and sparser than in the latter. The male genitalia is distinctive also from that species.

The specific name is dedicated to Mr. Masafumi Ohkura, manager of the society, for his anniversary of $60\mathrm{th}$ birth.

Helochares (Crephelochares) abnormalis (Sharp)

Philydrus abnormalis Sharp, 1890. Trans. Ent. Soc. London: 351.

Helochares (Crephelochares) abnormalis: D'ORCHYMONT, 1939. Bull. Ann. Soc. ent. Belgique 79: 159.

Phylhydrus ferrugatus Régimbart, 1903, Ann. Soc. ent. France 72: 57.

Philhydrus nigritulus Régimbart, 1903. Ann. Soc. ent. France 72: 57 (nec Kuwert, 1890).

Enochrus (Lumetus) abnormicollis Zaitzev, 1908. Horae Soc. Ent. Ross. 38: 385. Helochares (Chasmogenus) Regimbarti Knisch, 1924. in Junk Col. Catal. 79: 195. Helochares (Chasmogenus) livornicus: d'Orchymont, 1925. Bull. Ann. Soc. ent.

Belgique 65: 70; D'ORCHY-MONT, 1926. Philip. J. Sci. 30: 379 (nec Kuwert, 1890).

Body elliptical, moderconvex. shining ately above and subopaque beneath: dorsal surface dark reddish brown, but head blackish: ventral surface reddish brown to dark reddish brown; legs reddish brown except the tarsi; antennae, mouth parts. maxillary palpi and tarsi testaceous.

Head closely and finely punctate, punctual interspaces being about 1 to 2 times diameter of punctures on central area and about 2 to 3 times diameter on posterior area, the distinct punctures scattered on Y-shaped line of the vertex in addition to general punctures; eyes moderate, the distance between

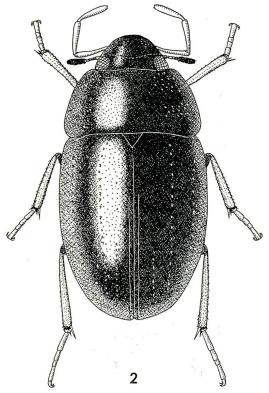


Fig. 2. Helochares (Crephelochares) abnormalis (Sharp).

them about 3 times as broad as the breadth of an eye; maxillary palpi remarkably long, approximate ratio of each length as 5:4.5:4. Pronotum closely and finely punctate same as those on the posterior area of head, the distinct punctures obliquely scattered on antero-lateral portion and transversely so on lateral side just behind the middle. Elytra closely and finely punctate, the punctures slightly finer and sparser than those on the pronotum, each elytron provided with a sutural stria and three longitudinal series of coarse punctures, inner one of the latter recognized at apical portion.

Ventral surface clothed with cinereous, fine and close pubescence; mentum slightly hollowed at middle, distinctly wrinkled on central area and closely and rugosely punctate on lateral areas; submentum sparsely and finely punctate; prosternum slightly medio-carinate and triangularly produced at posterior middle; mesosternum laminate between mesocoxae;

metasternum shagreened, but smooth transversely and narrowly along posterior margin, bearing a mediolongitudinal line and semicircularly elevated at central area; integument of abdomen shagreened. Legs slender, femora clothed with cinereous fine and close pubescence and shagreened in the integument except the knees; claws slightly dilated at base. Male genitalia as figured. Differences between male and female not distinguishable in general feature.

Length: 3.4– $3.8 \, \text{mm}$; breadth: 1.8– $1.9 \, \text{mm}$.

Specimens examined: 1 &, Shin-mura, Amami-Ôshima Is., Ryukyus, July 17, 1954, S. HISAMATSU leg.; 5 exs., Khon Kaen, Thailand, Oct.-Dec., 1972, M. SATÔ leg.

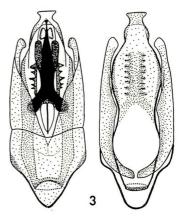


Fig. 3. Male genitalia of Helochares (Crephelochares) abnormalis (SHARP).

Distribution: Ceylon, Thailand, Cambodia, Vietnam, Malay Peninsula, Sumatra, Java, Celebes, Borneo, Philippines (Luzon Is.), Ryukyus (Amami-Ôshima Is.).

Although the present species is widespread in Southeast Asia, it is new to the fauna of the Ryukyu Archipelago, as it presents the northern limit.

Finally, I am very grateful to Mr. Sadanari Hisamatsu of Ehime University for his kind assistance in the material.

On the Subgenus *Parascatonomus* from Japan and Taiwan

(Col., Scarabaeidae, Onthophagus LATREILLE)

By SIZUMU NOMURA

In this paper, 12 species and 3 subspecies of the subgenus *Parascatonomus* from Japan and Taiwan are revised, in which 4 species and 3 subspecies are new to science, 6 species are transferred to this group from *Onthophagus* s. str.

Before going further the author wishes to express his sincere appreciation to Messrs. Ryo Aoki, Mitsuo Goto, Kimio Masumoto, Satoru Nagao, Masataka Satô, Kazuhiro Sawada and Taichi Shibata for their kindness and supplying the specimens for this study.

Genus Onthophagus Latreille Subgenus Parascatonomus Paulian

Parascatonomus Paulian, 1932, Bull. Soc. ent. Fr.: 205.

Onthophagus (Parascatonomus): Paulian, 1945, Col. Scarab. de l'Indochine: 101; Balthasar, 1963, Monogr. Scarab. u. Aphodiidae d. Palaeark. u. Oriental. Region, 2: 164.

Type: Onthophagus discedens Sharp (Parascatonomus politus Paulian).

This subgenus may be characterized as follows:

First lamella of the antenna is large, crescent-shaped in profile. Head without frontal carina, sometimes bears a strong or fine one, or a conical elevation in the middle. Front angles of the pronotum are rounded, not angulate. Metasternum is produced or vertical in front. Front tibia of the male frequently with a short spur-like projection at the tip of inner margin, sometimes without it.

This subgenus was described by Paulian in 1932 as a genus and treated by the same author in 1945 as a subgenus of the *Onthophagus* Latreille. In 1963, 5 species were contained to this group by Balthasar (tricornis Wiedemann, vitalisi Boucomont, accedens Lansberg, dux Sharp, egregius Arrow). In addition to those species, I refer 10 species in the present paper to this group. Those species have in common the protruded or vertical metasternal apex, the rounded front angles of the pronotum and the characteristic male genitalia as figured. And many species are found in carrion or plant refuse.

[[]Ent. Rev. Japan, Vol. XXIX, Nos. 1/2, pp. 25-33, pl. 1, Aug., 1976]

Following 16 species having the above-mentiond metasternal and pronotal characters in the descriptions probably belong to *Parascatonomus*. I consider that more numerous species of the *Onthophagus* s. str. may be transferred to this group.

O. rudis Sharp (A¹): 185; B²): 200, 505), coeruleicollis Arrow (A: 185; B: 200, 314), regalis Arrow (A: 186; B: 200, 499), gibbicollis Lansberg (A: 188; B: 181, 367), gangeticus Gillet (A: 190; B: 201, 364), abacus Boucomont (A: 193; B: 201, 260), amphinasus Arrow (A: 195; B: 198, 270), necrophagus Arrow (A: 196; B: 202, 447), gravis Walker (A: 196; B: 198, 373), igneus Vigors (A: 198; B: 200, 387), bisectus Arrow (A: 201; B: 199, 293), vividus Arrow (A: 245; B: 173, 584), sarawacus Harold (B 202, 511), semiaureus Lansberg (B: 203, 517), aurifex Harold (B: 204, 282), funebris Boucomont (B: 202, 357).

Key to the species and subspecies.

- 1 (10) Pronotum wholly or partly granulate, produced or feebly elevated in the middle of anterior part.
- 2 (3) Head with a conical tubercle at the middle in front of eyes and two horns at sides of posterior carina. Pronotum wholly granulate, with base margined. 11-17 mm. Japan (Honshu, Kyushu), Taiwan, China, Indo-China, Burma, India, Java.tricornis (Wiedemann)
- 3 (2) Head without horn. Base of pronotum not margined.
- 4 (5) Pronotum granulate on each side, punctate in the middle, with a median transverse process and a pair of large round impressions before middle. Posterior carina of head rather short, not touched near eyes. 7-9.5 mm. Amami-Ôshima.....shibatai Nakane
- 5 (4) Pronotum with a short, round process or a feeble elevation at the middle of anterior part.
- 6 (9) Pronotum wholly, coarsely, elytral intervals finely granulate.
- 8 (7) Dorsal surface of body blackish, shining, without metallic lustre. Pygidium weakly convex in male, moderately punctate, with cuticule coriaceous, feebly shining. Posterior carina of head short, pointed in the middle, obsolete at sides, frontal carina fine. 5.5-6 mm. Okinawa Is.itoi Nomura sp. nov.
- - a. Head and pronotum with purplish lustre. Dorsal surface finely pubescent on each side, almost bare in the middle. 6-9.5 mm. Taiwan, China............

¹⁾ A: Arrow, 1931, Fauna Brit. India, Coprinae.

²⁾ B: Balthasar, 1963, Monogr. Scarab. u. Aphodiidae, 2.

- subsp. acuticollis Gillet b. Head and pronotum without metallic lustre. Dorsal surface wholly, distinctly pubescent. 5.2-9.5 mm. Ishigaki Is. & Iriomote Is. 10 (1) Pronotum punctate, rarely granulate on each side near front angles. very feebly impressed, not produced in the middle of anterior part, sometimes without impression. 11 (12) Anterior margin of head deeply excised, with a short, sharp process at the middle. Pronotum very sparsely, finely punctate, almost smooth in the middle, distinctly punctate on each side. Dorsal surface without pubescence, almost bare. 8-13 mm. Ishigaki Is., Taiwan, China, Indo-China, Malaya, Burma, India, Sikkim, Java, Sumatra, Borneo......discedens Sharp 12 (11) Anterior margin of head rounded or feebly truncated. Dorsal surface more or less pubescent. 13 (16) Elvtral intervals smooth and shining. Elytra and sides of pronotum finely pubescent. Posterior carina of head obsolete. 14 (15) Head and pronotum with purplish or bronze lustre. Pronotum very finely, sparsely punctate in the middle, somewhat coarsely, but sparsely on each side. 4-6 mm. Ishigaki Is. & Iriomote Is.murasakianus Nomura sp. nov. 15 (14) Head and pronotum without metallic lustre, sometimes with faint purplish one. Pronotum coarsely, densely punctate on each side. ... nitidus WATERHOUSE a. Pronotum distinctly punctate in the middle. Hairs of elytra noticeable. 5-7.5 mm. Japan (Honshu, Shikoku, Kyushu)...subsp. nitidus Waterhouse b. Pronotum finely punctate in the middle. Hairs of elytra very minute and indistinct. 6.5-8 mm. Japan (Yakushima). subsp. yakushimanus Nomura nov. 16 (13) Elytral intervals finely coriaceous and feebly shining. 17 (20) Dorsal surface almost bare. Pronotum finely punctate in the middle, coarsely, densely punctate or granulate on each side. 18 (19) Head and pronotum with faint bronze or purplish lustre. Pronotum punctate on each side, with a median groove on basal half. 6-7.5 mm. Taiwan, China. formosanus Gillet 19 (18) Head and pronotum black, shining, without metallic lustre. Pronotum granulate on each side near front angles, very feebly depressed in the middle of anterior part, without distinct median groove, 6.5-8 mm. Taiwan, China. kuatunensis Balthasar 20 (17) Dorsal surface pubescent, sometimes pronotum almost bare in the middle. Pronotum with intermixed fine and coarse punctures. 21 (22) Head feebly elevated in the middle, with a smooth point at the tip of the elevation, posterior margin smooth and feebly elevated, not carinate. Head
- 22 (21) Head feebly elevated in the middle, densely punctate, without smooth point.

