

A Systematic Study of the Family Rhynchitidae of Japan (Coleoptera, Curculionoidea)*

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Abstract

Japanese RHYNCHITIDAE are systematically reviewed and revised. Four tribes, 17 genera and 62 species are recognized. Original and additional descriptions are given, with illustrations of and keys to their taxa. The generic and subgeneric names of Voss' system are reviewed from the viewpoint of nomenclature. At the species level, 12 new species *Auletobius planifrons*, *Notocyrtus caeligenus*, *Involvulus flavus*, *I. subtilis*, *I. cornix*, *I. aes*, *I. lupulus*, *Deporaus tigris*, *D. insularis*, *D. eumegacephalus*, *D. septemtrionalis* and *D. rhynchitoides* are described and 1 species *Eugnamptus sauteri* are newly recorded from Japan. Six species and subspecies names *Auletes carvus*, *A. testaceus* and *A. irkutensis japonicus*, *Auletobius okinawaensis*, *Aderorhinus pedicellaris nigricollis* and *Rhynchites cupreus purpuleoviolaceus* are synonymized under *Auletobius puberulus*, *A. fumigatus*, *A. uniformis*, *Ad. crioceroides* and *I. cylindricollis*, respectively. One new name *Deporaus vossi* is given as the replacement name of the primally junior homonym *D. pallidiventris* Voss, 1957 (nec Voss, 1924).

Generic and subgeneric classification is revised in the following points. The genus *Notocyrtus* is revived as an independent genus including subgenera *Notocyrtus* s. str., *Exochorrhynchites* and *Heterorrhynchites*. *Clinorrhynchites* and *Habrorrhynchites* are newly treated as each independent genera. *Caenorhinus* is newly treated as a valid subgenus of the genus *Deporaus*. The genera *Neocoenorhinus* and *Piazorrhynchites* are newly synonymized under *Notocyrtus* and *Agilaus*, respectively, in generic and subgeneric rank. A subgeneric name, *Aphlorhynchites* subgen. nov., is established for the 8th subgenus of the genus *Rhynchites* in Voss' system, which was incorrectly called as *Haplorhynchites*. *Haplorhynchites* is treated as an independent genus, following Ter-Minassian (1950). Consequently the following names are newly combined: *Notocyrtus sanguinipennis*, *N. interruptus*, *N. assimilis* and *Haplorhynchites funebris*.

Phylogenetic relationships of Japanese species are considered. Existing taxa in the system are reevaluated on the basis of estimated phylogeny.

Key words: Rhynchitidae, Curculionoidea, systematics, nomenclature, phylogeny.

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I. Introduction

The RHYNCHITIDAE, or Leaf-Rolling Weevils, belong to a very wellmarked division of the Curculionoidea, which are characterized by their filiform antennae and exodontate mandibles. Although the Rhynchitid weevils are assigned to the primitive group Orthoceri, they are highly adapted for living on the soft tissues of plants or trees. They bore into shoots, twigs, buds or fruits, or shave off the surface of leaves using their characteristic mandibles. In addition to the feeding, some of them cut leaves skillfully to build an apparatus called a "cradle" for breeding. The biologies are species-specific, according to their utilizing resources. Many interesting behaviors for their oviposition have been known since Debey (1846) reported on the leaf-rolling habit of *Deporaus betulae*.

In despite of their interesting biologies, however, their classification was established later, supposedly owing to the poor fauna in Europe. The outline of the recent system was gradually constructed by

many authorities such as Schoenherr (1833-1849), Desbrochers (1869), Bedel (1882-1888) Seidlitz (1887-1891) and Schilsky (1903-1906); a comprehensive world-wide system was first proposed by Eduard Voss in the 30's of this century. His monograph, however, required more than thirty years to publish; and was completed in 1969.

Voss treated more than 800 species of Rhynchitid weevils assigning them to the subfamilies RHYNCHITINAE and PTEROCOLINAE. He subdivided the former into 7 tribes and some 50 genera, including about 5 species from the New World in the latter. Later, their subfamilies were redefined by Crowson (1955) and two tribes were eliminated from the RHYNCHITINAE. Another systematic revision was made on the species of the USSR by Ter-Minassian (1950), who transferred the subtribe EUGNAMPTINA to the RHYNCHITINI and raised some subgenera to the generic rank. The transference of the subtribe was restored by Sawada (1988).

The RHYNCHITIDAE were formerly included in the family CURCULIONIDAE or ATTELABIDAE by some authors. But they are treated as the independent family RHYNCHITIDAE in the present study following Hamilton (1971).

The Japanese fauna of this family has been studied by Roelofs (1874, 1879), Pascoe (1875), Faust (1882, 1887), Sharp (1889), Schilsky (1903, 1906), Voss (1920, 1922a, 1929, 1930-1931, 1937a, 1956, 1957, 1971), Kôno (1927, 1928a, 1928b, 1929, 1930, 1940, 1977), Ter-Minassian (1950), Morimoto (1958, 1962c, 1983a, 1983b), Nakane (1963a), Sawada and Lee (1986) and Sawada (1987c). The Japanese fauna is composed of almost 50 species in 4 tribes. A complete check list and comprehensive keys to the older articles were compiled by Morimoto (1962a).

The classification of this family is, however, far from completion because of a number of problems, which are of two kinds, according to their degree of urgency. The first kind must be solved immediately. In the classification at the species level, some

species have been confused, owing to interspecific similarity, and some have been incorrectly discriminated into different species because of their strong sexual dimorphism. In the higher classification, moreover, generic and subgeneric divisions are often indefinite and difficult to key out. Their revisions are indispensable at present. It is also necessary to assign new scientific names to some undescribed species in our fauna.

The second kind of problem is, in my opinion, correlated with two modern biological notions, "the biological concept of species" and "the idea of phylogenetic system". The biological classification must adopt these two notions respectively in classifications at the species level and in the higher classification. But the recent system remains an artificial reference system, from the viewpoints of these notions.

In this study, the extent of each species is determined mainly on the basis of morphological differences in the male genitalia, because these structures are functionally correlated with the mechanical isolation of species. Therefore, the biological concept of species is adopted to the classification on the morphological basis.

On the other hand, the notion of the phylogenetic system is difficult to be adopted to the system because of the inadequacy of its estimation. I intend to first revise the system from the viewpoint of a functional reference system. Separately from the systematic revision, the phylogeny is estimated in so far as possible: the system is finally evaluated in comparison with the estimated phylogeny.

In this paper, the generic and subgeneric divisions are revised and keys to the tribes, genera and species known from Japan are given, together with the descriptions and illustrations of some important characteristics.

II. Materials and Methods

I. Specimens

The principal materials used in this study were

collected by the author and his colleagues from 1977 to 1988, by beating, net-sweeping, looking or and rarely, by light-traps. Some of the materials were preserved in alcohol for examination of their internal structures.

Many specimens deposited in the Entomological Laboratory, Kyushu University and in the personal collection of Dr. T. Kishii were also examined.

Some specimens were borrowed for study from the Entomological Laboratory, Ryukyu University (ELRU), the Hikosan Biological Laboratory, Kyushu University (HBKU), the National Institute of Agro-environmental Station (NIAES) and the Zoological Institute and Zoological Museum of Hamburg University (ZIM).

2. Preparation and Examination of the male genitalia

To remove the male genitalia, macerated specimens were dissected in 70% alcohol solution under a stereoscopic microscope at 12-60 magnifications. The removed genitalia, cleaned in hot 10% KOH solution for 10 to 15 minutes, were then mounted on slide glasses with glycerol. Observations and drawings were made through the above-mentioned microscope fitted with a cross-section micrometer. After examination, genitalia were preserved in a plastic tube filled with glycerol, after the method of Andersson (1972).

Such structures as tibial spurs and labium were observed by the same method as in the male genitalia.

3. Examination under a scanning electron-microscope

Details of some external structures were examined with a scanning electro-microscope JSM-T 200 of 35-1000 magnifications.

4. Examination of the visceral formula

Alcohol-stored specimens were dissected to examine their visceral looping formula. The abdomen was first removed from the body; the tergal

plates (median and lateral sclerites) were then detached from the venter (fused sternites), revealing the alimentary canal and the internal reproductive organs. The canal and the reproductive organs were sketched from above, the gastral spicule from the ventral side.

5. Estimation of the phylogeny

The shortest phylogenetic tree (Wagner tree) was estimated through the Wagner algorithm. The Wagner algorithm formulated by Kluge & Farris (1969) is composed of the following 6 steps:

- (1) Choose common ancestor OTU.
Go to 2.
- (2) Find the OTU that has the smallest difference.
Connect it to the ancestor to form an interval.
Go to 3.
- (3) Find unplaced "OTU A" that differs least from the ancestor.
Go to 4.
- (4) Find interval "INT(B)" from which "OTU A" differs least.
Difference "D(A,INT(B))", between "OTU A" and interval "INT(B)" is $D(A,INT(B)) = (D(A,B) + D(A,ANC(B)) - D(B,ANC(B))) / 2$.
Go to 5.
- (5) Attach "OTU A" to the interval "INT(B)".
To do this construct an intermediate, "Y", and insert it into the tree.
For each character, "i", character state "X(Y,i)" is computed as the median of "X(A,i)", "X(B,i)" and "X(ANC(B),i)".
Go to 6.
- (6) If any OTUs remain unplaced, go to 3.
Otherwise, stop.

where "ANC(P)" is the most recent ancestral OTU of "OTU P". And "X(P,i)" means the state of character "i" in "OTU P". Difference "D(P,Q)" is the distance between "OTU P" and "OTU Q" in Manhattan metric, $D(P, Q) = \sum |X(P, i) - X(Q, i)|$.

This algorithm was partially modified to enable the writing of a polytomy. At the fourth step of

the algorithm, the nearest attaching point of "OTU A" concerned was sought not only on the intervals "INT(B)" but also on "OTU B". The point was established on "OTU B" prior to the intervals "INT(B)", if the smallest differences "D(A,INT(B))" and "D(A,B)" are equal. In such a case, "OTU A" is directly attached to the point "OTU B" without making a new "OTU X" at the next step. The 4th and 5th steps were modified as follows:

- (4) Find interval "INT(B)" from which "OTU A" differs least.
Find "OTU B" from which "OTU A" differs least.
Difference "D(A,INT(B))", between "OTU A" and interval "INT(B)" is $D(A,INT(B)) = (D(A,B) + D(A,ANC(B)) - D(B,ANC(B))) / 2$.
If $0 < D(A,INT(B)) < D(A,B)$ then choose "INT(B)" and go to 5a.
If $0 = D(A,INT(B)) < D(A,B)$ then choose "INT(B)" and go to 5b.
If $D(A,INT(B)) = D(A,B) > 0$ then choose "OTU B" and go to 5c.
If $D(A,INT(B)) = D(A,B) = 0$ then choose "OTU B" and go to 5d.
- (5a) Attach "OTU A" to interval "INT(B)".
To do this, construct an intermediate "Y", and insert it into the tree.
Let $ANC(Y) = ANC(B)$
For each character, "i", character state "X(Y,i)" is computed as the median of "X(A,i)", "X(B,i)" and "X(ANC(B),i)".
Let $ANC(B) = Y$, $ANC(A) = Y$
Go to 6.
- (5b) Put "OTU A" on interval "INT(B)".
Let $ANC(A) = ANC(B)$
Let $ANC(B) = A$
Go to 6.
- (5c) Attach "OTU A" to "OTU B".
Let $ANC(A) = B$
Go to 6.
- (5d) Let "OTU A" = "OTU B".
Go to 6.

A conformability matrix was made from the original data set, composed of the diagnostic characters. Some characters had to be rejected to purify the unconformable set of characters into conformable ones. The number of rejected characters was minimized with the method of Sawada (1988a). The largest conformable subset of data comprising characters hierarchical to each other was selected.

The above-mentioned algorithm was also used when a network was written based on the conformable subset of characters. The root of the tree was set up as a median HTU instead of the hypothetical common ancestor, each character state of which was the median of the OTUs concerned.

III. Notes on nomenclature

1. Genus-group name *Rhynchites*

The genus group name *Rhynchites* is attributed to Schneider (1791) (ICZN, Art. 11, (c), (i)), though he did not show any nominal species (Art. 69, (a), (i), (2)). Herbst (1797) combined species names with it for the first time. From among these species, Latreille (1810) designated *Curculio baccus* as the type species. Later, Shoenherr (1826) selected *Rhynchites populi* as the type, but this selection is invalid.

2. Genus-group name *Involvulus*

Involvulus Schrank, 1798, Fn. Boica, 1: 474 (*I. avellanae*, (= *Apoderus coryli*); *I. alni*, (= *Byct. betulae*)), 475 (*I. curculioniformis*, (= *Attelabus nitens*); *I. populi*, (= *Byct. p.*); *I. betulae*, (= *Dep. b.*)), 476 (*I. sanguisorbae*, (= *Aulet. s.*); *I. marginatus*, (= *R. hungaricus* auctt.)), 477 (*I. metallics*, (= *R. cupreus* auctt.)), 506; Seidlitz, 1891, Fn. Balt. ed. 2, 1887-'91: 668; Seidlitz, 1891, Fn. Transsylv.: 742, 743; Schilsky, 1903, Käf. Eur., 40: F, N; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 94; Voss, 1938, Kol. Rdsch., 24: 132, 133; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 119.

The Latin word *Involvulus* means "leaf-roller".

Schrank (1798) adopted this name for a weevil genus established by him, which includes species of the Attelabid tribes ATTELABINI and APODERINI, as well as of the Rhynchitid tribes AULETINI, BYCTISCINI, RHYNCHITINI and DEPORAINI, in the modern sense. Some species of them, such as *Attelabus nitens*, *Apoderus coryli*, *Byctiscus populi* and *Deporaus betulae*, are real leaf-rollers, but many fruit-stingers and shoot-stingers were also assigned to the genus.

Later, Seidlitz (1891) assigned the name *Involvulus* to a subgenus of the genus *Rhynchites* without examining its biology. Subsequent research revealed that the members of his subgenus *Involvulus* were shoot-stingers.

Voss (1938, Kol. Rdsch., 24) mentioned the disarrangement between the actual biology and the etymology of the subgenus. Although he suggested the synonymy of *Byctiscus* under *Involvulus*, he kept the usage of Seidlitz.

Present usage of the name *Involvulus* is based on the type designation by Ter-Minassian (1950) who treats *I. metallics* Schrank (= *I. cupreus*) as the type of the genus.

3. Genus-group name *Merhynchites*

The genus *Merhynchites* was established by Sharp (1889) on the basis of *M. hungaricus* and *M. bicolor*. Pierce (1913) designated the latter as the type of the genus, hence the designation by Reitter (1916) is not valid.

4. Genus-group names proposed by Voss

Voss (1922a, 1930-31, 1931-32, 1932-33, 1933-37, 1938-43, 1938-69, 1941a) established the classification system of world RHYNCHITIDAE, a system followed by many taxonomists with some delicate modifications. In his monographic works, however, there are some nomenclatural problems with the type designation for the genus-group names. When he gave new genus group names, he often did not fix their type species. Especially, he hardly designated the types for the subgenera.

Consequently, many subgeneric names are unavailable under the Code (Art. 13 (b)).

This is not so controversial if such establishment was done before 1931, or if the genus was monobasic. For example, Voss (1922b) made *Arodepus* a subgenus of the genus *Deporaus* and included 24 species in the subgenus. The name *Arodepus* is attributable to Voss (1922b), though he (1922b) did not designate the type species (similar cases: *Eumetopon*, *Pseudauletes*, *Lasiorrhynchidius*, *Auletomorphus*, *Metarrhynchites*, *Cyllorrhynchites*, *Capylarodepus*, *Hypodeporaus*, and *Pseudodeporaus*). The type of genus-group name established before 1931 can be designated subsequently (Art. 69(a)), as the type *Arodepus*, *D. penangensis* was designated in 1958 by Voss.

If the publication was after 1930, names of the monobasic genera and subgenera are uncontroversially available because their types are (if not originally designated) fixed by monotypy (Art. 68 (d)), (such cases: *Heterauletes*, *Eurostaletes*, *Proteugnamptus*, *Oreugnamptus*, *Acitorrhynchites*, *Pseudocoenorrhinus*, *Exochorrhynchites*, *Heterorrhynchites*, *Ecnomonychus*, *Callirrhynchites*, *Hyporrhynchites*, *Habrorrhynchites*, *Teretiorrhynchites*, *Cartorrhynchites*, *Homalorrhynchites*, *Perrhynchites*, *Adeporaus*, *Pseudodepasophilus* and *Odontodeporaus*).

After 1930, on the other hand, the fixation of the type species is indispensable for establishing the genus-group name (Art. 13 (b)). The subgenus *Neorrhynchites*, for example, was first defined in a key to subgenera of the genus *Rhynchites* by Voss (1953). He included three species in the subgenus but did not fix the type; consequently, his action is invalid and the name is not available at that time. Later, he (1969, Ent. Arb. Mus. Frey, 20) described it again and indicated the type; the name then became available for the first time under the Code. As a result, the name *Neorrhynchites* is attributed not to Voss (1953) but to Voss (1969) (similar case: *Clinorrhynchites*).

It is more complicated in the case of *Parauletes*. This was proposed as a subgenus by Voss (1933,

Stett. ent Ztg., 94) in his monograph of the tribe AULETINI. He included 36 species in this subgenus, but did not fix the type. Then it was not available at the time, for the same reason as in the case of *Neorrhynchites*. Later, in a supplemental article on the subfamily RHYNCHITINAE, he (1937a) referred to this subgenus and described one new additional species, *A. monticola*. This publication can be regarded as establishing the name *Parauletes* based on *A. monticola* by monotypy. Consequently, the name *Parauletes* is attributed not to Voss (1933) but to Voss (1937a) (similar case: *Minurophilus*).

In the worst case, no available names (consequently no valid names) can be cited for the taxa. Voss (1933, Stett. ent Ztg., 94) divided his *Auletobius* into 9 subgenera. Their 3rd subgenus was named *Mesauletes* by him, but this name is not available for the same reason as in the above-mentioned *Neorrhynchites*. And this taxon has no valid name down to this day (similar cases: *Gymnauletes*, *Stictauletes*, *Numirus*, *Eugnamptellus* and *Biblarodepus*).

For deciding the availability and/or validity of the name under the Code, it is indispensable to the date of establishment for each genus or subgenus. However some names are not traceable to their original publications, owing to omission from the "Coleopterorum Catalogus". In the case of *Cartorrhynchites*, for example, the oldest article referring this subgenus (Voss, 1932, : 555) is not registered in the Catalogue, and the name is assigned to a newer article (Voss, 1935, Tijdschr. v. Ent., 78 : 104) (similar case: *Exrhynchites*). When the Code is applied to the generic or subgeneric taxa in Voss' system, a considerable number of names must be corrected as in the following list. In this list, the subgenera are arranged in the systematic order of Voss, and the numbers of the head of tribal, generic and subgeneric names coincide with their reference numbers in his monograph.

A LIST OF THE VALID, AVAILABLE AND UNAVAIL-

ABLE NAMES OF THE GENERIC AND SUBGENERIC
TAXA IN VOSS' SYSTEM
(Tribes I and II and genus *Caenominurus* Voss, 1965 are
excluded from the RHYNCHITIDAE.)

- =: invalid name of junior synonym
%: invalid name based on misidentification
-: unavailable name
*: rejected name of junior homonym

III. AULETINI

Voss, 1933, Stett. ent. Ztg., 94: 108-136, 273-286,
95: 109-135, 330-344, 96: 91-105, 229-241,
97: 279-289, 98: 101-108 (monograph).

AULETINA

10. *Auletes* Schoenherr, 1826

Type species: *Auletes tubicen* by original designation.

11. *Auletobius* Desbrochers, 1869

1. *Parauletes* Voss, 1937, Stett. ent. Ztg., 98: 204.
Type species: *Auletobius monticola* by monotypy.
* *Metopon* Waterhouse, 1842 (nec Walker, 1834)
Type species: *Metopon suturalis* by monotypy.
- *Parauletes*: Voss, 1933, without fixation of the type.
2. *Auletobius* Desbrochers, 1869
Type species: *Auletobius sanguisorbae* subsequently designated by Voss, 1934: 118.
3. Subgenus with no available names
- *Mesauletes*: Voss, 1933, without fixation of the type.
4. Subgenus with no available names
- *Gymnauletes*: Voss, 1933, without fixation of the type.
5. Subgenus with no available names
- *Stictauletes*: Voss, 1933, without fixation of the type.
6. *Heterauletes* Voss, 1933
Type species: *Auletobius constrictus* by monotypy.
7. *Aletinus* Desbrochers, 1908
Type species: *Auletobius maculipennis* by monotypy.
8. *Eurostauletes* Voss, 1933
Type species: *Auletobius rubrorufus* by monotypy.
9. *Eumetopon* Voss, 1922, Arch. f. Naturg., A, 8: 30.
Type species: *Auletobius flavomaculatus* subsequently designated by Voss, 1935.
12. *Dicranognathus* Redtenbacher, 1848
Type species: *Dicranognathus nebulosus* by monotypy?

PSEUDAULETINA

13. *Minurus* Waterhouse, 1842
- *Minurophilus*: Voss, 1936
Voss, 1951, Rev. Chil. ent., 1951: 181 (revision).

1. *Minurus* Waterhouse, 1842
Type species: *Minurus testaceus* by monotypy.
= *Minurophilus* Voss, 1951
Type species: *Minurophilus rufescens* by monotypy.
- *Minurophilus*: Voss, 1936, without fixation of the type.
2. Subgenus with no available names
- *Numinus*: Voss, 1951, without fixation of the type.

14. *Pseudauletes* Voss, 1922
Type species: not designated.

IV. RHINOCARTINI

Voss, 1941, Dt. ent. Z., 1941: 113-117 (monograph).

15. *Rhinocartus* Voss, 1922

Type species: *Rh. Tessmanni* by monotypy.

16. *Proteugnampthus* Voss, 1939

Verh. VII int. Kong. Entom., 1: 446.
Type species: *P. madagassus* by monotypy.

V. RHYNCHITINI

EUGNAMPTINA

Voss, 1941, Dt. ent. Z., 1941: 117-215 (monograph).

17. *Aderorhinus* Sharp, 1889

Aderorhinus: Voss, 1941
Type species: *Aderorhinus crioceroides* by monotypy.

18. *Hemilypus* Sharp, 1889

Type species: *H. latipes* subsequently designated
by Voss, 1941.

19. *Eugnamptus* Schoenherr, 1839

1. *Eugnamptus* Schoenherr, 1839
Type species: *Anthribus collaris* by original designation.
2. Subgenus with no available names
- *Eugnamptellus*: Voss, 1941, without fixation of the type.
3. *Eugnamptobius* Voss, 1922, Philipp. J. Sci., 21: 412.
Type species: *Eugnamptus insularis* by monotypy.
4. *Oreugnampthus* Voss, 1941
Type species: *Eu. tessellatus* by monotypy.

20. *Essodius* Sharp, 1889

Type species: *Essodius unicolor* by monotypy.

21. *Acritorrhynchites* Voss, 1941

Type species: *A. addendus* by monotypy.

Genus *Eugnamptolesius* Voss, 1951
Rev. Chil. Ent., 1951: 184.

Type species: *Rhynchites violaceipennis*
by original designation.

RHYNCHITINA

Voss, 1932-69, Kol. Rdsch., 18: 153-189, 19: 25-56,
24: 129-171; Mitt. münch. Ent. Ges., 31: 628-680;
Ent. Arb. Mus. Frey, 1969: 117-375 (monograph).

22. *Lasiorrhynchites* Jekel, 1860

1. *Coccyorrhynchites* Prell, 1926
Type species: *Rh. sericeus* by original designation.
2. *Lasiorrhynchites* Jekel, 1860
Type species: *Rh. pubescens* (= *L. cavifrons*) by monotypy.
3. *Stenorrhynchites* Voss, 1932
Type species: *L. coeruleocephalus* by monotypy.
4. *Pseudocoenorrhinus* Voss, 1935, Philipp. J. Sci., 56: 510.
Type species: *L. carinicollis* by monotypy.

23. *Merhynchites* Sharp, 1889
% *Coenorrhinus*: Voss, 1932

1. *Pselaphorrhynchites* Schilsky, 1903
Type species: *Rhynchites nanus* subsequently designated
by Ter-Minassian, 1950.
2. *Neocoenorrhinus* Voss, 1951, Rev. Chil. Ent., 1951: 182.
Type species: *Coenorrhinus germanicus* by original design-
nation.
% *Coenorrhinus*: Voss, 1932 (nec Thomson, 1859)
3. *Notocyrtus* Desbrochers, 1908
Type species: *Rhynchites cribripennis* by monotypy.
4. *Merhynchites* Sharp, 1889
Type species: *Rh. bicolor* subsequently designated by
Pierce, 1913.
5. *Exochorrhynchites* Voss, 1932
Type species: *C. decumanus* by monotypy.
6. *Heterorrhynchites* Voss, 1932
Type species: *C. incertus* by monotypy.

24. *Anisomerinus* Voss, 1933
Type species: *A. proteae* by original designation.

25. *Ecnomonychus* Voss, 1933
Type species: *E. usambaricus* by monotypy.

Genus *Coenorrhinophia* Voss, 1937

Voss, 1937, Stett. ent. Ztg., 98: 206.

Type species: *C. antennalis* by original designation.

26. *Involvulus* Schrank, 1798

Rhynchites: Voss, 1938: 134-136 (in part; key to subg.).

1. *Lasiorrhynchidius* Voss, 1923, Philipp. J. Sci., 22: 489.
Type species: *Rh. curtirostris* subsequently designated by
Voss, 1941: 628.
2. *Callirhynchites* Voss, 1938
Type species: *R. schroderi* by monotypy.
3. *Elautobius* Heller, 1901
Type species: *Elautobius Homi* by monotypy.
4. *Auletomorphus* Voss, 1923, Philipp. J. Sci., 22: 489.
Type species: *Rh. cupido* subsequently designated by Voss,
1941: 643.
5. *Piazorrhynchites* Voss, 1923, Philipp. J. Sci., 22: 489.
Type species: *Rh. pedestris* Voss, 1923 by monotypy.
6. *Habrorrhynchites* Voss, 1938
Type species: *R. scrobicollis* by monotypy.
7. *Metarhynchites* Voss, 1923, Philipp. J. Sci., 22: 489.
Type species: *Rh. arduus* subsequently designated by
Voss, 1938: 663.
8. Subgenus with no available name
% *Haplorhynchites*: Voss, 1938
9. *Haplorhynchites* Voss, 1930 (nec Voss, 1938), Wien. ent.
Ztg., 47: 69.
Type species: *Rhynchites coeruleus ussuriensis* by mono-
typy.
= *Teretriorrhynchites* Voss, 1938
Type species: *Rhynchites coeruleus* by monotypy.
10. *Cartorrhynchites* Voss, 1932 (nec Voss, 1935), Philipp. J.
Sci., 49: 555.
Type species: *Rhynchites palliicollis* by monotypy.
11. *Clinorrhynchites* Voss, 1969
Type species: *Rhynchites castaneus* by original designation.
- *Clinorrhynchites*: Voss, 1938, without fixation of the type.
12. *Homalorrhynchites* Voss, 1938
Type species: *Rhynchites hungaricus* by monotypy.
13. *Involvulus* Schrank, 1798
Type species: *I. metallicus* (= *Rh. cupreus*) subsequently
designated by Ter-Minassian, 1950.
= *Euvolvulus* Reitter, 1916
Type species: *Rh. cupreus* by original designation

14. *Hyporhynchites* Voss, 1935, Tijdschr. v. Ent., 78: 101.
Type species: *R. lauraceae* by monotypy.

15. *Cneminvolvulus* Voss, 1960, Ann. Zool. Warszawa, 18: 413.
Type species: *Rhynchites rugosicollis* by original designation.

Genus *Mechoris* Billberg, 1820
Mecorhis: Voss, 1949

1. *Mechoris* Billberg, 1820
Type species: *Attelabus azureus* by monotypy?
2. *Cyllorhynchites* Voss, 1930, Wien. ent. Ztg., 47: 73.
Type species: *Rhynchites ursulus* subsequently designated by Ter-Minassian, 1950.

Genus *Rhynchites* Schneider, 1791
Rhynchites: Voss, 1953, Ent. Blätt., 49: 44-47
(key to subg.).

1. *Perrhynchites* Voss, 1953
Type species: *Rh. aereipennis* by monotypy.
2. *Rhynchites* Schneider, 1791
Type species: *Curculio bacchus* subsequently designated by Latreille, 1810.
3. *Neorhynchites* Voss, 1969
Type species: *Rhynchites velatus* by original designation.
- *Neorhynchites*: Voss, 1953, without fixation of the type.
4. *Epirhynchites* Voss, 1969
Type species: *Rhynchites heros* by original designation.
- *Epirhynchites*: Voss, 1953, without fixation of the type.

27. *Rhynchitobius* Sharp, 1889
Type species: *Rh. longicollis* by monotypy.

28. *Agilaus* Pascoe, [1873]
Type species: *A. pedestris* by monotypy.

TRIBE RHYNCHITALLINI

Voss, 1969, Ent. Arb. Mus. Frey, 1969: 368-370 (monograph).

Genus *Rhynchitallus* Voss, 1960
Voss, 1960, Ann. Zool. Warszawa, 18: 415.
Type species: *Rhynchitallus cyclops* by original designation.

VI. BYCTISCINI

Voss, 1930-31, Kol. Rdsch., 16: 191-240, 241-243 (monograph).

29. *Byctiscus* Thomson, 1859

1. *Byctiscus* Thomson, 1859
Type species: *Rhynchites populi* by monotypy?

2. *Aspidobyctiscus* Schilsky, 1903
Type species: *A. lacunipennis* by monotypy.

3. *Taiwanobyctiscus* Kôno, 1929
Type species: *Byctiscus paviei* by original designation.

30. *Byctiscidius* Voss, 1923
Voss, 1923, Philipp. J. Sci., 22: 510.
Type species: *Rhynchites parvus* by original designation?

31. *Byctiscophilus* Voss, 1930
Type species: *B. championi* by original designation.

32. *Listrobyctiscus* Voss, 1923
Type species: *Rhynchites corvinus* by original designation.

VII. DEPORAINI
Voss, 1938-42, Stett. ent. Ztg., 99: 59-117, 302-363, 102: 132-141, 103: 129-155 (monograph).

33. *Chonostropheus* Prell, 1924
Type species: *Deporaus tristis* by monotypy.
= *Rhynchitobius* Kôno, 1928
Type species: *Rhynchites tristis* by original designation.

34. *Paradeporaus* Kôno, 1927
Type species: *Paradeporaus parasiticus* by original designation.

35. *Chokkirius* Kôno, 1929

1. *Chokkirius* Kôno, 1929
Type species: *Rhynchites Rosti* by original designation.

2. *Adeporaus* Voss, 1941, Arb. Morphol. Taxon. Ent. Berlin-Dahlem, 8: 116.
Type species: *Chokkirius punctissimus* by monotypy.

36. *Depasophilus* Voss, 1922
Voss, 1922, Philipp. J. Sci., 21: 410.

1. *Depasophilus* Voss, 1922
Type species: *Depasophilus bakeri* by monotypy.

2. *Pseudodepasophilus* Voss, 1942, Mitt. mûnch. Ent. Ges., 32: 95.
Type species: *Depasophilus blandulus* by monotypy.

37. *Philorectus* Voss, 1924
Voss, 1924, Ent. Blätt., 20: 40.
Type species: *Philorectus insilitus* by monotypy

38. *Scolocnemus* Kirsch, 1875
Type species: *Scolocnemus wallacei* by monotypy

39. *Deporaus* Samouelle, 1819

1. *Megalarodepus* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: *D. tibialis* by monotypy.
2. *Capylarodepus* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: *D. glaucoides* subsequently designated by Voss, 1958, Decheniana Beih., 5: 11.
3. Subgenus with no available names
- *Biblarodepus*: Voss, 1938, without fixation of type.
4. *Arodepus* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: *D. penangensis* subsequently designated by Voss, 1958, Decheniana Beih., 5: 11.
5. *Platyrhynchites* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: *D. basalis* by monotypy.
6. *Coenorhinus* Thomson, 1859
Type species: *C. megacephalus* (= *D. mannerheimi*) by original designation.
= *Hypodeporaus* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: *D. conicirostris* subsequent designated by Voss, 1958, Decheniana Beih., 5: 11.
7. *Deporaus* Samouelle, 1819
Type species: *Rhynchites betulae* subsequently designated by Ter-Minassian, 1950.
8. *Exrhynchites* Voss, 1930 (nec Voss, 1938), Wien. ent. Ztg., 47: 80.
Type species: *D. puberulus* by monotypy.
9. *Pseudodeporaus* Voss, 1922, Philipp. J. Sci., 21: 387.
Type species: not designated (type series: *D. pullatus* and *D. periscelis*).
10. *Odontodeporaus* Voss, 1941
Type species: *D. spinipes* by monotypy.

Genus *Neodeporaus* Kôno, 1928
Type species: *Neodeporaus femoralis*
by original designation.

IV. Systematics

I. Systematic revisions

The present classification of Japanese RHYNCHITIDAE principally follows the Voss' system except for some revisions as follows:

Systematic extent of the family RHYNCHITIDAE. The family RHYNCHITIDAE include two

subfamilies, RHYNCHITINAE and PTEROCOLINAE, and are independent from the family ATTELABIDAE.

Systematic note on the *Pselaphorhynchites* complex (= *Coenorhinus* auct. sensu Voss, 1932-33). The genus *Coenorhinus* sensu Voss (1932-33) was subdivided into six subgenera in his monograph as follows:

1. *Pselaphorhynchites* Schilsky, 1903
2. *Neocoenorhinus* Voss, 1951 (= *Coenorhinus*: Schilsky, 1903 (nec Thomson, 1859))
3. *Notocyrtus* Desbrochers, 1908
4. *Merhynchites* Sharp, 1889
5. *Exochorhynchites* Voss, 1932
6. *Heterorhynchites* Voss, 1932

Among the above-mentioned six subgenera, the 1st and 4th were treated as independent genera by Kôno and Morimoto (1958) and Hamilton (1971), respectively. Morimoto (1984) elevated the 2nd one to the generic level and assigned two Japanese species to the genus.

In my opinion, there are no reasonable distinctions between the 2nd and 3rd subgenera. The latter subgenus was distinguished from the former by Voss (1932-33) on the basis of the size (larger), colour (reddish without lustre) and hair (denser and shorter). But these characters of *Notocyrtus* are continuous with some reddish species of the subgenus *Neocoenorhinus* such as *N. aequatus*, so that these two subgenera are apparently synonymous as already treated by Hoffman (1958). Then the *Pselaphorhynchites*-complex is newly classified into 3 genera and 2 subgenera as follows:

Genus *Pselaphorhynchites*

Genus *Merhynchites*

Genus *Notocyrtus*

Subgenus *Notocyrtus* = *Neocoenorhinus* syn. nov.

Subgenus *Exochorhynchites*

Subgenus *Heterorhynchites*

Synonymic note on the genus *Agilaus* Pascoe and the subgenus *Piazorhynchites* Voss. The genus *Agilaus* was established by Pascoe (1873) on a new species, *A. pedestris* from Sarawak, in which the tibiae are remarkably compressed and foliaceous.

Voss (1923) described a new species *Rhynchites pedestris* from Borneo, which was also characterized by the compressed and foliaceous tibiae, and assigned it to a new subgenus *Piazorhynchites*. Later, he (1941, Mitt. Munch. ent. Ges., 31) treated the *Agilaus* as an independent genus from *Rhynchites* in his monograph.

There are no distinctions, however, between *A. pedestris* and *Rh. pedestris* so far as the descriptions are concerned, so that they belong to but one species.

Genus *Agilaus* Pascoe, [1873]

Agilaus Pascoe, [1873], J. Linn. Soc. London, 11: 176-177, (Type species: *Agilaus pedestris* Pascoe, [1873] by monotypy).

Piazorhynchites Voss, 1923, Philipp. J. Sci., 22: 496, (as a subg. of *Rhynchites*); Voss, 1935, Kol. Rdsch., 42: 140, (Type species *R. pedestris* Voss, 1923 by monotypy). **syn. nov.**

Agilaus pedestris Pascoe, [1873]

Agilaus pedestris Pascoe, [1873], J. Linn. Soc. London, 11: 177.

Rhynchites pedestris Voss, 1923 (nec Pascoe, 1873), Philipp. J. Sci., 22: 496, (subg. *Piazorhynchites*); Voss, 1935, Kol. Rdsch., 42: 140. **syn. nov.**

Systematic note on the *Rhynchites* complex (= *Rhynchites*: Voss, 1938). In the monographic study on the tribe Rhynchitini, Voss (1938, Kol. Rdsch., 24) subdivided the genus *Rhynchites* into 15 subgenera as follows:

1. *Lasiorrhynchidius* Voss, 1923
2. *Callirhynchites* Voss, 1938
3. *Elautobius* Heller, 1901
4. *Auletomorphus* Voss, 1923
5. *Piazorhynchites* Voss, 1923

6. *Haborrhynchites* Voss, 1938
7. *Metarrhynchites* Voss, 1923
8. Subgenus with no available names
9. *Haplorhynchites* Voss, 1930
10. *Cartorhynchites* Voss, 1932
11. *Clinorhynchites* Voss, 1969
12. *Homalorhynchites* Ter-Minassian, 1950
13. *Involvulus* Schrank, 1798
14. *Mechoris* Billberg, 1820
(= *Cyllorhynchites* Voss, 1930)
15. *Rhynchites* Schneider, 1791

Ter-Minassian (1950) recognized the 8+9, 12, 13, 14 and 15th subgenera as independent genera in her faunistic study.

Morimoto (1962a, 1962c) and Voss (1969, Ent. Arb. Mus. Frey, 20) agreed with her to separate the 14th and 15th from the others. Hamilton (1971) completely agreed with her elevation.

In addition to the above-mentioned subgenera, Voss (1935a, 1953, 1960, 1938-69) erected the following subgenera in *Involvulus*, *Mechoris* and *Rhynchites*:

16. *Hyporhynchites* Voss, 1935
(subg. of *Rhynchites*)
17. *Cneminvolvulus* Voss, 1960
(subg. of *Involvulus*)
18. *Cyllorhynchites* Voss, 1960
(subg. of *Mechoris*)
19. *Perrhynchites* Voss, 1953
(subg. of *Rhynchites*)
20. *Neorhynchites* Voss, 1969
(subg. of *Rhynchites*)
21. *Epirhynchites* Voss, 1969
(subg. of *Rhynchites*)

Japanese fauna includes the 7th, 8th, 10th, 12th, 13th, 16th, 17th, 18th and 21st subgenera. Considering the systematic treatment of Ter-Minassian and her followers, it is proper to arrange these 21 subgenera into 8 genera as follows:

Genus *Elautobius*

- Subgenus *Lasiorrhynchidius*
 Subgenus *Callirhynchites*
 Subgenus *Elautobius*
 Subgenus *Auletomorphus*
 Genus *Agilauis* = *Piazorrhynchites*. Syn. nov.
 Genus *Haplorhynchites*
 Subgenus *Aphlorhynchites* subg. nov. = 8th subgenus
 (type species: *Curculio pubescens* Fabricius, 1775)
 Subgenus *Haplorhynchites*
 Genus *Clinorrhynchites*
 Genus *Habrorrhynchites*
 Genus *Involvulus*
 Subgenus *Metarrhynchites*
 Subgenus *Cartorrhynchites*
 Subgenus *Homalorrhynchites*
 Subgenus *Involvulus*
 Subgenus *Hyporrhynchites*
 Subgenus *Cneminvolvulus*
 Genus *Mechoris*
 Subgenus *Mechoris*
 Subgenus *Cyllorrhynchites*
 Genus *Rhynchites*
 Subgenus *Rhynchites*
 Subgenus *Perrhynchites*
 Subgenus *Neorrhynchites*
 Subgenus *Epirhynchites*

8. *Exrhynchites* Voss, 1930
 9. *Pseudodeporaus* Voss, 1922
 10. *Odontodeporaus* Voss, 1941

Among them, the definition of the 6th subgenus is indistinct. Though Voss (1922) gave the definition for the subgenus *Hypodeporaus* as having the 9th and 10th striae confluent to each other, he (1938, Stett. ent. Ztg., 99) redefined it by the eye of moderate size (temple as long as the diameter of eye) and the slenderer hind tarsus (with the 1st segment longer than the 2nd and 3rd combined). And he assigned *D. mannerheimi* to this subgenus in spite of the fact that the 9th and 10th striae are not confluent to each other. Then the 6th subgenus is not separable from the 4th and 7th subgenera according to his definitions.

These subgenera can be, however, separated into 4 groups when the thickness of body, independency of striae, size of eye and tarsal length are taken into consideration.

A. Head not depressed, as tall as broad, basal constriction distinct around the head; 9th and 10th striae confluent to each other; eye large, longer than temple; tarsus slender; including *D. penangensis* Subg. *Arodepus*.

B. Head depressed, broader than thick, basal constriction indistinct at the ventral area; 9th and 10th striae confluent to each other; eye large or moderate, longer or as long as temple; tarsus slender; including *D. conicirostris* Subg. *Hypodeporaus*.

C. Head depressed, broader than thick, basal constriction indistinct at the ventral area; 9th and 10th striae extend to the apex of elytra; eye moderate, as long as temple; tarsus slender; including *D. mannerheimi* Subg. *Caenorhinus*.

D. Head depressed broader than thick, basal constriction indistinct at the ventral area; 9th and 10th striae extend to the apex of elytra; eye moderate as long as temple; tarsus stout; including *D. betulae* Subg. *Deporaus* s. str.

Systematic note on the subgeneric division of the genus *Deporaus*. In a faunistic study of the Indo-Malaysian Rhynchitinae and a monographic study of the tribe Deporaini, Voss (1922, 1938-41) subdivided the genus *Deporaus* into 10 subgenera as follows:

1. *Megalarodepus* Voss, 1922
2. *Capylarodepus* Voss, 1922
3. Subgenus with no available names
4. *Arodepus* Voss, 1922
5. *Platyrhynchites* Voss, 1922
6. *Caenorhinus* Thomson, 1859
 (= *Hypodeporaus* Voss, 1922)
7. *Deporaus* Samouelle, 1819

In the present study, both *Hypodeporaus* and *Caenorhinus* are considered as a valid subgenus, respectively. Consequently the genus *Deporaus* is subdivided into 11 subgenera, 6 subgenera of which are found in Japan.

