

Classification of the Subfamily Curculioninae from Korea (Coleoptera : Curculionidae)

한국산 밤바구미亞科의 분류

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ABSTRACT Korean Curculioninae are revised herein, and totally 28 species belonging to 5 genera are treated. Among them, 13 species with 1 subgenus and 2 genera are new to science, and 7 species with 1 genus are newly recorded from Korea. Keys are given for all the taxa respectively, and host plants and domestic localities for each species are provided.

KEY WORDS Classification, Coleoptera, Curculionidae, Curculioninae

초 록 한국산 밤바구미류는 지금까지 8종이 보고되었으나, 그 계통분류의 일환으로 재검토한 결과 총 5屬 28種이었고, 그중에는 2新屬, 1新亞屬, 13新種 및 7한국미기록종이 새로 추가된다. 각 분류군의 검색표, 분포상황 및 기주식물을 정리하였다.

검색어 분류, 초시목, 바구미과, 밤바구미亞科

The acorn and nut weevils, which characterized generally by having an extraordinarily long and slender rostrum, bore into acorns or nuts of various trees with their rostra and often oviposit their eggs in the holes, thus the larvae breed and infest inside the fruits. Some are quite important insect pests, such as chestnut weevil (*Curculio sikkimensis*) which had been erroneously identified as "*Curculio dentipes*" in Korea, Japan, and China until Morimoto (1981) rectified.

Hitherto, 8 species have been known in Korea prior to the present survey (Table 1). In the serial work, we intend to revise and arrange this group briefly and add 7 previously unrecorded

species to Korean fauna, including 13 species with 1 subgenus and 2 genera new to science respectively. Thus a total of 28 species belonging to 5 genera are listed as the result.

Important diagnostic characters employed are the male genitalia for the separation of supraspecific taxa, as these have been ignored by many authors. The M. R.-Romanization was adopted for notation of the collected domestic localities (cf. Kim 1978), and all the type-material designated here will be deposited in the collection of Systematic Entomology Laboratory, Department of Agricultural Biology, Kyungpook National University, Taegu.

SYSTEMATICS

Key to genera of Korean Curculioninae

1. Body often larger; mesosternal process

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Table 1. A synopsis of first reports of Korean Curculioninae (all valid species are printed in bold, described as new species are marked with*)

Year	Author	Species
1930	Kono	<i>B. flavescens</i> (=error for <i>C. ochrofasciatus</i>)
1930	Machida & Aoyama	<i>B. camellae</i> (sic,=error for <i>C. sikkimensis</i>)
1932	For. Exp. Stat.	<i>B. dentipes</i> (=error for <i>C. sikkimensis</i>)
1936	Haku	<i>B. distinguendus</i> (= <i>C. distinguendus</i>)
1937	Kono & Kim	<i>B. pictus</i> (= <i>C. pictus</i>)
1937	Ishii	<i>B. styracs</i> (sic,= <i>C. styracs</i>)
1956	Ter-Minassian	<i>C. dentipes</i>
1969	Ko	<i>C. camelliae</i>
1981	Park	<i>C. conjugalis</i>
1981	Morimoto	<i>C. ochrofasciatus</i> *

between mid coxae more or less convex, apparently narrower than the width of mid coxa; antennal clubs elongate; aedeagus blade-like 2.

— Body generally very small, not exceeding 3.5 mm in length; mesosternal process between mid coxae usually flat and broad, about as wide as or slightly narrower than mid coxa; antennal clubs oval; aedeagus more or less cylindrical 3.

2. Pronotum with lateral sides simple rounded, hind angles obtuse and not laminate; elytra with latero-basal angles blunt, not protruding anteriorly below hind angles of pronotum; fore femora with stalks generally straight *Curculio*

— Pronotum with lateral sides weakly but distinctly sinuate before hind angles which are laminate and producing latero-posteriorly in dorsal view, rectangular in lateral view; elytra with latero-basal angles sharply pointed anteriorly below hind angles of pronotum; fore femora slightly bent at basal 1/3 *Labaninus*

3. 1st antennal funicle apparently longer than 2nd one; male abdomen with 2 basal segments fused together, suture discernible only on each side 4.

— 1st antennal funicle apparently longer or

nearly as long as 2nd one; male abdomen with 2 basal segments somewhat fused, but suture complete *Balanobius*

4. Male hind tibiae armed with a spine-like process on each inner side distally; aedeagus with apical construction complicated, having lateral lobes well developed *Pagumia* gen. n.

— Male hind tibiae simple, without any projection on each inner side; aedeagus with apical construction simple, truncate or produced, without any lateral lobes *Koreoculio* gen. n.

Genus *Labaninus* Morimoto, 1981

어리밤바구미속(新稱)

1. *Labaninus confluens* sp. n.

어리밤바구미속(新稱)

(Fig. 1)

Male: General coloration black. Rostrum shorter than elytra (ratio, 1:1.2), rather roundly curved before middle, with its under side being above the level with the lower margin of eye in lateral view. Antennae excluding clubs sometimes dark reddish brown, inserted apparently behind middle of rostrum. Pronotum with a transverse yellowish white band of scales along basal margin. Elytra with a weak white patch basally around scutellum, behind the

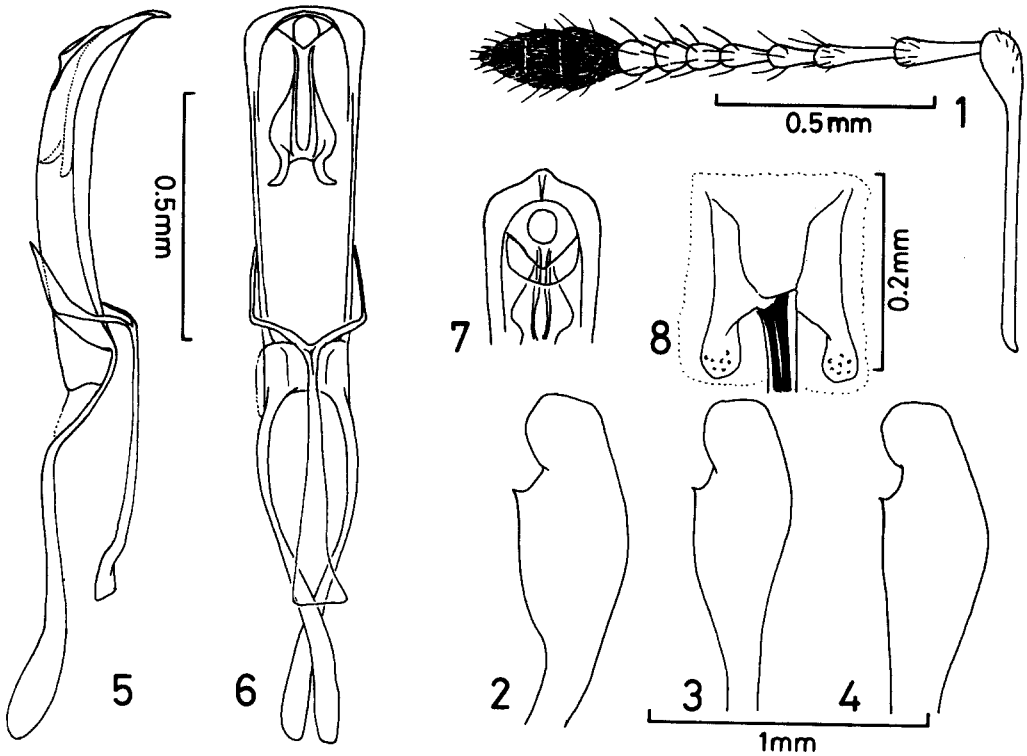


Fig. 1. *Labaninus confluens* sp. n., male (1~7) and female (8).

1 : Antenna, 2 : fore femur, 3 : mid femur, 4 : hind femur, 5 : aedeagus in lateral view, 6 : ditto, ventral view, 7 : ditto, apex in dorso-caudal view, 8 : spiculum gastrale.

middle with a transverse white band; apical declivitous portion of 1st interval bearing whitish long hairs. Aedeagus abruptly curved apically, with tip directed cephalad.

Female : Rostrum about as long as elytra, with antennal insertion at basal 1/3.

Length : 3.1~3.7 mm.

Type-material : Holotype ♂, Hallasan, JJ, S. Korea, 29, VI, 1981 (S. Lee); paratypes : 1 ♀, Choch'on Myön, JJ, S. Korea, 1, VII 1981 (S. Lee) ; 1 ♂, San'gumberi, JJ, S. Korea, 9, 9, V, 1989 (Y. Kwon); 1 ♂, Töksungsan, CN, C. Korea, 27, V, 1982 (Y. Kwon).

Host : Unknown.

Remarks : The present new species closely resembles *L. kimotoi* (Morimoto 1960) from Japan, but can be separated from the latter by

the external feature.

Genus *Curculio* Linnaeus, 1758

밤바구미속

Key to species of *Curculio*

- 1. Scutellum apparently longer than wide to about as long as wide; fore and mid femora prominently to minutely dentate 2.
- Scutellum about as long as wide to apparently wider; fore and mid femora not or very obscurely dentate 14.
- 2. Rostrum apparently shorter than elytra; fore and mid femora minutely dentate; elytra strongly convex mesally, commissure not fringed with long or raised scales distally; postscutellar depression absent
..... *taebaeksanensis* sp. n.