 Posterior margin of head obsoletely carinate......carnarius Nomura sp. nov.
 - a. Pronotum pubescent on each side, almost bare in the middle. Head and pronotum shining, sometimes with very faint purplish lustre. 4.5-6.5 mm.

and pronotum with faint bronze lustre. 5.7 mm. Yonaguni Is.aokii Nomura sp. nov.

Amami-Ôshima & Tokara Is. (Nakanoshima)...subsp. carnarius Nomura nov. b. Pronotum and elytra wholly pubescent. Head and pronotum shining, sometimes with faint bronze lustre. 4.8-5.5 mm. Okinawa Is. & Kumejima.subsp. okinawanus Nomura nov.

Onthophagus (Parascatonomus) tricornis (Wiedemann) (Pl. 1, fig. 1)

Copris tricornis Wiedemann, 1823, Zool. Mag., 2 (1): 10.

Onthophagus tricornis: BOUCOMONT, 1914, Ann. Soc. ent. Fr., 83: 270; ARROW, 1931, 1. c.: 184, 198; PAULIAN, 1945, 1. c.: 88, 104; MASUMOTO, 1967, Nature and Insects, 2 (3): 24.

O. (Parascatonomus) tricornis: Balthasar, 1963, l. c.: 190, 560; Nakane, 1956, Ent. Rev. Japan, 7 (2): 53; Nomura, 1973, Ent. Rev. Japan, 25 (1/2): 48.

Onthophagus crassus Sharp, 1875, Col. Hefte, 14: 51.

Onthophagus rectinicornis Fairmaire, 1878, Ann. Soc. ent. Fr., (5) 8: 96.

Hab.: AICHI: Shinshiro (X); FUKUOKA: Fukuoka (IX), Mt. Hiko (VII), Mizuki (VI); SAGA: Yobuko (VII); NAGASAKI: Nagasaki; TAIWAN: Puli (VIII), Kenting Park (VIII).

Distr.: Japan (Honshu, Shikoku, Kyushu), Taiwan, China, Indo-China, Malaya, Burma, India, Java.

Onthophagus (P.) shibatai Nakane

Onthophagus shibatai Nakane, 1960, Ent. Rev. Japan, 12 (1): 2; Masumoto, 1967, 1.c.: 24.

Hab.: Amami-Ôshima: Kinose (V), Ikari (V), Yuwan (VI).

Distr.: Amami-Ôshima.

Onthophagus (P.) anguicorius Boucomont

Onthophagus anguicorius Boucomont, 1914, Ann. Mus. Civ. Genova, 6 (46): 211; Balthasar, 1935, Folia Zool. Hydrob., 8: 328; Paulian, 1945, 1. c.: 106; Balthasar, 1963, 1. c.: 201, 274; Nomura, 1973, 1. c.: 48.

Onthophagus midorianus Matsumura, 1938, Ins. Matsum., 12 (2/3): 59.

Hab.: TAIWAN: Puli (V), Kenting Park (VII, VIII).

Distr.: Taiwan, S. China, Indo-China.

Onthophagus (P.) itoi Nomura sp. nov. (Pl. 1, fig. 2)

Oval, convex, piceous, shining, with ventral surface rufo-fuscous, legs rufous. Pronotum and elytra clothed with short fulvous hairs, ventral surface and legs bearing rather long ones.

Head short, bluntly angular before eyes, rounded and slightly reflexed at anterior margin. Clypeus transversely rugose, separated from forehead by a very fine transverse carina, forehead rugosely punctate, posterior carina feebly elevated, with a pointed tip at the middle. Pronotum wholly granulate, with smooth area near middle of base, two feeble depressions at the middle of anterior part and a median longitudinal groove on basal half, front angles rounded, lateral margins feebly sinuate behind, base obtusely angulate and elevated at the tip. Elytra shallowly striate, strial punctures sparse, intervals feebly convex and finely, sparsely granulate. Pygidium weakly convex in male, moderately punctate, with cuticule coriaceous, feebly shining. Metasternal process blunt. Front tibia gently curved in male. Length: 5.5 mm.; breadth: 3.3 mm.

Holotype: ♦, paratype: ♀, Yona, Okinawa Is., 7 July 1964, leg. T. Ito. Holotype in coll. S. Nomura, paratype in coll. T. Shibata.

Distr.: Okinawa Is.

Onthophagus (P.) acuticollis acuticollis Gillet

Onthophagus acuticollis Gillet, 1927, Bull. Ann. Ent. Belg., 67: 255; Balthasar, 1963. I. c.: 238, 263; Nomura, 1973, I. c.: 49.

Onthophagus marani VSETECKA, 1942, Acta Ent. Mus. Nat. Pragae, 20: 255.

Hab.: TAIWAN: Shihmen (VII), Lienhwachi (VI), Liukuei (IV), Kenting Park (VI-IX).

Distr.: Taiwan, China.

Onthophagus (P.) acuticollis sakishimanus Nomura subsp. nov. (Pl. 1, fig. 3)

Differs from the nominate form in the following points: Dorsal surface black, less shining. Head and pronotum without purplish lustre. Pronotum more coarsely punctate in the middle, granulate on each side. Pygidium coarsely punctate, with a median longitudinal smooth line. Length: 5.2-9.5 mm.; breadth: 3.0-5.2 mm.

Distr.: Ishigaki Is. & Iriomote Is.

Onthophagus (P.) discedens Sharp (Pl. 1, fig. 4)

Onthophagus discedens Sharp, 1875, Col. Hefte, 14: 49; Arrow, 1931, 1. c.: 259; Balthasar, 1935, Folia Zool. Hydrob., 8: 330.

O. (Parascatonomus) discedens: Paulian, 1945, l.c.: 88, 101; Balthasar, 1963, l.c.: 190, 333.

Parascatonomus politus Paulian, 1932, Bull. Soc. ent. Fr.: 205.

Hab.: TAIWAN: Funchiihu (26 VII 1974, leg. N. Ito); ISHIGAKI IS.: Mt. Banna (28 V 1973, leg. K. Sugino), Mt. Omoto (15 X 1973, leg. T. Mizunuma).

Distr.: Ishigaki Is. (new record), Taiwan (new record), China, Indo-China, Malaya, Burma, India, Java, Sumatra, Borneo.

Onthophagus (P.) murasakianus Nomura sp. nov. (Pl. 1, fig. 5)

Oval, convex, head and pronotum crimson, with strong purplish lustre, elytra black, subopaque, ventral surface piceous, legs rufous to rufo-fuscous, antennal club pale fulvous. Sides of pronotum and entirety of elytra covered with short fulvous hairs, ventral surface and legs with brownish and fulvous hairs.

Head short, subpentagonal, with anterior margin rounded and slightly reflexed. Surface of head densely, rugosely punctate in front, coarsely, normally behind, slightly elevated in the middle. Fronto-clypeal suture barely noticed, not carinate, posterior margin of head with short obsolete carina. Pronotum finely, sparsely punctate on each side, microscopically in the middle, depressed in the middle of anterior part, with a median longitudinal groove on posterior half very feebly impressed, front angles rounded, lateral margins weakly sinuate behind, base feebly arcuate, obtusely angulate in the middle, elevated at the tip. Elytra shallowly striated, each stria sparsely punctate, intervals feebly convex, coarsely punctate near striae, sparsely in the middle. Pygidium slightly convex in male, nearly flat in female, coarsely, rather sparsely punctate. Metasternum obtusely protrude in front. Front tibia of male moderately curved, with a short spur-like projection at the tip of inner side. Length: 5.4–6.2 mm.; breadth: 3.1–3.8 mm.

Holotype: \lozenge , paratypes: $1 \lozenge$, $1 \lozenge$, Mt. Omoto, Ishigaki Is., 28 May 1974, leg. K. Sawada; $3 \lozenge$, ditto, 2-4 Aug. 1962, leg. Y. Hama; $1 \lozenge$, Ootomi, Iriomote Is., 21 June 1970, leg. S. Miyake; $1 \lozenge$, Kanpira, Iriomote Is., 12 July 1975, leg. R. Yano; $2 \lozenge$, ditto, 30 March 1975, leg. M. Tanaka; $1 \lozenge$, Ushukumori, Iriomote Is., 31 July 1965, leg. M. Yasui. Holotype in my coll.

Distr.: Ishigaki Is. & Iriomote Is.

This is nearly related to O. horni Balthasar, but the front tibiae are normally dentated and the pronotal median groove is very feebly depressed.

Onthophagus (P.) nitidus Waterhouse (Pl. 1, fig. 6)

Onthophagus nitidus Waterhouse, 1875, Trans. Ent. Soc. London: 78; Balthasar, 1935, Folia Zool. Hydrob., 8: 337; Matsumura, 1937, Ins. Matsum., 2: 150; Nakane, 1956, 1. c.: 53; Balthasar, 1963, 1. c.: 203, 453.

Hab.: Yamagata: Tobishima; Tochigi: Ootawara (VIII); Сніва: Mt. Tomisan (VIII); Токуо: Mt. Takao (VII, VIII), Hikawa (VII), Niijima (VI), Toshima (VI), Kouzushima (V), Mikurajima (VI, VII); Niigata: Sado (VII), Kakizaki (VI), Awashima, Sarusawa (IX), Momozakihama, Kurokawa, Kaji (IX); Nagano: Fujimi (VII); Міе:

Mt. Gozaisho (VI), Misugi (VII); Osaka: Minoo; Hyogo: Hyonosen, Mimuroyama; Tokushima: Kamiryo (VII); Fukuoka: Mt. Hikosan (IX); Nagasaki: Iki Is. (VIII).

Distr.: Japan (Honshu, Shikoku, Kyushu).

Onthophagus (P.) nitidus yakushimanus Nomura subsp. nov.

This form may be separated from the nominate form in the very fine and sparse punctures on the pronotum and very minute and indistinct hairs on the dorsal surface. Length: 6.0-7.5 mm.; breadth: 3.5-4.0 mm.

Holotype: \lozenge , paratypes: $2\, \lozenge$, $1\, \lozenge$, Miyanoura, Yakushima, 18 July 1968, leg. H. Nomura. Holotype in my coll.

Distr.: Japan (Yakushima).

Onthophagus (P.) formosanus Gillet

Onthophagus formosanus Gillet, 1924, Ann. Soc. Sci. Brux., 44: 67; Balthasar, 1963, 1. c.: 205, 353; Nomura, 1973, 1. c.: 48.

Onthophagus yanoi Matsumura, 1938, l. c.: 62.

Hab.: TAIWAN: Talin (Taihorinsho), Chokakurai (VI), Nanshanchi (IV), Liukuei (IV), Neiwan (VII), Shihmen (VII), Kenting Park (VI).

Distr.: Taiwan.

Onthophagus (P.) kuatunensis Balthasar

Onthophagus kuatunensis Balthasar, 1942, Ent. Blätter, 38: 120; Balthasar, 1963, l. c.: 202, 408; Nomura, 1973, l. c.: 48.

Hab.: TAIWAN: Fenchiihu (VI).

Distr.: Taiwan, China.

Onthophagus (P.) aokii Nomura sp. nov. (Pl. 1, fig. 7)

Oval, piceous, with legs and anterior part of head rufo-fuscous to rufous, antennal club rufo-fulvous. Head and pronotum with faint bronze lustre, elytra feebly shining. Sides and anterior part of pronotum and entirety of elytra clothed with fine, fulvous hairs, ventral surface and legs with brownish and fulvous hairs.

Head broad, subpentagonal, narrowly rounded at anterior margin, roundly protrude in front of eyes. Clypeus rugosely, genae and frons coarsely, densely punctate, fronto-clypeal suture invisible, elevated in the middle, posterior carina nearly flat, impunctate. Pronotum with intermixed very fine and coarse punctures, the coarse punctures rather minute and sparse in the middle, coarser and denser on each side, the disc with a slight median groove on posterior half, without depression

at the middle of anterior part. Front angles of pronotum rounded, lateral margins sinuate behind, base obtusely angulate in the middle, elevated at the tip. Elytra shallowly striated, strial punctures not impressed, weakly incised to intervals, which are feebly convex, finely coriaceous, minutely, somewhat densely punctate. Pygidium strongly convex in male, coarsely punctate. Metasternum obtusely protrude in front. Front tibia of male somewhat strongly curved, with a spur-like projection at the end of inner side. Length: 5.7 mm.; breadth: 3.5 mm.