2. A list of Japanese RHYNCHITIDAE

Tribe AULETINI

Auletobius Desbrochers, 1869

Parauletes Voss, 1937

1. *A. (P.) puberulus* (Faust, 1882)
2. *A. (P.) fumigatus* (Roelofs, 1874)
3. *A. (P.) planifrons* **sp. nov.**
4. *A. (P.) submaculatus* (Sharp, 1889)

Auletobius Desbrochers, 1869

5. *A. (A.) sanguisorbae* (Schränk, 1798)

Aletinus Desbrochers, 1908

6. *A. (A.) uniformis* (Roelofs, 1874)

Tribe BYCTISCINI

Byctiscus Thomson, 1859

Byctiscus Thomson, 1859

1. *B. (B.) venustus* (Pascoe, 1875)
2. *B. (B.) puberulus* (Motschulsky, 1860)
3. *B. (B.) rugosus* (Gebler, 1830)
4. *B. (B.) fausti* Sharp, 1889

Aspidobyctiscus Schilsky, 1903

5. *B. (A.) lacunipennis* (Jekel, 1860)

Tribe RHYNCHITINI

Subtribe EUGNAMPTINA

Aderorhinus Sharp, 1889

1. *A. crioceroides* (Roelofs, 1874)

Eugnamptus Schoenherr, 1839

Eugnamptus Schoenherr, 1839

1. *E. (E.) amurensis* (Faust, 1882)

Eugnamptobius Voss, 1922

2. *E. (E.) flavipes* Sharp, 1889
3. *E. (E.) aurifrons* Roelofs, 1874
4. *E. (E.) morimotoi* Nakane, 1963
5. *E. (E.) sauteri* Voss, 1921

Subtribe RHYNCHITINA

Lasiorrhynchites Jekel, 1860

1. *L. brevisrostris* (Roelofs, 1874)

Pselaphorrhynchites Schilsky, 1903

1. *P. japonicus* Morimoto, 1958

Notocyrtus Desbrochers, 1908

1. *N. sanguinipennis* (Roelofs, 1874)
2. *N. caeligenus* **sp. nov.**
3. *N. interruptus* (Voss, 1920)
4. *N. assimilis* (Roelofs, 1874)

Haplorhynchites Voss, 1930

1. *H. funebris* (Sharp, 1889)
2. *H. amabilis* (Roelofs, 1874)

Involvulus Schränk, 1798

Cartorrhynchites Voss, 1932

1. *I. (C.) flavus* **sp. nov.**
2. *I. (C.) singularis* (Roelofs, 1874)
3. *I. (C.) amamiensis* Voss, 1971
4. *I. (C.) apertus* (Sharp, 1889)
5. *I. (C.) subtilis* **sp. nov.**

Metarrhynchites Voss, 1923

6. *I. (M.) apionoides* (Sharp, 1889)

Involvulus Schränk, 1798

7. *I. (I.) cylindricollis* (Schilsky, 1906)
8. *I. (I.) pilosus* (Roelofs, 1874)
9. *I. (I.) placidus* (Sharp, 1889)
10. *I. (I.) plumbeus* (Roelofs, 1874)

Hyporrhynchites Voss, 1935

11. *I. (H.) cornix* **sp. nov.**
12. *I. (H.) aes* **sp. nov.**

Cneminvolvulus Voss, 1960

13. *I. (C.) rugosicollis* (Voss, 1920)
14. *I. (C.) lupulus* **sp. nov.**
15. *I. (C.) haradai* (Kôno, 1940)

Rhynchites Schneider, 1791

1. *R. heros* Roelofs, 1874

Mechoris Billberg, 1820

1. *M. ursulus* (Roelofs, 1874)

Tribe DEPORAINI

Subtribe CHONOSTROPHEINA

Chonostropheus Prell, 1924

1. *C. chujoi* Voss, 1956

Subtribe DEPORAINA

Apoderites Sawada, 1987

1. *A. commodus* Sawada, 1987

Eusproda Sawada, 1987

- 1. *E. proxima* (Faust, 1882)
- Chokkirius* Kôno, 1929
- 1. *C. truncatus* (Sharp, 1889)
- Deporaus* Samouelle, 1891
- Arodepus* Voss, 1922
- 1. *D. (A.) tigris* **sp. nov.**
- Hypodeporaus* Voss, 1922
- 2. *D. (H.) ohdaisanus* Nakane, 1963
- 3. *D. (H.) insularis* **sp. nov.**
- 4. *D. (H.) fuscipennis* Sharp, 1889
- 5. *D. (H.) vossi* **nom. nov.**
- 6. *D. (H.) minimus* Kôno, 1928
- Caenorhinus* Thomson, 1859
- 7. *D. (C.) mannerheimi* (Hummel, 1823)
- 8. *D. (C.) eumegacephalus* **sp. nov.**
- Deporaus* Samouelle, 1891
- 9. *D. (D.) betulae* (Linnaeus, 1758)
- 10. *D. (D.) nidifucus* Sawada et Lee, 1986
- 11. *D. (D.) unicolor* (Roelofs, 1874)
- 12. *D. (D.) affectatus* Faust, 1887
- 13. *D. (D.) hartmanni* Voss, 1929
- Exrhynchites* Voss, 1930
- 14. *D. (E.) septemtrionalis* **sp. nov.**
- Pseudodeporaus* Voss, 1922
- 15. *D. (P.) rhynchitoides* **sp. nov.**
- Paradeporaus* Kôno, 1927
- 1. *P. depressus* (Faust, 1882)

3. Key to tribes, genera and species of the Japanese RHYNCHITIDAE

Key to Japanese tribes of the family RHYNCHITIDAE

- 1. Spiculum gastrale directed sinistro-anteriorly; mouth parts with labial palpi 2- or 1-segmented, not exceeding the apices of postmentum; head constricted at the base in general; elytra separately rounded at each apex; pygidium and larger part of propygidium exposed from elytra in general; tibiae without spurs; abdominal lobe undeveloped, venter distant from metasternum at the sides; lateral thorn of pronotum absent in both sexes
----- Tribe DEPORAINI
- Spiculum gastrale directed dextro-anteriorly; labial palpi 3-segmented, exceeding the apices of postmentum; propygidium concealed by elytra, pygidium hardly or partially exposed from elytra ----- 2
- 2. Elytra conjointly rounded at the apices; pygidium entirely

- concealed by elytra in general; eyes small, hemispherically prominent; frons broad, much broader than the diameter of eye; rostrum narrow and thin, much narrower than frons; abdominal lobe undeveloped, venter distant from metasternum at the sides; lateral thorn of pronotum absent in both sexes ----- AULETINI
- Elytra separately rounded at each apices; apical part of pygidium exposed from the elytra; eye large, frons at most as broad as the diameter of eye; rostrum thick; antennae inserted near the middle of the rostrum ----- 3
- 3. Abdominal lobe developed, contiguous to metasternum; head conical or cylindrical; eyes less prominent; pronotum with lateral thorn in the male ----- Tribe BYCTISCINI
- Abdominal lobe undeveloped, venter distant from metasternum at the sides; head quadrate, or transverse in general; eyes moderately prominent ----- Tribe RHYNCHITINI
- Tribe AULETINI
- Only one genus inhabits Japan ----- *Auletobius*

Key to Japanese species of the genus *Auletobius*

- 1. Antennae inserted near the base of rostrum ----- 2
- Antennae inserted near the middle of rostrum; rostrum weakly curved; pygidium exposed from elytra (subg. *Aletinus*); rostrum longer than pronotum; pronotum almost as long as broad; setose sex patches of procoxae and subapical tubercles of elytra developed in the male; entirely black, or elytra more or less fuscate; hairs pale grey but brownish in dorsum, scutellum with pale grey hairs; 2.3-3.4 mm ----- *A. uniformis*
- 2. Apex of pygidium exposed from elytra (subg. *Auletobius*); pronotum broader than long; rostrum curved, as long as (male) or a little longer (female) than pronotum; entirely black, elytra with blue metallic lustre; 2.7-3.2 mm ----- *A. sanguisorbae*
- Pygidium entirely concealed by elytra (subg. *Parauletes*); rostrum straight ----- 3
- 3. Antennal funicle with 3rd segment much shorter than 1st; rostrum a little shorter (male) or a little longer (female) than pronotum; pronotum broader than long; entirely black except for antennal funicle more or less reddish, derm with brownish grey recumbent hairs; 2.0-2.5 mm ----- *A. puberulus*
- Third funicular segment longer or as long as 1st; rostrum longer than pronotum; at least fore leg fuscous ----- 4
- 4. Irregular ring markings on elytra distinct, markings composed of conspicuous white hairs and neutral brown decumbent hairs; pronotum with a short median longitudinal keel (sometimes indistinct); anterior margin of pronotum not emarginate; body fuscous, rostrum, pterothoracic sterna and scutellum piceous; 3.2-4.0 mm ----- *A. submsculatus*

- Decumbent hairs of elytra uniformly neutral colour to the derm; pronotum without median keel; body smaller
----- 5
- 5. Pronotum a little broader than long, weakly rounded laterally, with anterior margin not emarginate; frons less convex; fuscous or testaceous with an obtriangular dark marking on elytra; 2.0-2.6 mm
----- *A. planifrons* sp. nov.
- Pronotum a little longer than broad, strongly rounded laterally (weaker in small individuals), with anterior margin emarginate; frons convex; body colour variable testaceous to piceous; 1.8-2.6 mm
----- *A. fumigatus*

Tribe BYCTISCINI

Only one genus inhabits Japan ----- *Byctiscus*

Key to Japanese species of the genus *Byctiscus*

- 1. Scutellum broad, almost three times as broad as long; elytra sculptured with incontinuous deep stria and their interstices and densely puncticulate; tibiae without dorsal ridges (subg. *Aspidobyctiscus*); venter and pygidium costate along the margins of elytra; tibiae each with two spurs; 4.4-5.0 mm ----- *B. lacunipennis*
- 1. Scutellum at most twice as broad as long; elytra with weak or indistinct striae; tibiae with dorsal ridges; (subg. *Byctiscus*) ----- 2
- 2. Fore tibia without spurs; elytra rugosely sculptured; colour blue or green, or appendages, rostrum, head and ventral part of body sometimes reddish; costa of the pygidium overlapped by elytra; 5.5-7.5 mm
----- *B. rugosus*
- Fore tibia with one spur; elytra rather smooth at first sight, more or less irregularly sculptured
----- 3
- 3. Dorsal surface of rostrum strongly bent; submental projection absent in both sexes; pronotum sparsely punctate; body with dorsum red to violaceous or sometimes purpureus to cyaneous, ventral surface violaceous; 4.5- 5.5 mm ----- *B. fausti*
- Rostrum evenly curved; submentum projected in the male; punctures on the pronotum denser, interstices as broad as their diameters ----- 4
- 4. Costa of the pygidium overlapped by elytra; ventral surface of the body blue to purple in contrast with dorsal surface red or green; 5.0- 7.0 mm
----- *B. venustus*
- Costa of the pygidium run along elytral margins; body uniformly green, red or blue, or green with two pairs of reddish spots on elytra; 4.9-7.0 mm
----- *B. puberulus*

Key to Japanese genera of the tribe RHYNCHITINI

- 1. Ovipositor with styli; pronotum delicate, a little broader

than head (subtribe EUGNEMPTINA)

- 2
- Ovipositor without styli; pronotum much broader than head (subtribe RHYNCHITINA)
----- 3
- 2. Head strongly constricted at the base; eyes anomalously large in the male; tibiae almost straight
----- *Eugnamptus*
- Head weakly constricted at the base; eyes of moderate size in both sexes; tibiae more or less strongly curved
----- *Aderorhinus*
- 3. Elytron with 9th stria extends to near the apex; scutellar striole present or sometimes vestigial
----- 4
- Ninth stria extinct or confluent with 10th at the middle of elytron ----- 5
- 4. Body slender; head thicker than prothorax; mesosternum with secondary mesocoxal process incomplete, not contiguous to metasternum ----- *Pselaphorhynchites*
- Body of normal breadth; prothorax thicker than head; secondary mesocoxal process complete
----- *Haplorhynchites*
- 5. Scutellar striole present ----- 6
- Scutellar striole absent ----- 7
- 6. Head quadrate, constricted at base; rostrum short in both sexes; abdominal terga with separate spiracular sclerites; secondary mesocoxal process incomplete
----- *Lasiorrhynchites*
- Head entirely globular with neck region, not or scarcely constricted at base; rostrum slender; abdominal spiracles open on the median tergite; secondary mesocoxal process complete ----- *Notocyrtus*
- 7. Procoxa distant from head; pronotum with a pair of lateral thorns in the male ----- 8
- Procoxa contiguous to head; lateral thorns absent in both sexes ----- *Involvulus*
- 8. Antenna and rostrum anomalously long; antennal funicle depressed ----- *Mechoris*
- Antenna and rostrum moderate in length, antennal funicle not depressed; basal margins of elytra produced anteriorly
----- *Rhynchites*

Genus *Aderorhinus*

Only one species inhabits Japan ----- *A. crioceroides*

Key to Japanese species of the genus *Eugnamptus*

- 1. Elytra with 9th stria confluent with 10th near the apex of elytra (subg. *Eugnamptus*); entirely black or piceous with strong blue lustre; 5.5-7.5 mm ----- *E. amurensis*
- Elytra with 9th stria confluent with 10th near the middle of elytra (subg. *Eugnamptobius*); at largest 5.1 mm
----- 2
- 2. Pronotum with setigerous punctures strong and dense, their sockets papillate; elytra with distinct rows of hairs; interval puncticles sparser than striae punctures

- 3
- Pronotum with setigerous punctures weak, sparse and simply hollowed, sockets inconspicuous; hairs on elytra with indistinct orderly arrangement; interval puncticles synchronous with striae punctures ----- 4
 - 3. Body piceous with remarkable blue lustre, appendages reddish yellow; fore tibia with dorsal ridge milled on the apical half; mucro of hind tibia well developed in the male; mesocoxa rounded ventrally in both sexes
----- *E. sauteri*
 - Fuscous to flavous except for the head with green metallic lustre; fore tibia with a row of spicules on the apical half of dorsal edge; hind tibia not mucronate; mesocoxa projected ventrally in the male ----- *E. aurifrons*
 - 4. Elytra with two kinds of distinct setae, erect setae on intervals and suberect setae on striae; fore tibia with a row of spicules on the apical half of dorsal edge; head and pronotum more or less darker in colour than elytra and appendages ----- *E. flavipes*
 - Setae on the elytra uniformly suberect except for a few longer setae on sides; fore tibia without row of spicules; head, rostrum, pronotum and elytra uniformly piceous
----- *E. morimotoi*

Genus *Lasiorrhynchites*

Only one species inhabits Japan ----- *L. brevisrostris*

Genus *Pselaphorrhynchites*

Only one species inhabits Japan ----- *P. japonicus*

Key to Japanese species of the genus *Notocyrtus*

- 1. Pygidium costate along margin of elytra; body larger, 4.0-5.0 mm; dark brown with weak brassy lustre, elytra red ----- *N. sanguinipennis*
- Pygidium not costate; body smaller than 4.0 mm ----- 2
- 2. Fuscous in colour, elytra and legs testaceous; 3.1-3.6 mm
----- *N. caeligenus* sp. nov.
- Black with blue or bluish green lustre, body at largest 2.8 mm ----- 3
- 3. Dorsum with fine suberect hairs ----- *N. interruptus*
- Hairs brown, recumbent in dorsum ----- *N. assimilis*

Key to Japanese species of the genus *Haplorhynchites*

- 1. Derm black without blue lustre; funicle with basal four segments almost of same length; intervals of striae almost glabrous with inconspicuous puncticles ----- *H. funebris*
- Derm with blue lustre; funicle with 2nd and 3rd segments longer than the 1st; intervals of striae strongly punctulate ----- *H. amabilis*

Key to Japanese species of the genus *Involvulus*

- 1. Rostrum short and stout, at most as long as pronotum in the female; pygidium with costa overlapped by elytra

- 2
- Rostrum slender, longer than pronotum in the female
----- 7
 - 2. Head cylindrical; eyes less prominent (subg. *Metarhynchites*); piceous with blue lustre; pronotum strongly rounded at the sides; 2.5-2.9 mm
----- *I. apionoides*
 - Head transverse or quadrate; eyes prominent laterally (subg. *Cartorrhynchites*) ----- 3
 - 3. Entirely yellow or yellowish brown except for vertex with weak green lustre; 3.0-3.5 mm ----- *I. flavus* sp. nov.
 - Derm partially darker ----- 4
 - 4. Derm with piceous maculations partially fuscate and with white flecks of hairs; 2.8-3.5 mm ----- *I. singularis*
 - Uniformly pubescent, without white flecks of hairs
----- 5
 - 5. Elytra entirely piceous or piceous with lustre ----- 6
 - At least central region of each elytron yellowish; derm with weak green lustre; 2.2-2.5 mm ----- *I. amamiensis*
 - 6. Derm with blue lustre; pronotum scarcely rounded laterally and subapical constriction weak; 2.1-3.0 mm
----- *I. apertus*
 - Derm without blue lustre; pronotum strongly rounded laterally and subapical constriction strong at sides; 2.4-2.8 mm ----- *I. subtilis* sp. nov.
 - 7. Four posterior tibiae with hook-like structures in the male; pronotum rugose; pygidium not costate (subg. *Cnemivolvulus*) ----- 13
 - Tibiae without hook-like structures absent in both sexes
----- 8
 - 8. Tibiae of normal breadth; pronotum moderately punctate (subg. *Involvulus*); pygidium costate along hind margins of elytra ----- 9
 - Hind tibiae strongly compressed and broadened; pronotum rugosely sculptured (subg. *Hyporrhynchites*); pygidium not costate ----- 12
 - 9. Pronotum almost cylindrical, broadest at the base and weakly narrowed anteriorly; elytra with striae as broad as intervals; derm with bluish green, blue or purple lustre; hairs dark and recumbent in dorsum 3.7- 4.8 mm
----- *I. cylindricollis*
 - Pronotum more or less prominent laterally, intervals broader than striae ----- 10
 - 10. Elytra densely covered with erect and suberect long setae, intervals with a row of puncticles; derm with blue lustre; 3.7 -4.6 mm ----- *I. pilosus*
 - Elytra with recumbent, grey or bluish white conspicuous hairs ----- 11
 - 11. Rostrum at most 1.2 times as long as pronotum; elytra with striae not grooved, erect setae inconspicuous, shorter than whitish recumbent hairs; 3.4-4.4 mm
----- *I. placidus*
 - Rostrum at least 1.3 times as long as pronotum; elytra with striae slightly grooved, fine sparse erect setae longer than whitish recumbent hairs; 4.0-5.0 mm ----- *I. plumbeus*
 - 12. Derm brazen; elytra with long and suberect hairs; 3.2-4.2 mm ----- *I. aes* sp. nov.

- Derm piceous with weak blue lustre; elytra with short and decumbent hairs; 2.7-3.5 mm

----- *I. cornix* sp. nov.

13. Derm with conspicuous bluish green lustre; elytra with decumbent hairs; antennae inserted at basal 1/3 of the rostrum; 3.1-4.0 mm ----- *I. haradai*

- Derm piceous with very weak blue lustre; elytra with suberect hairs; antennae inserted at basal 2/5 of the rostrum ----- 14

14. Rostrum 1.25 (male) or 1.6 (female) times as long as pronotum; elytra parallel-sided; 2.9-3.6 mm

----- *I. rugosicollis*

- Rostrum 1.9 (male) or 2.1 (female) times as long as pronotum; elytra dilated posteriorly; 3.7-4.4 mm

----- *I. lupulus* sp. nov.

Genus *Rhynchites*

Only one species inhabits Japan ----- *R. heros*

Genus *Mechoris*

Only one species inhabits Japan ----- *M. ursulus*

Key to Japanese genera of the tribe DEPORAINI

1. Elytra with scutellar striole; ovipositor without styli; coxite undivided (subtribe CHONOSTROPHEINA); rostrum short and stout; procoxae without setose sex patch; tibiae not mucronate; propygidium with a pair of wing folding spicule patches ----- *Chonostropheus*

- Elytra without scutellar striole; ovipositor with coxites and styli; each coxite subdivided (subtribe DEPORAINA) ----- 2

2. Propygidium with a pair of wing folding spicule patches; tibiae not mucronate ----- 3

- Propygidium entirely rugosely sculptured or weakly imbricate, without wing folding spicule patches; male fore and middle tibiae mucronate ----- 5

3. Rostrum depressed; rostrum without dense long hairs at the base ----- *Apoderites*

- Rostrum elongate, scarcely depressed; rostrum with long dense hairs at the base in the female ----- 4

4. Labial palpi 2-segmented; prothorax not broadened in the male, almost as long as or longer than broad in the two sexes; procoxae with setose sex patches in the female ----- *Eusproda*

- Labial palpi 1-segmented; prothorax broadened laterally in the male, broader than long; procoxae without setose sex patches in both sexes ----- *Chokkirius*

5. Body depressed; pygidium twice as broad as long; pronotum strongly emarginate on the anterior margin, strongly prominent postero-laterally; each side of the male rostrum with a foliaceous lateral projection below the antennal insertion ----- *Paradeporaus*

- Body not depressed; pygidium at most 1.7 times as broad as long; pronotum not or slightly emarginate on anterior

margin, weakly rounded at side; rostrum without lateral projection ----- *Deporaus*

Genus *Chonostropheus*

Only one species inhabits Japan ----- *C. chujoii*

Genus *Apoderites*

Only one species inhabits Japan ----- *A. commodus*

Genus *Eusproda*

Only one species inhabits Japan ----- *E. proxima*

Genus *Chokkirius*

Only one species inhabits Japan ----- *C. truncatus*

Key to Japanese species of the genus *Deporaus*

1. Head distinctly constricted at the base, at least on the dorsum and sides; frons as broad as or narrower than rostrum ----- 2

- Head constriction absent or indistinct, at most depressed on the dorsum; elytra with 9th stria extend to the apex of elytra; fore and middle tibiae mucronate in the male (subg. *Pseudodeporaus*); derm with blue lustre ----- *D. rhynchitoides* sp. nov.

2. Elytra with 9th stria confluent with 10th at the middle of elytra ----- 5

- Elytra with 9th stria extend to the apex of elytra ----- 3

3. Fore and middle tibiae with mucrones vestigial in the male; tarsi slender (subg. *Caenorhinus*); derm with remarkable blue lustre ----- 6

- Fore and middle tibiae with mucrones well developed in the male ----- 4

4. Rostrum slenderer; antennal club with 3rd and 4th segments elongate; derm with conspicuous blue or bluish green metallic lustre; elytra with striae strongly and closely punctate, clearly grooved (subg. *Exrhynchites*); rostrum narrow, 0.7 (male) or 1.0 (female) times as long as pronotum ----- *D. septentrionalis* sp. nov.

- Rostrum broader; antennal club with 3rd and 4th segments less elongate; derm without remarkable metallic lustre; elytra with striae moderately punctate, not or slightly grooved (subg. *Deporaus*) ----- 7

5. Head as tall as broad, with basal constriction strict on the ventral area; eye large and strongly prominent, temple shorter than the diameter of eye; pronotum convex dorsally; antenna slender, longer than twice as long as pronotum, with club loosely articulate (subg. *Ardepus*) ----- *D. tigris* sp. nov.

- Head more or less depressed, broader than thick, with basal constriction indistinct on the ventral area; eye large but less prominent, temple at most as long as the diameter

- of eye; pronotum more or less depressed; antennae at most twice as long as pronotum, with club more or less closely articulate (subg. *Hypodeporaus*) ----- 11
6. Head and rostrum broader, rostrum not more than 1.8 (female) or 1.5 (male) times as long as broad
----- *D. eumegacephalus* sp. nov.
- Head and rostrum of moderate breadth, rostrum not less than 2.0 (female) or 1.6 (male) times as long as broad
----- *D. mannerheimi*
7. All tibiae mucronate in the male ----- 8
- Hind tibia not mucronate in both sexes; entirely black
----- 9
8. Eyes large and strongly prominent, temple a half as long as the diameter of eye; intervals of elytra strongly and closely punctulate; rostrum with dorsal surface smooth; derm with weak blue lustre, hairs whitish ----- *D. hartmanni*
- Eye of moderate size, less prominent; temple almost as long as the diameter of eye; entirely black with dark hairs
----- *D. affectatus*
9. Hind tarsus with 1st segment longer or as long as the 2nd and 3rd combined in the female ----- *D. unicolor*
- The 1st segment of hind tarsus much shorter than the 2nd and 3rd combined in the female ----- 10
10. Rostrum with a pair of sharp projections at the apex; hind femur swollen and inner edge of hind tibia serrate in the male; prothorax with postcoxal projections distant from each other ----- *D. betulae*
- Rostrum with apical projections less developed; hind leg normal in both sexes; prothorax with postcoxal projections contiguous to each other ----- *D. nidificus*
11. Entirely black except for apex of rostrum and tarsi reddish ----- *D. minimus*
- Body fusate, at least venter or femur testaceous - - - 12
12. Metacoxa fulvous; length more than 4.0 mm in general
----- 13
- Metacoxa piceous; length less than 3.5 mm in general
----- 14
13. Intervals of elytra densely punctate and roughly sculptured; sterna and pleura of meso- and metathoraces piceous; pubescences dense and short
----- *D. insularis* sp. nov.
- Intervals sparsely punctate; sterna and pleura of meso- and metathoraces more or less fusate; pubescences rather long
----- *D. ohdaisanus*
14. Abdomen fulvous; tibiae black or fuscous; elytra black with humerus not fusate, 9th and 10th striae confluent above the 3rd ventrite ----- *D. vossi* nom. nov.
- Abdomen black or fuscous; or tibiae yellow, not immaculate when venter fluvous; elytra with humerus and centre sometimes fusate, 9th and 10th striae confluent above 1st ventrite ----- *D. fuscipennis*

Genus *Paradeporaus*

Only one species inhabits Japan ----- *P. depressus*

4. Phylogeny

Phylogenesis is the real history of organisms. When we interpret the resemblances and differences among species as the results of evolutionary divergences, the derived character shared by the species is attributed to their common ancestry (Hennig, 1965). The phylogenetic relationship among them is then partially estimatable.

The object of the present chapter is to estimate the phylogenetic relationship on the basis of character distribution among 31 of 62 species in our fauna. These 31 species seem to comprise the diversity of concerning characters to all species treated in the present study; the rest can be understood by comparison with any of the treated ones.

The following 31 diagnostic characters were used for classification in the present study. They can be considered also in the estimation of the phylogeny. Each character includes some (usually two, often three) alternative character states.

1. Head continuous to neck region (0), or constricted at the base (1).
2. Head more or less stretched anteriorly (0), or entirely globular with neck region (1).
3. Head in contact with procoxae (0), or distant from them (1) in relation to length of prosternal part of prothorax.
4. Postcoxal projections of prothorax separate from each other (0), or contiguous (1).
5. Scutellum triangular (0), trapezoid to oblong (1), or transverse (2).
6. Secondary mesocoxal process absent (0), incomplete (1), or complete (2).
7. Scutellar striole absent (0), or present (1).
8. Elytra with 9th and 10th striae independent (0), or confluent near the middle of elytra (1).
9. Four posterior tibiae with dorsal edge simple (0), or milled (1).
10. Fore tibia with no (0), one (1), or two (2) spurs.

11. Middle tibia with no (0), one (1), or two (2) spurs.
12. Hind tibia with no (0), one (1), or two (2) spurs.
13. Abdominal lobe absent (0), or developed (1).
14. First abdominal segment with tergum completely sclerotized (0), sclerite divided along median longitudinal line (1), or broadly membranous with some pairs of sclerites (2).
15. Spiracles of 2nd to 6th abdominal segments opening on the median tergites (0), or on independent spiracular sclerites (1).
16. Elytra separately rounded at apices (0), or conjointly rounded (1).
17. Propygidium (tergite of 6th abdominal segment) with pair of wing folding spicule patches developed (0), or reduced (1).
18. Pygidium simple (0), or costate along margins of elytra (1).
19. Visceral formula Deporaine type (0), or Rhynchitine type (1).
20. Submentum simple (0), or armed with antero-ventral projection in male (1).
21. Prothorax simple (0), or armed with pair of lateral thorns in male (1).
22. Procoxa simple or hairy (0), or with distinct setose patch in male (1).
23. Elytra simple (0), or with setose tubercles at declivity in male (1).
24. Fore tibia simple at apex (0), or mucronate in male (1).
25. Middle tibia simple at apex (0), or mucronate in male (1).
26. Hind tibia simple at apex (0), or mucronate in male (1).
27. Rostrum of normal length (0), or elongate in female fore boring materials (1).
28. Rostrum simple (0), or with hair tuft at base (1).
29. Rostrum of normal thickness (0), or depressed in female for slicing leaves (1).
30. Tarsi slender (0), or stout, especially in female (1).

31. Ovipositor simple with unique sclerites (0), or composed of coxites and styli (1).

These characters are listed not as cladistically reliable, but as diagnostic, therefore the codes (1, 2 or 3) in the above list do not mean evolutionary states (apomorphy or plesiomorphy). Character states of the 31 species are shown in Table 1.

Estimated Wagner tree. The "Wagner tree" (shortest phylogenetic tree) can be drawn on the basis of assumption that every character equally reflects the phylogeny. An estimated Wagner tree (EW-tree) in the present study was made through the Wagner algorithm (Kluge & Farris, 1969). The postulated ancestral state of each character (Table 1, bottom) is inferred from the state shown in the higher weevils or anthribids (outgroup comparison method by Watrous & Wheeler, 1981).

As a result, a tree of the length $L = 97$ was obtained (Fig. 1) for the original data of the size $R = 37$. The 60 homoplasies postulated in the tree include 18 reductions and 42 parallel changes in all but 10 characters. The presence of the postulated homoplasies in high frequency indicates the high inconformability of the original data set.

Network and phylogenetic tree from the conformable subset of the data. The inconformability is caused by nonhierarchical distributions among characters composing the data set. The conformability matrix (Table 2) indicates nonhierarchical (+) and hierarchical (-) relationships among characters. Characters containing the greatest number of non-hierarchical relationships with other characters are rejected in succession (Table 3), to remove non-hierarchical combinations from the set. As a result, thirteen characters (3, 5, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24 and 28) remain in the conformable subset of the original data set.

Concerning the remaining characters, there are no distinctions among some species, then only ten

Table 1. Original character matrix of 31 characters and representative 31 species of Japanese RHYNCHITIDAE and their hypothetical ancestor. Generic and subgeneric names are abbreviated.

No. species \ characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1. <i>Aul. (Par.) planifrons</i>	0	0	0	0	0	0	1	0	0	1	1	1	0	2	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	
2. <i>Aul. (Aul.) sanguisorbae</i>	0	0	0	1	0	0	1	0	0	1	1	1	0	2	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	
3. <i>Aul. (Alet.) uniformis</i>	0	0	0	0	1	1	1	0	0	1	1	1	0	2	1	1	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	
4. <i>Byct. (Byct.) venustus</i>	0	0	1	0	2	2	1	1	0	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	
5. <i>Byct. (Byct.) rugosus</i>	0	0	1	0	2	2	1	1	0	0	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	
6. <i>Byct. (Aspid.) lacunipennis</i>	0	0	1	0	2	2	1	1	0	2	2	2	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	
7. <i>Ader. crioceroides</i>	1	0	0	0	1	2	1	0	1	1	1	1	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	0	
8. <i>Eug. (Eug.) amurensis</i>	1	0	0	1	1	2	1	0	1	1	1	1	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	
9. <i>Eug. (Eg-bius) sauteri</i>	1	0	0	0	1	2	1	1	1	1	1	1	0	2	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	
10. <i>Lasiar. brevisrostris</i>	1	0	0	1	1	1	1	1	1	1	1	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11. <i>Psel. japonicus</i>	0	1	0	0	1	1	1	0	0	1	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	
12. <i>Not. sanguinipennis</i>	0	1	0	1	1	2	1	1	1	1	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	
13. <i>Not. assimilis</i>	0	0	0	1	1	2	1	1	1	1	1	1	0	2	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	
14. <i>Hapl. amabilis</i>	0	0	0	1	1	2	1	0	1	1	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	
15. <i>Inv. (Cart.) singularis</i>	1	0	0	1	1	2	0	1	1	0	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	
16. <i>Inv. (Cart.) amamiensis</i>	1	0	0	1	1	2	0	1	1	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
17. <i>Inv. (Cart.) apertus</i>	1	0	0	1	1	2	0	1	1	1	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	
18. <i>Inv. (Met.) apionoides</i>	1	0	0	1	1	2	0	1	1	1	1	2	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	
19. <i>Inv. (Inv.) pilosus</i>	0	0	0	1	1	2	0	1	1	1	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	
20. <i>Inv. (Inv.) placidus</i>	0	0	0	1	1	2	0	1	1	2	2	2	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	
21. <i>Inv. (Hyp-rh.) aes</i>	0	1	0	1	1	2	0	1	1	1	2	2	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	
22. <i>Inv. (Cnem.) rugosicollis</i>	0	1	0	1	1	2	0	1	1	1	2	2	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	
23. <i>Rh. heros</i>	0	0	1	1	1	2	0	1	1	1	2	2	0	1	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	
24. <i>Mech. ursulus</i>	0	1	1	1	1	2	0	1	1	2	1	2	0	1	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	
25. <i>Chon. chujoi</i>	1	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
26. <i>Apod. commodus</i>	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
27. <i>Eusp. proxima</i>	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	
28. <i>Chok. truncatus</i>	1	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	
29. <i>Dep. (Hyp-d.) fuscipennis</i>	1	0	0	0	1	2	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	1	
30. <i>Dep. (Dep.) nidificus</i>	1	0	0	1	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	1	1	
31. <i>Paradep. depressus</i>	1	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	
* ANCESTOR	0	0	1	0	1	2	1	0	0	2	2	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	

Table 2. Conformability matrix of 31 characters. In the matrix, hierarchical and non-hierarchical combinations are indicated as “-” and “+”, respectively. Total non-hierarchical combinations of each character are given at bottom (N-hC).

Char.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
1	-	-	+	+	-	+	+	+	+	+	+	+	-	+	+	-	-	+	+	-	-	+	-	-	+	+	+	+	-	+	+		
2	-	-	+	+	-	+	+	+	+	+	+	+	-	+	-	-	-	+	-	-	+	+	-	-	+	+	-	-	-	-	+	+	
3	-	+	-	+	-	-	+	-	+	+	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
4	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	-	+	+	-	+	+	-	+	-	+	+	+	+	
5	-	-	-	+	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	+	+	-	+	-	-	-	+	+	+	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	+	+	+	+	-	-	-	
7	+	+	+	+	-	-	-	+	+	+	+	+	-	+	-	-	-	+	+	-	+	+	-	-	+	+	+	+	-	+	+	+	
8	+	+	-	+	-	+	+	-	+	+	+	+	-	+	+	-	+	+	+	-	-	+	-	+	+	+	+	+	-	+	+	+	
9	+	+	+	+	-	+	+	+	-	+	+	+	-	+	+	-	-	+	+	-	+	+	-	-	+	+	+	+	-	+	+	+	
10	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+	-	-	+	-	+	+	+	-	-	+	+	+	-	+	+	+	+	
11	+	+	+	+	+	-	+	+	+	+	-	-	+	-	-	-	-	+	-	+	+	+	-	-	+	+	+	-	+	+	+	+	
12	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	-	-	+	-	+	+	+	+	-	-	+	+	+	-	+	+	+	
13	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	+	+	-	+	-	-	+	+	+	+	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	+	-	+	+	+	
15	+	-	-	+	-	+	-	+	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	+	-	+	+	+	
16	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	
17	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	-	
18	+	+	+	+	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	+	-	-	+	-	
19	+	-	-	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	+	-	+	+	+	
20	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	-	+	-	+	-	-	+	-	+	+	+	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	+	+	-	+	-	+	+	+	+	+	+	+	-	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	+	+	-	+	+
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	-	
25	+	+	-	+	-	+	+	+	+	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	+	+
26	+	+	-	-	-	+	+	+	+	+	+	+	-	+	+	-	+	-	+	-	-	-	-	-	+	-	-	+	-	+	-	+	+
27	+	-	+	+	-	+	+	+	+	+	+	+	-	+	+	-	-	+	+	-	+	+	-	+	+	-	+	+	-	-	+	-	+
28	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
29	-	-	-	+	-	-	-	+	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	+	+	+	-	-	-	-
30	+	-	+	+	-	-	+	+	+	+	+	+	-	+	-	-	+	+	+	-	+	+	-	+	+	-	+	-	-	+	-	+	+
31	+	-	-	+	-	-	+	+	+	+	+	+	-	+	+	-	-	-	-	-	-	-	+	-	-	+	+	+	-	-	+	-	+
Char.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
N-hC	19	15	10	25	4	12	20	22	22	23	20	23	3	15	12	2	5	14	12	3	10	19	0	5	17	17	20	2	16	19	16		

units can be discriminated. These ten units can be represented by 1, 3, 4, 7, 11, 12, 23, 25, 27 and 29th species (Table 4).

A network (unrooted tree) based on the conformable subset is shown in Fig. 2. The position of the root can easily be delimited by the ancestral states, already estimated by the outgroup comparison method. Polarities of 13 characters are indicated by arrows in the figure. Those arrows (except for that of character 3) suggest that the starting point (i.e. root) of the phylogenetic tree exists near or on the unit "a" of the network. Consequently, the phylogenetic tree of 10 units (31 species) is estimated as shown in Fig. 3.

Evaluation of the higher taxa. From a viewpoint of phylogenetic systematics, any higher taxon should be a holophyletic group. Though the recent classification system is a reference system far from the phylogenetic one, the taxa can be individually evaluated from the phylogenetic viewpoint. The conditions of taxa can be classified into the following 4 categories:

- A: evidently holophyletic on evidence of synapomorphy.
- B: holophyletic because includes one or a few species.
- C: not decidable whether holophyletic or not holophyletic.
- D: evidently not holophyletic because a part of the taxon in question share any apomorphic characters with the other taxon.

Taxa treated in this study can be evaluated on the basis of the estimated phylogeny (Fig. 4), as follows (numbers after taxa indicate included species):

- Tribe AULETINI (1-3), A (16th character).
 - Genus *Auletobius* (1-3), A (16th character).
 - Subgenus *Parauletes* (1), C.
 - Subgenus *Auletobius* (2), B.
 - Subgenus *Aletinus* (3), A (23rd character).
- Tribe BYCTISCINI (4-6), A (5, 13 and 20th characters).
 - Genus *Byctiscus* (4-6), A (5, 13 and 20th characters).

- Subgenus *Byctiscus* (4, 5), C.
- Subgenus *Aspidobycitiscus* (6), B.
- Tribe RHYNCHITINI (7-24), D (14, 15 and 21st characters)
 - Subtribe EUGNAMPTINA (7-9), C.
 - Genus *Aderorhinus* (7), B.
 - Genus *Eugnamptus* (8-9), B.
 - Subgenus *Eugnamptus* (8), B.
 - Subgenus *Eugnamptobius* (9), B.
 - Subtribe RHYNCHITINA (10-24), D (14, 15 and 21st characters).
 - Genus *Lasiorhynchites* (10), B.
 - Genus *Pselaphorhynchites* (11), B.
 - Genus *Nolocyrthus* (12, 13), D (14th character).
 - Genus *Haptorhynchites* (14), B.
 - Genus *Involvulus* (14-22), C.
 - Subgenus *Cartorhynchites* (15-17), C.
 - Subgenus *Metarhynchites* (18), B.
 - Subgenus *Involvulus* (19, 20), C.
 - Subgenus *Hyporhynchites* (21), C.
 - Subgenus *Cnemivolvulus* (22), C.
 - Genus *Rhynchites* (23), C.
 - Genus *Mechorhis* (24), B.
- Tribe DEPORAINI (25-31), A (14 and 19th characters).
 - Subtribe CHONOSTROPHEINA (25), B.
 - Genus *Chonostropheus* (25), B.
 - Subtribe DEPORAINA (26-31), C.
 - Genus *Apoderites* (26), B.
 - Genus *Eusproda* (27), B.
 - Genus *Chokkirius* (28), B.
 - Genus *Deporaus* (29-30), C.
 - Subgenus *Hypodeporaus* (29), C.
 - Subgenus *Deporaus* (30), C.
 - Genus *Paradeporaus* (31), B.

V. Descriptions

1. Tribe AULETINI

Diagnosis. Elytra conjointly rounded at the apex; pygidium almost entirely covered by elytra, not costate; eyes small and strongly prominent; frons broad; rostrum thin and narrow, almost straight; venter without abdominal lobe, distant from metasternum.

Distribution: Cosmopolitan.

Note. In many species of the tribe Auletini, the scutellar striole and 9th stria are indistinct owing to the rough sculpture of elytra. But the former obviously exists and the latter extends to the elytral apex in the genus *Minurus* which has the regularly

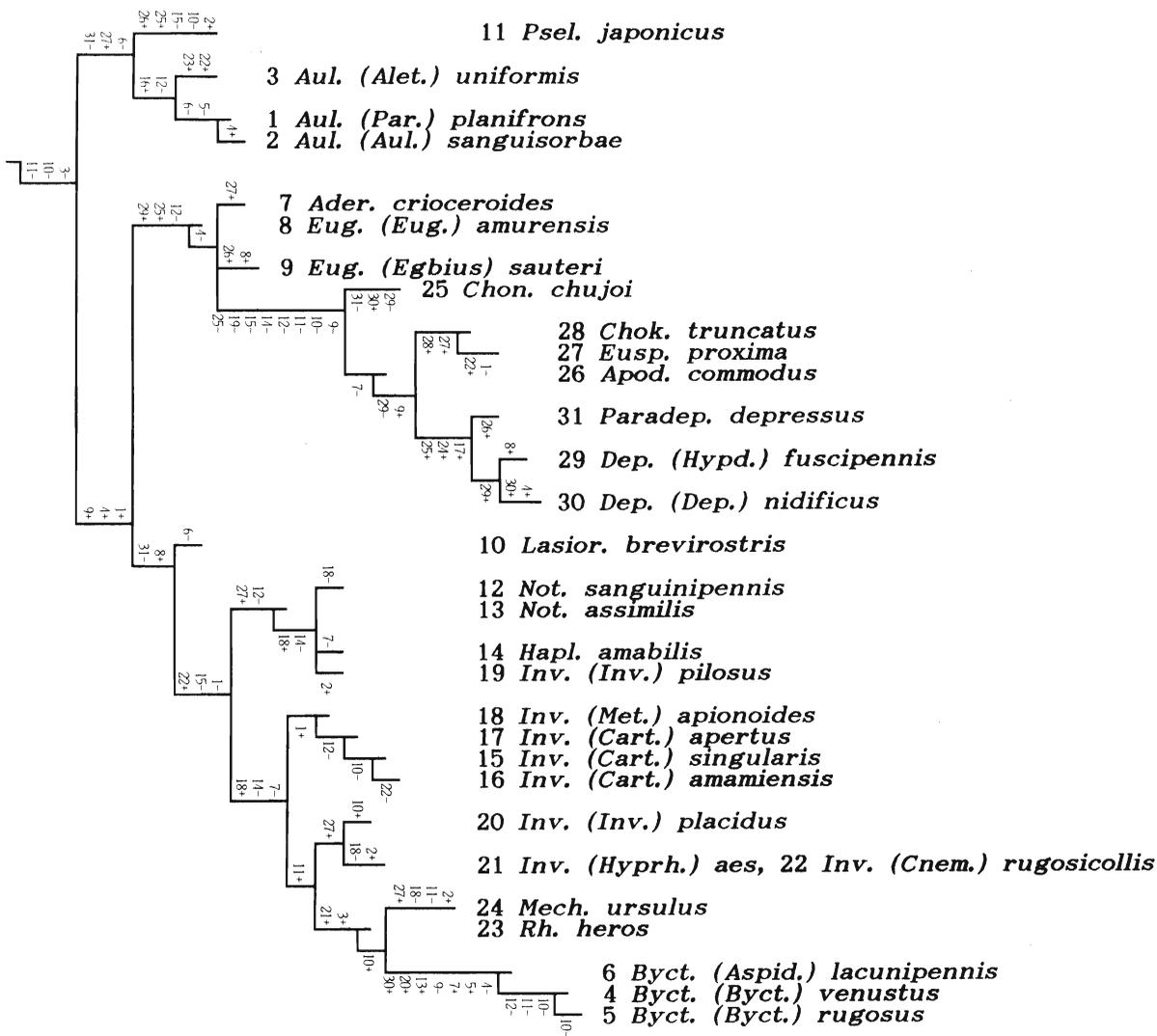


Fig. 1. An estimated Wagner tree for 31 characters.

punctate elytra.

Auletobius Desbrochers, 1869

Auletobius Desbrochers, 1869, Abeille, 1868-69: 396; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 73; Desbrochers, 1909, Frelon, 16, 1: 11; Sharp, 1911, Biol. centr. Amer. Col., 4, 3: 42; Voss, 1922, Arch. f. Naturg., 88, A8: 27, 29; Voss, 1933, Stett. ent. Ztg., 94: 110, 113; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 47; Voss, 1958, Decheniana Beih.,

5: 3. (Type species: *Auletobius sanguisorbae* (Schrank, 1798) by subsequent designation of Voss, 1933: 118; designation of Ter-Minassian, 1950: 47 invalid).

Metopon Waterhouse, 1842 (nec Walker, 1834), Proc. ent. Soc. Lond., 1842: 62; Waterhouse, 1842, Ann. Mag. nat. Hist., 10: 68; Lacordaire, 1863, Gen. Col., 4: 559; Voss, 1922, Arch. f. Naturg., 88, A8: 30, (homonymy), (Type species: *Metopon suturalis* Waterhouse, 1842 by monotypy).

Auletus: Seidlitz, 1891, Fn. Balt. ed. 2: 169, 667, (in part of subg. *Auletobius*); Schilsky, 1903, Käf. Eur., 40: A, B, (in part of subg. *Auletobius*); Reitter, 1916, Fn. Germ., 5: 261,

Table 3. Selecting sequence of conformable subset from original character set. In each step (Stp), the character (RjC) having most non-hierarchical combinations is rejected from the set of characters in the preceding step. Each line of the table indicates the amount of non-hierarchical combinations for characters. Selecting continues, to obtain remaining characters (RmC) hierarchical to each other.

