

Three New Species of *Clistopyga* Gravenhorst from Japan (Hymenoptera: Ichneumonidae)

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Received for Publication August 28, 1984

Introduction

The genus *Clistopyga* Gravenhorst, a comparatively large group of the Ephialtinae, has been represented by 16 species in the world: 7 from the Nearctic, 6 from the Palearctic, 1 from the Oriental (Formosa) and 3 from the Neotropical regions, while the members of this genus are probably distributed all over the world. So far as I am aware, no species of this genus has hitherto been known to occur in Japan. In the course of the present investigation I have found 3 species in Japan, all of which are new to science. It is said that some Nearctic and European species of *Clistopyga* are parasitic on egg sacs of some species of spiders which are placed in crevices (Townes and Townes, 1960, and Aubert, 1969). No host record is, however, given in the Japanese species. The holotypes of the new species are preserved in the collection of the Entomological Institute, Hokkaido University, Sapporo.

Genus *Clistopyga* Gravenhorst

Clistopyga Gravenhorst, 1829. *Ichneumonologia europaea* 3: 132. Type-species: *Ichneumon incitator* Fabricius.

Ichneumonoglypta Blanchard, 1941. *Rev. Soc. Ent. Argentina* 11: 9. Type-species: *Ichneumonoglypta lopezrichinii* Blanchard.

Hymenomacropyga Uchida, 1941. *Ins. Mats.* 15: 116. Type-species: *Hymenomacropyga latifrontalis* Uchida.

The systematic position and the morphological characters of this genus are discussed in details by H. Townes and M. Townes (1960) and H. Townes (1969). The Japanese species may be distinguished by the following key: —

Key to the Japanese species of *Clistopyga*

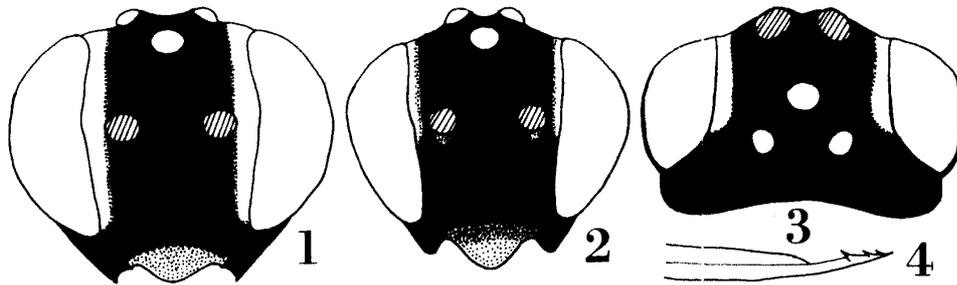
1. Propodeum distinctly trans-striate basally. Face strongly and densely punctate. Notaulus with very short trans-striae. Second and following tergites subpolished, densely and closely punctate. Facial orbit yellow (Fig. 1); front and middle coxae dark brown basally. *rugulosa*, sp. nov.
- Propodeum finely and sparsely punctate basally. Face weakly and sparsely punctate. Notaulus without trans-striae. Second and following tergites polished, weakly and rather sparsely punctate. Facial orbit dark brown to black wholly; front and middle coxae entirely pale yellow. 2

2. Yellow marking of frontal orbit attaining beyond the top of eye (Fig. 2). Temple comparatively narrow, about $1/2$ as long as eye in lateral view. Flagellum with 22 or 23 segments. Mesoscutum usually with 2 pairs of yellow markings; scutellum pale yellow, dark brown basomedially; wing concavity with a dorsal yellow marking.*arctica*, sp. nov.
- Yellow marking of frontal orbit not attaining beyond the top of eye (Fig. 3). Temple comparatively wide, about $7/9$ as long as wide in lateral view. Flagellum with 19 or 20 segments. Mesoscutum entirely black; scutellum black, pale yellow at apex; wing concavity without yellow marking. *emphera*, sp. nov.

