

## Larvae of the Weevil Family Attelabidae of Japan : Part 1. Subfamily Attelabinae (Insecta : Coleoptera)

Lee, Chan-Young  
Entomological Laboratory, Faculty of Agriculture, Kyushu University

Morimoto, Katsura  
Entomological Laboratory, Faculty of Agriculture, Kyushu University

<https://doi.org/10.5109/23878>

---

出版情報 : 九州大学大学院農学研究院紀要. 32 (3/4), pp.215-237, 1988-03. Kyushu University  
バージョン :  
権利関係 :



**Larvae of the Weevil Family Attelabidae of Japan**  
**Part 1. Subfamily Attelabinae**  
**(Insecta : Coleoptera) \***

**Chan-Young Lee and Katsura Morimoto**

Entomological Laboratory, Faculty of Agriculture,  
Kyushu University, Fukuoka 812

(Received November 10, 1987)

Larvae of 16 genera and 25 species of Japanese Attelabidae are described and illustrated in two parts. First part deals with the subfamily Attelabinae, together with a key to subfamilies, tribes, genera and species of the Attelabidae examined. Genera included are *Phymatapoderus*, *Paroplapoderus*, *Apoderus*, *Paratrachelophorus*, *Cycnotrackelus*, *Paracentrocorynus*, *Pkialodes*, *Henicolabus*, and *Euops*.

INTRODUCTION

In continuation of our studies on the weevil larvae of Japan, we report the family Attelabidae in two parts as the second of the series.

The materials treated in this study contain 16 genera and 25 species from Japan out of 25 genera and 85 species of the family known from our fauna up to the present.

Methods and terminology we employed are the same as already noted in our previous paper on Anthribidae.

We wish to express our cordial thanks to Prof. Y. Hirashima, of Kyushu University, for his kind guidance in the course of the present study.

Family Attelabidae

Rhynchitinae : Emden, 1938, Trans. Roy. Ent. Soc. London 87 : 9.

Attelabidae : Crowson, 1954, Nat. Class. Coleopt., : 158. — Morimoto, 1962, J. Fac. Agr., Kyushu Univ., 11: 367.

Body usually subcircular in cross-section, with sparse to abundant setae and moderately dense asperities.

Head retracted, convex, pale, anteriorly yellowish or brownish, as long as to 1.5 times as long as wide, posterior margin with or without a flattened extension under pronotum. Black ocellar spots six in general, anterior three close in position, posterior three smaller and often indistinct in Rhynchitinae. Antenna with two distinct segments, basal segment ring-like or cylindrical, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon present or absent. Frontal sutures indistinct. Epicranial suture present.

---

\* Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 3, No. 269).

Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, setae 1, 2 and 3 short to moderately long, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeal seta 1 short to moderately long, nearly twice as long as 2, or subequal. Labrum weakly trilobed or transverse at anterior margin, nearly straight or extended into clypeal zone at posterior margin, with three or four pairs of setae and one pair of basal sensilla, without anterior or median sensilla. Labral rods short to long, subparallel. Epipharynx with three anterolateral and four anteromedian setae and four median spines, with or without asperities between rods. Epipharyngeal sensory pores in two clusters. Mandible wide and short or rather short, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments. Prementum with or without distinct dividing line from postmentum. Postmentum with three pairs of setae. Maxillary palpus with two or three segments. Maxillary mala slightly expanded internally on the inner side, with or without thorn-like lacinia near middle of inner margin.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles. Spiracles all bicameral or without marginal air-tubes. Typical abdominal segment with two dorsal folds, pleurum not subdivided.

Larvae of this family are easily recognized by the two-segmented antennae, obsolete frontal sutures, partly overlapped head by the thorax, and multisetose body. Dorsal area of the typical abdominal segment is subdivided into the prodorsum and postdorsum, but the latter is again subdivided into two folds by posterior dorsal sulcus in the Rhynchitinae.

Black ocellar spots are completely faded in the time-worn materials preserved in alcohol. They are of the same size in the Attelabinae, while in the Rhynchitinae the anterior three spots are usually very close or almost contiguous and larger, and the posterior small spots are often indistinct.

#### Key to subfamilies, tribes and species examined

1. Prementum and postmentum fused and equally sclerotized ; Maxillary palpus two-segmented ; spiracle of thorax with its place in forefront of mesothorax ; postdorsum of abdominal tergites not divided by posterior dorsal sulcus ; hypopharyngeal bracon absent ; basal segment of antennae very short, ring-shaped ..... Attelabinae ..... 2
- Prementum and postmentum divided ; maxillary palpus three segmented (two-segmented in Auletini) ; spiracle of thorax in latero-posterior part of pronotum ; postdorsum of abdominal tergites divided into median and posterior folds by posterior dorsal sulcus ; hypopharyngeal bracon present ; basal segment of antennae short cylindrical ..... Rhynchitinae ..... 16
2. Spiracles annular, without marginal air-tubes ; anus ventral ; postmentum without mask-like extension ..... Apoderini ..... 3

- Spiracles bicameral ; anus subterminal or terminal ; postmentum often with mask-like extension ..... Attelabini ..... 13
- 3. Mandible with simple internal ridges ; frontal setae 1-4 arranged in a rather regular row ..... Hoplapoderina ..... 4
- Mandible with internal ridges often toothed near base ; frontal setae arranged in a zigzag line, seta 3 or 4 much external to 2 ..... 6
- 4. Labrum weakly trilobed ; apical segment of maxillary palpus much longer than that of labial palpus ..... *Phymatopoderus pavens*
- Labrum evidently trilobed, lateral lobes much produced anteriorly beyond median lobe ; apical segment of maxillary palpus scarcely longer than that of labial palpus ..... *Paroplapoderus* ..... 5
- 5. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short ..... *Paroplapoderus pardalis*
- Dorsal epicranial setae 1, 3, 4 and 5 long, subequal, 2 short ..... *Paroplapoderus vanvolxemi*
- 6. Apical segment of maxillary palpus about twice as long as broad and longer than basal segment, the latter broader than long ; mandible with two sharp apical and one obtuse postmedian teeth in dorsal aspect ..... Apoderina ..... *Apoderus* ..... 7
- Apical segment of maxillary palpus scarcely longer than basal segment, the latter almost as broad as long ; mandible with postmedian tooth indistinct ..... Trachelophorina ..... 11
- 7. Labium with five pairs of setae ; labral rods short ..... *Apoderus jekeli*
- Labium with four pairs of setae ..... 8
- 8. Labral rods extended back beyond epistoma ..... *Apoderus rubidus*
- Labral rods not reaching epistoma ..... 9
- 9. Clypeal setae more than half the length of clypeus ..... *Apoderus balteatus*
- Clypeal setae less than half the length of clypeus ..... 10
- 10. Labral rods longer than labrum ..... *Apoderus geminus*
- Labral rods about as long as labrum ..... *Apoderus erythrogaster*
- 11. Labral rods much longer than clypeus ..... 12
- Labral rods almost as long as clypeus ..... *Paratarachelophorus longicornis*
- 12. Apical teeth of mandible distant ..... *Cycnotrachelus roelofsi*
- Apical teeth of mandible close in position ..... *Paracentrocorynus nigricollis*
- 13.** Labium with six pairs of setae, of which three in premental area ; meso- and metasterna each with a median small projection ; maxillary stipes with a distinct spine near the middle of inner margin ..... *Phialodes rufipennis*
- Labium with four pairs of setae, meso- and metasterna without projection ..... 14
- 14. Maxillary mala without spine ; anterolateral setae of epipharynx arranged transversely along anterior margin ..... *Henicolabus lewisii*
- Maxillary mala with a distinct spine near middle of inner margin ; anterolateral setae of epipharynx arrange in an oblique line ..... *Euops* ..... 15
- 15. Posterior median spines of epipharynx placed in labral zone ..... *Euops politus*
- Posterior median spines of epipharynx placed in clypeal zone

