

A New Eulophid Parasite Of *Adris Tyrannus* Gueene From Japan (Hym., Eulophidae)

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A NEW EULOPHID PARASITE OF *ADRIS TYRANNUS*
GUENÉE FROM JAPAN

(Hym., Eulophidae)

KEIZŌ YASUMATSU

The citrus orchards of Japan have long been sustaining attacks by Noctuid moths which have caused comparatively serious damage by piercing the rind of the citrus fruits with their probosces.

While studying the biology of *Adris tyrannus* Guénée, one of the fruit-piercing Noctuidae, in Miyazaki Prefecture, Kyushu, Mr. S. Nasu found an Eulophid parasitic on the larvae of this moth. Professor S. Nakajima, of the Miyazaki University, handed the specimens of this parasite over to me for identification.

After carefully examining the material submitted to me, I came to the conclusion that the specimens presented a new species. Meanwhile, I sent some specimens of this parasite to Dr. B. D. Burks, Hymenopterist of the U. S. National Museum (to whom I was referred by Mr. Karl V. Krombein) and to Dr. Ch. Ferrière, Hymenopterist of the Geneva Museum, to confirm my conclusion. I further borrowed Girault's type specimens of *Euplectrus*-species from Dr. G. Mack, Director of the Queensland Museum.

I am deeply indebted to Dr. B. D. Burks for his kindness in comparing specimens under his charge and for his generous criticism to my manuscript. I am also indebted very much to Dr. Ch. Ferrière for his valuable advice and for the donation of valuable reprints, and to Dr. G. Mack for the loan of precious type specimens of *Euplectrus* under his charge. Further I am indebted for constant guidance and encouragement to Professor T. Esaki; for many favours to Mr. Karl V. Krombein; for literature to Mr. K. Maruyama; and for the donation of specimens to Professor S. Nakajima and Mr. S. Nasu, respectively.

A TENTATIVE KEY TO THE SPECIES OF THE GENUS
EUPLECTRUS SWEDERUS FROM JAPAN AND FORMOSA

1. Head and thorax partly yellow *nigromaculatus* Ashmead
- Head and thorax black 2
2. Hind coxae black *japonicus* Ashmead
- All coxae pale 3
3. Scutellum at base deeply reticulated, apically longitudinally rugose
..... *kuwanae* Crawford
- Scutellum finely, indistinctly reticulated 4
4. Clypeal area black 5
- Clypeal area pale 6
5. First funicle segment not distinctly longer than pedicel
..... *koebeleri* Crawford
- First funicle segment much longer than pedicel *taiwanus* Sonan
6. Mesoscutum with a complete, longitudinal, median carina
..... *noctuidiphagus* n. sp.
- Mesoscutum without such a median carina *fukuii* Crawford

Euplectrus noctuidiphagus n. sp.

♂♀. Head and thorax black, clypeal area whitish; antennae orange-yellow, brownish apically; antennal scape of male pale, pedicel and funicle darker or brownish apically; legs entirely orange-yellow, legs of male much paler; abdomen orange-yellow above and below, black only on the sides and the apical half. Vertex and thorax with some scattered, long, whitish ciliae.

♀. Head very transverse, almost smooth; vertex with a fine but distinct carina extending completely across its posterior margin; the lateral ocelli closer to the front ocellus than to the eye margins; eyes large and oval, not ciliate. Antennae with the scape narrow, its apex reaching the level of the front ocellus; scape, pedicel and the first funicle segment of the same width; scape long, about six times as long as wide, pedicel about twice as long as wide at the apex; relative lengths of scape, pedicel and the first funicle segment—65:18:40, the following segments shorter. Pronotum short, with a distinct, transverse carina comparatively far from the posterior margin. Mesonotum irregularly, transversely striate in the middle; mesoscutum with a complete, longitudinal, median carina. Axillae almost smooth. Scutellum

finely reticulate. Propodeum smooth, shining, with a distinct, complete, median, longitudinal carina and the spiracles distinctly oblong oval. The longest hind tibial spur almost as long as the first two tarsal segments taken together. Wings large; marginal vein slightly longer than the submarginal vein, the costal cell slightly broadened, relative lengths of the stigmal and the post-marginal veins—5:9, marginal vein about four times as long as the stigmal vein. Abdomen broadened behind, triangular, shorter than the thorax; abdominal petiole short, subquadrate or slightly wider than long, shagreened and with a complete, longitudinal, median carina.