Holotype: 3, Yonaguni Is., 9 Aug. 1963, leg. R. Aoki, in my coll.

Distr.: Yonaguni Is.

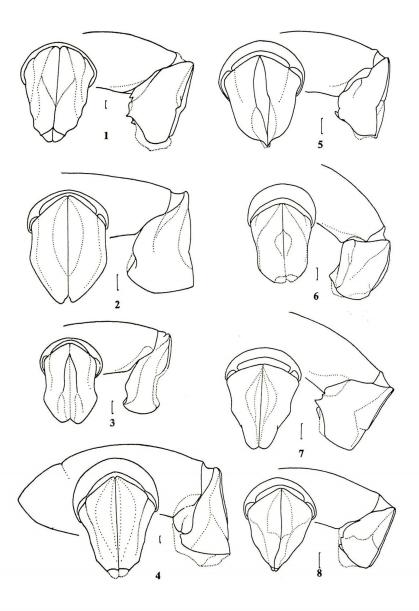
This species somewhat resembles O. (P.) nitidus Waterhouse, but the elytral intervals are finely coriaceous and less shining, the pronotum with intermixed fine and coarse punctures, the head and pronotum with faint bronze lustre, the posterior margin of head is smooth and feebly elevated, not carinate.

Onthophagus (P.) carnarius Nomura sp. nov. (Pl. 1, fig. 8)

Oval, black to piceous, with legs rufo-piceous, antennal club rufo-fulvous, head and pronotum shining, with faint dark-purplish lustre, elytra feebly shining. Ventral surface and legs clothed with brownish or fulvous hairs, sides of pronotum with very minute hairs, almost bare, elytra with fulvous short ones.

Head short, subpentagonal, broadly rounded and slightly reflexed at anterior margin, obtusely angulate in front of eyes. Clypeus transversely rugose, genae rugosely, frons rather sparsely punctate, fronto-clypeal suture invisible, slightly elevated in the middle, posterior carina short. but distinctly elevated. Pronotum with intermixed fine and coarse punctures, the latters rather minute and sparse in the middle, coarser and denser on each side, the disc with two faint depressions at the middle of anterior part and a median longitudinal groove on posterior half. Front angles of pronotum rounded, lateral margins sinuate behind, base obtusely angulate in the middle, elevated at the tip. Elytra shallowly striated, strial punctures sparse, intervals feebly convex, finely, sparsely punctate. Pygidium gently convex in male, feebly so in female, densely punctate, with an indistinct median smooth line. Metasternum obtusely protrude in front. Front tibia moderately curved in both sexes, with a short spur-like projection at the tip of inner side in male. Length: 5.4-6.0 mm.; breadth: 3.2-3.5 mm. (Amami-Oshima); length: 4.5mm.; breadth: 2.7 mm. (Nakanoshima).

Holotype: \Diamond , Naze, Amami-Ôshima, 4 May 1960, leg. T. Shibata; paratypes: $1 \circ$, Santaro-pass, Amami-Ôshima, 7 May 1960, leg. T. Shibata; $1 \circ$, Mt. Yuwan, Amami-Ôshima, 5 June 1963, leg. H. Yamazaki; $1 \circ$, Hatsuno, Amami-Ôshima, 14 July 1970, leg. K. Маѕимото; $1 \circ$, $1 \circ$, Naze, Amami-Ôshima, 9 July 1961, leg. Y. Susumu,



(S. Nomura del.)



Distr.: Amami-Ôshima & Tokara Is. (Nakanoshima).

This species is somewhat nearly allied O.(P.) nitidus Waterhouse, but the elytral intervals are finely coriaceous and less shining, the pronotum with intermixed fine and coarse punctures.

Onthophagus (P.) carnarius okinawanus Nomura subsp. nov.

Pronotum and elytra entirely covered with short fulvous hairs. Head and pronotum with faint bronze lustre. Basal margin of pronotum less elevated at the tip of median obtuse angle. Length: 4.7–5.5 mm.; breadth: 3.0–3.4 mm.

Holotype: ♀, Kumejima, 27 March 1935, leg. C. Nagaoka, in my coll.; paratype: 1♀, Sueyoshi, Okinawa Is., 25 July 1967, leg. I. Iwata, in coll. K. Masumoto.

Distr.: Okinawa Is. & Kumejima.

Explanation of Plate 1.

- Fig. 1. Onthophagus (Parascatonomus) tricornis (Wiedemann) (Kyushu)
 - 2. O. (P.) itoi Nomura sp. nov. (Okinawa Is.)
 - 3. O. (P.) acuticollis sakishimanus Nomura subsp. nov. (Iriomote Is.)
 - 4. O. (P.) discedens SHARP (Taiwan)
 - 5. O. (P.) murasakianus Nomura sp. nov. (Ishigaki Is.)
 - 6. O. (P.) nitidus nitidus Waterhouse (Honshu)
 - 7. O. (P.) aokii Nomura sp. nov. (Yonaguni Is.)
 - 8. O. (P.) carnarius carnarius Nomura sp. nov. (Amami-Ôshima)

On the Genus *Mimela* from Japan and Taiwan (Col., Scarabaeidae)

By Sizumu Nomura & Hirokazu Kobayashi

In the paper, 13 species and 4 subspecies of the genus *Mimela* from Japan and Taiwan are examined and shown in the key and figures. In which, 2 subspecies from Taiwan are new to science and *Mimela yonaguniensis* is raised to the specific status from subspecific rank. Three Japanese species (costata Hope, testaceipes Motschulsky and holosericea Fabricius) are generally treated with this genus by Ohaus, Machatschke and others, but in this paper these species are omitted because of having simple claws of the middle legs and other different characters.

Before going further, we wish to express our deepest appreciation to Dr. Yoshi-Hiko Kurosawa, Messrs. Toshiaki Kuroda, Kimio Masumoto, Kiyoyuki Mizusawa and Taichi Shibata for their kind offer of the invaluable specimens.

Genus Mimela Kirby

Mimela Kirby, 1825, Trans. Linn. Soc. London, 14:101; Burmeister, 1844, Handb. d. Ent., 4 (1): 285; Burmeister, 1855: ibid. 4 (2): 506; Reitter, 1903, Verh. naturf. Ver. Brünn, 41: 51; Ohaus, 1908, Deutsch. Ent. Zeitschr.: 634; Arrow, 1917, Fauna Brit. India, Lamell., 2: 102; Ohaus, 1943, Deutsch. Ent. Zeitschr.: 65; Medvedev, 1949, Fauna USSR, Col. 10 (3): 89; Machatschke, 1952, Beitr. Ent., 2: 333; Paulian, 1959, Ann. Soc. ent. Fr., 128: 105; Machatschke, 1972, Junk Col. Cat. Supplementa, pars 66, Rutelinae: 177.

Type: Mimela chinensis KIRBY (1825).

Key to the species and subspecies.

- 1 (18) Prosternal process bent forward angularly, with posterior margin frequently visible in profile. Body oval, convex, elytral intervals almost flat.
- 2 (9) Lateral margins of elytra distinctly flattened. Sides of abdominal sternites not carinate.
- 3 (6) Base of pronotum completely margined.

and tibiae red-brown. Clypeus more noticeably convex in the middle. notum, scutellum and pygidium finely, sparsely punctate. Pygidium strongly convex in male. Hind femora stout, about 2 times as long as its breadth. 17 mm. (Fig. 5) Taiwan.sauteri Ohaus 6 (3) Base of pronotum not completely margined. 7 (8) Large (20.5 mm.), deep green, with ventral surface, femora and tibiae red-brown. Elytra coarsely, pygidium sparsely punctate. 20.5 mm. (Fig. 6) Ishigaki Is., Yonaguni Is.yonaguniensis Nomura 8 (7) Small (10-11.5 mm.), deep green, rarely reddish purple or deep blue, with femora, sometimes ventral surface and sides of pronotum red-brown. Pygidium densely punctate.ignicauda Bates a. Elytra finely punctate. 10-11.5 mm. (Fig. 7) Taiwan.subsp. ignicauda Bates b. Elytra coarsely punctate. 10.5-11.5 mm. (Fig. 8) Iriomote Is.subsp. sakishimana Nomura 9 (2) Lateral margins of elytra not flattened. 10 (13) Basal 2 or 4 abdominal sternites longitudinally carinate at each side. Mesosternum not produced between middle coxae. 11 (12) Yellowish brown. Basal 2 abdominal sternites carinate. Hind femora 2.3 times as long as its breadth. 15-18 mm. (Fig. 9) Taiwan, China..... testaceoviridis Blanchard 12 (11) Dorsal surface deep green, with femora yellow-brown. Basal 4 abdominal sternites carinate at each side. Hind femora about 2 times as long as its breadth. ····ishigakiensis (SAWADA) a. Elytra coarsely punctate. Pygidium strongly convex in male, entirely yellowbrown. Ventral surface reddish brown. 18-20 mm. (Fig. 1) Ishigaki Is......subsp. ishigakiensis (SAWADA) b. Elytra rather finely punctate. Pygidium strongly convex in male, yellowbrown on apical half. Ventral surface reddish brown, with median area of metasternum darker or coppery green. 21-23 mm. (Fig. 2) N. Taiwan..... subsp. formosana nov. c. Elytra finely punctate. Pygidium moderately convex in male, entirely deep Ventral surface dark coppery green, with golden purple lustre. 20 mm. (Fig. 3) C. Taiwan.....subsp. kurodai nov. 13 (10) Abdominal sternites not carinate. Mesosternum very shortly produced between middle coxae. 14 (17) Pronotum not completely margined at base, without median longitudinal impression. 15 (16) Hind femora less than 2 times as long as its breadth, strongly excised at posterior margin and angulate at apex. Clypeus subtrapezoid, narrowed to

5 (4) Dorsal surface deep green, lateral margins of pronotum, ventral surface, femora

16 (15) Hind femora 2.2 times as long as its breadth, feebly emarginate at posterior margin, rounded at apex. Clypeus quadrangular, subparallel-sided. Dorsal

- - a. Pygidium strongly, rugosely punctate, with a median longitudinal line. Abdomen and legs, sometimes greater part of ventral surface yellow-brown. 15-16 mm. (Fig. 12) Korea, China.subsp. fusania BATES
 - b. Pygidium weakly, not rugosely punctate, without median line. Ventral surface blackish brown, with purple lustre. Legs yellow-brown, with femora fuscous in the middle. 15-17.5 mm. (Fig. 13) Taiwan.subsp. taiwana Sawada

18 (1) Prosternal process bent forward obtusely, with posterior margin not visible in profile. Body elongate oval, less convex. Base of pronotum completely margined. Lateral margins of elytra distinctly flattened, intervals somewhat

alternately convex. Sides of abdominal sternites not carinate.

19 (20) Greater part of elytra and ventral surface of thorax yellow-brown. Pronotum not rugose in both sexes, with median longitudinal impression fine, sometimes vanished. Pygidium closely punctate, opaque, densely clothed with long grayish white hairs. 12-13 mm. (Fig. 14) Japan......difficilis (WATERHOUSE)

- 20 (19) Greater part of dorsal surface deep green, very rarely golden purple. Pronotum sometimes rugose, with median longitudinal impression noticeable. Pygidium finely punctate, bears several long hairs near apex, the rest part almost bare.
- 22 (21) Middle femora with sparse hairs. Pygidium finely, somewhat densely punctate, less shining. Outer claw of front legs simple, not cleft.
- 23 (24) Frons lacks hair near eyes. Marginal ridges of elytra stout, epipleura lacks or rarely has a row of short bristles. Dorsal surface deep green. Pronotum in female generally rugose. 12.5-17 mm. (Fig. 16) Japan.inouei Nomura
- 24 (23) Frons bears three hairs on each side near eye. Marginal ridges of elytra somewhat narrow, epipleura with a row of distinct bristles. Dorsal surface deep green, rarely golden purple. Pronotum rarely rugose, in male shining, in female less shiny. 13-17 mm. (Fig. 17) Japan. flavilabris (WATERHOUSE)

Mimela splendens (Gyllenhal) (Pl. 3, fig. 4)

Melolontha splendens Gyllenhal, 1817, Schönh. Syn. Ins., 1 (3), app.: 110. Mimela splendens: Ohaus, 1908, 1. c.: 644; Arrow, 1917, 1. c.: 107; Ohaus, 1943, 1. c.: 72; Medvedev, 1949, 1. c.: 91, 93; Nomura, 1963, Icon. Ins. Jap. 3, Col.: 131, pl. 66, f. 3; Machatschke, 1972, 1. c.: 182.