- Rostrum often longer than elytra especially in female, or sometimes very slender; fore and mid femora prominently to minutely dentate; elytra slightly convex to flat mesally, commissure fringed with raised bristles or scales distally; post-scutellar depression often distinct 3.
- 3. Tibiae sharply carinate on each inner side; elytra with 1st intervals flat or slightly convex, more or less weakly punctulate as in the other intervals; commissure fringed very closely with suberect scales distally 4.
- Tibiae at most weakly carinate on each inner side; elytra with 1st intervals slightly concave to flat, shagreened or punctulate, but not wrinkled as in the other intervals, commissure fringed with erect bristles or long scales distally 6.
- 4. Female rostrum strikingly slender, much longer than that of male, with a median keel entirely absent on dorsal base; 7th antennal funicle far longer than 1st segment of club; median struts of aedeagus about as long as, or shorter than penis 5.
- Female rostrum very short, about as long as that of male, with a median keel distinct on dorsal base in both sexes; 7th antennal funicle slightly longer than 1st segment of club; median struts of aedeagus apparently longer than penis ... *conjugalis*
- 5. Body generally elongate; antennal scape in female shorter than basal 3 segments of funicle taken together; scutellum slightly longer than wide; aedeagus slightly arcuate in lateral shape, with apex abruptly narrowed and produced mesally; median struts apparently shorter than penis *sikkimensis*
- Body oval to elongate oval; antennal scape in female about as long as basal 4 segments of funicle taken together; scutellum about 1.5 times as long as wide; aedeagus prominently arcuate in lateral shape, with apex roundly produced at each side of median projection; median struts about as long as penis *dentipes*
- 6. Fore tibiae apparently depressed dorso-apically; rostrum with base higher than the level of frons in lateral view *funebri*
- Fore tibiae not depressed dorso-apically; rostrum with base not higher than the level of frons in lateral view 7.
- 7. Scutellum as long as or slightly longer than wide; pronotum with markings of scales variable, but lacking triangular white patch on each side of base; elytral markings variable 8.
- Scutellum about 1.5 times as long as wide; pronotum with a triangular transverse white patch of scales on each side of base; elytra with a X-shaped prominent white marking *styracis*
- 8. Femora strikingly dentate 9.
- Femora minutely, but sharply dentate 13.
- 9. 7th antennal funicle about as long as or longer than 1st segment of club; female rostrum very slender, much longer than elytra; elytra with markings of scales variable 10.
- 7th antennal funicle apparently shorter than 1st segment of club; female rostrum distinctly shorter than elytra; elytra with a yellowish brown to ochreous transverse band behind middle, each base and commissure yellowish brown to ochreous 12.
- 10. Female rostrum strikingly slender, longer than body; elytra uniformly covered with brown or greyish brown scales, commissure fringed with reddish brown erect bristles *camelliae*
- Female rostrum slightly shorter than body; elytra mottled with yellow or white spots of scales, commissure fringed with dark brown or yellowish brown erect bristles 11.

- 11. Pronotum with a triangular yellow patch of scales before scutellum; elytra mottled with yellow, somewhat transversely confluent spots of scales, commissure fringed with yellow to yellowish brown erect bristles *dieckmanni*
 - Pronotum without triangular patch of scales before scutellum; elytra mottled with white or yellow spots of scales, commissure fringed with dark brown erect bristles *distinguendus*
- 12. Frons between eyes half as wide as rostral base; scutellum slightly longer than wide; female antennae inserted in the basal 1/3 of rostrum *ochrofasciatus*
 - Frons between eyes exceeding half width of rostral base; scutellum about as long as wide; female antennae inserted in the basal 2/5 of rostrum *vibariae* sp. n.
- 13. Derm black; 1st antennal funicle nearly as long as 2nd one; pronotum with a triangular white or yellowish patch of scales before scutellum; elytra with a white or yellow transverse short band of scales behind middle *koreanus*
 - Derm reddish brown; 1st antennal funicle apparently shorter than 2nd one; pronotum rather uniformly covered with yellowish scales; elytra mottled with white, yellow, and yellowish brown patches of scales *flavidorsum* sp. n.
- 14. Antennae inserted in the middle of rostrum in male; aedeagus with end piece moderately produced, about as long as or slightly exceeding ostium; female pygidium lacking median longitudinal carina 15.
 - Antennae inserted before middle of rostrum in male; aedeagus with end piece elongately produced, nearly twice as long as ostium; female pygidium with a median longitudinal carina sharply defined and high *inornatus* sp. n.
- 15. Body elongate oval; male antennal scapes

comparatively slender, about as long as distal portion of rostrum from antennal insertion; aedeagus arcuately broader distally on each side, abruptly narrowed and produced apically *velox* sp. n.

- Body oval; male antennal scapes shorter than distal portion of rostrum from antennal insertion; aedeagus subparallel-sided, with apex subtriangularly produced 16.

16. Derm dark reddish brown, with scales much dense; frons between eyes weakly depressed and rugulose; aedeagus rather narrower *hallasanensis* sp. n.

- Derm yellowish brown, with scales less dense; frons between eyes with a median longitudinal deep depression; aedeagus relatively broader *quelparticola* sp. n.

2. *Curculio taebaeksanensis* sp. n.

태백산밤바구미 (新稱)

(Fig. 4 : 10~12)

Male: General coloration reddish brown, with thorax dark reddish brown. Rostrum nearly half as long as elytra, roundly bent at middle, darker basally; base slightly less than twice as wide as frons between eyes. Antennae reddish brown, inserted in the middle of rostrum. Pronotum clothed with greyish yellow and milky white scales. Elytra irregularly mottled with yellowish grey, yellowish brown, and milky white scales. Aedeagus comparatively stout apically in lateral shape, with tip truncately produced.

Female : Unknown.

Length : 3.4~3.6 mm.

Type-material : Holotype ♂, T'aebaeksan, GW, C. Korea, 18, VI, 1983 (Y. Kwon); paratypes : 2♂♂, same data as holotype.

Host : Unknown.

Remarks : This new species may be distinguished from *C. fluvipennis* Morimoto, 1960, by the external feature.

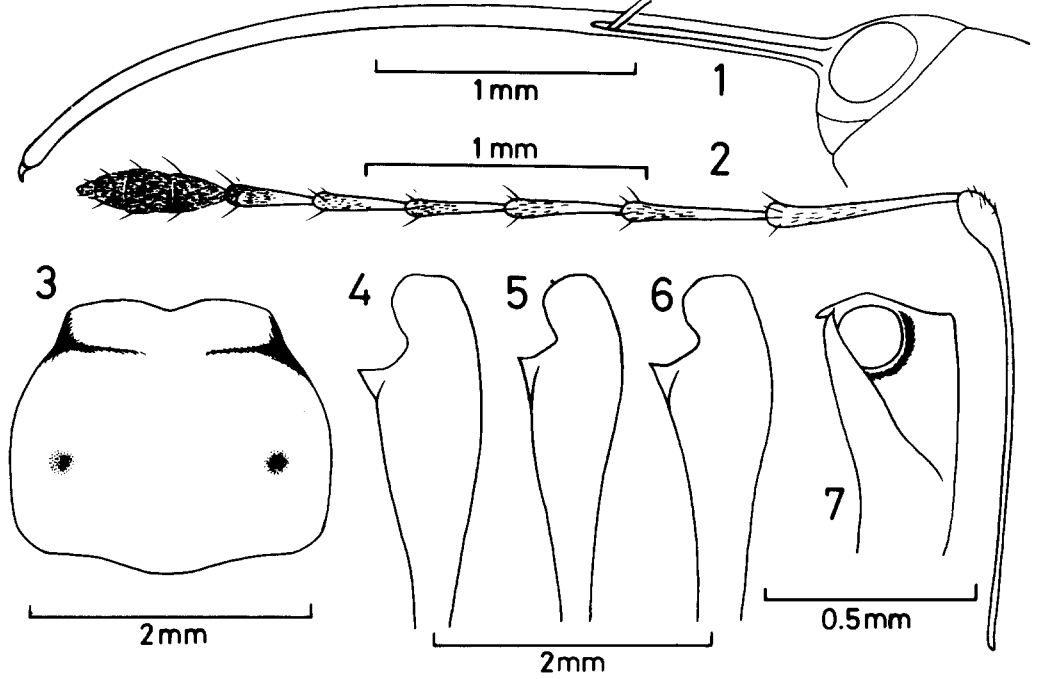


Fig. 2. *Curculio sikkimensis*, female.

1 : Head in lateral view, 2 : antenna, 3 : pronotum, 4 : fore femur, 5 : mid femur, 6 : hind femur, 7 : apex of fore tibia.