- ..... *Euops splendidus*
16. Maxillary palpus two-segmented ; anus subventral  
 ..... Auletini ..... *Auletobius uniformis*  
 Maxillary palpus three-segmented ; anus terminal ..... 17
17. Spiracles strongly prominent ; head deeply retracted, much longer than  
 broad ; hypopharynx with an arcuate sclerite; body transverse in  
 cross-section ..... Deporaini ..... *Deporaus*  
 Spiracles normal, not prominent ; hypopharynx without an arcuate  
 sclerite ; body circular in cross-section ..... 18
18. Sclerotisation of postmentum, if presented, much narrower than  
 prementum ; dorsointerior row of spines in the lacinia-lobe of maxillary  
 mala rather regular ..... Rhynchitini ..... 22  
 Sclerotisation of postmentum wider behind than prementum ; dor-  
 sointerior row of spines of maxillary mala forming a group rather than  
 a row ..... Byctiscini ..... 19
19. Prodorsum of abdominal tergites without ampullae ; head with a nar-  
 row posterior extension; postmental setae not in straight lines; scler-  
 otisation of postmentum only slightly wider than prementum  
 ..... *Aspidobyctiscus lacunipennis*  
 Prodorsum of abdominal tergites 1-5 with a pair of flat ampullae ; head  
 rounded posteriorly ; postmental setae in a pair of straight lines  
 ..... *Byctiscus* ..... 20
20. Dorsointerior setae 1-3 of maxillary mala arranged in a curve  
 ..... *Byctiscus puberulus*  
 -. Dorsointerior setae 1-3 of maxillary mala arranged in a straight row ..... 21
21. Dorsoanterior seta 2 of maxillary mala closer to 3 than 1 ... *Byctiscus venustus*  
 -. Dorsoanterior seta 2 of maxillary mala equidistant from 1 and 3  
 ..... *Byctiscus fausti*
22. Postmentum without median sclerotisation ; postdorsum with five  
 setae ..... *Neocoenorrhinus interruptus*  
 Postmentum with a media sclerotisation ; postdorsum with more than  
 five setae ..... 23
23. Setae of postmentum arranged in a pair of straight lines ..... *Rhynchites heros*  
 -. Seta 2 of postmentum placed interiorly to 1 and 3 ..... *Mechoris ursulus*

#### Subfamily Attelabinae

Apoderinae : Gardner, 1934, Ind. For Rec., 20 : 6.

Attelabini plus Apoderini : Emden, 1938, Trans. Roy. Ent. Soc. London, 87 : 10.

Larvae of this subfamily have marked difference from those of the Rhynchitinae,  
 and are easily grouped into two tribes as noted in the key.

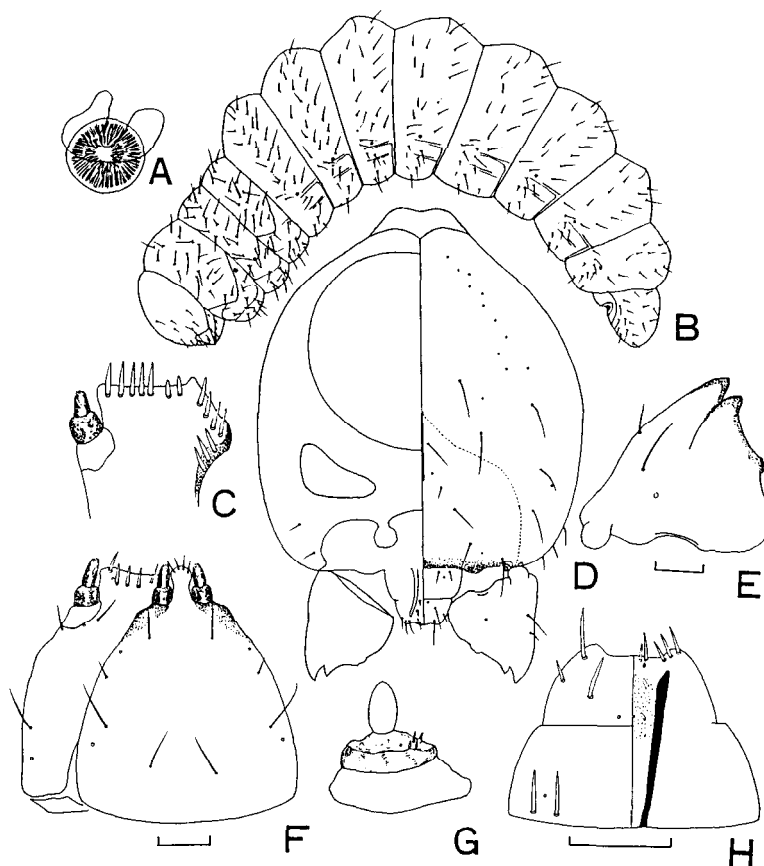
Larvae were obtained from cradles rolled by the females

Genus *Paroplapoderus* Voss

(Figs. 1, 2)

Body setae sparse to abundant, thorax slenderer than abdomen, with moderately dense asperities.

Head retracted, pale yellow, slightly longer than wide, posterior margin with a larger flattened extension under pronotum. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, seta 2 short, 1 and 3 moderately long, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal. Lateral epicranial seta 1 and 2 moderately long, 3 long. Ventral



**Fig. 1.** *Paroplapoderus pardalis* (Vollenhoven).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with two setae, moderately long, subequal. Anterior margin of labrum produced anteriorly at sides and median part weakly arched. Labrum with three pairs of setae, labral setae 1 and 2 moderately long, nearly twice as long as 3, with one pair of basal sensilla, posterior margin nearly straight. Labral rods moderately slender and long, subparallel. Epipharynx with three anterolateral and four antero-median setae, and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible wide and short, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four pairs of setae. Ligula about as broad as one labial palpus, palpi separated nearly by their own width. Labial palpus with two segments, basal segment with one short seta and one sensillum, apical segment twice as long as wide. Maxillary palpus with two segments, apical segment with one or two short setae and one sensillum, Maxillary mala slightly expanded internally on the inner side. Mala with 6 ventral and 10 or 12