Anomala splendens: Sawada, 1950, Kontyù, 18 (3): 10, 11; Sawada, 1950, Journ. Agr. Sci. Tokyo Nogyo Daigaku, 2 (2): 271.

Mimela lucidula Hope, 1835, Trans. Ent. Soc. London: 113; Reitter, 1903, 1. c.: 53; Lewis, 1895, Ann. Mag. Nat. Hist., (6) 16: 402; Niijima et Kinoshita, 1923, Res. Bull. Coll. Agr., Hokkaido Imp. Univ., Sapporo, Japan, 2 (2): 117.

Mimela gaschkevitchi Motschulsky, 1857, Et. Ent., 6: 32.

Mimela simplex BATES, 1866, Proc. Zool. Soc. London: 345.

forma corrusca Heyden, 1887, Horae Soc. Ent. Ross., 21: 253.

forma cyanicollis Ohaus, 1915, Stett. Ent. Zeit., 76: 96.

forma takemurai SAWANO et KOMETANI, 1939, Konchu-kai, 7 (62): 205.

forma murasaki Снџјо, 1940, Nippon no Kôchû, 3 (2): 76.

Hab.: Тосніді: Ootawara (V, VI): Saitama: Tokorozawa (VI), Hannô (VI, VII); Токуо: Meguro (VI), Kunitachi (VI), Murayama (VI); Kanagawa: Noborito (VI); Niigata: Kurokawa (VII), Imakawa (VI), Shibata (VI), Niigata, Sado; Shizuoka: Ohdaru spa (VI): Aichi: Toyohashi (VI); Gifu: Gifu; Mie: Mt. Fujiwara (VII), Iga, Yunoyama (VI); Kyoto: Kyoto, Yamazaki (VI); Osaka: Minoo (VI); Hyogo: Hyonosen (VI); Wakayama: Kanaya (VII); Tokushima: Kamiryo (VI, VII); Еніме: Imabari (VI, VII), Mt. Ishizuchi (VI); Fukuoka: Mt. Hikosan (VI, VII); Oita: Beppu; Kumamoto: Mt. Ichifusa (VII); Kagoshima: Kurino spa (VII), Kagoshima.

Taiwan: Chiahsien (Kosempo, V), Fengshan (Hoozan, IX), Suisharyo (X), Kangkou (Kankou, V), Lienhwachi (IV, V), Qixinsha (VII), Puli (VII), Nanshanchi (V).

Distr.: Japan (Honshu, Shikoku, Kyushu), Taiwan, Quelpart Is., Korea, E. Siberia, China, Indo-China, Burma.

Mimela sauteri Ohaus (Pl. 3, fig. 5)

Mimela sauteri Ohaus, 1938, Stett. Ent. Zeit., 99: 269, f. 13; Онаиs, 1943, l. c.: 73; Маснатьснке, 1972, l. c.: 182.

Hab.: Taiwan: Kangkou (Kankou), Hengchun (Koshun, V), Nanshanchi (V), Yangmingshan (VII).

Distr.: Taiwan.

Mimela yonaguniensis Nomura status nov. (Pl. 3, fig. 6)

Mimela sauteri yonaguniensis Nomura, 1965, Ent. Rev. Japan, 18 (1): 5; Machats-Chke, 1972, 1. c.: 182.

Mimela ishigakiensis yonaguniensis: Nomura, 1973, Ent. Rev. Japan, 25 (1/2): 19. Hab.: Urabedake, Yonaguni Is. (V); Mt. Banna, Ishigaki Is. (V).

Distr.: Yonaguni Is. & Ishigaki Is.

Mimela ignicauda ignicauda BATES (Pl. 3, fig. 7)

Mimela ignicauda Bates, 1866, 1. c.: 345: Ohaus, 1943, 1. c.: 73.

Mimela ignicauda ignicauda: Nomura, 1973, 1. c.: 20, f. 8.

forma indigonacea YAWATA, 1941, Mushi no sekai, 4 (3/4): 44.

Hab.: TAIWAN: Puli (V), Roshan (IV), Pinglin (VI), Juisui (V).

Distr.: Taiwan.

Mimela ignicauda sakishimana Nomura (Pl. 3, fig. 8)

Mimela ignicauda sakishimana Nomura, 1973, l. c.: 19, fig. 7, pl. 4, f. 8.

Hab.: Naharagawa, Iriomote Is. (VII).

Distr.: Iriomote Is.

Mimela testaceoviridis Blanchard (Pl. 4, fig. 9)

Mimela testaceoviridis Blanchard, 1850, Cat. Coll. Ent. Col.: 197; Ohaus, 1916, Arch. f. Naturg., (A) 82 (4): 3; Ohaus, 1943, l. c.: 75; Medvedev, 1949, l. c.: 92, 96; Machatschke, 1972, l. c.: 180.

Mimela testaceoviridens: Reitter, 1903, 1. c.: 54.

Mimela chryseis BATES, 1866, 1. c.: 345.

Mimela surigera HEYDEN, 1866, Deutsch. Ent. Zeitschr., 30: 291.

Hab.: TAIWAN: Yangmingshan (VII), Taitung (VI), Puli (VII, VIII), Wulai (VI, VII), Ssuchungchi (Shijûkei, VII), Tamari (VI), Chiahsien (Kosempo, V), Daitotai (VI), Sokutsu (VI), Maruyama (VI), Korotau (IX), Peitou (Hokuto, III), Kangkou (Kankou), Hengchun (Koshun, V, VI), Juisui (V), Kenting (VI, VII).

Distr.: Taiwan, China.

Mimela ishigakiensis ishigakiensis (SAWADA) (Pl. 2, fig. 1)

Anomala ishigakiensis Sawada, 1950, Journ. Agr. Sci. Tokyo Nogyo Daigaku, 2 (2): 272, 302, f. 1.

Mimela ishigakiensis: Nomura, 1960, Tôhô-Gakuhô, 10:69.

Mimela sauteri ishigakiensis: Nomura, 1965, Ent. Rev. Japan, 18 (1): 5; Machatschke, 1972, 1. c.: 182.

 ${\it Mimela\ ishigakiensis:\ Nomura,\ 1973,\ Ent.\ Rev.\ Japan,\ 25}\ (1/2)\colon 19.$

Hab.: Mt. Banna, Ishigaki Is. (VI-VIII).

Distr.: Ishigaki Is.

Mimela ishigakiensis formosana Nomura et Kobayashi subsp. nov. (Pl. 2, fig. 2)

Male: Colour strong resemblance to the nominate form, but basal area of pygidium metallic deep green, median area of metasternum darker or dark coppery green. Body more convex than the following subspecies. Clypeus convergent and gently rounded, densely and rugosely punctate, fronto-clypeal suture distinct and raised, almost straight. Pronotum rather broad, with sides rather angulate in the middle, subparallel behind, punctures of the disc fine and sparse, sparser than those of the head. Elytra more finely and less closely punctate than the nominate form. Pygidium strongly convex. Length: 21–23 mm.

Female: Pronotum with sides angulate in the middle, feebly sinuate near front angles, which are produced and acute. Pygidium feebly

convex. Length: 21-23 mm.

Holotype: \Diamond , Pinglin, Taipei Hsien, 23 VI 1965, leg. Y. Kurosawa (in coll. National Sci. Mus., Tokyo); allotype: \Diamond , Wulai, Taipei Hsien, 25 V 1971, leg. K. Sakai; paratypes: $1 \Diamond$, the same data to allotype; $1 \Diamond$, Lienhwachi, Nantou Hsien, 10 V 1975, leg. M. Kubota; $1 \Diamond$. Wulai, Taipei Hsien, 3 VII 1975, leg. K. Mizusawa. Distr.: N. Taiwan.

Mimela ishigakiensis kurodai Nomura et Kobayashi subsp. nov. (Pl. 2, fig. 3)

Male: Dorsal surface deep metallic green, ventral surface dark coppery, suffused with a slight metallic purple lustre. Body moderately convex. Clypeus convergent and rounded at front angles, finely, densely and rather rugosely punctate, fronto-clypeal suture very thin. Pronotum rather broad, gradually narrowed in front, with sides angulate in the middle, punctures of the disc very fine and sparse, clearly sparser than those of the head. Elytra finely and much closely punctate. Pygidium moderately convex. Length: 20-21 mm.

Female: Pronotum with sides angulate in the middle, feebly sinuate near the front angles, subparallel in posterior half. Length: 20 mm.

Holotype: 3, allotype 4, Fenchiihu, Chiai Hsien, 22 VI 1970, leg. T. Kuroda (in coll. H. Kobayashi); paratype: 13, Sekitaku, 7 VII 1961, leg. S. Uéno (in coll. National Sci. Mus., Tokyo).

Distr.: C. Taiwan.

Mimela excisipes Reitter (Pl. 4, fig. 10)

Mimela excisipes Reitter, 1903, l.c.: 54; Ohaus, 1916, Arch. f. Naturg., (A) 82 (4): 3; Ohaus, 1943, l.c.: 71; Machatschke, 1972, l.c.: 181.

Hab.: TAIWAN: Suisharyo (X), Fengshan (Hoozan, IX), Talin (Taihorin, VI), Fenchiihu (VII), Nanshanchi (VIII), Roshan (VII), Rarashan (VIII), Tanansha (VI), Puli (VI-VIII), Chihpen (Chipon, VIII), Yangmingshan (IX), Wulai (VII), Kenting (VI), Juisui spa (VIII).

Distr.: Taiwan, C. China.

Mimela taiheizana SAWADA (Pl. 4, fig. 11)

Mimela taiheizana Sawada, 1943, Trans. Kansai Ent. Soc., 13(2): 1: Machatschke, 1972, 1. c.: 185.

Hab.: TAIWAN: Puli (VIII), Sungkang (VIII), Mt. Ali (VII, VIII), Lishan (VII, VIII), Tayuling (VIII), Wushe (V), Liukuei (IV), Fenchiihu (V), Taipingshan (Mt. Taihei, VI).

Distr.: Taiwan.

Mimela fusania fusania BATES (Pl. 4, fig. 12)

Mimela fusania Bates, 1888, Proc. Zool. Soc. London, 26: 375; Ohaus, 1915, Stett. Ent. Zeitung, 76:95, f. 3; Ohaus, 1943, l.c.: 74, 81; Medvedev, 1949, l.c.: 91, 95; Machatschke, 1972, l.c.: 179.

Mimela chinensis (nec Kirby): Reitter, 1903, 1. c.: 54.

Anomala viriditincta Fairmaire, 1891, Ann. Soc. Ent. Belg., 35, CR. 18: 205.

Anomala sculpticollis Fairmaire, 1897, Notes Leyden Mus., 19:215.

Mimela plicicollis Arrow, 1908, Ann. Mag. Nat. Hist., (8) 1: 247.

Hab.: Korea: Suwon (V). Distr.: Korea, China.

Mimela fusania taiwana SAWADA (Pl. 4, fig. 13)

Mimela fusania taiwana SAWADA, 1943, Trans. Kansai Ent. Soc., 13 (2): 2; MACHATSCHKE, 1972, 1. c.: 179.

Hab.: TAIWAN: Chokakurai (VI), Chiaopanshan (Kappanzan, V).

Distr.: Taiwan.

Mimela difficilis (Waterhouse) (Pl. 4, fig. 14)

Anomala difficilis Waterhouse, 1875, Trans. Ent. Soc. London: 111.

