

CHALCIDOID-AND PROCTOTRYPOID-WASPS REARED FROM  
*DENDROLIMUS SPECTABILIS* BUTLER AND *D. ALBO-*  
*LINEATUS* MATSUMURA AND THEIR INSECTS  
 PARASITES, WITH DESCRIPTIONS OF  
 THREE NEW SPECIES.\*

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In this paper, the writer intends to list all Chalcidoid-and Proctotrypod-wasps reared from *Dendrolimus spectabilis* BUTLER and *D. albolineatus* MATSUMURA and their insect parasites, and to describe three new species.

The materials which the writer studied have been collected by Dr. T. KOJIMA and Messrs K. KAMIYA, G. TAKAGI and K. TAMANUKI during recent ten years in Japan.

In this opportunity, the writer expresses his hearty thanks to his colleagues just mentioned for great kindness to place the valuable specimens in his hand.

Chalcidoidea

Torymidae

*Monodontomerus dentipes* (BOHEMAN)

*Torymus dentipes* BOHEMAN, Vet. Ak. Handl. 1833, p. 335.

*Monodontomerus dentipes* THOMSON, Hym. Scand., IV, pt. 1, 1875, p. 66.

*Monodontomerus dentipes* MAYR, Verh. Zool. Bot. Ges. Wien, XXIV, 1874, p. 71.

*Torymus* sp., TAKAGI, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 2, pp. 51-52, 1925.

*Monodontomerus spectabilis* MATSUMURA, Journ. Coll. Agr. Hokkaido Imp. Univ., Vol. XVIII, pt. 1, pp. 33-34, 1926.

*Monodontomerus spectabilis* KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, pp. 63-64, 1934.

The specimens which the writer examined were bred from the pupae of *Dendrolimus spectabilis* BUTLER by Mr. G. TAKAGI in Chosen.

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## Chacididae

*Brachymeria obscurata* (WALKER)

- Chalcis obscurata* WALKER, Trans. Ent. Soc. London, pt. 2, p. 399, 1874.  
*Brachymeria obscurata* ISHII, Iconog. Insector., p. 346, 1932.  
*Brachymeria obscurata* KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, p. 62, 1934.

This species is a common parasite of the pupa of *Dendrolimus spectabilis* BUTLER.

## Eurytomidae

*Eurytoma appendigaster* (SWEDERUS)

- Pteromalus appendigaster* SWEDERUS, Svensk. Vet.-Akad. nya Handl. XVI, 1795, p. 217, n. 6.  
*Eurytoma abrotani* NEES, Hymen. Ichneum. affin. Monogr. 11, 1834, p. 40, n. 2 et p. 415.  
*Eurytoma abrotani* RATZBURG, Ichneum. d. Forstinsect. 1, 1844, p. 174, n. 4, et 111, 1852, p. 220, n. 5.  
*Eurytoma appendigaster* THOMSON, Hymen. Scandin. IV, p. 1, 1875, p. 48, n. 26.

The specimens which the writer examined were bred from the cocoons of *Apanteles liparidis*, a parasite of *Dendrolimus spectabilis*, by Mr. K. KAMIYA in the vicinity of Tōkyō in June, 1932.

## Encyrtidae

*Anastatus bifasciatus* (FONSCOLOMBE)

- Cynips bifasciata* FONSCOLOMBE, Ann. sc. Nat., XXVI, 1832, p. 294.  
*Pteromalus bifasciatus* NEES, Hym. Ichn. aff. Mon., 11, 1834, p. 426.  
*Anastatus bifasciatus* RESEKKA, Verh. Zool-bot. Gesells. Wien, LXX, Heft 6~8, 1920, pp. 264~267.  
*Anastatus gastropachae* ASHMEAD, Jour. New York Entom. Soc., XII, no. 3, pp. 153~154, 1904.  
 Gen. sp. ? NISHIDA, Forest Protect. (In Japanese), Vol. 1, pp. 289~290, 1903.  
*Anastatus gastropachae* TAKAGI, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 2, pp. 34~35, 1925.  
*Anastatus gastropachae* KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, p. 54, 1934.

The specimens which the writer examined were reared from the eggs of *Dendrolimus spectabilis* by Mr. K. KAMIYA in the vicinity of Tōkyō. *Anastatus gastropachae* is a form of this species, as the writer has found, in

the specimens, normal winged individuals and brachypterous ones and the latter is quite identical to ASHMEAD's description.