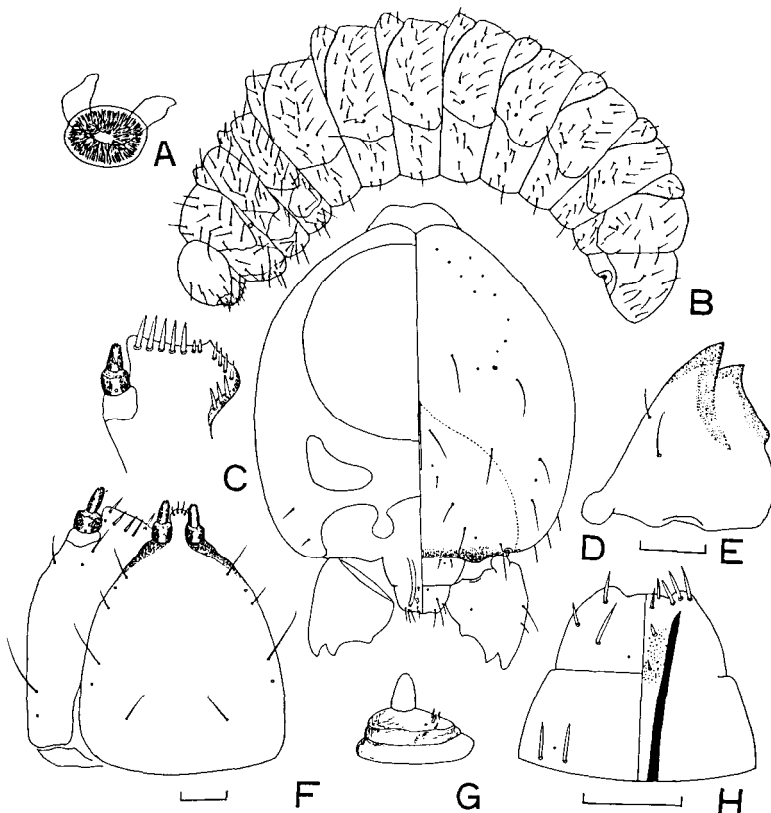


Fig. 2. *Paroplapoderus vanvolxemi* (Roelofs).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

dorsal setae, with an obtuse spine near the middle of inner margin.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all lateral, without marginal air-tubes. Typical abdominal segments with two dorsal folds, conically humped dorsally, 9th segment itself conically produced caudad. Anus subventral, transverse.

Species and materials examined :

*Paroplapoderus pardalis* (Vollenhoven). Mt. Aburayama, Fukuoka Pref., 24. v. 1959, on *Quercus glauca*.

*Paroplapoderus vanvolxemi* (Roelofs). Tatsudayama, Kumamoto Pref., 6. vii. 1957, on *Celtis sinensis* var. **japonica**.

This genus may be characterized by the trilobed labrum, of which the lateral lobes are much produced anteriorly than the median one, and by the subventral and transverse anus. Identification of two species is easy by their hosts, but difficult by the larval characters.

### *Phyma tapoderus pavens* Voss

(Fig. 3)

Body with rather sparse setae, with moderately dense asperities, thorax slenderer than abdomen.

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, seta 1 and 2 short, subequal, seta 3, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3, 4 and 5 long, subequal, 2 moderately long. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with two setae, moderately long, subequal. Labrum weakly trilobed at anterior margin, with three pairs of setae and one pair of basal sensilla, posterior margin nearly straight. Labral rods extended back beyond epistoma. Epipharynx with three antero-lateral and four anteromedian setae, and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible wide and short, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four pairs of setae. Labial palpus with two segments, basal segment with one short seta and one sensillum. Maxillary palpus with two segments, apical segment with one short seta and one sensillum. Maxillary mala slightly expanded internally on the inner side, and sharply produced apically. Mala with 5 ventral and 10 dorsal setae.

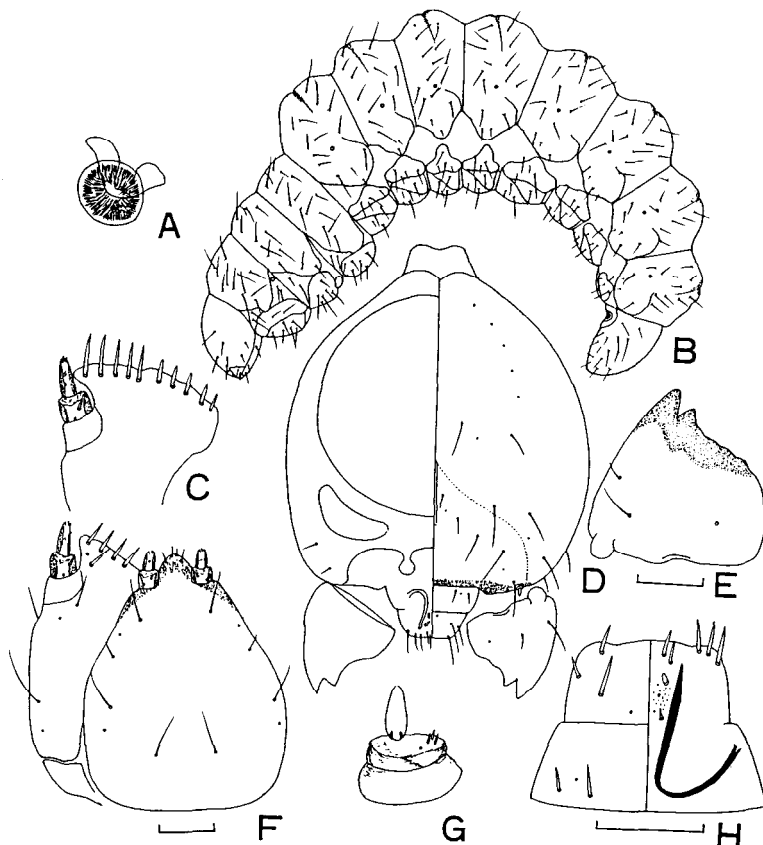
Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles. Spiracle without marginal air-tubes. Typical abdominal segment with two dorsal folds, conically humped dorsally, 9th segment itself conically produced posteriorly. Anus ventral, transverse.

Width of head 0.9 mm.

Materials examined: Mt. Inunaki, Fukuoka Pref., 24. v. 1958, on *Boehmeria*





**Fig. 3.** *Phymatapoderus pavens* Voss.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

***nipononivea* and *B. spicata*.**

This species may be separable from the relatives by the sparser setae on the abdomen, slenderer apical segment of the maxillary palpus, and shape of the maxillary mala. Frontal seta 4 and dorsal epicranial seta 4 are often very long

Genus ***Apoderus*** Olivier  
(Figs. 4-8)

*Apoderus*: Gardner, 1934, Ind. For Rec., 20: 6. -Emden, 1938, Tran. Roy. Ent. Soc. London, 87: 16.

Body with sparse to abundant setae and moderately dense asperities, thorax slenderer than abdomen.

Head retracted, pale yellow, posterior margin with a large flattened extension under pronotum, slightly longer than wide. Antenna with two distinct segments, basal

