

## ON SOME JAPANESE CURCULIONINAE (COLEOPTERA: CURCULIONIDAE)

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# ON SOME JAPANESE CURCULIONINAE (COLEOPTERA: CURCULIONIDAE) \*

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## Abstract

This is the additions and corrections to my revision of the subfamily Curculioninae from Japan (1960, '62). New taxa, recombinations and synonymies treated in this paper are as follows:

*Labaninus* gen. nov. (Type-species : *Carponinus plicatulus* Heller, 1925)

*Labaninus fukienensis* (Voss, 1958), comb. nov. (*Curculio*)

*Labaninus kimotoi* (Morimoto, 1960), comb. nov. (*Curculio*)

*Labaninus plicatulus* (Heller, 1925), comb. nov. (*Carponinus*)

*Shigizo rhombiformis* gen. et sp. nov. (monobasic)

*Curculio hirashimai* sp. nov., *rai* sp. nov., *ochrofasciatus* sp. nov., *nagaoi* sp. nov., *lateritius* sp. nov., and *okumai* sp. nov.

*Curculio arakawai* (Matsumura et Kôno, 1928), *quercivorus* (Kôno, 1928), and *shigizo* (Kôno, 1928) are synonymized with *Curculio dentipes* (Roelofs, 1874).

The chestnut weevil hitherto identified by Japanese entomologists as *dentipes* is erroneous. Its accurate name is *sikkimensis* (Heller, 1927) described from Sikkim.

*Curculio iwasakii* (Matsumura et Kôno, 1928) is a new synonym of *hilgendorfi* (Harold, 1878).

*Curculio tigrinus* Morimoto, 1960, is a new synonym of *breviscapus* (Heller, 1927).

*Curculio sakaguchii* (Kôno, 1932) is a new synonym of *maculanigra* (Roelofs, 1874).

Key to genera of the Oriental Curculioninae and a list of Japanese species are given.

This is the additions and corrections to my revision of the subfamily Curculioninae from Japan which appeared in *Mushi*, 33 (12) : 89-104, 1960, and 36 (4) : 21-40, pls. 2-6, 1962, as the result of my recent studies on the specimens mostly from the Ryukyus and on the type materials.

I wish to express my cordial thanks to Dr. R. T. Thompson of the British Museum (Natural History) for his kind help, and to many friends for their kindness giving me the material. My thanks are also due to Prof. Y. Hirashima

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of Kyushu University for his kind guidance in the course of the present study.

***Labaninus* gen. nov.**

(Figs. 1 ;2)

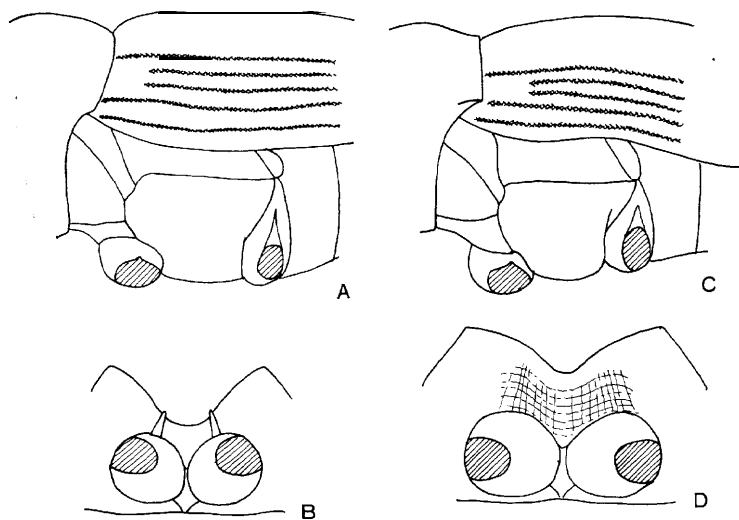
Body subrhombiform. Pronotum broadest at the base, hind angle laminate into a triangular process and pointed latero-posteriorly in dorsal aspect and rectangular in lateral aspect. Elytra cordiform, suture depressed on the basal half and fringed with suberect setae on apical half, latero-basal angle sharply pointed below the laminate hind angle of pronotum, lateral margin weakly sinuate above hind coxa. Prosternum deeply emarginate, shorter than the diameter of front coxa, flat or weakly depressed. Metepisternum broad, almost parallel-sided, weakly dilated dorsally and ventrally at apex and broadly rounded posteriorly. Front femora distinctly curved at basal third. Femora dentate, clavate. Hind tibiae with the dorso-terminal angle of tarsal groove produced into a large hook in male, the other tibiae in male and all tibiae in female simply mucronate. Claws toothed. Venter with first ventrite behind coxa longer than second, third ventrite a little shorter than second and as long as fourth.

**TYPE-SPECIES** : *Carponinus plicatulus* Heller, 1925.

This genus is established for the reception of the following species,

***Labaninus fukienensis*** (Voss), **comb. nov.**

*Curculio fukienensis* Voss, Decheniana, Beihefte 5: 90, 92, 1958.



**Fig. 1.** Meso-, metathorax, and basal part of elytra, lateral aspect; and prosternum, ventral aspect. A, B: *Shigizo rhombiformis* sp. nov. C, D: *Labaninus plicatulus* (Heller).

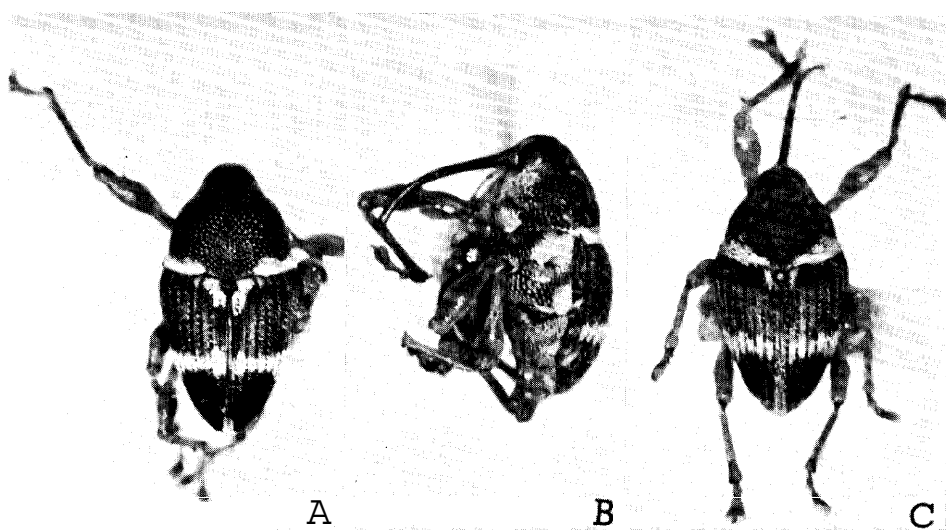


Fig. 2. A, B: *Labaninus plicatulus* (Heller). C: *Labaninus kimotoi* (Morimoto).

*Curculio fukienensis eurypterus* Voss, l.c. : 90, 93, 1958.

DISTRIBUTION : China (Fukien).

***Lubaninus kimotoi*** (Morimoto), **comb. nov.** (Fig. 2, C)

*Curculio kimotoi* Morimoto, Mushi, 33(12) : 94, 1960.

DISTRIBUTION : Japan (Kyushu).

***Lubaninus plicatulus*** (Heller), **comb. nov.** (Figs. 1, A, B ; 2, A, B)

*Carponinus plicatulus* Heller, Stett. Ent. Zeit., 86: 129, 1925; Kôno, Ins. Mats., V(1/2) : 21, 1930.

