

## On the Formosan Species of the Genus *Lusius* Tosquinet, with Description of a New Species (Hymenoptera : Ichneumonidae)

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### Abstract

Two Formosan species of the genus *Lusius* are described: *L. gracilis* sp. nov. and *L. apollo* (Morley). A key to the Formosan species is given.

Key words: Insecta, Parasitica, Ichneumoninae, *Lusius*.

### Introduction

*Lusius* is a small Oriental genus, represented by only three species: one from Formosa, India, and the Philippines; one from Sumatra; and one from India. In the course of the present investigation the author has found two Formosan species, of which one is new to science. No host has been recorded for the species of this genus, though some members of the genus have probably been associated with low vegetation in the forests and open grassy habitats. The holotype of the new species will be preserved in the collection of the Entomological Laboratory, Kagoshima University, Kagoshima.

### Genus *Lusius* Tosquinet

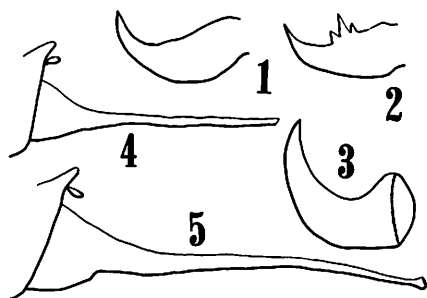
*Lusius* Tosquinet, Mém. Soc. Ent. Belgique 10: 384, 1903. Type-species: *Lusius macilentus* Tosquinet, 1903.

This genus is easily distinguished from any other genera of the tribe Heterischini of the subfamily Ichneumonidae by following combination of characters.

Body elongate, subcylindric. Head cubical in dorsal view. Mandible (Fig. 3) unidentate and strongly geniculate; occipital carina reaching base of mandible without first joining hypostomal carina; clypeus large, its apex truncate, and the apical margin thin, sometimes emarginate; temple wide, rather strongly swollen. Notaulus distinct on anterior 0.7; scutellum weakly convex, its lateral carina strong, reaching to apex; postpectal carina distinct and complete. Propodeal spiracle

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Figs. 1-2. Tarsal claws: 1. *Lusius gracilis* sp. nov., ♂. 2. *L. apollo* (Morley), ♀.

Fig. 3. Mandible, *L. apollo* (Morley), ♀.

Figs. 4-5. Claspers: 4. *L. apollo* (Morley), 5. *L. gracilis* sp. nov.

circular to subcircular. First abdominal tergite cylindrical without any carinae; basal half of 1st abdominal tergite deeper than wide, rounded above; 2nd abdominal tergite not impressed at the base; male clasper ending in a long rod as in male of Mesochorinae. Wings (Figs. 6-9) with 2nd intercubitus and discoidella absent.

The Formosan species can be distinguished by the following key: —

### Key to the Formosan species of *Lusius*

1. Head with apical margin of clypeus thin, not emarginate; frons not vertically striate; malar space 1.0-1.1 times as long as basal width of mandible. Forewing (Fig. 6) with base of 2nd discoidal cell pointed; metacarpella with 5 hamuli. Basitarsus of hind leg 1.0 times as long as 2nd and following segments together except claws; tarsal claws weakly pectinate (Fig. 2). Second abdominal tergite comparatively stout, 2.5 times as long as wide at apex in female, 3.3 times in male; clasper 4/9 as long as hind tibia. Ocellar area, median part of vertex, large spot of median and lateral lobes of mesoscutum black. .... 1. *apollo* (Morley)
- Head with apical margin of clypeus thick, emarginate; frons vertically striate laterally; malar space 5/7 as long as basal width of mandible. Forewing (Fig. 7) with base of 2nd discoidal cell truncate; metacarpella with 4 hamuli. Basitarsus of hind leg 1.3 times as long as 2nd and following segments together except claws; tarsal claws not pectinate (Fig. 1). Second abdominal tergite comparatively slender, 4.5 times as long as wide at apex in male; clasper 5/8 as long as hind tibia. Ocellar area, vertex, and mesoscutum almost entirely fusco-rufous. .... 2. *gracilis* sp. nov.

