



Title	ON THE LARVAE OF SOME SPECIES OF SMALL FAMILIES OF CUCUJOIDEA IN JAPAN (COLEOPTERA)
Author(s)	Hayashi, Nodoka
Citation	Insecta matsumurana. Supplement, 7, 1-9
Issue Date	1969-10
Doc URL	<a href="http://hdl.handle.net/2115/22233">http://hdl.handle.net/2115/22233</a>
Type	bulletin (article)
File Information	7_P1-9.pdf



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# ON THE LARVAE OF SOME SPECIES OF SMALL FAMILIES OF CUCUJOIDEA IN JAPAN<sup>1)</sup>

(COLEOPTERA)

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In this paper are described the mature larvae of eight Japanese species belonging to Elacatidae, Inopeplidae, Salpingidae, Prostomidae and Pythidae, all of which are comparatively small families of the superfamily Cucujoidea. In general, the species of these families resemble in the larval stages.

Before going further I wish to express my hearty thanks to Prof. C. Watanabe of the Entomological Institute, Hokkaido University, for his constant kind guidance. Many thanks are also due to Mr. A. Haga, Mr. S. Hisamatsu, Mr. T. Ichikawa, Mr. M. Miyatake, Mr. K. Mizusawa, Mr. H. Nakajima, Mr. H. Takenaka and Mr. H. Yamazaki for their kind help in various ways.

## Elacatidae

The larvae of three Japanese species of this family, namely, *Elacatis ocularis* (Lewis), *E. kraatzii* (Reitter) and *Prostominia lewisi* Reitter will be stated in the following pages:—

### *Elacatis ocularis* (Lewis, 1895)

Body nearly white, flattened, parallel-sided, with cephalic margins of tergites undulated; urogomphi markedly thickened basally, armed with a large spine on inner side.

Head-capsule (Pl. 1, B & C) about 0.6 mm. in breadth; frons and clypeus confluent; frontal suture lyre-shaped; post-frons (region surrounded by frontal suture) as long as wide; ocelli (Pl. 1, D) in 5 spots arranged in 2 transverse rows on each side. Antennae (Pl. 1, E) with 1st joint as long as wide, subequal to the 3rd in length; 2nd joint twice as long as the 1st, the sensory appendage being less than half as long as the 3rd. Labrum transversely oval, the anterior margin being rather strongly produced forwards. Epipharynx (Pl. 1, F) with a large tuft of microtrichia on base. Mandibles (Pl. 1, G & H) 5-dentate apically, the grinding part being much longer than cutting part; external surface with 2 setae, of which the posterior one is exceedingly small; grinding surface of left mandible strikingly projecting at extremity. Maxillae (Pl. 1, I) with joints of palpus increasing in length towards apex; 3rd joint about 1.5 times as long as the 1st; mala with a sharply pointed uncus at inner-distal angle. Labium (Pl. 1, J) with palpi broadly separated each other by ligula; apical joint as long as or

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a little longer than the basal; submentum and gula united. Hypopharyngeal sclerome (Pl. 1, J) transverse, supported posteriorly by lateral rods.

Prothoracic segment about 1.5 times as long as meso- or metathoracic segment; presternum (Pl. 1, K) forming an enormous, trapezoidal plate, connecting with post-sternellum. Legs (Pl. 1, L) subequal in length, with many short, spine-like setae on each joint except for claw; coxal cavities lying remote each other. First to 8th abdominal tergites each with 2 transverse rows of 4 to 6 setae. Ninth abdominal segment including urogomphi (Pl. 1, M & N) scarcely narrowed posteriorly, and not strongly constricted medianly in dorsal view; urogomphus with 2 spine-like tubercles on dorso-basal portion (Pl. 1, M: TA & TB), the inner-basal one being larger; venter with a transverse row of asperities near anterior margin. Thoracic and abdominal spiracles annular, furnished with 2 small chambers on margin. Body-length about 6 mm.

Larval food: Decaying oaken wood.

