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Larvae of the Weevil Family Curculionidae of Japan
Part 5. Cryptorhynchinae
(Insecta: Coleoptera)¹⁾

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Fifth part of our studies on the larvae of the family Curculionidae deals with the subfamily Cryptorhynchinae, including 14 species in the genera *Colobodes*, *Hyotanzo*, *Euscepes*, *Syrotelus*, *Apries*, *Anaechmura*, *Cechania*, *Simulatacalles*, *Cryptorhynchus*, *Shirahoshizo*, and *Camptorhinus*.

Subfamily Cryptorhynchinae

Cryptorhynchinae: Gardner, 1934, Ind. For. Rec., 20: 16. - Gardner, 1938,
Ind. For. Rec. Ent., 3: 246.

This subfamily had been classified principally into such four major tribes as Ithyporini, Sophrorhinini, Camptorhinini and Cryptorhynchini since Lacordaire (1866) until Morimoto (1978), who combined the Ithyporini and Sophrorhinini into Ithyporini of new sense and proposed the Mechistocerini for the *Mechistocerus*-allied genera. Kuschel (1987) transferred the Ithyporini into the Molytinae of his sense. Gardner (1934 & 38) pointed out in his larval studies of the Indian Curculionidae that the larvae of *Mechistocerus* and *Rhadinomerus* (part of Sophrorhinini auct.), *Camptorhinus*, and the remaining genera of the subfamily were markedly different to one another, and suggested the removal of first two genera to some other subfamily according to the opinion of Marshall.

Following definition by the larvae is based on the tribes Ithyporini and Cryptorhynchini sensu Morimoto (1978) and the Camptorhinini and Mechistocerini are not included. Larvae of the Camptorhinini are very characteristic in having large pronotum and longer head, and those of the Mechistocerini are in their remarkable caudal lobes.

Body moderately curved, nearly cylindrical, broadly rounded posteriorly, with dense and moderately coarse asperities.

Head free, nearly circular in outline. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinguishable throughout its length, incomplete anteriorly. Endocarina distinct, approximately one-half as long as frons. Frons with five pairs of setae, setae 1, 2 and 3 short to moderately long, subequal, 4 and 5

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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. Anterior margin of labrum trilobed, posterior margin strongly produced into clypeus zone. Labral setae 1 and 2 short to moderately long, nearly twice as long as 3. Median and paired lateral sensilla present on labrum. Labral rods short or conjoined posteriorly and reaching towards epistoma. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth and an angulation near middle of cutting edge. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments, apical segment longer than wide. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral setae, apical segment without lateral seta. Mala with five to many ventral and six to nine dorsal setae.

Pronotum with nine setae, strongly transverse, pale brownish. Thoracic spiracle bicameral, air-tubes of small or moderate size and dorsal or oblique. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with one or two setae. Epipleurum with a seta. Pleurum of prothorax with two setae, of meso- and metathorax with one seta. Pedal area with seven setae, one moderately long, the remainder shorter and subequal to short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral or unicameral, air-tubes of small or moderately size and dorsal or oblique. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Undetermined species

(Fig. 1)

This larvae were collected at the same time with the adult of *Mechistocerus* (= *Monaulax*) *rugicollis* from a branch of the chestnut tree.

Body moderately curved, nearly cylindrical.

Head free, circular in outline, as long as wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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. Anterior margin of labrum trilobed, posterior margin strongly produced into clypeal zone. Labral setae 1 and 2 short to moderately long, nearly twice as long as 3. Median and paired lateral sensilla present on labrum. Labral rods short, stout, subparallel. Epipharynx not asperate, with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth, with an angulation near middle of cutting edge. Mandibular seta 1

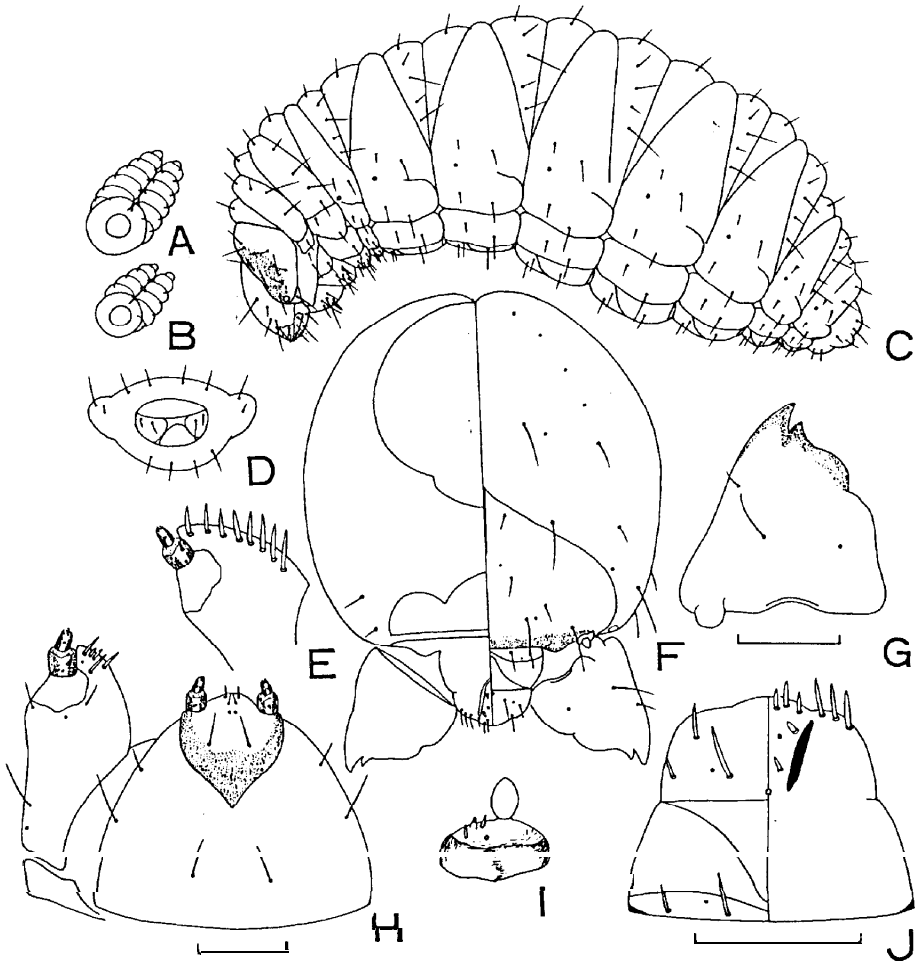


Fig. 1 Undetermined

A: Thoracic spiracle. B: Abdominal spiracle. C: Mature larva. D: Anus. E: Maxilla, dorsal. F: Head. G: Mandible. H: Maxilla and labium. I: Antenna. J: Labrum and epipharynx. Scale: 0.2mm.

short,, slightly longer than and directly behind 2. Labial palpus with two segments. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment without lateral seta. Mala with five ventral and eight dorsal setae.

Pronotum with ten setae, transverse, pale brown. Thoracic spiracle bicameral, larger than those of first to seventh abdomen. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a minute seta. Pedal area with seven setae, one moderately long, the remainder shorter and subequal to very short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, eighth abdominal spiracle larger than the anteriors and closer on dorsum, the distance between them three times the length of a spiracle. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Width of head 1.35 mm.

Materials examined. Kikuchi, Kumamoto Pref., 13. v. 1979, from a twig of chestnut tree.

This species is characteristic in having spiracles on the thorax and eighth abdomen larger than those of first to seventh, and short and subparallel labral rods.

***Colobodes matsumurai* Kôno**

(Fig. 2)

Body moderately curved, nearly cylindrical, broadly rounded posteriorly.

Head free, nearly circular in outline, as long as wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinguishable throughout its length, incomplete anteriorly. Endocarina distinct, approximately one-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. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Anterior margin of labrum trilobed, posterior margin with strong extension into clypeal zone, labrum about twice as wide as long. Labral setae 1 and 2 short to moderately long, nearly twice as long as 3. Median and paired lateral sensilla present on labrum. Labral rods moderately short, subparallel. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines, asperate. Epipharyngeal sensory pores in two clusters. Mandible with apex entire, cutting edge strongly oblique. Mandibular seta 1 short, slightly longer than and

directly behind 2. Labial palpus with two segments. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpi with two segments, basal segment without accessory process, with one very short seta, apical segment without lateral seta. Mala with five ventral and seven dorsal setae.