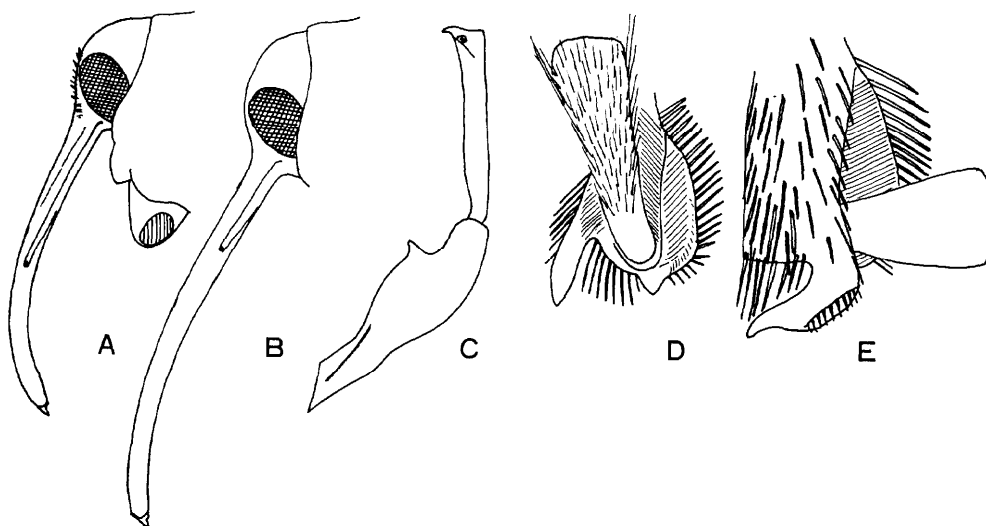
*Carponinus plicatulus* var. *definitus* Heller, l.c. : 129, 1925; Kôno, l.c., 21, 1930.

DISTRIBUTION : Taiwan.

### ***Shigizo* gen. nov.**

Body subrhombiform. Pronotum broadest at the base, hind angle weakly laminate, rounded, not pointed. Elytra cordiform, suture depressed on the basal half, fringed with suberect setae behind the middle, latero-basal angle sharply pointed below hind angle of pronotum, lateral margin not sinuate above hind coxa. Prosternum deeply emarginate, much shorter than coxa, canaliculate, the canal sharply limited laterally by carinae, inside of the canal densely scaled. Metepisternum dilated as in *Curculio* from the middle anteriorly. Femora clavate, denticulate. Front femora weakly curved at basal third. Tibiae as in *Labaninus*, male hind tibiae with inner dorso-terminal angle of tarsal groove produced into a large hook. Claws and venter as in *Labaninus*.

TYPE-SPECIES : *Shigizo rhombiformis* sp. nov.



**Fig. 3.** *Shigizo rhombiformis* sp. nov. A: Head, lateral aspect, male. B: Ditto, female. C: Front leg, male. D, E: Apex of hind tibia, male.

KEY TO GENERA OF THE SUBFAMILY CURCULIONINAE IN THE  
PALAEARCTIC AND ORIENTAL REGIONS

- 1 : Antennal funicle 5-segmented. Claws connate at the base, simple. Body robust, elytra convex. Tibiae robust, flattened, uncinatae and mucronate, uncus arises from the apico-ventral angle of the apex ..... 2
- 1' : Antennal funicle 7-segmented. Claws divergent, dentate. Tibiae slender, mucronate ..... 3
- 2 : Prothorax subtrapezoid, widest at the base ..... **Ergania** Pascoe
- 2' : Prothorax transverse, widest a little before the middle, the sides rounded ..... **Pimelata** Pascoe
- 3 : Lateral margins of elytra deeply sinuate above the anterior part of metepisterna. Mesepimera scarcely ascended upwards ..... **Carponinus** Heller
- 3' : Lateral margins of elytra straight or slightly sinuate above hind coxae ..... 4
- 4 : Elytra with latero-basal angles sharply pointed anteriorly below the basal angles of pronotum, not notched above the dorso-apical angles of metepisterna. Prosternum deeply emarginate, much shorter than coxa. Pronotum widest at the base, the sides evenly continuous to elytra. Front femora more or less curved at the basal third. Hind tibiae with the inner dorso-apical margin of tarsal grooves sharply pointed into a large hook in male ..... 5
- 4' : Elytra with latero-basal angles blunt, not protruding anteriorly below the hind angles of pronotum, with a small notch on each side above the dorso-apical angle of metepisterna. Prosternum not or weakly emarginate, at least as long as coxa. Mesepimera ascended upwards above the level of metepisterna. Side margins of pronotum and elytra more or less angulate at the hind angles of pronotum. Femora with stalks straight. Hind tibiae simply mucronate ..... **Curculio** Linnaeus
- 5 : Prosternum canaliculate. Lateral margins of elytra almost straight. Pronotum with hind angles rounded. Mesepimera ascended upwards above the

- level of metepisterna, the latter dilated at apex ..... **Shigizo** gen. nov.  
 ♂. Prosternum not canaliculate. Lateral margins of elytra weakly sinuate  
 above hind coxae. Pronotum with hind angles triangularly pointed. Mes-  
 epimera slightly ascended upwards. Metepisterna not dilated at apex .....  
 ..... **Labaninus** gen. nov.

***Shigizo rhombiformis* sp. nov.**

(Figs. 1, A, B; 3; 4, A)

**Male.** Reddish brown, eyes black. Forehead between eyes, pronotum and elytra clothed with brownish grey to greyish hairlike scales; pronotum with a narrow transverse basal white patch on each side reaching mesepimeron externally and third interval internally; elytra with a few white scales at the base of first interval and densely with white scales at the base of second interval, postmedian white band formed of small patches of scales on second, third, fifth to eighth intervals, often the scaly patch absent on fifth interval, or the transverse band indistinct, or in some specimens completely absent; underside clothed with whitish scales, the scales denser on prosternum before coxae, anterior surface of front coxae, mesepimera, metepisterna and on lateral margins of ventrites.

Head bare excepting forehead, punctate, forehead between eyes weakly tapering posteriorly, a little narrower than rostrum, median carina continuing from rostrum terminate at a small fovea. Rostrum as long as the length of suture, punctate behind antennal insertion, punctures longitudinally confluent and forming fine stria along the dorsal margin of scrobe. Antennae inserted in the middle of rostrum, scape not reaching eye, clavate at tip, as long as five basal segments of funicle combined, funicle with first segment  $\frac{2}{3}$  times as long as second and  $\frac{4}{3}$  times as long as fourth, seventh segment as long as wide, club as long as two basal segments of funicle combined, first segment as long as second and as long as wide.

Prothorax transverse (4 : 3), widest at base, weakly sinuate just before the hind angles, slightly constricted at apex, basal margin very slightly produced in the middle, apical margin weakly produced anteriorly and almost vertical at the sides; disc with reticulate and partly confluent punctures, median carina absent.

Scutellum bare, small, a little longer than wide.

Elytra cordiform, as wide as the length of suture, latero-basal angle sharply pointed anteriorly below the hind angle of pronotum, suture depressed on the basal half and fringed with suberect setae on the apical third, first interval with a row of latero-posteriorly directed scales on the basal two-thirds and with two rows of posteriorly directed scales on the apical third, the other intervals each with three rows of scales.

Pygidium twice as wide as long, with yellowish to ochreous hairs.

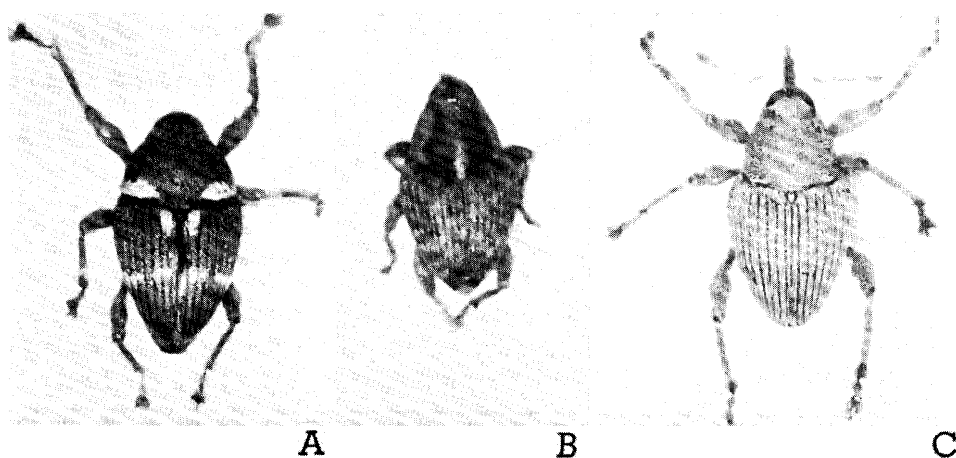


Fig. 4. A: *Shigizo rhombiformis* sp. nov., paratype, female. B: *Curculio hirashimai* sp. nov. paratype, female. C: *Curculio rai* sp. nov., paratype, female.