Stp	Chr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	RjC		
0		19	15	10	25	4	12	20	22	22	23	20	23	3	15	12	2	5	14	12	3	10	19	0	5	17	17	20	2	16	19	16	4		
1		18	14	9		3	11	19	21	21	22	19	22	3	14	11	1	4	13	11	3	9	18	0	4	16	17	19	2	15	18	15	10		
2		17	13	8		2	10	18	20	20		18	21	2	13	11	1	4	12	11	2	8	17	0	4	15	16	18	2	14	17	14	12		
3		16	12	7		1	9	17	19	19		18		1	12	10	1	4	11	11	1	7	16	0	4	14	15	17	2	13	16	13	8		
4		15	11	7		1	8	16		18		17		1	11	9	1	3	10	10	1	7	15	0	3	13	14	16	2	12	15	12	9		
5		14	10	6		1	7	15				16		1	10	8	1	3	9	9	1	6	14	0	3	12	13	15	2	11	14	11	11		
6		13	9	5		0	7	14						0	10	8	1	3	8	9	0	5	13	0	3	11	12	14	2	10	13	10	7		
7		12	8	4		0	7							0	9	8	1	3	7	8	0	4	12	0	3	11	0	3	9	10	13	2	8	12	8
8		11	8	3		0	6							0	8	7	1	3	6	7	0	3	11	0	3	9	10	2	8	10	2	7	7	1	
9		10	8	2		0	6							0	7	7	1	2	5	6	0	2	10	0	2	7	9	0	2	8	10	1	7	6	22
10		8	2	0		0	5							0	6	6	1	2	4	5	0	2	9	0	2	7	9	0	2	7	9	0	7	5	26
11		7	2	0		0	4							0	5	5	0	2	3	4	0	2	0	0	1	7	0	0	6	4	4	25			
12		6	2	0		0	3							0	4	4	0	1	3	3	0	2	0	0	1	7	0	0	0	5	3	2			
13		5	2	0		0	2							0	3	3	0	1	3	2	0	2	0	1	0	1	7	0	0	5	3	2			
14		1	0	1		0	1							0	2	3	0	1	2	2	0	1	0	1	0	1	7	0	0	5	3	29			
15		1	0	1		0	1							0	1	2	0	0	2	1	0	1	0	0	0	0	0	0	0	0	3	31			
16		1	0	1		0	1							0	0	1	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	18			
17		0	0	1		0	1							0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6				
18		0	0			0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RmC			3		5									13	14	15	16	17		19	20	21		23	24			28							

Table 4. The conformable character matrix composed of 13 characters hierarchical to each other and 10 species distinctive in the characters. Line "M-HTU" indicates median (among 31 species) states.

No. species	Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	species of same state
		3	5	13	14	15	16	17	19	20	21	23	24	28	
1	<i>Aul. (Par.) planifrons</i>	0	0	0	2	1	1	0	1	0	0	0	0	0	2
3	<i>Aul. (Alet.) uniformis</i>	0	1	0	2	1	0	0	1	0	0	1	0	0	0
4	<i>Byct. (Byct.) venustus</i>	1	2	1	1	0	0	0	1	1	1	0	0	0	5, 6
7	<i>Ader. crioceroides</i>	0	1	0	2	1	0	0	1	0	0	0	0	0	8-10
11	<i>Psel. japonicus</i>	0	1	0	2	0	0	0	1	0	0	0	0	0	13
12	<i>Not sanguinipennis</i>	0	1	0	1	0	0	0	1	0	0	0	0	0	14-22
23	<i>Rh. heros</i>	1	1	0	1	0	0	0	1	0	1	0	0	0	24
25	<i>Chon. chujoii</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	26
27	<i>Eusp. proxima</i>	0	1	0	0	0	0	0	0	0	0	0	0	1	28
29	<i>Dep (Dep.) fuscipennis</i>	0	1	0	0	0	0	1	0	0	0	0	1	0	30, 31
	M-HTU (in 31 spp.)	0	1	0	1	0	0	0	1	0	0	0	0	0	
	Ancestor	1	1	0	2	1	0	0	1	0	0	0	0	0	

(in part of subg. *Auletobius*); Hoffman, 1958, Fn. France, 62: 1730, (in part of subg. *Auletobius*).

Diagnosis. Head with frons much broader than rostrum; rostrum slender; mandibles without appendages nor scars; antennal club loosely segmented. Elytra long, concealing almost all abdominal terga, irregularly punctate and rugose in general; secondary mesocoxal process incomplete. Tibiae with spurs, not mucronate. First to sixth segments of abdomen with independent spiracular sclerites; terga of 1st and 2nd segments broadly membranous, each with a pair of tergites in both sides; pygidium not costate along margins of elytra.

Distribution: Cosmopolitan.

Note. Voss (1933-37) subdivided this genus into nine subgenera. Six species of three subgenera are found in Japan.

Subgenus *Parauletes* Voss, 1937

Parauletes: Voss, 1933, Stett. ent. Z., 94: 116, 129; Voss, 1937, *ibid.*, 98: 204. (Type species: *Auletobius monticola* by monotypy).

Diagnosis. Antennae inserted near the base of rostrum; rostrum straight; pygidium entirely concealed by elytra; post coxal projections not contiguous to each other; secondary mesocoxal process undeveloped.

Distribution: chiefly Oriental Region, a few

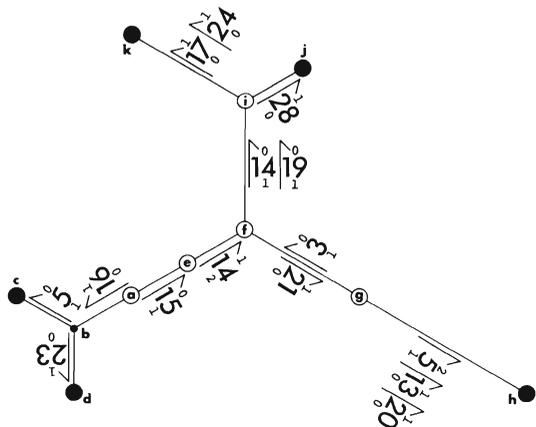


Fig. 2. A network connecting 11 units (10 groups of species and 1 Hypothetical unit) Composed of 13 characters hierarchical to each other. Characters and their polarities are indicated by numbers and arrows, respectively. The characters states of each characters are indicated by sub- and superscript numbers.

species distribute to East Africa or Far East.

1. *Auletobius (Parauletes) puberulus*

(Faust, 1882)

(Figs. 5, A ; 6, A ; 7, A-B)

Auletes puberulus Faust, 1882, Dt. ent. Z., 26: 283, (Amur); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 72, (Oyama, Sagami); Schilsky, 1903, Käf. Eur., 40: B, 2; - *Auletobius puberulus*: Voss, 1922, Arch. f. Naturg., 88, A8: 31, 41; Voss, 1933, Stett. ent. Ztg., 94: 117, 134; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 50; Matoba, 1983, Nankiseibutu, 25: 104, (Mt. Oishi, Wakayama); Morimoto, 1984, Coleopt. Jpn. Col., 4: 249.

Auletes carvus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 72, (Ogula Lake, near Kyoto); Schilsky, 1903, Käf. Eur., 40: E, 3; - *Auletobius carvus*: Voss, 1922, Arch. f. Naturg., 88, A8: 90. Syn. nov.

Black except for antennal funicle somewhat reddish; derm with yellowish grey dense recumbent hairs, some dark erect setae scattered on dorsum.

Head with frons weakly convex, separately

punctate. Rostrum straight, a little shorter (male) or a little longer (female) than pronotum, dorsal surface moderately punctate. Antennae inserted near the base of rostrum, 4/3 times as long as pronotum; funicle with 3rd segment much shorter than 1st.

Pronotum a little broader than long, densely punctate, less convex dorsally, prominent laterally; subapical constriction weak; median longitudinal keel absent; procoxal setose sex patch absent; postcoxal projections not contiguous to each other. Scutellum triangular with apex rounded.

Elytra rugose with irregular punctures and papillae; declivity not tuberculate in both sexes, with setigerous minute granules. Mesosternum with transversal lamina, secondary mesocoxal process undeveloped.

Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites almost symmetrical; apophysis of tegmen weakly biased dextrad, with proximal end auriculate.

Length: 2.0 - 2.5 mm (excl. rostrum).

Host: Some specimens were collected from mugwort (J.N.: Yomogi) according to Matoba (1983). One male was collected from willow in Kashii, Fukuoka.

Specimens examined: (Kyushu) 1 male, Kashii, Fukuoka Pref., 24. iv. 1960, K. Morimoto leg.; 1 male, Mt. Inunaki, Fukuoka Pref., 3. iii. 1956, H. Kamiya leg.; 1 male, 1 female, Mt. Wakasugi, Fukuoka Pref., 5. v. 1954, K. Morimoto leg.; (Shikoku) 1 male, Jinryo vall., Tokushima Pref., 4. vii. 1953, I. Hiura leg.

Distribution: Russian Federation (Primorsk kray) and Japan (Honshu, Shikoku and Kyushu).

2. *Auletobius (Parauletes) fumigatus*

(Roelofs, 1874)

(Figs. 5, B-D ; 6, B-D ; 7, C-D)

Auletes fumigatus Roelofs, 1874, Ann. Soc. ent. Berg., 17: 151, (Japan); Schilsky, 1903, Käf. Eur., 40: E, 1; - *Auletobius fumigatus*: Voss, 1922, Arch. f. Naturg., 88, A8: 92; Matoba, 1983, Nankiseibutu, 25: 104, (Mts. Goma-no-dan, Oishi and Oto, Wakayama); Morimoto, 1984,

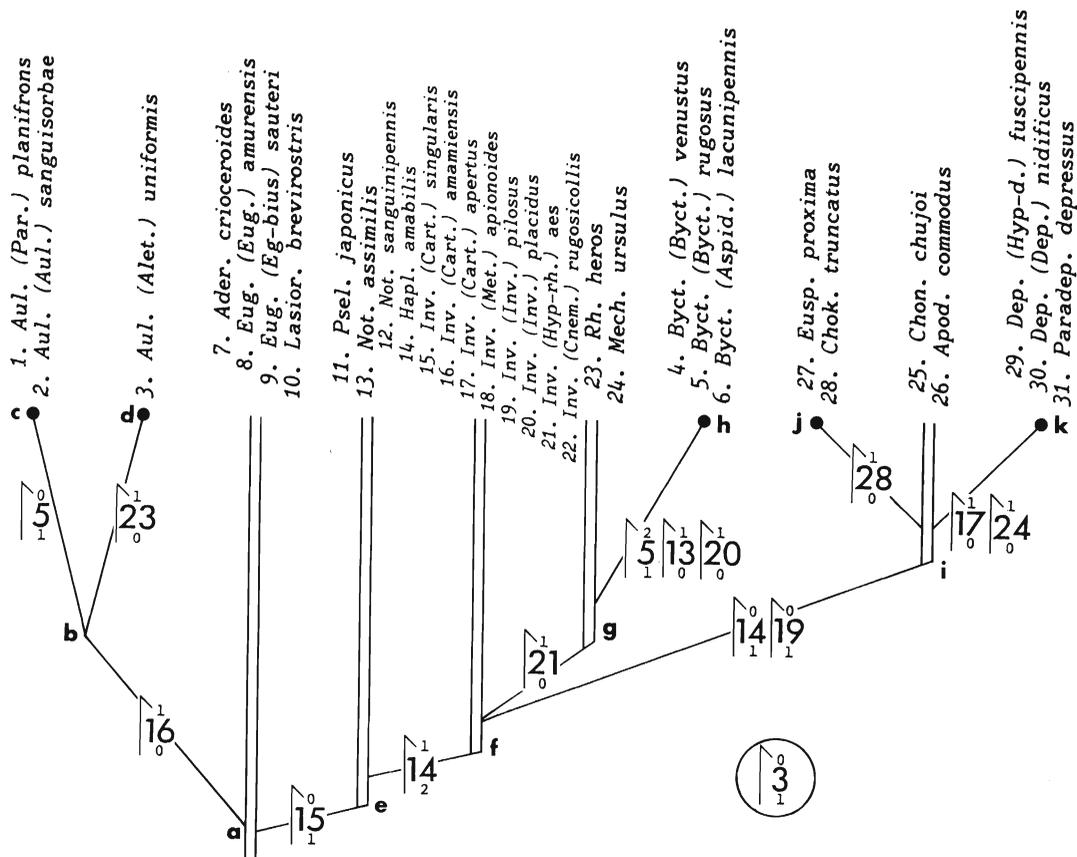


Fig. 3. An estimated phylogenetic tree among 10 units (31 species). The tree constructed with network shown in Fig. 2 and the root is delimited by polarities of characters except for no. 3.

Coleopt. Jpn. Col., 4: 249.

Auletus testaceus Roelofs, 1874, Ann. Soc. ent. Berg., 17: 152. (Japan); Schilsky, 1903, Käf. Eur., 40: E, 2; - *Auletobius testaceus*: Voss, 1922, Arch. f. Naturg., 88, A8: 33, 52; Voss, 1933, Stett. ent. Ztg., 94: 120; Voss, 1934, Stett. ent. Ztg., 95: 112. Syn. nov.

Auletobius irkutensis japonicus Voss, 1922, Arch. f. Naturg., 88, A8: 41; Voss, 1933, Stett. ent. Ztg., 94: 117, 132; Matoba, 1983, Nankiseibutu, 25: 104. (Mt. Goma-no-dan, Wakayama); Morimoto, 1984, Coleopt. Jpn. Col., 4: 249. Syn. nov.

Colour variable among piceous to fuscous, at least head and rostrum piceous and fore leg fuscous, derm with dense decumbent hairs, some dark erect setae scattered on dorsum, hairs and setae same colour as the derm.

Head with frons convex, sparsely punctate. Rostrum straight, longer than pronotum, with dorsal surface sparsely punctate, punctures minute in apical part. Eyes hemispherically prominent. Antennae inserted near the base of rostrum, funicle with 3rd segment almost as long as 1st.

Pronotum as long as broad, densely punctate, moderately convex dorsally, rounded laterally; subapical constriction weak; median longitudinal keel absent; procoxal setose sex patch absent; postcoxal projections not contiguous to each other. Scutellum triangular.

Elytra irregularly punctate; declivity not tuberculate, with setigerous minute granules.

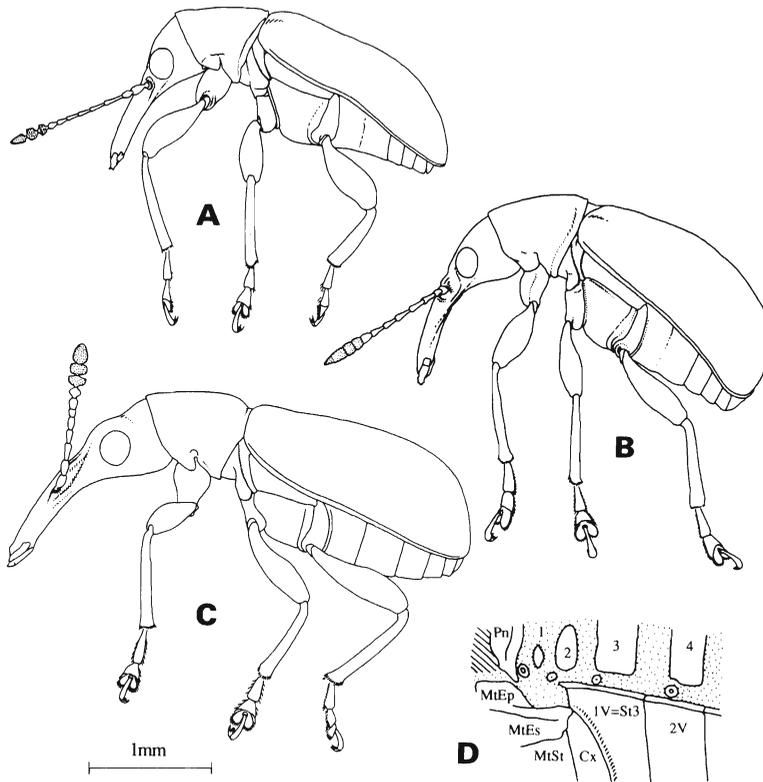


Fig. 4. *Auletobius* spp., habitus and antero-lateral part of abdomen.— A: *A. (Parauletetes) planifrons* sp. nov., male. B: *A. (Auletobius) sanguisorbae*, female. C, D: *A. (Aletinus) uniformis*, female.

mesosternum with transversal lamina, secondary mesocoxal process undeveloped.

Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites almost symmetrical; apophysis of tegmen weakly biased dextrad, with proximal end auriculate.

Length: 1.8 - 2.6 mm (excl. rostrum).

Host: Some specimens were collected from *Rhus japonica*, (J.N.: Nurude) according to Matoba (1983). One male was collected from wisteria (J.N.: Fuji) on Mt. Kuju-kurodake.

Specimens examined: (Kyushu) 1 female, Haki, Izumi, Kumamoto Pref., 13. v. 1980, K. Ohara leg.; 1 female, Ashikita, Kumamoto Pref., 8. vii. 1977, K. Morimoto leg.; 1 male, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 male, Mt. Wakasugi, Fukuoka Pref., 18. v. 1958, H. Kamiya leg.; 1 male, Mt. Fukuchi, Fukuoka Pref., 19. viii. 1953, S. Kimoto leg.; 1 female, Kurate, Fukuoka Pref., 28. viii. 1954, M. Yano leg.; 2 males, Kokura, Fukuoka Pref., viii. 1963, H. Sanada leg.; 1 male, Hirao, Fukuoka Pref., 3. v. 1953, K. Morimoto leg.; 1 female, Hirao, Fukuoka Pref., 17. v. 1952, S. Kimoto leg.; 1 female, Mt. Tachibana, Fukuoka Pref., 5. v. 1954, T. Hidaka leg.; (Shikoku) 1 male, Mt. Ishizuchi, Ehime Pref., 2. vi. 1952, Y. Wada leg.; (Honshu) 1 male, Mt. Oto, Wakayama Pref., 15. viii. 1981, I. Matoba leg.; 2 males, 2 females, Daihizan vall., Kyoto Pref., 1. vi. 1953, T. Kishii leg.; 1 female, Mt. Iozen, Ishikawa Pref., 27. iv. 1983, Y. Sawada leg.; 1 male, Shiratoricho, Gifu Pref., 27. vi. 1982, T. Nohira leg.; 2 females, Japan, Hiller, Coll.

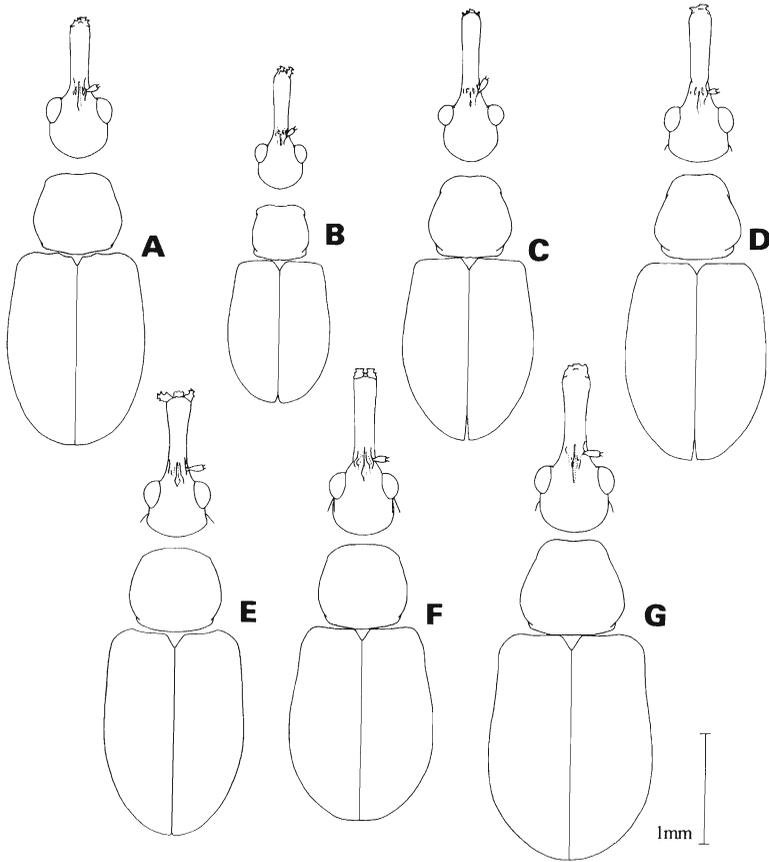


Fig. 5. Habitus of *Auletobius* spp., in dorsal view.— A: *A. (Parauletes) puberulus*, male. B–D: *A. (P.) fumigatus*, male (B, D: forma *japonicus*. C: forma *testaceus*). E: *A. (P.) planifrons* **sp. nov.**, male. F: ditto, female. G: *A. (Auletobius) sanguisorbae*, male.

Schilsky, (syntypes of *A. i. japonicus* Voss; E. Voss dcd. Eing. Nr. 9-65; ZIM).

Distribution: Japan (Honshu, Shikoku and Kyushu).

Note. Two colour variants, f. *japonicus* and f. *testaceus* can be distinguished.

3. *Auletobius (Parauletes) planifrons* **sp. nov.**

(Figs. 4,A; 5,E; 6,E; 7,E-F)

Auletobius testaceus: Chujo, 1971 (nec Roelofs, 1874), Mem. Fac. Educ., Kagawa Univ., 2 (202) : 32, (Nakanoshima, Ishigaki and Iriomote Isls.).

Male. Fuscous, elytra and legs testaceous; elytra with obtriangular or depressed V-shaped median marking on basal 1/3; derm with yellowish grey dense recumbent hairs, some dark erect setae scattered on dorsum.

Head with frons weakly convex, densely and strongly punctate. Rostrum straight, as long as pronotum, dorsal surface punctate. Antennae inserted near the base of rostrum, 5/3 times as long as pronotum.

Pronotum a little broader than long, densely punctate, less convex dorsally, weakly rounded laterally; subapical and subbasal constriction

weak; median longitudinal keel absent; procoxal setose sex patch absent; postcoxal projections not contiguous to each other. Scutellum triangular.

Elytra irregularly punctate, interstices of punctures broader than the diameter; declivity not tuberculate, with setigerous minute granules. Mesosternum with transversal lamina, not projected ventro-caudally, secondary mesocoxal process undeveloped. Legs with femora fusiform; tibiae almost straight, dilated distally, dorsal ridges absent; apices of tibiae completely fringed, each with one spur; tarsi with 1st segment shorter than 2nd and 3rd taken together. Claws bifid.

Abdominal venter sunken. Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites which are almost symmetrical; apophysis of tegmen weakly biased dextrad, with proximal end auriculate.

Female. Rostrum somewhat longer, abdominal venter inflated ventrally.

Length: 2.0 - 2.6 mm (excl. rostrum).

Host: Unknown.

Holotype: male (Type No. 2883, Kyushu Univ.), Ushikumori, Iriomote Is., 9. iii. 1964, S. Kimoto leg.

Paratypes: (Yaeyama Isls.) 3 males, same data as holotype; 60 exs., same locality as Holotype 7-11. iii. 1964, T. Shirozu, Y. Miyatake, K. Morimoto & S. Kimoto leg.; 50 exs., Mt. Omoto, Ishigaki Is., 16. iii. 1964, S. Kimoto & Y. Miyatake leg.; 3 males, 1 female, Mt. Omoto, Ishigaki Is., 22. iii. 1984, Y. Sawada leg.; (Okinawa Is.) 7 exs., Izumi, Okinawa Is., 21. x. 1963, S. Kimoto leg.; 1 male, 3 females, Mt. Yonaha, Okinawa Is., 4-6. iv. 1979, H. Makihara leg.; (Okinoerabu Is.) 1 male, China, Okinoerabu Is., 3. vi. 1973, S. Kimoto leg.; (Amami Isls.) 5 females, Yanma, Amami-oshima Is., 23. iii. 1980, H. Takemoto leg.; 1 male, Hatsuno, Amami-oshima Is., 10. iv. 1980, K. Ohara leg.; 1 female, Ohara, Tokunoshima Is., 8. xi. 1966 Y. Miyatake leg.; (Tokara Isls.) 1 male, Nakanoshima Is., 30. iv. 1987, T. Ogata leg.

Distribution: Ryukyus (Tokara Isls., Amami Isls., Okinoerabu Is., Okinawa Is. and Yaeyama Isls.)

Note. This new species is easily distinguishable from the other species of genus by the characteristic marking on the elytra.

4. *Auletobius* (*Parauletus*) *submaculatus*

(Sharp, 1889)

(Figs. 7.G-H)

Auletus submaculatus Sharp, 1889. Trans. ent. Soc. Lond., 1889: 73 (Omama, Gunma?); Schilsky, 1903, Kaf. Eur., 40: E, 4: - *Auletus submaculatus*: Voss, 1922, Arch. f. Naturg., 88, A8: 92; Morimoto, 1984, Coleopt. Jpn. Col., 4: 249.

Fuscous, head, rostrum and scutellum piceous; elytra with irregular ring markings composed of recumbent white and brown hairs; some dark erect setae scattered on dorsum.

Head with frons prominent, densely punctate. Rostrum straight, longer than pronotum in both sexes, dorsal surface strongly punctate, punctures arranged into rows on the apical half of rostrum. Antennae inserted near the base of rostrum, funicle with 3rd segment much longer than 1st.

Pronotum a little longer than broad, densely punctate, convex dorsally, rounded laterally; subapical constriction weak; median longitudinal keel developed in most individuals; procoxal setose sex patch absent; postcoxal projections contiguous to each other. Scutellum triangular.

Elytra irregularly punctate; declivity not tuberculate, with a pair of patches of minute

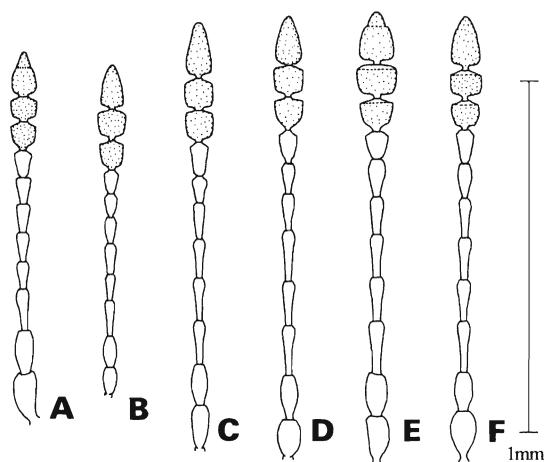


Fig. 6. Antennae of *Auletobius* spp.— A: *A. (Parauletus) puberulus*, male. B-D: *fumigatus*, male, (D: forma *japonicus*. C: forma *testaceus*). E: *A. (P.) planifrons* sp. nov., male. F: ditto, female.

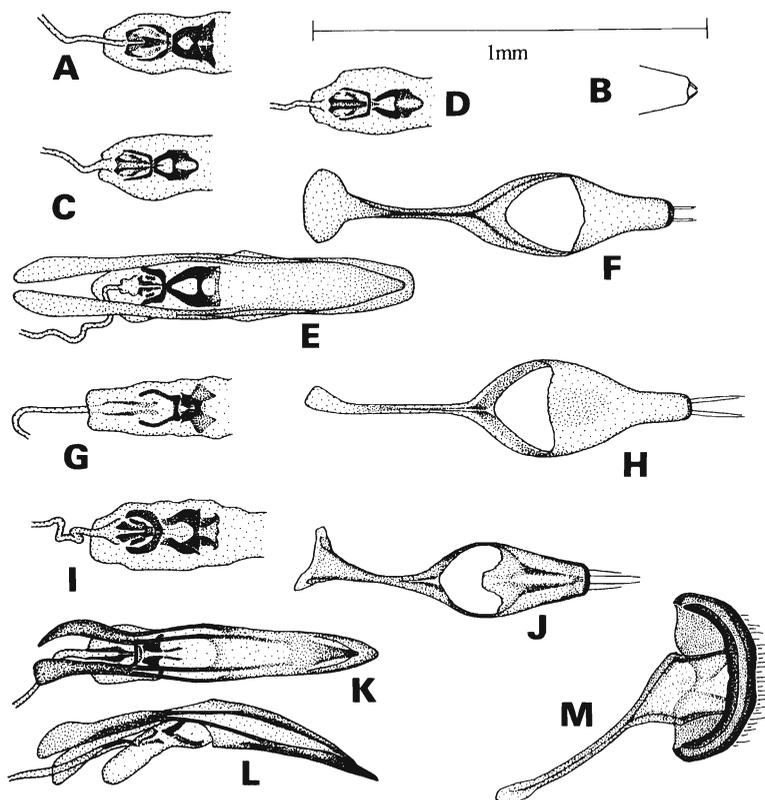


Fig. 7. Male genitalia of *Auletobius* spp. — A—B: *A. (Parauletes) puberulus*, (B: apex of cap piece of tegmen). C—D: *A. (P.) fumigatus*, male, (C: forma *japonicus*, D: forma *testaceus*). E—F: *A. (P.) planifrons* sp. nov. G—H: *A. (P.) submaculatus*. I: *A. (Auletobius) sanguisorbae*. J—M: *A. (Aletinus) uniformis*, (L: left lateral view, M: 8th and 9th segments in ventral view showing spiculum gastrale biased dextrad).

lamina, secondary mesocoxal process undeveloped.

Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites almost symmetrical; apophysis of tegmen weakly biased dextrad, with less dilated proximal end.

Length: 3.2 – 4.0 mm (excl. rostrum).

Host: Some specimens were collected by sweeping on blossom of a maple tree.

Specimens examined: (Kyushu) 1 male, Mt. Shiratori 1300m, Kumamoto Pref., 25. v. 1981. H. Takemoto leg.; 1 female, same locality and collector, 7. viii. 1981; 1 female, Mt. Sobo, Oita Pref., 10. ix. 1933, K. Yasumatsu leg.; (Shikoku) 1 male, Kashira-fudo, Tokushima Pref., 24. vii. 1952. I. Hiura leg.; (Honshu) 1 male, Omi-one, Kyoto Pref., 13. viii. 1978, T. Ogata leg.; 1 female, Hirogawara, Kyoto

Pref., 24. v. 1980, H. Tsuji leg.; 1 female, Mt. Ryosen, Suzuka, Shiga Pref., 10. x. 1982, Y. Sawada leg.; 2 females, Mt. Shimonegori, Obama, Fukui Pref., 6. v. 1979, H. Sasaji leg.; 1 female, Shimashima vall., Nagano Pref., 28. vii. 1980, H. Takemoto leg.; 1 female, Yunomata, Ohata, Aomori Pref., 30. vii. 1956, K. Morimoto leg.

Distribution: Japan (Honshu Shikoku and Kyushu).

Subgenus *Auletobius* s. str.

Auletobius: Voss, 1933, Stett. ent. Z., 94: 121.; Voss, 1934, *ibid.*, 95: 118.

Diagnosis. Antennae inserted near the base of rostrum; rostrum weakly curved; apex of pygidium

exposed from elytra; post coxal projections contiguous to each other; secondary mesocoxal process undeveloped.

Distribution: Holarctic Region.

5. *Auletobius (Auletobius) sanguisorbae*

(Schrank, 1798)

(Figs. 4,B; 5,G; 7,I)

Involvulus sanguisorbae Schrank, 1798, F. Boika, I, i: 476–504 (Europe); – *Auletobius sanguisorbae*: Voss, 1923, Dt. ent. Z., 1923: 238; Voss, 1933, Stett. ent. Ztg., 94: 121; Voss, 1934, Stett. ent. Ztg., 95: 118; Kôno, 1935, Ins. matsum., 10: 63; Ter–Minassian, 1950, Fauna SSSR, 27, 2: 51; Morimoto, 1984, Coleopt. Jpn. Col., 4: 249–250.

Auletes basilaris Gyllenhal, 1839, Gen. Sp. Curc., v, 1: 346 (Europe); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 72 (Siberia, Japan); Schilsky, 1903, Käf. Eur., 40: C, 4, (subg. *Auletobius*); – *Auletobius basilaris*: Desbrochers, 1869, Abeille, 1868–69: 398, 400; Voss, 1922, Arch. f. Naturg., 88, A8: 33, 57.

Entirely black, elytra with blue metallic lustre; derm with brown dense decumbent hairs, some dark erect setae scattered on dorsum.

Head with frons moderately convex, strongly punctate. Rostrum weakly curved, as long as (male) or longer (female) than pronotum, dorsal surface imbricate and punctate. Antenna inserted near the base of rostrum.

Pronotum broader than long, strongly punctate, less convex dorsally, prominent laterally; subbasal constriction strong; median longitudinal keel absent; procoxal setose sex patch absent; postcoxal projections contiguous to each other. Scutellum triangular.

Elytra rugose with dense irregular punctures and setigerous papillae; declivity not tuberculate, densely papillate. mesosternum with transversal lamina, secondary mesocoxal process undeveloped.

Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites almost symmetrical; apophysis of tegmen weakly biased dextrad, with proximal end hastate.

Length: 2.7 – 3.2 mm (excl. rostrum).

Host: *Sanguisorba officinalis*, (J.N.:Waremokou)

according to Ter–Minassian (1950).

Specimens examined: (Hokkaido) 4 males, 1 female, Shikaribetu–ko, Hokkaido Pref., 9. viii.1979, K. Ohara leg.; 1 female, Oshidomari, Rishiri Is., 31. vii. 1958, T. Kishii leg.; (Honshu) 1 male, 1 female, Kiyosato, Nagano Pref., 15–18. iv. 1978, Y. Sawada leg.; 10 males, 2 females, Amariyama, Yamanashi Pref., 27. vii. 1956, H. Kamiya leg.

Distribution: Europe, Ukraina, Kazakhstan, Russian Federation (European area, Bashkir, Chkalovsk oblast, Siberia, Yakutskaya, Chitinskaya, Amurskaya oblasts, Primorsk kray), Mongolia and Japan (Hokkaido, Rishiri Is., Honshu).

Subgenus *Aletinus* Desbrochers, 1908

Aletinus Desbrochers, 1908, Frélon, 16, 6: 79, 80; Voss, 1933, Stett. ent. Z., 94: 116.; Voss, 1934, ibid., 95: 332. (Type species: *Auletobius maculipennis* by monotypy).

Diagnosis. Antennae inserted near the middle of rostrum; rostrum curved; declivity of elytra tuberculate in the male; post coxal projections not contiguous to each other; secondary mesocoxal process incompletely developed.

Distribution: Oriental Region and its periphery.

6. *Auletobius (Aletinus) uniformis*

(Roelofs,) (1874)

(Figs. 4,C; 7,J–M)

Auletes uniformis Roelofs, 1874, Ann. Soc. ent. Berg., 17: 152; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 74; Schilsky, 1903, Käf. Eur., 40: D, 10; – *Auletobius uniformis*: Voss, 1922, Arch. f. Naturg., 88, A8: 35, 76; Voss, 1933, Stett. ent. Ztg., 94: 125; Voss, 1934, Stett. ent. Ztg., 95: 343; Voss, 1939, Mitt. Münch. ent. Ges., 29: 608; Morimoto, 1984, Coleopt. Jpn. Col., 4: 250.

= *Auletobius okinawaensis* Voss, 1971, Mem. Fac. Educ., Kagawa Univ., 2(202): 43, 44, (Amami Is.); Morimoto, 1984, Coleopt. Jpn. Col., 4: 250. *Syn. nov.*

Entirely black, or elytra largely reddish; derm with dense recumbent hairs; hairs brown in dorsal surface, bluish gray in ventral surface and scutellum; some fine erect setae scattered on dorsum.

Head constricted behind eyes and frons; frons prominent, densely and strongly punctate. Rostrum curved, as long as (male) or much longer (female) than pronotum, strongly punctate, with median longitudinal keel on basal 1/3. Antennae inserted near the middle of rostrum, 1.2 – 1.3 times as long as pronotum.

Pronotum almost as long as broad, strongly punctate, convex dorsally, weakly rounded laterally; subbasal constriction strong; median longitudinal keel developed in most individuals; procoxa with setose sex patch in the male; postcoxal projections not contiguous to each other. Scutellum oblong.

Elytra irregularly punctate, punctures strong, interstices narrower than the diameter; declivity tuberculate in the male, tubercles not punctate, with minute setigerous granules. mesosternum with ventro-caudal projection, secondary mesocoxal process developed but incomplete, not connect with metasternum.

Male genitalia with cap piece of tegmen, median lobe and endophallic sclerites almost symmetrical; apophysis of tegmen weakly biased dextrad, with proximal end hastate.

Length: 2.3 – 3.4 mm (excl. rostrum).

Biology: shoot-stinger of rose, raspberry and oak. Damage to *Lagerstroemia indica* (J.N.: Sarusuberi) by this species is known from Wakayama and Fukuoka Prefs.

Specimens examined: (Honshu) 2 males, 1 female, Senami, Murakami, Niigata Pref., 3. vi. 1980, H. Takemoto leg.; 1 male, Hobara, Fukushima Pref., 10. vii. 1976, T. Oishi leg.; 2 males, Uji, Kyoto Pref., oak, 11. ix. 1976, Y. Sawada leg.; 2 females, Joyo, Kyoto Pref., rose, 15. ix. 1977, Y. Sawada leg.; 4 females, Oji, Kameyama, Wakayama Pref., 20. viii. 1972, M. Inoue leg.; (Izu Isls.) 4 males, 6 females, Hachijo Is., 24–25. vii. 1962, T. Kishii leg.; (Shikoku) 2 males, Cape Ashizuri, Kochi Pref., 21. vii. 1957, K. Morimoto leg.; (Kyushu) 3 males, 1 female, Kuroki, Fukuoka Pref., 16. x. 1974, Y. Hagiwara leg.; 1 female, Mt. Tachibana, Fukuoka Pref., 13. iv. 1983, Y. Sawada leg.; (Tsushima) 1 male, 1 female, Asamo, Shimoagata Tsushima Is., 23. v. 1985, Y. Sawada leg.; (Yakushima) 3 males, 1 female, Unsuikyō, Yakushima Is., 13–15. v. 1983, Y. Sawada leg.; (Tokara Isls.) 1 male, Nakanoshima Is., 6. iv. 1974, H. Irie leg.; (Amami Isls.) 3 males, 2 females, Hatsuno, Amami-oshima, 26–27. v. 1960,

T. Shibata leg. (holo- and paratypes of *A. okinawaensis* Voss; MC); 3 males, 1 female, Ikari, Amami-oshima, 21–29. v. 1960, T. Shibata leg. (paratypes of *A. okinawaensis* Voss; ELKU); 1 male, 1 female, Naze, Amami-oshima, 5. v. 1960, T. Shibata leg. (paratypes of *A. okinawaensis* Voss; ELKU); 1 male, Naze, Amami-oshima, 9. x. 1960, K. Yamada leg. (paratype of *A. okinawaensis* Voss; ELKU); 7 males, 4 females, Santaro pass, Amami-oshima Is., 12. iv. 1984, Y. Sawada leg.; 5 males, Mikyo, Tokunoshima Is., 12. iv. 1984, Y. Sawada leg.; 5 males, 5 females, Mikyo, Tokunoshima Is., 27. vii. 1963, Y. Hirashima & T. L. Gressitt leg.; (Okinawa Is.) 5 males, 6 females, Ie-rindo 300m, Kunigami, Okinawa Is., 6. iv. 1984, Y. Sawada leg.; (Yaeyama Isls.) 8 males, 14 females, Mt. Banna, Ishigaki Is., 28. iii. 1984, Y. Sawada leg.; (Japan) 1 female, Japan, Hiller, Coll. Schilsky, (original example of *A. u. f. fulvescens* Voss; E. Voss ded. Eing. Nr. 9–65; ZIM).

Distribution: Japan (Honshu, Shikoku, Kyushu, Tsushima, Satsunan Isls., Ryukyu Isls.).

2. Tribe BYCTISCINI

Diagnosis. Abdominal lobe well developed, connecting with metasternum.

Head cylindrical, eyes less prominent laterally, rostrum thick, mandibles with appendages or scars; antennae inserted near the middle of rostrum; club rather closely articulate. Elytra with scutellar striole distinct when punctures orderly and striae distinct. Most part of pygidium exposed from the elytra.

Distribution: Palearctic Region and its periphery.

Byctiscus Thomson, 1859

Byctiscus Thomson, 1859, Scand. Col. 1: 130; Bedel, 1883, Fn. Col. Bassin Seine, 6: 24, 25; Voss, 1930, Kol. Rdsch., 16: 194. (Type species: *Byctiscus betulati* (= *B. betulae*) by subsequent designation by Voss, 1930).

Diagnosis. Prothorax with lateral thorn in the male.

Rostrum strongly curved or bent; procoxa distant from head; secondary mesocoxal process complete; elytra with each basal margin produced anteriorly; tibiae each with one or two spurs or sometimes absent, not mucronate; pygidium costate.

Distribution: Palearctic Region.

Note. Morimoto (1983b) presumed that the record of *B. coeruleus* from Japan (Voss, 1929) was based on the Formosan specimen(s). Thus, the species is excluded from Japanese fauna in this paper.

Subgenus *Byctiscus* s. str.

Byctiscus: Voss, 1930, Kol. Rdsch., 16: 195, 200.

Diagnosis. Elytra more or less irregularly punctate; some additional striae inserted between regular 10 striae; 9th stria (if distinct) extended near the apex of the elytra; scutellum at most twice as broad as long; tibia with dorsal ridge.

Distribution: Palearctic Region.

1. *Byctiscus (Byctiscus) venustus*

(Pascoe, 1875)

(Figs. 8,A,B; 9,E)

Rhynchites venustus Pascoe, 1875, Ann. Mag. nat. Hist., (4) 15: 393. (Awomori); *Byctiscus venustus*: Sharp, 1889, Trans. ent. Soc. Lond., 1889: 59; Schilsky, 1903, Kaf. Eur., 40: W; Kôno, 1929, J. Agr. Forestry, Sapporo, 20: 182; Matsumura, 1931, Ill. com. Ins. Jpn., 3: 104, pl. 24; Voss, 1930, Kol. Rdsch., 16: 202.

Rhynchites Haroldi Roelofs, 1879, Ann. Soc. ent. Belg., 22, Compt. Rend.: 53, (Japan).

Byctiscus reversus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 60, (Miyanosita).

Byctiscus hime Kôno, 1929, Trans. Sapporo nat. Hist. Soc., 11: 53, 57-58, (Moiwa, Sapporo).

Rhynchites motschoulskyi: Matsumura, 1907 (nec Sharp, 1889), Thousand Ins. Jpn., 4: 7-8, pl. 56.

Brilliant with metallic lustre, dorsal surface red and partially or sometimes entirely greenish, scutellum, appendages and ventral part of body deep blue to violaceous; derm without conspicuous hairs on dorsum except for minute decumbent hairs and very short fine setae; ventral surface rather hairy with recumbent whitish fine hairs.

Head conical, frons with median longitudinal impression. Rostrum long and stout, equally curved, 0.8 - 0.95 times as long as pronotum; postmentum projected antero-ventrally in the male. Antennal

funicle with 2nd segment almost twice as long as broad.

Pronotum broader than long, sparsely and partially wrinkly punctate, strongly prominent laterally, subapical and subbasal constrictions strong; dorsum convex, with a pair of oblique impressions and median longitudinal furrow distinct; lateral thorn and procoxal setose sex patch well developed in the male; postcoxal projections not contiguous to each other.

Elytra scabrous with irregular punctures and puncticles; declivity with whitish decumbent hairs. Tibiae almost straight, with smooth dorsal ridges, each with one spur.

Abdomen depressed (male) or flat (female) in lateral aspect; pygidium and sides of venter costate, costa on the pygidium overlapped by elytra.

Male genitalia with wrinkly endophallic structure.

Length: 5.0 - 7.0 mm (excl. rostrum).

Biology: Plug-roller of maple leaves.

Specimens examined: (Hokkaido) 2 females, Yukomanbet-su, Mts. Daisetsu, 24. iv. 1955, K. Morimoto leg.; 1 female, 18. vi. 1986, Y. Sawada leg.; (Honshu) 1 female, Naruko, Miyagi Pref., 23. vi. 1983, Y. Sawada leg.; 2 females, Mt. Daimonji, Kyoto Pref., 17. vi. 1978, Y. Sawada leg.; 1 female, Kamiyukawa, Wakayama Pref., 4. v. 1980, I. Matoba leg.; (Shikoku) 3 males, Mt. Koutsusan, Tokushima Pref., 9. vi. 1985, K. Ohara leg.; (Kyushu) 6 males, 3 females, Mt. Wakasugi, Fukuoka Pref., 26. iv. 1953, K. Morimoto, T. Yoshida & I. Hiura leg.; 1 female, Mt. Hikosan, Fukuoka Pref., 23. v. 1986, . Yasunaga leg.; 5 males, 2 females, Mt. Kujū-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 male, Mt. Takachiho-no-mine, Miyazaki Pref., 21. v. 1982, K. Konishi leg.

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu).

2. *Byctiscus (Byctiscus) puberulus*

(Motschulsky, 1860)

(Figs. 8,C; 9,A-D)

Rhynchites puberulus Motschulsky, 1860, Reisen Amurl., 2: 170, (Amur); - *Byctiscus puberulus*: Voss, 1930, Kol. Rdsch., 16: 204; Morimoto, 1984, Coleopt. Jpn. Col., 4: 250, pl. 49.