Pronotum with 10 setae, strongly transverse, pale brown. Thoracic spiracle bicameral, air-tubes shorter, pigmented with annular portion spherical to distinctly oval. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and

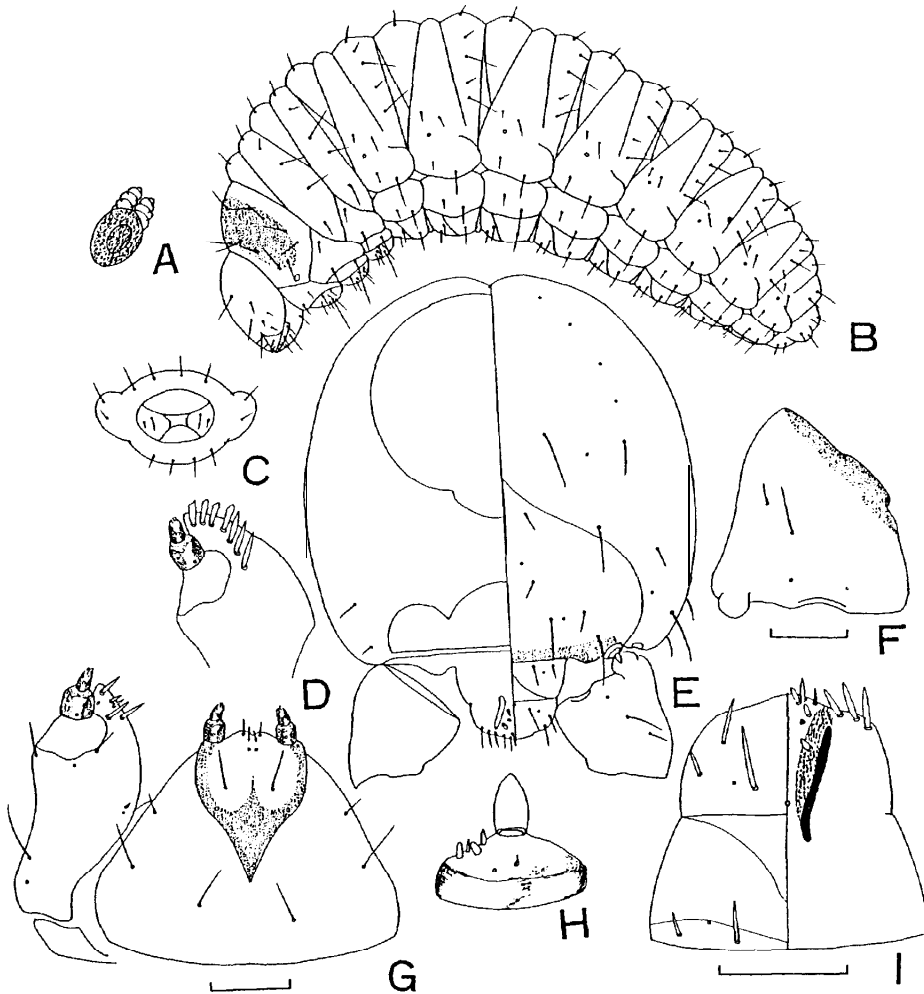


Fig. 2. *Colobodes matsumurai* Kôno

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a short seta. Epipleurum with a seta. Pleurum of prothorax with two setae, of meso- and metathorax with a seta. Pedal area with seven setae, one moderately long, the remainder shorter and subequal to very short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, a little smaller than and similar to those on pronotum. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, 3 and 5 moderately long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes, skin points dense, moderately coarse.

Width of head 1.8 mm.

Materials examined. Ashoro, Hokkaido, 26. vii. 1959, under bark of dead *Ulmus davidiana japonica*.

This species is characteristic in having the mandible with entire apex, short air-tubes of the spiracles, and the subparallel labral rods.

***Hyotanzo uenoi* Morimoto**

(Fig. 3)

Body nearly cylindrical, broadly rounded posteriorly.

Head free, nearly circular in outline, slightly longer than wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina present, approximately one-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, 2, 3 and 5 long, subequal, 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 setae 1 and 2 moderately long, subequal. Anterior margin of labrum evenly arched, posterior margin strongly extended into clypeal zone. Labral setae 1, 2 and 3 long, subequal. Median and paired lateral sensilla present on labrum. Labral rods moderately elongate, stout, conjoined posteriorly and reaching towards epistoma. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines, with asperities. Epipharyngeal sensory pores in two clusters. Mandible with two sharp apical teeth, with a median and postmedian obtuse teeth on cutting edge, longer than wide. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments. Prementum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment without lateral seta. Mala with five ventral and seven dorsal setae.

Pronotum with nine setae, strongly transverse, pale brownish. Thoracic spiracle

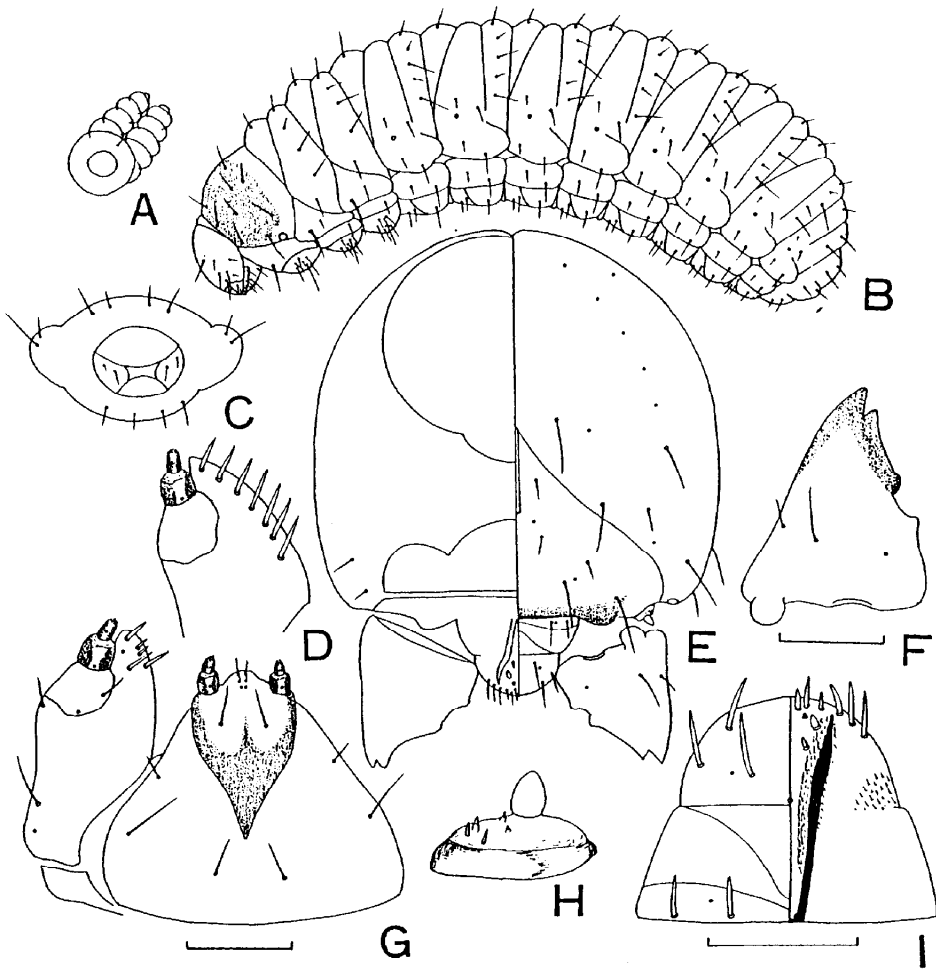


Fig. 3. *Hyotanzo uenoi* Morimoto

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

bicameral. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short setae. Spiracular area without setae. Epipleurum with one short and one long seta. Pleurum of prothorax with two long setae, of meso- and metathorax with a long seta. Pedal area with seven setae, one moderately long, the remainder shorter. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum

with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Width of head 1.25 mm.

