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<https://doi.org/10.5109/23924>

出版情報 : 九州大学大学院農学研究院紀要. 33 (1/2), pp.131-152, 1988-10. Kyushu University
バージョン :
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Larvae of the Weevil Family Curculionidae of Japan
Part 2. Hyperinae to Cioninae
(Insecta: Coleoptera) *

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(Received June 30, 1988)

Second part of the larval study on the Curculionidae deals with the subfamilies Hyperinae, Cleoninae, Mecysolobinae, Lissorhoptrinae, Gymnetrinae, and Cioninae. Genera treated are *Listroderes*, *Hypera*, *Lixus*, *Larinus*, *Mecysolobus*, *Mesalcidodes*, *Lissorhoptrus*, *Gymnetron*, *Cionus*, and *Stereonyx*.

Genus *Listroderes* Schoenherr

Listroderes : May, 1977, J. Roy. Soc. New Zealand, 7 : 102.

Listroderes costirostris Schoenherr
(Fig. 1)

Listroderes costirostris : Hayashi, 1959, Ill. Ins. Larv. Jap., : 529, fig. 998.

Listroderes obliquus : Peterson, 1951, Larv. Ins., 2 : 124, fig. C20.—May, 1977, J. Roy. Soc. New Zealand, 7 : 201.

Body slender, slightly curved, eusterna bilobed, greenish cream to bright green according to food plant, setae very minute.

Head free, dull brown with well defined, darker maculate pattern, broader than long. Two pairs of ocelli present, each ocellus convex, distinct. Antenna with one conical segment, with 2 basal papillae, one shorter and the other longer than membranous segment. Frontal sutures distinguishable throughout its length. Endocarina absent. Frons with five pairs of setae, setae 1, 2 and 3 short, subequal, 4 and 5 moderately long, subequal. Dorsal epicranial setae 1, 2 and 3 short, subequal, 4 and 5 long, subequal. Lateral epicranial seta 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeal setae short to moderately long, subequal. Anterior margin of labrum broadly concaved. Labrum with three setae, seta 2 more widely separated than seta 1, seta 1 long, 2 moderately long, 3 very short, median sensillum present, paired lateral sensilla absent. Labral rods short, moderately stout. Epipharynx with three anter-

*Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 3, No. 281).

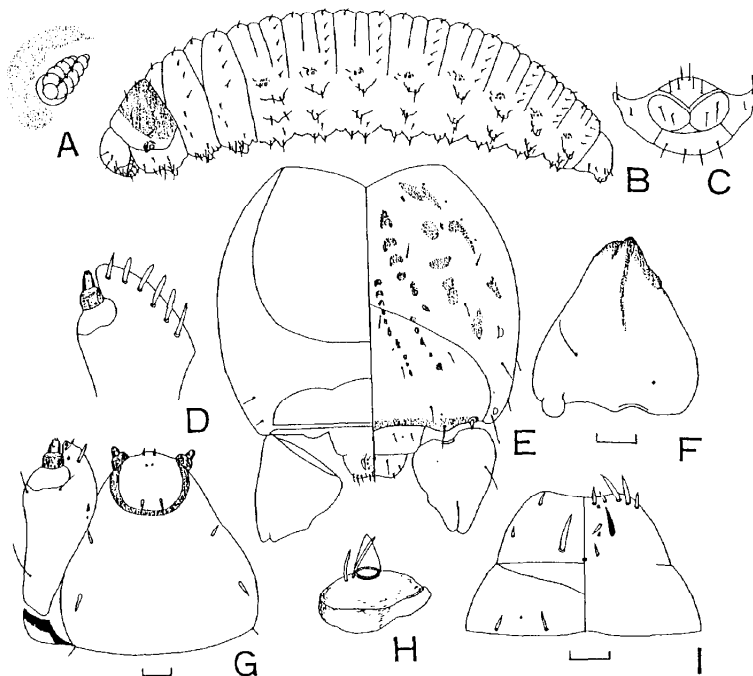


Fig. 1. *Listroderes costirostris* Schoenherr

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: 0.1 mm.

olateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters, three in each cluster, between the anterior and posterior pairs of median spines. Mandible with median and submedian supplementary teeth. Labial palpus with two segments, basal segment wider than long, apical segment longer than wide. Premental sclerite moderately sclerotized at sides, hardly sclerotized in the middle. Postmentum with two pairs of setae. Maxillary palpus with two segments, basal segment wider than long, apical segment longer than wide. Mala with three ventral and six dorsal setae.

Pronotum with eight setae and a common sclerite. Thoracic and abdominal spiracles bicameral, each surrounded by a crescent-shaped pigmented area. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae. Alara rea with one short seta. Spiracular area with one short seta. Epipleurum with one seta. Pleurum of prothorax with three setae, of meso- and metathorax with one seta. Pedal area with seven setae. Most ventral setae of pedal area subequal to very short sternal setae. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles. Typical abdominal segments with three dorsal folds. Prodorsum with a short seta. Postdorsum with five moderately short setae. Epipleurum and pleurum indistinct. Epipleurum with two moderately short setae. Pleurum with two moderately short setae. Pedal area indistinct, with one short

seta. Eusternum with two very short setae. Anus ventral, with three lobes.

Width of head : 1.4 mm.

Materials examined. Tokachi, Hokkaido. 15. viii. 1980. on vegetables.

This species is easily recognized by the crescent-shaped pigmented area around each spiracle.

Genus *Hypera* Germar

Hypera : Anderson, 1948, Proc. Ent. Soc. Wash., 50 : 26.

Phytonomus : Zaslavsky, 1959, Zool. Jum., 39 : 215.

Hypera basalis Voss

(Fig. 2)

Body slender, slightly curved, eusterna bilobed, setae minute.

Head free, dark, as long as wide. Two pairs of ocelli present, each ocellus convex, distinct. Antenna with a conical segment and several minute setae on membranous base. Catapophyses in same plane as frons. Frontal sutures distinguishable throughout

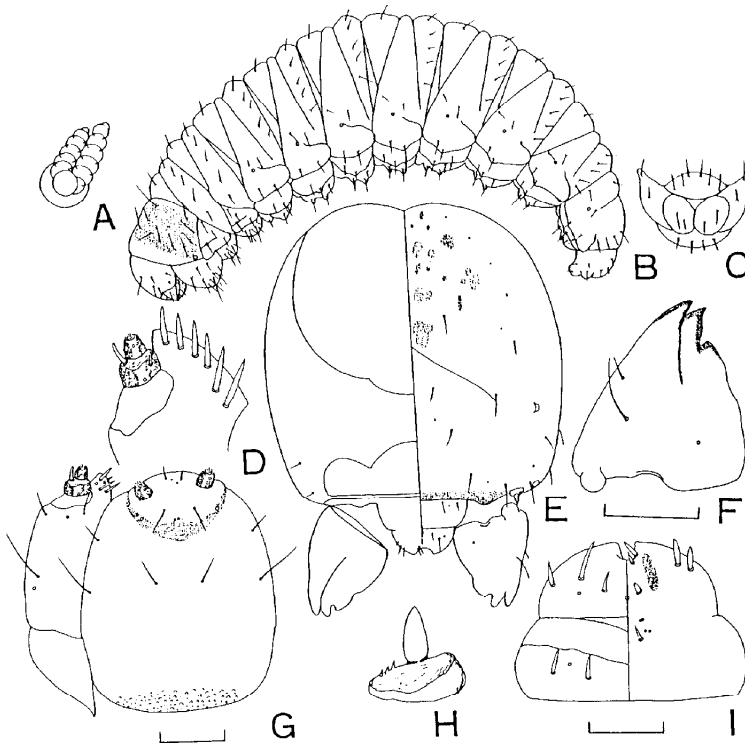


Fig. 2. *Hypera basalis* Voss

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 : 0.1 mm.