Prosternum deeply emarginate, the median length  $7/10$  the longitudinal diameter of front coxa, canaliculate, each side of the canal carinate. Mesosternal process not convex, narrowest distance between middle coxae half as wide as middle coxa. Venter with first ventrite behind coxa  $10/7$  times as long as second, suture between them obsolete widely on the median depressed area, fifth ventrite with a longitudinal median glossy depression, each side of the depression fringed with a tuft of suberect brownish to ochreous hairs.

Femora clavate on apical half, carinate externally on the basal half, each with a sharp tooth. Front femora curved at basal third. Tibiae almost straight, front tibiae weakly dilated apically and shallowly depressed above at apex.

**Female.** Rostrum slenderer, as long as the maximum length of elytra, glossy, finely punctulate above scrobes. Antennae inserted in the basal fourth, scape as long as three basal segments of funicle combined. First and second ventrites not depressed, suture between them complete.

Length : 2.2-3.1 mm.

**Holotype** ♂ (Type No. 2314, Kyushu Univ.), Shokubutsuen, Miyako Is., 29. vi. 1974, S. Kimoto leg.

**Paratypes:** Shinmura, Amami-Oshima, 1 ♀, 31. iii. 1957, O. Sato leg. Shuri, Okinawa, 1 ♀, 27. i. 1972, T. Teruya leg. Ozato, Okinawa Is., 1 ♂, 10. iv. 1972, T. Teruya leg. Yona, Okinawa, 1 ♀, 16. viii. 1958, T. Hidaka leg. Same data as holotype, 2 ♀. Karimata, Miyako, 1 ♀, 2. ix. 1958. T. Hidaka leg. Komi, Iriomote, 1 ♂, 12. vii. 1963, Y. Miyatake leg.

DISTRIBUTION : Japan (Amami-Oshima, Okinawa, Miyako and Iriomote Isls.).

***Curculio hirashimai* sp. nov.**

(Figs. 4, B; 7, A)

**Male and female.** Derm reddish brown, with scaly covering as follows : head with vertex and forehead thinly clothed with greyish brown hairy scales, forehead along inner margin of eyes with a row of greyish brown a little wider scales, underside of head densely covered with whitish scales; prothorax densely covered with milky white scales excepting two broad bands on pronotum, which formed of internally directing brownish narrower scales; scutellum densely covered with white scales; elytra variegated with brownish and whitish hairlike scales, whitish scales predominant on the lateral intervals; undersurface with milky white scales; legs with milky white hairy scales; pygidium with yellowish grey hairs. Suture fringed not with setae, but with a row of posterior-interiorly directing scales of the ordinary size.

Head forming a continuous curve with the dorsal edge of rostrum in lateral view; forehead  $2/3$  times as wide as the base of rostrum. Rostrum similar in both sexes, except that the punctuation a little stronger in male, rather abruptly narrowed at the insertion of antennae; the basal part with strong longitudinally-confluent punctures and a smooth median carina, the anterior part impunctate in female, scrobes somewhat oblique. Antennae with scape short, as long as three (male) or two (female) basal segments of funicle combined, clavate, almost touching the anterior margin of eye; funicle with first segment 1.5 times as long as second, third to sixth segments equal in length, half as long as second, seventh segment as long as wide, much longer and wider than sixth, club compact, as long as three basal segments of funicle combined, first segment a little longer than second, transverse.

Prothorax transverse (4 : 3), widest at the base, subconical, the sides slightly curved, basal margin bisinuate ; disk with close shallow punctures, without median carina.

Scutellum tongue-shaped, as long as wide.

Elytra as wide as the length of suture plus scutellum, much wider than pronotum at the prominent rounded shoulders, and rapidly narrowing behind, conjoint apices shallowly notched, without any glabrous depression on each side of scutellum, striae narrow, with shallow punctures, each containing a recumbent white seta, intervals broad, flat, punctate.

Pygidium pentagonal in male, sectoral in female, punctate.

Prosternum weakly concave, median length twice as long as the longitudinal diameter of coxa. Mesosternal process weakly convex, much narrower than coxa (10 : 7). Metasternum on the posterior half, first and fifth ventrites depressed in the middle in male, where the scales being sparser and



smaller.

Legs with front femora minutely and posterior femora triangularly dentate. Front tibiae almost straight internally and gradually widening apically, with several blackish stout setae at the dorso-apical angle.

Length : 2.5-2.7 mm.

*Holotype* ♂ (Type No. 2315, Kyushu Univ.), Mt. Banna, Tshigaki Is., 28. x. 1963, Y. Hirashima leg.

*Paratypes*: Shirahama, Iriomote Is., 1 ♀, 18. viii. 1971, S. Azuma leg. Mt. Goza, Iriomote Is., 1 ♀, 14. viii. 1962, M. Chujo leg. Kukan, Taichun, Taiwan, 1 ♂, 10. vi. 1976, H. Makihara leg.

DISTRIBUTION: Japan (Ishigaki and Iriomote Isls.), Taiwan.

This new species is close to *fulvus* Marshall from India in having the short scape and similar rostrum in both sexes, but the scaly coloration and the relative size of the mesosternal process are different.

### ***Curculio rai* sp. nov.**

(Fig. 4, C)

**Male.** Derm black, apical half of rostrum, antennae, apical part of tibiae and tarsi reddish brown, with uniform greenish grey scaling above, underside with dense chalky white scaling, lateral pieces of meso- and metathorax with greenish grey scales.

Head forming a continuous curve with the dorsal edge of rostrum in lateral view; forehead as wide as the base of rostrum, almost parallel-sided, without median fovea. Rostrum about as long as head and pronotum taken together, weakly narrowed at the insertion of antennae, rather strongly curved thence anteriorly, basal part with strong punctures, which longitudinally confluent and forming three pairs of irregular sulci and a smooth median carina, the anterior part sparsely punctulate, scrobes somewhat oblique. Antennae inserted in the apical third of rostrum, scape nearly as long as funicle, funicle with first segment 7/5 times as long as second, third to seventh segments subequal in length, half as long as first, seventh segment as long as wide, club as long as three basal segments of funicle combined, compact, first segment slightly longer than second and as long as wide.

Prothorax transverse (4 : 3), the sides subparallel for a short distance from the base, then weakly rounded and narrowed anteriorly, anterior margin truncate, 3/5 the width of the posterior one, disk with close shallow punctures without median carina.

Scutellum subcordiform, slightly longer than wide.

Elytra a little narrower than the length of suture, weakly curved and rapidly narrowing posteriorly from humeri, separately rounded at apex, without any glabrous depression on each side of scutellum, striae narrow, with

shallow punctures, each contains dark brown fine seta, intervals flat, punctate, suture fringed with a row of suberect brown short setae on declivity.

Pygidium not exposed, transverse-cordiform, strongly punctate, with sparse erect hairy scales.

Prosternum shallowly concave at anterior margin, median length a little longer than the diameter of coxa. Mesosternal process convex,  $2/3$  times as wide as coxa. Metasternum and first ventrite shallowly depressed in the middle, fifth ventrite flattened and bare in the median wide area, deeply and roundly emarginate, with a pair of black spots at apex.

Front femora each with a minute, middle femora each with a very small, and hind pairs each with a small tooth. Tibiae straight externally and weakly expanding internally towards apex.

**Female.** Rostrum similar to that of male in length, antennal insertion median. Scape as long as four basal segments of funicle combined. Venter simply rounded at apex.

Length : 3.2-3.4 mm.

*Holotype* ♂ (Type No. 2316, Kyushu Univ.), and *paratypes*: 1♂1♀, Yonehara, Ishigaki Is., 15. iii. 1964, Y. Miyatake leg.

DISTRIBUTION: Japan (Ishigaki Is.).

This new species is close to *hirashimai* sp. nov., but can easily be recognized by the concolorous scaling above and the position of the antennal insertion on the rostrum.