#### 1. *Lusius apollo* (Morley) (Figs. 2-4, 6 & 8)

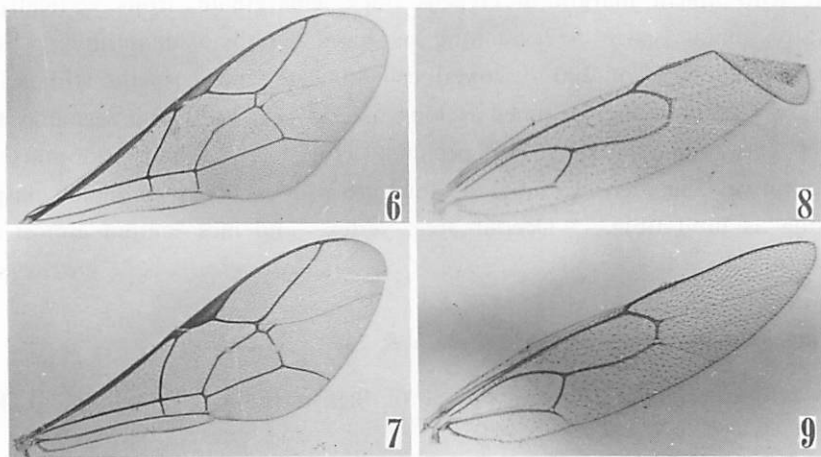
*Oedematopsis apollo* Morley, Fauna of British India... Hymenoptera 3(1): 50, 1913.

*Oedematopsis apollo*: Lopez, Ann. Rpt. Res. Bur. Philippine Sugar Assoc. 1930-1931: 272, 1930.

*Lusius apollo*: Cushman, Arb. über Morph. u. Taxonom. Ent. 4: 285, 1937.

On the basis of the present specimens a redescription is given below: —

♀. Face faintly convex, polished, weakly and rather densely punctate, the punctures sparser and weaker laterally, and about 1.1 times as wide as high at level of lower margin of antennal socket; clypeus moderately strongly convex, polished, very sparsely punctate, about 1/2 as wide as high, and separated from face by an indistinct groove; apical margin of clypeus thin, not emarginate; inner margins of eyes parallel-sided; malar space about 1.0–1.1 times as long as basal width of mandible; temple rather strongly swollen, virtually bare, 0.9 times as long as wide in lateral view; frons slightly concave, not striate; distance between lateral ocelli and eyes about 1.9 times as long as diameter of an ocellus. Antennae with 37 segments; 1st flagellar segment about 6.7 times as long as wide at apex; 2nd flagellar segment about 1.1 times as long as the 1st and 1.1–1.2 times as long as the 3rd. Pronotum polished, with very sparse punctures; epomia short but distinct; mesoscutum very sparsely punctate, virtually bare posteriorly; notauli distinct, with short transverse striae, reaching to anterior 5/7; mesopleurum strongly and rather densely punctate, partly striate-rugose; speculum polished and impunctate; prepectus narrow, divided by a short, distinct and longitudinal carina; metapleurum rather strongly and vertically striate-rugose. Propodeum more or less weakly and completely areolated, reticulate-rugose, with strong punctures; propodeal spiracle subcircular. Wings (Figs. 6 & 8) with nervulus interstitial or postfurcal by 1/5 of its own length; stigma slender, about 4.8 times as long as wide, with radius emitting from basal 1/2; base of 2nd discoidal cell pointed; nervellus strongly reclivous, not intercepted, 2.0 times as long as intercubitella; brachiella, 2nd abscissa of cubitella and 2nd abscissa of radiella absent; metacarpella with 5 hamuli. Legs slender; hind femur 4.9–5.0 times as long as wide in lateral view; outer spur of hind tibia about 1.4 times as long as inner spur; basitarsus of hind leg 1.0 times



Figs. 6–9. Fore (6–7) and hind (8–9) wings: 6 & 8, *L. apollo* (Morley), ♀; 7 & 9, *L. gracilis* sp. nov., ♂.



as long as 2nd and following segments together except claws; tarsal claws weakly pectinate (Fig. 2). First abdominal tergite polished, with very sparse, setiferous punctures, 3.6–3.8 times as long as basal width of postpetiole; postpetiole 1.0–1.1 times as long as its basal width; 2nd tergite strongly mat, with short, moderately dense hairs, and 2.5 times as long as wide at apex, 1.4 times as long as the 3rd, the part between base of 2nd tergite and thyridium finely and longitudinally striate; 3rd and subsequent tergites mat, with short, rather dense hairs, the apical segments subpolished. Ovipositor sheath  $3/5$ – $5/8$  as long as hind tibia.