Materials examined. Kashima-gun, Ibaragi Pref., 30.vi.1980, inside the roots of *Rhodea jaonica*.

This species is characteristic in having the asperate epipharynx, evenly arched labrum, and long labral rods.

***Euscepes postfasciatus* (Fairmaire)**

(Fig. 4)

Body moderately narrow and curved, nearly cylindrical.

Head free, nearly circular in outline, as long as wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon redily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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 seta present. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Anterior margin of labrum weakly trilobed, posterior margin strongly extended into clypeal zone. Labral setae 1, 2 and 3 long, subequal. Median and paired lateral sensilla present on labrum. Labral rods moderately elongate, conjoined posteriorly and reaching towards epistoma, Y-shaped. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines, three anterolateral setae irregularly placed, without asperities. Epipharyngeal sensory pores in two clusters. Mandible with two sharp apical teeth and with angulation near middle of dorsal edge, longer than wide. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments. Premental sclerite complete, short and broad. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment without lateral seta. Mala with five ventral and seven dorsal setae.

Pronotum with ten setae. Thoracic spiracle bicameral, air-tubes moderately short and subequal. Spiracular area of mesothorax with two setae, one moderately long, one very short. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a minute and a short seta. Epipleurum with a moderately long seta. Pleurum of prothorax with two setae, of meso- and metathorax with one long seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral seta of pedal area subequal to very short sternal seta. Sternal setae subequal to eusternal setae.

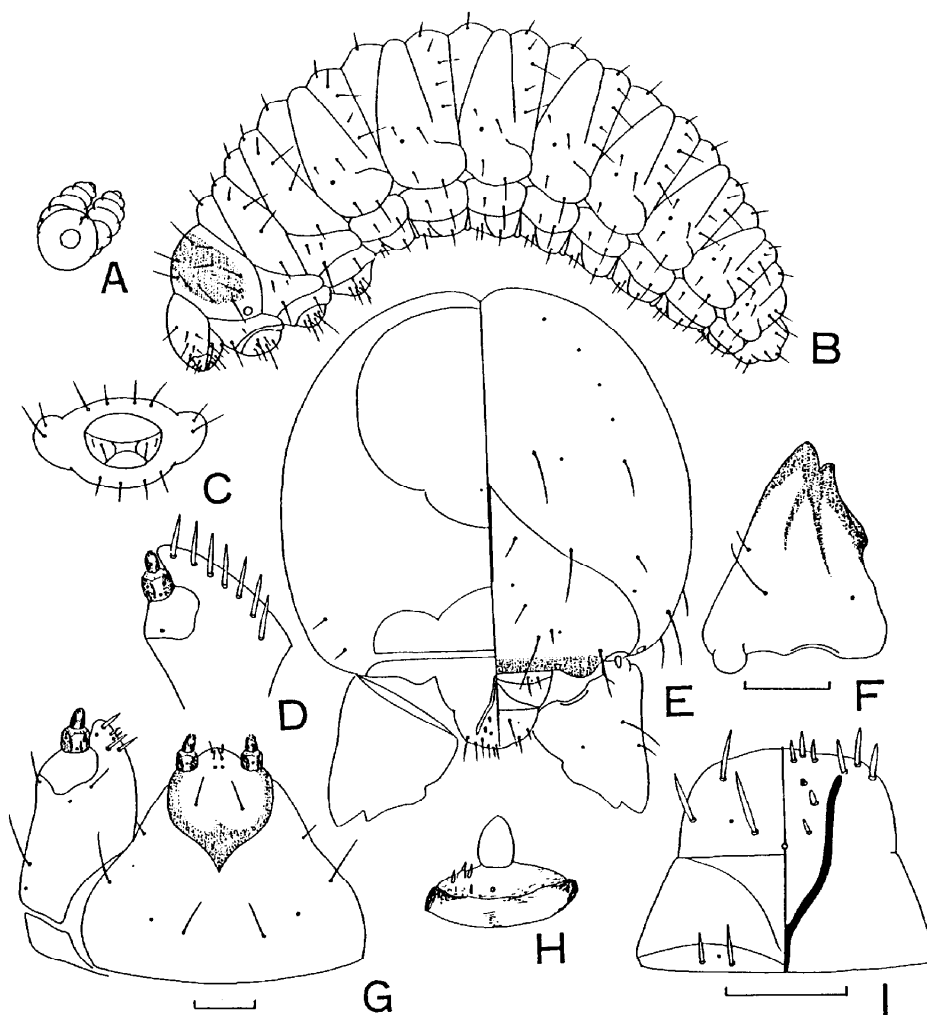


Fig. 4. *Euscepes postfasciatus* (Fairmaire)

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.

G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.1mm.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, air-tubes moderately short and subequal. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, 3 and 5 moderately long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Width of head 0.8 mm.

Materials examined. Okinawa I., 22. xi. 1960, injurious to sweet-potato.

***Syrotelus septentrionalis* (Roelofs)**

(Fig. 5)

Body nearly cylindrical, moderately stout and curved.

Head free, brownish, slightly longer than wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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. Labrum about twice as wide as long, anterior margin of labrum trilobed, posterior margin extended into clypeae zone. Median and paired lateral sensilla present on labrum. Labral setae 1 and 2 short to moderately long nearly twice as long as 3. Labral rods Y-shaped, stout. Epipharynx with six anterolateral setae, six anteromedian setae and four median spines, not asperate. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth and two distinct inner teeth on cutting edge. Mandibular seta 1 short, 2 moderately long, setae placed parallel to the base. Labial palpus with two segments. Premental sclerite complete. Ligula with 4 pairs of simple setae. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, the apical segment without lateral seta. Mala with twelve ventral and eight dorsal setae.

Pronotum with nine setae. Thoracic spiracle bicameral, air-tubes very short, subequal, circular peritreme pigmented. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a seta. Epipleurum with a seta. Pleurum of prothorax with two setae, of meso- and metathorax with a seta. Pedal area with seven setae, one moderately long, the remainder shorter and subequal to short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, air-tubes very short, subequal, peritreme pigmented. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, 3 and 5 moderately long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Width of head **2.8 mm.**

Materials examined. Mt. Tebako, Kochi Pref., 28 vi.1959, from trunk wood of dead

Quercus crispula.

This species is characteristic in having twelve ventral setae on the maxillary mala, six

