HYMENOPTEROUS PARASITES
OF THE MULBERRY PYRALID MoTH,
MARGARONIA PYLOALIS WALKER, IN JAPAN (I)

By
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(With 3 Textfigures)

After the writer had described the previously recorded species of the Hymenopterous parasites of the Mulberry Pyralid Moth, Margaronia pyloalis Walker, (Kontyu, XIII, pp. 231-236, 1939), he commenced work on the species which are found in Japan. In this paper eight species including one Bethylid, two Ichneumonids and five Braconids are described, one of which is new to science and two of which are new as parasites of the Mulberry Pyralid Moth.

The writer is much indebted to the Foundation for the Promotion of Science and Industrial Research of Japan (Nippon Gakujutsu Shinkōkai) for its kind assistance, also to Dr. C. F. W. MUSEBECK of the Bureau of Entomology and Plant Quarantine, Washington, D.C., U.S.A. and to Dr. TOICHI UCHIDA, professor of the Hokkaido Imperial University, for their kindness in determining certain species. Furthermore, he has to thank Mr. MASUO KUROSAWA of the Kyoto College of Sericulture, Mr. MICHITOSHI MATSUZAKI of the Fukuoka Sericultural Experiment Station and Mr. JINHAKU SONAN of the Taïhoku Agricultural Experiment Station of the Government of Formosa who have very kindly presented valuable specimens to him.

Family BETHYLIDAE

Goniozus japonicus ASHMEAD


This species was originally described by W. H. ASHMEAD from Gifu, Japan, without host record, and the type is preserved in the United States National Museum. The writer has not examined the type, but his observations have convinced him that the present material bred from Margaronia pyloalis Walker might be identical with Goniozus japonicus. Furthermore, it was Dr. C. F. W.
Mueßbeck who gave to the writer a good suggestion with regard to the identification. Mueßbeck’s letter reads as follows:—

“The single specimen of Goniözus which you sent seems to me to be Goniözus japonicus Ashmead. Unfortunately Ashmead’s two type specimens are in poor condition but enough of the sculpture and structure can be made out to enable one to be reasonably certain of the species they represent. We have in the collection other specimens, some of them from Japan, which I had previously identified as japonicus and which agree exactly with the single individual you forwarded.”

As a supplement to the original description the following aspects may be added:—

♀. Black; mandibles, palpi and antennae testaceous or red-testaceous; tegulae black; wings hyaline; stigma and parastigma dark brown; nervures pale; legs testaceous or red-testaceous; coxae and femora dark brown to black, the fore femora usually darker than the other ones.

Head as viewed from above subquadrate, triangularly produced in front of the eyes, convergent behind the eyes; surface shining, finely alutaceous, sparsely punctured, with pale hairs; clypeus triangularly produced at the apex, with a median keel; antennae moniliform, 13-jointed. Thorax sculptured like the
head; prothorax finely striate laterally. Propodeum shagreened; dorsal surface about quadrate, defined at the lateral sides and posteriorly by weak carinae, with a triangular median basal area which is smooth and shining; posterior surface subquadrate, narrowed towards the apex, broadly smooth and shining medially, defined laterally by carinae, the sculpture weaker than that of the dorsal surface. Stigma truncate at the apex, 2 times as long as broad; radius inserted at the apex of the stigma, 2.5 times as long as the stigma; radial cell open; basal nervure with a branch which is a little shorter than the apical portion of the basal nervure; anal nervure of the hind wing less than one-half the length of the costal nervure. Legs rather stout; femora dilated; claws split. Abdomen subpetiolate, smooth and shining, with sparse pubescence; 1st tergite slightly excavated at the base.

Length, 2.5-3 mm.

♀. Unknown.

Host: The present material was bred by M. Kurosa wa at Kyoto and by M. Matsu zaki at Fukuoka as a parasite of Margaronia pyloalis Walker.

Cocoon: Brown, ellipsoidal, 4.5 x 2.5 mm. in size.

Habitat: Honshu (Kyoto, 4 ♀, 11. IX, 1938, M. Kurosa wa leg.); Kyushu (Fukuoka, 4 ♀, 21. VIII, 1939, M. Matsu zaki leg.).

General Distribution: Japan.

Remarks: This species comes nearest to Goniozus claripennis (Förster), a common species in Europe, but differing from it by the nervation of the hind wing.

Family **ICHNEUMONIDAE**

The following two Ichne umonid species are kindly determined by Dr. T. Uchida.