### ***Curculio flavescens* (Roelofs)**

(Figs. 5; 6, A)

*Balaninus flavescens* Roelofs, Ann. Soc. Ent. Belg. XVII: 160, 1874 (Japan ; ♀)

This species was described on two females taken by Lewis, of which one female (holotype) is preserved in the British Museum (Natural History). On the examination of the holotype, I confirmed that Kôno (1930), Kôno and Kim (1937) and Morimoto (1962) misidentified the next species as this.

**Female.** Chestnut brown. Rostrum glossy, very sparsely punctate behind antennal insertion. Forehead between eyes almost as wide as rostrum, with a weak median carina running from the base of rostrum to the small median fovea.

Pronotum reticulately punctate, lateral and antescutellar area clothed with yellowish scales, the remaining area sparsely clothed with whitish narrower scales. Scutellum subcircular, covered with whitish scales. Elytra weakly depressed along the suture, which adorned with erect yellowish setae on the declivity, yellowish scales denser on the basal part of first-fourth intervals and on declivity, yellowish scales forming a transverse band behind the middle, intervals broader than striae. Lateral sides of thorax and abdomen

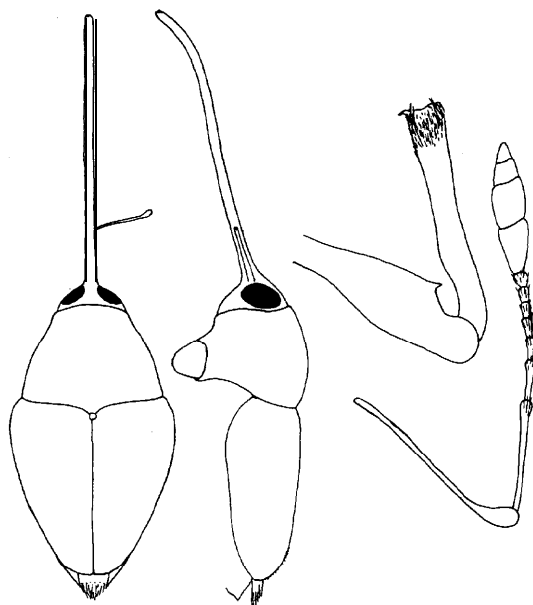


Fig. 5. *Curculio flavescens* (Roelofs), holotype, female.

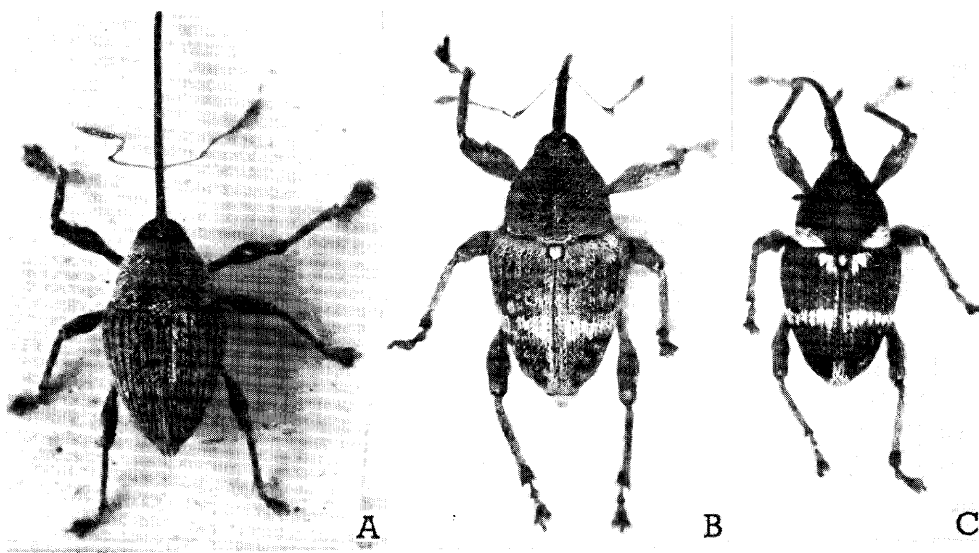


Fig. 6. A : *Curculio flavescens* (Roelofs), holotype, female. B : *Curculio ochrofasciatus* sp. nov., holotype, male. C : *Curculio nagaui* sp. nov., holotype, male.

closely covered with yellowish scales, ventral side with a little paler scales. Legs sparsely clothed with whitish hairy scales.

Measurements. Body length up to the base of rostrum from the apex of elytra 3.8 mm, Length: of rostrum straightly from base to apex 3.9 mm,

length of rostrum behind antenna1 socket 0.9 mm. Median length of pronotum 1.4 mm, width of pronotum 1.8 mm. Maximum width of elytra 2.1 mm. Relative length of antenna1 segments from scape to second segment of club as 36 : 20 : 7 : 5 : 3.8 : 3 : 3.1 : 3 : 10 : 7, total length of club 24, width of club 6 (40 = 1 mm), seventh segment of funicle as long as wide.

I have examined the holotype at the British Museum (Natural History) and not seen any other specimen.

***Curculio ochrofasciatus* sp. nov.**

*Balaninus flavescens*: Kôno (nec Roelofs, 1874), Ins. Mats., V: 14, 1930 (Key; Hokkaido, Korea).

*Curculio flavescens*: Kôno et Kim, Journ. Chosen Nat. Hist. Soc., (22) : 23, 1937 (Hokkaido, Korea) ; Morimoto, Mushi, 36: 23, 1962 (Key, aedeagus ; Hokkaido, Honshu, Kyushu, Korea).

**Male.** Oval, black, rostrum and legs brownish red to dark brown, antennae reddish brown. Derm closely covered with ochreous hairlike scales; pronotum with blackish narrow scales on the median area, elytra variegated with ochreous and blackish scales, ochreous scales forming basal and postmedian transverse bands, suture fringed with suberect yellowish brown setae behind the band; underside covered with a little paler and broader scales ; scales denser on scutellum and on mesepimera; legs clothed with ochreous grey hairy scales, often the apical part of hind femora and hind tibiae with brownish black scales ; tarsal grooves of middle and hind tibiae fringed with brownish black setae.

Head with dense fine punctures; forehead between eyes half as broad as the base of rostrum, with a small median fovea; eyes elliptic. Rostrum slightly longer than head and pronotum combined, with deep striae on the basal half and with a median carina, slightly dilated towards the base. Antennae inserted just before the middle, scape shorter than the first six segments of funicle combined, first segment of funicle a little longer than second, third segment half as long as second and as long as fourth, fifth segment  $5/7$  times as long as fourth and slightly shorter than sixth, seventh segment prolate spherical, as long as sixth, club 2.5 times as long as wide, first segment as long as wide and  $9/7$  times as long as second.

Pronotum transverse (5 : 4), widest at the base, the sides nearly straight and scarcely narrowed from the base to the middle, then strongly narrowing anteriorly, apical constriction slight, apical margin truncate dorsally and with weak postocular lobes ; disk closely and reticulately punctate, median keel indistinct.

Scutellum cordiform, slightly longer than wide.

Elytra slightly longer than wide, oblong-cordiform, the sides gently curved

to the apical one-fourth, subapical swellings indistinct, conjoint apices shallowly sinuate; striae deep and with same depth behind, intervals broad and flat, with close and slightly wrinkled punctures; basal sutural impression distinct, extending as far as the middle.

Pygidium with the apical portion exposed, closely covered with long ochreous hairs in both sexes.

Front tibiae nearly straight, slightly dilated inwards at apex, apical margin weakly depressed. Femora, especially front ones, each with a sharp tooth. Tarsi with the first segment shorter than the next two segments combined.

Basal ventrites very slightly depressed in the middle, apical margin of the last ventrite truncate.

Aedeagus with penis slender, apical projection moderate and blunt.

**Female.** Rostrum  $4/3$  times as long as head and pronotum combined. Antenna inserted in the basal third of rostrum, scape shorter than the five basal segments of funicle combined, first segment of funicle slightly longer than second, third segment  $3/5$  times as long as second and 1.5 times as long as fourth, fourth, fifth and seventh segments equal in length, club as in male. Apex of fifth ventrite obtusely angulate.