Specimens examined: 3 exs. living under bark of decaying oaken wood, Kikuna, Yokohama, Kanagawa-ken, 22. V. 1967, N. Hayashi leg.; 7 exs. Terao, Yokohama, Kanagawa-ken, 20. V. 1969, N. Hayashi leg.

***Elacatis kraatzi*** (Reitter, 1879)

Reference: Fukuda, 1962, Kontyû, 30(1): 17-20, pl. 1.

The larva of this species is similar to that of *E. ocularis*, from which it differs in the following characters:—

Body yellowish brown. Head-capsule about 1 mm. in breadth; lateral side with only one long seta. First to 8th abdominal tergites each with a single transverse row of about 6 setae. Ninth abdominal segment including urogomphi (Pl. 1, O) rather strongly constricted medianly in dorsal view, the outer sides of urogomphi being almost parallel or slightly diverging apically; urogomphus with 2 tubercles (Pl. 1, O: TA & TB) equal in shape. Body-length about 10 mm.

Larval food: Decaying oaken wood.

Specimens examined: 2 exs. living under bark of decaying oaken wood, Akita-ken, 22. V. 1951, N. Hayashi leg.; 10 exs. Karuizawa, Nagano-ken, 26. V. 1969, N. Hayashi leg.

***Prostominia lewisi*** Reitter, 1889

Body nearly white, strikingly flattened, parallel-sided; urogomphi rather slender, with a large spine on inner side.

Head-capsule (Pl. 2, B & C) about 0.5 mm. in breadth; lateral side evenly rounded; frons and clypeus confluent; frontal suture lyre-shaped, its base being sharply angulated backwards, reaching to posterior margin of capsule; frons extremely narrow, the post-frons being longitudinally rhombical; with a single ocellus (Pl. 2, D) on each side. Antennae (Pl. 2, E) with 1st joint slightly wider than length, about as long as the 3rd; 2nd joint almost 1.5 times as long as the 1st, the sensory appendage being elongate, a little shorter than the 3rd. Labrum semicircular. Epipharynx (Pl. 2, F) with a small tuft of microtrichia on base. Mandibles (Pl. 2, G & H) tridentate apically, the grinding part being not much longer than cutting part; external surface with 2 setae, of which the posterior one is exceedingly small; left mandible being strongly produced at extremity of grinding surface, armed with a very small additional tooth on dorsal cutting edge. Maxillae (Pl. 2, I) with palpus comparatively slender; 3rd joint about twice as

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long as the 1st, and subequal to the 1st and 2nd combined in length; mala short, broadly rounded apically, with a tridentate uncus at inner-distal angle. Labium (Pl. 2, J) with palpi rather widely separated each other by ligula, the apical joint being much longer than the basal; submentum and gula united. Hypopharyngeal sclerome (Pl. 2, J) transverse, slender and supported by lateral rods posteriorly.

Prothoracic segment subequal to meso- or metathoracic segment in length, slightly narrowing backwards; presternum similar to that of *Elacatis*-larva. Legs (Pl. 2, K) subequal in length, comparatively short, with a few short setae on each segment; coxal cavities lying remote each other. First to 8th abdominal tergites each with a single transverse row of about 6 setae. Ninth abdominal segment (Pl. 2, L & M) gradually convergent towards apices of urogomphi laterally, with several small, spine-like tubercles on dorsum, of which the posterior one is largest, located on base of urogomphus; venter with a transverse row of asperities near anterior margin. Thoracic and abdominal spiracles annular, with 2 small chambers on margin. Body-length about 4.1 mm.

Larval food: Decaying wood.

Specimens examined: 5 exs. living under bark of decaying wood, Miyake-jima, Izu, 5. V. 1966, N. Hayashi leg.