Rhynchites regalis Roelofs, 1874, Ann. Soc. ent. Belg., 17:

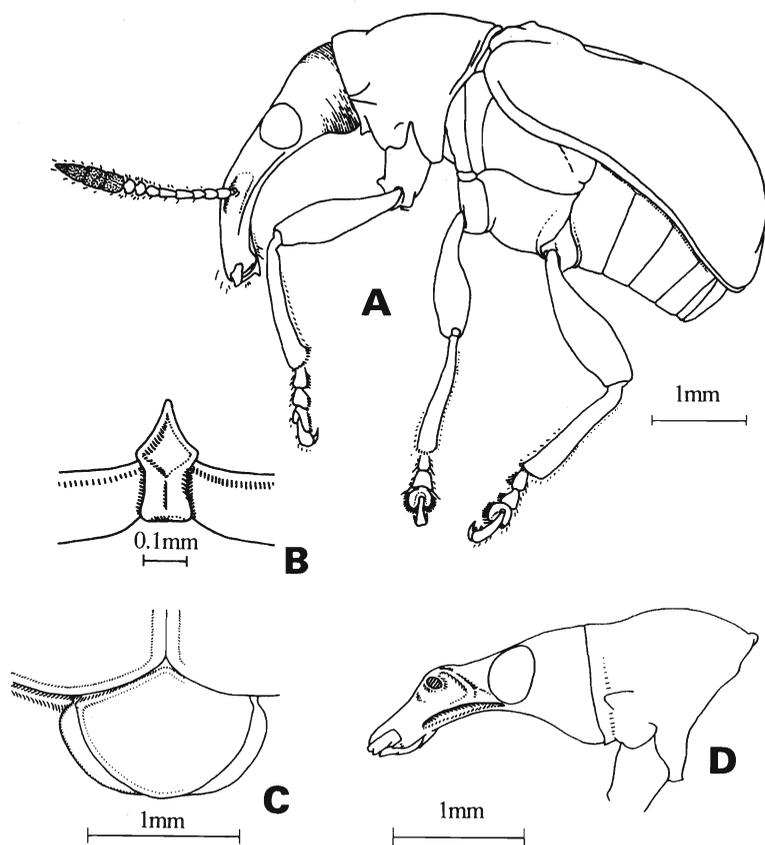


Fig. 8. *Byctiscus* spp. — A: Habitus of *B. (Byctiscus) venustus*, male. B: postcoxal projections and centrosternal piece of *B. (B.) venustus*. C: pygidium and elytral apices of *B. (B.) puberulus*, in caudal view. D: head and rostrum of *B. (B.) fausti*, male.

142. (Yokohama, Hakodadi, Omura, Kawachi); — *Byctiscus regalis*: Voss, Kol. Rdsch., 16: 203; — *Byctiscus puberulus regalis*: Morimoto, 1984, Coleopt. Jpn. Col., 4: 250, pl. 49.

Rhynchites motschoulskyi Sharp, 1889; Lewis, 1879, Cat. Col. Jap. Archip.: 22, (*Motchulskyi*, without description); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 58, (Japan).

Byctiscus subauratus Voss, 1943, Mitt. Münch. ent. Ges., 33: 230, (Tokio); Morimoto, 1984, Coleopt. Jpn. Col., 4: 250. Syn. nov.

Byctiscus congener: Faust, 1882 (nec Jekel, 1860), Dt. ent. Z., 26: 290, (partim); Schilsky, 1903, Käf. Eur., 40: 60, (partim); Matsumura, 1931, Ill. com. Ins. Jpn., 3: 104, pl. 24; Nakane, 1963, Icon. Ins. Jpn. Col. nat. ed., 4: 354, pl. 177.

Byctiscus princeps: Voss, 1930 (nec Solsky, 1872), Kol. Rdsch., 16: 206, (Nordjapan); Nakane, 1963, Icon. Ins. Jpn. Col. nat. ed., 4: 354, pl. 177.

Brilliant with green metallic lustre (f. *motschulskyi*), or sometimes entirely bluish (f. *puberulus*) or reddish (f. *subauratus*); elytra with two pairs of remarkable red spots in individuals from western Japan (f. *regalis*). Derm covered with inconspicuous hairs and very short fine setae scattered on the elytra; ventral surface rather hairy.

Rostrum long and stout, 0.8 – 0.95 times as long as pronotum, equally curved; postmentum projected antero-ventrally in the male. Antennal funicle with 2nd segment 1.1 – 1.8 times as long as broad; club with two basal segments almost as long as broad.

Pronotum broader than long, sparsely punctate and partially wrinkled, strongly prominent laterally, subapical and subbasal constriction strong; dorsum convex, with median longitudinal furrow; lateral thorn and procoxal setose sex patch well developed in the male; postcoxal projections not contiguous to each other. Scutellum transverse.

Elytra scabrous with irregular punctures and puncticles, with whitish decumbent hairs. Tibiae almost straight, with smooth ridges, each with one spur.

Abdomen depressed (male) or flat (female) in lateral aspect; pygidium and lateral part of venter costate along the margins of elytra.

Male genitalia with wrinkly endophallic structure.

Length: 4.9 - 7.0 mm (excl. rostrum).

Biology: Plug-roller of various trees and plants such as *Acer*, *Prunus*, *Polygonum* or *Populus*.

Specimens examined: (Hokkaido) 1 male, Shiokari pass, Kamikawa 13. vi. 1986, Y. Sawada leg.; 1 female, Jozankei, Ishikari, 23. vi. 1986, Y. Sawada leg.; 2 males, 1 female, Shimizudani, Kamishihoro, 25. vi. 1986, K. Morimoto leg.; (Honshu) 1 female, Japan Nippon Moyer Env. de Tokio, J. Harmand 1906, Museum Paris, (syntype of *B. subauratus* Voss; E. Voss ded. Eing. Nr. 14-67; ZIM); 1 male, 1 female, Naruko, Miyagi Pref., 23. vi. 1983, Y. Sawada leg.; 2 males, 1 female, Katashina, Gunma Pref., 13. vii. 1979, Y. Sawada leg.; 1 female, Kiyosato, Nagano Pref., 15. vii. 1978, Y. Sawada leg.; 1 female, Hakkaisan, Mt. Ontake, Nagano Pref., 17. vii. 1987, Y. Sawada leg.; 1 male, 1 female, Omi-one, Kyoto Pref., 25. ix. 1979, Y. Sawada leg.; 1 female, Mt. Gomadan, Wakayama Pref., 24. v. 1975, H. Hiramatsu leg.; (Shikoku) 2 males, Mt. Koutsusan, Tokushima Pref., 12. v. 1985, K. Ohara leg.; (Kyushu) 1 female, Mt. Hikosan, Fukuoka Pref., 3. x. 1958, K. Takeno leg.; 6 males, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 male, Mt. Hoka, Nagasaki Pref., 26. iv. 1953, H. Kamiya leg.;

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu).

Note. *B. regalis* and *B. subauratus* are synonymous with *B. puberulus*. They have been distinguished on the basis of the differences of the colouration and the length of antennal segments such as the 2nd one of the funiculus and the 1st and 2nd of the club. But their classification by the coloration does not

coincide with that by the length of antennal segments. Then they are the intraspecific variants of *B. puberulus*.

The presence of remarkable red spots of this species, which are developed in the individuals from western Japan, shows a high similarity with *Byctiscus princeps*. Then Ter-Minnasian (1950) synonymized *B. regalis* under *B. princeps*. But the former is a valid species because the true *princeps* from China can be distinguished from the Japanese species *B. puberulus* (= *B. regalis*) by its angular scutellum and costa on the pygidium overlapped by the elytra.

3. *Byctiscus (Byctiscus) rugosus*

(Gebler, 1830)

(Figs. 9,F)

Rhynchites rugosus Gebler, 1830, Ledebour, Reise Altai-Gebirge, 2 (3) : 146, (Altai); - *Byctiscus rugosus*: Schilsky, 1903, Käf. Eur., 40 : 57; Morimoto, 1962, Sci. Bull. Fac. Agr., Kyushu Univ., 19 : 172, (Hokkaido, Honshu).

Brilliant with blue or green metallic lustre, rostrum, appendages and ventral part of body sometimes reddish; dorsum without conspicuous hairs except for minute decumbent hairs and fine setae; ventral surface rather hairy with recumbent whitish fine hairs.

Rostrum long and stout, equally curved, 0.79 - 0.87 times as long as pronotum; postmentum projected antero-ventrally in the male. Antennal funiculus with 2nd segment almost 1.5 times as long as broad.

Pronotum broader than long, moderately punctate and partially wrinkly, strongly prominent laterally, subapical and subbasal constriction strong; dorsum convex, with median longitudinal furrow; lateral thorn and procoxal setose sex patch well developed in the male; postcoxal projections not contiguous to each other. Scutellum transverse.

Elytra rugose with strong punctures arranged into rows and much smaller puncticles; declivity with decumbent hairs. Secondary mesocoxal pro-

cess complete. Tibiae almost straight, with smooth dorsal ridges; four posterior tibiae with each one spur, fore one without spurs.

Abdomen depressed (male) or flat (female) in lateral aspect; pygidium and lateral part of venter costate, costa on the pygidium overlapped by elytra.

Male genitalia with wrinkly endophallic structure.

Length: 5.0 - 7.5 mm (excl. rostrum).

Biology: Plug-roller of leaves of poplar or apple.

Specimens examined: (Hokkaido) 1 female, Shiokari pass, Kamikawa, 15. vi. 1986, Y. Sawada leg.; (Honshu) 1 male, Wakamatsu, Fukushima Pref., 21. v. 1948, Y. K. leg.; 3 males, 3 females, Ohkawa r., Mondan, Fukushima Pref., 2. v. 1948, Y. K. leg.

Distribution: Asian area of Russian Federation (Altai and Krasnoyarsk kray, Irkutsk, Buryatskaya, Chitinskaya, Yakutsukaya and Amurskaya oblasts, Khabarovsk and Primorsk kray, Sakhalin), Mongolia, China (Manchuria), Korea and Japan (Hokkaido, Honshu).

4. *Byctiscus (Byctiscus) fausti*

(Sharp, 1889)

(Figs. 8,D; 9,H)

Byctiscus fausti Sharp, 1889, Trans. ent. Soc. Lond., 1889: 60, (Japan).

Byctiscus gibbirostris Schilsky, 1906, Käf. Eur., 42: 85, (suburb of Tokyo).

Brilliant with metallic lustre, dorsal surface red, partially or sometimes entirely bluish; head, rostrum, scutellum, appendages and ventral part of body deep blue to violaceous; derm without conspicuous hairs on dorsum except for sparse decumbent hairs and short fine setae; ventral surface rather hairy.

Rostrum short and stout, 0.7 - 0.75 times as long as pronotum, strongly bent at the middle; postmentum without projection in both sexes. Antennal funicle with 2nd segment 1.1 - 1.6 times as long as broad.

Pronotum broader than long, sparsely punctate,

strongly prominent laterally, subapical and subbasal constriction strong; dorsum convex, with median longitudinal furrow; lateral thorn and procoxal setose sex patch well developed in the male; postcoxal projections not contiguous to each other. Scutellum transverse.

Elytra with punctures more or less arranged into rows; much smaller puncticles distribute on the interstices of the punctures. Secondary mesocoxal process complete. Tibiae almost straight, with smooth dorsal ridges, each with one spur.

Abdomen depressed (male) or flat (female) in lateral aspect; pygidium and lateral part of venter costate, costa on the pygidium overlapped by elytra.

Male genitalia with wrinkly endophallic structure.

Length: 4.5 - 5.5 mm (excl. rostrum).

Biology: Plug-roller of deciduous oak.

Specimens examined: 1 male, Kurokawa Niigata Pref., 3. vii. 1985, K. Konishi leg.; 1 female, Asakawa, Takao, Tokyo Pref., 6. v. 1982, H. Makihara leg.; 1 male, 4 females, Mt. Daimonji, Kyoto Pref., 19. v. 1979, Y. Sawada leg.; 2 females, Mt. Kongo, Osaka Pref., 3. v. 1916, K. Takeuchi leg.; (Shikoku) Mt. Koutsusan, Tokushima Pref., 2. vi. 1985, K. Ohara leg.; (kyushu) 2 males, 1 female, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 male, Shiya pass, Kumamoto Pref., 24. vii. 1983, S. Ogata leg.; 1 male, Haki, Izumi, Kumamoto Pref., 22. iv. 1980, H. Takemoto leg.; 1 male, Mt. Takachiho-no-mine, Kirishima, Miyazaki Pref., 21. v. 1982, K. Konishi leg.

Distribution: Japan (Honshu, Shikoku and Kyushu).

Note. Body colour is uniformly deep blue in the specimens collected from southern part of Kyushu.

Subgenus *Aspidobyctiscus* Schilsky, 1903

Aspidobyctiscus Schilsky, 1903, Käf. Eur., 40: 56, U-V, (as subg. of *Byctiscus*), (Type species: *A. lacunipennis* (sic) by monotypy).

Diagnosis. Scutellum short, almost 3 times as broad as long. Elytra densely covered with strong puncticles; striae distinct but discontinuous, com-

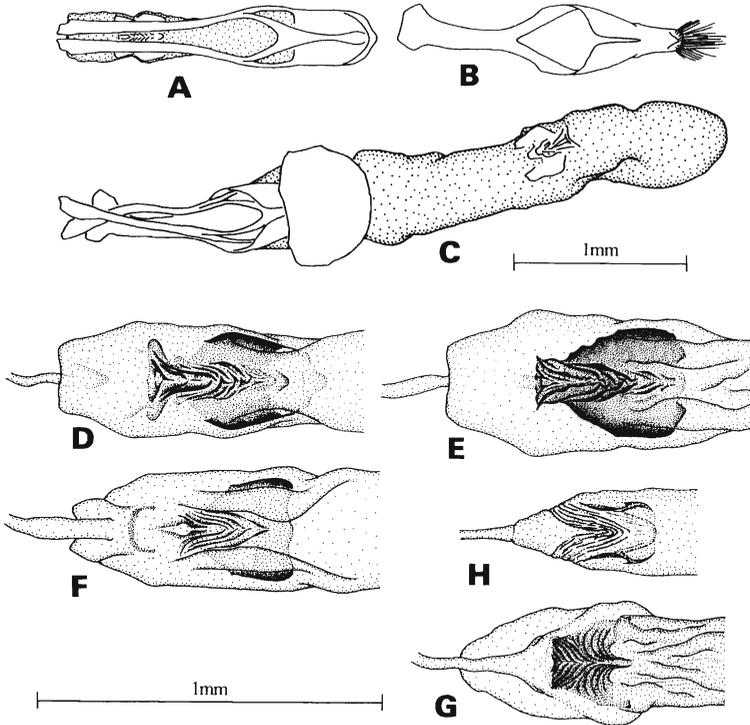


Fig. 9. Male genitalia of *Byctiscus* spp.— A–D: *B. (Byctiscus) puberulus*. E: *B. (B.) venustus*. F: *B. (B.) rugosus*. G: *B. (Aspidobyctiscus) lacunipennis*. H: *B. (B.) fausti*.

posed of deep oblong punctures. Pronotum finely wrinkled. Tibia without dorsal ridge.

Distribution: Korea, Japan, China and Taiwan.

5. *Byctiscus (Aspidobyctiscus) lacunipennis*
(Jekel, 1860)
(Fig. 9,G)

Rhynchites lacunipennis Jekel, 1860, Ins. Saunders, 2: 225. (Hong-Kong); - *Byctiscus lacunipennis*: Sharp, 1889, Trans. ent. Soc. Lond., 1889: 61; Schilsky, 1903, Käf. Eur., 40: 56, (subg. *Aspidobyctiscus*); Ter-Minassian, 1950, Fauna SSSR, 27, 2: 140, (Japan); - *Aspidobyctiscus lacunipennis*: Kôno, 1930, J. Fac. Agr., Hokkaido imp. Univ., 29: 11; Morimoto, 1958, Tsukushi-no konchu, 2: 6, (mimeograph).

Attelabus cicatricosus Motschulsky, 1860, Reisen Amurl., 2: 173, t. 10, (Amur); - *Byctiscus cicatricosus*: Faust, 1882, Dt. ent. Z., 26: 291.

Piceous to reddish brown with coppery lustre; derm with decumbent hairs, fine setae scattered on

elytra.

Rostrum long and stout, equally curved, 0.85 - 0.9 times as long as pronotum; postmentum projected antero-ventrally in the male. Antennal funicle with 2nd segment almost twice as long as broad; club depressed.

Pronotum broader than long, wrinkly sculptured, strongly prominent laterally, subapical and subbasal constriction strong; dorsum convex, with deep median longitudinal furrow; lateral thorn and procoxal setose sex patch well developed in the male; postcoxal projections not contiguous to each other.

Elytra with striae composed of deep oblong punctures, some punctures confused longitudinally with adjacent ones; intervals convex, broader than striae, densely punctulate, with dense decumbent hairs; 9th stria confluent with 10th above 1st

ventrite. Secondary mesocoxal process complete. Tibiae almost straight, without dorsal ridges, each with two spurs.

Abdomen depressed (male) or flat (female) in lateral aspect; pygidium and lateral part of venter costate along the margins of elytra.

Male genitalia with wrinkly endophallic structure.

Length: 4.4 - 5.0 mm (excl. rostrum).

Biology: Plug-roller of grape.

Specimens examined: (Honshu) 4 males, 4 females, Iwakura, Kyoto Pref., 18. viii. 1978, Y. Sawada leg.; (Kyushu) 4 males, 10 females, Fukuoka Pref., 29. v. 1934, T. Esaki leg.; 1 male, Fukakura vall., Fukuoka Pref., 10. viii. 1979, Y. Sawada leg.; 2 females, Madara-jima Is, Saga Pref., 8. viii. 1979, Y. Sawada leg.; (Tsushima) 1 female, Asamo, Shimoagata, 23. v. 1985, Y. Sawada leg.; (Koshiki) 1 male, 2 females, Teuchi, Shimo-koshiki Is., 6. viii. 1975, H. Makihara leg.

Distribution: Korea, Japan (Honshu, Shikoku and Kyushu), China and Taiwan.

3. Tribe RHYNCHITINI

Diagnosis. First abdominal segment with tergum less sclerotized, broadly membranous or composed by some pairs of sclerites divided by membrane; 1st ventrite (= sternum of 3rd abdominal segment) without abdominal lobe, distant from metasternum at the sides; pygidium exposed from elytra.

Distribution: Cosmopolitan.

Subtribe EUGNAMPTINA

Diagnosis. Head constricted at the base; mandibles without appendages nor scars; rostrum depressed at least at the apex in the female; antennae slender, with club loosely articulate, inserted near the middle of the rostrum. Procoxa without sex setose patch in both sexes; secondary mesocoxal process complete; several pairs of tibiae with spurs, mucrones sometimes developed in the male. Elytra separately rounded at the apices, concealing propygidium and basal part of pygidium;

scutellar striae present. Legs with tarsal claws each bifid. First to sixth segments of abdomen with spiracular sclerites independent from median tergite; terga of 1st segment broadly membranous with two pairs of tergites in both sides; venter without abdominal lobe, pygidium not costate; ovipositor with coxites and styli.

Distribution: Nearctic, Neotropical, Palearctic and Oriental Regions.

Genus *Aderorhinus* Sharp, 1889

Aderorhinus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 68. (Type species: *Aderorhinus crioceroides* by monotypy).

Diagnosis. Head less constricted; tibiae evenly curved.

Distribution: Oriental Region (Japan, Southeastern China and Indochina).

1. *Aderorhinus crioceroides* (Roelofs, 1874)

(Fig. 10)

Rhynchites crioceroides Roelofs, 1874, Ann Soc. ent. Belg., 17: 147, (Suwosama, Nagasaki); Schilsky, 1903, Käf. Eur., 40: 7, (subg. *Lasiorrhynchites*); - *Aderorhinus crioceroides*: Sharp, 1889, Trans. ent. Soc. Lond., 1889: 68. (Yezo); Voss, 1941, Dt. ent. Z., 1941: 122, (Burma).

Aderorhinus pedicellaris: Voss, 1939 (nec Voss, 1930), Mitt. Münch. ent. Ges., 29: 609, (Unzen Shimabara); Voss, 1941 Dt. ent. Z., 1941: 122, 124, (f. *nigricollis*, Japan).

Derm reddish brown except for apices of tibiae, antennae and sometimes central part of pronotum piceous to black; derm with erect dark setae.

Pronotum with post coxal projections not contiguous to each other. Elytra with 9th stria not confluent with 10th; Tibiae dilated apically, dorsal ridge milled; apices with each one spur; mucro developed on the male middle tibia.

Length: 5.5 - 7.2 mm (excl. rostrum).

Biology: Some specimens were collected from oak.

Specimens examined: (Honshu) 3 males, 4 females, Anayama, Yamanashi Pref., 13. vii. 1978, Y. Sawada leg.; 2

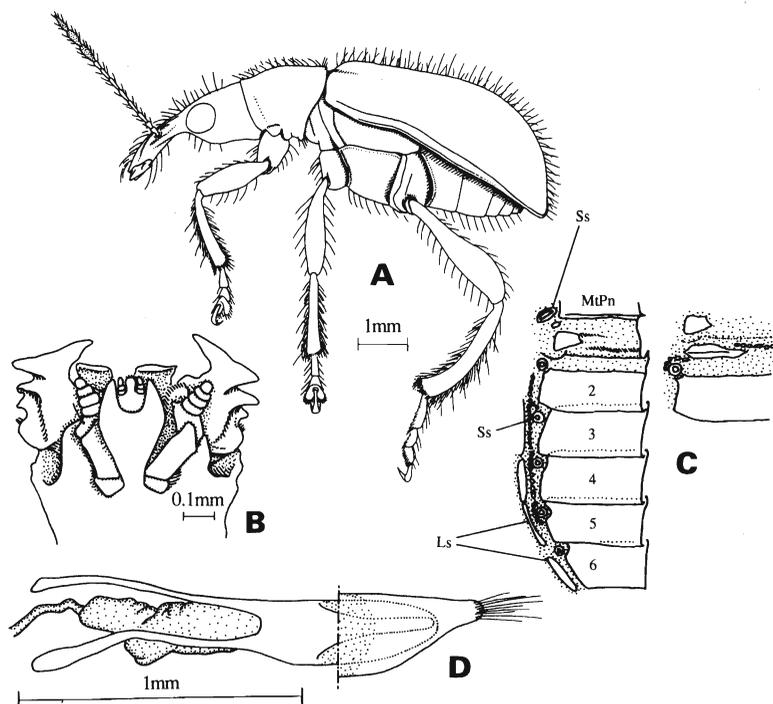


Fig. 10. *Aderorhinus cricoeroides* – A: Habitus in lateral view, female. B: mouth parts in ventral view. C: abdominal terga, showing independent spiracular sclerites (Ss) and membranous 1st segment, (Ls, lateral sclerite). D: male genitalia.

males, 1 female, Ogawara, Kyoto Pref., 11. vi. 1982, Y. Sawada leg.; (Kyushu) 1 female, Unzen, Shimabara, Reitter, (holotype of *A. ped. f. nigricollis* Voss; ZIM); 1 male, 1 female, Mt. Koshozan, Fukuoka Pref., 30. vi. 1984, R. Noda leg.; 2 males, 4 females, Cape Sata, Kagoshima Pref., 2-5. v. 1958, K. Morimoto leg.; 1 females, Mt. Konpira, Nagasaki Pref., 11. v. 1955, Y. Obuchi leg.

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu) and Burma.

Genus *Eugnamptus* Schoenherr, 1839

Eugnamptus Schoenherr, 1839, Gen. Spec. Curc., 5, 1: 339, (Type species: *Eugnamptus angustatus* (= *E. collaris*) by original designation).

Diagnosis. Eyes anomalously large in the male; rostrum short.

Distribution: Nearctic, Neotropical, Palearctic and Oriental Regions.

Subgenus *Eugnamptus* s. str.

Eugnamptus: Voss, 1941, Dt. ent. Z., 1941: 130, 143.

Diagnosis. Elytra slender, at least 3/2 times as long as broad; 9th stria confluent with 10th near the apex of the elytra; derm without conspicuous fleck markings composed of whitish hairs.

Distribution: Chiefly Nearctic and Neotropical Regions, a few species inhabit Palearctic and Oriental Regions.

1. *Eugnamptus (Eugnamptus) amurensis*

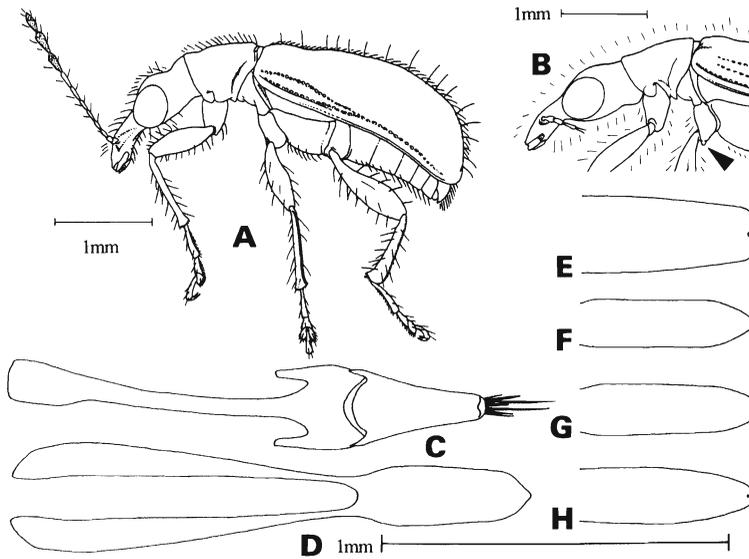


Fig. 11. Habitus, anterior half of body, genitalia and the apices of median lobe of *Eugnamptus* spp. — A, C, D: *E. (Eugnamptobius) sauteri*. B, G: *E. (Eugnamptobius) aurifrons*. E: *E. (Eugnamptus) amurensis*. F: *E. (Eugnamptobius) flavipes*. H: *E. (Eugnamptobius) morimotoi*.

(Faust, 1882)

(Fig. 11,E)

Rhynchites amurensis Faust, 1882, Dt. ent. Z., 26: 285, (Amur); Schilsky, 1903, Käf. Eur., 40: K, (subg. *Lasiorrhynchites*); — *Deporaus amurensis*: Faust, 1887, Dt. ent. Z., 31: 163; — *Eugnamptus amurensis*: Faust, 1889, Stett. ent. Ztg., 50: 223.

Eugnamptus fragilis Sharp, 1889, Trans. ent. Soc. Lond., 1889: 69, (Osaka, Miyanoshta).

Rhynchites gracilicornis Schilsky, 1906, Käf. Eur., 42: 81, (subg. *Lasiorrhynchites*, suburb of Tokyo, Nemuro).

Piceous with strong blue metallic lustre; derm with two kind of long setae.

Prothorax with post coxal projections not contiguous to each other. Elytra with striae strongly punctate, interstices of punctures each with one setigerous puncticle; intervals of striae each with one row of setigerous puncticles, puncticles synchronous with strial punctures. Strial setae sub-erect or recumbent; interval setae erect, longer than ones of striae. Tibiae with each one spur; fore tibia

almost straight, with dorsal ridge not milled; four posterior ones weakly curved, with dorsal ridges weakly milled; mucro developed in the male middle tibia.

Length: 3.6 – 5.1mm(excl. rostrum).

Biology: Some specimens were collected from alder, walnut and oak.

Specimens examined: (Hokkaido) 1 female, Ashorobuto, Ashoro, Hokkaido Pref., 27. vi. 1980, H. Takemoto leg.; (Honshu) 3 females, 2 males, Yunomata, Oohata, Aomori Pref., 9–30. vii. 1956, K. Morimoto leg.; 3 females, 1 male, Kinine pass, Fukui Pref., 25. vi. 1982, K. Morimoto leg.; 2 males, 1 female, Omi-one, Kyoto Pref., 3. vii. 1979, Y. Sawada leg.; (Kyushu) 6 males, Mt. Aso, Kumamoto Pref., 7. vi. 1979, K. Morimoto leg.; 3 males, 1 female, Mt. Shiratori, Kumamoto Pref., 19. vii. 1983, Y. Sawada leg.

Distribution: Russian Federation (Primorsk kray) and Japan (Hokkaido, Honshu Shikoku and Kyushu).

Subgenus *Eugnamptobius* Voss, 1922

Eugnamptobius Voss, 1922, Philipp. J. Sci., 21: 412, (Type species: *Eugnamptus insularis* by monotypy).

Diagnosis. Elytra slender, at shortest $3/2$ times as long as broad; 9th stria confluent with 10th near the middle of the elytron; derm without conspicuous fleck markings composed of whitish hairs.

Distribution: Chiefly Oriental Region, and a few species inhabit Mexico.

2. *Eugnamptus* (*Eugnamptobius*) *flavipes*

Sharp, 1889

(Fig. 11,F)

Eugnamptus flavipes Sharp, 1889, Trans. ent. Soc. Lond., 1889: 70, (Kobe, Fukushima); Kôno, 1930, J. Fac. Agr., Hokkaido imp. Univ., 29: 31, (subg. *Eugnamptobius*).

Fuscous to testaceous except for head and pronotum, head with weak green lustre; derm with two kind of long setae.

Pronotum weakly punctate; punctures setigerous, simply hollowed.

Elytra with striae moderately punctate, interstices of punctures each with one setigerous puncticle, setae suberect and inconspicuous; intervals of striae each with one row of setigerous puncticles, puncticles synchronous with strial punctures. Setae equally inconspicuous, strial setae suberect, interval setae erect and longer than ones of striae. Ninth stria confluent with 10th above 2nd or 3rd ventrite. Mesocoxa without ventral projections in both sexes.

Tibiae almost straight, with each one spur; fore tibia without row of spiculi nor dorsal ridge; four posterior ones with dorsal ridges milled; mucro well developed in the male middle tibia and weakly developed in the male hind tibia.

Length: 3.5 - 4.0 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: (Honshu) 4 males, 2 females, Kurokawa, Niigata Pref., 27. vi. 1968, K. Baba leg.; 1 female, Mt. Iozen, Ishikawa Pref., 27. vi. 1983, Y. Sawada leg.; 1 female, Omi-one, Kyoto Pref., 3. vii. 1979, Y. Sawada leg.; 2

males, Omi-one, Kyoto Pref., 6. vii. 1980, Y. Sawada leg.; (Shikoku) 1 male, 8 females, Mt. Takashiroyama, Tokushima Pref., 24-26. vii. 1986, K. Ohara, N. Koda and K. Konishi leg.; 3 males, 4 females, Mt. Kajigamori, Kochi Pref., 27. vii. 1954, K. Morimoto leg.; 2 males, 3 females, Jinryo, Awa, 2-4. viii. 1953, I. Hiura leg.; (Kyushu) 1 male, Kunimi pass, Mt. Sobu, Oita Pref., 23. vii. 1978, K. Maeto leg.

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu).

3. *Eugnamptus* (*Eugnamptobius*) *aurifrons*

Roelofs, 1874

(Figs. 11,B,G)

Eugnamptus aurifrons Roelofs, 1874, Ann. Soc. ent. Belg., 17: 151, (Japan); Kôno, 1930, J. Fac. Agr., Hokkaido imp. Univ., 29: 32, (subg. *Eugnamptobius*).

Fuscous to testaceous except for head with green metallic lustre; derm with two kind of long setae; strial rows of setae on elytra distinct to naked eye.

Pronotum strongly punctate, punctures setigerous each with central socket papillate.

Elytra with striae closely punctate, interstices of punctures each with one setigerous puncticle; intervals of striae each with one row of setigerous puncticles, puncticles more sparse than strial punctures. Strial setaerect, much conspicuous; interval setae erect and longer. Ninth stria confluent with 10th above 2nd or 3rd ventrite.

Mesocoxa projected ventrally in the male.

Tibiae almost straight, with each one spur; fore tibia with a row of spiculi on the apical half of dorsal edge; four posterior ones with dorsal ridges milled; mucro developed in the male middle tibia.

Length: 3.5 - 4.6 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: (Kyushu) 1 male, 1 female, Mt. Kunimi, Imari, Saga Pref., 29. vii. 1981, T. Ogata leg.; 6 males, 4 females, Okinoshima Is., Fukuoka Pref., 25-28. vii. 1958, Y. Hirashima, Y. Murakami & Y. Miyatake leg.; 1 male, 2 females, Cape Sata, Kagoshima Pref., 25-29. v. 1953, S. Kimoto leg.; (Tsushima) 2 males, Mt. Mokokoku, 17. vii. 1981, Y. Syono leg.; (YAKU) 2 males, Shiratani-unsuikyo, Yakushima Is., 26. vii. 1982, K. Konishi leg.; (Tokara) 2 females, Nakanoshima Is., 29. iv. 1987, T. Ogata leg.;

(Okinawa) 1 male, Yona, Okinawa Pref., 19. x. 1963, Y. Hirashima & S. Miyamoto leg.; (Yaeyama) 1 male, Mt. Omoto, Ishigaki Is., 29. iii. 1978, H. Takemoto leg.

Distribution: Japan (Honshu, Shikoku, Kyushu, Tsuchushima, Yakushima Is., Tokara Isls. and Yaeyama Isls.)

4. *Eugnamptus (Eugnamptobius) morimotoi*

Nakane, 1963

(Fig. 11,H)

Eugnamptus morimotoi Nakane, 1963, *Fragm. Coleopterol.*, 8: 34, (subg. *Eugnamptus* s. str., Shimashima, Nagano).

Head, rostrum, pronotum and elytra uniformly piceous, appendages fuscous to testaceous; derm with two kind of long setae.

Pronotum weakly punctate; punctures setigerous, simply hollowed.

Elytra with striae closely punctate, interstices of punctures each with one setigerous puncticle; intervals of striae each with one row of setigerous puncticles, puncticles more sparse than strial punctures. Strial setae and most of interval setae suberect, of same length; some longer erect setae scattered on sides. Ninth stria confluent with 10th above 3rd ventrite.

The male fore femora compressed at the base. Tibiae almost straight, with each one spur; fore tibia with a row of spiculi on the apical half of dorsal edge; four posterior ones with dorsal ridges milled; mucro well developed in the male middle tibia and weakly developed in the male hind tibia.

Length: 3.5 - 4.0 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: 2 males, 1 female, Renge spa, Niigata Pref., 29. vii. 1977, K. Baba leg.; 2 females, Kurokawa, Niigata Pref., 24. vii. 1971, K. Baba leg.

Distribution: Central part of Honshu.

5. *Eugnamptus (Eugnamptobius) sauteri*

Voss, 1921

(Figs. 11,A,C-D)

Eugnamptus sauteri Voss, 1921, *Arch. f. Naturg.*, 87, A, 11: 279, (Formosa); Kôno, 1930, *J. Fac. Agr., Hokkaido imp. Univ.*, 29: 32, (subg. *Eugnamptobius*).

Body piceous with remarkable blue lustre, appendages testaceous, or sometimes darker; derm with two kind of long setae. Pronotum strongly punctate, punctures setigerous each with central socket papillate. Post coxal projections not contiguous to each other.

Elytra with striae strongly and closely punctate, interstices of punctures each with one setigerous puncticle; intervals of striae each with one or partially two rows of setigerous puncticles, puncticles synchronous with strial punctures. Strial setae recumbent, interval setae erect and longer. Ninth stria confluent with 10th above 1st or 2nd ventrite.

Tibiae almost straight, with each one spur; fore tibia with dorsal ridge partially milled; four posterior ones with dorsal ridges milled; mucrones developed in the male middle and hind tibiae.

Length: 3.4 - 4.2 mm (excl. rostrum).

Biology: Specimens from Amami-oshima Is., examined in this paper were collected from *Rapanaea neriifolia* (J.N.: Taimin-tachibana).

Specimens examined: (Taiwan) 1 female, ToaTsuiKutsu, v. 1914, H. Sauter, (syntype of *E. sauteri* Voss; E. Voss ded. *Eing. Nr. 9-65; ZIM*); (Amamioshima) 6 males, 15 females, Mt. Yuwandake, Amami-oshima Is., 5. v. 1987, T. Ogata and S. Nomura leg.; 1 male, Mt. Yuwan, Amami-oshima Is., 29. vii. 1963, L. Gressitt leg.

Distribution: Japan (Amami-oshima Is.) and Taiwan.

Subtribe RHYNCHITINA

Diagnosis. Ovipositor without styli; head with basal constriction absent or weak in general.

Distribution: Cosmopolitan.

Lasiorhynchites Jekel, 1860

Lasiorrhynchites Jekel, 1860, Ins. Saunders, 2: 227, (subg. of *Rhynchites*); Bedel, 1883, Fn. Col., Bassin Seine, 6, 1882-88: 25; Schilsky, 1903, Käf. Eur., 40: F, J (*Lasiorrhynchus*, err.); Reitter, 1916, Fauna Germanica, 5: 262, 263; Voss, 1932, Kol. Rdsch., 18: 154, 155; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 58, (Type species: *Rhynchites pubescens* Herbst, 1797 (nec *Rhynchites pubescens* (Fabricius, 1775) Olivier, 1807), (*Rh. cavifrons* Gyllenhal, 1833) by monotypy).

Coccygorrhynchites Prell, 1926, Zool. Anz., 65: 288; Voss, 1932, Kol. Rdsch., 18: 157, 158, (Type species: *Rhynchites sericeus* Herbst, 1797 by monotypy).

Diagnosis. Derm with erect and suberect hairs; head quadrate, more or less constricted at base; elytra with scutellar striole, abdominal terga less sclerotized.

Distribution: Palearctic Region.

Subgenus *Lasiorrhynchites* s. str.

Lasiorrhynchites: Voss, 1932, Kol. Rdsch., 18: 157.

Diagnosis. Rostrum short; punctures on elytral striae weak on the posterior part; intervals of striae regularly punctulate.

Distribution: Palearctic Region.

1. *Lasiorrhynchites* (*Lasiorrhynchites*) *brevirostris*

(Roelofs, 1874)

(Fig. 12)

Rhynchites brevirostris Roelofs, 1874, Ann. Soc. ent. Belg., 17: 148 (female); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 64 (male); Schilsky, 1903, Käf. Eur., 40: R, 5; - *Lasiorrhynchites brevirostris*: Voss, 1932, Kol. Rdsch., 18: 157, 163; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 64; Matoba, 1983, Nankiseibutu, 25: 105; Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Black with strong blue lustre; derm with long suberect hairs and erect setae, hairs and setae piceous in dorsal and grey in ventral surface.

Head quadrate, constricted at base; eyes small and frons broad in the female; rostrum short and thick, submentum elevated.

Prothorax with postcoxal projections contiguous

to each other; procoxal setose sex patch absent.

Elytra with scutellar striae; 9th stria extinct above 1st ventrite; Mesosternum with secondary mesocoxal process incomplete, not connect with metasternum.

Tibiae almost straight, more or less dilated apically; posterior four tibiae milled on dorsal ridges; fore and middle tibiae with each one spur, hind one with each two spurs; tarsi with claws each bifid, inner branch spatulate.

Abdomen with anterior two ventrites strongly connected; first to sixth segments with independent spiracular sclerites; tergum of 1st segment broadly membranous, tergite of 2nd segment divided by membrane; pygidium not costate along margins of elytra.

Male genitalia symmetrical, without endophallic sclerites.

Length: 3.5 - 4.8 mm (excl. rostrum).

Biology: Some specimens were collected from kinds of oak (J.N.: Kunugi, Konara and Kashiwa). A fragmental observation suggests its same biology as that of *L. sericeus* (Sawada, 1987).

Specimens examined: (Honshu) 1 male, Mt. Chokai, Akita Pref., 12. vii. 1982, Y. Sawada leg.; 1 female, Omi-one, Kyoto Pref., 17. v. 1982, Y. Sawada leg.; 1 female, Iwakura, Kyoto Pref., 21. iv. 1981, Y. Sawada leg.; 1 female, Mt. Daisen, Tottori Pref., 9. vi. 1981, H. Takemoto leg.; (Kyushu) 1 male, 1 female, Mt. Joyama, Munakata, Fukuoka Pref., 6-9. v. 1973, K. Kido leg.; 1 male, 1 female, Mt. Inunakiyama, Fukuoka Pref., 25. iv. 1941, T. Shirozu leg.; 1 male, 1 female, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 female, Senomoto, Kuju, Kumamoto Pref., 2. vi. 1983, Y. Sawada leg.; 1 female, Shiya pass, Miyazaki Pref., 15. vi. 1985, R. Noda leg.

Distribution: Honshu, Shikoku and Kyushu.

Pselaphorrhynchites Schilsky, 1903

Pselaphorrhynchites Schilsky, 1903, Käf. Eur., 40: H, (subg. of *Rhynchites*); Voss, 1932, Kol. Rdsch., 18: 170, 171, (subg. of *Coenorhinus*); Ter-Minassian, 1950, Fauna SSSR, 27, 2: 66, (Type species: *Rhynchites nanus* (Paykull, 1792) by subsequent designation by Ter-Minassian, 1950).

Diagnosis. Body slender; derm covered with

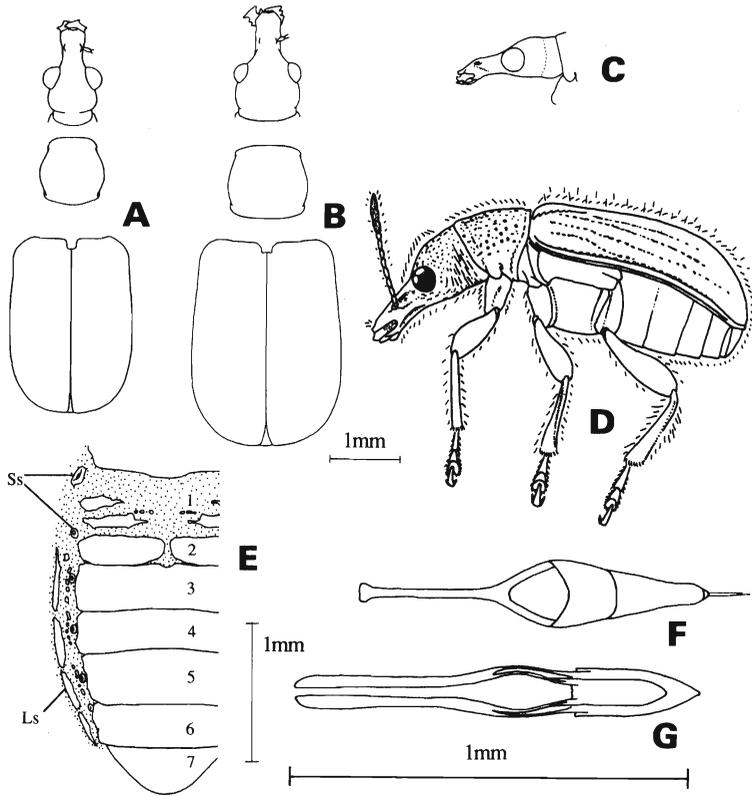


Fig. 12. *Lasiorhynchites breviostris* – A: Habitus in dorsal view, male. B: ditto, female. C: male head. D: female habitus in lateral view. E: abdominal terga, showing independent spiracular sclerites (Ss) and membranous 1st segment, (Ls, lateral sclerite). F, G: chitinous parts of male genitalia.

decumbent hairs; head globular; elytra with scutellar striole, 9th stria extended to near the apex; tibiae sometimes furnished with mucrones in the male.

Distribution: Chiefly Nearctic Region and its periphery, a few species distribute in the Palearctic Region.

1. *Pselaphorhynchites japonicus*

Morimoto, 1958

(Fig. 13)

Pselaphorhynchites japonicus Morimoto, 1958, Kontyû, 32:

97; Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Black with bluish green lustre; derm with decumbent dark hairs, fine erect setae scattered on elytra.

Head entirely globular with neck region; eyes prominent laterally; rostrum almost straight, a little shorter (male) or 1.3 times (female) as long as pronotum.

Pronotum as long as broad, anterior margin emarginate, sides rounded, subapical and basal constrictions strong; dorsum strongly punctate. Postcoxal projections not contiguous but separate

from each other by centro-sternal piece; procoxal setose sex patch absent in both sexes.

Elytra with scutellar striae, each composed of some three punctures; striae strongly punctate, scarcely grooved; intervals a little broader than striae, weakly convex; 9th stria extended to near the apex of elytra.

Mesosternum with secondary mesocoxal process incomplete, not connect with metasternum.

Tibiae almost straight, more or less dilated apically, with dorsal edges not milled; four posterior tibiae mucronate in the male; middle tibia with one and hind with two spurs in the female.

Abdomen with venter sunken (male) or inflated (female); tergum of 1st segment broadly membranous; pygidium not costate along margins of elytra.