Mimela difficilis: Reitter, 1903. l.c.: 53; Arrow, 1913: Ann. Mag. Nat. Hist.
(8) 12; 396; Ohaus, 1915, Stett. Ent. Zeitung, 76: 321; Nomura, 1963: Icon.
Ins. Jap. 3, Col.: 131, pl. 66, f. 6; Machatschke, 1972, l.c.: 178.

Mimela lenzi Ohaus, 1915, l.c.: 323.

Hab.: Ноккаїро: Horoka (VII); Miyagi: Sendai; Fukushima: Takanoyu spa (VIII); Tochigi: Nasu (VII), Ootawara (VII, VIII), Nikko, Chûzenji; Gumma: Hôshi spa (VII), Yunotaira spa (VII); Shizuoka: Oodaru spa (VII); Aichi: Toyone (VII); Osaka: Minoo; Hyogo: Mt. Rokko (VII), Hyonosen, Oginosen; Shimane: Mt. Sanbe (VII); Tokushima: Kamiryo (VII); Ehime: Oonogahara (VII), Kuma (VIII); Fukuoka: Mt. Hikosan (VII); Kumamoto: Mt. Ichifusa (VII), Yuyama spa (VII).

Distr.: Japan (Hokkaido, Honshu, Shikoku, Kyushu).

Mimela takemurai SAWADA (Pl. 4, fig. 15)

Mimela takemurai Sawada, 1942, Trans. Kansai Ent. Soc. 12(1): 38, Nomura, 1963, l. c.: 131, pl. 66, f. 5; Nomura, 1967, Ent. Rev. Japan, 19(2): 57, fig. 6, pl. 8, f. 6; Machatschke, 1972, l. c.: 188.

Hab.: AICHI: Mt. Dando (VII); Токизніма: Mt. Tsurugi (VII), Kamiryo (VII, VIII), Kiyadani (VIII); ЕнімЕ: Oonogahara (VII), Ishizuchi (VII): Косні: Tosa (VII), Ikegawacho (VII); Fukuoka: Mt. Hikosan (VII, VIII), Mt. Wakasugi (VII), Fukuoka (VII); Nagasaki: Mt. Unzen (VII); Оіта: Mt. Sobo (VII); Кимамото: Mt. Ichifusa (VII); Кадозніма: Mt. Takachiho (VII), Iwôdani (VII), Mt. Kirishima (VII), Mt. Naidaijin (VIII).

Distr.: Japan (Honshu, Shikoku, Kyushu).

Mimela inouei Nomura (Pl. 4, fig. 16)

Mimela inouei Nomura, 1967, Ent. Rev. Japan, 19 (2): 56, fig. 4, pl. 8, f. 8; Machatschke, 1972, l. c.: 188.

Hab.: Shizuoka: Oodaru spa (VI-VIII); Kanagawa: Sengokuhara (VII).

Distr.: Japan (Honshu).

Mimela flavilabris (WATERHOUSE) (Pl. 4, fig. 17)

Anomala flavilabris Waterhouse, 1875, l. c.: 110.

Mimela flavilabris: Arrow, 1913, l. c.: 396; Ohaus, 1943, l. c.: 78; Nomura, 1963, l. c.: 131, pl. 66, f. 4; Nomura, 1967, l. c.: 56, fig. 7, pl. 8, f. 7; Machatschke, 1972, l. c.: 187.

forma curifulgens OHAUS, 1915, l. c.: 91.

forma sculpticollis OHAUS, 1915, 1. c.: 91.

Hab.: Kuriles: Kunashiri Is. (VIII); Hokkaido: Teshio, Nemuro, Hidaka, Iburi, Nohoro, Otaru, Obihiro (VII), Misumai (VII), Horoka (VII), Okushiri Is.; Akita: Akita; YAMAGATA: Kogane spa (VII), Furudera (VII), Mt. Gosho (VII, VIII), Mt. Chokai, Nukumidaira, Mt. Azuma; MIYAGI: Sendai; Tochigi: Nikko (VII), Oosawa (VII), Ootawara (VII), Kurobane (VII); Gumma: Mt. Mikabo (VII), Kumanotaira (VII), Kirizumi spa (VII), Mt. Akagi (VII). Mt. Myogi (VII): IBARAKI: Hanazono (VIII); CHIBA: Mt. Kiyosumi; Tokyo: Mt. Mitake (VI), Mt. Takao (VII), Kanoto (VII); NIIGATA: Kurokawa (VII), Mt. Eburisashi (VII), Shiori pass (VII); NAGANO: Mt. Yatsugatake (VII), Shimajima (VII), Mt. Komagatake (VIII), Shinanomatsukawa (VII), Mt. Shirouma (VII), Tobira spa (VI, VII): YAMANASHI: Yamanashi (VII); SHIZUOKA: Mt. Akiba (VII), Gotenba (VII), Ikawa (VII), Sumatakyo (VII); AICHI: Mt. Dando (VIII), Mt. Hôraiji (VII), Toyone (VI, VII); MIE: Misugi (VI); WAKAYAMA: Mt. Gomanodan (VII), Kanaya (VII); KYOTO: Mt. Hiei (VII), Kyoto (VII); OSAKA: Minoo; HYOGO: Mt. Rokko (VII), Mt. Hyonosen; Tottori: Mt. Daisen (VII); Shimane: Mt. Sanbe (VII); Tokushima: Kamiryo (VII, VIII), Mt. Tsurugi (VIIII), Mt. Takagoshiyama (VII); Еніме: Мt. Ishizuchi (VII), Oonogahara (VII), Kuma (VII); Косні: Косні; Fukuoka: Mt. Hikosan (VI-VIII); KAGOSHIMA: Mt. Takachiho (VII).

Distr.: Japan (Hokkaido, Honshu, Shikoku, Kyushu), Kuriles.

Explanation of Plates.

- Plate 2, fig. 1. Mimela ishigakiensis ishigakiensis (SAWADA)
 - 2. M. ishigakiensis formosana Nomura et Kobayashi
 - 3. M. ishigakiensis kurodai Nomura et Kobayashi
- Plate 3, fig. 4. M. splendens (GYLLENHAL)
 - 5. M. sauteri OHAUS
 - 6. M. yonaguniensis Nomura
 - 7. M. ignicauda ignicauda BATES
 - 8. M. ignicauda sakishimana Nomura
 - 9. M. testaceoviridis Blanchard

Plate 4, fig. 10. M. excisipes REITTER

11. M. taiheizana SAWADA

13. M. fusania fusania BATES

14. M. fusania taiwana SAWADA

15. M. takemurai SAWADA

16. M. inouei Nomura

17. M. flavilabris (WATERHOUSE)

ナガセスジホソカタムシの分布について

吉田元重

Bitoma parallela Sharp ナガセスジホソカタムシは九州, 南西諸島;台湾, フィリッピン, セイロン等に広く分布しているようである. 私は下記の通り本種を得たので報告する. 和歌山県本宮町大杉谷尾根部 (740m).

2 exs., 27. V. 1973, M. Yoshida leg.

倒れていたアカガシの枯木から得たが、同時に Bothrideres takeii Kakane ムネクボスジホソカタムシも得ている.ここは紀伊半島南部大塔山系の山地帯で、アカガシを主とした森林であり、分布上非常に興味がある.同定をいただいた中根猛彦博士に厚くお礼申しあげる.

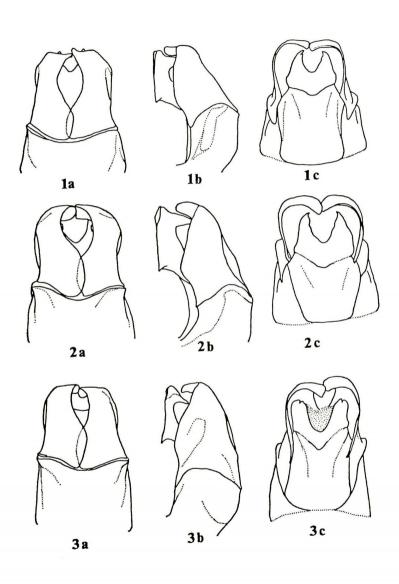
セアカオサムシを宝塚市で採る

小 島 一 郎

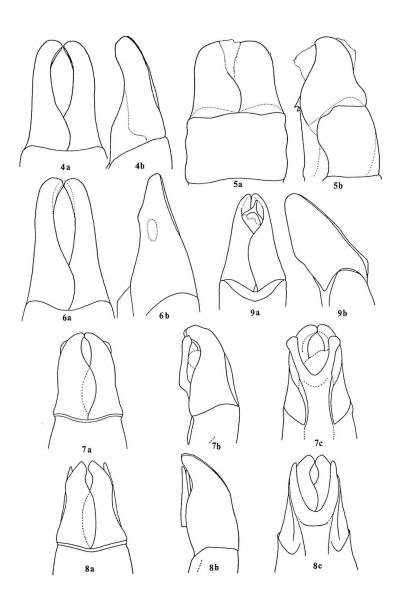
Hemicarabus tuberculosus Dejean et Boisduval セアカオサムシを兵庫県宝塚市で採集したので報告する.

1 ♀, Takatsukasa, Takarazuka City, Hyogo Pref., 10. IV. 1974, I. Kojima leg.

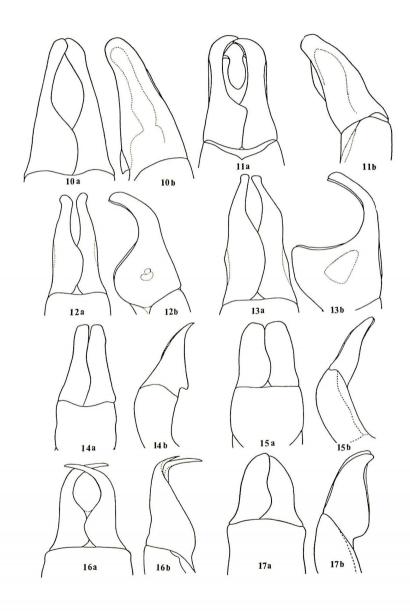
場所は阪神競馬場の北寄りで、一方は神社に面し、他方は新興住宅に囲まれた草地で、その石下から得られた. なお、同処からは *Campalita chinense* KIRBY エゾカタビロオサムシも数頭とれている.













Morphological Study of the Male Ninth Abdominal Segment in the Subfamily Hydrophilinae (Coleoptera)

I. Tribe Hydrophilini

By Nobutaka Watanabe

Department of Natural History, Faculty of Science, Tokyo Metropolitan University, Setagaya-ku, Tokyo, Japan

The male ninth abdominal segments of the five Japanese species belonging to three genera of the tribe Hydrophilini are morphologically compared. The characters common to the species in each of genera are also described.

My cordial thanks are due to Dr. T. Okada, Dr. H. Kurokawa, and Dr. M. Satò, for their useful suggestions on taxonomic accounts.

The morphological study of the ninth abdominal segment in the subfamily Hydrophilinae has not been comprehensively carried out. But it is quite probable that the structure is of importance in the consideration of the phylogenetic relationships especially for the higher taxa.

RICHMOND (1931) referred in his morphological study of *Hydrochara* obtusata to this segment and used the following terms: dorsal plate (ninth tergite), lateral plate, cephalo-ventral arm, ninth sternite, and eversion rod. These terms were used also in this study.

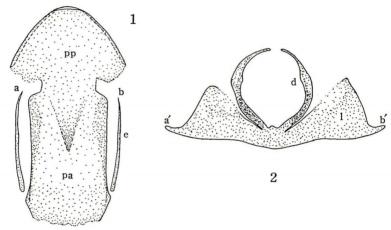
Materials examined in the present study are five Japanese species, which were mostly collected by the author himself from the various parts of Japan. As regards another Japanese species, *Hydrochara liber* (Sharp), the present author has been unable to investigate. In each figure the caudal end was directed upward except Figs. 4 and 10, in which the caudal end was directed to the left. The more strongly sclerotized areas were more densely dotted.