The larvae of the species mentioned in this paper are distinguished by the following key:—

### Key to the species based on the larvae

1. Ocelli with 5 spots on each side. Legs with many small, spiniform setae. Urogomphi strikingly thickened basally. . . . . 2.
- Ocelli with a single spot on each side. Legs without many small, spiniform setae. Urogomphi not strikingly thickened basally. . . . . *Prostominia lewisi* Reitter
2. Ninth abdominal segment including urogomphi scarcely constricted medianly, with unequal tubercles in shape on base of urogomphus. Body nearly white, less than 7 mm. in length. . . . . *Elacatis ocularis* (Lewis)
- Ninth abdominal segment including urogomphi rather strongly constricted medianly, with 2 equal tubercles in shape on base of urogomphus. Body yellowish brown, more than 7 mm. in length. . . . . *Elacatis kraatzii* (Reitter)

### Inoepelidae

The genus *Inoepelus* Smith contains about 60 known species, of which only one, *I. quadrinotatus* (Gorham), has been known to occur in Japan. In so far as I am aware, no larvae of this genus have been described except for the brief description of *I. praeustus* Chevrolat given by Peyerimhoff (1902). On this occasion the larva of *I. quadrinotatus* will be described as below:—

#### *Inoepelus quadrinotatus* (Gorham, 1873)

Body slightly tinged with brown, moderately depressed, enlarged medianly; urogomphi with a large spine on inner side.

Head-capsule (Pl. 3, B & C) about 0.7 mm. in breadth; post-lateral angles of capsule broadly rounded in dorsal view; frons and clypeus confluent; frontal suture lyre-shaped, its base sharply angulated, reaching to posterior margin of capsule; ocelli (Pl. 3, D) in 4 spots on each side, of which 3 are arranged in a transverse row. Antennae

(Pl. 3, E) with 1st joint a little wider than length, and as long as the 3rd; 2nd joint about 1.5 times as long as the 1st, the sensory appendage being extremely slender. Labrum broadly semicircular. Epipharynx (Pl. 3, F) with a pair of small tufts of microtrichia on base; unisetiferous sensillae (Pl. 3, F: us) frequently arranged longitudinally. Mandibles (Pl. 3, G & H) tridentate apically, with several setae on external surface; grinding surface of left mandible not distinctly pointed outwardly at extremity, similar to that of the right one. Maxillae (Pl. 3, I) with 1st joint of palpus as long as wide, and as long as or a little longer than the 2nd; 3rd joint scarcely longer than the 1st, not gradually tapering towards apex; mala relatively slender, almost 1.5 times as wide as basal joint of palpus, rounded apically, lacking uncus at inner-distal angle. Labium (Pl. 3, J) without ligula; palpi closely approached each other, with apical joint dome-shaped apically, subequal to the basal in length; submentum and gula united, the latter being comparatively well developed. Hypopharyngeal sclerome absent.

Prothoracic segment a little less than 1.5 times as long as meso- or metathoracic segment, slightly narrowing posteriorly; presternum (Pl. 3, K) forming an enormous, trapezoidal plate, connected with poststernellum. Mesothoracic segment about twice as wide as long, the spiracular region strongly projecting outwardly. Legs (Pl. 3, L) subequal in length, moderately developed, lacking spiniform setae; coxal cavities widely separated each other. First to 6th abdominal segments with lateral sides slightly diverging backwardly, the 6th about 2.5 times as wide as long. Ninth abdominal segment (Pl. 3, M & N) markedly smaller than the preceding; urogomphi strongly recurved apically, a little longer than median length of segment, bearing 2 dully pointed tubercles on dorso-basal portion, of which the posterior one is much larger; venter with 2 or 3 small teeth (Pl. 3, O: t) on each side near anterior margin, the anal region being slightly produced. Thoracic and abdominal spiracles annular, the former with 2 small chambers on margin. Body-length about 6 mm.

Larval food: Decaying oaken wood.

Specimens examined: 15 exs. living under or within bark of decaying oaken wood, Kikuna, Yokohama, Kanagawa-ken, 22. V. 1967, N. Hayashi leg.