**Epiurus persimilis** Ashmead


Host: This series was bred by M. Kuro sa wa at Kyoto as a parasite of Margaronia pyloalis Walker. According to M. Shimizu, this species is an exoparasite of the larva of Margaronia pyloalis, two or three eggs being laid

on the surface of the host-larva or on the leaf of the mulberry near the host. This species is also recorded by Dr. T. UCHIDA as a parasite of *Samia cynthia DRURY* and *Sylepta batula FABRICIUS* in Japan and as a parasite of *Sylepta derogata FABRICIUS* in China.

Habitat: Honshu (Kyoto, 5♀♂, 18. IV, 1938; 2♀♀, 6♂♂, 15.–21. IV, 1939, M. KUROSAWA leg.).
Gen. Distr.: Saghalien; Japan; Korea; China.

**Spilocryptus japonicus** UCHIDA

*Spilocryptus japonicus* UCHIDA, Jour. Facult. Agr., Hokkaido Imp. Univ., XXV, p. 314, ♀♂, Pl. VI, fig. 12 (1939); Matsuura, 6000 Ill. Insect. Japan-Empire, p. 66, fig. 368, ♀ (1931); Ishii, Nippon Konchu Zukan, p. 397, ♀, fig. 774 (1932); UCHIDA, Ins. Mats., XI, p. 6 (1936).

Host: This series was bred by M. KUROSAWA at Kyoto as a solitary parasite of *Margaronia pyloalis WALKER*. Further, according to Dr. T. UCHIDA this species is parasitic on *Chilo simplex BUTLER*.

This is the first record of the species as a parasite of *Margaronia pyloalis WALKER*.

Habitat: Honshu (Kyoto, 2♀♂, 16. IV, 1938, 2♀♀, 17. IV, 1938, M. KUROSAWA leg.).

**Family BRACONIDAE**

**Chelonus tabonus** SONAN


*Chelonus innatus* Watanabe, Kontyu, VII, p. 247, ♀♂ (1933) (nec Linne).

Host: This series was bred by M. KUROSAWA at Kyoto as a solitary parasite of *Margaronia pyloalis WALKER*. Further, *Sylepta derogata FABRICIUS* is recorded as a host of this species in Japan and North China.

This is the first record of the species as a parasite of *Margaronia pyloalis WALKER*.

Habitat: Honshu (Kyoto, 1♀, 1♂, 17. VI, 1938, M. KUROSAWA leg.).
Gen. Distr.: Japan; Formosa; North China.

**Phanerotoma planifrons** (NEES)

Phalerotoma planifrons MARSHALL, Spec. Hymen. Europe, IV, p. 381, 9 9 (1889); LYLE, Entomologist, LVI, p. 102, fig. 2 (1924); FAHRINGER, Opusc. bracon., III, p. 573, 9 6 (1934); WATANABE, Jour. Facul. Agr., Hokkaido Imp. Univ., XLII, p. 79 (1937); id., Ins. Mats., XII, p. 132, 9 6 (1938); id., Kontyu, XIII, p. 232 (1939).

Chelonus diversus WALKER, Cist. ent., I, p. 308, 6 (1874).


This species is widely variable in size and colour: the present material bred from Margaronia pyloalis WALKER belongs to a large and nigrescent form, its description being as follows:

♀ 9. Red-testaceous; head, thorax and propodeum tinged with dark brown in various degree; abdomen pale testaceous, the 2nd tergite laterally and the 3rd entirely dark brown to black; wings hyaline, with a fine cloud below the stigma; stigma brown, pale at the base; hind tibiae fuscescent at the apex.

Length, 5.5-5.5 mm.

Host: The present series was bred by M. KUROSAWA as a solitary parasite of Margaronia pyloalis WALKER. According to M. KUROSAWA and K. MABUCHI1 the egg of this species is laid in the egg of Margaronia pyloalis, the larva just pupating when the host-larva has attained full growth. Further, this species is widely distributed in the Eurasian region, the following host-species being represented:

Grapholitha strobiella LINNÉ and Hyphantiidium terebrella ZINCKEN (after FAHRINGER, 1934, in Europe); Grapholitha molesta BUSCK (after MUESEBECK, 1933, in Japan and Korea); Margaronia pyloalis WALKER (after ROHWER, 1934, in Formosa); Grapholitha glycinivorella MATSUMURA (after WATANABE, 1938, in Manchoukuo).

Cocoon: Pure white, covered with a thin web, 7 x 3 mm. in size.

Habitat: Honshu (Kyoto, 11 9, 9 6, VI, 1938, M. KUROSAWA leg.).

Gen. Distr.: Japan; Korea; Formosa; Europe; West and Central Asia; Siberia; North Africa; Manchoukuo; Ceylon.

Apanteles minor (ASHMEAD)


Apanteles sp. WATANABE, Kontyu, XIII, p. 233, no. 10 (1939).

This species was originally described by W. H. ASHMEAD from Gifu, Japan.