its length, incomplete anteriorly. Endocarina absent. Frons with four pairs of setae, seta 3 absent, setae moderately long, subequal. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 and 4 short, subequal. Lateral epicranial setae 1 moderately long, 2 long. Ventral epicranial setae short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeus broadly pigmented on basal half. Clypeal setae short to moderately long, subequal. Anterior margin of labrum with a distinct emargination at the middle. Labrum with three pairs of setae, median sensillum and paired lateral sensilla present. Labral rods vestigial, remaining as a pair of brown short area. Epipharynx with two anterolateral setae, four anteromedian setae, four median spines, and with four pairs of small sensilla, anterior pair of median spines short, obtuse, posterior pair setose, fine. Mandible with two acute apical teeth, longer than wide. Labial palpus with one segment, ogival, with two sensilla. Premental sclerite complete, moderately sclerotized, without median anterior and posterior extensions. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment wider than long, with a seta, two sensilla and a obtuse setiform appendage at the exterior base of apical segment, apical segment longer than wide. Mala with four ventral and six dorsal setae.

Pronotum with ten setae. Thoracic spiracle bicameral. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae. Alar area with one short seta. Spiracular area with two short setae. Epipleurum with one seta. Pleurum of prothorax with three setae, of meso- and metathorax with one seta. Pedal area with seven setae. Most ventral setae of pedal area subequal to very short sternal setae. Sternal setae subequal to eusternal setae. Setae on thorax and abdomen all setiform, attenuate apically, each borne on small brownish tubercle.

Abdomen with eight pairs of spiracles, spiracles all lateral, bicameral. Typical abdominal segments with three dorsal folds. Prodorsum with one short seta. Postdorsum of first to seventh segments with five setae, setae moderately short. Postdorsum of eighth segment with four moderately short setae. 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. Anus ventral, with three lobes.

Width of head : 0.7 mm.

Materials examined. Kashii, Fukuoka Pref., 20. iv. 1959. on *Malachium aquaticum*.

This species is easily separable from the known larvae of the genus by the pigmented tubercles from which all slender and attenuate setae arise.

Genus *Lixus* Fabricius (Figs. 3-4)

Lixus: Gardner, 1934, Ind. For. Rec., 20: 22.

Body moderately curved, with minute setae, and with dense minute asperities.

Head free, brownish with broad pale streaks. Two pairs of ocelli present, anterior ocellus near antenna, posterior ocellus with a small black spot. Antenna with apical segment conical, longer than wide. Catapophyses in same plane as frons. Frontal sutures distinct. Endocarina present. 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,

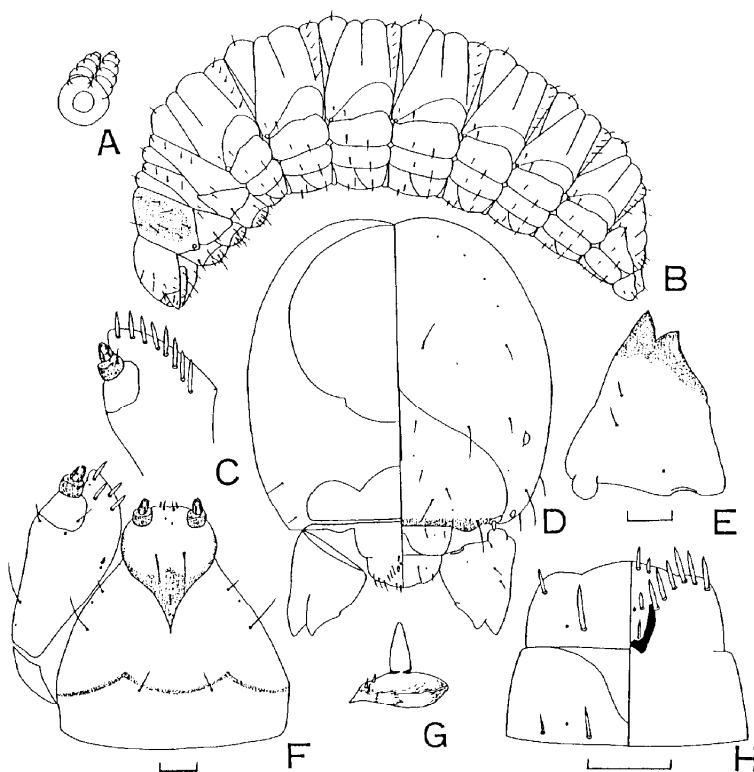


Fig. 3. *Lixus impressiventris* Roelofs

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

subequal, 2 moderately long, subequal. 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. Width of clypeus distinctly greater than combined length of clypeus and labrum. Epipharynx with four or six anterolateral setae, four anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters, three in each cluster, between the anterior and posterior pairs of median spines. Mandible with two acute apical teeth, longer than wide. Labral rods moderately short and elongate, approaching posteriorly to each other. Labial palpus with two segments, basal segment wider than long, apical segment longer than wide. Premental sclerite moderately sclerotized, posterior extension rather long. Postmentum with three pairs of setae. Maxillary palpus with two segments, basal segment wider than long, apical segment longer than wide. Mala with three or four ventral and eight or nine dorsal setae.

Pronotum with eight setae on a common sclerite. Thoracic spiracle bicameral. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, setae moderately short. Alar area with one short seta.