### Salpingidae

The genus *Istrisia* Lewis is represented by only a single species, *I. rufobrunnea* Lewis, which occurs in Japan. The larva of this species was already informed by myself (1959). As a supplement to the previous description a redescription will be given below:—

#### *Istrisia rufobrunnea* Lewis, 1895

Reference: Hayashi, 1959, Illustrated insect larvae of Japan, Tokyo, No. 911: 485.

Body nearly white, elongate, strongly flattened, parallel-sided; urogomphi exceptionally elongate, armed with several long spines on inner side.

Head-capsule (Pl. 4, B & C) about 1 mm. in breadth, rounded laterally; frons and clypeus confluent; frontal suture lyre-shaped, its base being sharply angulated, reaching to posterior margin of capsule; ocelli (Pl. 4, D) in 5 separated spots on each side. Antennae (Pl. 4, E) with 1st joint almost as long as wide, subequal to the 3rd in length; 2nd joint a little less than twice as long as the 1st. Labrum semicircular. Epipharynx (Pl. 4, F) with a pair of longitudinal rows of microtrichia; unisetiferous

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sensillae (Pl. 4, F: us) not located medianly. Mandibles (Pl. 4, G & H) 4-dentate apically, with dorsal and ventral cutting edges markedly retracted; left mandible strongly produced at extremity of grinding surface, furnished with a small additional tooth on dorsal cutting edge. Maxillae (Pl. 4, I) with 3rd joint of palpus 1.5 to 2 times as long as the 1st; mala comparatively wide, armed with a bidentate uncus at inner-distal angle. Labium (Pl. 4, J) with palpi far separated each other by ligula, the apical joint being a little longer than the basal; submentum and gula extremely narrow, confluent. Hypopharyngeal sclerome (Pl. 4, J) transverse, supported by lateral rods posteriorly.

Prothoracic segment subequal to meso- or metathoracic segment in length, strikingly narrowed backwards, emarginated posteriorly; presternum (Pl. 4, K) forming an enormous plate, reaching to poststernellum. Metathoracic segment smaller and narrower than head-capsule. Legs (Pl. 4, L) subequal in length, relatively short, stout, scattered with short, spiniform setae on femur and tibia; tibia about as long as wide, subequal to claw in length. First to 7th abdominal segments about 1.5 times as wide as long, vaguely rugose longitudinally. Ninth abdominal segment (Pl. 4, M) with urogomphus slightly longer than the 7th and 8th combined, moderately curved inwardly except for abruptly bent tip-end, furnished with 6 or 7 spines on inner surface, which are arranged dorsally and ventrally, becoming longer posteriorly, the last 2 spines being exceedingly elongate; venter with a transverse row of asperities near anterior margin. Thoracic and abdominal spiracles annular, the former with 2 small chambers on margin. Body-length about 11 mm.

Larval food: Decaying coniferous wood.

Specimens examined: 5 exs. living within decaying coniferous wood, Towada, Aomori-ken, 26. VII. 1959, N. Hayashi leg.; 10 exs. Meakan-dake, Hokkaido, 31. VII. 1952, N. Hayashi leg.; 1 ex. Sôunkyo, Hokkaido, 26. VII. 1962, K. Mizusawa leg.; 4 exs. Kanayama-toge, Yamanashi-ken, 18. V. 1963, H. Takenaka leg.; 2 exs. Yumoto, Nikko, Tochigi-ken, 12. VI. 1967, N. Hayashi leg.

### **Prostomidae**

The genus *Prostomis* Reitter has hitherto been referred to the family Cucujidae by most previous authors. Having examined larva of *Prostomis latoris* Reitter occurring in Japan, I have been convinced that this genus should be placed in the family Prostomidae as Böving and Craighead (1931) and Crowson already suggested.

#### ***Prostomis latoris* Reitter, 1889**

Reference: Hayashi, 1959, Illustrated insect larvae of Japan, Tokyo, No. 818: 483.

Body nearly white, strikingly flattened, moderately narrowing anteriorly and posteriorly except for a broadened head-capsule; urogomphi small, not pointed, fleshy, furnished with a very small tubercle at tip-end.