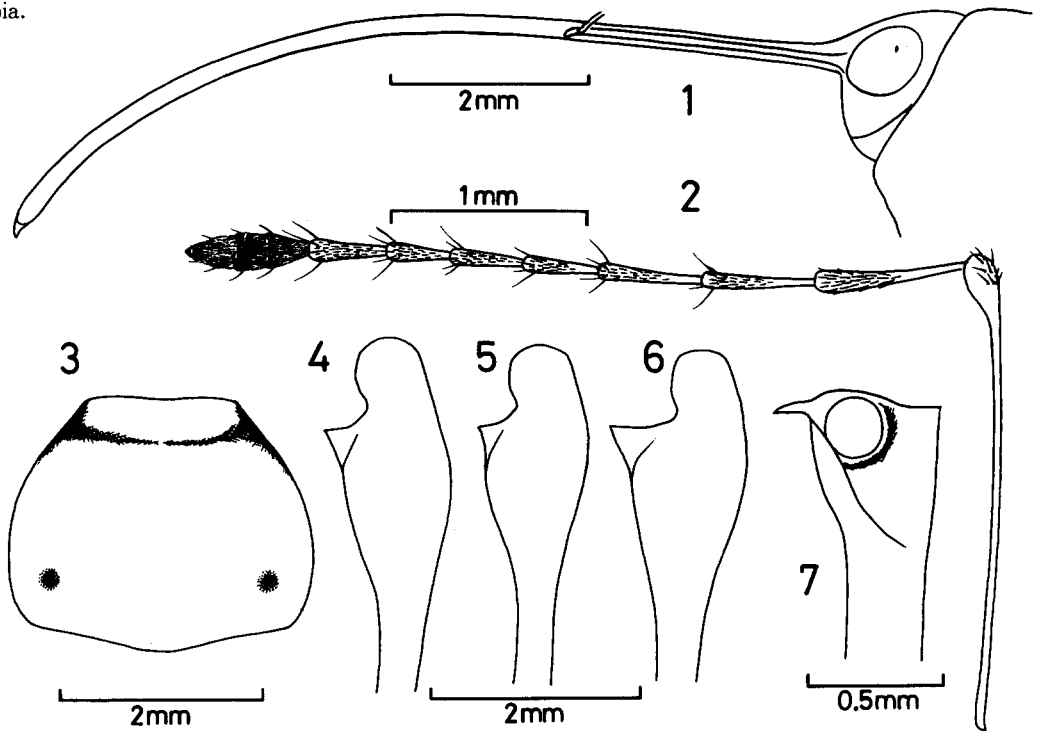


Fig. 3. *Curculio dentipes*, female. For caption, see fig. 2.

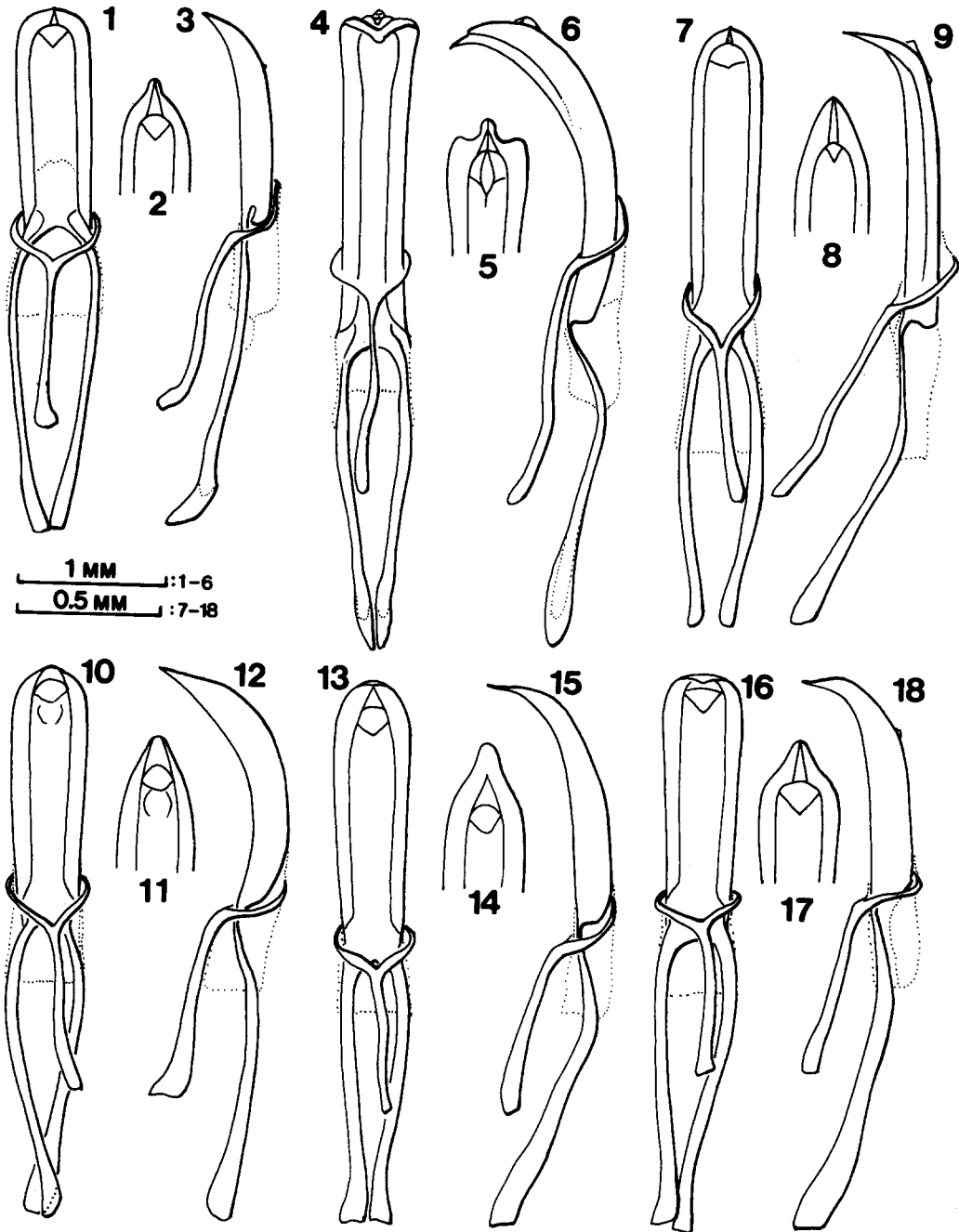


Fig. 4. Male aedeagal structure of *Curculio* spp.

1~3 : *C. conjugalis*, 4~6 : *C. dentipes*, 7~9 : *C. styracis*, 10~12 : *C. taebaeksanensis* sp. n., 13~15 : *C. inornatus* sp. n., 16~18 : *C. velox* sp. n.

3. *Curculio conjugalis* (Faust, 1882)

짧은밤바구미(新稱)

(Fig. 4 : 1~3)

Deutsch. Ent. Zeitschr. 26 : 278 (*Balaninus*).

Locality : Chindo, Hallasan, Kumsan (Park, 1981), Odaesan, Sogumgang, Soraksan.

Distribution : Korea (Central, South, Chejudo), Japan (Honshu, Kyushu), USSR (Maritime Territory).

Host : Unknown.

4. *Curculio sikkimensis* (Heller, 1927)

밤바구미(밤벌레, 꿀꿀이코벌레,

꿀꿀이바구미)

(Fig. 2)

Stett. Ent. Zeit. 88 : 185~186 (*Balaninus*).

Locality : Ch'iaksan, Chirisan(Kim 1961, 1967), Chömbongsan (Kim & Nam 1984a), Chönmasan, Hwanghaksan, Kümgangsán (Motchizuki & Tsunekawa 1937, Mori & Cho 1940, Cho 1947), Kwangnüng (For. Exp. Stat. 1932), Kyeryongsan(Chang & Choe 1982), Milyang (Machida & Aoyama 1930), Myohyangsan(Nagaoka 1938), Odaesan, P'algongsan, Pogaesan, P'yönyang (Machida & Aoyama 1930), Soraksan(Kim & Nam 1984b), Suwön, Taegu(Haku 1936), Turyunsan.

Distribution : Korea (North, Central, South), Japan (Honshu, Kyushu, Shikoku), China (Mainland, Manchuria), India (Punjab, Sikkim).

Host : *Castanea crenata* (chestnut).

The species was erroneously confused with the following species in Korea and Japan, as rectified by Morimoto(1981).

5. *Curculio dentipes* (Roelofs, 1874)

도토리밤바구미

(Fig. 3, 4 : 4~6)

Ann. Soc. Ent. Belg. 17 : 156 (*Balaninus*).

Balaninus arakawai Matsumura et Kono, 1928,

Ins. Mats. 2 : 171.

Balaninus shigizo + *B. quercivorus* Kono, 1928, Ibid. 2 : 171~172.

Locality : Ch'onggyesan, Kanghaiwado, P'algongsan, Pogwangsa, Pukhansan, Seoul, Soraksan, Soyosan, T'aebaeksan, Taesongni, T'ongdosa, Wangbangsan(Kim 1978), Yöngch'wisan.

Distribution : Korea (North, Central, South), Japan (Hokkaido, Honshu, Kyushu, Shikoku), China (Hebei, Manchuria, Shandong), USSR (Maritime Territory).

Host : *Quercus acutissima*, *Q. aliena*, *Q. dentata*, *Q. variabilis*.

Previous records of this species in Korea, known as "chestnut weevil", mostly apply to *C. sikkimensis*.

6. *Curculio styracis* (Roelofs, 1974)

흰떡밤바구미(新稱)

(Fig. 4 : 7~8)

Ann. Soc. Ent. Belg. 17 : 157 (*Balaninus*).