♂. Similar; relative lengths of the scape, pedicel and the first funicle segment—50:15:40, scape especially broadened in the middle, less than three times as wide as long, scape much wider than pedicel, pedicel slightly but distinctly longer than wide and very slightly wider than the first funicle segment which is as long as the third one, first funicle segment distinctly longer than the second one which is as long as fourth one. Abdomen much narrower than that of the female, petiole without a longitudinal carina.

Length of body: ♂ about 2.0 mm. ♀ about 3.5 mm.

Holotype: ♂, 13. x. 1951, Miyazaki, Kyushu (Mr. S. Nasu), ex a larva of *Adris tyrannus* Guénée.

Allotype: ♀, 19. x. 1951, the same data as the holotype.

Paratypes: 15 ♂♂, 13. x. 1951, 13 ♀♀, 19. x. 1951.

Holo-, allo- and 20 paratypes are preserved in the collection of the Entomological Laboratory, Kyushu University, Fukuoka. Eight paratypes will be distributed to the British Museum (Natural History), U. S. National Museum, American Museum of Natural History, and the Geneva Museum.

Habitat: Japan.

This new species is somewhat allied to *Euplectrus taiwanus* Sonan, 1942, from Formosa, but differs from the latter in the following points:—1. clypeal area whitish, 2. head smooth and shining, without any reticulated, impressed lines, 3. propodeum without a crenulate carina along the basal margin, 4. abdominal petiole without longitudinal striations. Judging from the description, the new species is also related to *Euplectrus kuwanai* Crawford, 1911, from Japan, the types of which are deposited in the

U. S. National Museum. Dr. Burks was so kind as to compare my specimen not only with the type of *kuwanae* but also all the specimens of the other species in his trust and wrote me as follows:—"I have compared it with the type of *E. kuwanae* and find that it is not that species. I checked it against all the species of this genus in our collection, but I am sorry to say I cannot place it. It is nearest to *agaristae* Crawford, from Australia, and is also quite close to the cosmopolitan *plathypenae* Howard, but is not identical with either. It has a complete, longitudinal, median carina on the mesoscutum and there is a fine but clearly discernible carina extending completely across the posterior margin of the vertex. These characters, along with the color, distinguish your specimen from all the species of this genus in our collection" (February 15, 1952).

The genus *Euplectrus* is parasitic on larvae of Lepidoptera. Since no concise world list of the known host Lepidoptera of the genus has been published hitherto, it has been considered appropriate to attempt to summarize the available data regarding the *Euplectrus*-species that have been recorded from the pests of crops.

A LIST OF HOST OF *EUPLECTRUS*

Species	Hosts	Localities
<i>agaristae</i> Crawford	<i>Phalaenoides glycinae</i> Lewin	Australia
<i>bicolor</i> Swederus	<i>Amathes c-nigrum</i> Linné	U. S. A.
	<i>Aplecta nebulosa</i> Hufnagel	Europe
	" <i>Crino setara</i> "	Europe
	<i>Epiglaea apicata</i> Grote	U. S. A.
	<i>Etiella zinckenella</i> Treischke	Europe
	<i>Laphygma exigua</i> Hübner	Anatolia
	" <i>Miselia tincta</i> "	Europe
<i>cacoeciae</i> Ferrière	<i>Archips rosana</i> Linné	Europe
<i>catocalae</i> Howard	<i>Alabama argillacea</i> Hübner	U. S. A.
	<i>Autographa</i> sp.	U. S. A.
	<i>Heliothis armigera</i> Hübner	U. S. A.
	<i>Laphygma frugiperda</i> Smith et Abbot	U. S. A.
	<i>Plathypena scabra</i> Fabricius	U. S. A.
	<i>Prodenia ornithogalli</i> Guénée	U. S. A.