Clistopyga rugulosa, sp. nov. (Figs. 1 & 4)

♀. Face about 1.1 times as wide as high, weakly convex, strongly and rather densely punctate, the punctures becoming weaker and sparser laterally and ventrally; clypeus weakly convex, polished, sparsely haired along dorsal and ventral margins, somewhat flattened centroapically, 1.4–1.6 times as wide as high; malar space 1.0 times as long as basal width of mandible; frons polished, very sparsely punctate on about dorsal $1/3$, weakly trans-striate on lower $2/3$, with a dull, median longitudinal protuberance; temple narrow, sparsely haired, almost flat, $4/9$ as long as eye in lateral view; occipital carina distinct and complete, slightly arched downward. Antennae with 24 or 25 segments; 1st flagellar segment 1.4 times as long as the 2nd; 2nd flagellar segment 1.1 times as long as the 3rd. Pronotum polished, almost entirely bare, weakly and sparsely punctate along posterior and dorsal margins; epomia weak and short, sometimes obsolete; mesoscutum densely haired; notaulus distinctly impressed, and with very short trans-striae, extending to basal $2/3$ of mesoscutum; scutellum strongly convex, strongly and sparsely punctate basally; transverse groove just before scutellum with a small pit on each lateral corner; mesopleurum more densely and strongly punctate than in that of *arctica*; metapleurum weakly convex, strongly and very sparsely punctate on about posterior $1/2$, with a closely spaced hair band along the anterior margin; submetapleural carina complete. Propodeum rather strongly convex, about as long as 1st tergite, closely trans-striate on basomedian portion, strongly punctate basolaterally, the punctures becoming sparser laterally, with a wide and shallow median longitudinal sulcus on basal area and areola; median longitudinal carinae of propodeum represented by weak ridges extending about $2/5$ of the propodeum; lateral longitudinal carinae of propodeum present only on posterior $2/9$. Forewing with areola absent; intercubitus very short; portion of cubitus between intercubitus and 2nd recurrent vein about 3.1 times as long as intercubitus; nervulus interstitial; nervellus weakly inclivous, intercepted at lower $1/5$ – $1/4$; discoidella distinct, weakly sinuate, reaching to posterior margin of hind wing. Abdomen with 1st tergite 1.2–1.3 times as long as wide at apex, strongly and densely rugoso-punctate longitudinally, with a complete lateral longitudinal carina, the median longitudinal carinae present on basal $5/8$; basomedian concavity of 1st tergite polished and bare; 2nd tergite 0.8–1.0 times as long as wide at apex; 2nd and 3rd tergites weakly and closely rugulo-punctate; 4th and following tergites subpolished, finely and closely punctate, the punctures becoming weaker on the posterior segments; subgenital plate large, moderately convex, strongly and densely punctate, the punctures a little weaker and sparser posteriorly. Ovipositor moderately compressed, rather strongly tapering towards apex, weakly mat wholly, weakly upcurved on the apical portion, and with 3 small, oblique apical teeth on the lower valve (Fig. 4); ovipositor sheath about $3/8$ as long as forewing.

Black. Facial, frontal and vertical orbits pale yellow (Fig. 1); clypeus dirty yellowish brown (Fig. 1); mandible dirty yellowish brown basally, blackish apically; palpi pale yellow; antennae



Figs. 1 and 2. Colour pattern of head in frontal view, ♀: 1, *Clistopyga rugulosa*, sp. nov.; 2, *C. arctica*, sp. nov.
 Fig. 3. Colour pattern of head in dorsal view, ♀, *C. emphera*, sp. nov.
 Fig. 4. Apical part of ovipositor, *C. rugulosa*, sp. nov.

yellowish brown to light infusate, a little paler basoventrally. Posterodorsal corner of pronotum, subtegular ridge, tegula and postscutellum pale yellow; mesoscutum black, with 2 pairs of small pale yellow markings, sometimes the markings obsolete; scutellum black, pale yellow on apical 2/7. Front leg with coxa pale yellow, dark brown basoventrally; trochanter pale yellow; femur light yellowish brown, a little paler apically; tibia and tarsus yellowish brown. Middle leg with coxa dark brown on about basal 1/3, pale yellow on about apical 2/3; trochanter pale yellow; femur light yellowish brown, a little darker dorsally; tibia and tarsus light yellowish brown. Hind leg with coxa dark brown to blackish on about basal 2/3, pale yellow on about apical 1/3; trochanter and both ends of femur pale yellow; femur dark brown except for both ends; tibia pale yellow on basal 2/3, infusate on apical 1/3; tarsus pale yellow to yellowish brown, the basal portion of each segment a little paler. Wings hyaline.

Length: Body 6.7–7.6 mm., forewing 4.5–5.3 mm.