Male genitalia with internal sac spiculate; endophallic sclerites absent.

Length: 2.2 - 2.7 mm (excl. rostrum).

Host: A kind of willow (J.N.: Yanagi) according to Morimoto (1984).

Specimens examined: Holotype and 4 paratypes, (ELKU); 1 female, Mt. Rausu, Hokkaido Pref., 31. vii. 1974, I. Matoba leg.; 1 female, Maruyama, Sapporo, Hokkaido Pref., 12. vi. 1980, H. Takemoto leg.; 1 female, Senpoku pass, Akan, Hokkaido Pref., 24. vi. 1986 C. Lee leg.; 1 female, Mt. Sasagamine, Niigata Pref., 23. viii. 1964, H. Koike leg.; 1 female, Kamikochi, Nagano Pref., 2. vii. 1952, H. Ishida leg.; 1 male, Senjogahara, Nikko, Tochigi Pref., 30. vi. 1963, K. Morimoto leg.

Distribution: Japan (Hokkaido and north Honshu).

Notocyrtus Desbrochers, 1908

Notocyrtus Desbrochers, 1908, Frelon, 16 (6): 78 (subg. of *Rhynchites*); Voss, 1932, Kol. Rdsch., 18: 170, 176; Voss, 1933, Ibid., 19: 45, (Type species: *Rhynchites cribripennis* Desbrochers, 1869 by monotypy).

Neocoenorhinus Voss, 1951, Rev. Chil. Entom., 1951: 182 (subg. of *Merhynchites*); Morimoto, 1984, Coleopt. Jpn. Col., 4: 255 (as independent genus), (Type species: *Coenorhinus germanicus* (Herbst, 1797) by original designation).

Coenorhinus: Seidlitz, 1891 (nec Thomson), Fn. Balt., ed. 2, 1887-91: 668, 669.

Coenorhinus: Seidlitz, 1891, Fn. Transsylv., 1888-91: 742, 744; Reitter, 1916, Fn. Germanica, 5: 262, 263; Voss, 1932, Kol. Rdsch., 18: 154; Voss, 1933, Ibid., 19: 25; Terminassian, 1950, Fauna SSSR, 27, 2: 70.

Coenorhymus: Schilsky, 1903, Käf. Eur., 40: F (subg. of *Rhynchites*).

Coenorhymus: Schilsky, 1903, Käf. Eur., 40: K (subg. of *Rhynchites*).

Diagnosis. Head not or scarcely constricted at base; rostrum slender. Elytra moderately broad, with scutellar striae, 9th stria not extend to the apex of elytra but confluent with 10th or extinct near the middle of elytra; secondary mesocoxal process complete; tibiae with spurs, not mucronate. First abdominal segment with tergites divided by at least narrow median membrane.

Distribution: Holarctic Region.

Subgenus *Notocyrtus* s. str.

Coenorhinus: Voss, 1932, Kol. Rdsch., 18: 154; Voss, 1933, Ibid., 19: 25.

Notocyrtus: Voss, 1932, Kol. Rdsch., 18: 170, 176; Voss, 1933, Ibid., 19: 45.

Neocoenorhinus Voss, 1951, Rev. Chil. Entom., 1951: 182.

Diagnosis. Episternum narrow; elytra with striae more or less grooved.

Distribution: Holarctic Region.

1. *Notocyrtus* (*Notocyrtus*) *sanguinipennis*

(Roelofs, 1874) **comb. nov.**

(Figs. 14,D-F)

Rhynchites sanguinipennis Roelofs, 1874, Ann. Soc. ent. Berg., 17: 144 (Yokohama); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 62; Schilsky, 1903, Käf. Eur., 40: R; - *Involvulus sanguinipennis*: Morimoto, 1957, Chikushi-no-Konchu, 2 (2): 8; Morimoto, 1962, Sci. Bull. Fac. Agr., Kyushu Univ., 19: 174; Nakane, 1963, Icon. Ins. Jpn., 2: 355, pl. 178; Matoba, 1972, Nankiseibutu, 14: 18; Matoba, 1983, Nankiseibutu, 25: 105; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl. 50.

Piceous with weak brassy lustre, elytra blood-red; derm with dense recumbent hairs, which are whitish in ventral surface of the body; elytra densely covered with yellowish recumbent hairs

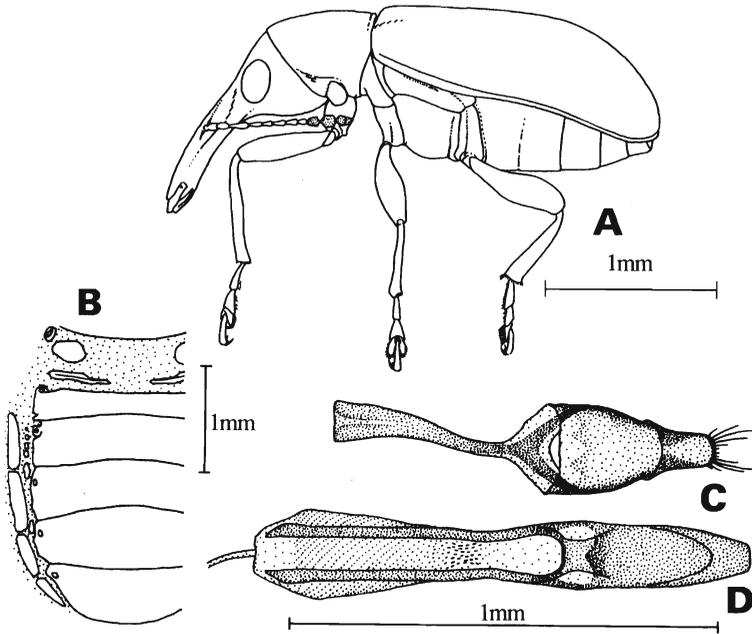


Fig. 13. *Pselaphorhynchites japonicus* — A: Habitus in lateral view, female. B: abdominal terga. C, D: Male genitalia.

and piceous suberect setae.

Frons broader than rostrum, glabrous, broadly depressed; rostrum slender, 5/3 times as long as pronotum in both sexes; antennae inserted behind the middle in both sexes. Pronotum broader than long; postcoxal projection contiguous to each other; setose sex patch of procoxa small but distinct in the male.

Elytra with scutellar striole composed of some two punctures, 9th stria confluent with 10th above 1st ventrite; tibiae straight, each with one spur; posterior four tibiae and apical 1/3 of fore tibiae milled on dorsal ridges. Tarsi robust, with 1st segment much shorter than 2nd and 3rd taken together; 2nd and 3rd segments conjointly broader than long; claws bifid, inner branches obtuse.

Abdomen with venter scarcely sunken (male) nor inflated (female); tergum of 1st segment broadly sclerotized except for narrow median cleft; spiracles of 2nd to 6th segments opening on median

sclerites. Pygidium costate along the posterior margins of elytra.

Male genitalia with large endophallic sclerites. Length: 4.0 - 5.0 mm (excl. rostrum).

Host: *Pieris japonica*, (Asebi) according to Matoba (1983), *Pourthiaea villosa*, (Ushikoroshi) according to Morimoto (1984).

Specimens examined: (Honshu) 1 male, Jubusen hill, Kyoto Pref., 25. vi. 1961, T. Kishii leg.; 1 male, Mt. Tanagami, Shiga Pref., 26. vi. 1960, T. Kishii leg.; (Shikoku) 1 female, Mt. Tshurugi, Tokushima Pref., 16. x. 1980, K. Maeto leg.; 1 male, Minaminoma, Tokushima Pref., 20. vii. 1952, I. Hiura leg.; 2 males, 3 females, Mt. Sasa, Hata, Kochi Pref., 29. vii. 1953, K. Morimoto leg.; (Kyushu) 1 male, 1 female, Mt. Hikosan, Fukuoka Pref., 21. viii. 1954, T. Yoshida leg.; (Tsushima) 1 male, Mt. Mitake, Tsushima Is., 1-6. viii. 1959, T. Kishii leg.

Distribution: Japan (Honshu, Shikoku, Kyushu and Tsushima).

Note. This species unquestionably belongs to the genus *Notocyrtus* because of the presence of scutellar

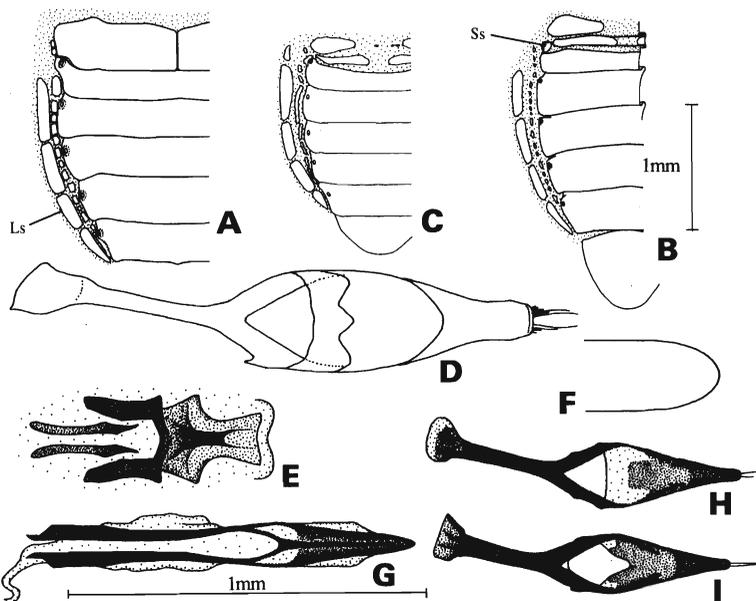


Fig. 14. Abdominal terga and male genitalia of *Notocyrtus* spp. — A, D–F: *N. sanguinipennis*, (Ls, lateral sclerite, E: endophallic sclerites, F: apex of median lobe). B: *N. caeligenus* **sp. nov.**, (Ss, spiracular sclerite). C, I: *N. assimilis*. G, H: *N. interruptus*.

strioles on the elytra, though the species has been assigned to the genus *Rhynchites* or *Involvulus*. This species was originally described under the genus *Rhynchites* by Roelofs (1874), who did not refer to the scutellar striole in the description of the species. When Schilsky (1903) distinguished the subgenus *Coenorhinus* (sensu Seidlitz, 1891) from *Rhynchites* based on the presence of scutellar strioles, he left this species in the subgenus *Rhynchites* s. str. because of no actual observation. Later, Schilsky's subgenera were elevated to generic rank by Voss (1932–69). He also did not examine this species by himself. Morimoto (1957, 1962a) accepted Schilsky's treatment and tentatively included the species into the genus *Involvulus* of Voss' system. But the presence of the scutellar striole of *sanguinipennis*, which Schilsky did not observe, clearly suggests the generic position of the species.

This species resembles *Notocyrtus aequatus* (L.) as Roelofs stated, but is distinguishable by its A longer rostrum.

2. *Notocyrtus* (*Notocyrtus*) *caeligenus* **sp. nov.**
(Figs. 14,B; 15)

Male. Fuscous, appendages, pronotum and the greater part of elytra testaceous, elytra pigmented along lateral margins and the suture; derm with dense decumbent hairs, some erect setae scattered on dorsum.

Head strongly punctate. Rostrum slender, 3/2 times as long as pronotum, moderately curved; basal half narrower than the anterior half; dorsal surface with sparse strong punctures and minute punctures. Eyes large, prominent antero-laterally; frons broader than rostrum; temple short. Antennae inserted just behind the middle of rostrum; funicle with 7th segment obovate.

Pronotum a little broader than long, weakly rounded laterally; subapical constriction weak; dorsum moderately convex, rugose with dense strong punctures and decumbent hairs; postcoxal projections contiguous to each other, with apices wound ventrally. Procoxae without distinct setose

sex patches. Scutellum oblong.

Elytra with striae weakly grooved with strong punctures; intervals broader than striae, scarcely convex, with dense punctules; punctules on intervals partially arranged into two rows, each with recumbent hair; scutellar striole with a few punctures; 9th stria confluent with 10th above 2nd ventrite.

Tibiae each with one spur, milled on dorsal ridges; fore tibia almost straight, four posterior tibiae weakly curved and dilated distally. Tarsi with 1st segment shorter than 2nd and 3rd taken together; claws bifid, inner branches obtuse.

Abdomen with venter scarcely sunken, almost straight in lateral view; tergum of 1st abdominal segment broadly membraneous, composed of two pairs of main sclerites and a pair of spiracular sclerites incorporated into the metathoracic tergum; 2nd abdominal terga with spiracular sclerites isolated from median sclerite. Pygidium broader than long, not costate along the margins of elytra.

Male genitalia with complex endophallic sclerites.

Female. rostrum more slender, 9/5 times as long as pronotum; dorsal surface glabrous with faint punctures; antennae inserted behind the middle of rostrum; pronotum as long as broad.

Length: 3.1 - 3.6 mm (excl. rostrum).

Biology: A few specimens were collected at the summit of Takachiho-no-mine; host plant is not known.

Holotype: male (Type No. 2884, Kyushu Univ.), Mt. Takachiho-no-mine, Kirishima, Miyazaki Pref., 17. v. 1983, K. Konishi leg. Paratypes: 1 male, same locality and date as holotype, Y. Sawada leg.; 1 male, Mts. Kirishima, Kagoshima Pref., 21. vii. 1951, J. Nagao leg.; 1 male, 1 female, same locality and collector, 26 - 27. vii. 1953; 1 male, Kirishima-shizen-hodo, 10. vi. 1980, T. Goto leg.

Distribution: Kyushu (Mts. Kirishima).

Note. This new species is easily distinguished from the other species of the genus by its light coloration.

3. *Notocyrtus* (*Notocyrtus*) *interruptus*

(Voss, 1920) **comb. nov.**

(Figs. 14,G,H)

Rhynchites interruptus Voss, 1920, Dt. ent. Z., 1920: 168 (Nemuro; subg. *Coenorhynchus*); - *Coenorhynchus interruptus*: Voss, 1932, Kol. Rdsch., 18: 175; Voss, 1933, Ibid., 19: 36; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 74; - *Merhynchites interruptus*: Morimoto, 1962, Sci. Bull. Fac. Agr., Kyushu Univ., 19: 173; Morimoto, 1979, In Baba, Niigata-taken no Konchu: 28; - *Neocoenorhynchus interruptus*: Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Black with blue or bluish green lustre, derm with fine suberect hairs, some erect setae scattered on dorsum.

Antennae inserted behind the middle of rostrum in both sexes. Post coxal projections contiguous to each other; procoxal setose sex patch developed in the male.

Elytra with striae strongly punctate, intervals as broad as striae; scutellar striole present, composed of some five punctures; 9th stria confluent with 10th above 1st or 2nd ventrite.

Tibiae straight, each with one spur; posterior four tibiae milled on dorsal ridges.

Abdomen with venter sunken (male) or inflated (female); tergum of 1st segment broadly membraneous, composed of two pairs of main sclerites and a pair of spiracular sclerites incorporated into the metathoracic tergum. Pygidium not costate along margins of elytra.

Male genitalia without distinct endophallic sclerites; basal sclerotization of cap piece of tegmen oblong.

Length: 2.2 - 2.8 mm (excl. rostrum).

Biology: Shoot-stinger of *Filipendula kamschatica*. (J.N.: Oni-shimotuke), apple tree, persimmon tree and willow.

Specimens examined: (Hokkaido) 1 male, 1 female, Nemuro, Yezo, Staudgr., (holo- and paratype of *R. interruptus* Voss; E. Voss ded. Eing. Nr. 3-66; ZIM); 3 males, 1 female, Rausu spa, Shiretoko, 4. vii. 1982, Y. Sawada leg.; 4 males, 2 females, Shiokari pass, Kamikawa, 15. vi. 1986, Y. Sawada leg.; 2 males, 5 females, Yukomanbetu, Mts. Daisetu, 18. vi. 1986, Y. Sawada leg.; (Honshu) 1 male, 2 females, Kanagi, Aomori Pref., 4. vi. 1984, M. Yamada leg.; 4 males, 2 females,

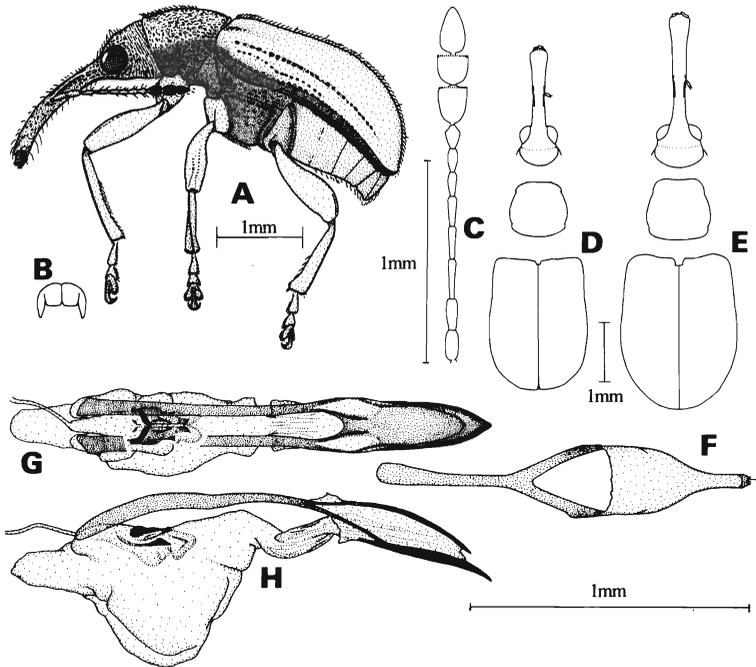


Fig. 15. *Notocyrtus caeligenus* sp. nov. — A: Habitus in lateral view, male. B: tarsal claws. C: male genitalia. D: habitus in dorsal view, male. E: ditto, female. F–H: male genitalia.

Toei, Higashi-tagawa, Yamagata Pref., 12. v. 1972; 1 female, Momoyake, Cokai, Akita Pref., 16. v. 1978, K. Baba & N. Kato leg.; 1 male, 1 female, Nuruyu spa, Miyagi Pref., 23. vi. 1983, Y. Sawada leg.; 1 male, Tainai, Kurokawa, Niigata Pref., 4. vi. 1980, K. Maeto leg.; (Sado Is.) 1 female, Niibo, Sado Is., vi. 1973, S. Sakurai leg.

Distribution: Hokkaido, Northeastern district of Honshu and Sado Is.

4. *Notocyrtus* (*Notocyrtus*) *assimilis*

(Roelofs, 1874) **comb. nov.**

(Figs. 14,C,I)

Rhynchites assimilis Roelofs, 1874, Ann. Soc. ent. Berg., 17: 146 (Japan); Faust, 1884, Stett. ent. Ztg., 1884: 192; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 65; Schilsky, 1903, Káf. Eur., 40: M, 34, (subg. *Coenorhynchus*); — *Coenorhynchus assimilis*: Voss, 1932, Kol. Rdsch., 18: 175; Voss, 1933, Ibid., 19: 43; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 77; — *Merhynchites assimilis*: Morimoto, 1962,

Sci. Bull. Fac. Agr., Kyushu Univ., 19: 173; Nakane, 1963, Icon. Ins. Jpn., 2: 354, pl. 177; — *Neocoenorhynchus assimilis*: Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Black with blue or bluish green lustre, derm with brown recumbent hairs, some erect setae scattered on dorsum.

Antennae inserted behind the middle of rostrum in both sexes. Postcoxal projections contiguous to each other; procoxal setose sex patch developed in the male.

Elytra with striae strongly punctate, intervals as broad as striae; scutellar striole present, composed of some five punctures; 9th stria confluent with 10th above 1st or 2nd ventrite.

Tibiae straight, each with one spur; posterior four tibiae milled on dorsal ridges.

Abdomen with venter sunken (male) or inflated (female); tergum of 1st segment broadly mem-

braneous, composed of two pairs of main sclerites and a pair of spiracular sclerites incorporated into the metathoracic tergum.

Pygidium not costate along margins of elytra.

Male genitalia without distinct endophallic sclerites; basal sclerotization of cap piece of tegmen emarginate proximally.

Length: 2.2 - 2.8 mm (excl. rostrum).

Biology: Shoot-stinger of oak, apple tree, willow and alder (J.N.: Yashabushi).

Specimens examined: (Honshu) 1 male, 1 female, Okunikko, Tochigi Pref., 1. vii. 1963, K. Morimoto leg.; 1 female, Ami, Ibaraki Pref., 4. v. 1985, S. Nakagaki leg.; 1 female, Shizen-en, Tokyo Pref., 24. v. 1972, H. Hasegawa leg.; 3 females, Takane, Yamanashi Pref., 25. v. 1985, K. Kosuge leg.; 1 male, 3 females, Shiga, Saku, Nagano Pref., 28. v. 1980, Y. Kitamura leg.; 1 female, Mt. Shiritaka, Ishikawa Pref., 3. v. 1980, I. Togashi leg.; 2 males, 1 female, Iwakura, Kyoto Pref., 21. iv. 1979, Y. Sawada leg.; 1 male, 1 female, Oada, Nara Pref., 16. iv. 1982, Y. Sawada leg.; 1 female, Mt. Daisen, Tottori Pref., 13. vi. 1982, Y. Syono leg.; (Shikoku) 1 male, 1 female, Kuroson, Kochi Pref., 29. iv. 1956, K. Morimoto leg.; (Kyushu) 1 male, Mt. Tachibana, Fukuoka Pref., 13. iv. 1983, Y. Sawada leg.; 1 male, 1 female, Mt. Kyogadake, Saga Pref., 30. iv. 1985, T. Ogata leg.; 2 males, 1 female, Mt. Kujukurodake, Oita Pref., 27-29. iv. 1985, Y. Sawada leg.; 4 males, Mt. Shiroyama, Kagoshima Pref., 10. v. 1983, Y. Sawada leg.

Distribution: Central and western area of Honshu, Shikoku and Kyushu.

Haplorhynchites Voss, 1930

Haplorhynchites Voss, 1930, Wien. ent. Ztg., 47: 69; Voss, 1938, Kol. Rdsch., 24: 135; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 86, 87; Hamilton, 1974, Ann. ent. Soc. Amer., 67: 787, (Type species: *Rhynchites coeruleus ussuriensis* by monotypy; designation by Ter-Minassian, 1950 and Hamilton, 1974 invalid).

Teretriorhynchites Voss, 1938, Kol. Rdsch., 24: 144; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 88, 92; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 133, (Type species: *Rhynchites coeruleus* by monotypy).

Diagnosis. Body broad; elytra with 9th stria not confluent with 10th, scutellar striole present or sometimes indistinct.

Head quadrate or transverse, without basal

constriction; rostrum slender; pronotum broader than long, with sides rounded; secondary mesocoxal process complete.

Distribution: Holarctic Region.

Subgenus *Aphlorhynchites* **subg. nov.**

Haplorhynchites: Voss, 1938 (nec Voss, 1930), Kol. Rdsch., 24: 135; Voss, 1941, Mitt. münch. ent. Ges., 31: 672; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 88; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 120.

Type species: *Haplorhynchites laevior* (Faust)

Diagnosis. Head not constricted at the base; elytra with intervals of striae almost flat.

Distribution: Holarctic Region.

Etymology: Anagram of *Haplorhynchites*, masculine.

1. *Haplorhynchites* (*Aphlorhynchites*) *funebri* (Sharp, 1889) **comb. nov.**

(Figs. 16,A,B)

Rhynchites funebri Sharp, 1889, Trans. ent. Soc. Lond., 1889: 64 (Sapporo); Schilsky, 1903, Käf. Eur., 40: S. 7; *Involvulus funebri*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 102; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl.50 (subg. *Haplorhynchites*).

Male. Piceous black; derm with suberect brown hairs; erect setae absent.

Head quadrate, not constricted at the base; eyes large, less prominent laterally; frons flat, broader than the diameter of eye; rostrum a little longer than pronotum, rather strongly bent near the antennal insertions. Antennae less slender; funicle with 1st to 4th segments almost of same length.

Pronotum broader than long, sides rounded, basal and subapical constrictions absent; dorsum convex, densely and strongly punctate, with median furrow. Procoxa with distinct setose sex patch; postcoxal projections contiguous to each other.

Elytra with striae closely punctate, scarcely grooved; intervals flat, almost glabrous with inconspicuous puncticles, much broader than striae;

scutellar striole present, composed of some three punctures; 9th stria extended to the apex of elytra.

Legs with spindulate femora; strigation on the dorsal ridges indistinct. Tibiae straight, weakly compressed, each with one spur; four posterior tibiae milled on dorsal ridges.

Abdomen with venter sunken; pygidium with distinct costa overlapped by elytra.

Male genitalia with broad endophallic sclerites.

Length: 5.0 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: 1 male, Ashorobuto, Ashoro, Hokkaido Pref., 23. v. 1957, M. Takahashi leg.

Distribution: Hokkaido.

2. *Haplorhynchites* (*Aphlorhynchites*) *amabilis*

(Roelofs, 1874)

(Fig. 16,C)

Rhynchites amabilis Roelofs, 1874, Ann. Soc. Ent. Berg., 17: 145; Sharp, 1889, Trans ent Soc Lond., 1889: 63; Schilsky, 1903, Käf. Eur., 40: R, 2; - *Haplorhynchites amabilis*: Kôno & Morimoto, 1958, Mushi, 31: 27, (Shanshi, North China); - *Involvulus amabilis*: Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, 256, pl. 50 (subg. *Haplorhynchites*).

Rhynchites pilosus: Voss, 1938 (nec Roelofs, 1874), Kol. Rdsch., 24: 143 (subg. *Haplorhynchites*); Kôno & Morimoto, 1958, Mushi, 31: 27-28, (note on misidentification in Voss, 1938); - *Haplorhynchites pilosus*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 89, 90 - *Involvulus pilosus*: Voss, 1969, Ent. Arb. Mus. Frey, 1969: 127, 128 (subg. *Haplorhynchites*).

Piceous black with blue lustre; derm with suberect brown hairs; erect setae absent.

Head quadrate, not constricted at the base; eyes large, less prominent laterally; frons flat, as broad as (male) or broader (female) than the diameter of eye; rostrum as long as (male) or 1.3 times as long as (female) pronotum, rather strongly bent near the antennal insertions (male) or equally curved ventrally (female). Antennae less slender; funicle with 2nd and 3rd segments longer than the 1st.

Pronotum broader than long, sides rounded, basal and subapical constrictions absent; dorsum convex, densely and strongly punctate, with median keel.

Procoxa with distinct setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae closely punctate, not grooved; intervals flat, with strong puncticles, much broader than striae; scutellar striole composed of some two punctures or sometimes indistinct; 9th stria extended to the apex of elytra.

Legs with spindulate femora; strigation on the dorsal ridges indistinct.

Tibiae straight, weakly compressed, each with one spur; four posterior tibiae milled on dorsal ridges.

Abdomen with venter sunken (male) or weakly inflated (female); pygidium with distinct costa overlapped by elytra.

Male genitalia with broad endophallic sclerites.

Length: 4.3 - 4.7 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: (Honshu) 1 male, Mt. Sasagamine, Niigata Pref., 16. vi. 1973, K. Baba leg.; 1 male, Onna-zawa, Ina, Nagano Pref., 16. vi. 1962, K. Oshima leg.; (Kyushu) 1 female, Mt. Hikosan, Fukuoka Pref., 10-11. v. 1942, I. Fukushima & S. Ito leg.

Distribution: Japan (Honshu and Kyushu) and China (Shanshi).

Involvulus Schrank, 1798

Involvulus Schrank, 1798, Fn. Boica, 1: 474, 475, 476, 477, 506; Seidlitz, 1891, Fn. Balt. ed. 2, 1887-'91: 668; Seidlitz, 1891, Fn. Transsylv.: 742, 743; Schilsky, 1903, Käf. Eur., 40: F, N; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 94; Voss, 1938, Kol. Rdsch., 24: 132, 133; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 119, (Type species: *I. metallicus* (= *I. cupreus*) by subsequent designation by Ter-Minassian).

Diagnosis. Head quadrate, transverse or entirely globular with neck region, rostrum short or long; lateral thorn absent in both sexes; secondary mesocoxal process complete; elytra without scutellar striole, 9th stria confluent with 10th at the middle of elytron; each tibiae with one or two spurs, sometime absent in fore tibia.

Distribution: Chiefly Palearctic and Oriental

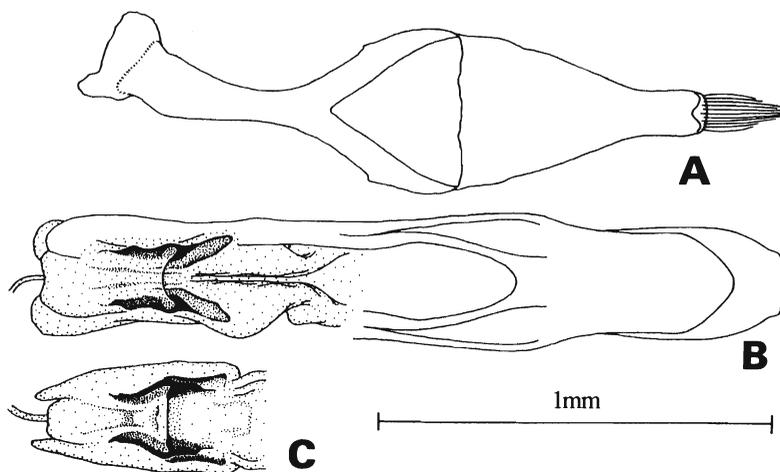


Fig. 16. Male genitalia of *Haptorhynchites* spp. — A, B: *H. funebris*. C: *H. amabilis*.

Regions, a few species distribute to West Africa or North-east America.

Subgenus *Cartorhynchites* Voss, 1932

Cartorhynchites Voss, 1932, Philipp. J. Sci., 49: 555; Voss, 1935, Tijdschr. v. Ent., 78: 104; Voss, 1938, Kol. Rdsch., 24: 135; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 137, (Type species: *Rhynchites pallicolis* by monotypy).

Diagnosis. Rostrum short; pygidium costate.

Distribution: Oriental Region, Far East and West Africa.

1. *Involvulus* (*Cartorhynchites*) *flavus* sp. nov. (Figs. 17,B-G)

Male. Fulvous to fuscous, vertex with slight green lustre; derm with recumbent hairs; hairs of uneven length, yellow in dorsal surface, white in ventral surface; brown suberect setae scattered on elytra. Head quadrate, weakly constricted at base; frons flat, with strong punctures; eyes large, prominent laterally; rostrum short and stout, with apex broad but not depressed; antennae inserted at the middle

of rostrum, funicle with 2nd segment much narrower than 1st.

Pronotum broader than long, rounded laterally, subapical constriction indistinct; dorsum less convex, separately punctate with a pair of very faint oblique depressions; hairs antero-proximad on dorsum. Procoxal setose sex patch absent; postcoxal projections contiguous to each other; central sternal piece pointed ventrally. Scutellum oblong, densely covered with hairs.

Elytra parallel-sided, with striae closely punctate but scarcely grooved; intervals slightly convex, much broader than striae. Sutural intervals broadened behind scutellum but scutellar striole absent; 9th stria confluent with 10th above 1st ventrite.

Legs with spindulate femora; four posterior femora each with two rows of piceous spiculi on the dorso-apical edges; spiculi arranged into an irregular row on fore femur. Tibiae compressed, dilated apically, weakly curved; four posterior tibiae milled on dorsal ridge, with setose fringes open; middle and hind tibiae each with one short obtuse spur, fore tibia without spur. Tarsi with 1st

segment shorter than 2nd and 3rd combined; claws bifid, inner branch broad.

Abdomen sunken; terga of 1st to 6th segments completely sclerotized, not divided; spiracles of 2nd to 6th segments opening on median sclerites; pygidium with costa overlapped by elytra.

Male genitalia almost symmetrical, median lobe with ventral plate truncate apically; internal sac spiniferous, with small endophallic sclerite.

Female. Eyes smaller, rostrum longer and broader with apex depressed; pronotum almost as long as broad; elytra not dilated, parallelsided as in the male; abdomen weakly inflated.

Length: 3.0 - 3.5 mm (excl. rostrum).

Biology: unknown; a newly emerged weevil (remaining mandibular appendages) was collected in the middle of May.

Holotype: male (Type No. 2885, Kyushu Univ.), Ushiku-mori, Iriomote Is., 9. iii. 1964, Y. Miyatake leg.

Paratypes: (Iriomote Is.) 1 female, Upper Nakara, Iriomote Is., 12. iii. 1964, Y. Miyatake leg.; 1 female, Mt. Gozadake, Iriomote Is., 11. v. 1973, I. Fujiyama leg.; 1 female, Kami, Iriomote Is., 18. vii. 1963, Y. Miyatake leg.; (Ishigaki Is.) 1 male, Mt. Omoto, Ishigaki Is., 16. iii. 1964, S. Kimoto leg.; 1 male, Mt. Odoto, Ishigaki Is., 14. x. 1963, Y. Hirashima leg.; 1 male, Mt. Banna, Ishigaki Is., 7. x. 1963, K. Morimoto leg.; 1 male, Ishigaki Is., 14. xi. 1963, H. Hasegawa leg., (NIAES).

2. *Involvulus* (*Cartorhynchites*) *singularis*

(Roelofs, 1874)

(Figs. 17,H,I)

Rhynchites singularis Roelofs, 1874, Ann. Soc. ent. Berg., 17: 147, (Nagasaki and Higo; oak); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 67; Schilsky, 1903, Káf. Eur., 40: R; Voss, 1939, Mitt. Münch. ent. Ges., 29: 611, (Unzen, Shimabara; subg. *Involvulus*); Voss, 1942, Mitt. Münch. ent. Ges., 32: 91, (Fukien, 2300m); *Involvulus singularis*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 95, 103 Voss, 1958, Decheniana Beih., 5: 6, (subg. *Involvulus*); Nakane, 1963, Icon. Ins. Jpn., 2: 355, pl. 178; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 260; Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Derm maculate, largely piceous and partially fuscate; suberect long hairs partially arranged into white flecks; derm with weak green lustre; brown

erect setae scattered on elytra.

Head quadrate with basal constriction scarce but distinct on dorsal part; rostrum as long as (female), or 4/5 times as long as (male) pronotum, covered with dense decumbent hairs.

Pronotum as long as broad, basal half parallel-sided; subapical constriction strong; dorsum convex with a pair of oblique impressions, strongly punctate except for three glabrous calli among and behind impressions; subapical constriction transversely strigate. Procoxa with setose sex patch in the male; postcoxal projections contiguous to each other, central sternal piece protrude ventrally from the level of postcoxal projections.

Elytra with striae strongly but separately punctate, not grooved; intervals flat, much broader than striae; sutural intervals broadened behind scutellum; 9th stria confluent with 10th above 1st ventrite.

Legs with spindulate femora; four posterior femora each with two rows of piceous spiculi on the dorso-apical edges. Tibiae compressed, dilated apically, weakly curved; four posterior tibiae milled on the dorsal ridges, each with one spur; fore tibiae without spur.

Abdomen with venter sunken (male) or weakly inflated (female); pygidium with costa overlapped by elytra.

Male genitalia with complex endophallic sclerites.

Length: 2.8 - 3.5 mm (excl. rostrum).

Host: *Symplocos coreana* (J.N.: Tan'na-sawafutagi).

Specimens examined: (Honshu) 1 male, Omi-one, Kyoto Pref., 21. viii. 1979, N. Nishida leg.; 2 males, Kibune, Kyoto Pref., 15. v. 1981, Y. Sawada leg.; 2 males, Mt. Daisen Tottori Pref., 9. vi. 1981, H. Takamoto leg.; (Kyushu) 1 male, Mt. Hikosan, Fukuoka Pref., 17. ix. 1946, K. Yasumatu leg.; 3 males, 2 females, same locality, 9-10. v. 1985, Y. Sawada leg.; 11 male, 7 females, Mt. Sefuri, Saga Pref., 18. v. 1988, Y. Sawada leg.; 1 male, 1 female, Mt. Kuju-kurodake, Oita Pref., 27-29. iv. 1985, K. Konishi & Y. Sawada leg.; (Yakushima) 1 female, Mt. Aikodake, 11. v. 1983, Y. Sawada leg.

Distribution: Japan (Honshu, Kyushu and

Yakushima Is.) and China (Fukien).

3. *Involvulus (Cartorhynchites) amamiensis*

Voss, 1971

(Figs. 17,A,J)

Involvulus amamiensis Voss, 1971, Mem. Fac. Educ., Kagawa Univ., 2 (202) : 44-45, (Naze and Uragami; subg. *Cartorhynchites*); Morimoto, 1984, Coleopt. Jpn. Col., 4 : 255, pl. 50.

Piceous to fuscous with green lustre; antennae, legs and greater parts of elytra except for their margins testaceous without lustre; derm with fine decumbent hairs.

Head quadrate, constricted at base; eyes large, prominent laterally; rostrum almost 1/2 times (male) or 2/3 times (female) as long as pronotum.

Pronotum as long as or a little longer than broad, not convex dorsally, less prominent laterally; parallel-sided at the basal half; subapical constriction strong at sides and weak on dorsum. Procoxal setose sex patch absent; postcoxal projections contiguous to each other, central sternal piece protrude ventrally from the level of postcoxal projections.

Elytra with striae strongly punctate, weakly grooved; intervals each with a row of puncticles; sutural intervals scarcely broadened behind scutellum; 9th stria extinct above metacoxa.

Legs with spindulate femora; four posterior femora each with two rows of spiculi on the dorso-apical edges. Fore tibiae straight, without spur; four posterior tibiae compressed, weakly curved, milled on dorsal ridges, each with one spur.

Abdomen with venter scarcely sunken (male) nor inflated (female); pygidium with costa overlapped by elytra. Male genitalia less pigmented, with distinct endophallic sclerites.

Length: 2.2 - 2.5 mm (excl. rostrum).

Host: Some individuals were collected from *Symplocos microcalyx* (J.N.: Amashiba).

Specimens examined: 3 males, 2 females, Naze,

Amami-oshima Is., 9. x. 1960, K. Yamada leg., (holo- and paratypes of *Involvulus amamiensis* Voss; ELKU); 1 female, Uragami, Amami-oshima Is., 23. ix. 1960, K. Yamada leg., (paratype of *Involvulus amamiensis* Voss; ELKU); 1 male, 3 females, Mt. Yuwan-dake, Amami-oshima Is., 31. vii. 1963, Y. Hirashima & L. Gressitt leg.; 3 males, 1 female, same locality, 24. iii. 1980, H. Takemoto leg.; 2 females, same locality, 5. v. 1987, T. Ogata leg.; 1 male, Maruhata, Amami-oshima Is., 22. iii. 1986, T. Ogata leg.; 1 female, Hatsuno, Amami-oshima Is., 23. iii. 1986, T. Ogata leg.

Distribution: Amami-oshima Is.

4. *Involvulus (Cartorhynchites) apertus*

(Sharp, 1889)

(Fig. 17,K)

Rhynchites apertus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 66, (Kashiwagi, Nagasaki, Chuzeji, Yezo); - *Dasophylus apertus*: Voss, 1938, Stett. ent. Ztg., 99: 73, 78-79; Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50; - *Involvulus apertus*: Sawada, 1988, Kontyû, 56: 562, (subg. *Cartorhynchites*).

Male. Piceous with blue lustre; derm with dense recumbent fine hairs; erect setae on elytra inconspicuous.

Head transverse, weakly constricted at base, separately punctate; frons convex (female) or less convex (male), narrower than the diameter of eye, almost as broad as rostrum, temple shorter than a half of the diameter of eye; eyes large, prominent laterally. Rostrum stout, as long as head, 2/3 (male) or 3/4 (female) times as long as pronotum. Antennae inserted at the middle (male) or behind the middle of rostrum, funicle with 1st segment as broad as scape, 2nd much narrower than 1st, 7th spherical longer than broad.

Pronotum almost as long as broad, weakly convex dorsally and scarcely rounded laterally; subapical constriction weak; dorsum separately punctate. Procoxa with long white hairs, setose sex patch small but distinct in the male; postcoxal projections not contiguous to each other. Scutellum oblong.

Elytra with striae closely punctate, grooved; intervals much broader than striae, weakly convex with some two rows of puncticles; sutural intervals

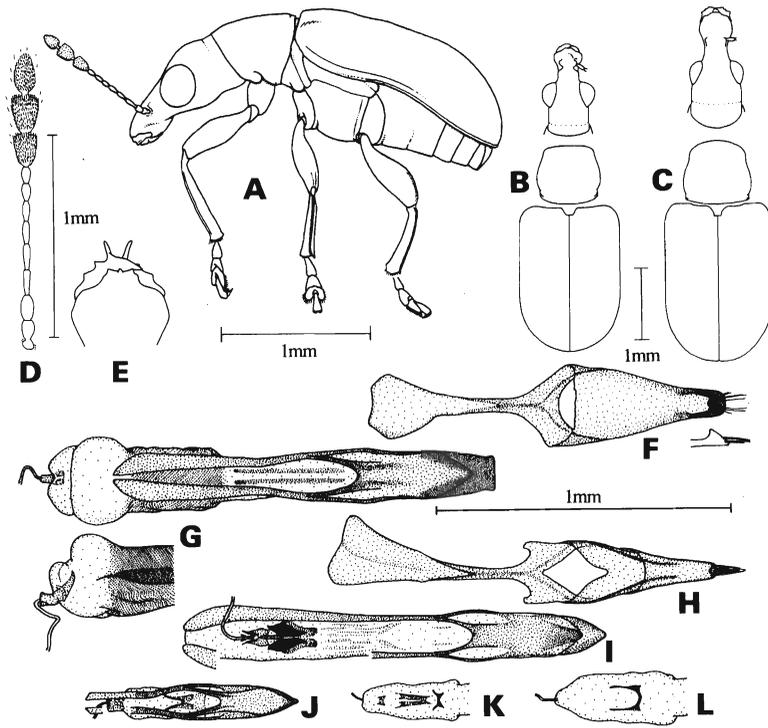


Fig. 17. Habitus antenna, mandibular appendages and genitalia of *Involvulus* (*Cartorhynchites*) spp.— A, J: *I. (C.) amamiensis*, (A: male). B–G: *I. (C.) flavus* sp. nov., (B, D: male. C, E: female). H, I: *I. (C.) singularis*. K: *I. (C.) apertus*. L: *I. (C.) subtilis* sp. nov.

weakly broadened at just behind scutellum; 9th stria confluent with 10th above metacoxa or 1st ventrite.

Legs with femora clavate, rather compressed; two rows of spiculi distinct on apical parts of middle femora. Fore tibiae straight, almost of same breadth, each with one spur; four posterior tibiae weakly curved, dilated apically, milled on dorsal ridges, each with one spur. Tarsi with 1st segment shorter than 2nd and 3rd combined; adhesive spongy hairs of 3rd segment long; claws bifid, inner branch spatulate.

Abdomen with venter weakly inflated (female) or scarcely sunken (male); pygidium with costa overlapped by elytra.

Male genitalia with complex endophallic sclerites.

Length: 2.1 – 3.0 mm (excl. rostrum).

Biology: Some weevils were collected from leaves of *Symplocos coreana* (J.N.: Tan'na-sawafutagi); one weevil overwintering under the bark of *Litsea glauca* (J.N.: Shirodamo) was collected in March.

Specimens examined: (Honshu) 1 male, Mt. Kurikoma, Miyagi Pref., 21. vi. 1983, Y. Sawada leg.; 1 male, Mt. Madarao, Niigata Pref., 26. viii. 1970, K. Baba leg.; 2 females, Mt. Daihizan, Kyoto Pref., 30. v. 1953, T. Kishii leg.; 1 female, Mt. Omi-one, Kyoto Pref., 17. v. 1982, Y. Sawada leg.; (Shikoku) 1 male, Jinzenji, Kochi Pref., 24. iii. 1955, K. Morimoto leg.; (Kyushu) 1 male, Mt. Hikosan, Fukuoka Pref., 2-4. v. 1984, Y. Sawada leg.; 2 males, Mt. Sefuri, Saga Pref., 18. v. 1988, Y. Sawada leg.; 1 female, Mt. Kyogadake, Saga Pref., 30. iv. 1985, T. Ogata leg.; 1 male, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.; 1 male, 1 female, Mt. Shiratori, Kumamoto Pref., 17-18. ix. 1980, H. Takemoto leg.; (Tsushima) 1 male, 1 female, Mt. Maishinodan, Tsushima Is., 22. v. 1985, Y. Sawada leg.

Distribution: Hokkaido, Honshu, Shikoku, Kyushu and Tsushima.

5. *Involvulus (Cartorhynchites) subtilis* sp. nov.
(Fig. 17,L)

Male. Piceous, legs reddish; derm with dense recumbent hairs; hairs brown in dorsal surface, bluish white in ventral surface and scutellum; erect setae on elytra inconspicuous.