anterolateral setae on the epipharynx, and very short air-tubes of the spiracles

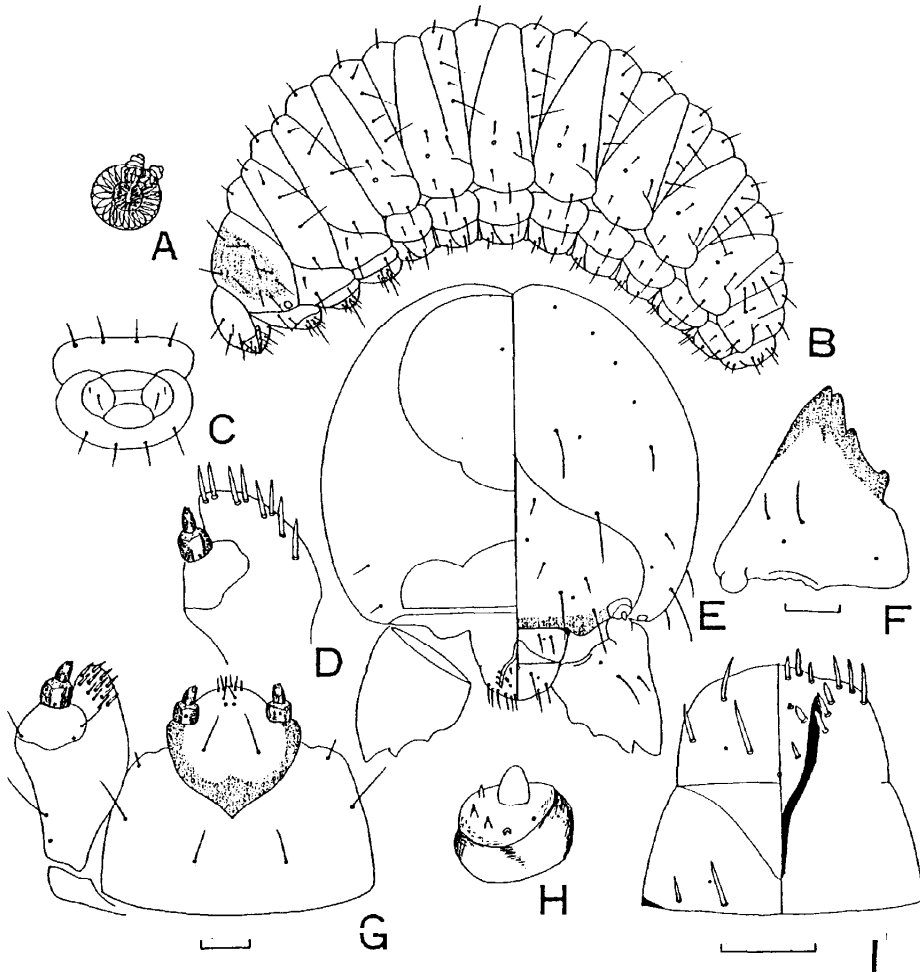


Fig. 5. *Syrotelus septentrionalis* (Roelofs)

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

***Apries* sp.**

(Fig. 6)

Body nearly cylindrical, broadly rounded posteriorly.

Head free, as long as wide, anterior part of frons brownish. Anterior ocellus present.

Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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. Labrum about twice as wide as long, anterior margin of labrum evenly

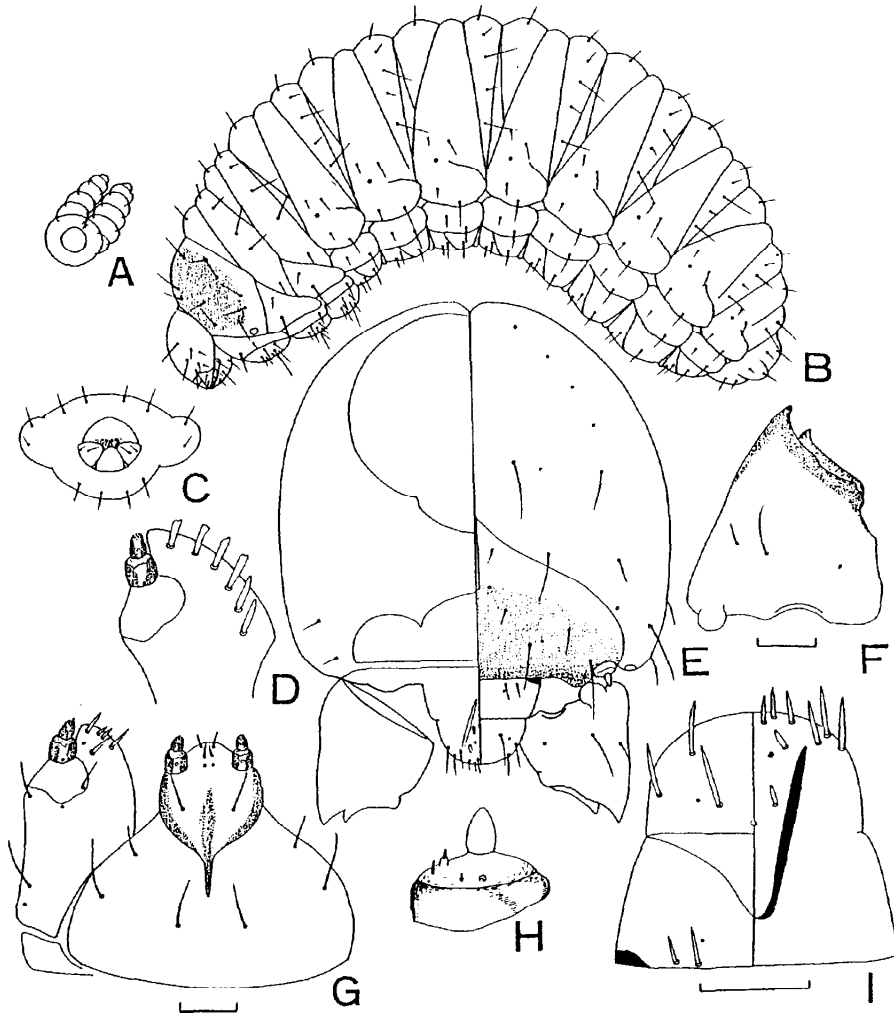


Fig. 6. *Apries* sp.

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

arched, posterior margin extended into clypeal zone. Median and paired lateral sensilla present on labrum. Labral setae 1, 2 and 3 long, subequal. Labral rods moderately elongate, stout, conjoined posteriorly. Epipharynx with three anterolateral setae, being irregularly placed, six anteromedian setae and four median spines, without asperities. Epipharyngeal sensory pores in two clusters. Mandible with two sharp apical teeth, broadly angulate near middle of dorsal edge. Mandibular seta 1 short, 2 moderately long, setae placed parallel to the base. Labial palpus with two segments. Premental sclerite complete, weakly pigmented on each side of the middle. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one short lateral seta, apical segment without lateral seta. Mala with five ventral and six dorsal setae.

Pronotum with ten setae. Thoracic spiracle bicameral, air-tubes a little longer than peritreme. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a minute seta. Epipleurum with a moderately long seta. Pleurum of prothorax with two long setae, of meso- and metathorax with a long seta. Pedal area with seven setae, most setae of pedal area subequal to short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, air-tubes about as long as peritreme. Typical abdominal segment with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes, dorsal lobe broad.

Width of head 1.05 mm.

Materials examined. Mt. Yuwan, Amami- Oshima I., 16. viii.1980, from dead stems of *Celastrus orbiculatus*.

***Anaechmura yurikoae* Morimoto et Miyakawa**

(Fig. 7)

Body nearly cylindrical, moderately curved and stout.

Head free, slightly longer than wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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 and 4 short, subequal. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Dorsal epicranial setae 2, 4 and four minute posterior epicranial setae between dorsal epicranial setae 1 and 3. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Anterior margin of labrum trilobed, posterior margin extended into clypeae zone. Median and paired lateral sensilla present on labrum. Labral setae 1

and 2 short to moderately long, nearly twice as long as 3. Labral rods Y-shaped, stout. Epipharynx with six anterolateral setae, being irregularly placed, six anteromedian setae, and four median spines, without asperities. Epipharyngeal sensory pores in two clusters. Mandible with two sharp apical teeth, with a median tooth on cutting edge. Mandibular seta 1 short, 2 moderately long, setae placed parallel to the base. Labial palpus with two segments. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment

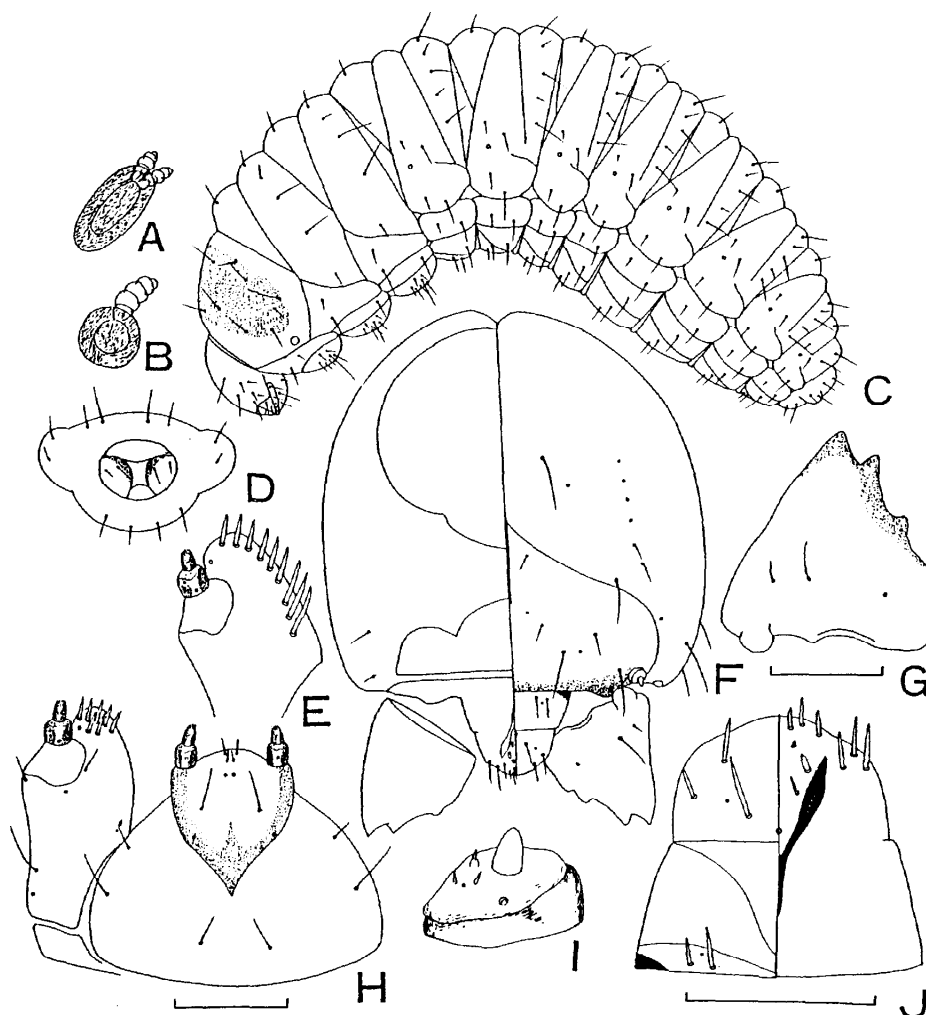


Fig. 7. *Anaechmura yurikoe* Morimoto et Miyakawa

A: Thoracic spiracle. B: Abdominal spiracle. C: Mature larva. D: Anus. E: Maxilla, dorsal. F: Head. G: Mandible. H: Maxilla and labium. I: Antenna. J: Labrum and epipharynx. Scale: 0.2mm.

without lateral seta. Mala with seven ventral and nine dorsal setae.

Pronotum with nine setae. Thoracic spiracle bicameral, air-tubes short, subequal, oval peritreme pigmented. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with one minute seta. Epipleurum with one seta. Pleurum of prothorax with two setae, of meso- and metathorax with one seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral seta of pedal area subequal to short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, unicameral, air-tubes as long as or a little shorter than peritreme, circular peritreme pigmented. Typical abdominal segment with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 3 and 5 long, subequal, 2 and 4 short, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes, lateral lobes larger.

Width of head 1.45 mm.

Materials examined. Izu, Shizuoka Pref., 27 vii. 1959, from dead trunk of *Osmanthus ilicifolium*.

This species is easily recognized by the unicameral spiracles on the abdomen and seven ventral setae on the maxillary mala.

***Cechania eremita* Pascoe**

(Fig. 8)

Body short and stout.

Head free, slightly longer than wide. Anterior ocellus present. Antenna with a conical and several setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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. Anterior margin of labrum evenly arched, posterior margin extended into clypeae zone. Labral setae 1 and 2 short to moderately long, nearly twice as long as 3. Median and paired lateral sensilla present on labrum. Labral rods moderately short and stout, Y-shaped. Epipharynx with six anteromedian setae, three anterolateral and four median spines, anterolateral setae irregularly placed, without asperities. Epipharyngeal sensory pores in two clusters. Mandible with broad apical and withdrawn subapical teeth, and with a median obtuse tooth on the cutting edge. Mandibular seta 1 short, 2 moderately long, setae placed parallel to the base. Labial palpus with two segments. Premental sclerite complete, with anterior median extension. Postmentum with three pairs of setae.

Maxillary palpus with two segments, basal segment without, accessory process, with one short lateral seta, apical segment without lateral seta. Mala with twelve small ventral setae and six dorsal setae.

Pronotum with nine setae. Thoracic spiracles bicameral, air-tubes very short, peritreme oval. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 long, subequal. Alar area with one short seta. Spiracular area with a minute seta. Epipleurum with a moderately long seta. Pleurum of prothorax with two setae, of meso- and

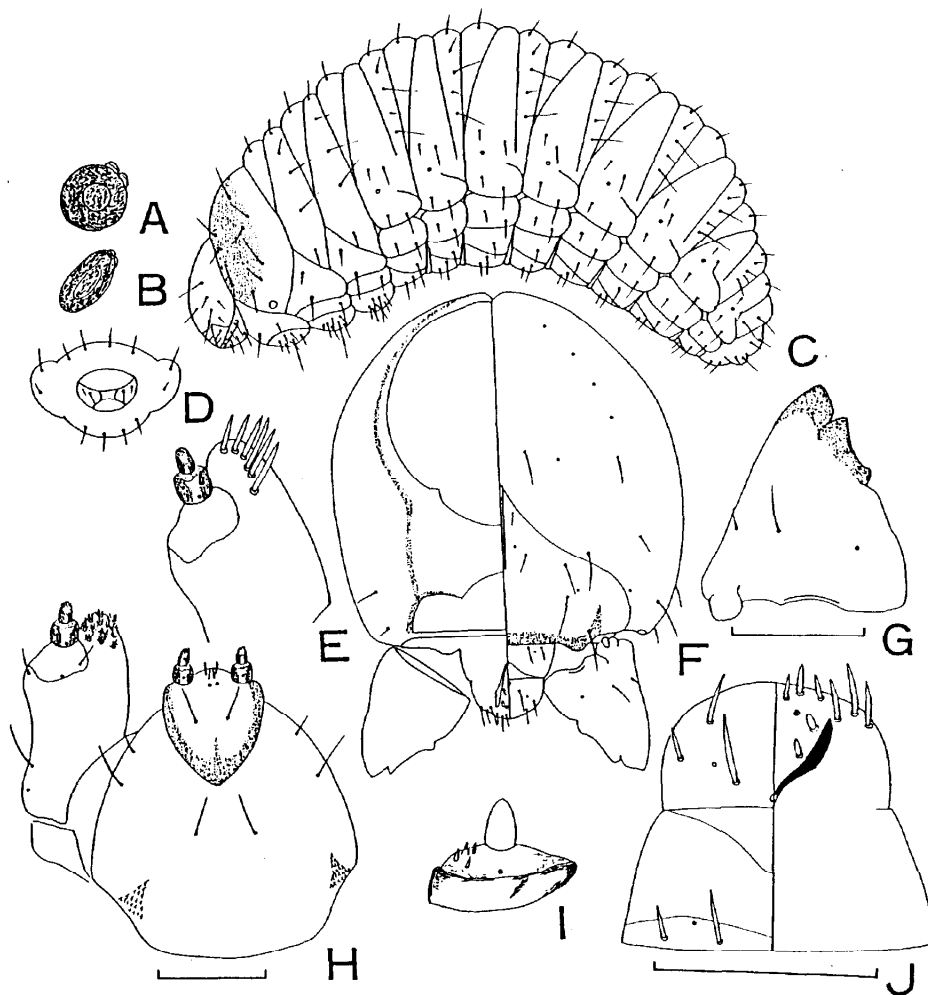


Fig. 8. *Cechania eremita* Pascoe

A: Thoracic spiracle. B: Abdominal spiracle. C: Mature larva. D: Anus. E: Maxilla, dorsal. F: Head. G: Mandible. H: Maxilla and labium. I: Antenna. J: Labrum and epipharynx. Scale: 0.2mm.

metathorax with a seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral seta of pedal area subequal to very short sternal seta. Sternal subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, air-tubes very short, peritreme circular. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, 3 and 5 moderately long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

Width of head 1.2 mm.

Materials examined. Ogi, Saga Pref., 19.ii.1958, from dead trunk of *Acer* sp.

This species is characteristic in having twelve small setae on the ventral side of the mala, and large apical tooth of the mandible.

***Simulatacalles simulator* (Roelofs)**

(Fig. 9)

Body nearly cylindrical, broadly rounded posteriorly.