Length : 4.5-5.5 mm.

**Holotype** ♂ (Type No. 2317, Kyushu Univ.), Mt. Daisen, Tottori Pref., 26. v. 1954, S. Kimoto leg.

**Paratypes:** Same data as holotype, 1♂1♀. Togakushi, Nagano Pref., 1♀, 6. vii. 1966, Y. Miyatake leg. Masumizuhara, Mt. Daisen, Tottori Pref., 1♀, 23. vi. 1975, H. Irie leg. Mt. Fukuchi, Fukuoka Pref., 1♀, 18. v. 1955, S. Takashima leg. Tashiro, Fukuoka Pref., 1♂, 26. iv. 1951, Y. Miyake leg. Mt. Katamuki, Oita Pref., 1♀, 1. viii. 1973, K. Morimoto leg. Mt. Sobo, Oita Pref., 1♀, 3. viii. 1954, K. Asakura leg. Simohakusen, Kan-Nan-Engan, Korea, 1♀, 24-29. vii. 1943, H. Uchida leg.

DISTRIBUTION : Japan (Hokkaido, Honshu, Kyushu), Korea.

This new species is separable from *flavescens* (Roelofs) by the shorter rostrum, compact clubs of antennae and the shape of pronotum.

### ***Curculio nagaoi* sp. nov.**

(Fig. 6, C)

**Male.** Dull black, thinly clothed above with recumbent blackish small setae, with markings formed of dense broad white scales; prothorax with a large transverse basal white patch on each side extending from mesepimeron inwards as far as third stria of elytron; elytra with a white patch surrounding scutellum on the bases of first to fourth intervals, often reduced on fourth interval, a broad white band just behind the middle on second to tenth

intervals, with its anterior margin almost straight, suture fringed with white suberect setae on the apical fourth, the setae becoming darker thence anteriorly and almost black behind the scaly band, first interval with a row of white scales along exterior margin of apical fourth, second interval with a few white scales at apex; undersurface densely clothed with white scales, which being smaller in the median area and broader at sides, densest on prosternum before coxae, mesepimeron, posterior half of metepisternum and on the lateral margins of first and second ventrites; pygidium and apical margin of fifth ventrite with whitish hairs.

Head with small punctures; forehead between eyes a little narrower than the base of rostrum with a trace of median fovea, the dorsal outline of rostrum and forehead forming a weakly concave curve in profil. Rostrum straight on basal third and evenly curved thence forwards, finely punctate on basal half, punctures denser on each side at the base, with a faint sulcus above scrobe. Antennae inserted in the middle of rostrum, scape as long as six basal segments of funicle combined, first segment of funicle  $5/4$  times as long as second, third half as long as first and slightly longer than fifth, the remaining segments subequal in length and half as long as first, much longer than wide, club compact, as long as two basal segments of funicle combined, first segment much longer than second, as long as wide, second segment transverse.

Pronotum transverse (30 :23), the sides parallel on basal third, then rounded anteriorly, subapical constriction indistinct, apical margin truncate dorsally and sloping obliquely forwards behind eyes; disk with denser small punctures, median carina absent. Scutellum subcordiform, a little longer than wide, with dense white scales.

Elytra with suture depressed on the basal half, intervals rugose.

Legs rather densely clothed with white setiform scales. Femora each with two carinae on the basal half externally and with a sharp tooth. Tibiae straight, with the basal sinuation very shallow. Venter with two basal ventrites depressed in the middle, fifth ventrite simply truncate at the apex.

**Female.** Rostrum slenderer, as long as the maximum length of elytra. Antennae inserted in the basal third of rostrum, scape as long as five basal segments of funicle combined. Venter not depressed.

Length :2.8-3.8 mm.

*Holotype* ♂ (Type No. 2318. Kyushu Univ.), Hatsuno, Amami-Oshima, 13-20. vi. 1963, J. Nagao leg.

*Paratypes*: Same data as holotype, 5♂3♀. Miyanoura, Yaku, 5♂2♀, 26-28. vii. 1974, T. Mikage leg.

DISTRIBUTION: Japan (Yaku and Amami-Oshima Isls.).

The scaly colour pattern of this new species is similar to *interruptus* Kirsch and *confucius* Heller, but the postmedian band is straight, the apical

margin of fifth ventrite is truncate in both sexes, and the femur has a pair of carinae on the basal half.

***Curculio lateritius* sp. nov.**

(Fig. 8, C)

*Curculio kojimai*: Kido (nec Morimoto), Kitakyushu no Konchu, 25: 109, pl. 10, fig. 2, 1978.

**Male.** Derm reddish brown to rusty brownish red, with yellowish brown hairy scaling above, the scales smaller, seta-like and darker on elytra excepting the bases and first intervals; underside and legs with the similar scaling as that on pronotum, apex of tibiae darkened.

Head forming a continuous straight surface with the dorsal edge of rostrum in lateral view, forehead  $3/4$  times as wide as the base of rostrum, with an indistinct median fovea. Rostrum parallel-sided, cylindrical, evenly curved, the basal part with shallow punctures, which becoming wider and coriaceous at the base, with a short median carina at the base to forehead, the anterior part impunctate. Antennae slender, scape a little longer than three basal segments of funicle combined, first segment of funicle a little longer than second, third  $3/4$  times as long as second and a little longer than fourth, fifth to seventh equal in length and half as long as second, seventh 2.3 times as long as wide, club a little shorter than two basal segments of funicle combined, acuminate apically, first segment as long as wide,  $5/4$  times as long as second, the latter slightly transverse, third segment as long as first and  $3/2$  times as long as wide, fourth segment as long as second and twice as long as wide.

Prothorax transverse (7 :5), broadest at the base, slightly and straightly narrowing anteriorly to the middle, then roundly and rapidly tapering apically, posterior margin scarcely pointed posteriorly in the middle, disk with close small punctures, median carina obsolete.

Scutellum tongue-shaped, depressed longitudinally.

Elytra  $3/4$  times as wide as maximum length, the sides weakly narrowing posteriorly from humeri to the middle, conjoint apices shortly notched; first interval flattened for a short distance at the base, thence weakly convex and clothed with posteriorly directing hairy scales to the apical third, behind this point with intero-posteriorly directing similar scales densely along suture and posteriorly directing similar scales along exterior margin; intervals flat, rugosely punctate.

Prosternum weakly sinuate, median length  $4/3$  times as long as the diameter of coxa. Mesosternal process convex,  $1/4$  times as wide as coxa. First ventrite behind coxa as long as third and a little shorter than second, fifth ventrite not with hairy scales, but with fine setae excepting lateral margins, flattened, obtuse-triangularly and weakly notched at apex.

Legs with femora dentate, Front tibiae straight externally.

**Female.** Rostrum and antennae similar to those of male. Venter simply rounded at apex.

Length : 5.2-6.2 mm.

*Holotype* ♂ (Type No. 2319, Kyushu Univ.), Kuchinotsu Park, Nagasaki Pref., 26. iv. 1977, S. Imasaka leg.

*Paratypes*: Mt. Adachi, Fukuoka Pref., 1 ♂, 2. v. 1961, T. Tsubone leg. Mt. Joyama, Munakata, Fukuoka Pref., 1 ♀, 1. vii. 1972, K. Kido leg.

DISTRIBUTION : Japan (Kyushu) .

This new species is close to *kojimai* Morimoto, but easily separable from it by the coloration and the structure of the clubs of antennae.

***Curculio okumai* sp. nov.**

(Figs. 7, B-F; 8, A)

**Male.** Derm reddish brown, with sparse minute hairy scales above; scutellum, median and lateral areas along hind margin of pronotum, and basal margin of elytra with sparse yellowish grey hairy scales ; underside with sparse whitish small narrow scales, legs with sparse yellowish grey scales of the similar size.

Head forming a very weak sinuation with the dorsal edge of rostrum a little before the base in lateral view in both sexes; forehead half as wide as the base of rostrum, with a median fovea, vertex bare. Rostrum weakly curved, almost parallel-sided, sparsely punctate above antennal scrobes, with a short flat median carina at the base. Antennae inserted just behind the middle of rostrum, scape reaching eye, a little shorter than six basal segments of funicle combined, first segment of funicle  $5/3$  times as long as second, third segment half as long as first and  $5/4$  times as long as fourth, fourth to seventh segments subequal in length, seventh segment much longer than wide, club as long as two basal segments of funicle combined, first segment as long as second, second segment transverse.