	<i>Trichoplusia ni</i> Hübner	U. S. A.
<i>ceylonensis</i> Howard	<i>Euproctis fraterna</i> Moore	Ceylon
	<i>Euproctis flava</i> Bremer	Ceylon
	<i>Nygmia scintillans</i> Walker	Malaya
<i>comstocki</i> Howard	<i>Alabama argillacea</i> Hübner	U. S. A.
	<i>Autographa</i> sp.	U. S. A.
	<i>Caradrina</i> sp.	U. S. A.
	<i>Heliothis armigera</i> Hübner	U. S. A.
	<i>Laphygma frugiperda</i> Smith et Abbot	Puerto Rico, Trinidad
	<i>Plathypena scabra</i> Fabricius	U. S. A.
	<i>Trichoplusia ni</i> Hübner	U. S. A.
<i>epiplemae</i> Ferrière	<i>Epiplema doherlyi</i> Warren	Africa
<i>euplexiae</i> Rohwer	<i>Perigea capensis</i> Guénée	India
	<i>Selepa docilis</i> Butler	India
<i>frontalis</i> Howard	<i>Amathes c-nigrum</i> Linné	U. S. A.
<i>fukuii</i> Crawford	<i>Naranga aenescens</i> Moore	Japan
<i>furnius</i> Walker	<i>Protoparce cingulata</i> Fabricius	Barbados
<i>gopimohai</i> Mani	<i>Laphygma exigua</i> Hübner	India
<i>howardi</i> Olliff	<i>Phragmatiphila truncata</i> Walker	Australia
<i>junctus</i> Gahan	<i>Isoparce cupressi</i> Boisduval	U. S. A.
<i>kuwanae</i> Crawford	<i>Parnara guttata</i> Bremer et Grey	Japan
<i>laphygmae</i> Ferrière	<i>Amsacta moloneyi</i> Druce	Africa
	<i>Heliothis</i> sp.	Africa
	<i>Laphygma exempta</i> Walker	Africa
	<i>Laphygma exigua</i> Hübner	Africa
	<i>Leucania obsoleta</i> Fabricius	Africa
	<i>Phytometra gamma</i> Linné	Africa
	<i>Plusia orichalcea</i> Fabricius	Africa
<i>leona</i> Risbec	<i>Anomis leona</i> Schaus	Africa
<i>leucostomus</i> Rohwer	<i>Achaea janata</i> Linné	India
	<i>Trabala vishnu</i> Lefebvre?	India
<i>liparidis</i> Ferrière	<i>Lymantria dispar</i> Linné	Africa
<i>manilae</i> Ashmead	<i>Anomis</i> sp.	Philippines
	<i>Cosmophila</i> sp.	Philippines
	<i>Papilio alphenor</i> Cramer	Philippines
<i>maternus</i> Bhatnagar	<i>Orthreis fullonica</i> Linné	India
	<i>Orthreis materna</i> Linné	India
<i>mellipes</i> Provancher	<i>Coleophora laricella</i> Hübner	Canada
	<i>Feralia jocosa</i> Guénée	Canada

<i>noctuidiphagus</i>	<i>Adris tyrannus</i> Guénée	Japan
Yasumatsu		
<i>nyctemerae</i> Crawford	<i>Nyctemera laticinctia</i> Cramer	India
<i>parvulus</i> Ferrière	<i>Boarmia selenaria imparata</i> Walker	India
	<i>Plecoptera reflexa</i> Gmelin	India
	<i>Tephria disputaria</i> Gmelin	India
<i>phthorimaeae</i> Ferrière	<i>Gnorimoschema operculella</i> Zeller	Cyprus
<i>phytometae</i> Risbec	<i>Phytometra</i> sp.	Africa
<i>plathypenae</i> Howard	<i>Autographa falcifera simplex</i> Guénée	U. S. A.
	<i>Cirphis humidicola</i> Guénée	Br. West Indies
	<i>Cirphis unipuncta</i> Haworth	U. S. A., Hawaii
	<i>Diatraea saccharalis</i> Fabricius	U. S. A.
	<i>Heliothis armigera</i> Hübner	U. S. A., Hawaii
	<i>Laphygma exempta</i> Walker	Hawaii
	<i>Laphygma exigua</i> Hübner	U. S. A.
	<i>Laphygma frugiperda</i> Smith et Abbot	U. S. A., Cuba
	<i>Leucania latiuscula</i> Herrich-Schäffer	U. S. A., Mexico
	<i>Leucania multilinea</i> Walker?	U. S. A.
	<i>Lycophotia margaritosa</i> Haworth	Hawaii
	<i>Peridroma margarita</i> Haworth	U. S. A.
	<i>Plathypena scabra</i> Fabricius	U. S. A.
	<i>Prodenia ornithogalli</i> Guénée	U. S. A.
	<i>Prodenia sunia</i> Guénée	U. S. A.
	<i>Protoparce sexta</i> Johanssen	U. S. A.
<i>singularis</i> Ferrière	<i>Anaphaeis creona creona</i> Cramer	Africa
<i>spodopterae</i> Bhatnagar	<i>Cirphis</i> sp.	India
	<i>Spodoptera mauritia</i> Boisduval	India
<i>taiwanus</i> Sonan	<i>Bombotelia jocosatrix</i> Guénée	Formosa
	<i>Euproctis taiwana</i> Shiraki	Formosa
	<i>Spodoptera mauritia</i> Boisduval	Formosa
<i>utethesia</i> Mani et Kurian	<i>Utethesia pulchella</i> Linné	India