Head free, slightly longer than wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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 and 4 short, subequal. Four minute posterior epicranial setae present on middle part. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Anterior margin of labrum weakly trilobed, posterior margin extended into clypeal zone. Labral setae 1, 2 and 3 long, subequal. Median and paired lateral sensilla present on labrum. Labral rods Y-shaped, moderately short. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines, without asperities. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth. Mandibular seta 1 short, 2 moderately long, setae placed parallel to the base, wrinkled externally in the median area. Labial palpus with two segments, apical segment as long as basal segment. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment without lateral seta. Mala with five ventral and nine dorsal setae.

Pronotum with nine setae. Thoracic spiracle bicameral, air-tubes very short, peritreme oval. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area without seta. Epipleurum with a seta. Pleurum of prothorax with two setae, of meso- and metathorax with a seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral setae of pedal area subequal to short sternal seta. Sternal setae subequal to eusternal setae.

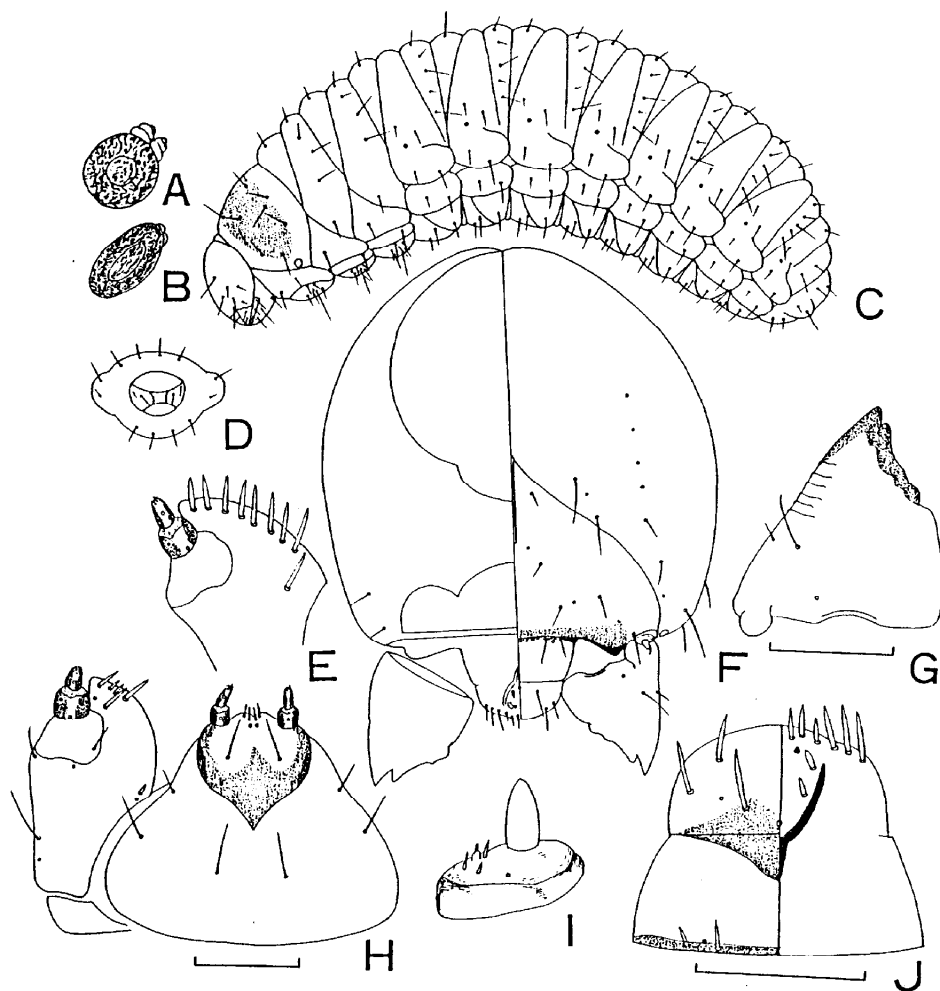


Fig. 9. *Simulatacalles simulator* (Roelofs)

A: Thoracic spiracle. B: Abdominal spiracle. C: Mature larva. D: Anus. E: Maxilla, dorsal. F: Head. G: Mandible. H: Maxilla and labium. I: Antenna. J: Labrum and epipharynx. Scale: 0.2mm.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, much smaller than those on prothorax, air-tubes very short, peritreme circular. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal,

with four lobes.

Width of head 1.2 mm.

Materials examined. Kuroki, Fukuoka Pref., 20.x.1982, from old dead bamboo of

Phyllostachys pubescens.

This species may be determined by the pigmented labrum at the basal area, very short air-tubes of the spiracles, and slender apical segment of the labial palpus, which is fully twice as long as wide.

***Cryptorhynchus lapathi* (Linnaeus)**

(Fig. 10)

Cryptorrhynchus Lapathi: De Viedema, 1963, EOS, 39: 274.

Cryptorhynchus lapathi: Peterson, 1951, Larv. Ins., 2: 128, C20.

Body moderately curved, attenuated posteriorly.

Head free, circular in outline, slightly longer than wide. Anterior ocellus present. Antenna with one conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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. Anterior margin of labrum weakly trilobed, posterior margin extended into clypeal zone. Labral setae 1, 2 and 3 long, subequal. Median and paired lateral sensilla present on labrum. Labral rods moderately elongate and long, stout, subparallel. Epipharynx with dense hair-like asperities between labral rods, with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth, with an obtuse tooth near the middle of cutting edge, longer than wide. Mandibular seta 1 short, slightly longer than and directly behind 2, setae parallel to the base. Labial palpus with two segments. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one very short lateral seta, apical segment without lateral setae. Mala with five ventral and seven dorsal setae.

Pronotum with ten setae. Thoracic spiracle bicameral, air-tubes subequal in length to each other, almost as long as the minor axis of peritreme. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with a seta. Epipleurum with a seta. Pleurum of prothorax with two setae, of meso- and metathorax with a seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral seta of pedal area subequal to very short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, much smaller than those on pronotum, air-tubes subequal in length to each other. Typical abdominal

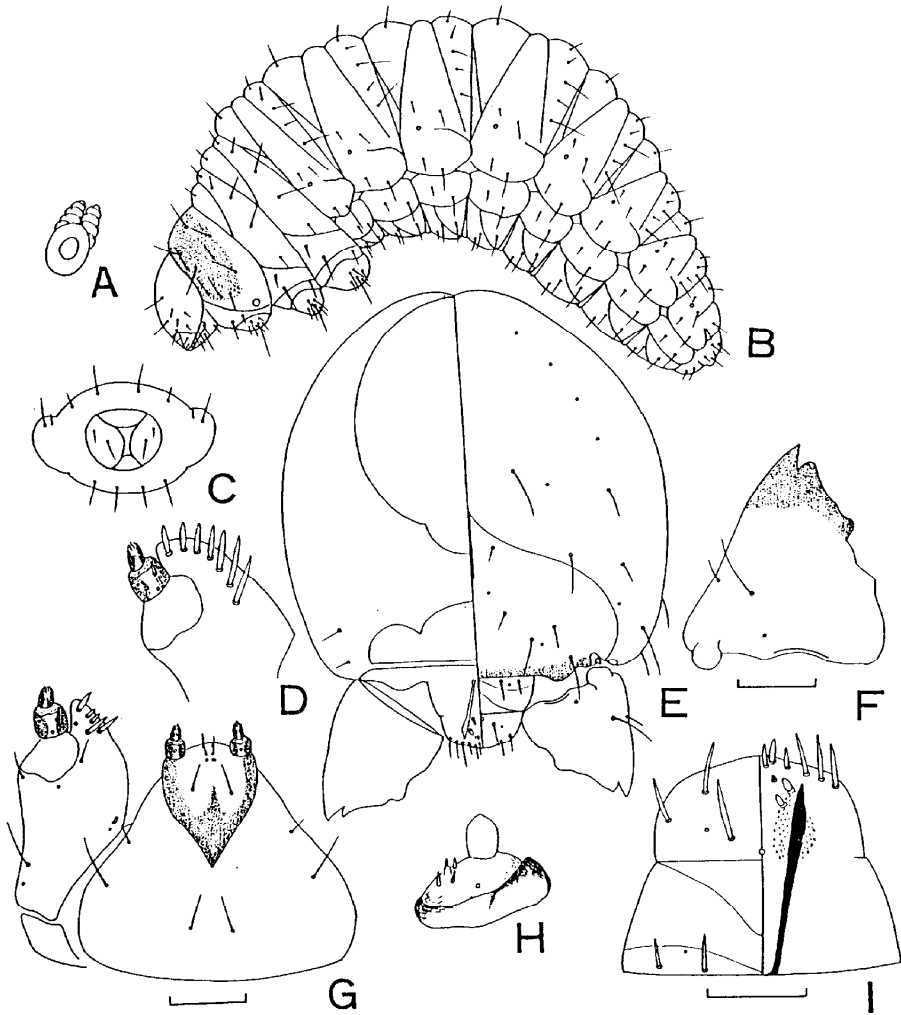


Fig. 10. *Cryptorhynchus lapathi* Linnaeus

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 moderately long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes, lateral lobes broader.