Head-capsule (Pl. 5, B & C) about 1.6 mm. in breadth, exceptionally well developed laterally, the right half being larger than the left; frons and clypeus confluent, the latter being extremely narrow, reddish brown together with labrum; frontal suture obsolete, lyre-shaped; ocelli absent. Antennae (Pl. 5, D) with 1st joint as long as wide, subequal to the 3rd in length; 2nd joint about 1.5 times as long as the 1st. Labrum exceedingly small, semicircular. Epipharynx (Pl. 5, E) with 2 rows of microtrichia from base to apex, the left row being well developed, provided with unisetiferous sensillae

anteriorly (Pl. 5, E: us). Mandibles (Pl. 5, F & G) strongly projecting forwards, comparatively slender, tridentate apically, markedly undulated externally; left mandible distinctly produced at extremity of grinding surface, furnished with a small additional tooth behind ventral apical tooth. Maxillae (Pl. 5, H) with palpus rather elongate, the basal 2 joints being subequal in length, while the 3rd a little longer than the 1st or 2nd, spindle-shaped; mala slightly amplicated proximally, roundly elevated apically, armed with a weakly undulated uncus at inner-distal angle. Labium (Pl. 5, I) with palpi rather elongate, far separated each other by ligula, the apical joint being subequal to the basal in length; prementum and mentum narrowing towards base, the former being apparently longer than the latter; submentum and gula united. Hypopharyngeal sclerome (Pl. 5, J) transverse, supported by lateral rods anteriorly and posteriorly.

Prothoracic segment obviously smaller than the succeeding, forming a suboctagonal plate in dorsal view; presternum well developed, reaching to presternellum. Legs (Pl. 5, K) subequal in length, comparatively short; tibia with a number of small, spiniform setae; femur considerably thickened apically; coxal cavities lying remote each other. Abdominal segments vaguely rugose longitudinally, lacking setae apart from lateral ones. Ninth abdominal segment (Pl. 5, L & M) extremely small, almost as wide as half width of head-capsule, projecting upwardly, and rather closely scattered caudally with microscopic spine-like granulations; venter with a transverse row of fine asperities before anal orifice (Pl. 5, M: as). Thoracic and abdominal spiracles annular, lacking chambers on margin. Body-length about 9 mm.

Larval food: Decaying coniferous wood.

Specimens examined: 6 exs. living within decaying coniferous wood, Meakandake, Hokkaido, 31. VII. 1952, N. Hayashi leg.; 4 exs. Ôyama, Kanagawa-ken, 29. IV. 1950, N. Hayashi leg.; 5 exs. Daibosatsu-toge, Yamanashi-ken, 21. V. 1961, N. Hayashi leg.; 3 exs. Gongenyama, Fukuoka-ken, 20. III. 1963, A. Haga leg.; 3 exs. Amami-Ôshima, Kagoshima-ken, 24. V. 1960, N. Hayashi leg.

### Pythidae

*Pytho nivalis* Lewis and *P. jezoensis* Kôno of this family have been known to occur in Japan, and yet no larvae of these species have been informed. In the following pages descriptions of the larvae will be given below:—

#### *Pytho nivalis* Lewis, 1895

Body yellowish brown, considerably sclerotized, flattened and slightly expanded posteriorly; urogomphi with several spine-like, pigmented tubercles dorsally and a large spine inwardly, and a transverse, corneous projection between urogomphi.