Head transverse, weakly constricted at base, separately punctate; frons less convex, narrower than the diameter of eye, broader than rostrum at the base, temple shorter than the radius of eye; eyes large, prominent laterally. Rostrum stout, as long as head, 3/5 times as long as pronotum, irregularly punctate. Antennae inserted at the middle of rostrum, funicle with 1st segment thicker than scape, 2nd much narrower than 1st, 7th much longer than broad.

Pronotum a little longer than broad, weakly convex dorsally and weakly rounded laterally; subapical constriction strong at sides, weak on dorsum; dorsum separately punctate. Procoxa with long white hairs, setose sex patch small but distinct; postcoxal projections not contiguous to each other. Scutellum oblong.

Elytra with striae closely punctate, grooved; intervals much broader than striae, weakly convex with some two rows of puncticles; sutural intervals weakly broadened at just behind scutellum; 9th stria confluent with 10th above 1st ventrite.

Legs with femora clavate, rather compressed; two rows of spiculi distinct on apical parts of four posterior femora. Fore tibiae straight, almost of same breadth, each with one spur; four posterior tibiae weakly curved, dilated apically, milled on dorsal ridges, each with one spur.

Tarsi with 1st segment shorter than 2nd and 3rd combined; adhesive spongy hairs of 3rd segment long; claws bifid, inner branch spatulate.

Abdomen with venter scarcely sunken, almost straight in lateral view; pygidium with costa

overlapped by elytra.

Male genitalia with endophallic sclerite arcuate.

Female. Frons convex; rostrum longer, 4/5 times as long as pronotum; antennae inserted behind the middle of rostrum; pronotum as long as broad, less rounded laterally; abdomen with venter weakly inflated.

Length: 2.4 - 2.8 mm (excl. rostrum).

Biology: unknown.

Holotype: male (Type No. 2886, Kyushu Univ.), Shikina, Okinawa Is., 10. v. 1957, K. Iha leg.

Paratypes: (Okinawa Is.) 1 female, same data as holotype; 1 male, 4 females, same locality and collector, 13. v. 1957; 1 male, Shuri, Okinawa Is., 22. iv. 1961, O. Nakachi leg.; 1 female, same locality and collector, 31. v. 1961; 1 male, 1 female, same locality, 24. vi. 1979, K. Ogata leg.; 1 female, Yona - Hedo, Okinawa Is., 14. xi. 1960, K. Yasumatu leg.; (Yaeyama Isls.) 1 male, 2 females, Mt. Omoto-dake, Ishigaki Is., 14. x. 1963, Y. Hirashima & K. Morimoto leg.; 1 female, same locality, 19. iv. 1979, H. Makihara leg.; (Amami Isls.) 1 female, Mt. Amagidake, Tokunoshima Is., 4. v. 1988, T. Ogata leg.

Distribution: Ryukyus (Tokunoshima Is., Okinawa Is., and Ishigaki Is.).

Note. This species resembles *Involvulus (C.) apertus* in many features, but the blue lustre is absent and the pronotum is almost cylindrical.

Subgenus *Metarhynchites* Voss, 1923

Metarhynchites Voss, 1923, Phillip. J. Sci., 22: 489; Voss, 1938, Kol. Rdsch., 24: 135; Mitt. Münch. ent. Ges., 31: 663, (Type species: *Rh. arduus* by subsequent designation by Voss, 1938).

Diagnosis. Head cylindrical; eyes less prominent; pygidium costate.

Distribution: Japan, Taiwan, Philippines, Sumatra, Thailand, India, Ceylon, East Africa and South Africa.

6. *Involvulus (Metarhynchites) apionoides*
(Sharp, 1889)

(Figs. 18,A; 19,G,H)

Rhynchites apionoides Sharp, 1889, Trans. ent. Soc. Lond., 1889: 67, (plain of Fujisan); Schilsky, 1903, Kaf. Eur., 40: S; - *Involvulus apionoides*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 95, 99; Voss, 1969, Ent. Arb. Mus. Frey., 1969: 236; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256.

Piceous black with blue lustre; derm with recumbent hairs; erect setae absent.

Head oblong, cylindrical, constricted at base; eyes less prominent; rostrum as long as (female) or a little shorter (male) than pronotum.

Pronotum as long as broad (male) or broader than long, sides strongly rounded; basal and subapical constrictions weak; dorsum convex, very strongly punctate, rugose partially with longitudinal wrinkles; median longitudinal keel distinct. Procoxa with distinct setose sex patch in the male; postcoxal projections contiguous to each other, central sternal piece.

Elytra with striae separately punctate, weakly grooved. Intervals almost flat, broader than striae, with each one row of setigerous puncticles in major parts; the puncticles arranged into two rows in dorsal part. Ninth stria extinct above 1st ventrite.

Legs with spindulate femora; tibiae almost straight, four posterior tibiae milled on dorsal ridges; fore and middle tibiae each with one spur, fore ones short; hind tibiae with each two spurs.

Abdomen with venter inflated (female) or almost straight (male); pygidium with costa overlapped by elytra.

Male genitalia with distinct endophallic sclerites; ventral plate of median lobe truncate at apex.

Length: 2.5 - 2.9 mm (excl. rostrum).

Host: *Berberis Thunbergii* (J.N.: Megi).

Specimens examined: 1 male, Iwakura, Kyoto Pref., 11. x. 1981, Y. Sawada leg.; 1 male, Yugawara, Kanagawa Pref., 2. v. 1955, K. Kawashima leg.; 1 male, Lake Kamakita, Saitama Pref., 3. v. 1971, S. Miyakawa leg.; 3 males, 3 females, Kitano, Hachioji, Tokyo Pref., 28. xi. 1969, S. Miyakawa leg.

Distribution: Japan (Honshu).

Subgenus *Involvulus* s. str.

Involvulus: Voss, 1938, Kol. Rdsch., 24: 136. *Euvolvulus* Reitter, 1916, Fn. Germanica, 5: 262, 264, (subg. of *Rhynchites*), (Type species: *Rh. cupreus* by original designation).

Diagnosis. Pronotum less prominent laterally, almost cylindrical or trapezoidal, separately punctate; rostrum moderately long and thick; pygidium costate.

Distribution: Palearctic and Oriental Regions and their periphery.

7. *Involvulus (Involvulus) cylindricollis*

(Schilsky, 1906)

(Figs. 19,A-E)

Rhynchites cylindricollis Schilsky, 1906, Kaf. Eur., 42: 82, (suburbs of Tokyo; subg. *Involvulus*); - *Involvulus cylindricollis*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 104, 105; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl. 50 (*cylindricus* err.).

Rhynchites dybofskyi? Sharp, 1889 (nec Faust, 1882), Trans. ent. Soc. Lond., 1889: 65, (Tokyo, Sapporo).

Rhynchites conicus: Sharp, 1889 (nec Illiger, 1807), Trans. ent. Soc. Lond., 1889: 66, (Wada-toge); Morimoto, 1983, Esakia, 20: 54, (as a synonym of *cylindricus* (sic) Schilsky, 1906).

Rhynchites cupreus: Sharp, 1889 (nec Linnaeus, 1758), Trans. ent. Soc. Lond., 1889: 65, (Sapporo); Yuasa, 1939, Nogyo to Engei, 14: 1307-1311, (Honshu; biology); Nakane, 1963, Icon. Ins. Jpn., 2: 355, pl. 178.

Rhynchites cupreus f. *purpureo-violacea* (sic) Voss, 1920, Dt. ent. Z., 1920: 164, (Hakodate); Voss, 1938, Kol. Rdsch., 24: 150; Kōno, 1935, Ins. Matsum., 9: 105, 106, (Etorofu and Uruppu Isls.); - *Involvulus cupreus* f. *purpureo-violacea*: Voss, 1969, Ent. Arb. Mus. Frey, 1969: 172; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, 257, pl. 50; - *Involvulus cupreus purpureoviolaceus*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 98. Syn. nov.

Piceous black with bluish green, blue or purple lustre, derm with recumbent hairs; hairs dark and dense in dorsal surface, light and sparse in ventral surface; very fine erect setae present on elytra.

Head quadrate, with basal constriction faint; eyes prominent; frons narrower (male) or as broad as (female) the diameter of eye; rostrum shorter or almost as long as pronotum in the male, 5/4 times as long as pronotum in the female.

Pronotum a little broader (male) or almost as

broad as (female) long, broadest at the base, slightly narrowed anteriorly, basal and subapical constrictions absent; dorsum less convex, strongly punctate without distinct median keel nor furrow. Procoxa with setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae separately punctate, not grooved; intervals weakly convex, irregularly punctate, as broad as striae; 9th stria confluent with 10th above 1st ventrite.

Legs with tibiae almost straight, each with one spur; four posterior tibiae milled on dorsal ridges.

Abdomen with venter sunken (male) or almost straight (female), more or less punctate; pygidium with distinct costa overlapped by elytra.

Male genitalia with elongate endophallic sclerite.

Length: 3.7 - 4.8 mm (excl. rostrum).

Biology: Fruit-stinger of plum, peach and apple. Some specimens were collected from a kind of mountain ash (*Sorbus sambucifolia* var. *pseudogracilis*; J.N.: Miyama-nanakamado) (Kono, 1935; Yuasa, 1939; Morimoto, 1979).

Specimens examined: (Kyushu) 1 male, Mt. Kuju-kurodake, Oita Pref., 11. v. 1982, R. Noda leg.; (Honshu) 3 males, 7 females, Mt. Daisen, Tottori Pref., 26. v. - 8. vi. 1954, S. Kimoto leg.; 1 male, Hanase, Kyoto Pref., 20. v. 1956, T. Kishii leg.; 2 males, Omi, Ohara, Kyoto Pref., 14-19. v. 1984, T. Matsumoto leg.; 2 females, Nobeyama, Nagano Pref., 2. ix. 1978, H. Makihara leg.; 1 female, Utsukushigahara, Nagano Pref., 2. viii. 1961, T. Syoji leg.; 1 female, Hakone, 26. vi. 1961 K. Morimoto leg.; 2 males, 3 females, Chichibu, Saitama Pref., v. 1974, T. Oishi leg.; (Sado Is.) 1 male, 1 female, Mt. Myoken, Sado, 19-23. viii. 1985, K. Baba leg.; (Hokkaido) 1 male, Hakodate, Japan, Staudgr., (original example of *Rhynchites cupreus* f. *purpureo-violacea* Voss; "Schilsky vid haud ded"; E. Voss ded. Eing. Nr. 14-57; ZIM); 4 males, 3 females, Yukomanbetsu, Mts. Daisetsu, 1. vii. 1982, Y. Sawada leg.; 2 males, Ashoro, 23. vi. 1986, K. Morimoto leg. 1 female, Mt. Rausu, 1. viii. 1974, I. Matoba leg.; (Etorofu Is.) 1 male, Naibo, Etorofu, 5. viii., R. Yoshii leg.

Distribution: Kuril Isls., Japan (Hokkaido, Honshu and Kyushu).

Note. This species varies in body size and colour among local populations or races. The male endophallic sclerites are, however, completely

stable in the species: through this structure, it is separable from the related species *Involvulus cupreus*.

8. *Involvulus (Involvulus) pilosus*

(Roelofs, 1874)

(Fig. 19,F)

Rhynchites pilosus Roelofs, 1874, Ann. Soc. ent. Berg., 17: 145; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 64; Schilsky, 1903, Kaf. Eur., 40: R; Schilsky, 1906, l. c., 42: 84 (subg. *Involvulus*); - *Involvulus pilosus*: Nakane, 1963, Icon. Ins. Jpn., 2: 355, pl. 178; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl. 50.

Rhynchites amabilis: Voss, 1938, Kol. Rdsch., 24: 164, (subg. *Involvulus*); Kôno & Morimoto, 1958, Mushi, 31: 27-28, (note on misidentification in Voss, 1938); - *Involvulus amabilis*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 101.

Piceous black with strong blue lustre; derm with erect and suberect long setae.

Head quadrate (male) or transverse (female), not constricted at base; eyes prominent; rostrum as long as (male) or 1.4 times as long as (female) pronotum.

Pronotum a little broader than long; sides rounded, broadest at the basal 1/3, then subparallel posteriorly; basal constriction scarce, subapical constriction distinct on dorsal surface; dorsum convex, separately punctate but irregular at the centre. Procoxa with setose sex patch small but distinct in the male; postcoxal projections contiguous to each other.

Elytra with striae separately punctate, not grooved; each interstice between punctures with setigerous puncticle; setae of interstitial puncticles dorsad or antero-dorsad. Intervals flat, broader than striae, each with one row of setigerous puncticles; puncticles of intervals strong, but weaker than ones of striae; setae of intervals postero-dorsad, as long as ones of striae; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; hind femora compressed. Tibiae straight, each with one spur; two posterior tibiae compressed, dilated apically, milled on dorsal ridges.

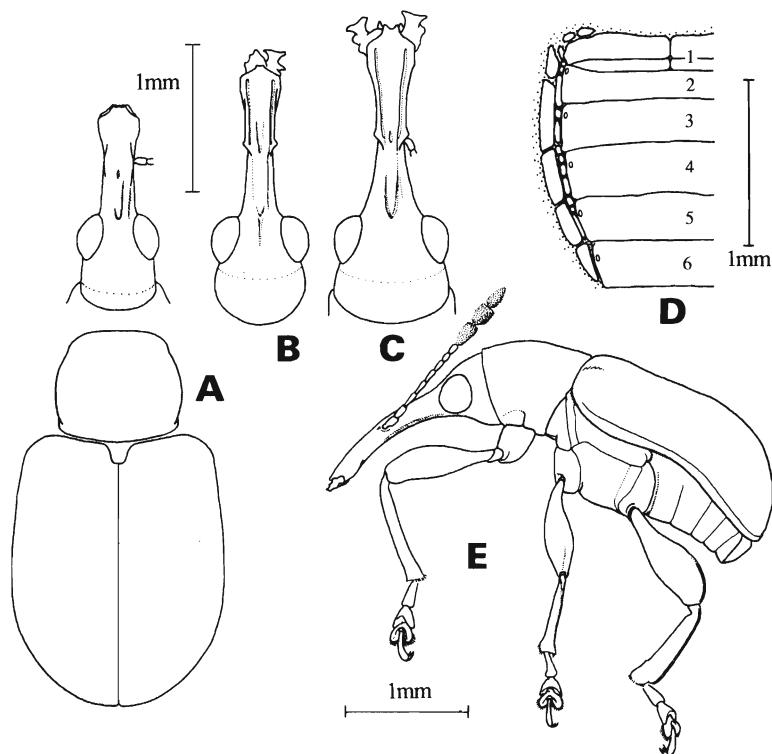


Fig. 18. Heads, habitus and abdominal tergum of *Involvulus* spp. — A: *I. (Metarhynchites) apionoides*, male. B, C: *I. (Involvulus) aes*, (B: male, C: female). D, E: *I. (Hyporhynchites) cornix* sp. nov., (E: male).

Abdomen with venter weakly sunken (male) or almost straight (female); pygidium with distinct costa overlapped by elytra.

Male genitalia with broad endophallic sclerites.

Length: 3.7 - 4.6 mm (excl. rostrum).

Biology: Shoot-stinger of rose.

Specimens examined: (Honshu) 1 male, Kurokawa, Niigata Pref., 15. vii. 1964, K. Baba leg.; 1 female, Shimashima val., Nagano Pref., 20. vii. 1987, Y. Sawada leg.; 1 male, Omi - Ohara, Kyoto Pref., 16. vi. 1984, T. Matsumoto leg.; 2 males, Hanazono, Iwakura, Kyoto Pref., 29. iv. 1979, Y. Sawada leg.; 1 female, Joyo, Kyoto Pref., 4. iv. 1978, H. Nishida leg.; (Shikoku) 1 male, Tosayama, Kochi Pref., 13. iv. 1956, A. Yamaguchi leg.; (Kyushu) 1 male, 1 female, Mt. Tachibana, Fukuoka Pref., 13. iv. 1983, Y. Sawada leg.; 1 male, Shiya pass, Miyazaki Pref., 16. vi. 1985, T. Goto leg.

Distribution: Japan (Honshu, Shikoku and Kyushu).

Note. Kono & Morimoto (1958) pointed out that Voss (1938-69) misunderstood *Rhyhchites pilosus* and *Rh. amabilis* and vice versa. Later, Morimoto (1988, personal communication) ascertained this fact by the examination of the types.

9. *Involvulus (Involvulus) placidus*
(Sharp, 1889)
(Fig. 19,K)

Rhynchites placidus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 63. (Tokyo, Yokohama, Junsai); Schilsky, 1903, Kaf. Eur., 40: R, 6; Schilsky, 1906, Kaf. Eur., 42: 83, (subg. *Involvulus*); Voss, 1938, Kol. Rdsch., 24: 158; - *Involvulus placidus*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 101,

105; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 237; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl. 50.

Piceous black with bluish green lustre; derm with dense recumbent grey hairs; erect setae on elytra inconspicuous, shorter than recumbent hairs.

Head transverse, scarcely constricted at base; eyes prominent; rostrum a little shorter (male) or a little longer (female) than pronotum. Antennae inserted behind the middle of rostrum; funicle with three basal segments of same length, longer than 4th.

Pronotum almost as long as broad, sides rounded, basal constriction weak, subapical constriction distinct; dorsum moderately convex, densely and strongly punctate, sometimes with median keel. Procoxa with indistinct setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae not grooved, punctate and puncticulate; intervals flat, broader than striae, densely puncticulate; puncticles on striae and intervals with recumbent hairs; 9th stria extinct above metacoxa.

Legs with fusiform femora. Tibiae almost straight, each with two spurs; four posterior tibiae dilated apically, compressed with dorsal ridge milled.

Abdomen with venter almost straight (male) or inflated (female); pygidium with costa overlapped by elytra.

Male genitalia with broad endophallic sclerites. Length: 3.4 - 4.4 mm (excl. rostrum).

Host: *Elaeagnus* spp. (J.N.: Gumi).

Specimens examined: 2 males, 5 females, Mt. Fujisan, Miura pen., Kanagawa Pref., 9. v. 1982, S. Miyakawa leg.; 1 male, 2 females, Senami, Niigata Pref., 21. vii. 1977, K. Baba leg.; 5 males, Mt. Myoken, Sado Is., 21-22. viii. 1985, K. Baba leg.; 1 female, Ogi, Sado Is., 22. vii. 1970, K. Baba leg. Distribution: Hokkaido and Honshu.

10. *Involvulus (Involvulus) plumbeus*

(Roelofs, 1874)

(Fig. 19.L)

Rhynchites plumbeus Roelofs, 1874, Ann. Soc. ent. Berg., 17: 143, 144, (Japan; from yam); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 63, (*Bryonia* sp.; include a specimen from N. China); Schilsky, 1903, Káf. Eur., 40: P, 45, (subg. *Involvulus*); Voss, 1938, Kol. Rdsch., 24: 166; - *Involvulus plumbeus*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 100, 101; Nakane, 1963, Icon. Ins. Jpn., 2: 355, pl. 178; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 302, 303; Morimoto, 1984, Coleopt. Jpn. Col., 4: 256, pl. 50.

Piceous black with weak bluish green lustre; derm with fine suberect hairs; longer erect setae scattered on elytra.

Head transverse, not constricted at base, entirely globular with neck region in the female; eyes prominent; rostrum 1.4 (male) or 1.8 (female) times as long as pronotum.

Pronotum a little broader than long, sides strongly rounded, basal constriction weak, subapical constriction distinct; dorsum strongly convex, separately and sometimes wrinkly punctate, median keel developed in most individuals. Procoxa with distinct setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae slightly grooved, punctate and puncticulate; intervals slightly convex, broader than striae; puncticles on striae and intervals with suberect hairs; 9th stria extinct above metacoxa.

Legs with fusiform femora. Tibiae almost straight, each with two spurs; four posterior tibiae dilated apically, compressed with dorsal ridges milled.

Abdomen with venter straight in both sexes; pygidium with costa overlapped by elytra.

Male genitalia with broad endophallic sclerites. Length: 4.0 - 5.0 mm (excl. rostrum).

Host: *Sinomenium diversifolium* (J.N.: Tsuzurafuji). Some specimens were collected from deciduous oak (J.N.: Konara).

Specimens examined: (Honshu) 1 male, 2 females, Senami, Niigata Pref., 9-17. vii. 1983, K. Baba leg.; 1 male, Mt. Awatayama, Kyoto Pref., 27. vii. 1962, T. Maeda leg.; 1 male, Mt. Daihizan, Kyoto Pref., 20. viii. 1964, K. Yamaguchi leg.; 1 female, Kitayama, Kyoto Pref., 23. vii. 1963, T. Ishiguro.; 1 female, Kameoka, Kyoto Pref., 28. viii. 1962, O. Iki leg.; 2 females, Uji, Kyoto Pref., 11. viii. 1967, T. Kato leg.; 1

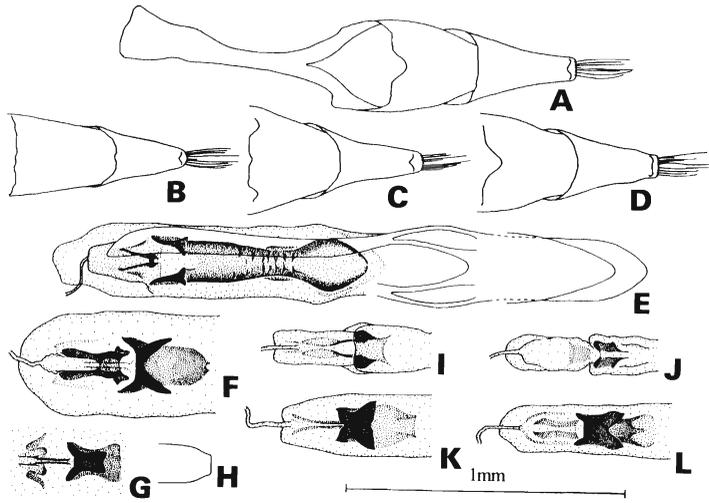


Fig. 19. Male genitalia of *Involvulus* spp. — A—E: *I. (Involvulus) cylindricollis*, (A, E: plum. Saitama. B: f. *purpureovioraceus*, mountain ash, Mts. Daisetu. C: f. *cylindricollis*, Ashoro. D: Mt. Daisen). F: *I. (L.) pilosus*. G, H: *I. (Metarhynchites) apionoides*, (H: apex of ventral plate of median lobe). I: *I. (Hyporhynchites) cornix* sp. nov. J: *I. (H.) aes* sp. nov. K: *I. (L.) placidus*. L: *I. (L.) plumbeus*.

female, Ichihara, Takatsuki, Osaka Pref., 5. vii. 1981, N. Nishida leg.; 1 male, Mt. Maya, Hyogo Pref., 3. ix. 1953, K. Morimoto leg.; (Shikoku) 1 male, Jinzanji, Kochi Pref., 14. vii. 1952, K. Morimoto leg.; (Kyushu) 1 male, Cape Sata, Kagoshima Pref., 6. viii. 1955, Y. Obuchi leg.; (Tsushima) 1 female, Izuhara - Mt. Ariake, Tsushima Is., 9. vi. 1941, T. Shirozu.

Distribution: Korea, Japan (Honshu, Shikoku, Kyushu and Tsushima), and China.

Subgenus *Hyporhynchites* Voss, 1935

Hyporhynchites Voss, 1935, Tijdschr. v. Ent., 78: 101, (Type species: *R. lauraceae* by monotypy).

Involvulus: Voss, 1938, Kol. Rdsch., 24: 148, (in part, 3rd group).

Diagnosis. Tibiae more or less compressed; rostrum slender; head entirely globular with neck region; pronotum rounded laterally, dorsum wrinkly sculptured and rugose; pygidium not costate.

Note. This subgenus may include the species of the 3rd group of the subgenus *Involvulus* defined by Voss (1938).

Distribution: Oriental Region.

11. *Involvulus (Hyporhynchites) cornix* sp. nov. (Figs. 18,D,E; 19,I)

Piceous black with very weak blue lustre; with short decumbent hairs; fine erect setae scattered on elytra.

Head transverse, entirely globular with neck region; eyes less prominent; rostrum 1.8 (female) or 1.3 (male) times as long as pronotum.

Pronotum broader than long; sides rounded, basal constriction weak, subapical constriction indistinct; dorsum moderately convex, rugose, with median furrow. Procoxa with distinct setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae strongly punctate, punctures oblong; striae strongly grooved; intervals broader than striae, convex, rugose with irregular puncticles; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; four posterior femora compressed. Fore tibia almost straight, with dorsal ridge, apex with one spur; four posterior tibiae weakly curved, dilated apically, strongly compressed with dorsal ridges milled, each with two spurs.

Abdomen with venter sunken (male) or weakly inflated (female); pygidium not costate.

Male genitalia with endophallic sclerites.

Length: 2.7 - 3.5 mm (excl. rostrum).

Host: Unknown.

Holotype: male (Type No. 2887, Kyushu Univ.), Mt. Hikosan, Fukuoka Pref., 13-14. vi. 1957, K. Morimoto leg.

Paratypes: (Honshu) 1 male, Ijira v., Gifu Pref., 24. iv. 1983, T. Nohira leg.; 1 male, Neo v., Gifu Pref., 5. v. 1982, T. Nohira leg.; 1 male, Mt. Kasuga, Nara Pref., 6. v. 1972, H. Ohira leg.; (Kyushu) 1 female, Mt. Tachibana, Fukuoka Pref., 7. vi. 1976, Y. Kanamaru leg.; 1 male, same locality, 27. iii. 1979, H. Takemoto leg.; 1 female, Mt. Inunaki, Fukuoka Pref., 3. v. 1979, Y. Syono leg.; 1 female, Mt. Joyama, Fukuoka Pref., 23. iv. 1973, K. Kido leg.; 1 female, same data as holotype; 1 female, same locality as holotype, 15. v. 1955, K. Morimoto leg.; 1 male, same locality as holotype, 8-10. v. 1957, K. Morimoto leg.; 1 male, same locality as holotype, 1. v. 1958, Y. Miyatake leg.; 1 male, same locality as holotype, 4. vi. 1958, K. Morimoto leg.; 1 female, same locality as holotype, 9. v. 1979, H. Takemoto leg.; 1 female, Okuhirohira, Saga Pref., 3. v. 1985, M. Nishida leg.; 1 female, Mt. Taradake, Saga Pref., 9. vi. 1985, T. Ogata leg.; 1 female, same locality and collector, 7. vi. 1986; 1 female, Mt. Shiratori, Izumi, Kumamoto Pref., 7. viii. 1981, H. Takemoto leg.; 1 female, Mt. Osuzu, Miyazaki Pref., 2. viii. 1952, S. Kimoto leg.; 1 female, Miike, Takaharu, Miyazaki Pref., 18. v. 1983, Y. Sawada leg.; 1 male, Cape Sata, Kagoshima Pref., 25. v. 1953, K. Matuda leg.; (Yakushima) 1 male, Unsuikyo, Yakushima Is., 14-16. v. 1986, Y. Sawada leg.; (Amami Is.) 2 females, Maruhata, Amami-oshima Is., 21-22. iii. 1986, K. Ogata leg.; 1 female, Hatsuno, Amami-oshima Is., 23. iii. 1986, T. Ogata leg.; 1 male, Mt. Yuidake, Amami-oshima Is., 4. v. 1987, T. Ogata leg.; 1 male, Mt. Yuwan, Amami-oshima Is., 7-9. iv. 1956, S. Miyamoto leg.; 1 male, same locality, 4. iv. 1958, M. Takahashi leg.; (Okinawa Is.) 1 female, Yona, Okinawa Is., 24. iii. 1978, H. Takemoto leg.

Distribution: Japan (Honshu, Kyushu and Satsunan Is.).

12. *Involvulus* (*Hyporhynchites*) *aes* sp. nov.

(Figs. 18,B,C; 19,J)

Brassy; derm with suberect long hairs; erect setae scattered on elytra.

Head transverse, entirely globular with neck region in the female, or weakly constricted at base in the male; eyes prominent; rostrum $5/4$ (male) or $3/2$ (female) times as long as pronotum.

Pronotum a little broader than long, sides rounded, basal and subapical constrictions weak; dorsum moderately convex, rugose, with median furrow.

Procoxa with small setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae deeply punctate, moderately grooved; intervals broader than striae, irregularly puncticulate; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; four posterior femora compressed, with dorsal ridges strigate. Fore tibiae almost straight, with dorsal ridge, apex with one spur; four posterior tibiae weakly curved, compressed with dorsal ridge milled, each with two spurs.

Abdomen with venter almost straight (male) or weakly inflated (female); pygidium not costate.

Male genitalia with small endophallic sclerites.

Length: 3.2 - 4.2 mm (excl. rostrum).

Host: Unknown.

Holotype: male (Type No. 2888, Kyushu Univ.), Izumi, Okinawa Is., 22. iii. 1964, T. Shirozu leg.

Paratypes: 1 female, Hiji-gawa, Okinawa Is., 25. iii. 1964, T. Shirozu leg.; 1 male, Ynona, Okinawa Is., 25. iv. 1976, M. Kinjo leg., (Ryukyu Univ.); 2 males, 1 female, Ie-rindo, Okinawa Is., 7. iv. 1979, Y. Syono leg.; 1 male, 1 female, Mt. Nagodake, Okinawa Is., 2. iv. 1984, Y. Sawada leg.

Distribution: Okinawa Is.

Subgenus *Cneminvolvulus* Voss, 1960

Cneminvolvulus Voss, 1960, Ann. Zool. Warszawa, 18: 413, (Type species: *Rhynchites rugosicollis* by original designation).

Diagnosis. Male hind and middle tibiae with hook-like structures; rostrum slender; head

entirely globular with neck region; pronotum rounded laterally, dorsum rugose; pygidium not costate.

Distribution: Far East.

13. *Involvulus* (*Cneminvolvulus*) *rugosicollis*
(Voss, 1920)
(Figs. 20,A,D,G)

Rhynchites rugosicollis Voss, 1920, Dt. ent. Z., 1920: 165, 166, (subg. *Involvulus*), (Seish, Korea); Voss, 1938, Kol. Rdsch., 24: 157; - *Involvulus rugosicollis*: Voss, 1955, Ann. hist. nat. Mus. nat. hung., 6: 270, 271; Voss, 1960, Ann. zool., Warszawa, 18: 414, (subg. *Hyporhynchites*); Voss, 1969, Ent. Arb. Mus. Frey, 1969: 229-231, 235; Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Piceous black with weak blue lustre; derm with long suberect hairs; longer erect setae scattered on elytra.

Head transverse; eyes strongly prominent; rostrum 1.25 (male) or 1.6 (female) times as long as pronotum; antennae inserted at basal 2/5 of the rostrum; club depressed.

Pronotum as long as broad, sides rounded, basal constriction weak, subapical constriction distinct; dorsum moderately convex, rugose, sometimes with median longitudinal furrow. Procoxa with distinct setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae strongly punctate, grooved; intervals convex, broader than striae, irregularly punctulate; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; four posterior femora compressed with dorsal ridges strigate. Fore tibia almost straight, with smooth dorsal ridge, apex with one spur; four posterior tibiae curved, dilated apically, compressed with dorsal ridges milled, hook-shaped structures developed in the male, each apex with two spurs in the female.

Abdomen with venter sunken (male) or almost straight (female); pygidium not costate.

Male genitalia with distinct endophallic sclerite.
Length: 2.9 - 3.6 mm (excl. rostrum).

Host: Some individuals were collected from *Quercus variabilis* (J.N.: Abemaki)

Specimens examined: (Korea) 1 male, 1 female, Seish in Korea, Staudgr., (holo- and paratype of *Rh. rugosicollis* Voss; E. Voss ded. Eing. Nr. 14-67; ZIM); (Tsushima) 2 males, Airport, Tsushima Is., 8. v. 1978, H. Makihara leg.; 1 male, 5 females, same locality, 10. v. 1979, K. Morimoto leg.; 1 male, Tsutsuse, Shimoagata, Tsushima Is., 22. v. 1985, Y. Sawada leg.; 2 females, Mt. Maishinodan, Tsushima Is., 22. v. 1985 Y. Sawada leg.

Distribution: Korea and Japan (Tsushima).

14. *Involvulus* (*Cneminvolvulus*) *lupulus* **sp. nov.**
(Figs. 20,B,E,H,I)

Piceous black with very weak blue lustre; derm with long suberect hairs; erect setae scattered on elytra.

Head transverse, entirely globular with neck region; eyes strongly prominent; frons broader than the diameter of eye, almost glabrous; rostrum slender, 1.9 (male) or 2.1 (female) times as long as pronotum. Antennae slender, inserted at basal 2/5 of the rostrum; funicle depressed, with 2nd to 6th segments clavate, 7th obovate; club scarcely depressed with last (3+4) segment almost two times as long as broad.

Pronotum a little longer than broad, sides rounded, basal and subapical constrictions distinct; dorsum rugose with narrow median longitudinal furrow. Procoxa with small setose sex patch in the male; postcoxal projections not contiguous to each other or contact to each other at a point.

Elytra dilated posteriorly in both sexes, broadest at the middle; striae strongly punctate, distinctly grooved; intervals convex, a little broader than striae, irregularly punctulate; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; four posterior femora compressed with dorsal ridges strigate. Fore tibia almost straight, apex with one spur; four posterior tibiae weakly curved, dilated apically, compressed with dorsal ridges milled, hook-shaped structures

developed in the male, each apex with two spurs in the female.

Abdomen with venter sunken (male) or weakly inflated (female); pygidium not costate.

Male genitalia without endophallic sclerites.

Length: 3.7 - 4.4 mm (excl. rostrum).

Host: Unknown.

Holotype: male (Type No. 2889, Kyushu Univ.), Mt. Takachiho-no-mine, Kirishima, Miyazaki Pref., 21. vi. 1967, H. Makihara leg.

Paratypes: (Kyushu) 1 female, same data as holotype; 1 female, same locality as holotype, 10. vi. 1980, K. Ohara leg.; 2 females, same locality as holotype, 6. vii. 1979, N. Koda leg.; 2 males, same locality as holotype, 21. v. 1982, H. Takemoto & K. Konishi leg.; 1 female, same locality as holotype, 17. v. 1983, Y. Sawada leg.; 1 male, Mts. Kirishima, Miyazaki Pref., 4. viii. 1950, R. Matsuda leg.; 1 male, same locality, 21. vii. 1951, J. Nagao leg.; (Yakushima) 1 female, Onoaida, Yakushima Is., 7. vi. 1979, H. Makihara leg.

Distribution: Kyushu (Mts. Kirishima) and Yakushima Is.

15. *Involvlus*(*Cneminvolvlus*) *haradai*

(Kôno, 1940)

(Figs. 20,C,F,J)

Rhynchites haradai Kôno, 1940, Ins. Mats., 14: 67, (Uenai, Jozankei and Tomakomai, Hokkaido; subg. *Involvlus*); Kôno, 1940, Hokkaido Ringyokaihou, 38 (449): 12-14, (biology), (subg. *Involvlus*); Inouye, 1953, Ringyo Gaichu Bojo-ron, 124-125, (subg. *Involvlus*); - *Involvlus haradai*: Morimoto, 1984, Coleopt. Jpn. Col., 4: 255, pl. 50.

Piceous black with bluish green lustre; derm with recumbent hairs; suberect fine setae scattered on elytra.

Head entirely globular with neck region; eyes prominent; rostrum slender, 1.7 (male) or 1.9 (female) times as long as pronotum. Antennae slender, inserted at basal 1/3 of the rostrum; funicle and club more or less depressed.

Pronotum as long as broad, sides rounded, basal and subapical constrictions distinct; dorsum rugose, with median longitudinal furrow.

Procoxa with small setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra with striae moderately punctate, shallowly grooved; intervals less convex, broader than striae, strongly puncticulate, puncticles arranged into one row; 9th stria confluent with 10th above 1st ventrite.

Legs with clavate femora; four posterior femora compressed with indistinct dorsal ridges strigate. Fore tibia almost straight, with smooth dorsal ridge, apex with one spur; four posterior tibiae compressed with dorsal ridges milled, hook-shaped structures weakly developed in the male, each apices with two spurs in the female.

Abdomen with venter sunken (male) or almost straight (female); pygidium not costate.

Male genitalia with endophallic sclerites.

Length: 3.1 - 4.0 mm (excl. rostrum).

Biology: Shoot-stinger of *Picea jezoensis*, (J.N.: Ezo-matsu), (Kono, 1940).

Specimens examined: (Hokkaido) 1 female, Senpoku pass, Akan, Hokkaido Pref., 24. vi. 1986, K. Morimoto leg.; 1 male, Tomakomai, Hokkaido Pref., 27. v. 1957, M. Inouye leg., (specimens described and illustrated by Inouye, 1953); (Honshu) 1 male, Mt. Komagadake, Yamanashi Pref., 18. vii. 1956, H. Kamiya leg.; 1 male, Mt. Kasuga, Nara Pref., 23. iv. 1982, N. Nishida leg.; 1 male, Mt. Goma-no-dan, Wakayama Pref., 7. ix. 1975, Y. Mori leg.; (Kyushu) 1 male, Mt. Taradake, Saga Pref., 29. iv. 1958, T. Ogata leg.; 1 female, Mt. Takachiho-no-mine, Kirishima, Kagoshima Pref., 21. v. 1982, H. Takemoto leg.

Distribution: Hokkaido, Honshu and Kyushu.

Rhynchites Schneider, 1791

Rhynchites Schneider, 1791, Neu. Mag. Liegh. Ent. I, 1791: 82, (with no nominal species); Herbst, 1797, Natursyst. Ins. Käfer., 7: 133, Q, 9-11; Olivier, 1807, Entom., 5: 19, 81; Illiger, 1807, Mag. Ins. -Kunde 6: 323; Latreille, 1810, Consid. genear., 1810: 219; Schoenherr, 1826, Disp. meth. Curc., 44; Thomson, 1859, Skand. Col., 1: 130; Lacordaire, 1863, Gen. Col., 6: 554; Faust, 1887, Dt. ent. Z., 31: 163; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 61; Seidlitz, 1891, Fn. Balt. ed., 2: 169, 668; Schilsky, 1903, Kaf. Eur., 40: A; Desbrochers, 1908, Frelon, 16 (2-3): 16, 23; Reiter, 1916, Fn. Germ., 5: 261, 262; Voss, 1932, Kol. Rdsch., 18: 154; Voss, 1938, ibid., 24: 129; Voss, 1953, Ent. Blatt., 49: 42-48; Voss, Ent. Arb. Mus. Frey, 1969: 329, (Type species: *Curculio baccus* by subsequent designation by Latreille, 1810).

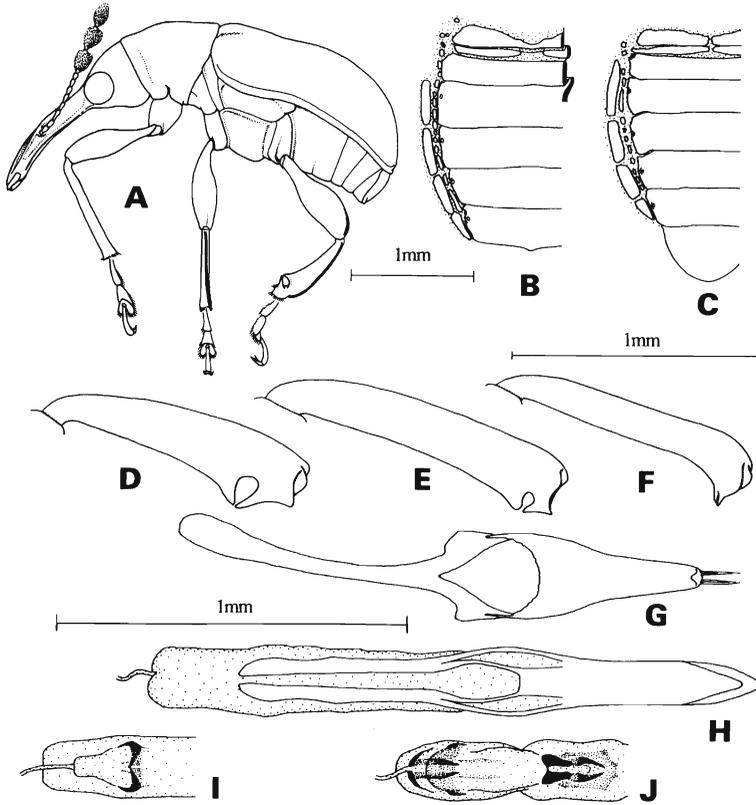


Fig. 20. Habitus, abdominal terga, male hind tibiae and male genitalia of *Involvulus* (*Cneminvolvulus*) spp. — A, D, G: *I. (C.) rugosicollis*, (A: male). B, E, H, I: *I. (C.) lupulus* **sp. nov.** C, F, J: *I. (C.) haradai*.

Dorsid. Rostrum slender; prothorax with lateral thorn or spike in the male; procoxa distant from head; secondary mesocoxal process complete; elytra with each basal margin produced anteriorly, scutellar striole absent, 9th stria not extend to the apex of elytron.

Distribution: Palearctic Region.

Subgenus *Epirhynchites* Voss, 1969

Epirhynchites: Voss, 1953, Ent. Blatt., 49: 44-47; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 348, (Type species: *Rhynchites heros* by original designation).

Diagnosis. Rostrum stout, a little longer than head and pronotum combined in the male; body less

hairy.

Distribution: Palearctic Region.

Rhynchites (Epirhynchites) heros

Roelofs, 1874

(Figs. 21,D,E)

Rhynchite heros Roelofs, 1874, Ann. Soc. ent. Berg., 17: 141; Roelofs, 1875, l. c., 18: 132. (var. *sumptosus*); Sharp, 1889, Trans. ent. Soc. Lond., 1889: 62; Schilsky, 1903, Kaf. Eur., 40: Q, 55, (subg. *Rhynchites*); Voss, 1938, Kol. Rdsch., 24: 171; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 108, 120; Nakane, 1963, Icon. Ins. Jpn., 2: 354, pl. 177; Voss, 1969, Ent. Arb. Mus. Frey, 1969: 359, (subg. *Epirhynchites*); Morimoto, 1984, Coleopt. Jpn. Col., 4: 257, pl. 50.

Metallic purple, partially with bluish or greenish lustre; hairy with suberect hairs, erect setae absent on elytra.

Head transverse (male) or quadrate (female), not constricted at base; eyes convex, frons broader than the diameter of eye; rostrum 4/3 (male) or 5/3 (female) times as long as pronotum. Antennae inserted in apical 1/3 (male) or near the middle of rostrum; funicle with 1st segment shorter than scape and a half as long as the 2nd.

Pronotum broader than long, sides rounded; lateral thorn developed in the male; subapical constriction distinct; dorsum moderately convex, strongly punctate, with a pair of oblique impressions, in some individuals three glabrous blue calli develop among and behind impressions. Procoxa with small setose sex patch in the male; postcoxal projections contiguous to each other.

Elytra roughly sculptured; striae intermittent, not grooved, with oblong punctures; intervals and interstices of punctures irregularly punctulate; 9th stria confluent with 10th above 1st ventrite. anterior margins of elytra produced anteriorly and overlapping the base of pronotum.

Legs with spindulate femora; tibiae almost straight, more or less dilated apically, compressed with dorsal ridges; fore tibia with one spur; four posterior tibiae with each two spurs, ridges milled.

Abdomen sunken (male) or straight (female); pygidium with costa overlapped by elytra.

Male genitalia with stout cap piece and delicate basal piece.

Length: 6.4 - 9.7 mm (excl. rostrum).

Biology: Fruit-stinger of peach, pear or apple.

Specimens examined: (Kyushu) 3 males, 2 females, Sengoku, Fukuoka Pref., 11. vi. 1949, H. Yano leg.; (Honshu) 2 females, Kameyama, Gobo, Wakayama Pref., 9. v. 1979, Y. Sawada leg.; 1 male, Mt. Tennoz, Otokuni, Kyoto Pref., 3. vi. 1978 leg.; 1 female, Omi - Ohara, Kyoto Pref., 15-19. v. 1984, T. Matsumoto leg.; 1 male, Tochioka, Kiso-fukushima, Nagano Pref., 8. v. 1982, A. Ueda leg.; 1 female, Katashina, Tone, Gunma Pref., 15. vii. 1979, Y. Sawada leg.; 1 male, 5 females, Kuroishi, Aomori Pref., 19. vi. 1979, K. Morimoto leg.

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu).

Mechoris Billberg, 1820

Mechoris Billberg, 1820, Enum. Ins., 1820: 39; Voss, 1949, Verh. nat. Heimatforsch., Hambg., 30: 101, (*Mechoris* unjustified emendation), (Type species: *Attelabus azureus* Olivier, 1807 by monotypy?).