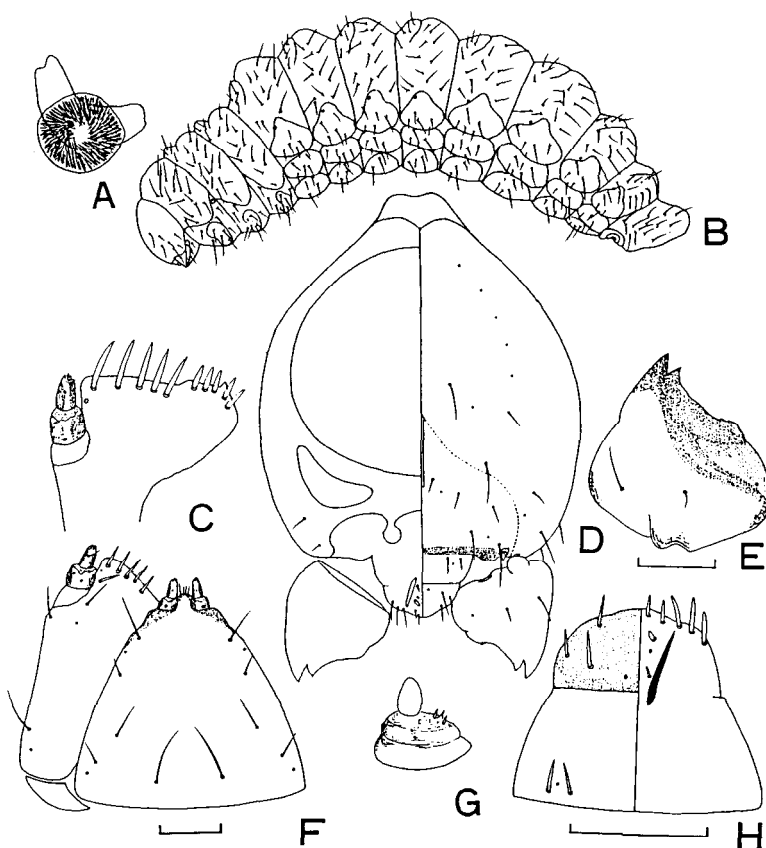


Fig. 4. *Apoderus jekelii* Roelofs.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, seta 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with two setae, moderately long, subequal. Labrum trilobed anteriorly, with three pairs of setae and one pair of basal sensilla, posterior margin nearly straight. Labral rods long or moderately long, subparallel. Epipharynx with three anterolateral and four anteromedian setae, and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth, wide and short. Mandibular seta 1 short, slightly longer than and directly behind

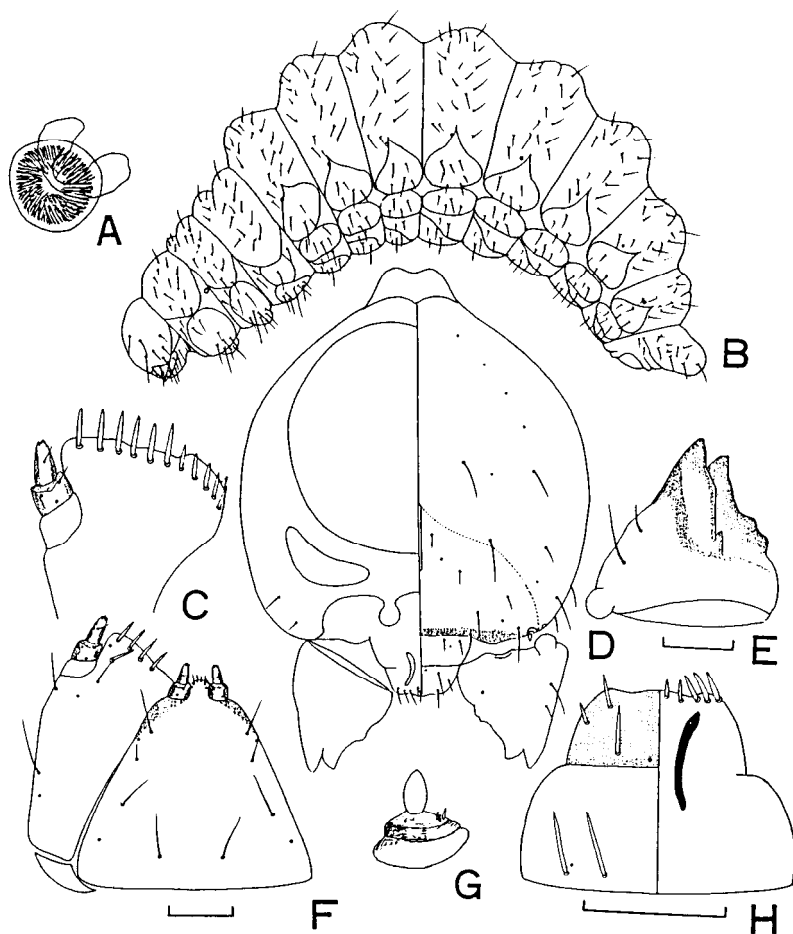


Fig. 5. *Apoderus balteatus* Roelofs.

A. Spiracle, B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

2. Labium longer than wide, with four or five pairs of setae. Ligula about as broad as one labial palpus, palpi separated almost by their own width. Labial palpus with two segments, basal segment with one short seta and one sensillum, apical segment of maxillary and labial palpi twice as long as wide. Maxillary palpus with two segments, apical segment with one short seta, basal segment transverse, as large as apical segment of labial palpus. Maxillary mala slightly expanded internally on the inner side. Mala with 5 ventral and 10 to 12 dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles without marginal air-tubes, all lateral. Typical abdominal segment with two dorsal folds, conically humped dorsally,

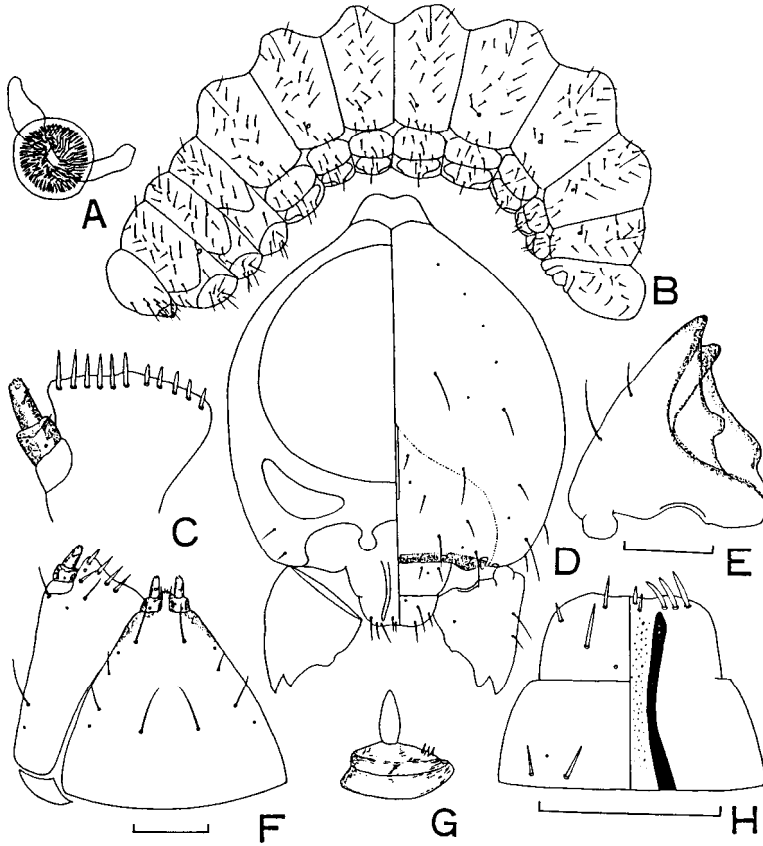


Fig. 6. *Apoderus rubidus* Motschulsky.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

9th abdominal segment strongly and sharply produced posteriorly. Anus ventral, transverse.