Head-capsule (Pl. 6, B & C) about 2.8 mm. in breadth; frons and clypeus confused; frontal suture lyre-shaped; ocelli (Pl. 6, D) in 5 separated spots on each side. Antennae (Pl. 6, E) apparently elongate, almost as long as half width of head-capsule; joints decreasing in length towards apex, the basal joint 2 to 2.5 times as long as wide, about twice as long as the apical; sensory appendage extremely small. Labrum semi-circular. Epipharynx (Pl. 6, F) with a large, longitudinal tuft of microtrichia, and with a transverse row of numerous sensillae before unisetiferous sensillae (Pl. 6, F: us); posterior rods (torma) long, abruptly bent apically. Mandibles (Pl. 6, G & H) 4-dentate apically; dorsal and ventral cutting edges markedly retracted; grinding surface of left

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mandible strongly produced at extremity. Maxillae (Pl. 6, I) with palpus rather stout, the 2nd joint a little longer than the others; mala parallel-sided, armed with a tridentate uncus at inner-distal angle. Labium (Pl. 6, J) with palpi far separated each other by ligula, the apical joint distinctly longer than the basal; mentum strikingly narrowed basally; submentum and gula united. Hypopharyngeal sclerome (Pl. 6, J) supported by lateral rods.

Prothoracic segment less than 1.5 times as long as meso- or metathoracic segment, weakly swollen laterally; presternum (Pl. 6, K) not reaching to point between coxal cavities, and broadly separated from poststernellum, furnished with 2 longitudinal sutures. Legs gradually increasing in length towards posterior pair, moderately developed; joints except for claw with many short, spiniform setae; coxal cavities lying far remote each other. Mesothoracic to 8th abdominal segments with cephalic margin of each tergite corneously ridged, interrupted, forming 2 small, longitudinal spine-like maculations at middle (Pl. 6, N) Ninth abdominal segment (Pl. 6, L & M) a little wider than head-capsule; hind margin (dorsal margin between urogomphi) strongly retracted; projection between urogomphi forming a trapezoidal plate; urogomphi contiguous each other at base, much longer than dorso-median length of segment, with 4 tubercles arranged on dorsum of urogomphus; venter with margin of tergite longitudinally striated, with a transverse row of asperities near anterior margin of sternite. Thoracic and abdominal spiracles elliptical, lacking chambers on margin. Body-length about 27 mm.

Larval food: Decaying coniferous wood.

Specimens examined: 6 exs. living under bark of decaying coniferous wood, Kari-saka-toge to Jiumonji-toge, Okuchichibu, 2. VII. 1956, H. Yamazaki leg.; 1 ex. near Oze, Okunikko, 28. VII. 1963, H. Yamazaki leg.; 1 ex. Yumoto, Nikko, Tochigi-ken, 29. VII. 1956, N. Hayashi leg.

### *Pytho jezoensis* Kôno, 1936

The larva of this species is similar to that of *P. nivalis*, from which it differs in the following characters:—

Head-capsule about 2.5 mm. in breadth. Antennae with apical joint a little longer than half length of the basal. Mandibles with dorso-caudal tooth of right one usually absent (3-dentate). Second to 7th abdominal segments with longitudinal ridges of each tergite (Pl. 6, P) extending backwards. Ninth abdominal segment (Pl. 6, O) with hind margin nearly straight, not retracted; projection between urogomphi forming a transverse plate; urogomphi widely separated each other, almost as long as dorso-median length of segment. Body-length about 18 mm.

Larval food: Decaying coniferous wood.

Specimens examined: 2 exs. living under bark of decaying coniferous wood, near Hakutaisan, Okuchichibu, 29. XII. 1968, H. Nakajima leg.; 1 ex. near Oze, Okunikko, 28. VII. 1963, H. Yamazaki leg.

Notes: The larvae of *Pytho nivalis* and *P. jezoensis* are distinguished from those of any other congeneric species by the shape of anterior ridge of each tergite, by the structures of the ninth abdominal segment and by the body-length.