Locality : Kajisan, Soyosan (Ishii, 1937), Unmunsan.

Distribution : Korea (Central, South), Japan (Honshu, Kyushu, Shikoku).

Host : *Styrax japonica*.

7. *Curculio funebris* (Roelofs, 1874)

천선과밤바구미(新稱)

Ann. Soc. Ent. Belg. 17 : 159~160 (*Balaninus*).

Balaninus clavatus Faust, 1882, Deutsch. Ent. Zeitschr. 26 : 278.

Locality : JJ : Chungmun.

Distribution : Korea(new record : Chejudo), Japan(Honshu, Kyushu, Shikoku).

Host : *Ficus erecta*.

8. *Curculio camelliae* (Roelofs, 1874)

동백밤바구미(동백바구미)

Ann. Soc. Ent. Belg. 17 : 157(*Balaninus*).

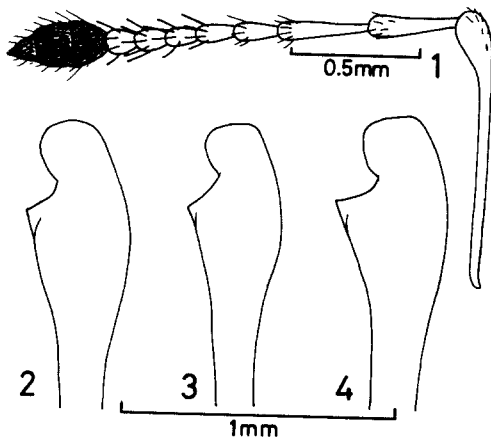


Fig. 5. *Curculio vibariae* sp. n., female.

For caption, see the preceding figs.

Locality : Ch'onggye, "Korea" (Ko 1969).

Distribution : Korea (South), Japan (Honshu, Kyushu, Shikoku).

Host : *Camellia japonica*.

9. *Curculio dieckmanni* (Faust, 1887)

개암밤바구미 (新稱)

Deutsch. Ent. Zeitsch. 31:178~179 (*Balaninus*).

Locality : Ch'onmasan, Obongsan.

Distribution : Korea (new record : Central), Japan (?), China (Manchuria), USSR (Maritime Territory).

Host : *Corylus heterophylla*, *C. mandshurica*.

10. *Curculio distinguendus* (Roelofs, 1874)

검정밤바구미 (검정꿀풀이바구미)

Ann. Soc. Ent. Belg. 17 : 156 (*Balaninus*)

Locality : Chirisan Ch'onmasan, Hwanghaksan, Inje (Kim et al. 1975), Obongsan, Odaesan, P'algongsan (Haku 1936), Pukhansan, Söraksan, Tonaе, Unmunsan.

Distribution : Korea (North, Central, South), Japan (Honshu, Kyushu).

Host : *Quercus acutissima*.

11. *Curculio ochrofasciatus* Morimoto, 1981

노랑띠밤바구미 (노랑띠꿀풀이바구미)

Esakia 17 : 119~120.

Locality : "Korea" (Kono, 1930), "Simohakusen, Kan-Nan-Engan" (Morimoto, 1981).

Distribution : Korea (North), Japan (Hokkaido, Honshu, Kyushu).

Host : Unknown.

Hitherto, this species has been erroneously known as "*Curculio flavescens*" in Korea.

12. *Curculio vibariae* sp. nov.

비바리밤바구미 (新稱)

(Fig. 5)

Male : Unknown.

Female : General coloration black to dark brown, clothed with yellowish brown and dark brown scales. Rostrum polished black, shorter than elytra (ratio, 1 : 1.3), somewhat roundly curved distally; base apparently wider than frons between eyes (ratio, 1.4 : 1). Antennae excluding clubs dark brown, inserted in basal 2/5 of rostrum. Pronotum clothed with yellowish brown scales peripherally, and dark brown scales centrally. Scutellum about as long as wide, densely clothed with yellowish brown scales. Elytra with a yellowish brown transverse band of scales behind middle; base and commissure forming a yellowish brown band of scales, remainder mostly with dark brown scales; commissure fringed with a row of dark brown erect bristles besides yellowish brown ones apically.

Length : 5 mm.

Type-material : Holotype ♀, Hallasan, JJ. S. Korea, 27, VI, 1981 (S. Lee); paratype : 1 ♀, same locality as holotype, 5, VII, 1989 (Y. Kwon).

Remarks : The present new species may be distinguishable easily from *C. ochrofasciatus* Morimoto, 1981, by the external feature as given above.

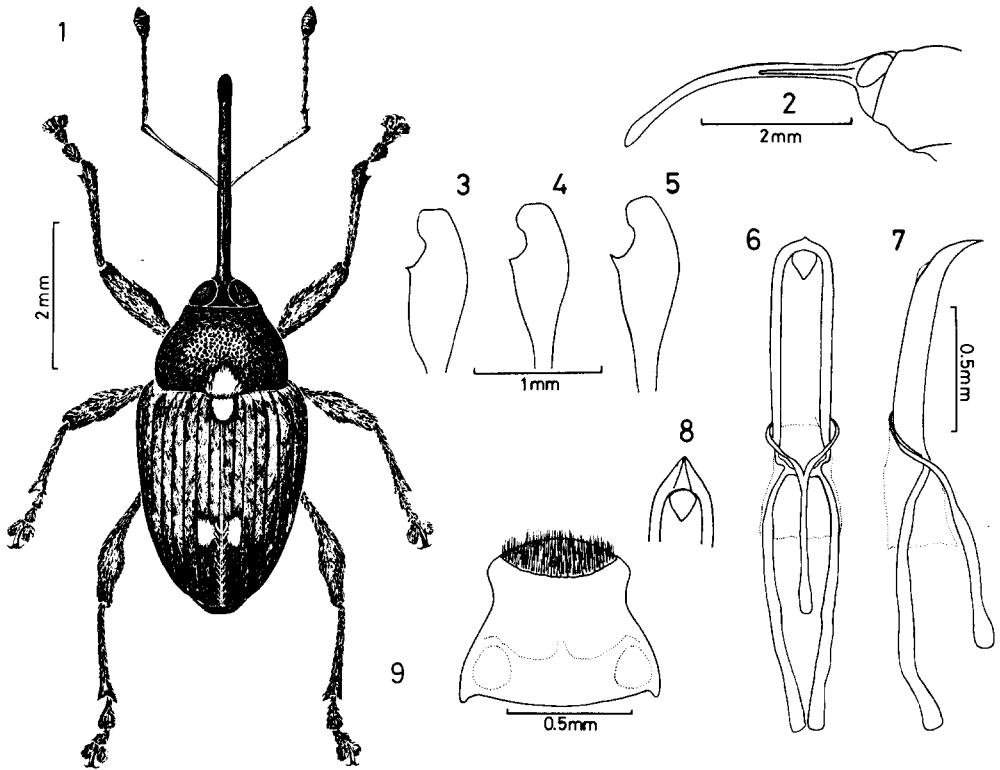


Fig. 6. *Curculio koreanus*, male (1~8) and female (9).

For caption, see the preceding figs., except for 9 : pygidium.

13. *Curculio koreanus* (Heller, 1927)

한국밤바구미(新稱)

(Fig. 6)

Stett. Ent. Zeit. 88 : 181 (*Balaninus*).

Locality : Chirisan, Ch'önmasan, Obongsan, Söraksan.

Distribution : Korea (new record : Central, South), Japan (Honshu, Shikoku), USSR (Maritime Territory).

Host : Unknown.

The type-locality of this species is not Korea but "Wladiwostock" of Soviet Maritime Territory according to Heller's original description, therefore this is the first record to Korean fauna.

14. *Curculio flavidorsum* sp. n.

알락밤바구미(新稱)

(Fig. 7)

Male : General coloration dark reddish brown to dark brown. Rostrum slightly longer than elytra (ratio, 1.2 : 1), roundly curved distally; base slightly wider than frons between eyes. Antennae inserted behind middle of rostrum. Pronotum rather uniformly clothed with yellow to yellowish grey scales. Elytra mottled with white, yellow, and yellowish brown patches of scales; commissure fringed with a row of golden to yellowish brown erect bristles apically. Aedeagus deep roundly curved apically, with tip simple triangularly produced.