Observations

1. Genus Hydrochara Berthold, 1827 (Figs. 1, 2)

Hydrochara affinis (SHARP) (Figs. 1, 2)

Ninth sternite (Fig. 1 pp and pa) 2.2–2.5 mm. long, with a notch on each lateral margin at the point one-third from caudal end; pp (=the portion posterior to notch) wider than long, broader than pa (=the portion anterior to notch), and nearly spade-shaped; pa parallel-sided, twice as long as wide. Eversion rod (Fig. 1 e) narrow, about half as long as the whole length of the ninth sternite. Dorsal plate (Fig. 2 d) circular, with central portion broadly membranous, and the marginal sclerotized ring shortly interrupted at caudal end. Lateral plate (Fig. 2 l) nearly triangular.



Figs. 1-2 Male ninth abdominal segment of *Hydrochara affinis*, ninth sternite (pp=portion posterior to notch, pa=portion anterior to notch, e= eversion rod, d=dorsal plate, l=lateral plate, a' and b'=cephaloventral arm; a and b are connected with a' and b', respectively).

2. Genus Hydrophilus Geoffroy, 1762 (Figs. 3-6)

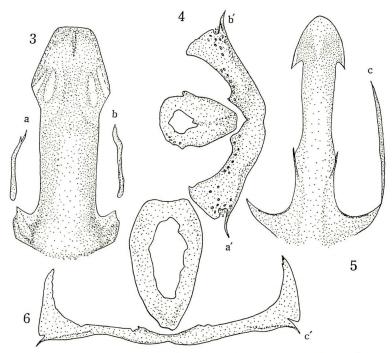
Hydrophilus acuminatus Motschulsky (Figs. 3, 4)

Ninth sternite 4.6-5.1 mm. long, with middle portion narrow and nearly parallel-sided; the posterior third triangular and apically more or less truncate; the anterior portion nearly quadrangularly projected laterad. Eversion rod comparatively broad, almost one-third as long as the whole length of the ninth sternite. Dorsal plate nearly oval, with central portion weakly sclerotized. Lateral plate gradually widened laterally.

Materials examined: $3 \, \Diamond \, \Diamond$, Niiya, Kanra-gun, Gumma; $1 \, \Diamond$, Mt. Ishiwari, Yamanashi; $1 \, \Diamond$, Fussa, Tokyo; $3 \, \Diamond \, \Diamond$, Okuma, Okinawa Is.

Hydrophilus bilineatus cashmirensis Redtenbacher (Figs. 5, 6)

Ninth sternite 2.8-3.1 mm. long; the middle portion very narrow and nearly parallel-sided but somewhat swollen laterad at proximal half; the posterior part small, nearly spade-shaped; the anterior part much broader than posterior part, strongly projected in claw-shape. Eversion rod slender and long, about half as long as the whole length of the ninth sternite. Dorsal plate nearly oval, with central portion weakly sclerotized. Lateral plate narrow, laterally falcate.



Figs. 3-6. Male ninth abdominal segment of the genus *Hydrophilus*. 3 and 4. *H. acuminatus*, 5 and 6. *H. bilineatus cashmirensis* (Right eversion rod is omitted). a, b, and c are connected with a', b', and c', respectively.

3. Genus Sternolophus Solier, 1834 (Figs. 7-10)

Sternolophus rufipes (Fabricius) (Figs. 7, 8)

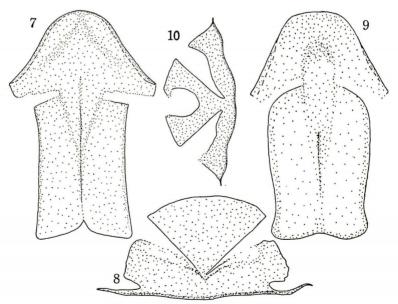
Ninth sternite 1.3-1.6 mm. long, with a notch on each lateral margin

at the point one-third from caudal end; pp nearly triangular, much broader than long, and broader than pa; pa about 1.5 times as long as wide, slightly concaved laterally, and with anterior margin medially notched. Eversion rod absent. Cephalo-ventral arms connected with membrane near each postero-lateral angle of pa. Dorsal plate fan-shaped. Lateral plate broad.

Sternolophus mergus (REDTENBACHER) (Figs. 9, 10)

Ninth sternite 1.2-1.3 mm. long. The whole appearance very similar as in the previous species, but distinguishable from it in having more obtuse postero-lateral angles. Dorsal plate fan-shaped, with central portion weakly sclerotized.

Materials examined: $2\, \lozenge\, \lozenge$, Yonehara, Ishigaki Is., Okinawa; $1\, \lozenge$, Hirae, Ishigaki Is., Okinawa.



Figs. 7-10. Male ninth abdominal segment of the genus Sternolophus. 7 and 8. S. rufipes, 9 and 10. S. mergus.

Generic Comparison

Although the male ninth abdominal segment of the tribe Hydrophilini is very similar among the species of each genus, it shows distinct generic differences. The characters common to each genus are as follows:

1. Genus Hydrochara Berthold (Figs. 1, 2)

Ninth sternite with a notch on each lateral margin at the point about one-third from caudal end; pp nearly spade-shaped; pa almost parallel-sided, twice as long as wide. Eversion rod about half as long as the whole length of the ninth sternite. Dorsal plate circular, with central portion broadly membranous, and the marginal sclerotized ring shortly interrupted at caudal end.

These characters are common to *H. obtusata* examined by RICHMOND (1931).

2. Genus Hydrophilus Geoffroy (Figs. 3-6)

Ninth sternite without notch, longitudinally stretched, with middle portion narrow and parallel-sided; the posterior portion narrower than the anterior portion; the latter broader than long. Eversion rod long or fairly long. Dorsal plate nearly oval, with central portion weakly sclerotized.

3. Genus Sternolophus Solier (Figs. 7-10)

Ninth sternite with a notch on each lateral margin at the point one-third from caudal end; pp nearly triangular, broader than pa; pa as long as broad. Eversion rod absent. Dorsal plate fan-shaped.

References

- RICHMOND, E. A., 1931; The external morphology of *Hydrophilus obtusatus* SAY (Coleoptera: Hydrophilidae), J. N. Y. Ent. Soc. 39: 191-251, pls. 7-15.
- Satô, M., 1959; Notes on generic names of *Hydrophilus* and allied genera (Coleoptera: Hydrophilidae), Ageha, 7: 29 (In Japanese).
- —— 1965; Some aquatic Coleoptera from Formosa, I, Spec. Bull. Lep. Soc. Jap. (1): 126-129.

Supplementary Notes on my Contribution of Formosan Notodontidae (Lepidoptera)

By Masanao Nakamura

After the publication of my previous papers on Formosan Notodontidae, in Ent. Rev. Japan, 25: 53-59, 1973 and Tyô to Ga (Trans. Lep. Soc. Jap.), 24: 61-77, 1973, I noticed that the following additional information and amendments to those articles were necessary.

1. The genus *Bireta* Walker sensu Kiriakoff, 1967 comprised four species, *longivitta* Walker, *dorsisuffusa* Kiriakoff, *albifusa* Wileman and *obliqua* Hampson, but the first two species strikingly differ from the last two and are rather allied to *Torigea* Matsumura in the triangular forewing, vein R₂ of forewing diverging from apex of areole, bipectinated antenna and developed proboscis.

A new genus should therefore be established for albifusa and obliqua.

Loxobireta gen. nov.

Type species: Pydna albifusa Wileman.

 \circ . Proboscis vestigial; palpus slender and just beyond frontal tuft, 3rd joint minute and acute; antenna short pectinated; abdomen extending far beyond hindwing, anal tuft long; hindtibia with two pairs of spurs; forewing somewhat narrower, areole very slender, vein R_2 diverging from common stem of R_3 - R_4 near apex of areole, veins R_3 - R_4 arising from apex of areole, vein R_5 from areole at a point near apex, vein M_1 arising just below of upper angle of cell, vein M_2 from middle of discocellular, discocellular slightly concave, veins M_3 and Cu_1 separated; hindwing with veins R_5 - M_1 short stalked (about $\frac{1}{4}$ of the length of each vein).

Male genitalia: only differing from *Bireta* in slender uncus, relatively small and triangular valva with tongue-like costal projection and 8th abdominal sternite with longer arm possessing a large spine.

Closely allied to *Bireta* Walker but differs in vestigial proboscis, short pectinated antenna, narrow forewing with vein R_5 from areole and vein M_1 from cell.

[[]Ent. Rev. Japan, Vol. XXIX, Nos. 1/2, pp. 48-50, Aug., 1976]

2. The genus Subwilemanus Kiriakoff, 1963, type species: pictus Kiriakoff, is merely congeneric with the genus Fentonia Butler. Consequently, the following nominal alterations should be necessary.

Genus Fentonia Butler, 1881

= Subwilemanus Kiriakoff, 1963 syn. nov.

Fentonia parabolica Matsumura, 1925

- = Fentonia ocypete: KIRIAKOFF (part, nec Bremer), 1968
- = Subwilemanus pictus Kiriakoff, 1963 syn. nov.

Fentonia modestior Kiriakoff comb. nov.

=Subwilemanus modestior Kiriakoff, 1963

Fentonia modestior macroparabolica Nakamura stat. nov.

> =Fentonia macroparabolica NAKA-MURA, 1973

The Formosan *macropara-bolica* is larger than mid-east Chinese nominate subspecies.

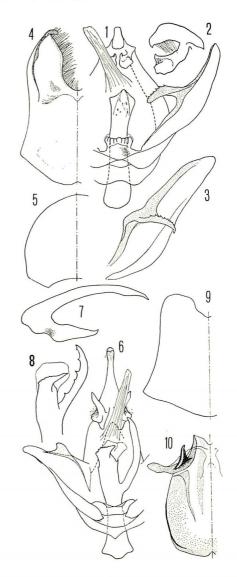
3. Metriaeschra elegans Nakamura, 1973 from Formosa is a junior synonym with M. apatela

Figs. 1-5. Pseudofentonia (Disparoides) seriatopunctata Matsumura

(1) male genitalia, (2) uncus and socius, lateral view, (3) valva, inner view, (4) 8th abdominal sternite, (5) 8th abdominal tergite.

Figs. 6-10. Loxobireta albifusa Wile-

(6) male genitalia, (7) uncus and socius, lateral view, (8) apical portion of aedoeagus, latero-frontal view, (9) 8th abdominal tergite, (10) 8th abdominal sternite.



KIRIAKOFF, 1963 from mid-east China.

Metriaeschra apatela KIRIAKOFF = M. elegans NAKAMURA syn. nov.

4. The genus *Horaia* which was erected by me for *albomaculata* Okano is preoccupied by *Horaia* Chujo, 1935, Trans. Nat. Hist. Soc. Formosa, 25: 357 (Chrysomelidae) and a new name will be proposed.

Peridopsis nom. nov. = Horaia NAKAMURA, 1973

I heartily thank Dr. Haruo Takizawa of Hatano Tobacco Experiment Station for suggestion of this fact.

It seems that Notodonta sp. which has been recorded from Nepal by Daniel (Khumbu Himal., 4: 256, f. 38, 1972) is a member of this genus.

I am grateful to Dr. Hiroshi Inoue for the aid in this literature.

5. In the generic synopsis on the Formosan *Pseudofentonia*-complex which was shown in the previous paper, "*Disparia*" seriatopunctata Matsumura was excluded as I did not examine at that time. After that, through the courtesy of Mr. Yutaka Arita of Meijo University, Nagoya, I was able to investigate two male specimens of this species.

The external features of *seriatopunctata* are almost identical with those of *Disparia* but the male genitalia differ, and a new subgenus will be established

Genus *Pseudofentonia* Strand, 1912 *Disparoides* subgen. nov.