Cyllorhynchites Voss, 1930, Wien. ent. Ztg., 47: 73-78, (as a subg. of *Rhynchites*) ; Voss, 1938, Kol. Rdsch., 24: 166-169; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 105, (as an independent genus), (Type species: *Rhynchites ursulus* by subsequent designation by Ter-Minassian, 1950).

Diagnosis. Rostrum much slender; antennae with funicle depressed; procoxa distant from head; secondary mesocoxal process complete; elytra with scutellar striole absent, 9th stria not extend to the apex of elytron.

Distribution: Japan to South-east Asia.

Subgenus *Cyllorhynchites* Voss, 1930

Cyllorhynchites Voss, 1930, Wien. ent. Ztg., 47: 73-78, (as a subg. of *Rhynchites*) ; Voss, 1938, Kol. Rdsch., 24: 166-169; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 105, (as an independent genus), (Type species: *Rhynchites ursulus* by subsequent designation by Ter-Minassian, 1950).

Diagnosis. Pronotum with lateral torn or rostrum with lateral serration in the male.

Distribution: Japan to South-east Asia.

Mechoris (*Cyllorhynchites*) *ursulus*

(Roelofs, 1874)

(Figs. 21A-C)

Rhynchites ursulus Roelofs, 1874, Ann. Soc. ent. Berg., 17: 142, (Yokohama and Higo); Faust, 1886, Stett. ent. Ztg., 47: 152; Sharp, 1889, Trans. ent. Soc. Lond., 1889: 62; Schilsky, 1903, Käf. Eur., 40: P, 49, (subg. *Rhynchites*); Voss, 1930, Wien. ent. Ztg., 47: 78; Voss, 1938, Kol. Rdsch., 24: 169, (subg. *Cyllorhynchites*); - *Cyllorhynchites ursulus*: Ter-Minassian, 1950, Fauna SSSR, 27, 2: 105; - *Mechoris ursulus*: Morimoto, 1962, Sci. Bull. Fac. Agr., Kyushu Univ., 19: 173, (*Mechoris*); Nakane, 1963, Icon. Ins. Jpn., 2: 354, pl. 177, (*Mechoris*); Voss, 1969, Ent. Arb. Mus. Frey, 1969: 328, (subg. *Cyllorhynchites*); Morimoto, 1984, Coleopt. Jpn.

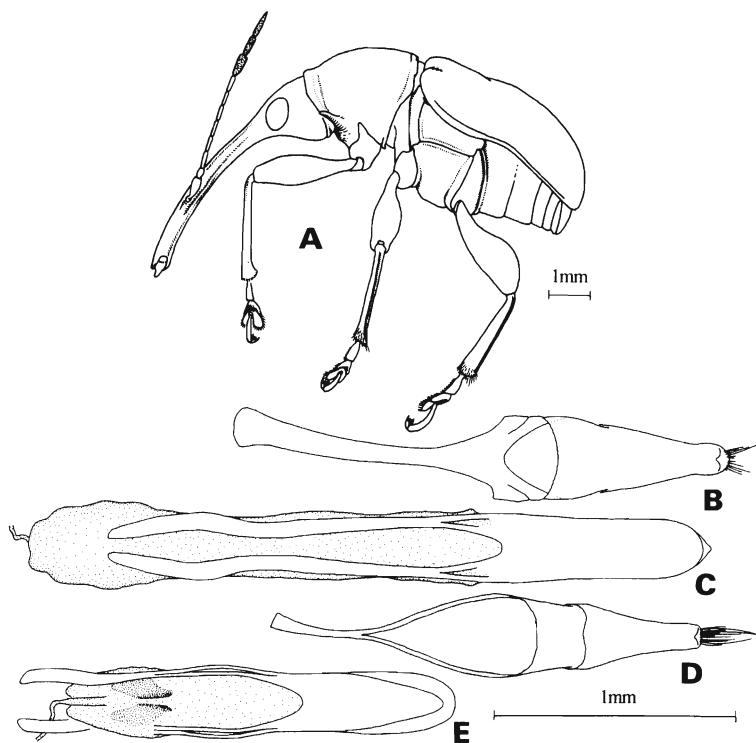


Fig. 21. *Mechoris ursulus* and *Rhynchites heros* – A–C: *Mechoris ursulus*, (A: male). D, E: *Rhynchites heros*.

Col., 4: 257, pl. 50.

Derm piceous to fuscous with weak greenish blue lustre; densely covered with conspicuous dark yellow decumbent hairs; longer erect setae scattered on dorsal surface.

Head entirely globular with neck region; eyes convex, frons broader than the diameter of eye; rostrum $5/3$ times (male) or twice (female) as long as pronotum. Antennae slender, inserted at apical $2/5$ (male) or near the middle of rostrum, scape, funicle and club more or less depressed.

Pronotum longer (male, excl. lateral thorn) or as long as (female) broad, sides rounded; subapical and basal constrictions distinct; dorsum strongly convex, finely punctate, somewhat wrinkly sculp-

tured at the central part. Lateral thorn developed in the male; procoxa with distinct setose sex patch in the male. Postcoxal projections broad, contiguous to each other for a considerable length.

Elytra with striae scarcely grooved, strongly punctate; intervals weakly convex with a row of setigerous puncticles; 9th stria confluent with 10th above 1st ventrite.

Legs with spindulate femora. Tibiae straight and dilated near apices, weakly compressed with dorsal ridges, dorsal ridges milled in four posterior tibiae; fore and hind tibiae with each two short spurs, middle tibia with one short spur.

Abdomen almost straight in both sexes, pygidium not costate.

Male genitalia without distinct endophallic scler-

ites.

Length: 6.3 - 8.0 mm (excl. rostrum).

Host: *Quercus acutissima* (J.N.: Kunugi).

Specimens examined: (Honshu) 1 male, Anayama, Yamashiro Pref., 12. viii. 1979, H. Fujita leg.; 1 male, Mt. Takagamine, Kyoto Pref., 22. viii. 1963, T. Koyanagi leg.; 1 female, Mts. Higashiyama, Kyoto Pref., 12. viii. 1962, T. Maeda leg.; 1 female, Joyo, Kyoto Pref., 23. viii. 1977, Y. Sawada leg.; (Shikoku) 1 male, Jinzenji, Kochi Pref., 15. vii. 1952, K. Morimoto leg.; 1 female, Jinzenji, Kochi Pref., 14. vii. 1953, K. Morimoto leg.; 1 female, 17. vii. 1954, K. Morimoto leg.; (Kyushu) 1 male, Mt. Wakasugi, Fukuoka Pref., 16. v. 1948, H. Oohira leg.; (Tsushima) 1 male, Mt. Ohoshi, Tsushima, 26-27. vii. 1979, I. Kanazawa leg.; 1 female, Toyo, Tsushima, 8. viii. 1961, H. Konishi leg.

Distribution: Korea and Japan (Honshu, Shikoku, Kyushu and Tsushima).

4. Tribe DEPORAINI

Diagnosis. Head constricted at base, or sometimes scarcely constricted; rostrum more or less dilated anteriorly and flattened, or sometimes slender.

Labial palpi 2- or 1 segmented, not exceeding the apices of ligula. Secondary mesocoxal process complete. Tibiae truncate vertically and completely fringed with setae at tips, without spurs; claws free, each bifid.

Elytra separately rounded at apex. Abdomen with 1st to 8th tergites complete; 1st entirely sclerotized; spiracular sclerite of 1st abdominal segment incorporated into the metathoracic dorsal sclerotized region, spiracles of 2nd to 6th segments located on the lateral region of each median sclerite; the 2nd to 6th segment with lateral sclerites, lateral sclerites of 2nd and 3rd segments fused longitudinally into single plate. Abdominal lobe absent. Pygidium not costate.

Alimentary canal with tubular part of the mid-gut looping clockwise in dorsal view; rectum situated at the right side of genital chamber; spiculum gastrale directed sinistro-anteriorly.

Tegmen of male genitalia with dorsal plate of penis rather broad.

Distribution: Oriental, Palearctic and Nearctic Regions.

Subtribe CHONOSTROPHEINA

Diagnosis. Ovipositor without stylus, coxite undivided. Elytra with scutellar striae.

Tibiae without mucrones; propygidium with a pair of wing folding spicule patches.

Distribution: Palearctic Region.

Chonostropheus Prell, 1924

Chonostropheus Prell, 1924, Zool. Anz., 61: 168, (as a subg. of *Deporaus*); Voss, 1938, Stett. ent. Ztg., 99: 62, (as a genus). (Type species: *Deporaus tristis* by monotypy).

Rhynchitobius Kono, 1929 (nec Sharp, 1889), Ins. matsum. 2: 177, (misspelled as *Rhynchitobius*) (Type species: *Rhynchites tristis* (sic) by original designation).

1. *Chonostropheus chujoi* Voss, 1956

(Fig. 24)

Chonostropheus chujoi Voss, 1956, Akitu, 5: 13-14, (*Chonostropheus* err.; Kobokutai, Aomori; Omogo valley, Ehime; Yunoyama).

Deporaus unifornis (sic): Iwata, 1935, Kontyû, 9: 261-278, (biology).

Rhynchites tristis?: Sharp, 1889 (nec Fabricius, 1794), Trans. ent. Soc. Lond., 1889: 68 (Miyanoshta).

Entirely black, elytra with weak blue lustre; derm with dense decumbent hairs.

Head and pronotum closely punctate, each puncture setigerous with central socket papillate; pronotum broader than long in both sexes, strongly rounded laterally and constricted at the base in the male; postcoxal projections not contiguous to each other; setose sex patch absent. Secondary mesocoxal process complete. Elytra with regular 10 striae, scutellar striole and some irregular striae, partially confused; 9th stria extend to the apex of elytra. Tibiae without distinct dorsal ridges.

Length: 3.5 - 4.0 mm (excl. rostrum).

Biology: Leaf-roller of maple and oak.

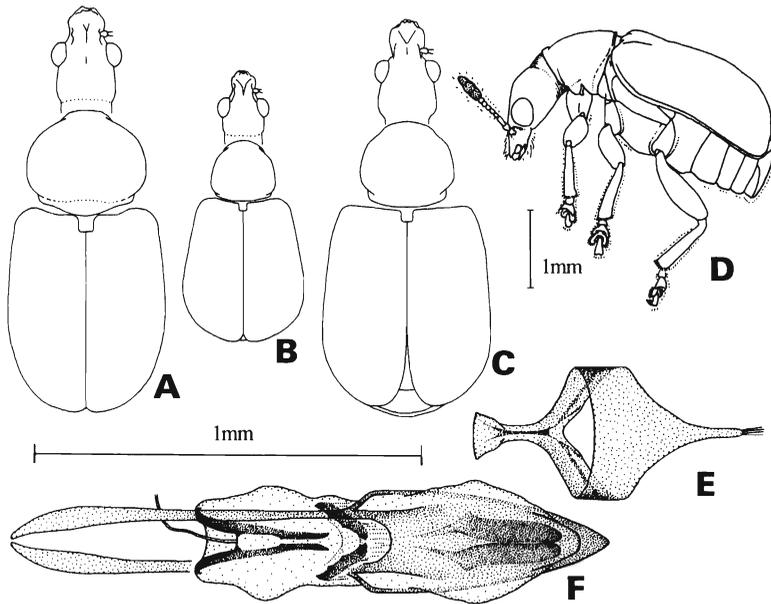


Fig. 22. *Chonostropheus chujoi* – A, B: Habitus in dorsal view. male. C: ditto, female. D: ditto, in lateral view. E, F: male genitalia.

Specimens examined: (Honshu) 1 male, 1 female, Kobokutai, Awomori Pref., 5. vi. 1953, K. Shimoyama leg., (holo- and paratype of *Ch. chujoi* Voss; ZIM); 1 male, 1 female, Chojagahara, Oguni, Yamagata Pref., 7. vi. 1980, H. Takemoto leg.; 1 female, Omi-one, Kyoto Pref., 13. vii. 1978, T. Ogata leg.; 1 female, Ohara, Kyoto Pref., 30. iv. 1978, Y. Sawada leg.; 1 male, 8 females, Mt. Daisen, Tottori Pref., 9. vi. 1981, H. Takemoto leg.; (Shikoku) 6 males, 14 females, Mt. Kotsusan, Tokushima Pref., 2. vi. 1985, K. Ohara leg.; (Kyushu) 9 males, 21 females, Mt. Kuju-kurodake, Oita Pref., 11-12. v. 1985, Y. Sawada leg.

Distribution: Japan (Honshu, Shikoku and Kyushu).

Subtribe DEPORAINA

Diagnosis. Ovipositor with styli, coxites subdivided; elytra without scutellar striae.

Distribution: Chiefly Oriental and Palearctic Regions, a few species inhabit Nearctic Region.

Apoderites Sawada, 1987

Apoderites Sawada, 1987, Kontyû, 55: 654; Sawada, 1987, Kontyû, 56: 561. (Type species: *Apoderites commodus* by original designation.).

Diagnosis. Rostrum depressed; tibiae not mucronate in both sexes; propygidium with a pair of wing folding spicule patches.

Distribution: Japan.

1. *Apoderites commodus* Sawada, 1987 (Fig. 23)

Apoderites commodus Sawada, 1987, Kontyû, 55: 654, (Honshu, Shikoku and Kyushu).

Entirely black except for apex of rostrum and procoxae reddish; derm with close fine hairs.

Pronotum as long as broad, or a little longer than broad; post coxal projections not contiguous to each other; setose sex patch absent. Secondary mesocoxal process complete. Elytra with 9th stria extinct

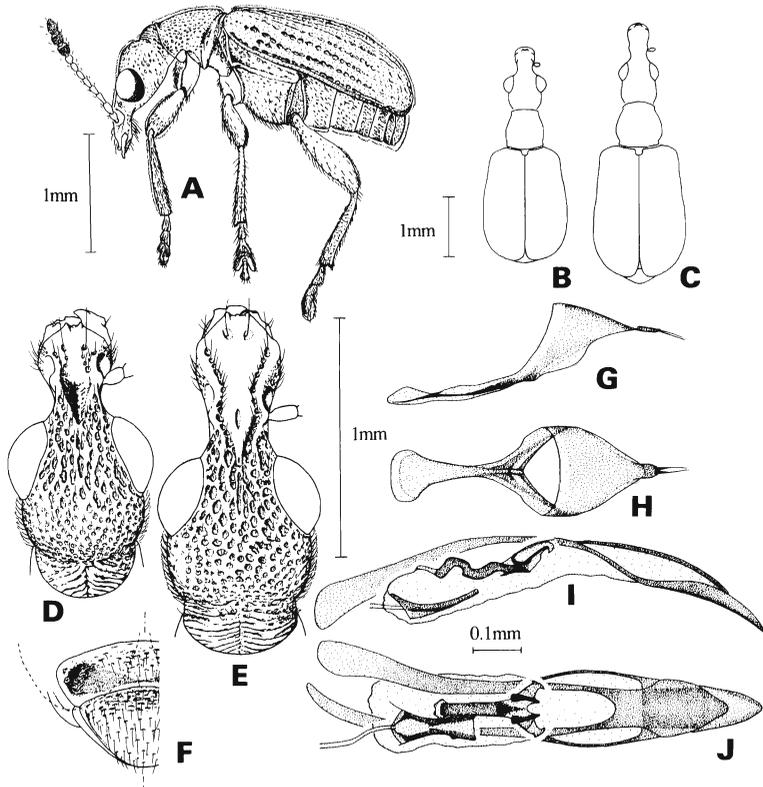


Fig. 23. *Apoderites commodus* – A: Habitus in lateral view, male. B: ditto, dorsal view. C: ditto, female. D: head, male. E: ditto, female. F: propygidium and pygidium, male. G–J: male genitalia.

above 3rd ventrite. Tibiae without distinct dorsal ridges.

Length: 2.2 – 3.3 mm (excl. rostrum).

Host: Unknown.

Specimens examined: 27 males, 20 females from Honshu, Shikoku and Kyushu, (type series).

Distribution: Japan (Honshu, Shikoku and Kyushu).

Eusproda Sawada, 1987

Eusproda Sawada, 1987, *Kontyû*, 55: 657; Sawada, 1987, *Kontyû*, 56: 561, (Type species: *Eusproda proxima* by original designation.).

Diagnosis. Rostrum elongate, not depressed, with

basal hair tuft in the female; labial palpi 2-segmented; pronotum a little broader in the male; procoxa with setose sex patch in the male; tibiae not mucronate in both sexes; propygidium with a pair of wing folding spicule patches.

Distribution: Russian Federation (Amur oblast and Primorsk kray), Korea and Japan (Tsushima).

1. *Eusproda proxima* (Faust, 1882)

(Fig. 24)

Rhynchites proximus Faust, 1882, *Dt. ent. Z.*, 26: 260, 287, (Amur); - *Deporaus proximus*: Faust, 1887, *Dt. ent. Z.*, 31: 163, (nec *D. proximus* Voss, 1938, *Stett. ent. Ztg.*, 99: 104, 359); - *Depasophilus proximus*: Voss, 1938, *Stett. ent. Ztg.*, 99: 74-75; Ter-Minassian, 1950, *Fauna SSSR*, 27, 2: 148, 150, (Amur oblast); - *Eusproda proxima*. Sawada, 1987, *Kontyû*, 55: 654; Sawada, 1987, *Kontyû*, 56: 567.

Rhynchites illibatus Voss, 1920, *Dt. ent. Z.*, 1920: 166-

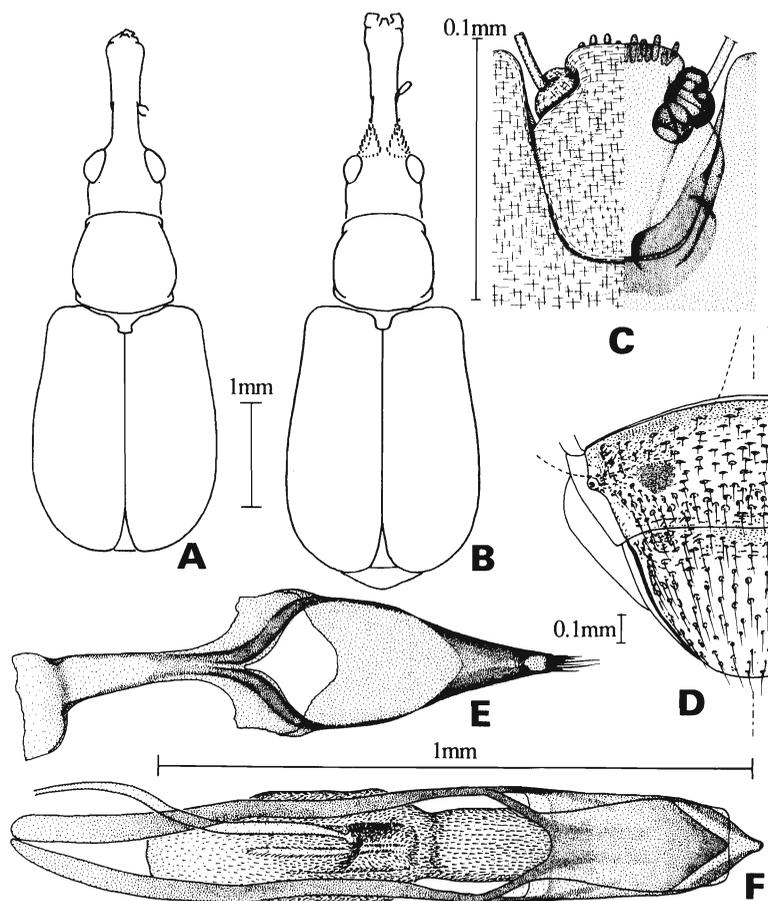


Fig. 24. *Eusproda proxima* – A: Habitus in dorsal view, male. B: ditto, female. C: labial palpi, mentum and submentum. D: propygidium and pygidium, male. E, F: male genitalia.

167, (subg. *Involvulus*, Korea: Seish, Japan: Taushima) ; - *Depasophilus illibatus*: Voss, 1938, Stett. ent. Ztg., 99: 73-74; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 148, 149; Sawada, 1986, Gekkan-Mushi, (186) : 28-29.

Black with blue metallic lustre; hairy.

Pronotum a little longer than broad (male), or as long as broad (female); post coxal projections not contiguous to each other; sex setose patch well developed in the male. Secondary mesocoxal process complete.

Elytra with 9th and 10th striae not confluent

throughout.

Length: 3.8 mm (excl. rostrum).

Biology: Shoot-stinger of *Pueraria thunbergiana* (J.N.: Kuzu) and *Lespedeza cyrtobotrya* (J.N.: Marubahagi).

Specimens examined: (Tsushima) 1 female, Mt. Tatsura 18-20. v. 1961, H. Kamuya leg.; 1 female, Asamo, 27. v. 1982, O. Tadauchi leg.; 1 male, Mitsushima, 24. v. 1985, Y. Sawada leg.; 2 females, Tsutsuse, 24-25. v. 1985, Y. Sawada leg.; 1 male, 2 females, 7. v. 1986, Y. Sawada leg.; 10 males, 10 females, Uchiyama, 7-8. v. 1986, Y. Sawada leg.; (Korea)

1 male, Seish in Korea, Staudgr., (syntype of *Rh. illibatus* Voss; E. Voss ded. Eing. Nr. 11- 68; ZIM); 2 males, Mt. Sudo, Gyonsangbug Do, 28-29. v. 1979, K. Yamagishi leg.

Distribution: Russian Federarion (Amur oblast and Primorsk kray), Korea and Japan (Tsushima).

Chokkirius Kôno, 1929

Chokkirius Kôno, 1929, Trans. Sapporo nat. Hist. Soc., 10: 122-123, 136; Voss, 1938, Stett. ent. Ztg., 99: 71, (Type species: *Rhynchites (Deporaus) rosti* Schilsky (= *Chokkirius truncatus*) by original designation).

Diagnosis. Rostrum elongate, not depressed, with basal hair tuft in the female; labial palpi 1-segmented; pronotum broadened in the male; procoxa without setose sex patch; tibiae not mucronate in both sexes; propygidium with a pair of wing folding spicule patches.

Distribution: Kuril Isls., Japan and Taiwan.

1. *Chokkirius truncatus* (Sharp, 1889)

(Fig. 25)

Rhynchites truncatus Sharp, 1889, Trans. ent. Soc. Lond., 1889: 67, (Miyanoshta); - *Chokkirius truncatus*: Morimoto, 1962, Sci. Bull. Fac. Agr. Kyushu Univ., 19: 175- 176.

Rhynchites rosti Schilsky, 1906, Käf. Eur., 42: 79, (Japan, Okuru); - *Chokkirius rosti*: Kôno, 1929, Trans. Sapporo nat. Hist. Soc., 10: 123-128, (Hokkaido and Honshu); Kôno, 1935, Ins. matsum., 10: 63, (Kuril Isls.); Voss, 1938, Stett. ent. Ztg., 99: 71-72; Ter-Minassian, 1950, Fauna SSSR, 27, 2: 144-145.

Black or piceous with blue or bluish green metallic lustre; hairy.

Pronotum 7/8 times as long as broad in the male; post coxal projections contiguous to each other; sex setose patch absent. Secondary mesocoxal process complete. Elytra with 9th and 10th striae not confluent throughout.

Length: 3.5 - 4.0 mm (excl. rostrum).

Biology: Twig-stinger of maple.

Specimens examined: 7 males, 8 females from Hokkaido, Honshu, Shikoku Kyushu and Tsushima; 1 females from Taiwan.

Distribution: Kuril Isls., Japan (Hokkaido, Honshu, Shikoku, Kyushu and Tsushima Is.) and Taiwan.

Deporaus Samouelle, 1819

Deporaus Samouelle, 1819, Ent. Compend: 201; Lacordaire, 1863, Gen. Col., 6: 554; Bedel, 1882, Fn. Col. Bassin Seine, 6: 24, 29, 227; Ter-Minassian, 1950, Fn. SSSR, 17, 2: 152-153, (Type species: *Rhynchites betulae* by subsequent designation by Ter-Minassian, 1950).

Platyrhynchus: Thunberg, 1815 (nec Desmines, 1805), Nova Acta Upsal., 7: 104, (Type species: *P. betulae* by monotypy?).

Diagnosis. Rostrum more or less depressed in the female; femur nor tibiae without hook-shaped spines, some tibiae mucronate at apices in the male; propygidium without wing folding spicule patches.

Distribution: Oriental, Palearctic and Nearctic Regions.

Subgenus *Arodepus* Voss, 1922

Arodepus Voss, 1922, Philipp. J. Sci., 21: 387, (Type species: *Deporaus penangensis* by subsequent designation by Voss, 1958).

Diagnosis. Eye large, strongly prominent, temple shorter than the diameter of eye; rostrum stout and slender; head not depressed, as tall as broad; basal constriction strong, distinct at the ventral area; antenna slender; pronotum convex dorsally; elytra with 9th striae confluent with 10th near the middle of the elytra; fore and middle tibiae mucronate in the male; tarsi slender.

Distribution: Oriental Region.

1. *Deporaus (Arodepus) tigris* sp. nov.

(Fig. 27)

Flavus with black maculations. Head, prothorax and scutellum black except for the rostral base, neck region, apical and basal margins of prothorax yellow; pronotum with a pair of spots rather fuscate. Antenna piceous. Elytra yellow, with two

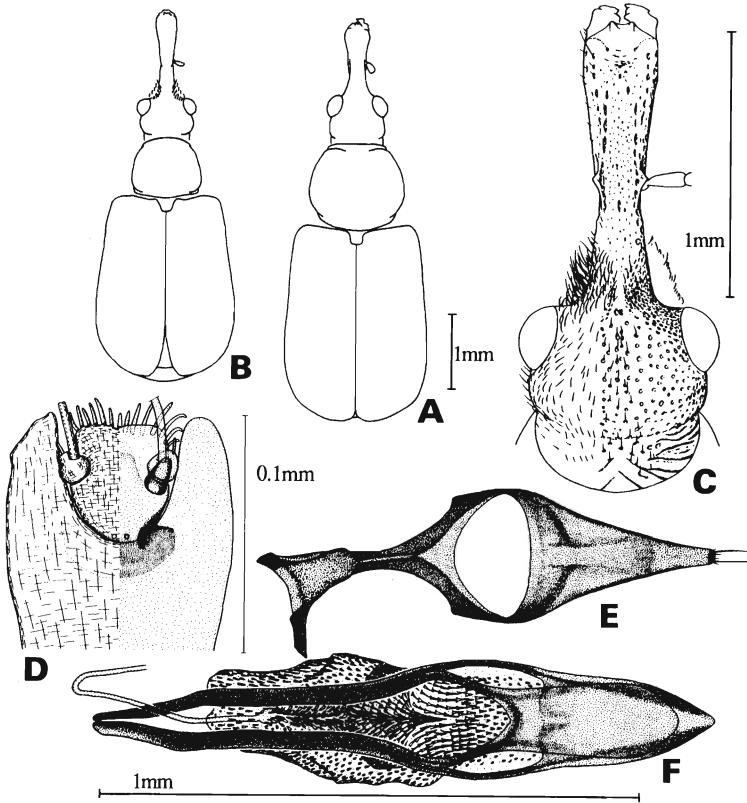


Fig. 25. *Chokkirius truncatus* – A: Habitus in dorsal view, male. B: ditto, female. C: head and rostrum, female. D: labial palpi, mentum and submentum. E, F: male genitalia.

pairs of black spots; meso- and metathoraces with sterna, episterna and epimera black; abdominal venter yellow, each ventrite with a pair of transversal linear black spots on latero-ventral surface; 6th tergite and pygidium yellow, each with a pair of black spots. Legs with black metacoxa and yellow pro- and mesocoxae, femora yellow with dorso-apical black spots, tibiae and tarsi entirely black.

Male. Head longer than broad excluding the neck region; strictly and strongly constricted at the base; temples shorter than the diameter of eye, slightly tapered posteriorly. Eyes large, strongly prominent laterally. Rostrum long and stout, a little

longer than head, 0.8 times as long as pronotum; basal part almost parallel-sided, from the middle of length suddenly dilated apically; broadest at the apical 1/4. Antenna 2.5 times as long as pronotum; funicle with 1st segment twice as long as broad; 2nd a little shorter than and broader than 1st; 3rd and 4th conjointly lanceolate, 2.5 times as long as broad.

Pronotum a little longer than broad, with sides rounded; subapical constriction strong, subbasal constriction distinct at dorsal and lateral regions; base double fringed; dorsum moderately punctate, partially wrinkly, derm with suberect hairs. postcoxal projections contiguous to each other as a

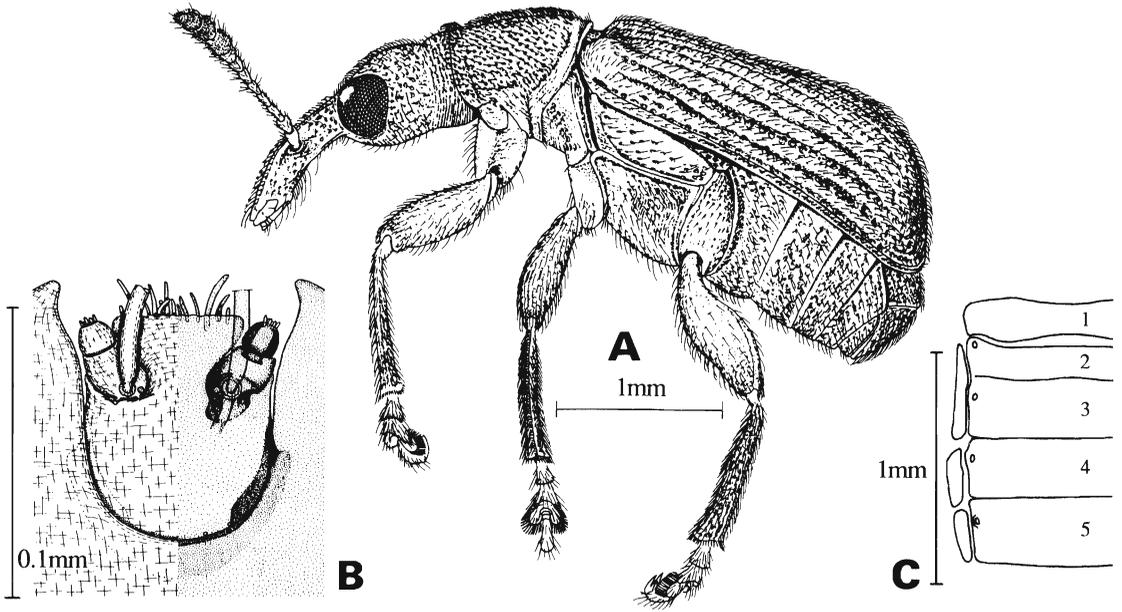


Fig. 26. *Deporaus* spp. – A: Habitus of *D. (Deporaus) nidificus*, female. B: labial palpi, mentum and submentum of *D. (Caenorhinus) mammerheimi*. C: abdominal terga of *D. (C.) eumegacephalus* sp. nov.

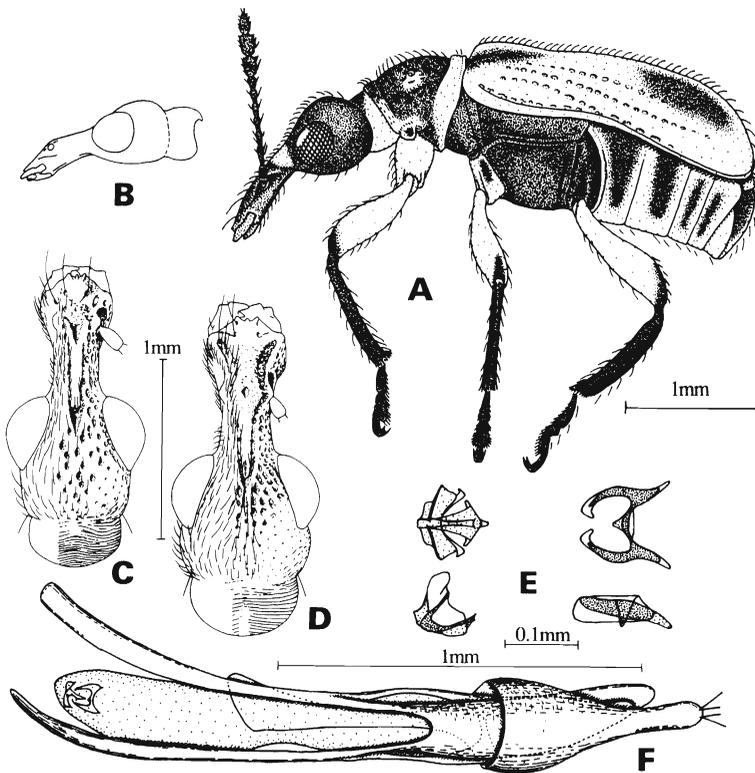


Fig. 27. *Deporaus (Apodepus) tigris* sp. nov. – A: Habitus female. B: head in lateral view, male. C: ditto, in dorsal view. D: ditto, female. E: endophallic sclerites. F: male genitalia.

rule, but incompletely confronted in some individuals. Scutellum with basal half tapered, apical half slightly dilated and apex emarginate.

Elytra 1.6 times as long as broad at humeri; striae not grooved, rather weakly punctate; intervals almost flat with puncticles arranged into one row, partially irregular; 9th stria confluent with 10th below the hemerus.

Legs with clavate femora of same length; dorsal ridges developed on the femora; fore tibia with basal half straight and of same breadth, apical half curved and dilated near the apex, without dorsal ridge; four posterior tibiae monotonously dilated and curved, with dorsal ridges milled; fore and middle tibiae mucronate; hind tarsi not longer than the others, with the 1st segment longer than 2nd and 3rd combined.

Abdomen sunken, pygidium as long as broad.

Male genitalia with small endophallic sclerites.

Female. Head and frons broader, rostrum slightly longer, a little shorter than the pronotum; antenna inserted at the middle of the rostrum; tibiae not mucronate; venter with ventral surface almost straight; pygidium broader, 1.2 times as broad as long.

Length: 3.5-4.0 mm (excl. rostrum).

Host: *Ligustrum* spp. (J.N.: Ibota).

Holotype: male (Type No. 2890, Kyushu Univ.), Mt. Shiratori, (1300m), Izumi, Kumamoto Pref., 15. v. 1979, H. Takemoto leg.

Paratypes: same data as holotype 2 males, 2 females; same locality as holotype, 1 female, 14. v. 1983, K. Ohara leg.

Distribution: Japan (Mt. Shiratori).

Subgenus *Hypodeporaus* Voss, 1922

Hypodeporaus Voss, 1922, Philipp. J. Sci., 21: 387, (Type species: *D. comicrostris* by subsequent designation by Voss, 1958).

Diagnosis. Head more or less depressed, broader than thick; basal constriction of head indistinct at the ventral area; eye large, moderately prominent,

temple as long as or shorter than the diameter of eye; pronotum more or less depressed; rostrum short, shorter than the head in the male; elytra with 9th striae confluent with 10th near the middle of the elytra; fore and middle tibiae mucronate in the male; tarsi slender.

Distribution: Oriental and Nearctic Regions.

2. *Deporaus* (*Hypodeporaus*) *ohdaisanus*

Nakane, 1963

(Figs. 28,A,C; 29,A)

Deporaus ohdaisanus Nakane, 1963, *Fragm. Coleopterol.*, 8: 33, (subg. *Arodepus*; Odaigahara).

Body red brown to dark yellow except for rostrum, dorsal part of head, prothoracic dorsum, scutellum and elytral margins black; major part of elytra broadly black remaining humeri fuscate in some individuals; pronotum entirely fuscate.

Head a little longer (male) or a little broader (female) than long, strongly constricted at the base; eye large, temples shorter than eye; rostrum 0.8 (male) or 1.2 (female) times as long as pronotum; antenna 1.8 times as long as pronotum. Pronotum a little longer (male) or as long as (female) broad, subbasal and subapical constrictions strong, with postcoxal projections distant from each other. Elytra conjointly flat, 5/3 times as long as broad at humeri, with 9th stria confluent with 10th above the 1st ventrite. Legs with fore and middle tibiae mucronate in the male; hind leg with 1st tarsal segment longer than 2nd and 3rd combined.

Length: 4.7 - 6.0 mm (excl. rostrum).

Biology: Leaf-cutter of *Rhododendron metternichii* (J.N.: Tsukushi-sha-kunage).

Specimens examined: 2 males, 9 females, Mt. Odai-ga-hara, Mie Pref., 26-27. vi. 1984, Y. Sawada and K. Konishi leg.; 7 males, 10 females, 22. vii. 1984, Y. Sawada leg.; Kurozo vall., Mt. Oto, Wakayama Pref., 1 male, 1 female, 23. vii. 1982, I. Matoba leg.

Distribution: Japan (Mts. Kii).

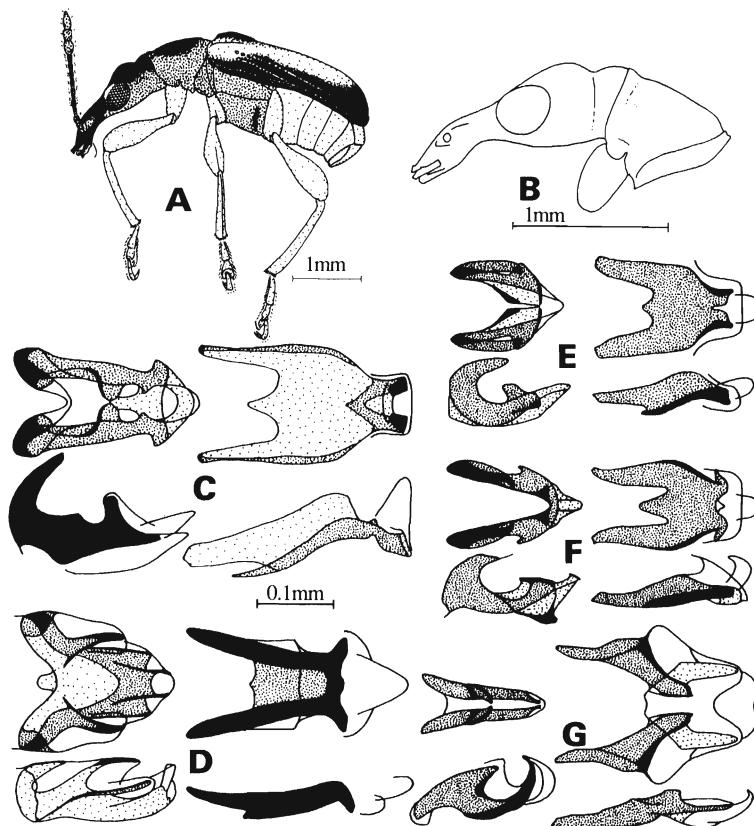


Fig. 28. Habitus, head and endophallic sclerites of *Deporaus* (*Hypodeporaus*) spp. – A, C, D: *D. (H.) ohdaisanus*, (A: male). B, E: *D. (H.) fuscipennis*, (B: male). D: *D. (H.) insularis* **sp. nov.** F: *D. (H.) vossi* **nom. nov.** G: *D. (H.) minimus*.

3. *Deporaus* (*Hypodeporaus*) *insularis*
sp. nov.

(Figs. 28,D; 29,B)

Body two-tone; head, antenna, thorax and elytra black; legs including coxae and abdomen yellow; ventral part of head reddish; tibiae and tarsi partially darker; elytra largely yellow remaining their margins black in some individuals; derm with dense recumbent hairs.

Head a little longer (male) or a little broader (female) than long, strongly constricted at the base; eye large, strongly prominent, temples shorter than eye; rostrum 0.8 (male) or 1.1 (female) times as

long as pronotum; antenna twice as long as pronotum. Pronotum a little longer (male) or as long as (female) broad, subbasal constriction weak and distinct, subapical constrictions sharp, with postcoxal projections distant from each other. Elytra conjointly flat, 1.6 times as long as broad at humeri, with 9th stria confluent with 10th above the 1st ventrite. Legs with fore and middle tibiae mucronate in the male; hind leg with 1st tarsal segment longer than 2nd and 3rd combined.

Length: 3.1 – 4.6 mm (excl. rostrum).

Biology: Leaf-cutter of oak, *Pasania edulis* and *Quercus salicocina*.

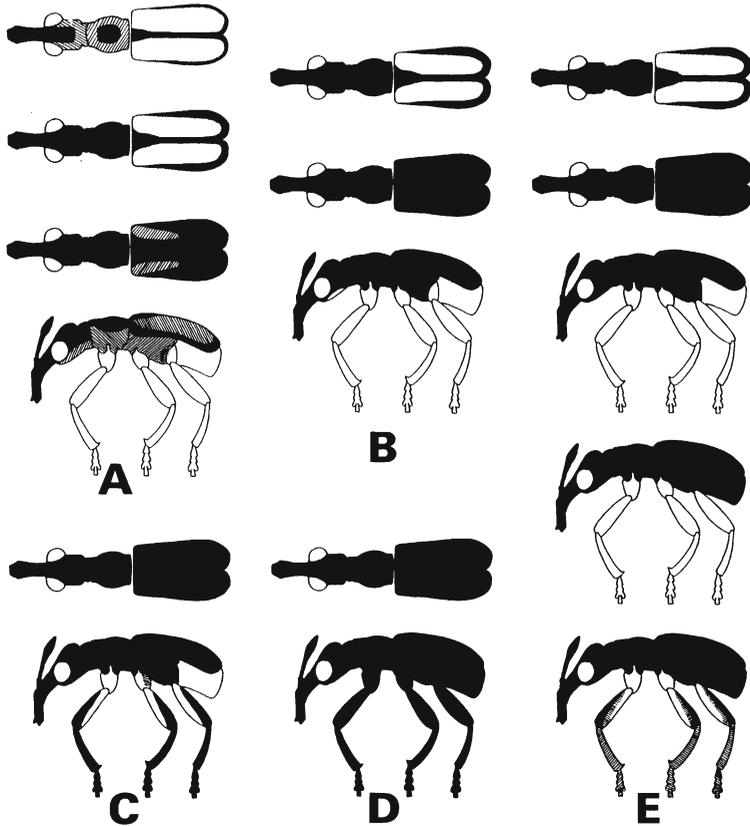


Fig. 29. Colouration of *Deporaus* (*Hypodeporaus*) spp. — A: *D. (H.) ohdaisanus*, B: *D. (H.) insularis*. C: *D. (H.) vossi*. D: *D. (H.) minimus*. E: *D. (H.) fuscipennis*.

Holotype: male (Type No. 2891, Kyushu Univ.), Santaro pass, Amami oshima Is., 12. iv. 1984, Y. Sawada leg.

Paratypes: (Yakushima) 2 males, 1 female, Mt. Aikodake, Yakushima Is., 11. v. 1983, K. Konishi leg.; 1 male, 1 female, Nagata, Yakushima Is., 17. v. 1960, J. Nagao leg.; 3 males, Miyanouura, Yakushima Is., 26. vii. 1974, T. Mikage leg.; (Amami) same data as holotype 1 male, 2 females; Asato pass, Naze, Amami-oshima Is., 3 males, 2 females, 11. iv. 1984, Y. Sawada leg.; 1 male, Mt. Benten, Naze, Amami-oshima Is., 11. iv. 1984, Y. Sawada leg.; 5 males, 4 females, Yuwan, Amami-oshima Is., 5. iv. 1958, M. Takahashi leg.; (Okinawa) 8 males, 3 females, Ie-rindo, Kunigami, Okinawa Is., 6-7. iv. 1979, Y. Syono and H. Takemoto leg.; 22 males, 14 females, 5-8. iv. 1984, Y. Sawada leg.

Distribution: Japan (Yakushima Is., Amami-oshima Is. and Okinawa Is.).

4. *Deporaus* (*Hypodeporaus*) *fuscipennis*

Sharp, 1889

(Figs. 28,B,E; 29,E)

Deporaus fuscipennis Sharp, 1889, Trans. ent. Soc. Lond., 1889: 71, (Chiuzenji).

Rhynchites flavipes Schilsky, 1906, Käf. Eur., 42: 80, (subg. *Deporaus*; suburb of Tokyo).

Body two-tone; head, antenna thorax and elytra black; legs yellow including pro- and mesocoxae; metacoxa black or at least immaculate; venter black; abdomen yellowish in some individuals or legs broadly fuscate in the others; elytra often broadly fuscate remaining their margins black.

Head longer than broad, strongly constricted at the base; eye large, temples as long as the diameter of eye; rostrum 0.75 (male) times, or almost as long as (female) pronotum; antenna almost twice as long as pronotum.