Species and materials examined :

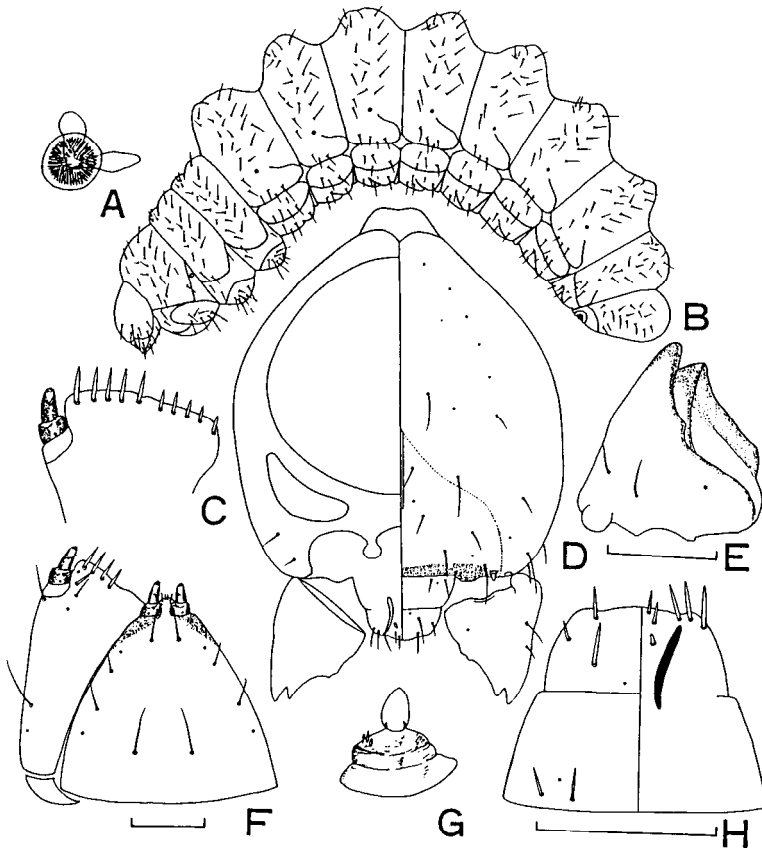
***Apoderus jekelii*** Roelofs. Mt. Kanayama, Fukuoka Pref., 15. vi. 1958, on *Quercus acutissima*.

*Apoderus balteatus* Roelofs. Mt. Tachibanayama, Fukuoka Pref., 16. vi. 1959, on *Euscaphis japonica*.

*Apoderus rubidus* Motschulsky. Mt. Hikosan, Fukuoka Pref., 12. vi. 1959, on ***Schizophragma hydrangeoides***, *Clethra barbinervis*, and ***Weigela japonica***.

***Apoderus erythrogaster*** Vollenhoven. Kashii, Fukuoka Pref., 24. v. 1959, on *Quercus serrata*.

*Apoderus geminus* Sharp. Kanazawa, Ishikawa Pref., 30. v. 1974, on *Salix* sp.



**Fig. 7.** *Apoderus erythrogaster* Vollenhoven.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

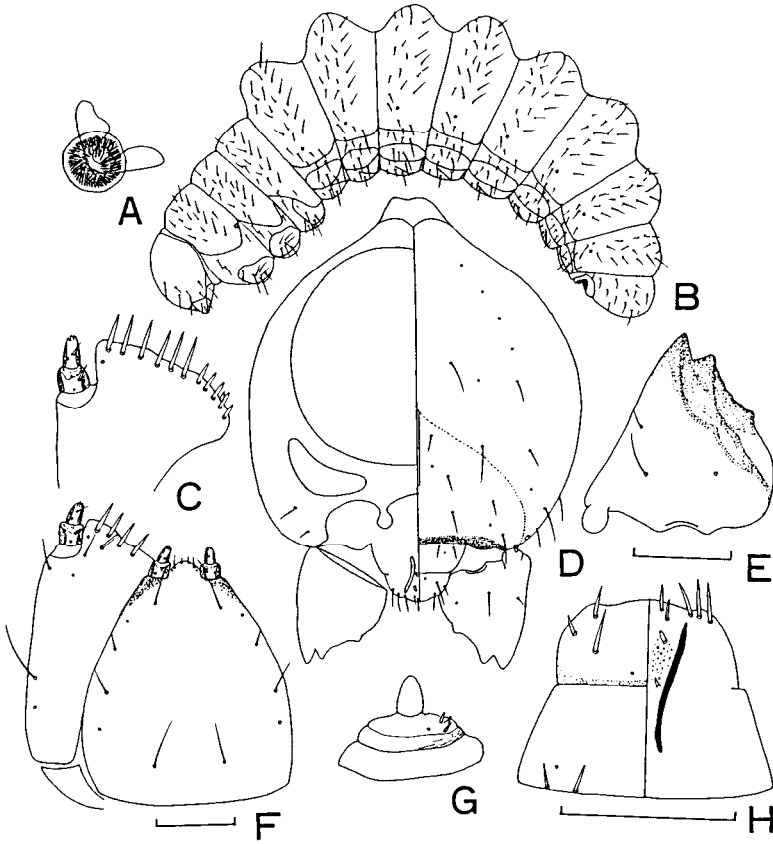
This genus may be characterized by the slender apical segment of maxillary palpus, which is about twice as long as broad and much longer than the basal segment.

***Cynotrachelus roelofsi* (Harold)**

(Fig. 9)

Body with sparse to abundant setae and moderately dense asperities

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons.



**Fig. 8.** *Apoderus geminus* Sharp.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

Frons with five pairs of setae, seta 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Posterior epicranial setae minute, four in number. Clypeus with two setae moderately long, subequal. Labrum trilobed at anterior margin, nearly straight at posterior margin, with three pairs of setae and one pair of basal sensilla. Labral rods moderately slender and long, subparallel. Epipharynx with three anterolateral and four anteromedian setae, and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible wide, short, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four pairs of setae. Ligula concaved, about as broad as one labial palpus. Labial palpus with two segments, basal segment with one short seta and one sensillum.

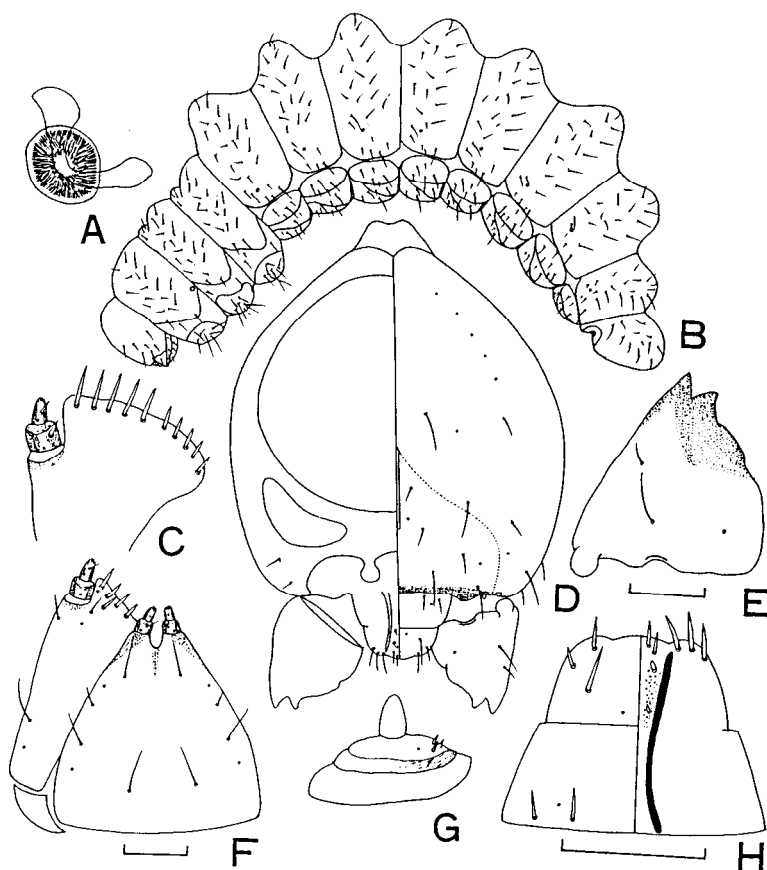


Fig. 9. *Cyncotrachelus roelofsi* (Harold).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

Maxillary palpus with two segments, apical segment with one short seta and one sensillum. Maxillary mala slightly expanded internally on the inner side, with 5 ventral and 10 dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all lateral, without marginal air-tubes. Typical abdominal segments with two dorsal folds, conically humped dorsally, 9th segment itself conically produced posteriorly. Anus ventral, transverse.