The larvae of the species mentioned above are easily distinguished by the following key:—

**Key to the species based on the larvae**

Second to 7th abdominal tergites with longitudinal ridges short, not reaching to basal third. Ninth abdominal segment with projection between urogomphi trapezoidal, strongly produced backwardly; urogomphi contiguous basally, much longer than dorso-median length of segment. Body longer, more than 21 mm. in length. . . . . *Pytho nivalis* Lewis

Second to 7th abdominal tergites with longitudinal ridges long, reaching to basal third. Ninth abdominal segment with projection between urogomphi not trapezoidal, weakly produced backwardly; urogomphi far separated each other basally, almost as long as dorso-median length of segment. Body smaller, less than 21 mm. in length. . . . . *Pytho jezoensis* Kôno

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**EXPLANATION OF PLATES**

**Pl. 1.** A-N: Larva of *Elacatis ocularis*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Ocelli (right) (d: shows dorsal surface). E: Antenna (right, ventral view). F: Epipharynx. G: Mandible (right, ventral view). H: ditto (left, ventral view). I: Maxilla (right, buccal view). J: Labium (buccal view). K: Prothoracic segment (ventral view) (pre: presternum; post: poststernellum). L: Metathoracic leg (right, anterior view). M: Ninth abdominal segment (dorsal view) (TA: tubercle A; TB: tubercle B). N: ditto (lateral view). O: Ninth abdominal segment of *Elacatis kraatzi* (right half, dorsal view) (TA: tubercle A; TB: tubercle B).

**Pl. 2.** A-M: Larva of *Prostominia lewisi*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Ocellus (right) (d: shows dorsal surface). E: Antenna

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(left, ventral view). F: Epipharynx. G: Mandible (right, ventral view). H: ditto (left, ventral view). I: Maxilla (right, buccal view). J: Labium (buccal view). K: Metathoracic leg (left, posterior view). L: Ninth abdominal segment (dorsal view). M: ditto (lateral view).

**Pl. 3.** A-O: Larva of *Inopeplus quadrinotatus*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Ocelli (right) (d: shows dorsal surface). E: Antenna (right, ventral view). F: Epipharynx (us: unisetiferous sensillae). G: Mandible (right, ventral view). H: ditto (left, ventral view). I: Maxilla (right, buccal view). J: Labium (buccal view). K: Prothoracic segment (ventral view) (pre: presternum; post: poststernellum). L: Metathoracic leg (left, posterior view). M: Ninth abdominal segment (dorsal view). N: ditto (lateral view). O: Anal region (t: teeth).

**Pl. 4.** A-M: Larva of *Istrisia rufobrunnea*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Ocelli (right) (d: shows dorsal surface). E: Antenna (right, ventral view). F: Epipharynx (us: unisetiferous sensillae). G: Mandible (right, ventral view). H: ditto (left, ventral view). I: Maxilla (right, buccal view). J: Labium (buccal view). K: Prothoracic segment (ventral view) (pre: presternum; post: poststernellum). L: Metathoracic leg (left, anterior view). M: Ninth abdominal segment (ventral view).

**Pl. 5.** A-M: Larva of *Prostomis latoris*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Antenna (left, ventral view). E: Epipharynx (us: unisetiferous sensillae). F: Mandible (right, ventral view). G: ditto (left, ventral view). H: Maxilla (left, ventral view). I: Labium (buccal view). J: Prothoracic segment (ventral view) (pre: presternum; post: poststernellum). K: Metathoracic leg (left, post-ventral view). L: Ninth abdominal segment (dorsal view). M: ditto (ventral view) (as: asperities).

**Pl. 6.** A-M: Larva of *Pytho nivalis*. A: Larva (dorsal view). B: Head (dorsal view). C: ditto (ventral view). D: Ocelli (right) (d: shows dorsal surface). E: Antenna (left, ventral view). F: Epipharynx (us: unisetiferous sensillae). G: Mandible (right, ventral view). H: ditto (left, ventral view). I: Maxilla (left, ventral view). J: Labium (buccal view). K: Prothoracic segment (ventral view) (pre: presternum; post: poststernellum). L: Ninth abdominal segment (dorsal view). M: ditto (ventral view). N: Cephalic margin of 5th abdominal tergite (median part). O & P: Larva of *Pytho jezoensis*. O: Ninth abdominal segment (dorsal view). P: Cephalic margin of 5th abdominal tergite (median part).