♂. Unknown.

Holotype (♀): Sapporo, Hokkaido, 27–viii–1965, K. Kusigemati leg. Paratype: 1♀, Hirakawa, Kagoshima-shi, Kyushu, 7–vi–1976, K. Ôhara leg.

This species is closely allied to the Holarctic *C. canadensis* (Provancher, 1880), in having its punctate metapleurum on the posterior part, punctate propodeum on the basal part, and entirely black meso- and metapleurum. The present species is clearly distinguishable from the latter in having the comparatively narrow temple, the propodeum with weak trans-rugulae on the basal portion, the distinct and complete discoidella, and the yellow inner orbit.

Clistopyga arctica, sp. nov. (Fig. 2)

♀. Face 1.1–1.2 times as wide as high, weakly convex, weakly and very sparsely haired, the hairs becoming sparser laterally and ventrally; clypeus weakly convex, polished, very sparsely haired along ventral and dorsal margins, somewhat flat centroapically, 1.6–1.8 times as wide as high; malar space 0.9–1.0 times as long as basal width of mandible; frons polished, almost flat, very scatteringly haired on dorsal half, with a small trans-striate area on the bottom and without a distinct longitudinal protuberance; temple narrow, slightly swollen, sparsely haired, about 1/2 as wide as eye in lateral view; mandible rather strongly tapering towards apex, the lower tooth very short; occipital carina distinct and complete. Antennae with 24 or 25 segments; 1st flagellar

segment 1.3–1.5 times as long as the 2nd; 2nd flagellar segment 1.1 times as long as the 3rd. Pronotum polished, almost entirely bare, weakly and very sparsely punctate along posterior and dorsal margins; epomia weak and short, but distinct; notaulus distinctly impressed without trans-striae, extending to basal 2/3 of mesoscutum; scutellum strongly convex, weakly and sparsely punctate; transverse groove just before scutellum with a small pit on each lateral corner; mesopleurum very weakly and sparsely punctate; metapleurum weakly convex, with sparse and weak punctures on posterior corner, and with a band of closely spaced hairs along anterior margin; submetapleural carina complete. Prododeum rather strongly convex, 0.9 times as long as 1st tergite, finely and very sparsely punctate, sometimes obsoletely trans-striate, sometimes with a very weak, basomedian longitudinal sulcus; petiolar area bare; median longitudinal carinae of propodeum absent; lateral longitudinal carinae weak, present on posterior 2/9–2/7. Forewing with areolet absent; intercubitus very short; portion of cubitus between intercubitus and 2nd recurrent vein 2.1–2.5 times as long as intercubitus; nervulus interstitial; nervellus slightly inclivous, intercepted at lower 1/4–3/8; discoidella indistinct, weakly pigmented, almost straight, not reaching to posterior margin of hind wing. Abdomen with 1st tergite 1.0–1.2 times as long as wide at apex, weakly and rather closely rugulo-punctate longitudinally, with a strong and complete lateral longitudinal carina and median longitudinal carinae on basal 4/7–2/3; basomedian concavity of 1st tergite polished and bare; 2nd tergite slightly shorter than its apical width, densely and distinctly punctate, sometimes weakly and longitudinally striate basally; 3rd and following tergites weakly and closely punctate, the punctures becoming weaker on the posterior segments; subgenital plate and ovipositor as in *rugulosa*; ovipositor sheath comparatively long, about 2/5 as long as forewing.

Dark brown to black. Face dark brown to black; upper corners of face, markings just below antennal socket, frontal and vertical orbits dirty yellowish brown (Fig. 2); clypeus dirty yellowish brown, a little darker dorsally (Fig. 2); mandible dirty yellowish brown basally, blackish apically; palpi pale yellow. Subtegular ridge, posterodorsal corner and upper margin of pronotum, tegula, postscutellum and an anterior small marking of wing convexity pale yellow; mesoscutum black, usually with 2 pairs of small yellow markings, sometimes the markings, especially the anterior one, indistinct. Front and middle legs pale yellow to light yellowish brown; hind leg with coxa pale yellow to light yellowish brown, paler apically, and darker basally; femur light yellowish brown, pale yellow at both ends; tibia pale yellow on about basal 2/3, infuscate on about apical 1/3; tarsus pale yellow, the apex of each tarsal segment yellowish brown. Abdominal tergites more or less weakly tinged with dark brown, the base and basolateral corners of each tergite light yellowish brown; ovipositor light reddish brown. Wings hyaline.