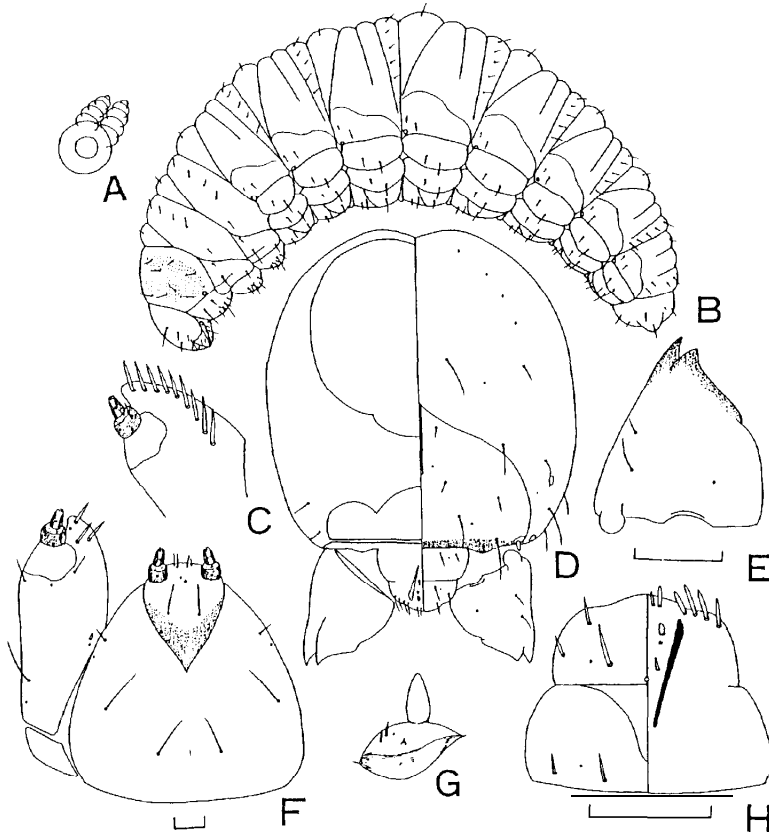


Fig. 4. *Lixus acutipennis* Roelofs

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

Spiracular area with one short seta. Epipleurum with one seta. Pleurum of prothorax with two setae, of meso- and metathorax with one seta. Pedal area with six setae, moderately short. Most ventral setae of pedal area subequal to very short sternal setae. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles, all lateral, bicameral, close to anterior margin in position on convex spiracular area. Typical abdominal segments with four dorsal folds. Prodorsum with one short seta. Postdorsum of first to seventh abdominal segment with five setae, setae moderately short. Epipleurum with two setae, setae moderately short. Pleurum with two setae, setae moderately short. Pedal area with one short seta. Eusternum with two very short setae. Sternellum present. Anus terminal, with four lobes.

This genus is characteristic in having four dorsal folds on the typical abdominal segment.

Key to species

1. Epipharynx with six anterolateral setae *Lixus impressiventris* Roelofs
- . Epipharynx with four anterolateral setae *Lixus acutipennis* (Roelofs)

Species and materials examined.

Lixus impressiventris Roelofs. Tokushima Pref., injurious to *Polygonum tinctorium*.

Lixus acutipennis (Roelofs). Jinzenji, Kochi City, from a stem of *Artemisia vulgaris*.

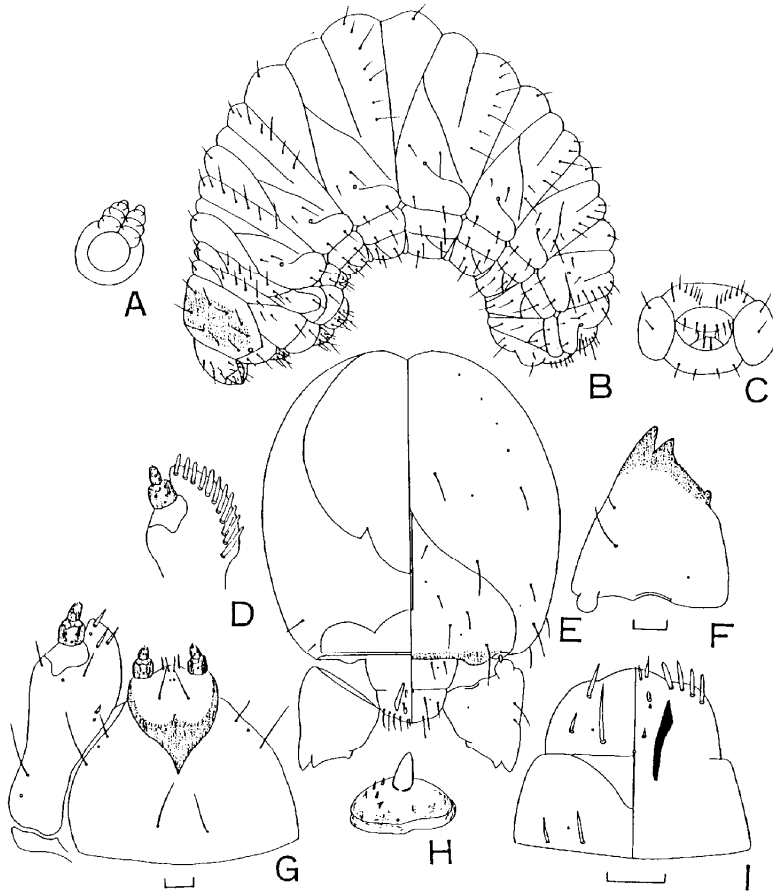


Fig. 5. *Larinus meleagris* Petri

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 : 0.1 mm.

Genus *Larinus* Germar
(Figs. 5-6)

Larinus : Gardner, 1934, Ind. For. Rec., 20 : 22.

Body strongly curved, stout, widest near the middle.

Head free, dark brown, as long as wide. Anterior ocellus present by antenna, posterior ocellus absent. Antenna with apical segment stoutly conical, longer than wide. Catapophyses in same plane as frons. Frontal sutures distinct. Endocarina present. 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 moderately long, 2 long. Anterior margin of labrum trilobed. Labrum with three setae, with median and paired sensilla. Epipharynx with four anterolateral setae, four

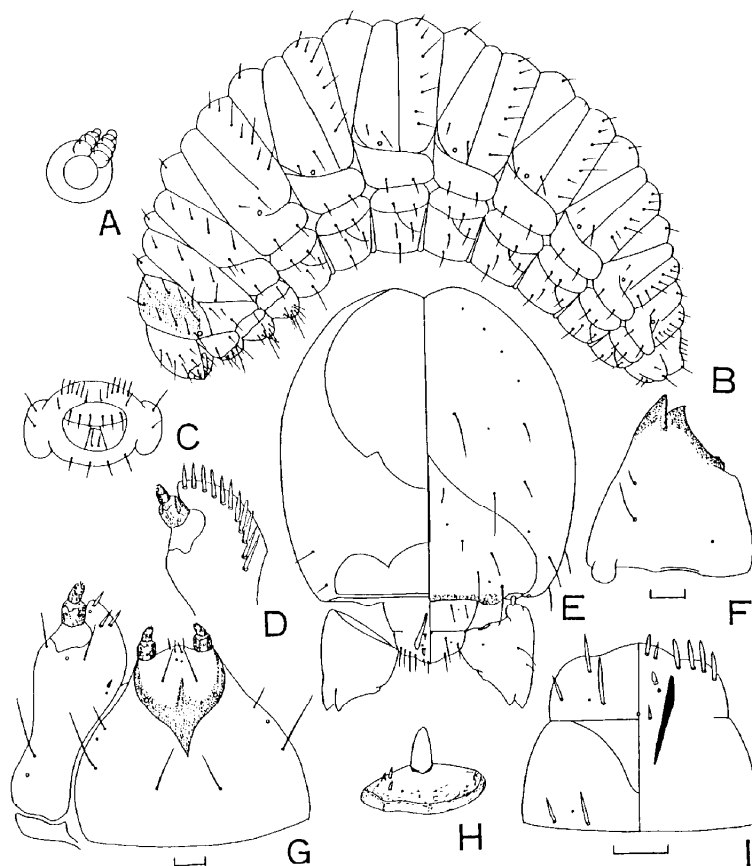


Fig. 6. *Larinus latissimus* Roelofs

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 : 0.1 mm.

anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters, three in each cluster, between the anterior and posterior pairs of median spines. Labral rods short, subparallel. Mandible with two acute apical teeth and acute angulation on ventral cutting edge. Labial palpus with two segments, basal segment wider than long, 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 and apical segments each longer than wide. Mala with three ventral and 11 dorsal setae.