Pronotum a little longer (male) or a little shorter (female) than broad, subbasal constriction weak, subapical constrictions strong, with postcoxal projections distant from each other. Elytra conjointly rather convex dorsally, 5/3 times as long as broad at humeri, with 9th stria confluent with 10th above the 1st ventrite. Legs with fore and middle tibiae mucronate in the male; four posterior tibiae milled on dorsal edges; hind leg with 1st tarsal segment longer than 2nd and 3rd combined.

Length: 2.8 - 3.8 mm (excl. rostrum).

Biology: Leaf-miner of *Leucothoe grayana* (J.N.: Hanahiri-no-ki).

Specimens examined: (Hokkaido) 2 females, Sapporo, Hokkaido Pref., 22. v. 1959, T. Kumata leg.; (Honshu) 6 males, 3 females, Ohata, Shimokita pen., Awomori Pref., 9-27. vii. 1956, K. Morimoto leg.; 2 males, 1 female, Kawaragoya-sawa, Hanayama, Miyagi Pref., 3. viii. 1984, Y. Sawada leg.; 1 female, Mt. Kai-Komagadake, Yamanashi Pref., 20. vii. 1956, H. Kamiya leg.; 1 male, Omi-one, Kyoto Pref., 26. vii. 1981, Y. Sawada leg.; 2 males, Mt. Odai-ga-hara, Nara Pref., 22. vii. 1984, Y. Sawada leg.; 1 female, Mt. Daisen, Tottori Pref., 9. vi. 1981, H. Takemoto leg.

Distribution: Japan (Hokkaido and Honshu).

5. *Deporaus (Hypodeporaus) vossi*

nom. nov.

(Figs. 28,F; 29,C)

Deporaus pallidiventris Voss, 1957 (nec Voss, 1924), Ent. Rev. Jpn., 8: 33-34, (subg. *Platyrrhynchites* ?; Kuroson, Kochi).

Black with abdomen yellow; basal half of femora and mesocoxa flavescent; antenna, tibiae and tarsi fuscate.

Head a little longer (male) or broader (female) than long, strongly constricted at the base; eye large, temples shorter than the diameter of eye; rostrum 0.77 (male), or 1.13 times (female) as

long as pronotum; antenna 1.75 times as long as pronotum. Pronotum a little longer (male) or a little shorter (female) than broad, subbasal and subapical constrictions strong, with postcoxal projections distant from each other. Elytra conjointly rather convex dorsally, 1.6 times as long as broad at humeri, with 9th stria confluent with 10th or extinct above the 3rd or 4th ventrite.

Legs with fore and middle tibiae mucronate in the male; four posterior tibiae milled on dorsal edges; hind leg with 1st tarsal segment longer than 2nd and 3rd combined.

Length: 3.8 - 4.0 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: (Shikoku) 2 females, Japan, Shikoku, Kuroson, Kochi Pref., 29. iv. 1956, Coll. M. Chujo, (holo- and paratype of *D. pallidiventris* Voss, 1957; E. Voss ded. Eing. Nr. 11-68; ZIM); 3 males, 3 females, same date and locality, K. Morimoto leg.; 1 male, Erimon, Kochi Pref., 2. vii. 1952, H. Kashiwara leg.; (Honshu) 1 female, Motomura, Shobara, Hiroshima Pref., 17. vi. 1979, K. Maeto leg.; 1 male, Mt. Naki, Tottori Pref., 22. vii. 1954, S. Nakao leg.

Distribution: Japan (Honshu and Shikoku).

Note. *Deporaus (Platyrrhynchites?) pallidiventris* Voss, 1957 is a junior primary homonym of *Deporaus pallidiventris* Voss, 1924 from Sumatra. I give a new name *Deporaus vossi* for the former.

This species resembles *Deporaus fuscipennis*, but the endophallic sclerites of male genitalia in both species are slightly different. In the former species, the dorso-apical part of proximal sclerite is projected laterally (both sides) above the median projection, and this part is rather strongly sclerotized. On the other hand, such projections are absent in the latter. These two species are also distinguishable by their colour patterns.

6. *Deporaus (Hypodeporaus) minimus* Kôno, 1928

(Figs. 28,G; 29,D)

Deporaus minimus Kôno, 1928, Ins. matsum., 2: 175, (subg. *Hypodeporaus*; Honshu and Kyushu).

Depasophilus pacatoides Voss, 1937, Stett. ent. Ztg., 98: 207, (Japan).

Entirely black.

Head as long as (male) or a little broader (female) than long, strongly constricted at the base; eye large, moderately convex, temples as long as or a little shorter than the diameter of eye; frons convex; rostrum stout and strongly bent in the male, 0.7 (male) times, or almost as long as (female) pronotum; antenna 1.6 times as long as pronotum. Pronotum as long as broad, sides rounded; subbasal constriction weak, subapical constrictions strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally, 1.5 times as long as broad at humeri, with 9th stria confluent with 10th above the 1st ventrite. Legs with fore and middle tibiae mucronate in the male; four posterior tibiae milled on dorsal edges; hind leg with 1st tarsal segment as long as or a little longer than 2nd and 3rd combined. Abdomen with pygidium 1.5 times as broad as long.

Length: 1.9 - 3.3 mm (excl. rostrum).

Biology: Some individuals were collected from *Lespedeza* spp.

Specimens examined: (Honshu) 4 males, 1 female, Mt. Zao, Miyagi Pref., 25. vi. 1983, Y. Sawada leg.; 1 female, Chiuzenji, Japan, G. Lewis, B. M. 1926-369, (syntype of *Depas. pacatoides* Voss; E. Voss ded. Eing. Nr. 11-68; ZIM); 4 males, 8 females, Mt. Iozen, Kanazawa, Ishikawa Pref., 28. vi. 1983, Y. Sawada leg.; 2 males, Arashiyama, Kyoto Pref., 7-9. vi. 1955, T. Kishii leg.; 4 males, 1 female, Yokoyuki vall., Oya, Hyogo Pref., 24. vi. 1984, Y. Sawada leg.; (Shikoku) 1 male, Jinryo, Tokushima Pref., 4. viii. 1953, I. Hiura leg.; (Kyushu) 2 females, Mt. Tatsudayama, Kumamoto Pref., 23-31. v. 1977, K. Morimoto leg.

Distribution: Japan (Honshu, Shikoku and Kyushu).

Subgenus *Caenorhinus* Thomson, 1859

Caenorhinus Thomson, 1859, Scand. Col., 1: 130, (as a subg. of *Rhynchites*), (Type species: *R. megacephalus* (= *D. mannerheimi*) by monotypy).

Caenorhinus Lacordaire, 1863, Gen. Col., 6: 555, ; Thomson, 1865, Scand. Col., 7: 34.

Caenorhinus Bedel, 1883, Fn. Col. Bassin Seine, 6: 29.

Diagnosis. Head more or less depressed, broader than thick; basal constriction of head indistinct at the ventral area; eye large, moderately prominent, temple almost as long as the diameter of eye; rostrum short, shorter than the head in the male, moderately broadened apically; pronotum more or less depressed; elytra with striae scarcely grooved; 9th striae extended to the apex of the elytra; mucrones of the male fore and middle tibiae vestigial; tarsi slender.

Distribution: Palearctic and Oriental Regions.

7. *Deporaus* (*Caenorhinus*) *mannerheimi*

(Hummel, 1823)

(Figs. 26,C; 30,A-E,K)

Rhynchites mannerheimi Hummel, 1823, Essais Ent., 3: 45, (Europe); - *Deporaus mannerheimi*: Bedel, 1886, Fn. Col. Bassin Seine, 6: 227.

Rhynchites megacephalus Germer, 1824, Ins. Spec. Col. novae, 1: 187.

Deporaus alliariae Stephens, 1831, Ill. Brit. Ent. Mandib., 4: 200.

Rhynchites cyaneopennis Stephens, 1831, Ill. Brit. Ent. Mandib., 4: 199.

Rhynchites laevicollis Stephens, 1831, Ill. Brit. Ent. Mandib., 4: 199.

Deporaus constrictus Gyllenhal, 1839, Gen. Sp. Curc., 5, 1: 335.

Rhynchites planipennis Roelofs, 1874, Ann. Soc. ent. Belg., 17: 150, (Japan).

Body black with blue or blue-green metallic lustre; appendages and apex of rostrum sometimes fuscate.

Head longer than broad, moderately constricted at the base; eye moderately convex; frons weakly depressed or flat with furrow rather long or indistinct; rostrum 0.8 (male) or 1.15 (female) times as long as pronotum; antenna almost twice as long as pronotum. Pronotum a little longer (male) or as long as (female) broad, subbasal constriction moderate, subapical constriction strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally, 1.75 times as long as broad at humeri, with 9th stria not confluent

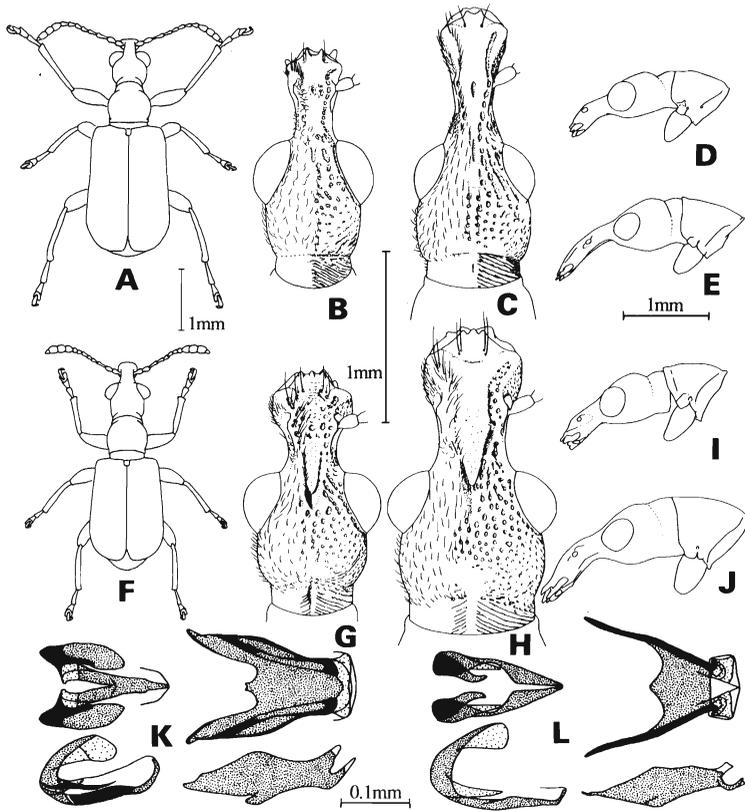


Fig. 30. Habitus, head and endophallic sclerites of *Deporaus* (*Caenorhinus*) spp. — A–E, K: *D. (C.) mannerheimi*, (A, B, D: male, C, E: female). F–J, L: *D. (C.) eumegacephalus* **sp. nov.**, (F, G, I: male, H, J: female).

with 10th. Four posterior tibiae milled on dorsal ridges; mucrones of male fore and middle tibiae vestigial; hind leg with 1st tarsal segment longer than 2nd and 3rd combined. Abdomen with pygidium 0.6 times as long as broad.

Length: 3.0 – 3.8 mm (excl. rostrum).

Biology: Leaf-cutter of *Castanopsis cuspidata* (according to Yano, 1973).

Some specimens were collected from *Alnus firma* and *Quercus salicina*.

Specimens examined: (Hokkaido) 1 male, Mt. Tokachidake, Tokachi, 25. vii. 1955, K. Yasumatsu leg.; (Honshu) 1 female, Shin-hodaka, Gifu Pref., 2. ix. 1980, Y. Syono leg.; 1 female, Owase, Mie Pref., 3. v. 1980, Y. Sawada leg.; 1 male,

Omi-one, Kyoto Pref., 10. vi. 1956, T. Kishii leg.; 1 female, Yokotemachi, Mt. Daisen, Tottori Pref., 30. vi. 1974, F. Miyauchi leg.; (Shikoku) 6 males, 2 females, Mt. Ishizuchi, Ehime Pref., 27. vii. 1983, Y. Sawada leg.; (Kyushu) 1 female, Mt. Tachibana, Fukuoka Pref., 30. iv. 1983, Y. Sawada leg.; (Tsushima) 1 male, 1 female, Asamo, Tsushima Is., 18–21. v. 1961, Y. Kimura leg.; (Yakushima) 2 males, 2 females, Mt. Aikodake, Yakushima Is., 11. v. 1983, Y. Sawada leg.; (Tokara) 1 female, Tokara-nakanoshima Is., 28. iv. 1983, N. Nishida leg. Distribution: Europe, Russia (West-siberia, Primorsky), Korea, Japan (Hokkaido, Honshu, Shikoku, Kyushu, Tsushima and Satsunan Isls.), China (Fukien) and India.

8. *Deporaus* (*Caenorhinus*) *eumegacephalus*
sp. nov.

(Figs. 26,C; 30,F–J,L)

Body black with blue or blue-green metallic lustre; appendages and apex of rostrum sometimes fuscate.

Head a little longer than broad (male) or broader than long (female), moderately constricted at the base; eye large, prominent laterally; frons with weak depression; temples shorter than the diameter of eye and parallel-sided behind eyes in the male, as long as eye and rounded in the female; rostrum stout, strongly dilated apically, 0.77 times (male) or as long (female) as pronotum; antenna almost 2.2 times as long as pronotum.

Pronotum almost as long as broad, subbasal constriction weak, subapical constriction weak; with postcoxal projections distant from each other.

Elytra conjointly convex dorsally, 1.67 times as long as broad at humeri, with 9th stria not confluent with 10th. Four posterior tibiae milled on dorsal ridges; mucrones of male fore and middle tibiae vestigial; hind leg with 1st tarsal segment longer than 2nd and 3rd combined. Abdomen with pygidium 0.6 times as long as broad.

Length: 2.8 - 4.0 mm (excl. rostrum).

Biology: Unknown.

Holotype: male (Type No. 2892, Kyushu Univ.), Mt. Shiratori, Izumi, Kumamoto Pref., 7. viii. 1981, H. Takemoto leg.

Paratypes: (Kyushu) 5 males, 3 females, same data as holotype; 2 males, 2 females, same locality as holotype, 6. viii. 1981, H. Takemoto leg.; 2 males, Mt. Taradake, Saga Pref., 5. vi. 1983, T. Ogata leg.; (Yakushima) 1 male, 1 female, Hananoego, Yakushima Is., 21. vii. 1982, K. Konishi leg.; 1 male, Mt. Miyanoura, Yakushima Is., 14. vii. 1984, T. Ogata leg.; (Honshu) 1 male, Mt. Daisen, Tottori Pref., 13. vi. 1982, Y. Syono leg.; 1 female, Onzui, Haga, Hyogo Pref., 17. viii. 1979, A. Kitayama leg.; 2 males, 1 female, Miyazu, Tango, Kyoto Pref., 8. vii. 1982, T. Ogata leg.; 1 male, Oirase, Towada, Awomori Pref., 20-21. vii. 1980, H. Takemoto leg.

Distribution: Japan (Honshu, Kyushu and Yakushima Is.).

Note. This new species resembles *D. mannerheimi* in several characters, but is different from the latter in its stouter rostrum. The index of rostrum (length/width) is less than 1.5 (male) or 1.8 (female) in *D. eumegacephalus*, while more than 1.6

(male) or 2.0 (female) in *D. mannerheimi*.

It should be noted that the seasonal appearance of this species is limited to July and August.

Subgenus *Deporaus* s. str.

Deporaus: Voss, 1938, Stett. ent. Ztg., 99: 106, (as a subgenus).

Diagnosis. Elytra with 9th striae extend to the apex; fore, middle and sometimes hind tibiae mucronate in the male; tarsi robust especially in the female.

Distribution: Palearctic and Oriental Regions.

9. *Deporaus (Deporaus) betulae*

(Linnaeus, 1758)

(Figs. 31,B,G)

Attelabus betulae Linnaeus, 1758, Syst. Nat. ed., 10: 387, (Europe); - *Rhinomacer betulae*: Müller, 1776, Zool. Dan. Prodr.: 91; - *Bruchus betulae*: Schrank, 1781, Enum. Ins. Aust.: 101; - *Curculio betulae*: Paykull, 1792, Monogr. Curc. Spec.: 127; *Involvulus betulae*: Schrank, 1798, Fn. Boica, 1: 475; - *Platyrhynchus betulae*: Thunberg, 1815, Nova. Acta Upsal., 7: 110; *Deporaus betulae*: Stephens, 1831, Ill. Brit. Mandib., 4: 198; Kôno, 1936, Trans. Biogeogr. Soc. Jpn., 2: 101, (Mts. Daisetsu); *Rhynchites betulae*: Bedel, 1883, Fn. Col. Bassin Seine, 6: 29.

Curculio excoriatoniger Degeer, 1775, Mem. Hist. Ins., 5: 257.

Curculio fagi Scopoli, 1763, Ent. Carn.: 25.

Curculio populi Scopoli, 1763, Ent. Carn.: 25.

Attelabus femoratus Olivier, 1789, Entom., 5: 81: 11.

Curculio populineus Gmelin, 1790, Syst. Nat., ed. 13, 1, 4: 1801.

Attelabus femoralis Latreille, 1814, Hist. Nat. crust. et Ins., 2: 89; - *Rhynchites femoralis*: Kolbe, 1901, Cat. Col.: 705.

Entirely black.

Head a little longer (male) or a little broader (female) than long, strongly constricted at the base; eye moderately prominent; rostrum 2/3 (male) or 4/3 (female) times as long as pronotum; antenna almost 1.6 (male) or 1.25 (female) times as long as pronotum. Pronotum a little longer than long; subbasal constriction moderate, subapical constriction strong; postcoxal projections distant from each

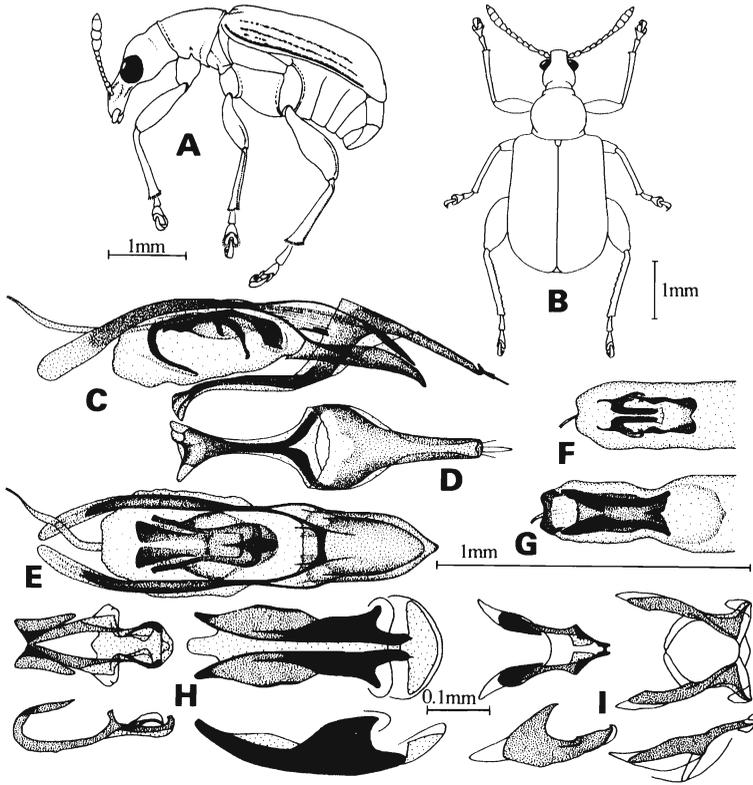


Fig. 31. Habitus, head and endophallic sclerites of *Deporaus (Deporaus)* spp. — A, C–E: *D. (D.) nidificus*, (A: male). B, G: *D. (D.) betulae*, (B: male). F: *D. (D.) unicolor*. H: *D. (D.) affectatus*. I: *D. (D.) hartmanni*.

other. Elytra 1.6 times as long as broad at humeri, with 9th stria not confluent with 10th. The male hind leg with femur much thicker than the others and tibia serrate on the under surface and concave on posterior surface; fore and middle tibiae with mucrones in the male; hind leg with 1st tarsal segment shorter than 2nd and 3rd combined in the female. Abdomen with pygidium 0.6 times as long as broad.

Length: 3.6 – 4.5 mm (excl. rostrum).

Biology: Leaf-roller of birch.

Specimens examined: (Hokkaido) 2 males, Aizankai, Mts. Daisetsu, 2. vii. 1982, Y. Sawada leg.; 17 males, 15 females, Shiokari pass, Kamkawa, 13–15. vi. 1986, Y. Sawada leg.;

(Europe) 1 male, 2 females, Beltgraven, Oldebroek, Gelderland prov., Netherlands, 24–30. ix. 1958, M. Servaas leg.; (Great Britain) 1 male, Box hill, 2. vi. 1968, K. Morimoto leg.

Distribution: Europe, England, Russia (Komi, Tyumenskaya, Irkutskaya, Chitinskaya, Amurskaya, Khabarovsk and Primorsky), Mongolia, Japan (Hokkaido).

10. *Deporaus (Deporaus) nidificus*

Sawada et Lee, 1986

(Figs. 26,A; 31,A,C–E)

Deporaus nidificus Sawada et Lee, 1986, Kontyû, 54: 672–679. (Honshu and Kyushu).

Black except for rostral apex and tarsal claws reddish.

Head a little longer than broad, weakly constricted at the base; eye moderately prominent; temples shorter than the diameter of eye, almost parallel-sided; rostrum thick and robust in the male, as long as pronotum in the female; antenna almost 7/4 times as long as pronotum. Pronotum as long as broad, anterior margin emarginate; subbasal constriction moderate, subapical constriction strong; postcoxal projections contiguous to each other. Elytra 1.6 times as long as broad at humeri, with 9th stria not confluent with 10th. All tibiae milled on dorsal ridges; fore and middle tibiae with minute mucrones in the male; hind leg with 1st tarsal segment much shorter than 2nd and 3rd combined in the female. Abdomen with pygidium 0.7 times as long as broad.

Length: 3.5 - 4.5 mm (excl. rostrum).

Biology: Leaf-roller of deciduous oak.

Specimens examined: 8 males, 24 females from Honshu and Kyushu, (type series).

Distribution: Japan (Honshu and Kyushu).

11. *Deporaus (Deporaus) unicolor*

(Roelofs, 1874)

(Fig. 31,F)

Rhynchites unicolor Roelofs, 1874, Ann. Soc. ent. Belg., 17: 149, (Japan); - *Deporaus unicolor*: Faust, 1887, Dt. ent. Z., 31: 163; Kôno, J. Fac. Agr., Hokkaido imp. Univ., 29: 14, (as *Deporaus uniformis* Roelofs (err)).

Entirely black.

Head almost as long as broad; eye strongly prominent; frons weakly depressed or flat, with furrow strong and long, extended posteriorly in general; rostrum 0.7 (male) or 0.9 (female) times as long as pronotum; antenna 1.5 times as long as pronotum. Pronotum a little longer than broad, subbasal constriction weak, subapical constriction strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally in smaller

individuals, or rather flat in larger ones, 1.5 times as long as broad at humeri, with 9th stria not confluent with 10th. Four posterior tibiae milled on dorsal ridges; fore and middle tibiae mucronate in the male; hind leg with 1st tarsal segment as long as 2nd and 3rd combined in the female. Abdomen with pygidium 0.7 times as long as broad.

Length: 2.4 - 4.2 mm (excl. rostrum).

Biology: Leaf-roller of oak.

Specimens examined: (Hokkaido) 5 males, 5 females; (Honshu) 31 males, 51 females from Awomori, Miyagi, Niigata, Gunma, Nagano, Gifu, Mie, Ishikawa, Kyoto, Tottori and Hiroshima Prefs.; (Sado) 5 males, 7 females; (Shikoku) 1 male from Tokushima Pref.; (Kyushu) 44 males, 50 females, from Fukuoka, Saga, Oita, Kumamoto and Miyazaki Prefs.

Distribution: Russian Federation (Krasnoyarsky, Irkutskaya, Chitinskaya, Amurskaya and Primorsky), Kuril Isls., Korea, Japan (Hokkaido, Honshu, Sado Is., Shikoku and Kyushu), China (Fukien, Yunnan), Indochina and Tonkin.

12. *Deporaus (Deporaus) affectatus*

Faust, 1887

(Fig. 31,H)

Deporaus affectatus Faust, 1887, Dt. ent. Z., 31: 163, (Nikolajevsk and Japan); - *Rhynchites unicolor* var. *affectatus*: Schilsky, 1903, Käf. Eur., 40: D, 16, (subg. *Deporaus*).

Entirely black.

Head as long as broad (male), or a little broader than long (female); eye less prominent; frons weakly convex or flat with furrow slight or absent; rostrum 5/7 times as long as pronotum in the male, as long as pronotum in the female; antenna 1.6 (male) or 1.5 (female) times as long as pronotum. Pronotum a little longer than broad, subbasal constriction moderate, subapical constriction strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally, 1.5 times as long as broad at humeri, with 9th stria not confluent with 10th. All tibiae milled on dorsal ridges; all tibiae mucronate in the male; hind leg with 1st tarsal segment as long as 2nd and 3rd

combined. Abdomen with pygidium 0.7 times as long as broad.

Length: 2.8 - 3.4 mm (excl. rostrum).

Biology: Some specimens were collected from *Sorbus commixta* (J.N.: Nana-kamado) and *Betula* spp. (J.N.: Kaba).

Specimens examined: (Hokkaido) 3, 10 females, Nukabira, Kami-shihoro, 30. vi. 1980, H. Takemoto leg.; 4 males, 3 females, Shikaribetsu, Shikaoi, 3. vii. 1980, H. Takemoto & K. Maeto leg.; 3 males, 9 females, Yukomenbetsu, Mts. Daiset, 24-26. vii. 1955, K. Morimoto leg.; (Rishiri) 4 males, 1 female, Oshidomari, Rishiri Is., 31. vii - 3. viii. 1956, T. Kishii leg.

Distribution: Russian Federation (Amurskaya and Khabarofsky) and Japan (Hokkaido and Rishiri Is.).

13. *Deporaus* (*Deporaus*) *hartmanni*

Voss, 1929

(Fig. 31.1)

Deporaus hartmanni Voss, 1929, Ent. Blät., 25: 28, (Kiga); Voss, 1938, Stett. ent. Ztg., 99: 103, 357, (subg. *Arodepus*).

Deporaus affectatus: Sharp, 1889 (nec Faust, 1889), Trans. ent. Soc. Lond., 1889: 71, (Kiga).

Entirely black except for appendages more or less fuscate; derm with fine decumbent hairs on dorsum and suberect long hairs on ventral surface.

Head as long as broad (male), or a little broader than long (female); eye large and strongly prominent; frons weakly convex or flat with furrow slight or absent; temple much shorter than the diameter of eye; rostrum 0.7 (male) or 0.9 (female) times as long as pronotum, with dorsum smooth, equally curved in the female; antenna almost twice as long as pronotum. Pronotum as long as or a little longer than broad, subbasal constriction weak, subapical constriction strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally except post-scutellar area narrowly depressed, 1.6 times as long as broad at humeri, with 9th stria not confluent with 10th. Four posterior tibiae milled on

dorsal ridges; all tibiae mucronate in the male; hind leg with 1st tarsal segment almost as long as 2nd and 3rd combined. Abdomen with pygidium 0.7 times as long as broad.

Length: 3.8 - 4.5 mm (excl. rostrum).

Biology: Unknown.

Specimens examined: (Honshu) 1 male, Tainai, Kurokawa, Niigata Pref., 4. vi. 1980, K. Maeto leg.; 1 female, Shinano-oiwake, Nagano Pref., 16. vii. 1979, Y. Sawada leg.; 1 male, Karuizawa, Shimokita, Aomori Pref., 26. vii. 1983, S. Yamauchi leg.; 1 female, Sakyo, Kyoto Pref., 5. vi. 1984, K. Saigusa leg.; 1 female, Japan, Kyoto, (paratypoid of *D. hartmanni* Voss; E. Voss ded. Eing. Nr. 11-68; ZIM); 1 female, Omi-one, Kyoto Pref., 21. vi. 1984, Y. Sawada leg.; 3 females, Arashiyama, Kyoto Pref., 3-11. v. 1956, T. Kishii leg.; 1 male, Mt. Daisen, Tottori Pref., 26. v. 1954, S. Kimoto leg.; (Kyushu) 1 female, Mt. Kuju-kurodake, Oita Pref., 19-21. v. 1984, Y. Sawada leg.; 1 male, Mt. Hirao, Fukuoka Pref., 5. v. 1954, Y. Murakami leg.; 1 female, Nagasaki c., Nagasaki Pref., 20. iv. 1958, Y. Ikezaki leg.

Distribution: Japan (Honshu and Kyushu).

Subgenus *Exrhynchites* Voss, 1930

Exrhynchites Voss, 1930, Wien. ent. Ztg., 47: 80. (Type species: *D. puberulus* by monotypy).

Diagnosis. Derm with blue or bluish green metallic lustre; rostrum slender, long or shrunk, less broadened apically; antennal club with 3rd and 4th segments conjointly slender, longer or narrower than the 2nd; elytra with striae closely punctate and conspicuously grooved; 9th striae extend to the apex of the elytra; fore and middle tibiae mucronate in the male; tarsi slender.

Distribution: Japan, China and India.

14. *Deporaus* (*Exrhynchites*) *septemtrionalis*

sp. nov.

(Fig. 32)

Body black with bluish green metallic lustre; antenna and apex of rostrum sometimes fuscate.

Head as long as, or a little broader than broad in the male, distinctly broader than long in the female,

strongly constricted at the base; eye large, prominent antero-laterally; frons with median longitudinal furrow; rostrum narrow, 0.7 (male) or 1.0 (female) times as long as pronotum; antenna almost 1.5 as long as pronotum. Pronotum as long as broad, subbasal constriction weak, subapical constriction strong, with postcoxal projections distant from each other. Elytra conjointly convex dorsally, 1.4 times as long as broad at humeri, with 9th stria not confluent with 10th. Tibiae milled on dorsal ridges; fore and middle tibiae mucronate in the male; hind leg with 1st tarsal segment as long as 2nd and 3rd combined. Abdomen with pygidium 0.6 times as long as broad.

Length: 2.3 - 3.5 mm (excl. rostrum). Host: *Prunus yedoensis*, (J.N: Somei-yoshino), (according to Ito, 1975).

Holotype: male (Type No. 2893, Kyushu Univ.), Serio vall., Mts. Kitayama, Kyoto Pref., 18. v. 1957, T. Kishii leg.

Paratypes: (Honshu) 1 female, Maruike, Nagano Pref., 25. vii. 1953, J. Akiyama leg.; 1 female, Hirofani, Mt. Hira-bunagadake, Shiga Pref., 6. vi. 1982, N. Nishida leg.; 1 male, 5 females, Maizuru, Kyoto Pref., 12. iv. 1974, T. Ito leg.; 10 males, 9 females, same locality and collector; 1 female, same locality as holotype, 1. vi. 1952, H. Ishida leg.; 4 females, 3. v. 1962, T. Kishii leg.; 3 males, 3 females, Sugi pass, Omi-one, Kyoto Pref., 17. v - 10. vi. 1956, T. Kishii leg.; 1 female, same locality and collector, 31. v. 1958; 1 female, Mt. Daihizan, Kyoto pref., 14. vi. 1957, T. Kishii leg.; 2 males, same locality and collector, 30. v. 1953; 1 male, 2 females, Mt. Iwaya, Kyoto Pref., 26. iv. 1981, Y. Sawada leg.; 1 female, Kibune, Kyoto Pref., 27. iv. 1980, N. Nishida leg.; 1 male, 3 females, Mt. Nachi, Wakayama Pref., 3. v. 1957, T. Kishii leg.; (Shikoku) 1 female, Kuroson, Kochi Pref., 29. iv. 1956, K. Morimoto leg.; (Kyushu) 2 females, Mt. Kuju-kurodake, 11-12. v. 1985, Y. Sawada leg.

Distribution: Japan (Honshu, Shikoku and Kyushu).

Subgenus *Pseudodeporaus* Voss, 1922

Pseudodeporaus Voss, 1922, Philipp. J. Sci., 21: 387. (Type species: *Deporaus periscelis* Voss, 1922 new designation).

Diagnosis. Eye moderate in size, temple as long as the diameter of eye; head scarcely constricted at the

base; rostrum rather long; elytra with 9th striae extend to the apex of the elytra; fore and middle tibiae mucronate in the male; tarsi slender.

15. *Deporaus* (*Pseudodeporaus*) *rhynchitoides*

sp. nov.

(Fig. 33)

Body black with blue metallic lustre.

Head as long as broad (male), or broader than long (female); basal constriction weak, distinct at the dorsum; eye large, prominent laterally; frons with median longitudinal furrow; rostrum slender, 0.8 (male) or 1.1 (female) times as long as pronotum; antenna 1.6 times as long as pronotum. Pronotum as long as broad; strongly prominent posterolaterally in the male; subbasal constriction weak, subapical constriction slight, with postcoxal projections distant from each other. Elytra conjointly convex dorsally, almost parallel-sided in the male, weakly dilated posteriorly in the female, 1.4 times as long as broad at humeri, with 9th stria not confluent with 10th. Tibiae with dorsal ridges milled, fore and middle tibiae with mucrones in the male; hind leg with 1st tarsal segment as long as 2nd and 3rd combined. Abdomen with pygidium 0.7 times as long as broad.

Length: 3.5 - 5.0 mm (excl. rostrum).

Biology: Unknown.

Holotype: male (Type No. 2894, Kyushu Univ.), Mt. Hikosan, Fukuoka Pref., 4. v. 1966, K. Takeno leg.

Paratypes: 3 males, same data as holotype, (HBKU); 1 male, same locality and collector, 11. v. 1966, (HBKU); 11 males, 8 females, same locality and collector, 14. iv - 12. v. 1967, (HBKU); 1 female, same locality and collector, 21. iv. 1980, (HBKU); 3 males, same locality, 13. iv. 1964, S. Kimoto leg., (HBKU); 1 female, same locality and collector, 14. x. 1964, (HBKU); 1 male, 1 female, same locality, 1-9. v. 1970, K. Takeno and M. T. Chujo leg., (HBKU).

Distribution: Kyushu (Mt. Hikosan).

Paradeporaus Kôno, 1927

Paradeporaus Kono, 1927, Ins. matsum., 2: 60; Voss, 1938,

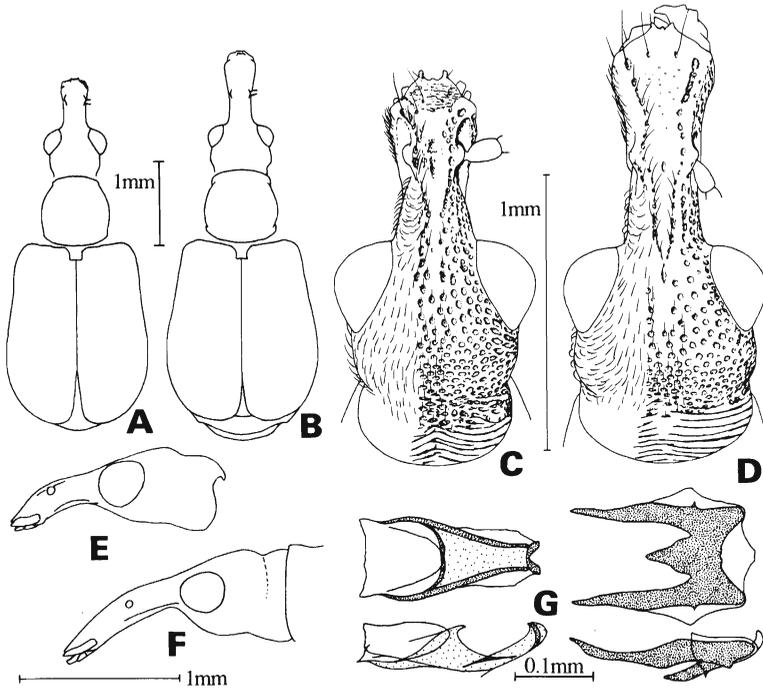


Fig. 32. *Deporaus (Exrhynchites) septentrionalis* sp. nov. — A: Habitus in dorsal view, male. B: ditto, female. C: head and rostrum in dorsal view, male. D: ditto, female. E: head and rostrum in lateral view, male. F: ditto, female. G: male genitalia.

Stett. ent. Ztg., 99: 69; Ter-Minassian, 1950, Fn SSSR, 21, 2: 145, (Type species: *Paradeporaus parasiticus* by original designation).

Diagnosis. Rostrum short and depressed, with a foliaceous lateral projections below the antennal insertion in the male; femur nor tibiae without hook-shaped spines, tibiae mucronate in the male; propygidium without wing folding spicule patches.

Distribution: Russian Federation (Primorsk kray) and Japan.

1. *Paradeporaus depressus* (Faust, 1882)
(Fig. 34)

Rhynchites depressus Faust, 1882, Dt. ent. Z., 26: 260, 287-288, (Amur); Reitter, 1889, Ent. Nach., 25: 307, (subg. *Deporaus*); Schilsky, 1903, Käf. Eur., 40: 14, (Amur: Vladivostok); - *Deporaus depressus*: Faust, 1887, Dt. ent. Z., 31: 163; - *Paradeporaus depressus*: Voss, 1938, Stett. ent.

Ztg., 99: 60, 69-70, fig. 5; Ter-Minassian, 1950, Fn. SSSR, 27, 2: 145-146, (Primorsk kray); Sawada, 1987, Kontyû, 55: 662-664, (Japan).

Paradeporaus parasiticus Kôno, 1927, Ins. matsum., 2: 60-61, (Hokkaido).

Male. Black; elytra with slight blue lustre; hairy.

Head a little shorter than broad. 0.6 times as long as pronotum excluding the neck region, distinctly constricted at base, under surface excavated; eyes small, strongly prominent; temples a little shorter than eyes, parallel-sided, constricted along hind margins of eyes; frons very broad, 3/4 times as broad as head excluding eyes; rostrum 5/9 times as long as pronotum, directed anteriorly and evenly curved, apex with a pair of weak projections and a minute median projection, each side with a filiaceous lateral projection below the antennal insertion; antenna 1.2 times as long as pronotum.

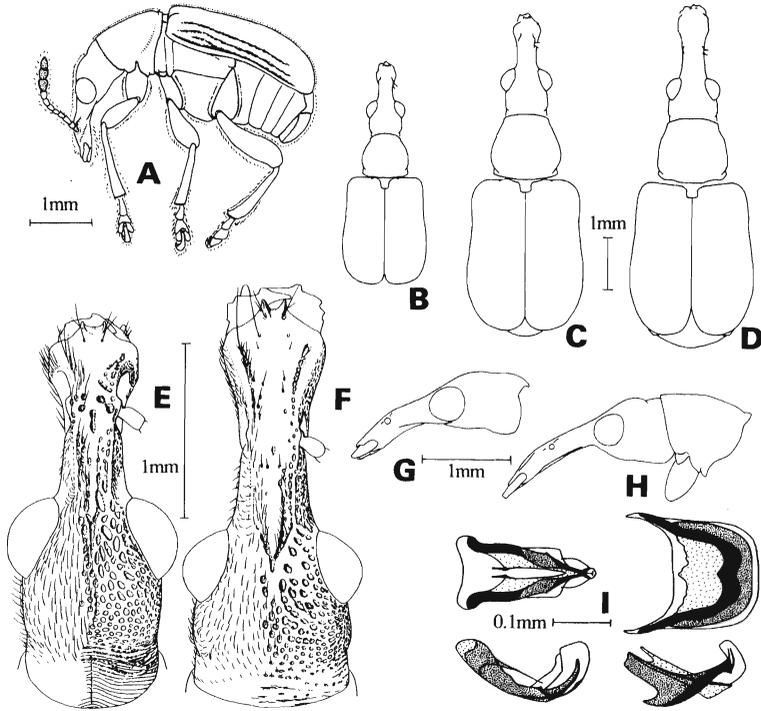


Fig. 33. *Deporaus (Pseudodeporaus) rhynchitoides* sp. nov. — A: Habitus in lateral view, male. B, C: ditto, in dorsal view. D: ditto, female. E: head and rostrum in dorsal view, male. F: ditto, female. G: head and rostrum in lateral view, male. H: ditto, female. I: endophallic sclerites.

Pronotum depressed and prominent posterolaterally, 0.8 times as long as broad, broadest at basal 1/3, sharply constricted just behind apical margin, strongly constricted at base; postcoxal projections not contiguous to each other; dorsum strongly and closely but separately punctate; elytra 1.4 times as long as broad at humeri, 2.3 times as long as pronotum, dilated posteriorly, reaching the apical part of propygidium; 9th and 10th striae not confluent throughout; all tibiae mucronate; 1st segment of hind tarsus as long as or a little longer than 2nd and 3rd taken together; pygidium 5/9 times as long as broad, propygidium without spicules.

Male genitalia with distinct endiphallid sclerites. Female. Head orderly, not excavated ventrally,

broader, 0.7 times as long as broad; temples shorter, rounded laterally; rostrum normal, directed antero-ventrally and evenly curved ventrally, without foliaceous projections; pronotum rather smaller; tibiae without mucrones; pygidium broader, twice as broad as long.

Length: 2.7 - 3.8 mm (excl. rostrum).

Biology: Symbiont of plug-roller.

Specimens examined: (Hokkaido) 1 male, Yukomanbetsu, Mts. Daisetsu, 30. vi. 1982, Y. Sawada leg.; (Honshu) 2 females, 1 female, Akazai vall., Hyogo Pref., 6. v. 1984, N. Nishida leg.; (Shikoku) 3 males, 4 females, Mt. Koutsusan, Tokushima Pref., 12. v. 1985, K. Ohara leg.; (Kyushu) 1 male, 1 female, Mt. Hikosan, Fukuoka Pref., 10. v. 1980, K. Ohara leg.; 5 males, 2 females, Mt. Kuju-kurodake, Oita Pref., 19-21. v. 1984, Y. Sawada leg.; 9 males, 14 females, same locality, 11-12. v. 1985, Y. Sawada leg.

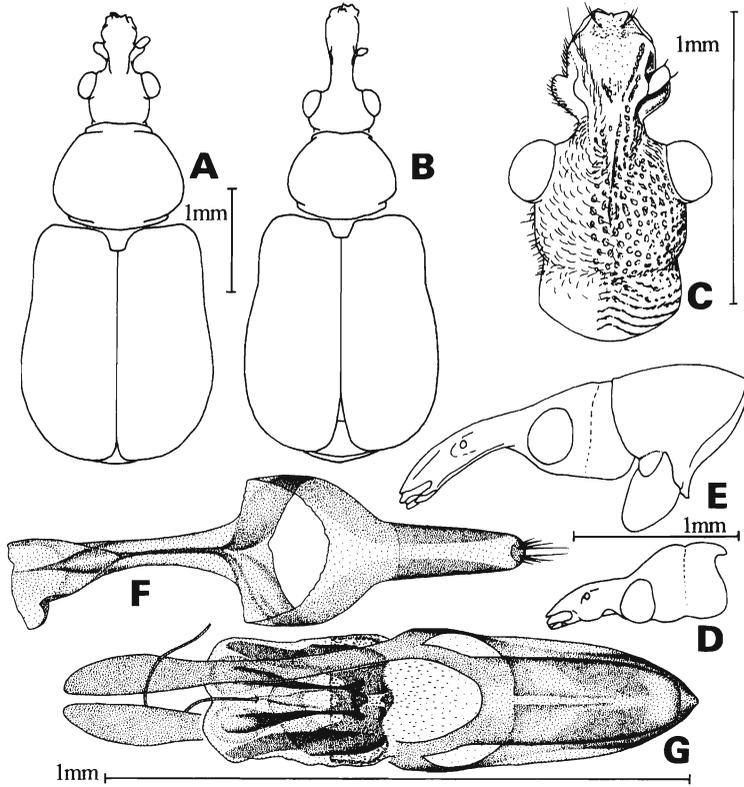


Fig. 34. *Paradeporaus depressus* — A: Habitus in dorsal view, male. B: ditto, female. C: head and rostrum, male, in dorsal view. D: ditto, in lateral view. E: ditto, female. F, G: male genitalia.

Distribution: Russian Federation (Primorsk kray) and Japan (Hokkaido, Honshu, Shikoku and Kyushu).

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日本産チョッキリゾウムシ科の分類学的研究(鞘翅目, ゾウムシ上科)

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日本産チョッキリゾウムシ科について分類学的再検討を行った。その結果この地域から12新種、1新記録種を含む4族62種が認められた。これらについて記載、図示を行い、検索表を与えた。また1新参異物同名に対して新名を与えた。Vossによって構築された現行の分類体系における属および亜属の学名について命名法の観点から再検討した。日本産の種間の系統関係の推定を試み、現行の分類群に関して推定される系統関係に基づいて評価を行った。