*Anastatus albitarsis* ASHMEAD

*Anastatus albitarsis* ASHMEAD, Jour. New York Entom. Soc., p. 154, 1904.

*Anastatus albitarsis* ISHII, Iconog. Insector., p. 358, 1932.

*Anastatus albitarsis* KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, pp. 53~54, 1934.

This species is a parasite of the egg of *Dendrolimus spectabilis*.

*Ooencyrtus pinicolus* (MATSUMURA)

*Ooencyrtus pinicolus* MATSUMURA, Journ. Coll. Agr. Hokkaido Imp. Univ., Vol. XVIII, pt. 1, p. 37, 1926.

The specimens which the writer examined were reared from the eggs of *Dendrolimus albotinctus* by K. TAMANUKI in Karafuto.

Pteromalidae

*Euterus tabatae* n. sp.

This species is allied to *E. mediterraneus* MAYR from Europe, but it may be distinguished from the latter by the antennal pedicel being a little shorter than the three ring joints combined, and by the funicle joints and club with much more sensoriae.

Female.—Head and thorax black with metallic green reflections; abdomen dark brown with slight metallic green lustres; mandibles yellowish with the tip brown. Antennae yellowish brown except the scape which is yellowish. Wings hyaline, the veins pale yellowish brown. Legs yellowish except all the coxae which are dark brown with metallic green lustres; the terminal joints of all the legs pale brown.

Head, pronotum, mesonotum and mesopleurae umbriate-reticulate; abdomen with feeble shagreen-reticulations.

Head much wider than deep (50:37) and much wider than the thorax (50:32); frontoververtex about three-fifths as wide as the head; eyes bare; ocelli arranged in an obtuse-angled triangle, the posterior ocelli separated from the eye margins by their own diameter; toruli ovate in shape, separated from one another by their own width, and from the clypeal margin by thrice their own length, and from the inner eye margin by about five times their own width; clypeal margin sinuate, about one-fifth of the

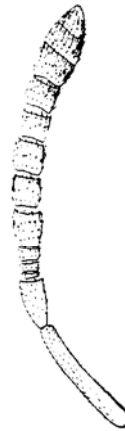


Fig. 1  
*Euterus tabatae* n. sp.  
Antenna of female.

width of the head; scapal grooves shallow. Left mandible tridentate with the upper tooth truncated the right quadridentate. Antennae 0.9 mm. in length and 13-jointed with three ring joints; scape cylindrical; pedicel a little longer than wide at apex; ring joints increasing in width and in length distad, the first joint one-half of the length or the width of the third joint; the first funicle joint a little wider than long, or wider than the last ring joint, a little shorter than the pedicel, and almost as long as 3 ring joints combined; the following joints slightly shorter than the first funicle joint respectively, increasing gradually in width distad; the last funicle joint a little wider than long; club 3-jointed, long ovate in shape, a little wider than the last funicle joint and almost as long as the last 3 funicle joints combined; funicle joints with about 10 sensoriae respectively; club joints with much more; the first joint with about 16.

Pronotum a little narrower than the mesonotum; the anterior margin nearly straight and more or less marginate; parapsidal furrows indistinct; scutellum as long as wide; propodeum reticulate, with a median and lateral keels; spiracles oblong. Abdomen nearly as long as the head and thorax combined, and as wide as the head, conic-ovate and pointed towards the tip; segments subequal in length except the terminal segment which is considerably shorter. Ovipositor slightly produced.

Fore wings 2 mm. in length and 0.89 mm. in width, uniformly ciliate beyond the area below the base of the marginal vein, and there are sparse ciliae below the apical two-thirds of the submarginal vein; submarginal, marginal, stigmal and postmarginal veins approximately in the ratio of 45:30:15:25; submarginal vein with about 19 bristles; marginal and postmarginal veins with many bristles. Hind wings 1.7 mm. in length and 0.48 mm. in width, and sparsely ciliate beyond the tip of the submarginal vein.

Length of body, 3.1 mm.

Male.—Unknown.

Described from 7 female balsam specimens which were sent to the writer from Mr. K. TAMANUKI of the Central Experiment Station, Karafuto. This species was first described by Mr. TABATA in his Report on *Dendrolimus* in Karafuto (pp. 102~103, 1924). It is said to be a parasite of the egg of *Dendrolimus albolineatus* MATSUMURA.