Width of head 0.85 mm.

Materials examined: Mt. Aburayama, Fukuoka Pref., 25. v. 1957, on *Styrax japonica*.

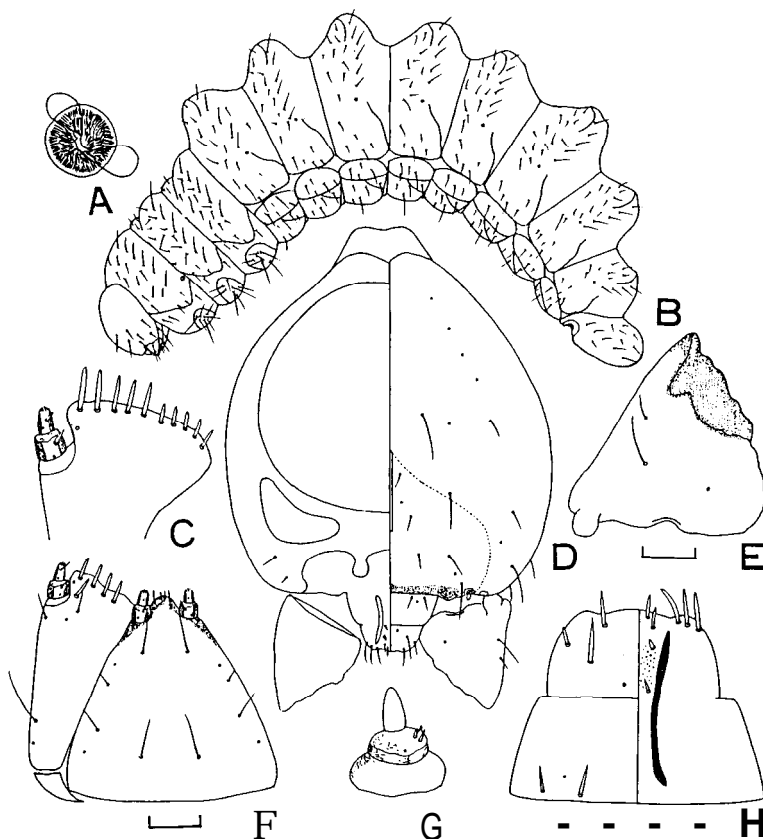
This species may be separable from the relatives by the concaved ligula and long labral rods.

***Paracentrocorynus nigricollis* (Roelofs)**

(Fig. 10)

Body with sparse to abundant setae and moderately dense asperities.

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, seta 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Posterior epicranial setae minute, four in number. Clypeus



**Fig. 10.** *Paracentrocorynus nigricollis* (Roelofs).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.

D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.

H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.



with two setae moderately long, subequal. Labrum trilobed at anterior margin, nearly straight at posterior margin, with three pairs of setae and one pair of basal sensilla. Labral rods moderately slender and long, subparallel. Epipharynx with three antero-lateral and four anteromedian setae and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible wide and short, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four setae. Labial palpi with two segments, basal segment with one short seta and one sensillum. Maxillary palpus with two segments, apical segment with one short seta and one sensillum. Apical segment of maxillary and labial palpi longer than broad. Maxillary mala slightly expanded internally on the inner side, with 5 ventral and 10 dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all lateral, without marginal air-tubes. Typical abdominal segments with two dorsal folds, conically humped dorsally, 9th segment itself conically produced posteriorly. Anus ventral, transverse.

Width of head 0.75 mm.

Materials examined : Jinzenji, Kochi City., 10. vi. 1959, on *Pourthiaea villosa*.

This species may be recognized by the shape of mandibular teeth.

### ***Paratrachelophorus longicornis* (Roelofs)**

(Fig. 11)

Body with sparse to abundant setae and moderately dense asperities.

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, setae 1, 2. and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Posterior epicranial setae minute, four in number. Clypeus with two setae, moderately long, subequal. Labrum weakly trilobed at anterior margin, straight at posterior margin, with three pairs of setae and one pair of basal sensilla. Labral rods about as long as clypeus. Epipharynx with three anterolateral and four anteromedian setae and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible short and wide, with two apical teeth. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four setae. Labial palpi with two segments, basal segment with one short seta and one sensillum. Maxillary palpus with two segments, apical segment with one short seta and one sensillum. Basal segment as large as that of labial palpus. Maxillary mala slightly expanded internally on the inner side, mala with 5 ventral and 10 dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all lateral, without marginal air-tubes. Typical abdominal segments with two dorsal folds, conically humped

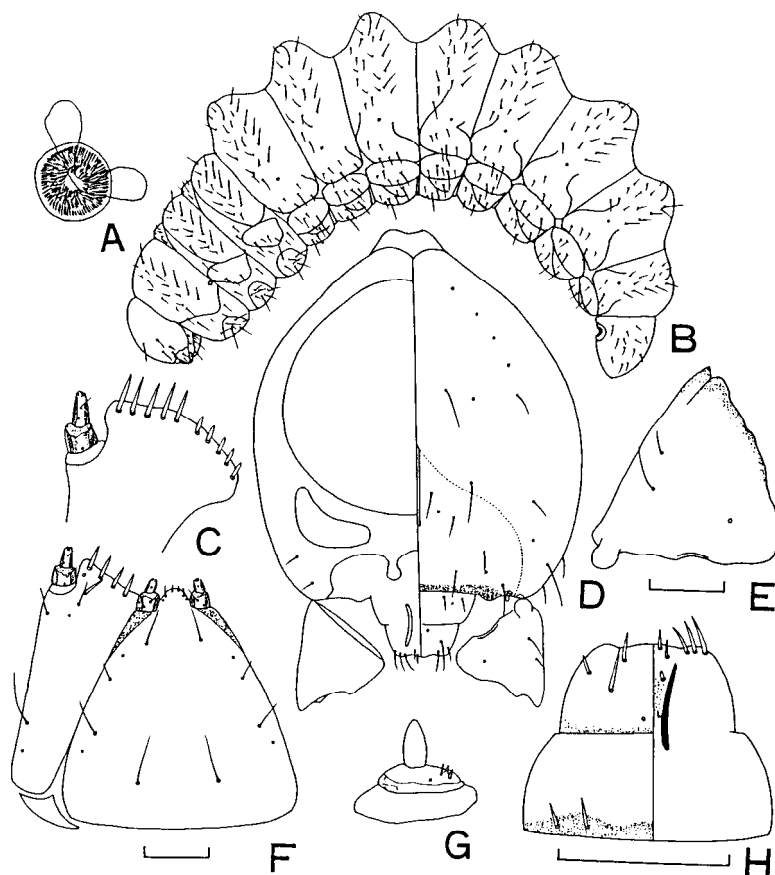


Fig. 11. *Paratrachelophorus longicomis* (Roelofs).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

dorsally, 9th segment itself conically produced posteriorly. Anus ventral, transverse.  
 Width of head 0.7 mm.