Length: Body 5.2–7.3 mm., forewing 4.4–5.1 mm.

♂. Unknown.

Holotype (♀): Soranuma-dake, Hokkaido, 30–viii–1967, K. Kusigemati leg. Paratypes: 1♀ (23–ix–1966), 3♀♀ (30–viii–1967), Soranuma-dake (Mt. Soranuma), Hokkaido, K. Kusigemati leg.; 2♀♀ (12–vii–1967), Sapporo, Hokkaido, K. Kusigemati leg.; 1♀ (6–ix–1967), Sapporo, Hokkaido, M. Miyazaki leg.; 1♀ (6–ix–1967), Sapporo, Hokkaido, K. Kusigemati leg.

This species is similar to the Formosan *C. latifrontalis* (Uchida, 1941), but it may be distinguished from the latter by the face distinctly punctate, by the mesopleurum and mesosternum blackish and without yellow markings, and by the vertex and malar space black.

Clistopyga emphaera, sp. nov. (Fig. 3)

In general structures this species resembles most closely *C. arctica*, sp. nov., from which it differs readily in having the yellow marking of frontal orbit which is not attaining to top of the eyes, the comparatively wide temple, the colouration of the scutellum and the mesoscutum, etc. as below.

♀. Face more sparsely and weakly punctate than in *arctica*; clypeus very sparsely haired, 1.7–2.0 times as wide as high; yellow marking of frontal orbit attaining near top of eye; temple weakly swollen, comparatively wide, about 3/4 as wide as eye in lateral view. Antennae with 21 or 22 segments; 1st flagellar segment 1.4–1.5 times as long as the 2nd; 2nd flagellar segment as long as the 3rd. Metapleurum polished, weakly convex, with several hairs on anterior margin and posterior corner each. Forewing with portion of cubitus between intercubitus and 2nd recurrent vein 2.0–2.6 times as long as intercubitus; nervellus weakly inclivous, intercepted at lower 2/3; discoidella straight, not reaching to posterior margin of hind wing and faintly pigmented. Propodeum as long as 1st tergite, with a shallow basomedian longitudinal sulcus. Hind femur 3.4 times as long as wide in lateral view. Abdomen with 1st tergite slender, 1.5–1.6 times as long as wide at apex, with median longitudinal carinae on basal 5/8; 2nd tergite about as long as wide at apex; ovipositor sheath 0.3 times as long as forewing.

Dark brown to black. Palpi, tegula and subtegular ridge pale yellow; frontal orbit pale yellow, the yellow marking attaining near top of eye (Fig. 3); clypeus dirty yellow apically, dark brown basally (Fig. 3); mandible except for apical teeth light ferruginous, pale yellow on basal half, black on apical half, sometimes entirely dark brown to black. Antennae yellowish brown to light infusate, paler basoventrally. Front and middle legs pale yellow to light yellowish brown. Hind leg with coxa dark brown to yellowish brown basally, pale yellow apically; trochanter pale yellow; femur yellowish brown to dark brown; tibia pale yellow on basal 5/8, infusate on apical 3/8; tarsus pale yellow, the apical part of each segment a little darker. Abdominal tergites dull yellowish brown to dark brown.

Length: Body 4.7–5.0 mm., forewing 3.7–3.8 mm.

♂. Unknown.

Holotype (♀): Sapporo, Hokkaido, 20-ix-1966, K. Kusigemati leg. Paratype: 1♀, Jōzankei, Hokkaido, 27-ix-1967, K. Kusigemati leg.

Summary

Three new species of the genus *Clistopyga* are described: *C. rugulosa*, sp. nov.; *C. arctica*, sp. nov.; and *C. emphaera*, sp. nov. This is the first record of the genus from Japan. A key to the species is given.

Acknowledgements

The writer is greatly indebted to Prof. A. Nagatomi of the Kagoshima University for his kindness in reading through the manuscript and for his constant encouragement. Thanks are also due to Dr. M. Miyazaki of the Insect Taxonomy Laboratory, National Institute of Agriculture Sciences, and Mr. K. Ôhara of the Kyushu University for their kindness in offering valuable material and generous help in many ways.

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