#### *Euterus kojimae* n. sp.

This species belongs to the group of *E. amoenus* (WALKER), but it differs from others of this group in the funicular joints, in both sexes, being subequal in length and width.

Female.—Black in general, with green and blue metallic reflections. Antennae dark brown except the scape, pedicel and ring joints which are yellowish brown. Wings hyaline, the veins pale yellowish brown; legs dark

brown except the tibiae and tarsi which are yellowish; the apices of all the femora yellowish.

Head considerably wider than the thorax (70:60), and much wider than deep (70:50); frontovertex about four-sevenths of the width of the head (70:40); eyes bare; ocelli in an obtuse-angled triangle, the posterior pairs separated from the inner eye margins by 3 times their own diameter; scapal grooves shallow; toruli round, separated from one another by slightly more than their own diameter, and from the clypeal margin by a little less than 4 times, and from the inner eye margin by 4 times their own diameter; clypeal margin sinuate. Left mandible 3-dentate with the upper tooth truncated, the right 4-dentate.

Antennae 0.2 mm. in length; scape cylindrical, slightly widened towards apex; pedicel twice as long as wide at apex, and as long as two ring joints and first funicle joint combined; funicle joints subequal in width and gradually decreasing in length distad, the first joint as long as wide, the last joint slightly shorter than wide; club 3-jointed, the joints decreasing in length distad, as wide as the last funicle joint and a little longer than the last two funicle joints combined; sensoriae on the funicle and club joints as follows; First funicular, 8; second, 8; third, 8; fourth, 6; fifth, 9; sixth, 10; club, 12, 13.4. Maxillary palpi 4-jointed, the first joint and third joint subequal in length, the second joint one-third as long as the third joint; labial palpi 3-jointed, the first joint thrice as long as the second, the third joint five times as long as the second.

Pronotum narrow, the anterior margin slightly rounded and more or less marginate; parapsidal furrows faintly indicated anteriorly; scutellum a little wider than long; propodeum slightly produced posteriorly, with a middle and lateral keels; spiracles long ovate.

Abdomen ovate, a little longer and much wider than the thorax; the segments subequal in length except the last segment which is very short. Ovipositor not produced.

Fore wings 2 mm. in length and 0.96 mm. in width, and uniformly ciliate except the basal third below the submarginal vein; submarginal, marginal, stigmal and postmarginal veins approximately in the ratio of 50:27:15:14; marginal vein with about 23 bristles, other veins with many

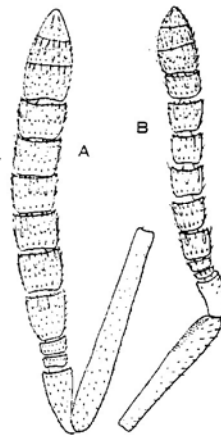


Fig. 2  
*Ectercus kojimae* n. sp.  
A. Antenna of female.  
B. Do. of male.

bristles. Hind wings 0.96 mm. in length and 0.56 mm. in width, and uniformly ciliate except the basal half.

Head timble-reticulate, the part near the clypeal margin longitudinally strio-reticulate; pro-, mesonotum and pleurae timble-reticulate; propodeum roughly reticulate. Abdomen with feeble transverse, shagreen-reticulations except the basal two segments which are almost smooth and shining.

Length of body, 3.4 mm.

Male.—Similar to the female in general, but the antennae yellowish brown except the club which is dark brown; abdomen dark brown at the base; legs yellowish brown except all the coxae which are dark brown.

Antennae 0.76 mm. in length; scape subcylindrical, somewhat dilated towards the tip; pedicel a little longer than wide at apex; the first ring joint about one-half as long as the second and much narrower than the latter; funicle joints subequal in length and in width; the first funicle joint as long as wide and slightly shorter than the pedicel; the last funicle joint a little wider than long; club ovate, as long as the last 2 funicle joints combined; sensoriae on the funicle and club joints as follows:—

First funicular, 5; second, 5; third, 6; fourth, 6; fifth, 8; sixth, 8; club, 8, 8, 3. Length of body, 1.9 mm.

This species reared from the pupae of *Dendrolimus spectabilis* BUTLER by Mr. T. KOJIMA in the vicinity of Tôkyô.

*Euterus matsukemushii* (MATSUMURA)

*Pteromalus matsukemushii* MATSUMURA, Journ. Coll. Agr. Hokkaido Imp. Univ., Vol. XVIII, pt. 1, p. 35, 1926.

This species is said to be a parasite of *Apanteles liparidis*.