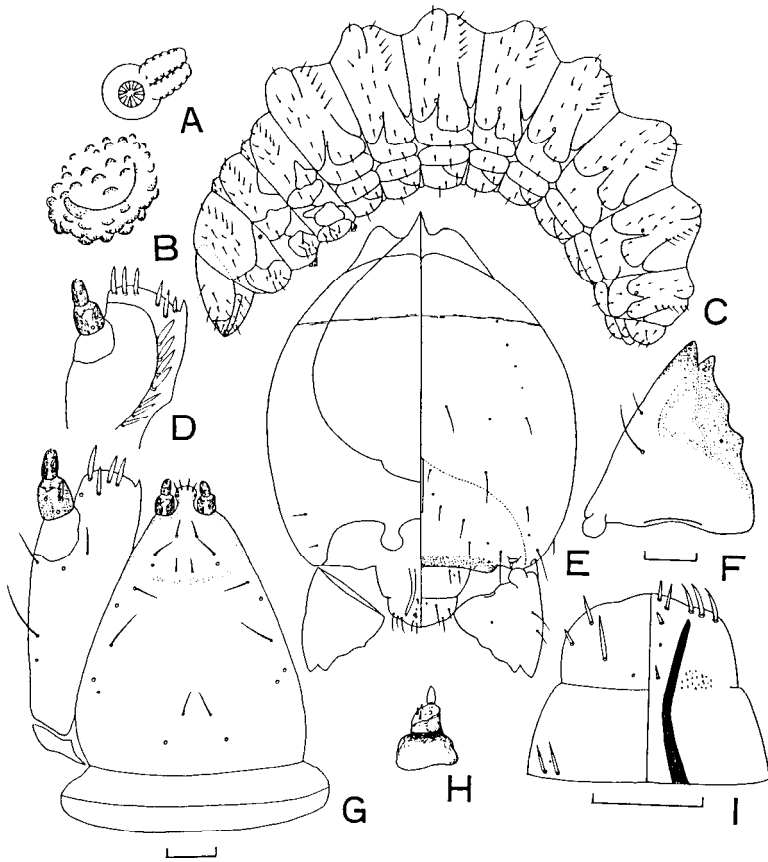
Materials examined : Mt. Hikosan, Fukuoka Pref., 15. vi. 1959, on *Lindera erythrocarpa*.

This species may be recognized by the length of labral rods and size of the basal segment of maxillary palpus, which is as large as basal segment of labial palpus.

***Phialodes rufipennis* Roelofs**

(Fig. 12)

Body with sparse to abundant normal setae and moderately dense asperities.



**Fig. 12.** *Phialodes rufipennis* Roelofs.

A. Spiracle. B. Projection of meso- and metasterna. C. Mature larva.  
D. Maxilla, dorsal. E. Head. F. Mandible. G. Maxilla and labium.  
H. Antenna. I. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, setae 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with two setae, moderately long, subequal. Labrum trilobed at anterior margin, nearly straight at posterior margin, with three pairs of setae and one pairs of basal sensilla. Labral rods extended back beyond epistoma. Epipharynx with three anterolateral and

four anteromedian setae, and four median spines, asperate between rods. Epipharyngeal sensory pores in two clusters. Mandible wide and short, coarsely sculptured on back, with two apical teeth, mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, prementum and postmentum with six pairs of setae, and five pairs of sensillae, with a mask-like, strongly sclerotized appendix to labium. Labial palpus with two segments, basal segment with one short seta and one sensillum. Ligula broadly rounded, nearly reaching tip of labial palpus. Maxillary palpus with two segments, apical segment with two short setae. Mala with a distinct spine near middle of inner margin, with five to 6 ventral and 12 to 13 dorsal setae, of which the basal three setae smaller.

Pronotum with transverse smooth plate. Meso- and metasterna each with a fleshy projection.

Abdomen with eight pairs of spiracles, spiracles all lateral, with a pair of marginal air-tubes. Typical abdominal segments with two dorsal folds, conically humped dorsally. Postdorsum of abdominal segment with six long setae in a straight line. Ninth abdominal segment broadly rounded posteriorly. Anus subterminal, with one large dorsal and 3 smaller ventral lobes.

Width of head 1.1 mm.

Materials examined: Mt. Wakasugi, Fukuoka Pref., 13. v. 1958, on *Quercus acutissima*, *Quercus serrata* and *Quercus glauca*.

This species may be separable from the relatives by the fleshy projections on the meso- and metasterna and three pairs of setae on the premental area. First instar larvae have a pair of horn-like conspicuous appendages on the posterior margin of postmentum.

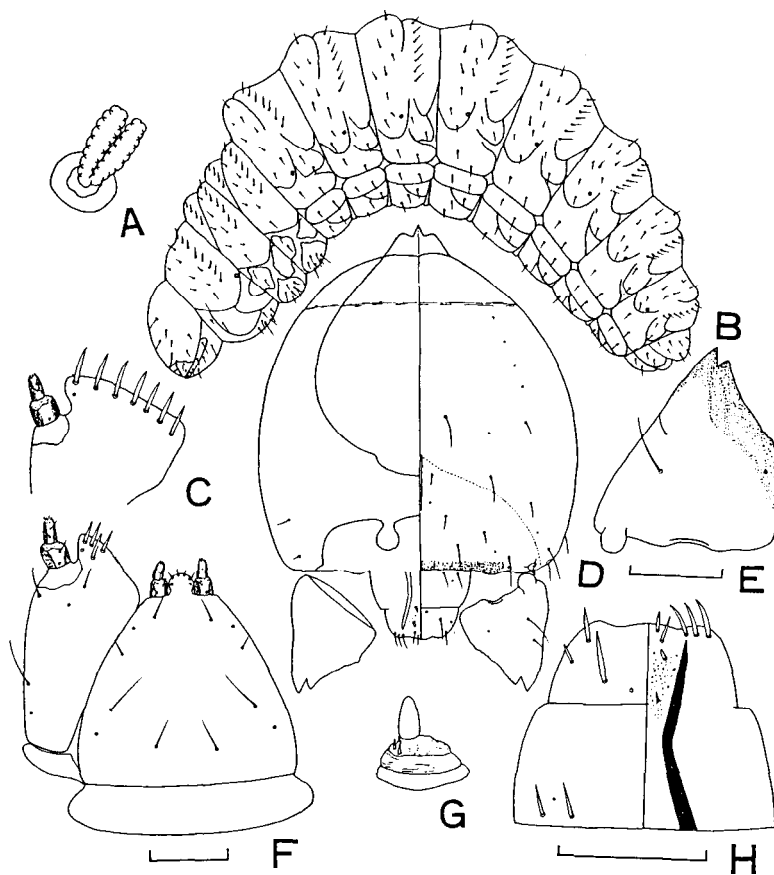
### ***Henicolabus lewisii* (Sharp)**

(Fig. 13)

Body with sparse to abundant setae and moderately dense asperities.

Head retracted, posterior margin with a larger flattened extension under pronotum as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, setae 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with two setae, moderately long, subequal. Anterior margin of labrum trilobed. Labral rods extended back beyond epistoma.

Epipharynx with three anterolateral and four anteromedian setae, and four median spines, asperate between rods. Mandible with two apical teeth, wide and short. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four pairs of setae, with a mask-like, strongly sclerotized appendix to labium. Labial palpus with two segments, basal segment with one short seta and one sensillum. Maxillary palpus with two segments, apical segment with two short setae.