Width of head 2.0 mm

Materials examined. Aomori Pref., 20 vi.1956, from the stems of living willow and

poplar.

Genus ***Shiruhoshizo*** Morimoto

(Figs. 11-12)

Body moderately curved, nearly cylindrical.

Head free, nearly circular in outline, as long as wide. Anterior ocellus present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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 seta short, to moderately long, subequal. Four minute posterior epicranial setae present. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Anterior margin of labrum trilobed, posterior margin extended into clypeal zone, Median and paired lateral sensilla present, on labrum. Labral setae 1 and 2 short, to moderately long, nearly twice as long as 3. Labral rods moderately long and stout, conjoined at posterior ends. Epipharynx with dense fine hairy asperities between labral rods, with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Mandible with two apical teeth and an angulation or tooth near middle of dorsal edge, longer than wide. Mandibular seta placed parallel to the base. Labial palpus with two segment. Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment without accessory process, with one short lateral seta, apical segment without lateral seta. Mala with five ventral and six or seven dorsal setae.

Pronotum with nine setae. Thoracic spiracle bicameral, air-tubes shorter than peritreme, the latter pigmented. Spiracular area of mesothorax with two setae, one moderately long, one very short. Prodorsum of meso- and metathorax with a seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, subequal, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with two setae, one short to minute, the other long. Epipleurum with a long seta. Pleurum of prothorax with two long setae, of meso- and metathorax with a long seta. Pedal area with seven setae, one moderately long, the remainder shorter. Most ventral setae of pedal area subequal to short sternal seta. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, much smaller than those on pronotum, air-tubes a little shorter than peritreme, peritreme circular, inside densely asperate and visibly pale brownish. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae, setae 1, 2, and 4 short, subequal, 3 and 5 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

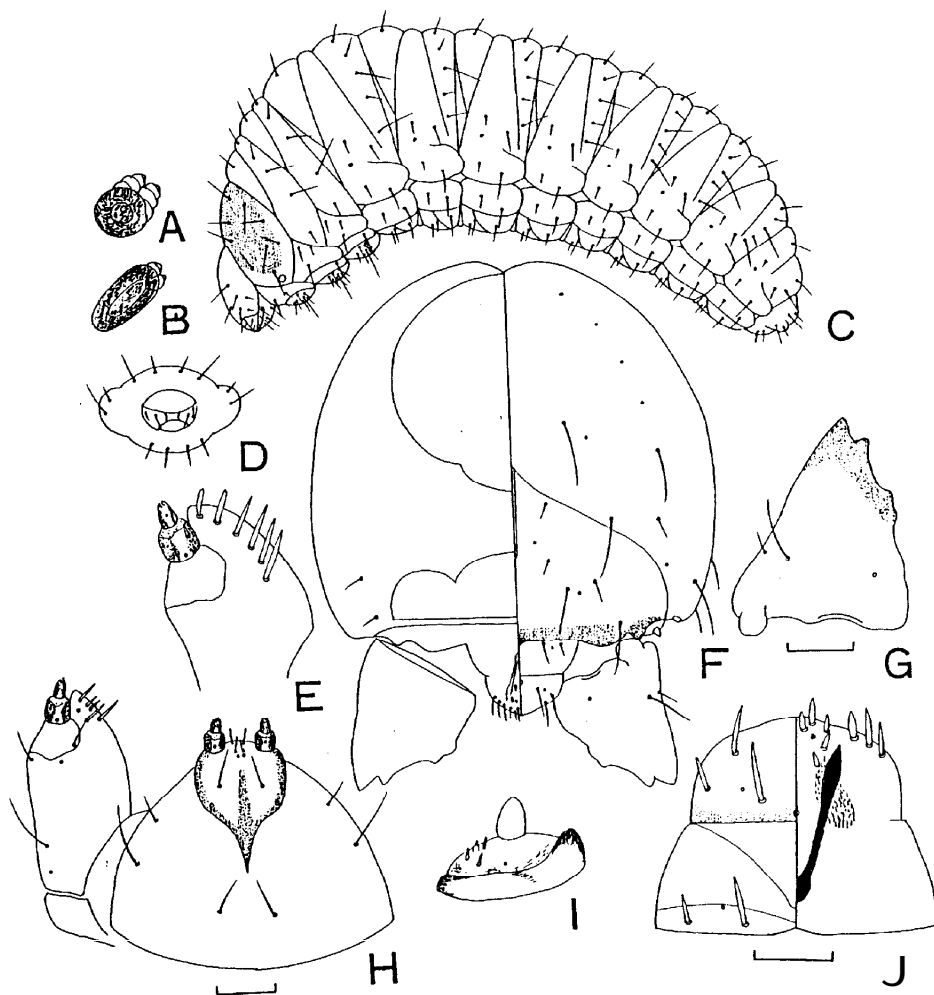


Fig. 11. *Shirahoshizotamanukii* (Kôno)

A: Thoracic spiracle. B: Abdominal spiracle. C: Mature larva. D: Anus. E: Maxilla, dorsal. F: Head. G: Mandible. H: Maxilla and labium. I: Antenna. J: Labrum and epipharynx. Scale: 0.2mm.

Larvae of this genus is close to *Cryptorhynchus lapathi*, but each air-tube of the thoracic spiracles composed of five to eight annulets, while in *Cryptorhynchus lapathi*, it is composed of ten to twelve annulets. Three species are common on *Pinus* spp., but are unable to separate them by the larvae.