Pronotum with nine setae on a common sclerite. Thoracic spiracle bicameral, air-tubes shorter than diameter of peritreme. Prodorsum of meso- and metathorax with one 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 two setae, one moderately long, one very short. 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 and subequal to very short sternal setae. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles, spiracles all lateral, bicameral, with short air-tubes. Typical abdominal segments with three dorsal folds. Prodorsum with a seta. Postdorsum of first to eighth abdominal segment with seven setae, setae 3, 5 and 7 long, subequal, 1, 2 and 4, 6 short, subequal. 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.

Species and materials examined.

Larinus meleagris Petri. Hokkaido, 7. viii. 1959,

Larinus latissimus Roelofs. Kashii, Fukuoka Pref, 18. vi. 1959. Both species from flowers of *Cirsium* spp.

Genus *Mecysolobus* Reitter (Figs. 7-10)

Alcides: Gardner, 1934, Ind. For. Rec., 20 : 27. — Gardner, 1938, Ind. For. Rec., (N. S.) Ent., 3 : 241.

Body slender, parallel sided, weakly curved.

Head free, dark brown, subcircular in outline. Anterior and posterior ocelli present. Antenna with a conical segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal sutures 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 epicranial setae present. Clypeal seta 1 short to moderately long, 1 nearly twice as long as 2. Anterior margin of labrum trilobed, posterior margin deeply produced into clypeal zone. Labrum with three setae and median and paired lateral sensilla. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines, posterior pair of spines separated by about half the distance of the anterior pair. Epipharyngeal sensory pores in two clusters,

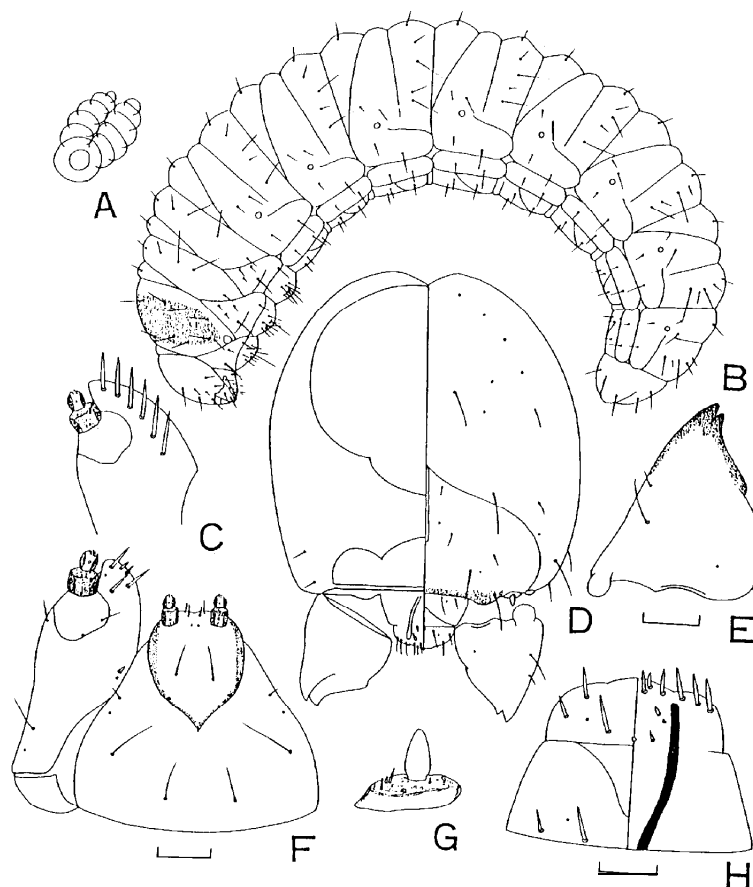


Fig. 7. *Mecysolobus nipponicus* (Kôno)

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

three in each cluster, between the anterior and posterior pairs of median spines. Labral rods slender, nearly parallel or converging slightly and extend slightly into clypeal zone. Mandible with two apical teeth. Labial palpus with two segments, separated each other by twice the width of a basal segment or less. Prementum very distinct. Maxillary palpus with two segments, basal-segment with one seta and two sensilla, apical segment with a sensillum and one sensory slit.

Pronotum strongly transverse, with a common sclerite. Thoracic spiracle 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 long, subequal. Alar area with one short seta. Spiracular area with three short setae. Epipleurum with one seta. Pleurum of prothorax with three setae, of meso- and metathorax with one seta. Pedal area with seven setae, one moderately long, the remainder short and subequal to sternal setae. Sternal setae subequal to eusternal setae.

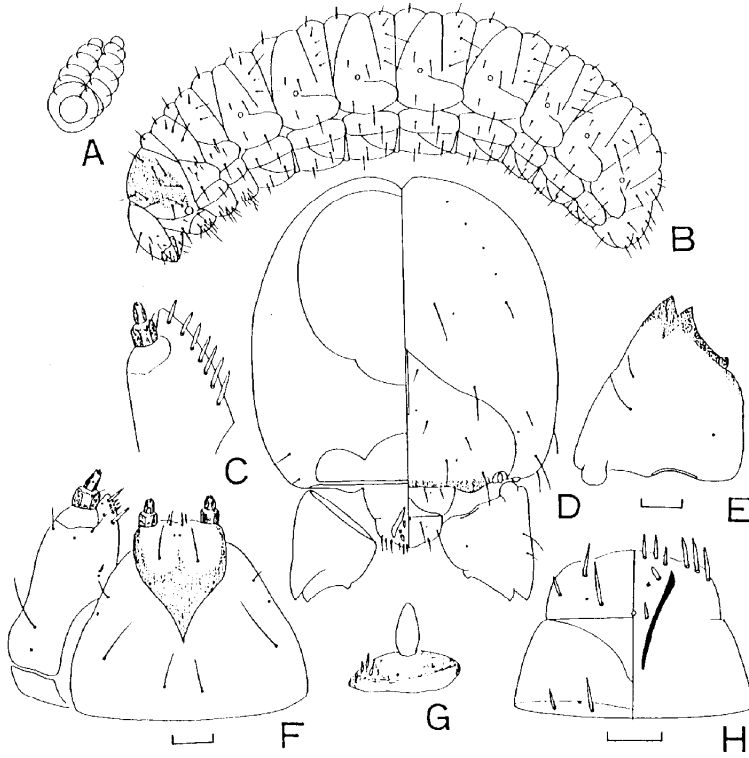


Fig. 8. *Mecysolobus flavosignatus* (Roelofs)

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

Abdomen with eighth pairs of spiracles, spiracles all lateral, bicameral, peritreme circular. Typical abdominal segment with three dorsal folds. Prodorsum with one seta. Postdorsum with five setae, setae 1, 2 and 4 short, subequal, 3 and 5 long, subequal. Ninth abdominal tergum considerably larger than sternum. 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 ventral, usually transverse with four lobes, dorsal lobe large.