**Fig. 13.** *Henicolabus lewisii* (Sharp).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

Mala without spine near middle, with four ventral and seven dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all bicameral. Typical abdominal segment with two dorsal folds, conically humped dorsally. Postdorsum of abdominal segment with seven long setae in a straight line. Ninth abdominal segment broadly rounded posteriorly. Anus subterminal, with one large dorsal and three smaller ventral lobes.

Width of head 0.55 mm.

Materials examined : Mt. Hikosan, Fukuoka Pref., on *Zelkova serrata*.

Genus *Euops* Schoenherr

(Figs. 14, 15)

Body moderately broad and stout, with sparse to abundant setae and moderately dense asperities.

Head retracted, posterior margin with a larger flattened extension under pronotum, as long as wide. Antenna with two distinct segments, basal segment ring-like, with three or four minute sensilla and an elongate conical apical segment. Catapophyses in same plane as frons. Hypopharyngeal bracon absent. Frontal sutures indistinct. Epicranial suture present. Endocarina distinct, approximately half as long as frons. Frons with five pairs of setae, setae 1, 2 and 3 short, subequal, 4 and 5 long,

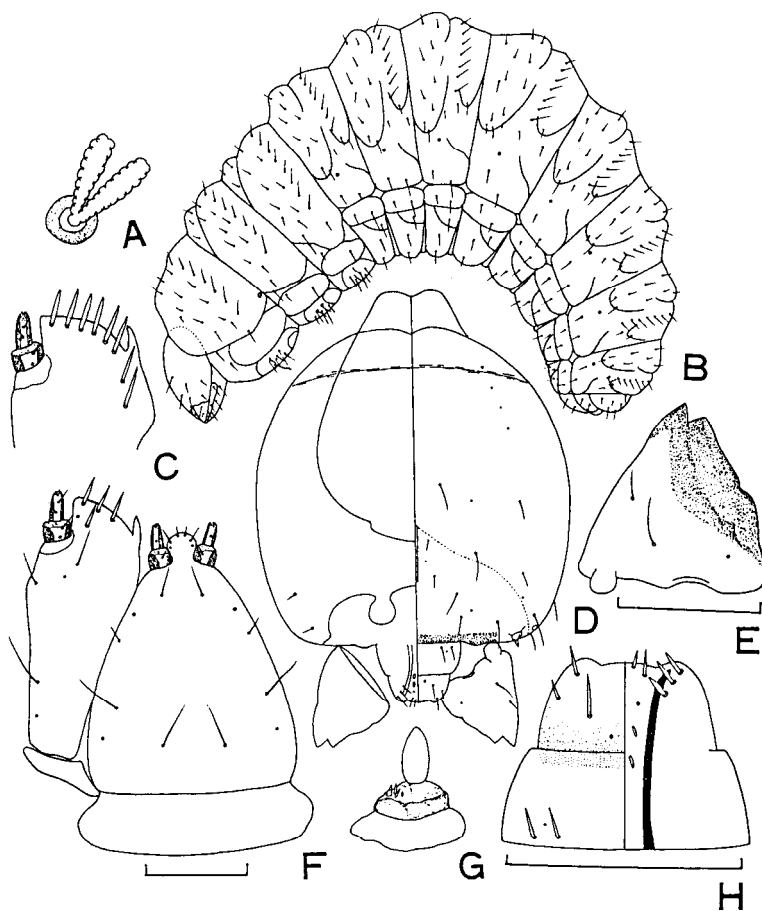
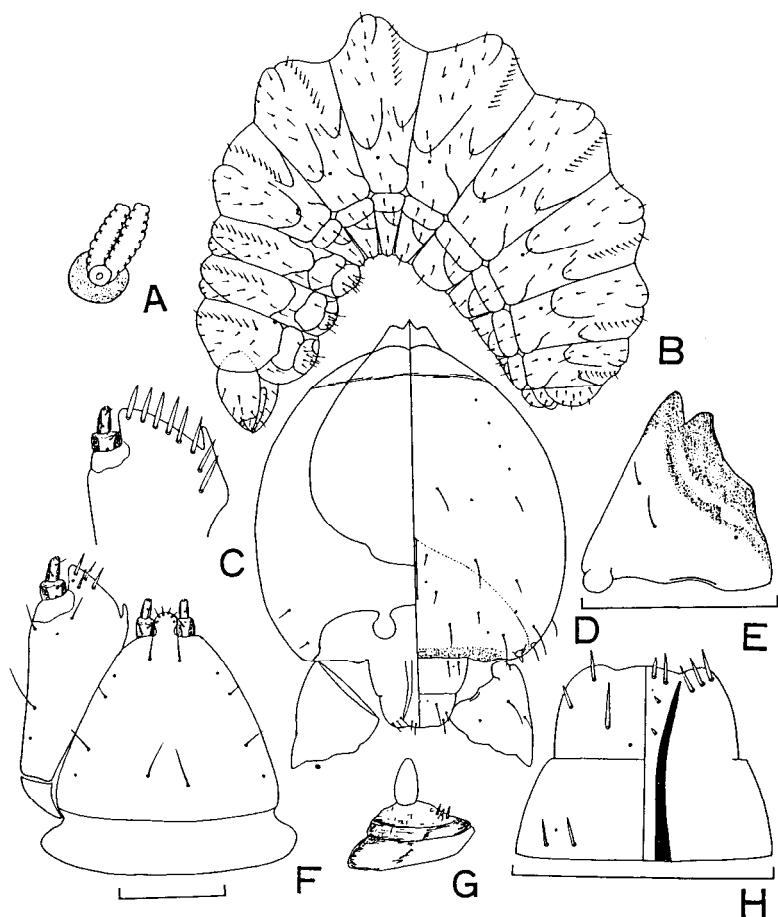


Fig. 14. *Euops splendidus* Voss.

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
 D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
 H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.



**Fig. 15.** *Euops politus* (Roelofs).

A. Spiracle. B. Mature larva. C. Maxilla, dorsal.  
D. Head. E. Mandible. F. Maxilla and labium. G. Antenna.  
H. Clypeus, labrum and epipharynx. Scale : 0.1 mm.

subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus with moderately long two setae, subequal. Labrum trilobed at anterior margin, nearly straight at posterior margin, with three pairs of setae and one pair of basal sensilla. Labral rods extended back beyond epistoma. Epipharynx with three anterolateral setae in an obliquely backward line towards the middle, with six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth, wide and short. Mandibular seta 1 short, slightly longer than and directly behind 2. Labium longer than wide, with four pairs of setae, of which one pair

on premental area, and with a mask-like posterior extension. Labial palpus with two segments, basal segment with one short seta, basal segment as long as apical segment. Maxillary palpus with two segments, apical segment with two short setae, longer than basal segment, the latter wider than long. Mala with a distinct spine near middle of inner margin, with four ventral and eight dorsal setae.

Pronotum with transverse smooth plate.

Abdomen with eight pairs of spiracles, spiracles all lateral, bicameral. Typical abdominal segments with two dorsal folds, conically humped dorsally. Postdorsum of abdominal segment with nine or ten setae. Ninth abdominal segment broadly rounded posteriorly. Anus terminal, four lobed.

Species and materials examined :

*Euops splendidus* Voss. Chojabaru, Oita Pref., 8. vi. 1979, on *Polygonum cuspidatum*

*Euops politus* (Roelofs). Mt. Hikosan, Fukuoka Pref., 14. vi. 1959. on *Carpinus japonica*.

This genus may be separable from the relatives by the obliquely arranged antero-lateral setae of epipharynx.