Type species: Disparia seriatopunctata Matsumura

Antenna same as that of *Pseudofentonia* (*Disparia*) variegata but different from that of *Pseudof*. (*Disparia*) nigrofasciata, viz. bipectinated with each pair of branches differing in length; forewing with vein R_2 stalked with common stem of R_3 - R_5 slightly before origin of vein R_5 , but stalked about half way between origin of veins M_1 and R_5 in subgenus *Disparia*. Male genitalia: uncus short and beak-like, never bifid at tip; socius short and robust; valva with large dentate-edged costal string, without cucullus protuberance; juxta like that of *Formotensha* and *Nipponotensha*; saccus never produced; 8th abdominal sternite with caudal margin deeply incised at the meson, cephalic margin never projected.

沖縄のカブトムシについて

楠 井 善 久

Notes on the *Allomyrina dichotoma* (Linné) from Okinawa Islands (Coleoptera, Scarabaeidae)

by Yoshihisa Kusui

琉球列島のカブトムシ *Allomyrina dichotoma* (LINNÉ) は FRITZ (1894) により最初に記録され、その後、東 (1975) が図示している。また、久米島での記録は、高良・東 (1974) にみられるが、いずれも亜種の問題にはふれていない。

筆者は1975年夏期沖縄に滞在し、沖縄本島近隣の島嶼の昆虫相を調査したが、久米島において採集したカブトムシは日本本土および台湾産のものとかなり異なっていることに気がついた。また、沖縄本島北部において採集された琉球大学の標本ならびにその後、同処で採集された田中和夫博士の標本も検する機会を得た。これらの標本および久米島産のものはそれぞれ他の亜種と異なるので、その知見も記録しておきたい。

この小文を草するに当たり三宅義一氏に多大なご指導を賜った。また、貴重な標本を検する機会を与えられた琉球大学学長高良鉄夫、同教授東清二の両博士、ならびに田中和夫博士、種々ご協力を願った沖縄在住の星野千春氏に厚くお礼申しあげる。

沖縄周辺のカブトムシの亜種の検索表

- 1. ôの前頭部にある角状突起は長大. ♀の頭部の瘤起は中央の突起が高く,前胸背板前縁中央は全く弯入しない.
 - 1a. ôの前胸背板の角状突起は細く,分岐した先端間は狭い.分布;台湾…………subsp. tsunobosonis (Kôno)
- 2. ♂の前頭部にある角状突起は短小.♀の頭部の瘤起は中央の突起が低く,前胸背板前縁は中央においてわずかに弯入する.
 - 2a. 含は黒褐色で、前胸背板の角状突起は短小. ♀の前胸背板中央の縦溝はわずかに浅く、前縁付近で弱く2叉する.分布;沖縄本島………subsp. takarai nov.
 - 2b. 3 は黒色で光沢が著しく,前胸背板の角状突起は極めて短小,♀の前胸背板中央の縦溝はわずかに認められる程度で,前縁付近では2叉しない.分布;久米島……………………………………………………………subsp. inchachina nov.

新亜種の記載

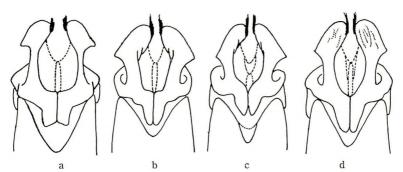
Allomyrina dichotoma takarai subsp. nov.

やや小形で黒褐色. 前胫節はわずかに短く,幅は第2歯と第3歯の間において,第3歯の基方の幅より狭い.

- ô. 頭部の角状突起は短く、その長さ(頭楯前縁中央から最長部まで)は大形の個体(体長 44.0 mm, Pl. 5, fig. 2 & 5)では、前胸背板の長さ 14.5 mm に対して、角状突起の長さ 15.5 mm, 小形の個体(体長 37.5 mm, Pl. 5, fig. 11)では、前胸背板の長さ 11.0 mm に対して、角状突起の長さ 9.5 mm, 分枝は弱く、分枝間の弯入はやや浅い、大形の個体では2 叉した先端はさらに2 叉するが、先端間はあまり拡がらず、小形の個体では2 叉するのみ、前胸背板は周縁部および中央の角状突起の前後の部分をのぞいてやや光沢が鈍く、角状突起は短く、先端は背板面よりあまり高くならずに前方を向き、その腹面は光沢がなく、小形の個体ではその部分が角状突起の基部より前方に小さく半円状に拡がる。
- ♀. 頭部の瘤起は中央の突起が両脇のものより低いかほぼ等しい. 前胸背板中央の縦溝は浅く, 前縁付近で横に弱く2叉する.

Holotype: \Diamond , Yona, Kunigami-son, Okinawa Is., VII 26 1963 (in coll. Ryukyu Univ.); Allotype: \Diamond , Yona, Kunigami-son, Okinawa Is., IX 3 1970, K. Tanaka leg.; Paratypes: $1 \Diamond$, Yona, VII 26 1963 (in coll. Ryukyu Univ.); $2 \Diamond \Diamond$, Yona, IX 3 1970, K. Tanaka leg.

分布:沖縄本島.



Text fig. Dorsal side of apical part of male genitalia.
a. Allomyrina dichotoma dichotoma (Linné), (Yokohama, Honshu); b. A. d. tsunobosonis (Kôno); c. A. d. takarai subsp. nov.; d. A. d. inchachina subsp. nov.

Allomyrina dichotoma inchachina subsp. nov.

小形で黒みが強い。脚が短く、前胫節の幅は第2歯と第3歯の間において、第3歯の基方の幅より狭い。

↑ 黒色で小形,やや平らたい.頭部の角状突起は非常に短く,細い.その長さ(頭楯前

縁中央から最長端まで)は大形の個体(体長 44.5 mm, Pl. 5, fig. 1 & 6)では,前胸背板の長さ 13.1 mm に対して,角状突起の長さ 12.1 mm,小形の個体(体長 38.0 mm,Pl. 5, fig. 12)では,前胸背板の長さ 11.5 mm に対して,角状突起の長さ 8.0 mm,分枝は極く弱い.大形の個体では 2 叉した先端においてわずかに 2 突起をなすのみで,ほとんど切断状,先端間の幅は狭く,小形の個体では 2 叉するのみ.前胸背板の両側はやや扁圧され,周縁部および中央の角状突起の前後の部分をのぞいて光沢が鈍く,角状突起は極く短く,背板面から直接 2 叉する,その腹面は光沢を欠き基部より前方に小さく半円状に拡がる.

♀. 頭部の瘤起は中央の突起が両脇のものより明らかに低い. 前胸背板前縁中央は角ばって弯入し, 前胸背板中央の縦溝は極く浅く, 前縁付近で2叉しない.

Holotype; \lozenge , Allotype: \lozenge , Paratypes: $5 \lozenge \lozenge$, $3 \lozenge \lozenge$, Kume-jima, Ryukyu Islands, VIII 25 1975, Y. Kusui leg. (author's coll.).

分布: 久米島.

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Résumé

Key to subspecies of Allomyrina dichotoma (LINNÉ)

- 1. Head horn well developed in \Diamond ; middle tubercle of head distinctly higher than lateral ones, and front margin of prothorax not notched at the middle in \Diamond .
 - 1a. Prothoracic horn slender, the space between each apex of bifurcate thoracic horn narrow.subsp. tsunobosonis (Kôno)
 - 1b. Prothoracic horn stout, the space between each apex of thoracic horn wide....

 subsp. dichotoma (Linné)
- 2. Head horn not developed in \Im ; middle tubercle of head low, front margin of prothorax notched at the middle in \Im .
 - 2a. Body blackish brown, prothoracic horn short in ⋄, medial longitudinal hollow of thorax shallow, very weakly furcate near apical margin in ♀.subsp. takarai nov.
 - 2b. Black and polished on upper surface, prothoracic horn very short in β, medial longitudinal hollow of prothorax indistinct in β.subsp. inchachina nov.

Descriptions of the new subspecies

Allomyrina dichotoma takarai subsp. nov.

fuscous. Head horn more or less narrow and short, forked, each apex bifurcate. Disc of prothorax matted, except shining margin and a small polished part before and behind thoracic horn. The thoracic horn short and produced anteriorly, the apex nearly reaching the level of prothoracic disc, the lower surface and a small semicircular part before horn matted.

 \property ; middle tubercle of head lower than rest outer ones or almost same in height. Longitudinal hollow of prothorax not distinctly bifurcate near apical margin.

Distribution: Mainland of Okinawa, Ryukyu Islands.

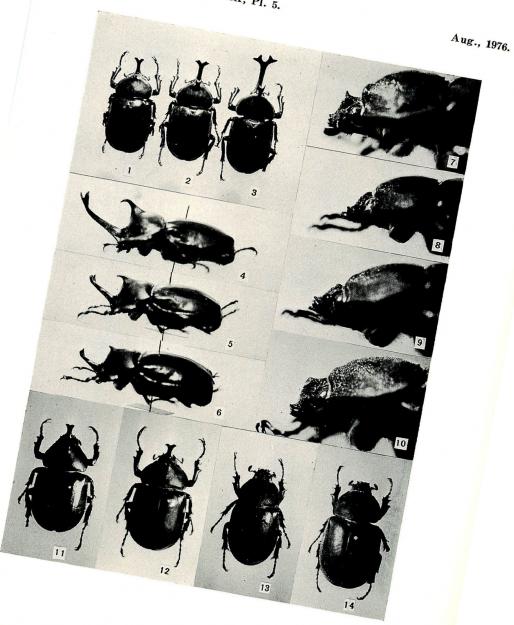
Allomyrina dichotoma inchachina subsp. nov.

- \$\(\frac{1}{3}\); entirely black, more or less flattened above. Head horn very short, forked, each apex weakly bifurcate. Prothorax more or less flattened above on each side, disc matted except shining margin and a small polished part before and behind thoracic horn. The thoracic horn very short and abruptly bifurcated, the lower surface of the horn and small semicircular part before the horn matted. Legs more or less short.
- \circ ; middle tubercle of head a little lower than rest outer ones. Longitudinal hollow of prothorax shallow and not bifurcated near apical margin, the apical margin of prothorax angulately sinuate at the middle.

Distribution: Kume-jima, Ryukyu Islands.

Explanation of Plate 5.

- 1-3: Dorsal view of male (nearly same length specimens).
- 4-6: Ditto, lateral view.
 - 1 & 6. Allomyrina dichotoma inchachina subsp. nov.
 - 2 & 5. A. d. takarai subsp. nov.
 - 3 & 4. A. d. dichotoma (LINNÉ), (Tokyo, Honshu).
- 7-10: Head in profile of female.
 - 7. A. d. dichotoma (LINNÉ), (Tokyo, Honshu).
 - 8. A. d. takarai subsp. nov.
 - 9. A. d. inchachina subsp. nov.
 - 10. A. d. tsunobosonis (Kôno).
- 11 & 12 · Little-sized specimens of male.
 - 11. A. d. takarai subsp. nov.
 - 12. A. d. inchachina subsp. nov.
- 13 & 14: Dorsal view of female.
 - 13. A. d. takarai subsp. nov.
 - 14. A. d. inchachina subsp. nov.





サワフタギの花に飛来するカミキリムシと 気象条件との関係

渡 辺 弘 之 (京都大学農学部付属演習林)

Relation between Cerambycid-beetles attract to Bloom of Sweet Leaf and Weather Conditions

by Hiroyuki Watanabe

まえがき

ハナカミキリ亜科に属するカミキリムシの多くと、カミキリ亜科に属す一部のカミキリムシは花を訪れ、花弁・葯・花粉・花蜜などを後食したり、花の上で交尾したりすることはよく知られており、カエデ類・ガマズミ類・ノリウツギ・サワフタギ・リョウブ・クリや高山のショウマ類などにはとくに多くのカミキリムシが集まる.

そのカミキリムシにも飛来する時刻が種類によって異なること、すなわち、朝早く現われるものや日中に現われるものなどのあることも一般的には知られているが、カミキリムシが花を訪れる時刻とそれに大きな影響を与えていると考えられる温度・湿度・明るさなどの気象条件との関係を調べたものはないようである.

5月中・下旬に咲き,多くのカミキリムシが訪れるサワフタギの花に集まり活動するカミキリムシを採集記録し,飛来時刻,飛来個体数と気温・湿度・照度・風力との関係を調べてみた。

気象条件は毎日異なるものであり、連続した調査を計画したものの実行できなかった.たった1日の観察であり、データーも少し古くなってしまったが、参考までに記録しておきたい.