*Mormoniella vitripennis* (WALKER)

*Pteromalus vitripennis* WALKER, Ent. Mag., Vol. 3, 1836, p. 492.

*Mormoniella brevicornis* ASHMEAD, Mem. Carn. Mus., Vol. 1, 1904, p. 316 et 317.

*Nasonia brevicornis* GIRAULT, Mem. Queensland Mus., Vol. 3, 1915, p. 316.

*Nasonia brevicornis* FROGGATT, Bull. Ent. Res. Lond., Vol. 9, 1919, pp. 257~262.

*Nasonia brevicornis* GIRAULT, Proc. U. S. Nat. Mus., Vol. 58, 1920, p. 214.

*Mormoniella brevicornis* GAHAN and FAGAN, Bull. 124, U. S. Nat. Mus., 1923, p. 91 and 93.

The specimens which the writer examined collected by K. KAMIYA in the vicinity of Tôkyô. This species may be a parasite of some Tachnid. In Europe, it was reared from puparia of *Sarcophaga* species, and in Japan was bred from puparia of *Crossocosmia sericariae*.

*Hypopteromalus apantelephagus* (CRAWFORD)

Gen. et sp. ? S. TABATA. Report on *Dendrolimus* in Karafuto (In Japanese), pp. 101~102, 1924.

*Hypopteromalus apantelephagus* CRAWFORD. U. S. Dept. Agr. Bur. Ent. Techn. Ser. no. 19, pt. 2, p. 17, figs. 15-16.

The specimens which the writer examined were reared from the cocoons of *Apanteles liparidis* by K. KAMIYA in the vicinity of Tôkyô.

*Dibrachys boucheanus* (RATZEBURG)

*Pteromalus boucheanus* RATZEBURG. Ichweim. d. Forstins. 1, 1844, p. 195, n. 8, ♂.

*Pteromalus boucheanus* RATZEBURG. 1, c. p. 196, n. 19, T. 3, f. 6; 11, 1848, p. 189, n. 6; 111, 1852, p. 231, n. 8.

*Pteromalus* (*Dibrachys*) *boucheanus* THOMSON. Hym. Scandiv. Vol. 1878, p. 160, n. 1.

*Dibrachys boucheanus* MASI. Boll. Lab. Zool. Gen. e Agr. d. R. Scuola Super. d'Agr. Portici, Vol. 1, 1907, pp. 247~250.

The specimens which the writer examined were reared from the cocoons of *Apanteles liparidis* by K. KAMIYA in the vicinity of Tôkyô, in June and July, 1932.

*Pachyneuron nawai* ASHMEAD

*Pachyneuron nawai* ASHMEAD. Journ. New York Entom. Soc., Vol. XII, 1904, p. 158, n. 3.

Gen. et sp. ? S. TABATA. Report on *Dendrolimus*, Karafuto (In Japanese), pp. 99~100, 1924.

Gen. et sp. ? Y. NISHIDA. Forest Protect. (In Japanese), Vol. 1, p. 290, Pl. 6, figs. 8-11, 1903.

This species was reported by S. TABATA and Y. NISHIDA as a parasite of the egg of *Dendrolimus*, from Karafuto.

## Eulophidae

*Pleurotropis howardi* CRAWFORD

*Pleurotropis howardi* CRAWFORD. U. S. Dept. Agr. Bur. Ent. Techn. Ser. No. 19, pt. 2, p. 23.

The specimens which the writer examined were reared from the cocoons of *Apanteles liparidis* by K. KAMIYA in the vicinity of Tôkyô, on June 14, 1932.

*Atoposoidea ogimae* HOWARD

*Atoposoidea ogimae* HOWARD, U. S. Dept. Agr. Bur. Ent. Techn. Ser. no. 19, Pt. 1, p. 8.

*Atoposoidea ogimae* ISHII, Iconog. Insector., p. 371, 1932.

The specimens which the writer examined were reared from the cocoons of *Apanteles liparidis* by K. KAMIYA in the vicinity of Tôkyô 1932.

*Dimmockia secundus* HOWARD

*Dimmockia secundus* CRAWFORD, U. S. Dept. Agr. Bur. Ent. Techn. Ser. no. 19, Pt. 2, p. 23, 1910.

The specimens which the writer examined were reared by KAMIYA from the cocoons of *Apanteles liparidis* in the vicinity of Tôkyô in 1932.