Female : Rostrum nearly as long as or slightly shorter than elytra, with antennal in

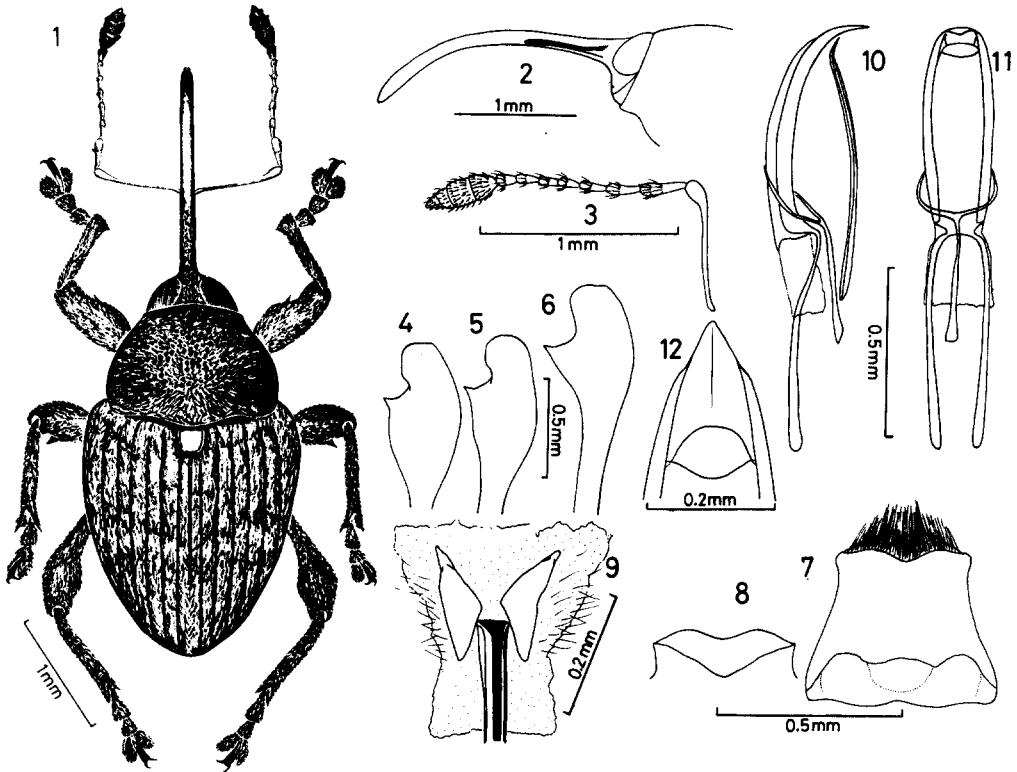


Fig. 7. *Curculio flavidorsum* sp. n., female(1~9) and male (10~12).

For caption, see the preceding figs., except for 8 : pygidium in caudal view.

sersion at basal 1/3; base as wide as frons between eyes.

Length : 3~3.5 mm.

Type-material : Holotype ♂, T'ongdosa, GN, S. Korea, 24 V, 1980 (Y. Kwon); paratypes : 1♀, Ch'iaksan, GW, C. Korea, 21, V, 1979 (S. Lee); 1♀, Kyeryongsan, CN, C. Korea, 22, V, 1980 (Y. Kwon); 1♂ & 1♀, Yö ngch' wisan, GN, S. Korea, 11, V, 1981 (Y. Kwon); 1♀, Pukhansan, GG, C. Korea, 12, VII 1981 (S. Lee); 1♂, Kwangnüng, GG, C. Korea, 14, V, 1982 (Y. Kwon); 1♂, Kanghwado, GG, C. Korea, 9, V, 1983 (Y. Kwon).

Host : Unknown.

Remarks : The present new species differs from other related species by the male genitalia.

15. *Curculio inornatus* sp. n.

멋쟁이밤바구미(新稱)

(Fig. 4 : 13~15)

Male : General coloration reddish brown to dark reddish brown. Rostrum slightly shorter than elytra (ratio, 1 : 1.1), shallow roundly curved distally; base wider than frons between eyes (ratio, 1.25 : 1). Antennae inserted before middle of rostrum. Pronotum covered with yellowish brown scales peripherally, and brown ones centrally. Elytra mottled with yellowish grey and brown scales, with a yellowish grey to yellowish brown band of scales behind middle; commissure fringed with a row of yellowish brown erect bristles apically. Aedeagus with end piece elongately produced, nearly twice as long as ostium.

Female : Rostrum very weakly curved dis-

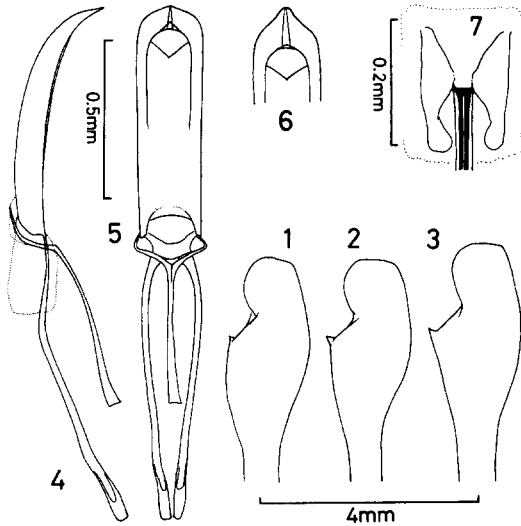


Fig. 8. *Curculio hallasanensis* sp. n., male (1~6) and female (7). For caption, see the preceding figs.

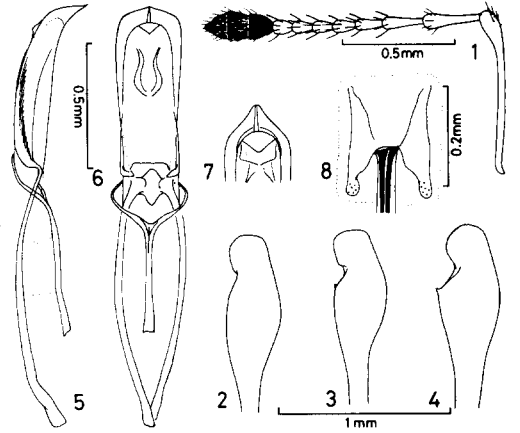


Fig. 9. *Curculio quelparticola* sp. n. For caption, see the preceding figs.

tally, about as long as elytra, with antennal insertion at basal 2/5. Pygidium with a median longitudinal carina sharply defined and high.

Length : 3.5~4.4 mm.

Type-material : Holotype ♂, Turyunsan, JN, S. Korea, 2, X, 1983 (Y. Kwon); paratypes : 1 ♀, same data as holotype; 1 ♀, Chuwangsan, GB, S. Korea, 27, VII, 1984 (Y. Kwon); 1 ♀, P'algongsan, GB, S. Korea. 23, IX, 1984 (Y. Kwon).

Host : Unknown

Remarks : The present new species may be apparently separated from other related species by the male genitalia.

16. *Curculio velox* sp. n.

각시밤바구미(新稱)

(Fig. 4 : 16~18)

Male : General coloration reddish brown to dark reddish brown. Rostrum slightly shorter than elytra (ratio, 1 : 1.3), shallow roundly curved distally; base 1.5 times as wide as frons between eyes. Antennae inserted in the middle of rostrum. Pronotum covered with yellowish brown scales, with a row of milky white scales

along basal margin near scutellum. Scutellum slightly wider than long (ratio, 1.14 : 1). Elytra mottled with yellowish grey, brown, and milky white scales, with a milky white to grey transverse band of scales behind middle; commissure fringed with a row of yellowish brown erect bristles apically. Aedeagus arcuately broader distally on each side, roundly but abruptly narrowed, and produced apically; end piece 1.4 times as long as ostium.

Female : Unknown.

Length : 3.5~4 mm.

Type-material : Holotype ♂, Söraksan, GW, C. Korea, 29, VII, 1982 (Y. Kwon); paratype : 1 ♂, Odaesan, GW, C. Korea, 17, IX, 1982 (Y. Kwon).

Host : Unknown.

Remarks : This new species resembles closely the preceding one, but can be easily separable from the latter by the male aedeagus.

17. *Curculio hallasanensis* sp. n.

한라산밤바구미(新稱)

(Fig. 8)

Male : General coloration dark reddish brown. Rostrum apparently shorter than elytra (ratio, 1 : 1.45), shallow roundly curved distally; base wider than frons between eyes (ratio, 1.33 : 1), Antennae inserted in the middle of rostrum, with scape shorter than the length of distal portion from antennal insertion of rostrum (ratio, 1 : 1.18). Pronotum covered with yellowish brown scales; basal margin with scales rather lighter than remainder in tint. Elytra mottled with yellowish grey, yellowish brown, and brown scales. with an obscure transverse patch of light scales behind middle; commissure fringed with a row of yellowish brown erect bristles apically. Aedeagus somewhat narrow; end piece about as long as ostium.

Female : Rostrum weakly curved distally, shorter than elytra (ratio, 1 : 1.3), with antennal insertion at basal 2/5 to 1/3.

Length : 3~3.7 mm.

Type-material : Holotype ♂, Hallasan, 1750 ~1800 mm, JJ, S. Korea, 23, VII, 1981, on *Abies* sp. (Y. Kwon); paratypes : 2♀♀, same data as holotype; 1♀, the same locality, 9, VIII, 1984, on *Abies* sp. (Y. Kwon).

Remarks : The present new species differs well from other related groups by the external feature.

18. *Curculio quelparticola* sp. n.

제주밤바구미(新稱)

(Fig. 9)

Male : General coloration yellowish brown to reddish brown, Rostrum slightly shorter than elytra (ratio, 1 : 1.13), shallow roundly curved; base 1.5 times as wide as frons between eyes. Antennae inserted in the middle of rostrum, with scape shorter than the length of distal portion from antennal insertion of rostrum (ratio, 1 : 1.17). Pronotum clothed with yellow scales laterally and medio-longitudinally. Elytra mottled with yellowish brown scales, with an ob-

scure patch of yellow scales behind middle. Aedeagus comparatively broad, with apex somewhat sinuately narrowed on each lateral side.