Prothorax transverse (3 : 2), widest basally, slightly narrowing anteriorly to the middle, then roundly and rapidly narrowing to the apex, posterior margin slightly bisinuate, disk with close punctures, without median carina.

Scutellum as long as wide, densely covered with hairy scales.

Elytra  $4/5$  times as wide as long, widest a little behind humeri, the sides evenly curved and narrowing posteriorly, suture not depressed at base, fringed with intero-posteriorly directing hairy scales of the normal size, striae without or with sparse minute setae, intervals flat, with irregular three rows of fine scales.

Pygidium sectoral, twice as wide as long, with erect hairs.

Prosternum weakly sinuate, median length equal to the diameter of coxa.



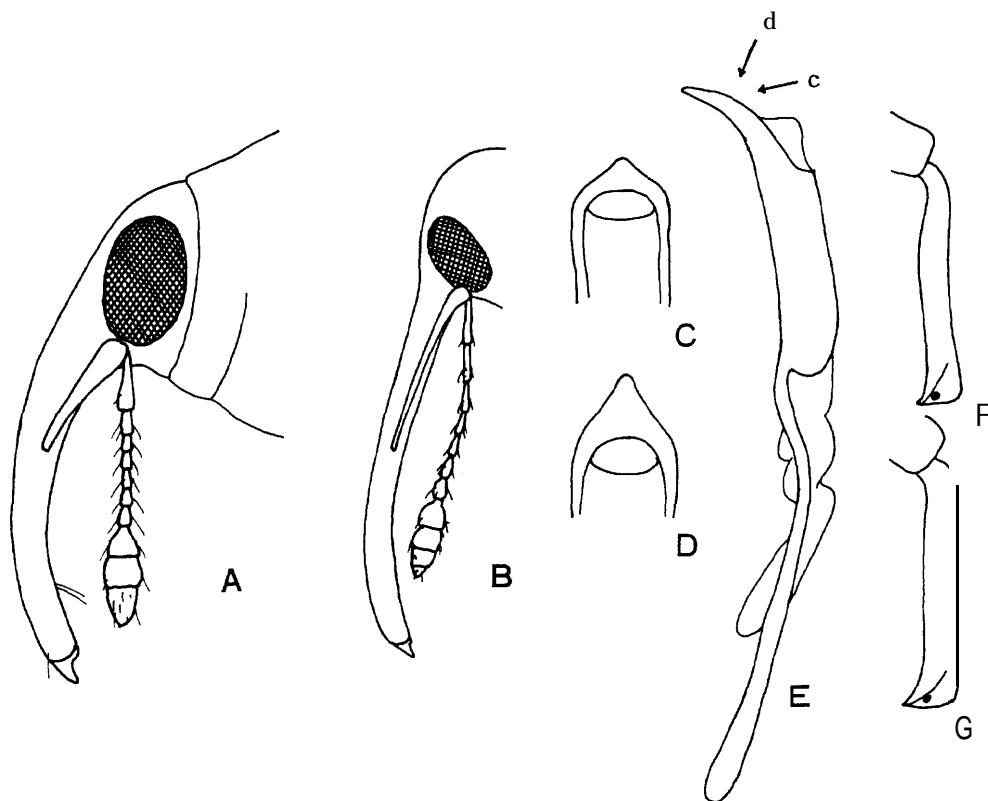


Fig. 7. A : *Curculio hirashimai* sp. nov., holotype, male, head lateral aspect. B-F : *Curculio okumai* sp. nov., paratype, male, B : Head lateral aspect, C-E : Penis, apex seen from two angles, F : Hind tibia. G : *Curculio hime* (Kôno), male hind tibia.

Mesosternal process half as wide as coxa, slightly convex. Mesepimera a little densely scaled. First ventrite behind coxa a little longer than second, fifth ventrite truncate, with erect hairs along posterior margin, which being denser on each side of the middle.

Legs with femora not carinate, each femur with a minute tooth. Tibiae slender, weakly bisinuate internally, front tibiae straight externally, hind tibiae weakly curved.

**Female.** Rostrum slender, antennae inserted in the basal three-tenths, fifth ventrite simply rounded.

Length : 3.3-3.8 mm.

*Holotype* ♂ (Type No. 2320, Kyushu Univ.), and *paratypes* : 2♂4♀, Shigesawa, Nishitanzawa, Kanagawa Pref., 9. x. 1978, J. Okuma leg.

DISTRIBUTION : Japan (Honshu).

This new species is very close to *hime* Kôno, but separable from it by the

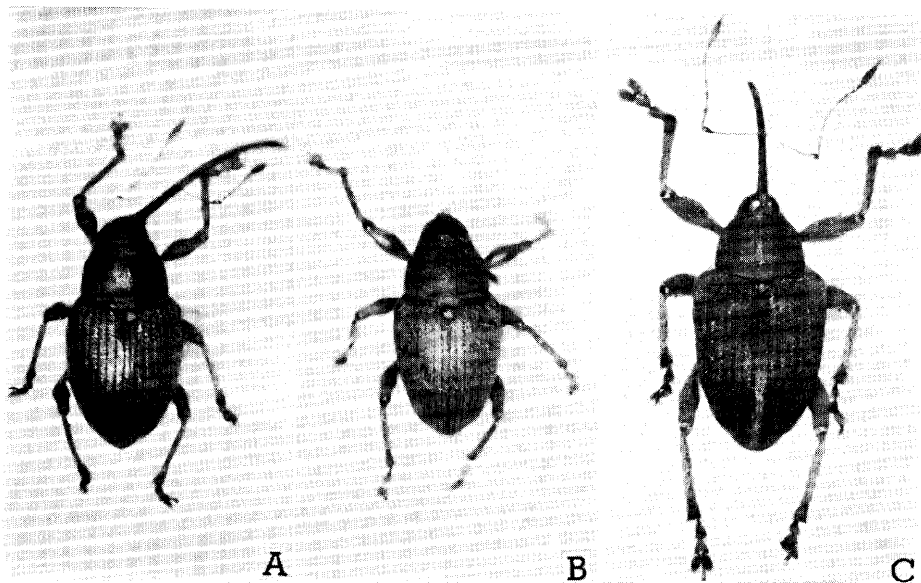


Fig. 8. A : *Curculio okumai* sp. nov., paratype, male. B : *Curculio hime* (Kôno), male. C : *Curculio lateritius* sp. nov., holotype, male.

scaling much smaller and finer above and sparser below, first segment of antennal funicle much longer than second, and legs slenderer.

#### SYNONYMIC NOTES

##### *Curculio dentipes* (Roelofs)

(Fig. 9)

***Balaninus dentipes*** Roelofs, Ann. Soc. Ent. Belg., XVII: 156, 1874; Lewis, Cat. Col. Jap. Archip.: 22, 1879; Heyden, Deut. Ent. Zschr.,: 281, 1884 (Is. Askold); Faust, Deut. Ent. Zschr., XXVI: 259, 279, 1882 (Amur); Schoenfeldt, Cat. Col. Jap.: 148, 1887; Desbrochers, Frelon, II: 125, note, 1892; Lewis, Ann. Mag. Nat. Hist., (6) XVII: 341, 1896 (*dentipes*=*hilgendorfi*); Heller, Stett. Ent. Zeit., 86: 276, 1925; Yokoyama, Nihon no Kochu: 52, pl. 6, fig. 7, 1930; Kato, Three Col. Ill. Ins. Jap., IX: pl. 22, fig. 11, 1933; Kamiya et Adachi, Genshoku Kochu Zufu, pl. 46, fig. 9, 1933; Hirayama, Genshoku Kochu Zufu: 76, pl. 28, fig. 13, 1940.

***Curculio dentipes***: Dalla Torre et Schenkling, Col. Cat. 123, Curculioninae: 12, 1932; Ter-Minassian, Ent. Oboz., XXXV: 422, 426, 1956.