Key to species

1. Air-tubes of spiracles shorter than diameter of peritreme. *Mecysolobus erro*
- Air-tubes of spiracles longer than diameter of peritreme. 2
2. Apical segments of labial and maxillary palpi as broad as or slightly broader than long. *Mecysolobus nipponicus*
- Apical segments of labial and maxillary palpi longer than broad. 3
3. Basal segment of maxillary palpus broader than long. *Mecysolobus flavosignatus*

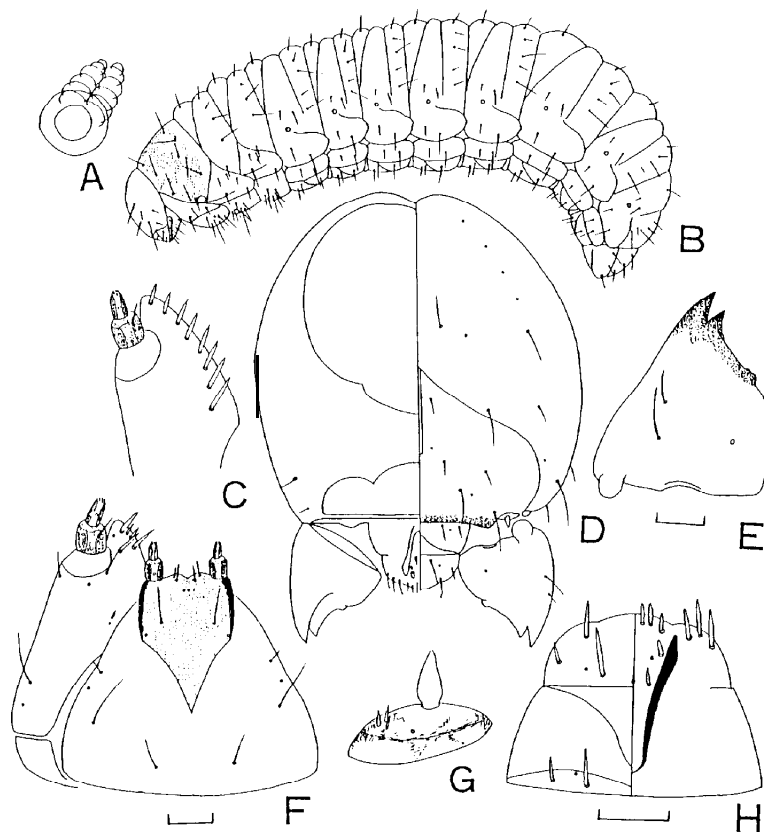


Fig. 9. *Mecysolobus erro* (Pascoe)

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

Basal segmenta of maxillary palpus longer than wide. *Mecysolobus piceus*

Species and materials examined.

Mecysolobus nipponicus (Kôno). Mt. Hikosan, Fukuoka Pref, 10. v. 1959, from stems of *Hydrangea macrophylla* and *H. paniculata*.

Mecysolobus flavosignatus (Roelofs). Mt. Inunakiyama, Fukuoka City, 24. v. 1958, from stems of *Boehmeria longispica*.

Mecysolobus erro (Pascoe). Mt. Kanayama, Fukuoka City, 25. vi. 1958, from stems of *Rhus silvestris* and *R. verniciflua*.

Mecysolobus piceus (Roelofs). Mt. Aburayama, Fukuoka Pref., 22. vii. 1958, from galls on shoots of *Quercus glauca* and *Castanea crenata*.

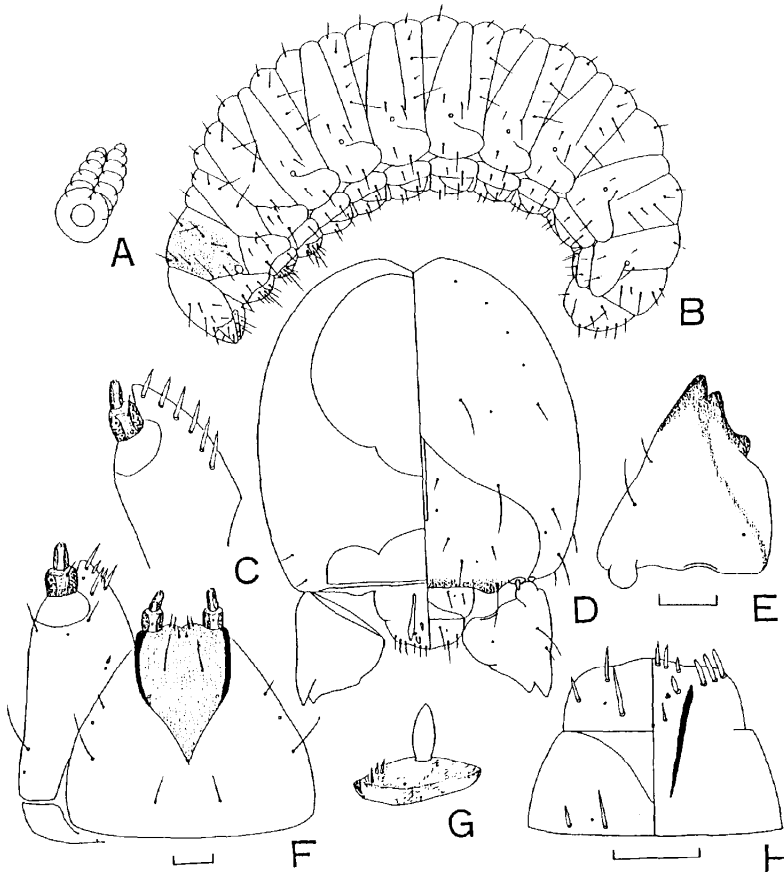


Fig. 10. *Mecysolobus piceus* (Roelofs)

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

***Mesalcidodes trifidus* (Pascoe)**

(Fig. 11)

Body strongly curved, stout, narrowing towards extremities.

Head free, reddish brown, subcircular in outline. Anterior and posterior ocelli present. Antenna with a slender segment and several minute setae. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal sutures distinct. Endocarina present. 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

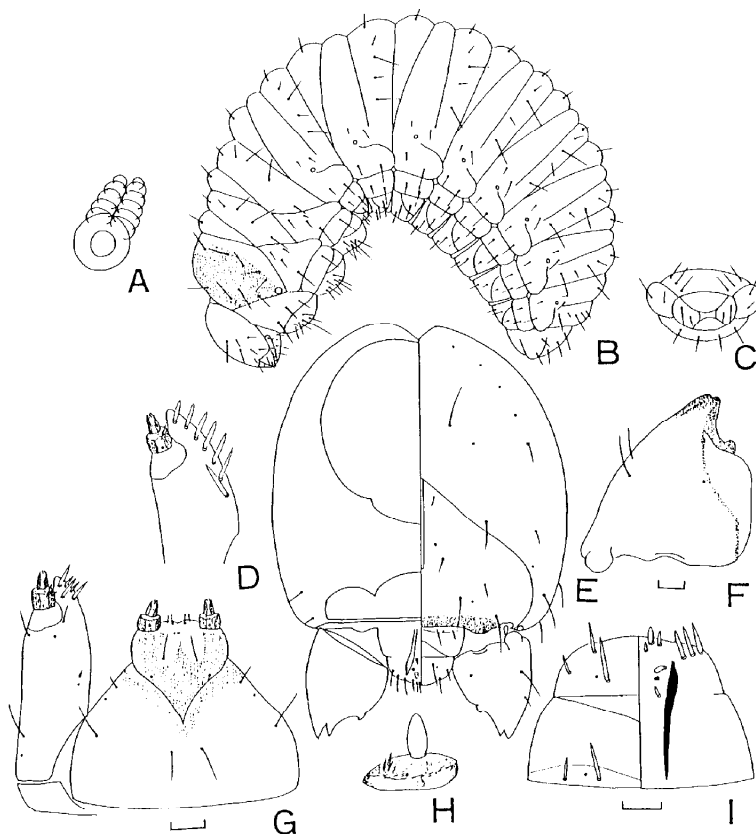


Fig. 11. *Mesalcidode trifidus* (Pascoe)