Female : Rostrum shallowly curved distally, about 1.2 times as long as elytra, with antennal insertion at basal 2/5.

Length : 3~3.7 mm.

Type-material : Holotype ♂, Hallasan, 1750 ~1800 mm, JJ, S. Korea, 23, VII, 1981, on *Abies* sp. (Y. Kwon); paratypes : 5♂♂ & 4♀♀, same data as holotype.

Host : Unknown.

Remarks : This new species allies closely to the preceding one, but can be distinguishable from the latter by the external feature.

Genus *Balanobius* Jekel, 1861

애밤바구미속

Key to subgenera of *Balanobius*

1. Male hind tibiae broadly extending distally, with inner sides serrate *Toptaria* subgen. n.
- . Male hind tibiae simple without any projection on inner sides *Balanobius* s. str.

Subgenus *Toptarius* subgen. n.

툽다리아밤구미아속(新稱)

Type-species : *Balanobius rolofsi* Heller, 1927.

Diagnosis : Rostrum shorter than elytra in both sexes; base as wide as, or slightly wider than frons between eyes. Antennae with 1st funicle longer than 2nd one. In male, fore tibiae with spur long and well developed; hind tibiae broadly extending distally, with inner sides serrate. Aedeagus with ventral lobe of apical portion extending laterally, produced conically at tip.

Remarks : This new subgenus is erected for the separation of the following unique monotypic species.

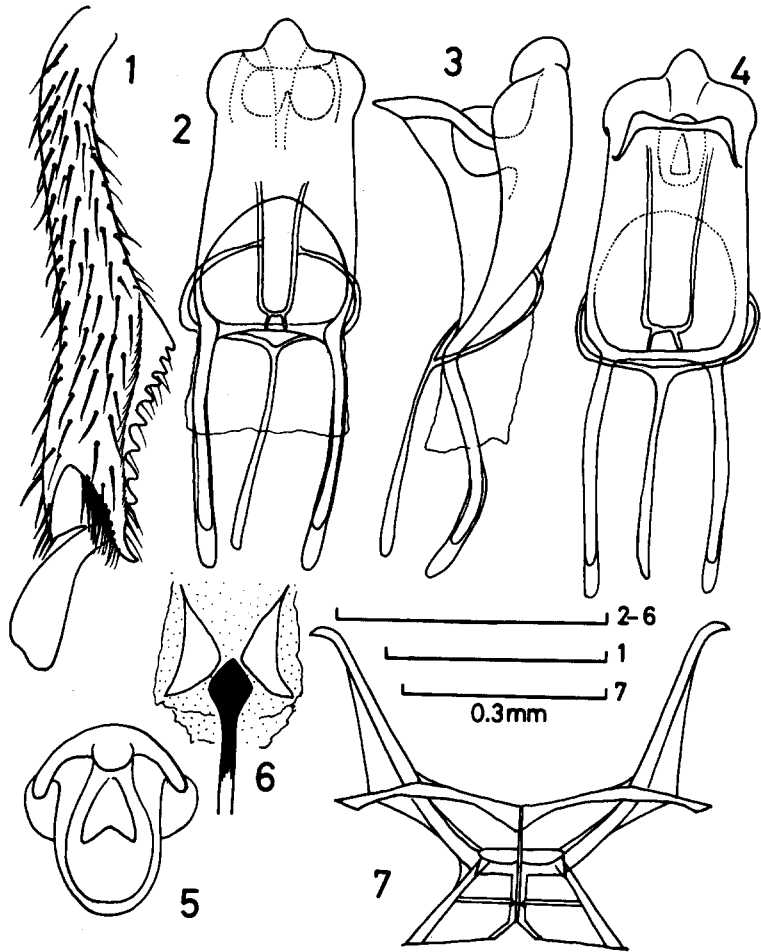


Fig. 10. *Blanobius roelofsi*, male (1~5) and female (6~7). For caption, see the preceding figs., except for 1 : male hind tibia, and 7 : metendosternite.

19. *Balanobius (Toptaria) roelofsi*

(Heller, 1927) comb. n.

툽다리애밤바구미 (툽다리꿀꿀이바구미)

(Fig. 10)

Ann. Soc. Ent. Belg. 17 : 162 (*Balaninus*).

Locality : Chirisan, Kajisan, Kanghwado, Kumjongsan, Maisan, Obongsan, P'algongsan, Sobaeksan, Tansan Myön, Unmunsan, Wö nhyosan.

Distribution : Korea (new record : Central, South), Japan (Hokkaido, Honshu, Kyushu, Shi-

koku).

Host : *Quercus acutissima*, *Q. aliena*.

Subgenus *Balanobius* s. str.

애밤바구미아속 (新稱)

Key to species of *Balaninus* s. str.

- 1. 1st antennal funicle apparently longer than 2nd one 2.
- 1st antennal funicle about as long as 2nd one 3.
- 2. Rostrum, antennae, legs, and elytra except

- yellow patches of scales reddish brown; mid and hind femora very obscurely dentate *exiguus* sp. n.
- . Rostrum, antennae, and legs dark reddish brown, elytra except white patches of scales black; mid and hind femora minutely, but sharply dentate ... *pictiformis* sp. n.
- 3. Male 2nd abdominal sternum with reversed Y-like ridge posteromesally; aedeagus with ventral lobe of apical portion rather truncate *pictus*
- . Male 2nd abdominal sternum simple, or with Y-like ridge bearing hairy pads postero-mesally; aedeagus with ventral lobe of apical portion subtriangularly produced4.
- 4. Male spiculum thick, nearly twice as wide as median struts of aedeagus in lateral view *latispiculum* sp. n.
- . Male spiculum slender, about as wide as median struts of aedeagus in lateral view *parvus* sp. n.

20. *Balanobius* (s. str.) *exiguus* sp. n.

무늬애밤바구미(新稱)
(Fig. 11)

Male : Unknown.

Female : Derm lighter than other related group; rostrum, antennae, legs, abdomen, and elytra except basal part reddish brown, remainder black. Rostrum shorter than elytra (ratio, 1 : 1.27), gentle roundly curved; base apparently wider than frons between eyes. Antennae inserted in basal 2/5 of rostrum. Legs with mid and hind femora very obscurely dentate. Pygidium with disc very short and wide subtriangular. Length : 1.7 mm.

Type-material : Holotype ♀. Sörsaksan, GW, C. Korea, 9, VIII, 1976 (Y. Kwon).

Remarks : The present new species can be distinguished from other group by the derm coloration and the pygidium shape.

21. *Balanobius* (s. str.) *pictiformis* sp. n.

짧은엿애밤바구미(新稱)
(Fig. 12)

Male : General coloration and scale pattern as in *B. pictus* (Roelofs, 1874). Rostrum apparently shorter than elytra (ratio, 1 : 1.38), with distal part dark reddish brown; base slightly wider than frons between eyes. Antennae inserted in apical 2/5 of rostrum, with scape 1.4 times as long as the length of distal portion from antennal insertion of rostrum. Aedeagus with dorsal lobe of apical portion slightly produced, subangularly emarginate mesally. Spiculum strikingly thick, nearly triple as wide as median struts of aedeagus in lateral view.

Female : Rostrum rather roundly curved, shorter than elytra (ratio, 1 : 1.25), with antennal insertion behind middle.

Length : 2~3 mm.

Type-material : Holotype ♂, Kajisan, GN, S. Korea, 10, V, 1981 (Y. Kwon); paratypes : 1 ♂, same data as holotype; 2♀♀, Kümjöngsan, GN, S. Korea, 1, VI, 1980 (Y. Kwon).

Host : Unknown.

Remarks : The present new species can be separated easily from other related group by the structure of rostrum and genitalia.

22. *Balanobius* (s. str.) *pictus*

(Roelofs, 1874)

엿애밤바구미(옛바구미)

Ann. Soc. Ent. Belg. 17 : 161 (*Balaninus*).

Locality : Sörsaksan, T'aebaeksan (Kim & Chang 1987), Töksungsan, Unmunsan.

Distribution : Korea (Central, South), Japan (Honshu, Kyushu, Shikoku).

Host : *Quercus serrata*.

23. *Balanobius* (s. str.) *latispiculum* sp. n.