Ivory yellow to yellowish brown. Mandible reddish brown on apical half; ocellar area, median dorsal part of frons and median  $1/3$  of vertex black. Antennae fuscous to infusate, darker apically, the 10th or 11th to 16th or 17th segments white. Mesoscutum with 3 large, longitudinal black spots; scutellar fovea blackish. First and 2nd lateral areas of propodeum, sometimes basal area of propodeum blackish. First tergite light yellowish brown, fulvous brown posteriorly; 2nd and following tergites fusco-rufous; 2nd and 4th tergites with a pair of blackish spots each, the spots of 4th tergite indistinct. Legs light yellowish brown; outer side of hind coxa sometimes fusco-rufous; tarsi fuscous to infusate, darker apically. Ovipositor sheath infusate. Wings hyaline; stigma pale.

Length: Body 7.3–8.6 mm., forewing 4.2–4.7 mm.

♂. Differs from the female, apart from sexual differences, by the following characters: —

Temple about 1.1 times as long as wide in lateral view; distance between lateral ocelli and eyes about 1.7 times as long as diameter of an ocellus. Metapleurum a little more weakly striate vertically. Wings with stigma 5.2 times as long as wide; nervulus postfurcal by  $1/5$  of its own length. First abdominal tergite 3.5 times as long as basal width of postpetiole; 2nd tergite 3.3 times as long as wide at apex and 1.6 times as long as the 3rd; clasper  $4/9$  as long as hind tibia, the apical part not widened (Fig. 4). Abdomen and tarsi a little paler than in female.

Length: Body 8.5 mm., forewing 4.9 mm.

Specimens examined: 1 ♂ & 1 ♀, 10-xi-1911, Taihorin, H. Sauter leg.; 1 ♀, 27-iv-1981, Jihyetan, 750 m, Nantou Hsien, H. Takemoto leg.

Distribution: Formosa, India and Philippines.

## 2. *Lusius gracilis* sp. nov. (Figs. 1, 5, 7 & 9)

In general structures this new species is closely related to the preceding species, *L. apollo* (Morley) from which it differs by the following characters: —

♂. Face a little more strongly and densely punctate; apical margin of clypeus thick and emarginate; malar space  $5/7$  as long as basal width of mandible; frons slightly convex medially, with vertical striae on lateral area; temple 0.9 times as long as wide in lateral view; distance between lateral ocelli and eyes about 1.5



times as long as diameter of an ocellus. Antennae with 36 segments; 1st flagellar segment about 6.2 times as long as wide at apex. Prepectus wide; median part of prepectal carina rather strongly notched; mesopleurum with an impunctate area in front of speculum; metapleurum almost entirely impunctate, the posterior corner vertically striate. Propodeum transversely and strongly reticulate-rugose, the petiolar, 3rd lateral and pleural areas strongly and longitudinally reticulate-rugose; apical transverse and pleural carinae strong, the others obsolete; propodeal spiracle circular. Venation of wings as in Figs. 7 & 9; nervulus interstitial; stigma 4.8 times as long as wide; nervellus 1.9 times as long as intercubitella; base of 2nd discoidal cell truncate. Leg with basitarsus about 1.3 times as long as 2nd and following segments together except claws; tarsal claws simple (Fig. 1). First abdominal tergite 3.8 times as long as basal width of postpetiole; postpetiole 1.3 times as long as its basal width; 2nd tergite slender, 4.5 times as long as wide at apex, closely and longitudinally striate on basal 2/3, mat on apical 1/3; clasper long, 5/8 as long as hind tibia, the apical part weakly widened (Fig. 5).

In colouration similar to the preceding species. Body with no blackish marking. Temple and vertex fulvous to fuscous; antennae fuscous to infusate, paler basally; lateral sides of median and lateral lobes of mesoscutum ivory yellow; 1st abdominal tergite dull ferrugineous to infusate; 2nd and subsequent tergites dull ferrugineous, without any dark marking.

Length: Body 9.4 mm., forewing 5.2 mm.

♀. Unknown.

Holotype (♂): Lienhuachin, 500-550 m, Nantou Hsien, 28-iv-1981, K. Ôhara leg.

Distribution: Formosa.

This species is very closely related to *L. apollo* (Morley), but it is immediately distinguished from the latter by the emarginate apical margin of the clypeus, the striate frons, the short malar space, etc. as stated in the key.

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