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 : 0.1 mm.

deeply produced into clypeal zone. Labrum with three setae and median and paired lateral sensilla. Labral rods moderately elongate, subparallel. Epipharynx with three anterolateral setae on an obliquely backward line towards the middle, six antero-medial setae and four median spines, posterior spines as widely separated as anterior pair. Epipharyngeal sensory pores in two clusters, three in each cluster, between the anterior and posterior pairs of median spines. Mandible with two apical teeth and an angulations on ventral cutting edge. Mandibular setal 1 short, slightly longer than and directly behind 2. Labial palpus with two segments, basal segment wider than long, apical segment longer than wide, Premental sclerite complete, with anterior and posterior median extensions. Postmentum with three setae. Mala with five ventral and seven dorsal setae,

Pronotum with nine setae. Thoracic spiracle bicameral. Prodorsum of mes- 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 three short setae. Epipleurum with one seta. Pleurum

of prothorax with three setae, of meso- and metathorax with one seta. Pedal area with seven setae, one moderately long, the remainder shorter and as long as sternal setae. Sternal setae subequal to eusternal setae.

Abdomen with eight pairs of spiracles, 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 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 ventral, with four lobes.

Width of head : 1.9 mm.

Materials examined. Kochi, Kochi Pref., 5. viii. 1954, from galls on vine of *Pueraria lobata*.

The genus *Mesalcidodes* Voss was synonymized with *Alcidodes* Marshall by Haaf, but the adults of the former have the uncus and mucro at the apex of tibiae, and the larvae are very stout, not cylindrical, and the posterior pair of median spines on epipharynx as widely separated as anterior pair.

***Lissorhoptrus oryzophilus* Kuschel**

(Fig. 12)

Lissorhoptrus simplex : Boving and Craighead, 1930, Ent. Amer., 11 : 330, pl.122.

Body weakly curved, slender, with minute and fine setae.

Head free, brownish, broadest at posterior $1/4$, weakly narrowed anteriorly, broadly rounded posteriorly. Anterior and posterior ocelli present. Antenna projecting, transverse oval, at least one-third wider than long. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal sutures distinguishable throughout its length, incomplete anteriorly. Endocarina absent. Frons with one pair of setae, seta 5 long, setae 1, 2, 3 and 4 absent. Dorsal epicranial seta 5 long, setae 1, 2, 3 and 4 absent. Lateral epicranial setae absent. Ventral epicranial setae absent. Four minute posterior epicranial setae present. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Labrum transverse, anterior margin nearly straight, the posterior margin strongly extended medially into clypeus, with two labral setae and median sensillum present. Labral rods moderately elongate, subparallel. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores in two clusters, three in each cluster, between the anterior and posterior pair of median spines. Mandible longer than wide, with two sharp apical teeth and smooth angulation on ventral cutting edge. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with two segments, basal segment wider than long, 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 wider than long, with two sensilla and one very short lateral seta, apical segment longer than wide, without seta. Mala with three ventral and six dorsal setae.

Pronotum with a transverse pigmented smooth plate, without setae. Thoracic spiracle bicameral. Prodorsum without seta. Postdorsum of meso- and metathorax

with two moderately short setae. Alar area with one short seta. Spiracular area with one short seta. Pedal area without seta. Ventral setae absent.

Abdomen with eight pairs of spiracles. Spiracles on second to seventh abdominal segments projecting, hook-shaped, and placed dorsally. Thoracic, and first and eighth abdominal spiracles not freely projecting, normally placed. Typical abdominal segments with three dorsal folds, and with a well-defined lenticular intermediate fold. Spiracular area with two setae, seta 1 very short, seta 2 short. Epipleurum and pleurum indistinct and setae absent. Anus terminal, with four lobes.

Width of head : 0.5 mm.

Material examined. Takoname City, Aichi Pref., 7. vii. 1976, on rice plants.

This species was first discovered in 1976 in Aichi Pref., and apparently introduced from U. S. A. The larvae are very characteristic in having the specially modified spiracles on the abdomen. The antennae are also unique in the phaneroognathous Curculionidae.

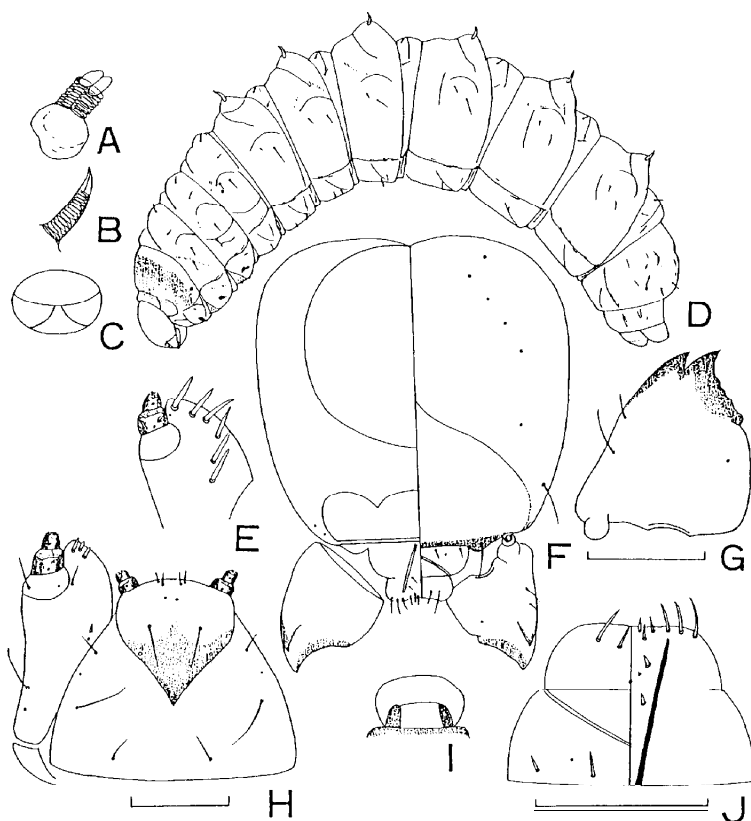


Fig. 12. *Lissorhoptrus oryzophilus* Kuschel

A. Thoracic spiracle and 1st, 8th abdominal spiracle. B. 2-7 abdominal spiracle. C. Anus. D. Mature larva. E. Maxilla, dorsal. F. Head. G. Mandible. H. Maxilla and labium. I. Antenna. J. Labrum and epipharynx. Scale : 0.1 mm.

Genus *Gymnetron* Schoenherr

Gymnetron: Gardner, 1934, Ind. For. Rec., 20 : 5. — Emden, 1938, Trans. Roy. Ent. Soc. London, 87 : 21. — Anderson, 1973, Proc. Ent. Soc. Wash., 75 : 134.