십자에밤바구미(新稱)
(Fig. 13 : 1~3)

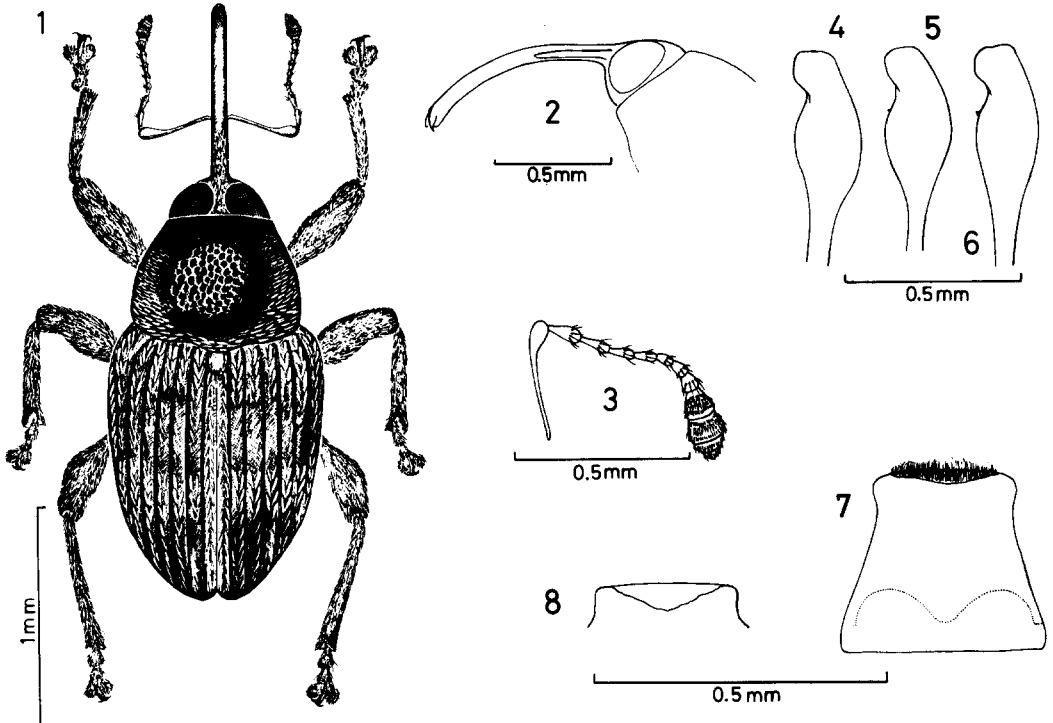


Fig. 11. *Blanobius exiguus* sp. n., female. For caption, see the preceding figs.

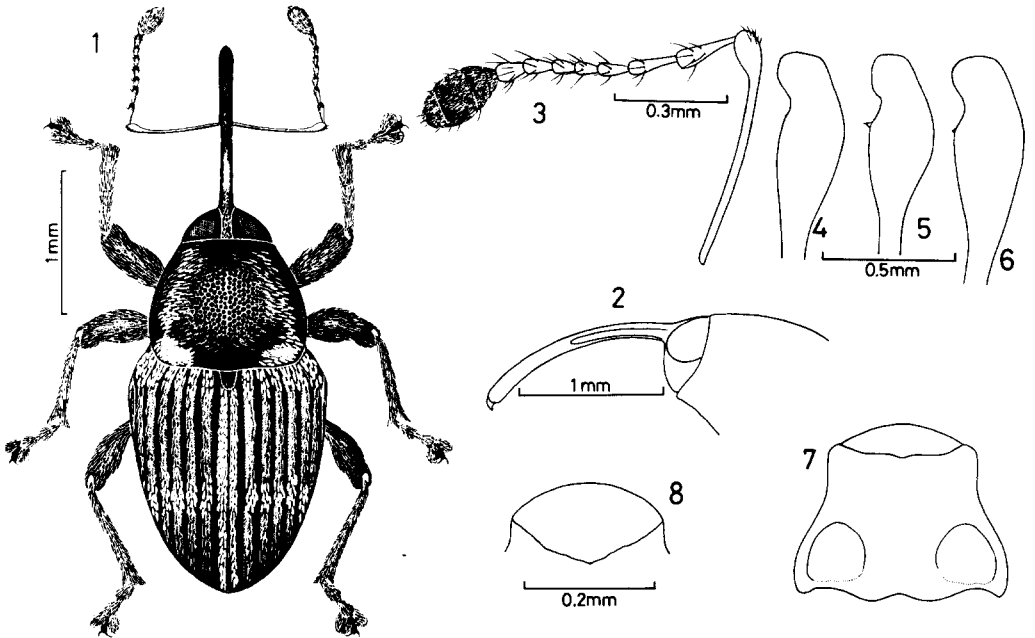


Fig. 12. *Blanobius pictiformis* sp. n., female. For caption, see the preceding figs.

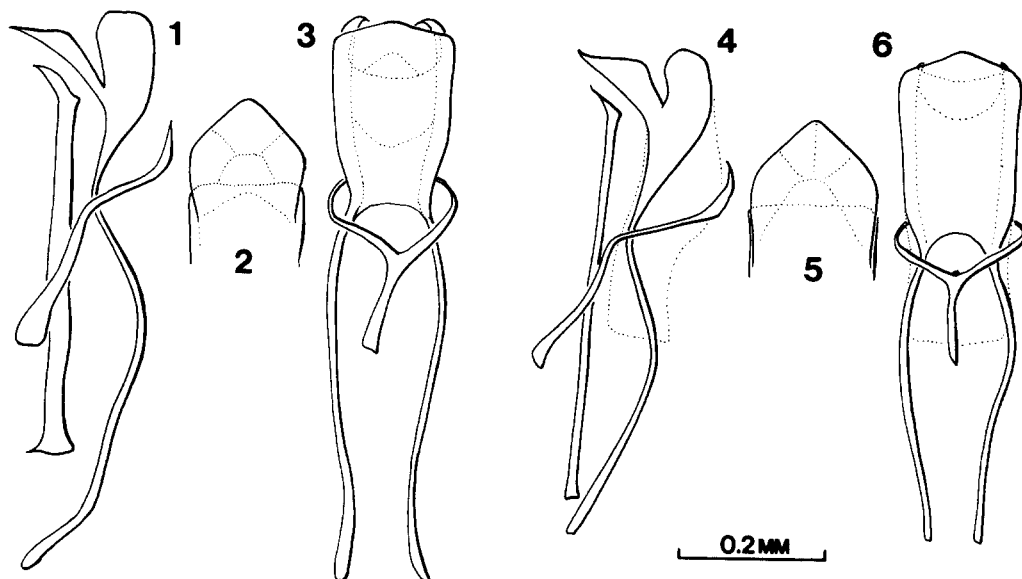


Fig. 13. Male aedeagal structure of *Balanobius* spp. 1~3 : *B. latispiculum* sp. n., 4~6 : *B. parvus* sp. n.

Male : General coloration and scale pattern as in the preceding species. Rostrum apparently shorter than elytra (ratio, 1 : 1.4), roundly bent at middle; base 1.25 times as wide as frons between eyes. Antennae inserted in the middle of rostrum, with scape slightly shorter than the length of distal portion from antennal insertion of rostrum (ratio, 1 : 1.18). 2nd abdominal sternum with)-shaped ridge bearing hairy pads postero-mesally. Aedeagus with ventral lobe of apical portion subtriangularly produced. Spiculum thick, nearly twice as wide as median struts of aedeagus in lateral view.

Female : Rostrum apparently shorter than elytra (ratio, 1 : 1.37~1.4), with antennal insertion behind middle to basal 2/5.

Length : 1.7~2.4 mm.

Type-material : Holotype ♂, Maisan, JB, S. Korea, 11, V, 1980 (Y. Kwon); paratypes : 1 ♂ & 1 ♀, same data as holotype; 1 ♀, Hwanghaksan, GB, S. Korea, 10, VI, 1980 (Y. Kwon); 2 ♂♂, Soyosan, GG, C. Korea, 15, V, 1982 (Y. Kwon); 1 ♂ & ♀♀, Töksungsan, CN,

C. Korea, 27, V, 1982 (Y. Kwon); 1 ♂, Kayasan, GN, S. Korea, 26, VI, 1982 (Y. Kwon); 1 ♂, Kanghwado, GG, C. Korea, 9, V, 1983 (Y. Kwon).

Remarks : The present new species can be separable from other related group as shown in the key.

24. *Balanobius* (s. str.) *parvus* sp. n.

남십자애밤바구미(新稱)

(Fig. 13 : 4~6)

Male : General coloration and scale pattern as in the preceding group. Rostrum apparently shorter than elytra (ratio, 1 : 1.4), rather roundly bent distally; base slightly wider than frons between eyes. Antennae yellowish brown to brown, inserted in the middle of rostrum, with scape shorter than the length of distal portion from antennal insertion of rostrum (ratio, 1 : 1.2). 2nd abdominal sternum with)-shaped ridge bearing hairy pads postero-mesally. Aedeagus with ventral lobe of apical portion subtriangularly produced. Spiculum slen-

der, about as wide as median struts of aedeagus in lateral view.

Female : Unknown.

Length : 1.9~2.1 mm.

Type-material : Holotype ♂, Kŭmjŏngsan, GN, S. Korea, 16, X, 1983 (Y. Kwon); paratypes : 2♂♂, same data as holotype.

Host : Unknown.

Remarks : The present new species resembles the preceding one, but may be easily distinguished from it by the slender spiculum.

Genus *Pegumia* gen. n.

창언밤바구미속(新稱)

Type-species : *Pagumia changeoni* gen. et sp. n.

Diagnosis : Rostrum shorter than elytra in both sexes; base wider than frons between eyes. Antennae with 1st funicle longer than 2nd one. In male, fore tibiae with inner sides roundly sinuate distally; hind tibiae armed with a spine-like process on each inner side distally. Aedeagus with apical construction complicated, having lateral lobes conspicuously developed.

Remarks : This new genus (gender : masculine) is erected for the reception of the below unique monotypic species.

25. *Pagumia changeoni* sp. n.