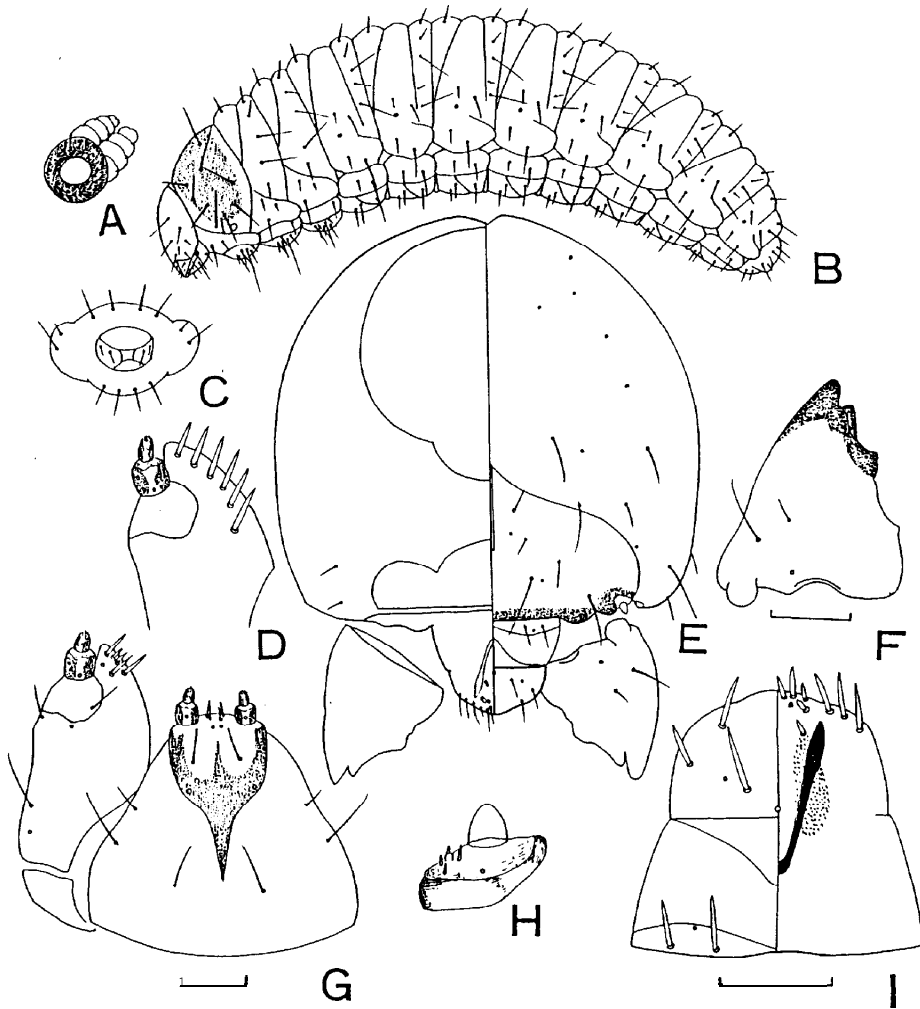


Fig.12. *Shirahoshizo rufescens* (Roelofs)

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

Key to species examined

1. Maxillary mala with six dorsal setae *Shirahoshixo tamanukii*
 -. Maxillary mala with seven dorsal setae
 *Shirahoshixo rufescens, indisiosus, and pini*

Species and materials examined.

Shirahoshixo tamanukii (Kôno). Kawayu, Hokkaido, 27.viii. 1948, under bark of

dead *Picea jezoensis*.

Shirahoshizo rufescens (Roelofs). Kumamoto, 27. v. 1969, reared in laboratory, under bark of *Pinus* spp.

Shirahoshizo indisiosus (Roelofs). Kumamoto, 3. x. 1969, reared in laboratory, under bark of *Pinus* spp.

Shirahoshizo pini Morimoto. Kumamoto, 25. viii. 1969, reared in laboratory, under bark of *Pinus* spp.

***Camptorhinus* sp.**

(Fig. 13)

Camptorrhinus: Gardner, 1934, Ind. For. Rec., 20: 19.

Present specimen was identified by larval stage after Gardner (1934).

Body very stout.

Head deeply retracted into thorax, distinct longer than wide. Anterior ocellus present. Antenna slender, with an narrow conical segments. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal suture distinct. Endocarina distinct, approximately one-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 and 4 short, subequal. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present, in middle of dorsal epicranium. Clypeus very large, with seta 1 and 2 moderately long, subequal. Anterior margin of labrum trilobed, posterior margin extended into clypeal zone, with a hexagonal basal pigmented area. Labral setae 1 and 2 short to moderately long, nearly twice as long as 3. Median and paired lateral sensilla present on labrum. Labral rods moderately short, stout and subparallel. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters. Epipharynx asperate. Mandible with blunt apex, without distinct teeth, longer than wide. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments, basal segment twice as long as wide. Premental sclerite irregular. Postmentum with three pairs of setae, setae moderately long, subequal. Maxillary palpus with two segments, basal segment without accessory process, twice as long as wide, apical segment without lateral seta. Mala with five ventral and seven dorsal setae.

Pronotum large, with ten setae, with a transverse brown smooth area on anterior one-third, which has five pale breaks from anterior margin to two-third of its length, posterior two-thirds of pronotum with coarse dense brownish asperities, asperate area also has five narrow smooth breaks. Thoracic spiracle bicameral, paired air-tubes small or minute and directed dorsally, peritreme broadly oval to circular. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae 1 and 2 short, 3 and 4 moderately long, subequal. Alar area with one short seta. Spiracular area with one short and one long seta. Epipleurum with a long seta. Pleurum of prothorax with two long setae, of meso- and metathorax with a long seta. Pedal area with seven setae, one long, one very short, the remainder short. Sternal setae subequal to eusternal

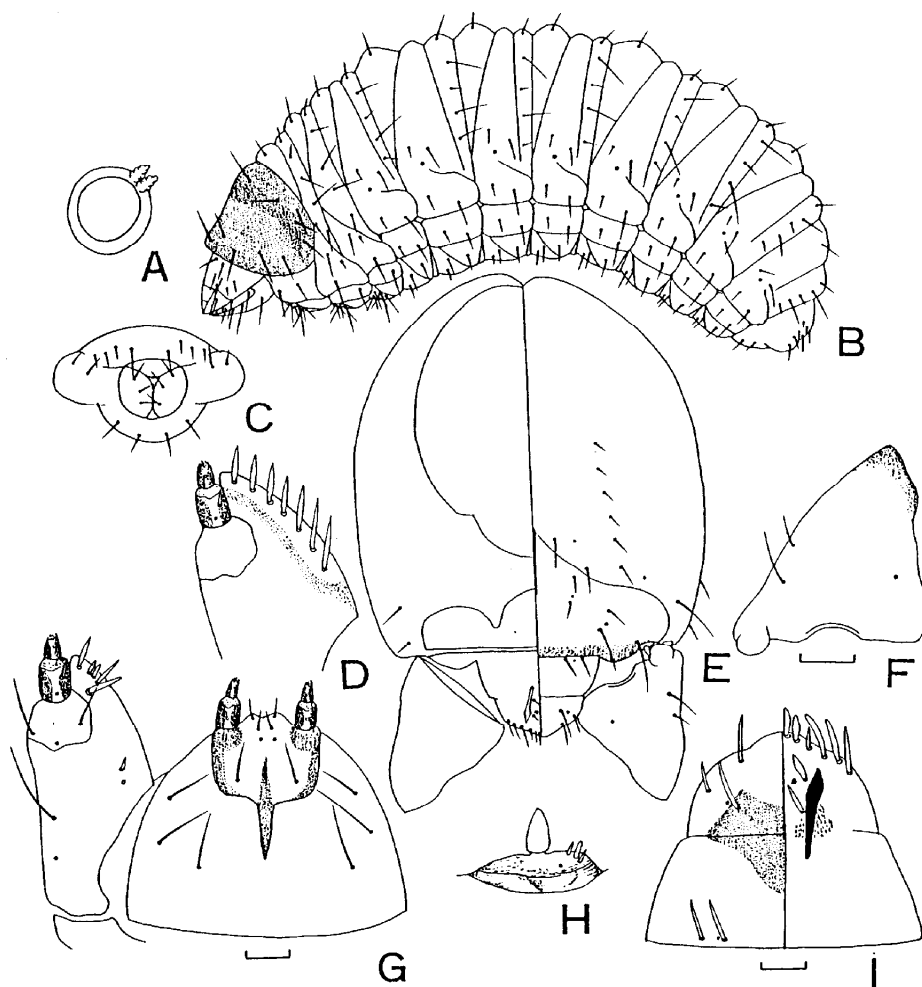


Fig.13. *Camptorhinus* sp.

A: Spiracle. B: Mature larva. C: Anus. D: Maxilla, dorsal. E: Head. F: Mandible.
G: Maxilla and labium. H: Antenna. I: Labrum and epipharynx. Scale: 0.2mm.

setae.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral, about half as large as those of pronotum in diameter, paired air-tubes small or minute and directed dorsally, with four to five annulets. Typical abdominal segment with three dorsal folds. Prodorsum with one short seta. Postdorsum segments with five setae, setae 1, 3 and 5 short, subequal, 2 and 4 long, subequal. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum with two setae, one short, the other slightly longer. Pleurum with two setae, one short, the other slightly longer. Pedal area with one short seta.

Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes, lateral lobes large.

Width of head 2.3 mm.

Materials examined. Okuchi, Kagoshima Pref., xii. 1985, in an tubercle made on the bark of a large living tree of *Castanopsis cuspidata*.

This larva may be separable from the other weevil larvae by the pronotum with large, smooth dorsal plate divided by a median groove, the mandible without distinct teeth and blunt at apex, and basal segments of the maxillary and labial palpi with the basal segments twice as long as wide.