***Balaninus arakawai*** Matsumura et Kôno, Ins. Mats., II: 171, T. VI, f. 3, 1928; Kôno, Ins. Mats., V: 9, 11, 1930; Matsumura, 6000 Ill. Ins. Jap.,: 277, fig. 889, 1931.—**syn. nov.**

***Curculio arakawai***: Dalla Torre et Schenkling, Col. Cat. 123, Curculioninae: 9, 1932; Morimoto, Mushi, 33: 98, 1960 (*arakawai*=*quercivorus*=*shigizo*); Nakane, Icon. Ins. Jap. col. nat. ed.: 376, pl. 188, f. 20, 1963; Chao, Econ. Ins. Fauna China, 20, Curculionidae (I): 160, 161, pl. XIII f. 138, 1980.

***Balaninus quercivorus*** Kôno, Ins. Mats., II: 172, T. VI, f. 20, 1928; Kôno, Ins. Mats., V: 9,

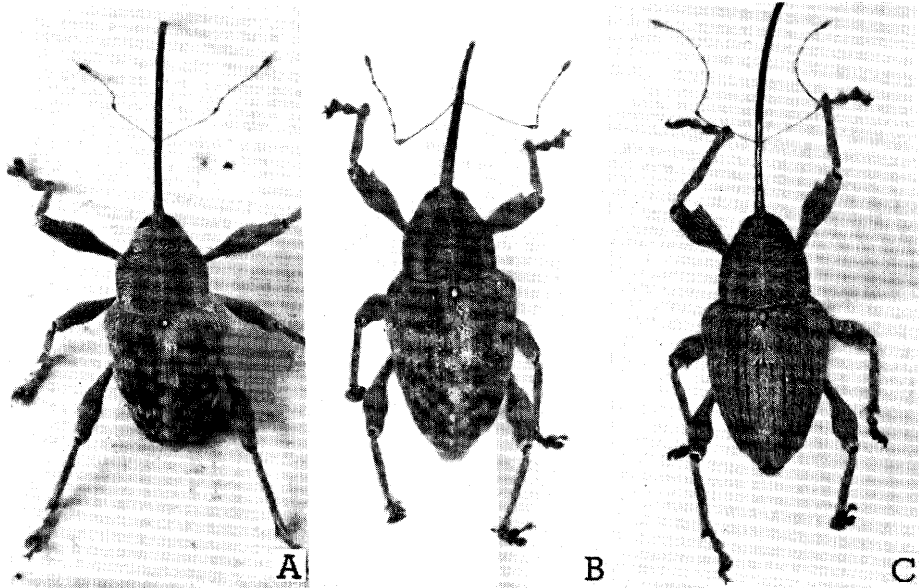


Fig. 9. *Curculio dentipes* (Roelofs) A : Holotype, Japan. B : Male, Mt. Daisen. C : Female, Tsushima.

11, 1930; Matsumura, 6000 Ill. Ins. Jap.,: 278, fig. 983, 1931; Matsumura, Ill. Common Ins. Jap. Ill. Col. : 111, pl. 26, f. 6, 1931.—**syn. nov.**

*Curculio quercivorus*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae: 9, 1932.

**Balaninus shigizo** Kôno, Ins. Mats., II : 171, T. VI, f. 19, 1928; Kôno, Ins. Mats., V : 9, 11, 1930; Matsumura, 6000 Ill. Ins. Jap.,: 278, fig. 895, 1931.—**syn. nov.**

*Curculio shigizo*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae: 21, 1932; Kôno, Icon. Ins. Jap., 2nd ed.,: 1279, fig. 3688, 1950; Ishihara et al., Trans. Shikoku Ent. Soc., III, suppl. : 106, 1953.

*Curculio camelliae*: Iga (nec Roelofs), Col. Ill. Ins. Jap., Col.: 141, pl. 50, fig. 48, 1955.

This species has been misidentified or confused with next species in Japan. The adult beetles appear from the middle of April and feed on the sprouts, galls and young leaves of *Quercus* spp., and *Castanea crenata* till the ovipositing period in September. They lay eggs into the acorn of *Quercus serrata*, *dentata*, *alina* and *crispula*, and not to *Castanea* species.

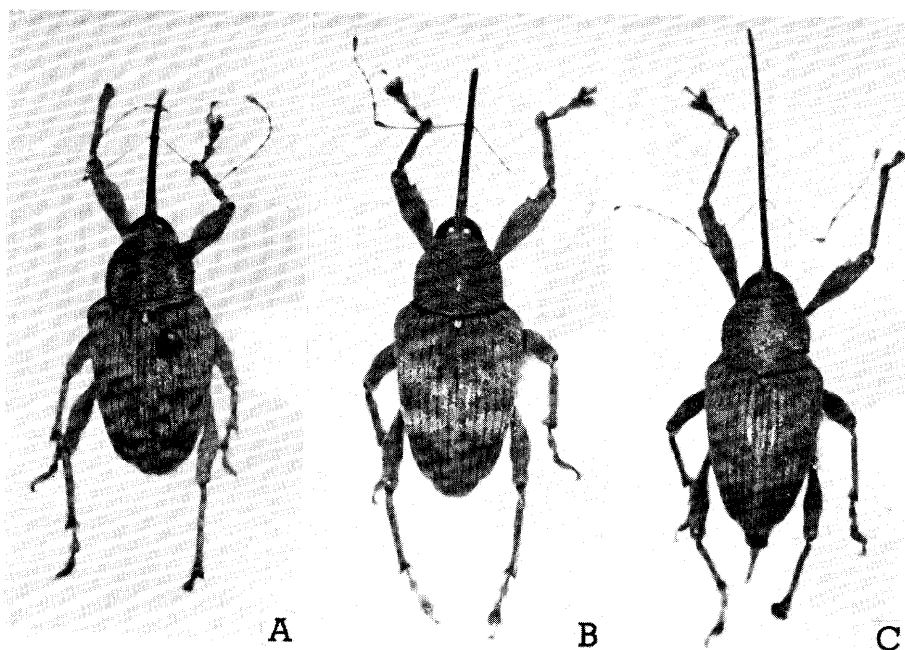
### ***Curculio sikkimensis* (Heller)**

(Fig. 10)

**Balaninus sikkimensis** Heller, Stett. Ent. Zeit., 88: 185, 1927 (Sikkim).

*Curculio sikkimensis*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae: 28, 1932.

**Balaninus dentipes**: Matsumura (nec Roelofs), Thous. Ins. Jap., IV: 10, pl. 56, fig. 19, 1909; Matsumura, Konchu Bunruigaku, II: 96, 1915; Matsumura, Dainippon Gaichu Zensho, II: 198, pl. 23, fig. 1, 1915; Kôno, Ins. Mats., V: 9, 12, 1930; Matsumura, 6000 Ill. Ins. Jap.: 277, fig. 890, 1931; Matsumura, Ill. Common Ins. Jap., III, Col. : 111, pl. 26, fig. 6,



**Fig. 10.** *Curculio sikkimensis* (Heller) A : Male, India (Punjab: Murree Hills.) B : Male, Mt. Hiko. C : Female, Mt. Hiko.

1931; Yuasa, Icon. Ins. Jap. : 535, fig. 1043, 1932.

*Curculio dentipes*: Kôno et Kim, Journ. Chosen Nat. Hist. Soc. (22) : 23, 1937; Kôno, Icon. Ins. Jap., 2nd ed.: 1279, fig. 3687, 1950; Chûjô et Morimoto, Pub. Nagaoka Sci. Mus., Ins. Niigata Pref., II: 38, 1957; Morimoto, Mushi, 33: 97, 1960; Nakane, Icon. Ins. Jap. col. nat. ed., II: 376, pl. 188, fig. 19, 1963; Morimoto, Ins. Fauna of Niigata (Baba ed.) : 40, 1979.

This is a famous pest of the chestnut in Japan known as Kurishigizo or Chestnut weevil, and has been identified as *dentipes* Roelofs by many Japanese entomologists, I have compared the Japanese specimens with those from India (Punjab) at the British Museum (Natural History), which was identified by Marshall as *sikkimensis*, and confirmed their identity.