창언밤바구미(新稱)

(Fig. 14)

Male : General coloration black, covered with hairy scales. Rostrum about as long as head and pronotum taken together, slightly exceeding half as long as elytra, roundly curved mesally; base wider than frons between eyes (ratio, 1.3 : 1). Antennae excluding clubs brown, inserted before middle of rostrum. Pronotum covered with silver hairy scales laterally, yellowish grey ones centrally. Elytra with silver patches of hairy scales on base, commissure, and behind middle, remainder covered with yellowish grey hairy scales. Hind tibiae armed with a spine on each inner side of apical 1/3. Aedeagus with lateral lobes well developed.

lowish grey hairy scales. Hind tibiae armed with a spine on each inner side of apical 1/3. Aedeagus with lateral lobes well developed.

Female : Rostrum slightly longer than head and pronotum taken together, with antennal insertion behind middle to basal 2/5.

Length : 1.7~2.5 mm.

Type-material : Holotype ♂, Yŏngch'wisan, GN, S. Korea, -11, V, 1981 (Y. Kwon); paratypes : 2♂♂ & 1♀, same data as holotype; 1♂, Ch'ŏnmasan, GG, C. Korea, 28, V, 1976 (S. Lee); 1♂, P'alongsan, GB, S. Korea, 22, IV, 1980 (Y. Kwon); 1♂, 23, V, 1981; 1♀, 21, IV, 1982; 1♀, 19, IV, 1982, all same locality & collector; 1♂, Chirisan, GN, S. Korea, 9, VI, 1980 (Y. Kwon); 1♂, Kajisan, GN, S. Korea, 10, V, 1981 (Y. Kwon); 1♂, Obongsan, GW, S. Korea, 17, V, 1981 (Y. Kwon); 1♀, Soyosan, GG, C. Korea, 15, V, 1982 (Y. Kwon); 1♂, Myŏngsŏngsan, GG, C. Korea, 16, V, 1982 (Y. Kwon); 1♂ & 2♀♀, Kanghwado, GG, C. Korea, 8, V, 1983 (Y. Kwon); 1♀, Yokchido, GN, S. Korea, 28, VII, 1983 (Y. Kwon); 1♂, Taegu, S. Korea, 13, IX, 1983 (Y. Kwon).

Host : Unknown.

Genus *Koreoculio* gen. n.

우리밤바구미속(新稱)

Type - species : *Balaninus antennatus* Kono, 1930.

Diagnosis : Rostrum shorter than elytra in both sexes; base wider than frons between eyes. Antennae with 1st funicle longer than 2nd one. In male, hind tibiae simple, without spine-like projection on innerside; abdomen with 2 basal segments fused with each other, suture discernible only on each side. Aedeagus rather cylindrical, with apical construction simple, truncate or produced, but not bifurcating.

Remarks : This new genus (gender : masculine) is separable from other related genera by

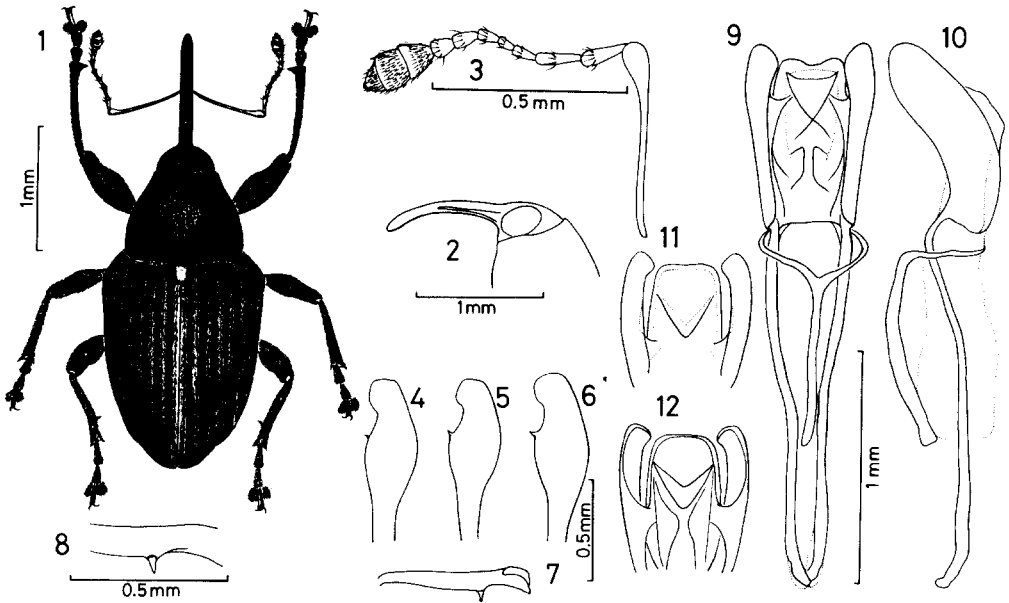


Fig. 14. *Pagumia changeoni* sp. n., male. For caption, see the preceding figs., except for 7, 8 : hind tibia.

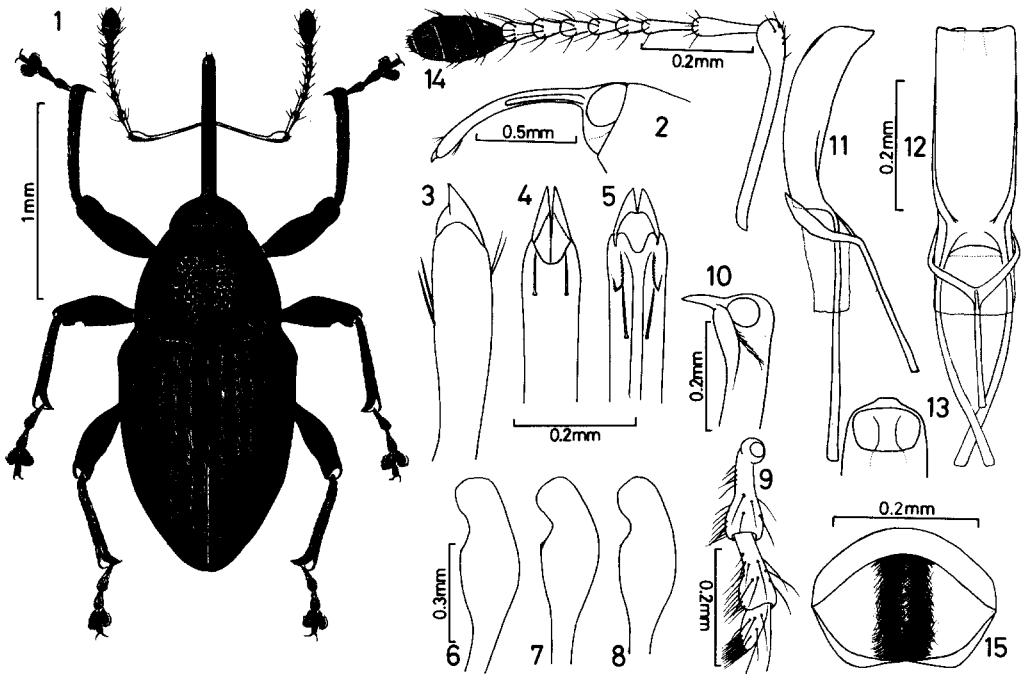


Fig. 15. *Koreoculio antennatus*, male. For caption, see other figs., except for 3 : apex of rostrum in latera view, 4 : ditto, dorsal view, 5 : ditto, ventral view, 9 : tarsi, and 15 : pygidium in caudal view.

the aedeagal structure.

Key to species of *Koreoculio*

1. Male rostrum about as long as head and pronotum taken together; elytra with a transverse median band consisting of light or white scales 2.
 —. Male rostrum apparently longer than head and pronotum taken together; elytra with a transverse median band indistinct or completely absent *antennatus*
2. Male antennae inserted slightly before middle of rostrum; aedeagus with apex deep roundly produced; female pygidium transversely depressed *kunugi*
 —. Male antennae inserted behind middle of rostrum; aedeagus with apex very short roundly produced; female pygidium with a deep longitudinal median ditch
 *minutissimus*
26. *Koreoculio antennatus* (Kono, 1930) **comb. n.**
 우리밤바구미 (新稱)
- Ins. Mats. 5 : 18 (*Balaninus*).
Locality : Maisan.
Distribution : Korea (new record : South), Japan (Hokkaido, Honshu, Kyushu, Shikoku).
Host : Unknown.
27. *Koreoculio kunugi* (Morimoto, 1962)
 갈참우리밤바구미 (新稱)
 Mushi 36 : 34~35 (*Curculio*).
Locality : P'algongsan, Töksungsan.
Distribution : Korea (new record : Central, South), Japan (Honshu, Kyushu, Shikoku).
Host : *Quercus acutissima*.
28. *Koreoculio minutissimus* (Dalla Torre et Schenkling, 1932) **comb. n.**
 참우리밤바구미 (新稱)

Col. Cat. 123 : 15 (*Curculio*).

Balaninus minimus Kono, 1930, Ins. Mats. 5 : 16 nom. praeocc.

Locality : Kanghaiwado, Obongsan, P'algongsan, Sobaeksan, Töksungsan.

Distribution : Korea (new record : Central, South), Japan (Hokkaido, Honshu, Kyushu, Shikoku).

Host : Unknown.

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(1990년 3월 7일 접수)