1) Kinugasa Sampa, XXXIV, pp. 33-43 (1939).
and the type-specimens are preserved in the United States National Museum.

Through the kindness of Dr. C. F. W. Muesebeck, the writer knows that the present material may be identical with *Apanteles minor* (ASHMEAD). The following is a redescriptions of this species:—

♀. Black; antennae red-testaceous to reddish brown, darkened towards the apex; mouthparts, tegulae, legs, 1st to 3rd tergites laterally and venter except apically red-testaceous; hind coxae more usually dark brown, somewhat red-testaceous at the apex, very occasionally almost completely red-testaceous; hind tibiae slightly fuscous apically; 3rd tergite normally black with red-testaceous lateral margins, sometimes broadly red-testaceous; palpi and tibial spurs pale; wings hyaline; stigma and veins dark brown. Antennae, hind coxae and 3rd tergite variable in colour.

Head minutely punctate; vertex smooth and shining; antennae a little shorter than the combined length of the thorax and abdomen, submoniliform; mesonotum minutely punctate, the punctuation becoming weaker and sparser posteriorly; mesopleura smooth and shining, with punctures along the anterior margin; scutellum smooth and shining, with scattered minute punctures; propodeum smooth, sparsely punctate basally, without a median carina. Breadth of the stigma as long as the 1st abscissa of the radius, which forms a strong angle with the intercubitus; recurrent nervure nearly equal to the intercubitus in length; pigmented portion of the 2nd abscissa of the cubitus as long as the apical portion of the 1st abscissa of the cubitus. Hind coxae smooth, with the outer face minutely punctate; the longer hind tibial spur three-fifths and the shorter spur just less than one-half the length of the hind metatarsus. First tergite smooth and shining, slightly excavated at the base, with some
scattered minute punctures, 2.5 times as long as broad, its lateral margins very slightly converging towards the apex; 2nd tergite a little shorter than the 3rd, smooth and shining, often with some minute punctures, the discal sulci distinctly marked, straight; 3rd and following tergites smooth and shining; hypopygium (as viewed from the side) rounded at the apex, not acute; ovipositor-sheath as long as the hind metatarsus.

Length, 2.5-3 mm.

The male was not previously known. It differs from the female as follows:

♂. Darker than the female in colour; antennae longer than the body, normally filiform.

Length, 2-2.5 mm.

Host: The present specimens were bred by M. Kurosawa at Kyoto and by J. Sonan at Taihoku as a gregarious parasite of Margaronia pylalois Walker; in Kurosawa’s collection it is found that as many as from 9 to 13 individuals occur in a single host-larva.

Cocoons: Pure white, with some loose silk, usually attached irregularly to the leaf of the mulberry.

Habitat: Honshu (Kyoto, 9 ♀ ♂, 8 ♂ 8, X, 1938; 40 ♀ ♂, 12 ♂ 8, XII, 1938, M. Kurosawa leg.); Formosa (Taihoku, 4 ♀ ♂, 1 ♂, 10. VI, 1936, J. Sonan leg.).

Gen. Distr.: Japan; Formosa.

Remarks: This species belongs to Marshall’s Section IV or Wilkinson’s Group A, and may be placed nearest to Apanteles glyphodes Wilkinson, a parasite of the Pyralid, Glyphodes sericea Drury, in Uganda, differing from that species in the sculpture of its 1st and 2nd tergites and in the antennae of its female being submoniliform.

Apanteles kurosawai sp. nov.

Apanteles sp. Watanabe, Kontyu, XIII, p. 233, no. 9 (1939).

♀. Black; antennae entirely black; tegulae black; palpi and tibial spurs pale; wings hyaline; stigma discally hyaline, narrowly margined with pigmentation; costal nervures, outer margin of the stigma and metacarp dark brown; inner margin of the stigma, radius, intercubitus and pigmented portion of the 2nd abscissa of the cubitus brownish, the remaining nervures almost colourless; legs black; apical two-thirds of the fore femora, and their tibiae and tarsi red-testaceous; tibiae and tarsi of the middle legs, hind tibiae at the base and their tarsi sometimes tinged with brown.

Head closely punctate; antennae a little shorter than the body, filiform. Mesonotum closely punctate, the punctuation rather stronger than that of the head; scutellum with some indefinite punctures; mesopleura smooth and shining posteriorly and on the anterior half closely punctate; propodeum rugosely reticulate with the areola and costulae well marked, the areola open at the base, U-shaped at the apex. Breadth of the stigma as long as the radius which forms a slight angle with the intercubitus; recurrent nervure as long as the intercubitus; pigmented portion of the 2nd abscissa of the radius a little longer than half the length of the intercubitus. Hind coxae with sparse, minute punctures; the longer hind tibial spur as long as one-half, the shorter spur less than two-fifths the length of the hind metatarsus. First tergite 1.5 times as long as broad, parallel-sided, basally excavated, apically turned over, longitudinally striate laterally and rugosely reticulate medially, with a smooth median apical knob; 2nd tergite minutely striate, with the lateral sulci very short; 2nd suture strongly rounded outwardly; 3rd tergite 1.5 times as long as the 2nd; 3rd and following tergites smooth and shining; hypopygium sharply acute at the apex; ovipositor-sheath as long as the hind femur.