Gymnetron miyoshii Miyoshi
(Fig. 13)

Body weakly curved, rather slender, strongly attenuated posteriorly, with minute setae, finely asperate.

Head free, brown with pale stripes at sides and along cranial and frontal sutures, circular in outline, broader than long, broadest at the middle. Anterior and posterior ocelli present. Antenna with a rather stout conical segment, distinctly longer than wide. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal sutures distinct. Endocarina distinct, approximately one-half as long as frons. Frons with three pairs of setae, setae 1 and 3 absent. Dorsal epicranial seta 1,

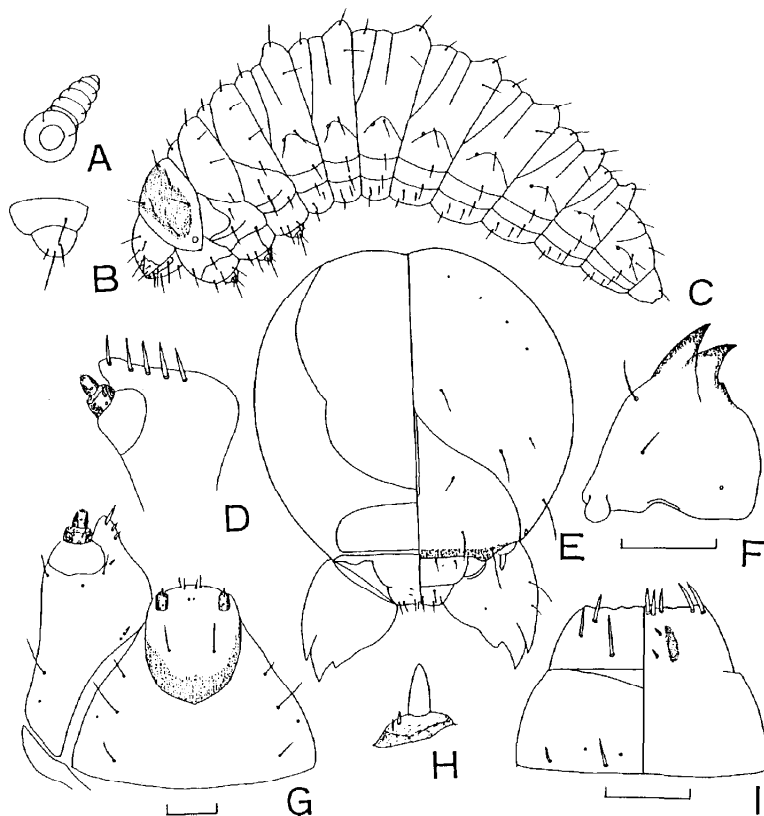


Fig. 13. *Gymnetron miyoshii* Miyoshi

A. Spiracle. B. Leg. C. Mature larva. D. Maxilla, dorsal. E. Head. F. Mandible. G. Maxilla and labium. H. Antenna. I. Labrum and epipharynx. Scale : 0.05 mm.

3 and 5 long, subequal, 4 short, 2 absent. Lateral epicranial setae absent. Ventral epicranial setae absent. Four minute posterior epicranial setae present. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Labrum transverse, anterior margin nearly straight, posterior margin weakly extended medially into clypeal zone, with three setae on each side, sensilla absent. Labral rods indefinite as a pair of brownish patches. Epipharynx with two anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores absent. Mandible with two apical teeth and a rounded flange just posterior to the dorsal tooth. Labial palpus with one segment, longer than wide. Prementum strengthened posteriorly and laterally by a U-shaped pale brownish band. Postmentum with three setae. Maxillary palpus with two segments, basal segment wider than long, with two sensilla and one very short lateral seta, apical segment longer than wide, with a sensillum and sensory slits, without seta. Mala with four ventral and five dorsal setae.

Pronotum with six setae on a pale smooth plate. Thoracic spiracle unicameral. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with three setae, setae moderately short. Alar area with one short seta. Spiracular area with one short seta. Epipleurum with one seta. Pleurum of prothorax with two setae, of meso- and metathorax with one seta. Legs with two flesh segments, basal segment with two long setae, apical segment with four setae. Eusternum with two setae, often with one seta on metathorax.

Abdomen with eight pairs of spiracles, all lateral, each with a single annulated air-tube which is longer than the diameter of the circular peritreme. Typical abdominal segments with three dorsal folds. Epipleurum and pleurum indistinct. Prodorsum with one short seta. Postdorsum of first to seventh abdominal segments with a soft protruberance posteriorly, with two setae, setae moderately long, subequal. Spiracular area with one short seta long. Epipleurum with one seta. Pleurum with one seta. Pedal area with one short seta. Eusternum with two very short setae. Caudal segment tapering rapidly to anus. Anus with transverse cleft.

Width of head. 0.5 mm.

Materials examined. Hakozaki, Fukuoka City, 20. v. 1959, from galls on ovaries of *Veronica peregrina*.

Genus *Cionus* Clairville

Cionus : Gardner, 1934, Ind. For. Rec., 20 : 5.—Grandi, 1938, Boll. Ist. Ent. Bologna, 11 : 9-16 (*Cionus scrophulariae* and *olens*).

Cionus helleri Reitter

(Fig. 14)

Cionus helleri : Hayashi, 1959, Ill. Ins. Larv. Jap., : 528, fig. 996.

Body very stout, flattened ventrally, strongly convex dorsally, declivous and narrower posteriorly.

Head free, dark brownish, as long as wide. Anterior and posterior ocelli present. Antenna with apical segment elongate conical. Catapophyses in same plane as frons.