This species is close to *fuscovarius* Heller from Java, but separable from it by the following points:

*fuscovarius* : Male. Antennae inserted into apical third of rostrum. Female. Scape of antenna longer than three basal segments of funicle combined.

*sikkimensis*: Male. Antennae inserted into the middle of rostrum. Female. Scape shorter than three basal segments of funicle combined.

*Curculio sikkimensis* appears from the middle of August to September and lays eggs into the chestnut.

In the continental China, *Curculio davidi* (Fairmaire) is known as the pest

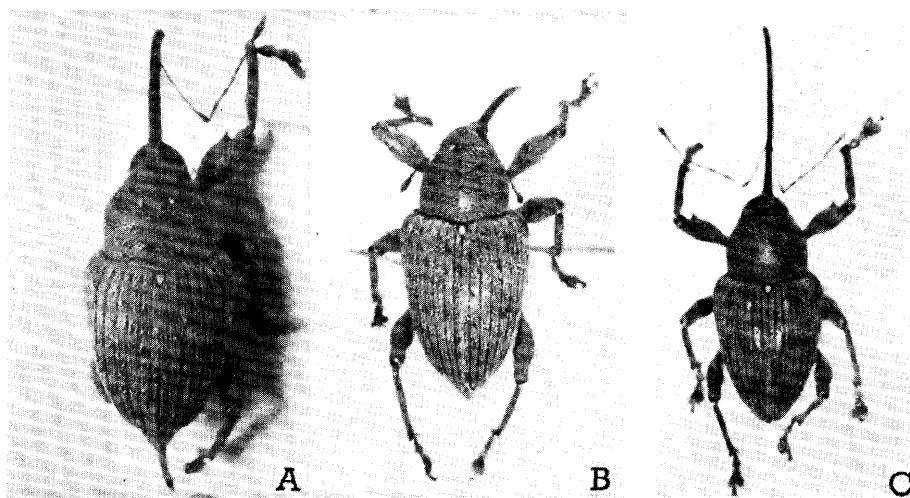


Fig. 11. *Curculio hilgendorfi* (Harold) A : Male, Yamaguchi, Hiller leg., det. by Harold ?  
B : Male, Iriomote. C : Female, Kumamoto.

of chestnut and the presence of *sikkimensis* has not been confirmed.

### *Curculio hilgendorfi* (Harold)

(Fig. 11)

*Balaninus Hilgendorfi* Harold, Deut. Ent. Zschr., XXVII: 86, 1878; Faust, Deut. Ent. Zschr. : 262, 1890.

*Balaninus iwasakii* Matsumura et Kôno, Ins. Mats., II: 170, T. VI, fig. 4, 1928; Kôno, Ins. Mats., VI : 9, 11, 1930; Matsumura, 6000 Ill. Ins. Jap., : 278, fig. 892, 1931.—**syn. nov.**

*Curculio Isawakii*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae: 15, 1932.

*Curculio iwasakii* : Morimoto, Mushi, 33 : 96, 1960.

This species was once treated as a synonym of *dentipes* by Lewis (1896) but one specimen in the British Museum (Natural History), collected by Hiller from Hagi and probably identified by Harold as *hilgendorfi*, is apparently the same as *iwasakii*. This species appears from the middle of August to September and oviposits into the acorn of *Castanopsis cuspidata*, *lutschuensis* and *sieboldii*.

### *Curculio breviscapus* (Heller)

*Balaninus breviscapus* Heller, Stett. Ent. Zschr., 88: 193, 274, 1927.

*Curculio breviscapus*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae : 24, 1932; Voss, Decheniana, Beihefte 5: 96, 1958.

*Curculio tigrinus* Morimoto, Mushi, 33: 103, 1960; Nakane, Icon. Ins. Jap. col. nat. ed., II: 376, pl. 188, fig. 28, 1963.—**syn. nov.**

### *Curculio maculanigra* (Roelofs)

*Balaninus macula-nigra* Roelofs, Ann. Soc. Ent. Belg., XVII : 158, 1874: Kôno, Ins. Mats., V: 10, 13, 1930.

- Curculio macula-nigra*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae : 15, 1932;  
 Morimoto, Mushi, 33: 103, 1960; Voss, Decheniana, Beihefte 5: 92, 95, 1958.  
*Balaninus sakaguchii* Kôno, Ins. Mats., II : 173, T. VI, fig. 6, 1928; Kôno, Ins. Mats., V : 10,  
 13, 1930; Matsumura, 6000 111. Ins. Jap., : 278, fig. 894, 1931.—**syn. nov.**  
*Curculio sakaguchii*: Dalla Torre et Schenkling, Col. Cat., 123, Curculioninae: 20, 1932.

The holotype of *sakaguchii* is a male in bad condition and has a black mark at the base of suture. The illustrations by Kôno (1928) and Matsumura (1931) are inaccurate.

#### List of the subfamily Curculioninae in Japan

1. *Labaninus kimotoi* (Morimoto, 1960)
2. *Shigizo rhombiformis* sp. nov.
3. *Cyculio aino* (Kôno, 1930)
4. *Curculio alboscuteellatus* (Roelofs, 1874)
5. *Cyculio albobittatus* (Kôno, 1930)
6. *Curculio amabilis* Morimoto, 1962
7. *Curculio antennatus* (Kôno, 1930)
8. *Cyculio byviscapus* (Heller, 1927)  
     = *tigynus* Morimoto, 1960
9. *Curculio camelliae* (Roelofs, 1874)
10. *Cyculio cerasorum* (Paykull, 1792)
11. *Cyculio chibi* (Kôno, 1930)
12. *Cyculio clarus* Notsu, 1978
13. *Cyculio conjugayis* (Faust, 1882)
14. *Curculio convexus* (Roelofs, 1874)
15. *Cyculio dentipes* (Roelofs, 1874)  
     = *arakawai* Matsumura et Kôno, 1928  
     = *queycivoyus* Kôno, 1928  
     = *shigizo* Kôno, 1928
16. *Cyculio dieckmanni* (Faust, 1887)
17. *Curculio distinguendus* (Roelofs, 1874)
18. *Cyculio elaeagni* Morimoto, 1962
19. *Curculio esakii* Morimoto, 1962
20. *Cyculio flavescens* (Roelofs, 1874)
21. *Cyculio flavoscutellatus* (Roelofs, 1874)
22. *Cyculio fluvipennis* Morimoto, 1960
23. *Cyculio funebyis* (Roelofs, 1874)
24. *Curculio hachijoensis* Morimoto, 1962
25. *Cyculio hilgendorfi* (Harold, 1878)  
     = *iwasakii* Matsumura et Kôno, 1928
26. *Cyculio hime* (Kôno, 1930)

27. *Curculio hirashimai* sp. nov.
28. *Curculio ichihashii* Morimoto, 1962
29. *Curculio kamiyai* Morimoto, 1962
30. *Curculio kojimai* Morimoto, 1960
31. *Curculio koreanus* (Heller, 1927)
32. *Curculio kunugi* Morimoto, 1962
33. *Curculio kurosawai* Morimoto, 1962
34. *Curculio lateritius* sp. nov.
35. *Curculio maculanigra* (Roelofs, 1874)  
= *sakaguchii* Kôno, 1928
36. *Curculio minutissimus* Dalla Torre et Schenkling, 1932
37. *Curculio miyatakei* Morimoto, 1960
38. *Curculio murakamii* Morimoto, 1962
39. *Curculio nagaoi* sp. nov.
40. *Curculio ochrofasciatus* sp. nov.
41. *Curculio okumai* sp. nov.
42. *Curculio parasiticus* Morimoto, 1962
43. *Curculio pictus* (Roelofs, 1874)
44. *Curculio rai* sp. nov.
45. *Curculio robustus* (Roelofs, 1874)
46. *Curculio roelofsi* (Heller, 1927)
47. *Curculio sikkimensis* (Heller, 1927)  
= *dentipes* auct. (Chestnut weevil)
48. *Curculio styracis* (Roelofs, 1874)
49. *Curculio ussuriensis* (Heller, 1927)
50. *Curculio yanoi* Morimoto, 1962
51. *Curculio yoshieae* Notsu, 1978