常々,カミキリムシの同定をお願いしている高知大学農学部小島圭三教授,大阪城南女子 短期大学林匡夫教授に厚くお礼申しあげる.

調査地および調査方法

1969年5月21日京都府北桑田郡美山町芦生にある京都大学芦生演習林の事務所構内(標高360 m)に植栽されている1本のサワフタギ(Symplocos chinensis Druce var. leucocarpa (Nakai) Ohwi forma pilosa (Nakai) Ohwi), 樹高約1.5 m の花に飛来するカミキリムシを午前4時から午後8時まで連続して採集し、15分ごとにとりまとめた.

サワフタギの花に飛来したカミキリムシと飛来時刻

表1

種 名 時	7時	∞	6	10	11	12	13	14	15	16	17
Gaurotes doris BATES カラカネハナカミキリ	Н			_		-					
Lemula rufithorax Pic ピックニセハムシハナカミキリ											Н
L. decipiens Bates キバネニセハムシハナカミキリ		2	9	4	7					Н	8
Acmaeops minuta (Gebler) ヒナルリハナカミキリ	Н			П							
Pidonia simillima OHB. et HAY. ニセヨコモンヒメハナカミキリ	Н	П	2			Н					
P. amentata (BATES) セスジヒメハナカミキリ	7	∞	36	15	10	2	2	Ţ	10	18	13
P. miwai (Marsushita) ミワヒメハナカミキリ			Н							1	
P. puziloi (Solsky) フタオビチビハナカミキリ	Н		Н			Н				2	
P. debilis (KRAATZ) チャイロヒメハナカミキリ	П	2	8	2	13	П	Н		2	ro	20
P. signifera (BATES) ナガバヒメハナカミキリ		2			1						Н
P. mutata (BATES) ヒメハナカミキリ		П									
P. muneaka TAMANUKI ムネアカヒメハナカミキリ	П	П		П					Н		
P. grallatrix (BATES) オオヒメハナカミキリ				Н	က					Н	1
Pyrrhona laeticolor Bates ヘリウスハナカミキリ					1				Н	2	
Anoplodera excavata (BATES) ミヤマクロハナカミキリ						1	Н		Н		
Marthaleptura scotodes (BATES) ツヤケシハナカミキリ				П	1	1			က	Н	
Strangalomorpha tenuis Solsky アオバホソハナカミキリ				П	2						
Leptura arcuta tsumagurohana Ohbayashi ヤツボシハナカミキリ						1					
Molorchus gracilis HAYASHI オダヒゲナガコパネカミキリ								Н			
Leontium viride Thomson ミドリカミキリ					Н						
Demonax transilis Bates トゲヒゲトラカミキリ			П								
Clytus melaenus Bates シラケトラカミキリ							П	Н			
C. auripilis BATES キンケトラカミキリ								П			
Chlorophorus diminutus (BATES) ヒメクロトラカミキリ		П		П							
Epiclytus yokoyamai (KANO) ヨコヤマトラカミキリ									1		
Dere thoracica White ホタルカミキリ						Н					

気温および湿度は自記温度・湿度計を用いて、調査前日から記録させた. 照度は東芝照度計 5 号型、風速は風杯型風程風速計を用いて15分ごとにサワフタギの樹冠上で読みとった.

結 果

1. サワフタギの花を訪れたカミキリムシ

5月21日の1日間に、調査したこの1本のサワフタギを訪れたカミキリムシはハナカミキリ亜科の Gaurotes, Lemula, Acmaeops, Pidonia, Pyrrhona, Anoplodera, Marthaleptura, Strangalomorpha, Leptura 属のものとカミキリ亜科の Molorchus, Leontium, Demonax, Clytus, Chlorophorus, Epiclytus, Dere 属のものなど26種, 263個体であった.

表 1に示したように個体数のほとんどは Pidonia 属のもので占められているが,最も個体数の多いものは Pidonia amentata (BATES) セスジヒメハナカミキリの122個体,P. debilis (Kraatz) チャイロヒメハナカミキリ57個体,Lemula decipiens BATES キバネニセハムシハナカミキリの23個体などであった.

2. 花を訪れる時刻

花の上にまず現われるカミキリムシは前夜から葉の裏や枝に止まっていたハナカミキリ類、とくに Pidonia 類であるが、これらも午前 4 時にはまだ全く動かず、 4 時45分にはわずかに触角を動かすものがあった。 7 時15分すぎ、直射日光が花にあたりはじめると Pidonia 類がゆっくりと花上に移り、触角を盛んに動かし葯を食べ始めたが飛びまわることはなかった。 9 時10分には Pidonia 類を主にして多くのカミキリムシが飛来しはじめ、活動は最も盛んであった。

夕方は5時30分をすぎると花の上で静かに触角を動かしている程度で、6時をすぎるとほとんど動かず、飛来するものは全くなかった.

日中の活動は表 1 ,図 3 に示したように,午前 9 時~12時と午後 3 時30分~ 5 時30分の 2 回,飛来する個体数の多いことがわかった.この 2 回の飛来・活動時刻は個体数の最も多い Pidonia,Lemula 属のそれと全く一致している.しかし,これらに比較して著しく大形のカミキリムシである Leptura,Anoplodera 属などのものは,飛来時刻がやや遅れ, 10時頃から飛来し夕方も他のカミキリムシよりも早く来なくなってしまった. なお,正午から 3 時頃まではカミキリムシはほとんど飛来しなかったが,トラカミキリ類の中には個体数は少ないが,この時間に飛来するものがあった.

この調査では、飛来し花上で活動するものすべてを採集してしまったので、朝と夕方の2度飛来するものは、朝に採集されてしまったことになるが、それでも午後3時30分~5時30分に飛来する個体数が多かったことは、カミキリムシには1日2回の飛来、活動時刻があることを示すものであろう。

3. 気象条件との関係

図1に示したように、気温は午前5時~6時に6°Cまで下降し、たいへん寒い朝であったが、9時には20°C、午後2時には最高の24°Cに達し、その後はゆっくりと下降する暖かい

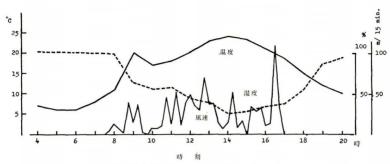


図1 サワフタギ花上の温度,湿度,風速の変化

日になった. 湿度は午前4時から8時すぎまで100%を示し,霧が発生していたが,8時すぎから急に下降しはじめ,午後2時には26%まで下った.

照度は日の出とともに急激に上昇し、午前10時から正午すぎまで10~12万 lux を記録するたいへん天候のよい日であった. 風は7時30分すぎから吹きはじめたが、花がゆれるくらいで、カミキリムシの飛来に影響があるとは思えない程度で、夕方にはふたたび無風になった.

カミキリムシの飛来した時間およびほとんど飛来しなかった時間と気象条件との関係

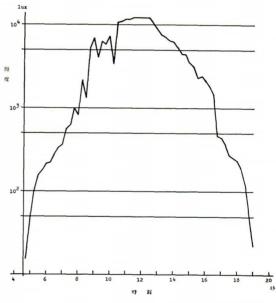


図2 サワフタギ花上の照度の変化

をみると,カミキリムシの飛来した午前9時~正午の気温は 17~20°C,湿度44~64%,照度 3.4~12.0× 10^4 lux,午後3時30分~5時30分は17~22°C,32~45%,0.3~2.4× 10^4 lux で,ほとんど飛来しなかった正午から3時では,気温20~24°C,湿度26~45%,照度3.5~12.0× 10^4 lux であった.

このことは正午~3時の気象条件がカミキリムシの飛来・活動に適さないことを示しているのであろう。 しかし, Leptura,Anoplodera 属のものなど大形のカミキリムシは小形の Pidonia,Lemula 属のものにくらべて,より高い温度,照度下でも飛来・活動できることを

示している.

考 察

ハナカミキリ亜科, カミキリ亜科に属するカミキリムシが花を訪れ, 花粉・花蜜・葯・花 弁などを摂食することは後食の一つの形態で, 成虫が羽化脱出後, 産卵能力をえるために摂 食が必要であるとされている.

この調査によって採集されたカミキリムシはいずれも花を訪れることが知られているものであるが、Clytus auripilis BATES キンケトラカミキリや Dere thoracica White ホタルカミキリの訪花はそれほど多くない事例のようである。このことはトラカミキリ類やホタルカミキリなどにとっては花を訪れ後食することは必須の条件でないのか、あるいはよく活動している伐採木上で他の何かを摂食しているのかのどちらかであろう。後食がぜひとも必要かどうかと同時に、雌雄とも後食が必要なのかどうかを調べてみる必要もあろう。

カミキリムシの飛来時刻について、林(1948)はハナカミキリ類では午前10~11時に最も多く、午後は漸次その数を減ずると観察を述べ、加藤(1944)のヤツデ・ヤナギの花に集まる昆虫でも、いずれも午前中に大きな活動のあることを示している。本調査でも午前9時~正午に飛来するものの多いことは、これらの観察と一致するが、午後3時30分~5時30分に飛来するものがふたたび増加することは一致していない。

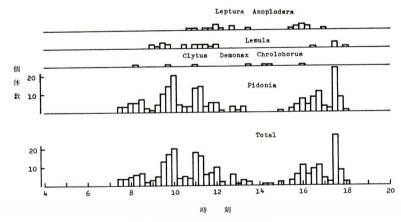


図3 主要な属ごとの飛来時刻のちがい

また、飛来するカミキリムシのうち Pidonia、Lemula 属など小形のカミキリムシと Leptura、Anoplodera 属などの大形のカミキリムシの活動時刻がややずれていること、それらが活動に適する気象条件のちがいによるものであろうと述べたが、気象条件のみであろうか.

朝と夕方に現われた Pidonia, Lemula 属のものは早春から現われるもので、ここ芦生では $5\sim6$ 月が出現期で7 月にはもういない。これに対し、Leptura, Anoplodera 属の大形のも

のは6~8月に出現するものが多い. Pidonia, Lemula 属はその出現期間中いずれも早朝に現われるとすれば、気象的条件とともに、他の昆虫との競争、とくに、大形のカミキリムシとの競争、時間的なすみわけがあるようにも考えられる. すなわち、条件のよい時刻を、あるいは場所を大形の Leptura, Anoplodera 属のものなどが占めているのかも知れない.

これらの解析には気象条件とともに、花の開花期、花粉・花蜜の成熟、分泌の時刻との関係を調べることも必要と考えられる.

いずれにしろ,いろいろな植物,気象条件下で連続した調査をつづける必要があるが,このような観察をもっとやってみてほしいものである.

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第27回(昭和50年度)大会記録

第27回大会を昭和50年12月14日正午から大阪市東住吉区長居公園内の大阪市立自然史博物館において開催した.

澤田幹事の司会により,まず大倉幹事から会務会計報告が行われた後,本年は"近畿地方における甲虫の分布,特に紀伊半島の特異性について"の座談会が開催された.座長に林幹事があたり,紀伊半島の特異性について気候・地質・地形などの概要説明があった後,出席会員からそれぞれ甲虫の分布について報告があった。特に吉田・奈良両氏からは和歌山県下における植物分布の特異性が甲虫の分布に影響している話があり,盛会裡に午後4時すぎ終了した.

当日の出席者(敬称略)はつぎのとおり、秋山黄洋・安藤清志・有本久之・藤本隆二・春沢圭太郎・畑 守国・畑山武一郎・林 匡夫・平松広吉・伊賀正汎・生谷義一・石田 裕・金森伸子・河上仁之・木下哲也・北村順三・草間慶一・正木 清・的場 績・松田 潔・松田 勗・源 信広・水野弘造・水沼哲郎・森 和夫・中川真次・中川俊夫・中北 隆・奈良ー・大倉正文・澤田高平・高羽正治・田村 修・田村 保・谷 幸三・寺村周太郎・横山美千子・吉田元重. (大 倉)