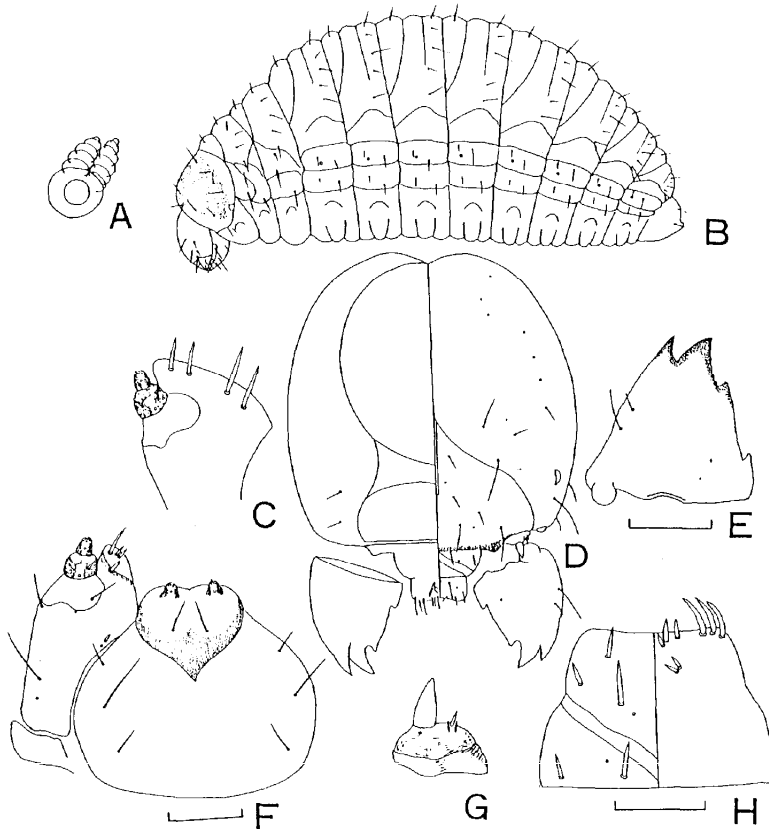


Fig. 14. *Cionushelleri* Reitter

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

Hypopharyngeal bracon readily discernible. Frontal sutures 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 1 and 2 short to moderately long, subequal. Four minute posterior epicranial setae present. Clypeal sclerite narrowed internally and interrupted in the middle. Clypeal seta 1 short to moderately long, nearly twice as long as 2. Labrum transverse, anterior margin weakly and irregularly concave, posterior margin strongly extended medially into clypeus. Labrum with three setae, median and pairs lateral sensilla indistinct. Labral rods absent. Epipharynx with three anterolateral setae, six anteromedian setae and four median spines. Epipharyngeal sensory pores absent. Mandible with two sharp apical teeth, inner apical tooth finely serrate internally, with two marked angulations before and behind the middle of cutting edge. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with a single more or less globular segment. Prementum limited posteriorly by a dark

brown V-shaped thickening. Postmentum with three pairs of setae approximately in a pair of straight lines. Maxillary palpus with two segments, the basal segment wider than long and with two sensilla and one very short lateral seta, apical segment longer than wide and without seta. Mala with three ventral and four dorsal setae.

Pronotum with eight setae, with a transverse pigmented smooth plate. Thoracic spiracle 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 long, subequal. Alar area with one short seta. Spiracular area with one short seta. Epipleurum with one seta. Pleurum of meso- and metathorax with one seta. Setae of pedal and ventral areas indistinct.

Abdomen with eight pairs of spiracles. Spiracles all lateral, bicameral. Typical abdominal tergite with two well-marked folds and a less well-defined lenticular intermediate fold. 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 and pleurum moderately convex. Epipleurum with two setae, one short, the other slightly longer. Pleurum, pedal area and eusternum with setae indistinct. Anus ventral, with four lobes.

Width of head. 0.7 mm.

Materials examined. Mt. Tachibana, Fukuoka City, 15. v. 1983, on leaves of *Paulownia tomentosa*.

This species is separable from two European species by the shape of the labrum which is sharply notched in the middle according to Grandi.

***Stereonychus thorucicus* Faust**

(Fig. 15)

Body very stout, flattened ventrally, strongly convex dorsally, narrowed posteriorly.

Head free, black, slightly wider than long. Anterior and posterior ocelli present. Antenna with apical segment slender, basal segment cushion-like with small elongate sensory appendages. Catapophyses in same plane as frons. Hypopharyngeal bracon readily discernible. Frontal sutures distinguishable throughout their length. Endocarina distinct. Frons with one pairs of seta, setae 1, 2, 3 and 5 absent. Dorsal epicranial setae 1, 3 and 5 long, subequal, 2 moderately long, 4 short. Lateral epicranial setae absent. Ventral epicranial setae absent. Clypeus with pigmented scleties narrowed internally, with two setae, moderately long, subequal, Labrum pentagonal, transverse, anterior margin weakly and irregularly concave, posterior margin strongly extended medially into clypeus, with three setae and a pairs lateral sensilla. Labral rods indistinct. Epipharynx with three anterolateral setae and six anteromedian setae, median spines and epipharyngeal sensory pores absent. Mandible with two sharp apical teeth, as long as wide, inner tooth finely serrate internally, without distinct tooth behind the middle of cutting edge. Mandibular seta 1 short, slightly longer than and directly behind 2. Labial palpus with one segment. Prementum limited posteriorly by a dark brown V-shaped thickening. Postmentum with three pairs of setae, the median pair separated by a distance approximately one-half as great as that between setae of posterior pair. Maxillary palpus with two segments, basal segment wider than long

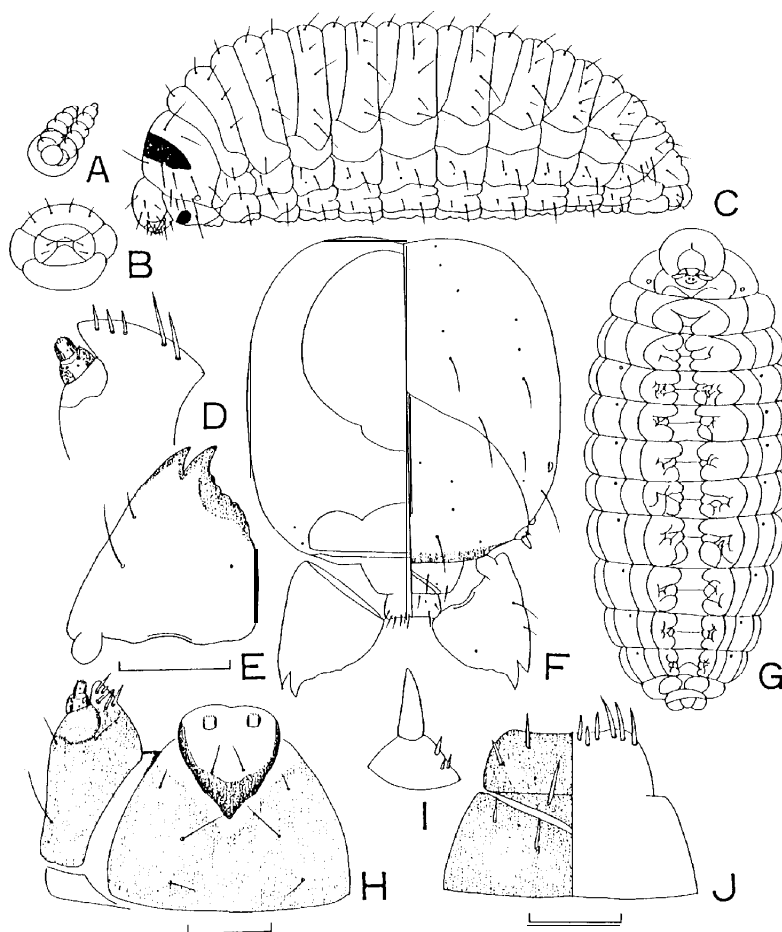


Fig. 15. *Stereonychus thoracicus* Faust

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

and with two sensilla and one very short lateral seta, apical segment longer than wide and without seta. Mala with five ventral and five dorsal setae.

Pronotum with ten setae, with a transverse and black pigmented smooth plate. Thoracic spiracle bicameral. Prodorsum of meso- and metathorax with one short seta. Postdorsum of meso- and metathorax with four setae, 1 and 2 short, subequal, 3 and 4 long, subequal. Alar area with one short seta. Spiracular area with one short seta. Epipleurum with one seta. Pleurum of meso- and metathorax with one seta. Pedal and ventral areas with setae absent.

Abdomen with eight pairs of spiracles, spiracles all lateral, bicameral. Typical abdominal segments with three dorsal folds, fold II very weak. 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, eusternum and pedal area with setae absent. Anus subterminal, with four lobes.

Width of head 0.6 mm.

Materials examined. Mt. Hikosan, Fukuoka Pref., 9. v. 1985, on the leaves of *Fraxinus spatulifolia*.