Length, 2.5-3 mm.

♀. Differs from the female, apart from the usual sexual differences, in the following respects:

Antennæ longer than the body; stigma paler than that of the female; 1st tergite slightly rounded at the lateral margins, rugosely reticulate throughout, not longitudinally striate laterally, with a smooth median apical knob; 2nd tergite almost smooth, with some scattered minute punctures.

Length, 2-2.5 mm.

Host: This type-series was bred by M. Kurosa wa as a solitary parasite of Margaronia pyloalís Walker.
Cocoon: Pure white, with some loose silk, usually attached to the leaf of the mulberry.


The type-specimens are deposited in the Entomological Institute of the Hokkaido Imperial University, Sapporo.

**Habitat:** Honshu (Kyoto).

**Remarks:** This new species closely resembles *Apanteles earters Wilkerson* (♀), belonging to Wilkinson’s Group S, from which it differs in the sculpture of the propodeum and the two basal tergites. It is also allied to *Apanteles molestae Muesebeck* (♀), a parasite of *Grapholita molesta* Busck in Japan and Korea, but may be immediately distinguished by its discally hyaline stigma and by the sculpture of its 1st tergite.

**Macrocentrus philippinensis** Ashmead


The present writer had considered that *Macrocentrus japonicus* might be placed nearest to *Macrocentrus philippinensis*, but the original description of the latter is too incomplete to allow one to come to a definite conclusion. In the previous paper (1939), however, the writer accepted Dr. Muesebeck’s view and synonymized *M. japonicus* under *M. philippinensis*. Muesebeck’s letter reads as follows:

“I have compared carefully your specimens of *Macrocentrus japonicus* with Ashmead’s type of *M. philippinensis* and can find no basis for holding the two distinct. I believe your name will need to be suppressed as a synonym.”

This species may be easily distinguishable from the congeneric ones by the antennae which have a broad pale yellow ring at the middle and by the 1st tergite which is transversely striate.

**Host:** This species has been already recorded as a parasite of *Margaronia pylaalis Walker* from Japan, Formosa and China, and as a parasite of *Pyrausta dinisalis Walker* from Manchoukuo. The present series was bred by M.

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Kurosawa as a solitary parasite of *Margaronia pyloalis* at Kyoto.

Cocoon: Dark brown to light brown, spindle-shaped, covered with a small amount of loose silk. Length, 7-10 mm., width, 3-4 mm.

Habitat: Honshu (Kyoto, 7°9', 9°8', VI, 1939, M. Kurosawa leg.).

Gen. Distr.: Japan; Formosa; Manchoukuo; China; The Philippines.

### 摘要
本文に記録せるクハノメイガの寄生蜂の学名及び和名は次の如し。

*Goniozus japonicus* Ashmead  ハマキアリガタバチ (ハマキダマゴバチ*)

*Epiaurus persimilis* Ashmead  クロヒゲヒラタヒメバチ

*Spliocryptus japonicus* Uchida  シロフタガリヒメバチ

*Chelonus tabanus* Sonan  クタノメイガカウラコマエ

*Phanerotoma planifrons* (Nees)  ヒメイロカウラコマエ

*Apanteles minor* (Ashmead)  ヒメクロツササムラヒコマエ（ヒメクロツヤドリ**)  

*Apanteles kurosawai* Watanabe (sp. nov.)  クハノメイガサムラヒコマエ

*Macrocentrus philippensis* Ashmead  キマダラヒグナガコマエ

*松村松年: 日本益虫目録. p. 96 (1908).


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**A BRACONID PARASITE OF **

**THERETRA JAPONICA DE L'ORZO**

*(HOST RECORD OF **BRACONIDAE, III)*

By

Chihisa Watanabe

*Microplitis theretrae* Watanabe


Host: *Theretra japonica* de l’Orzo

This species was originally described as a parasite of *Theretra nessus* Drury.

The writer has received a female bred from the larva of *Theretra japonica* de l’Orzo by Mr. T. Ishizawa at Ogikubo, Tokyo.

Habitat: Honshu (Ogikubo, Tokyo, 1°9', 12. V, 1939, T. Ishizawa leg.).

General Distribution: Japan (Honshu).