## Trichogrammidae

*Trichogramma dendrolimi* MATSUMURA

Gen. et sp. ? Y. NIJIMA, Forest Protect. (In Japanese), Vol. 1, p. 291, Pl. 6, figs. 12-18, 1908.

*Trichogramma* sp., S. TABATA, Report on *Dendrolimus*, Karafuto (In Japanese), pp. 95-96, 1924.

*Trichogramma dendrolimi* MATSUMURA, Ann. Mus. Zool. Acad. Sci. U. S. S. S., p. 45, 1925.

*Trichogramma* sp., G. TAKAGI, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 2, pp. 36-38, 1925.

*Trichogramma dendrolimi* MATSUMURA, Journ. Coll. Agr. Hokkaido Imp. Univ., Vol. XVIII, Pt. 1, pp. 37-38, 1926.

*Trichogramma dendrolimi* K. KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, pp. 52-53, 1934.

*Trichogramma ceras-scens* CHU, Foo-Tso. Ent. & Phytopath., 5, pp. 57-59, 1937.

The specimens which the writer examined were reared from the eggs of *Dendrolimus spectabilis* by K. KAMIYA in the vicinity of Tôkyô, on August 25, 1931.

## Proctotrypoidea

## Scelionidae

*Telenomus dendrolimi* (MATSUMURA)

Gen. et sp. ? T. NIJIMA, Forest Protect. (In Japanese), Vol. 1, p. 292, Pl. 8, figs. 1-5, 1908.

*Holcaeus* sp., G. TAKAGI, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 2, pp. 35-36, 1925.

*Holcaerus* (?) *dendrolimi* MATSUMURA, Journ. Coll. Agr. Hokkaido, Imp. Univ., Vol. XVIII, Pt. 1, pp. 36-37, 1926.



*Phanurus* sp., K. KAMIYA, Rep. Forest Exp. Stat. Chosen (In Japanese), no. 18, p. 52, 1934.

*Telenomus dendrolimusi* (Nec. MATSUMURA), Chu. Foo-Tso, Ent. & Phytopath., 5, pp. 60-63, 1937.

This species is a parasite of the egg of *Dendrolimus spectabilis* and *D. albolineatus*, in Japan and China.

#### Calliceratidae (Ceraphronidae)

##### *Calliceras* (*Ceraphron*) *kamiyae* n. sp.

Allied to *C. frenalis* (KIEFF.), but it may be distinguished from the latter by the marginal vein being almost as long as the stigmal vein.

Female.—Black in general; abdomen shining black with the apical part reddish brown. Antennae yellowish brown except the club which is dark brown. Legs brownish; tibiae yellowish brown with the tip more paler; tarsi pale yellow. Wings slightly infuscate; veins pale brown.

Head and thoracic notum minutely scaly reticulate with whitish hairs; propleurae scaly reticulate; mesopleurae smooth with transverse striae.

Head a little wider than deep (24:20); frontovertex broad, about five-sevenths as wide as the head; eyes with sparse hairs; ocelli arranged in an obtuse-angled triangle, the posterior pair separated from the inner eye margins by twice their own diameter. Mesonotum with a distinct longitudinal furrow; axillae meeting; scutellum with a furrow on the posterior margin; propodeum with a small tubercle on both sides; abdomen a little longer than the thorax and head combined; the second tergite very long, occupying about three-fourths of the length of the abdomen, and with 8 striae besides small ones on the base; the fourth and fifth tergites with whitish hairs.

Fore wings 0.8mm. in length and 0.24mm. in width and uniformly ciliate; submarginal, marginal and stigmal veins approximately in the ratio of 26:6:6. Hind wings 0.7mm. in length and 0.16mm. in width and sparsely, uniformly ciliate.

Length of body, 1.2mm.

Male. Similar to the female in general, however the antennae much differing.

Antennae 11-jointed and dark brown except the scape which is yellowish brown; flagellum with rather long, sparse hairs; scape rather strong, tapering towards the tip; pedicel a little longer than wide at apex; the first flagellar joint much longer than the pedicel and twice as long as wide; flagellar joints 2-5 subequal in length and in width, and a little shorter than the first; flagellar joints 6-7 subequal in length and a little longer than the fifth joint; eighth flagellar joint considerably longer than the seventh joint; ninth joint a little longer than the eighth joint.

Length of body, 0.85mm.

This species was reared from the cocoons of *Apanteles liparidis* by K. KAMIYA in the vicinity of Tōkyō in 1936.