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Klyngon, gen. nov. (Hymenoptera: Eulophidae) with two new species from Costa Rica

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Abstract. A new genus, *Klyngon*, is described, including two new species, *Klyngon bouceki* sp. nov. and *K. jimenezi* sp. nov., both species from Costa Rica. *Klyngon jimenezi* sp. nov. has been reared from galls of Cecidomyiidae on *Serjania mexicana* (L.) (Sapindaceae). The new genus belongs in subfamily Entedoninae but is otherwise difficult to place due to a mosaic possession of characters.

Taxonomy, new genus, new species, Hymenoptera, Eulophidae, gallmidges, Diptera, Cecidomyiidae, Neotropical region

INTRODUCTION

The Neotropical fauna of Eulophidae has received some attention in the last couple of years, including several taxonomic and biologic contributions (e.g. Schauff & Janzen 2001, Hansson 2002, Hansson & LaSalle 2003). The Neotropical eulophid fauna is partly made up of genera known from other parts of the World – notably from the Nearctic Region. Apart from these well-known genera, a number of species belonging to other undescribed genera occur in the Neotropics, some of which don't look like anything known previously and, based on morphological features, are not easily fitted within the existing taxonomic frame-work. Here one of these odd genera is described.

ACRONYMS OF MUSEUMS

BMNH – Natural History Museum, London, United Kingdom;
CH – collection of the author Department of Cell and Organism Biology, Lund, Sweden;
INBio – Instituto Nacional de Biodiversidad, Santo Domingo, Costa Rica;
MIUCR – Museo de los Insectos, Universidad de Costa Rica, San Pedro, Costa Rica;
USNM – United States National Museum of Natural History, Washington, D.C., USA.

Klyngon gen. nov.

TYPE SPECIES. *Klyngon jimenezi* sp. nov.

DIAGNOSIS. Frontal suture absent (Fig. 5); antennal scrobes as narrow and distinct grooves (Fig. 5); clypeus delimited by a groove laterally and dorsally (Fig. 6); pronotum strongly reduced, not visible in dorsal view (Figs 1, 2); propodeum with plicae, with a strong median carina and with reticulate grooves laterad to median carina (Fig. 7); propodeum with a distinct nucha; gastral tergites reticulate with posterior margin smooth (Fig. 3); male gaster with an enlarged subgenital plate (i.e. the 9th sternite) (Fig. 11), plate is strongly reticulate.

Description. Flagellum with sensilla ampullacea short and asymmetric, present on all flagellomeres; males with scattered setae (Fig. 10). Antenna with discoid anelli. Mandibles with two large teeth at apex (Fig. 6). Clypeus delimited (Fig. 6). Malar sulcus absent. Frontal suture absent. Antennal scrobes as narrow and distinct grooves. Occipital margin with a sharp edge; occiput without median groove or fold above occipital foramen.

Pronotum reduced, not visible in dorsal view. Midlobe of mesoscutum with two pairs of setae, notauli not visible. Scutellum with one pair of setae. Transepimeral sulcus strongly curved (Fig. 4); lower mesepimeron strongly reticulate. Fore wing rounded; costal cell narrow, as wide as base of submarginal vein; postmarginal vein 1.0–1.2× as long as stigmal vein; speculum open below; radial cell hairy; without stigmal hair lines. Hind tibial spur stout, 5× as long as width at base. Propodeum with plicae and medially with a strong median carina, carina reticulate and with reticulate grooves laterad to median carina (Figs 1, 2, 7), and with a nucha; propodeal callus with two setae.

Gastral tergites reticulate with posterior margin more or less smooth (Fig. 3). Male phallobase similar to the majority of entedonines (Fig. 12): parameres not drawn out and not distinguishable from remaining sclerites in the phallobase, parameral setae absent; volsellar setae as thin "normal" setae, i.e. not enlarged; digitus as long as wide, with two equally large spines. Male gaster with a large subgenital plate, surface of plate strongly reticulate (Fig. 11).

Hosts. One of the species has been reared from galls of an unknown gall midge (Diptera: Cecidomyiidae) on *Serjania mexicana* (L.) (Sapindaceae).

Distribution. The Neotropical Region (Costa Rica).

Remarks. The gender of this new genus is neuter.

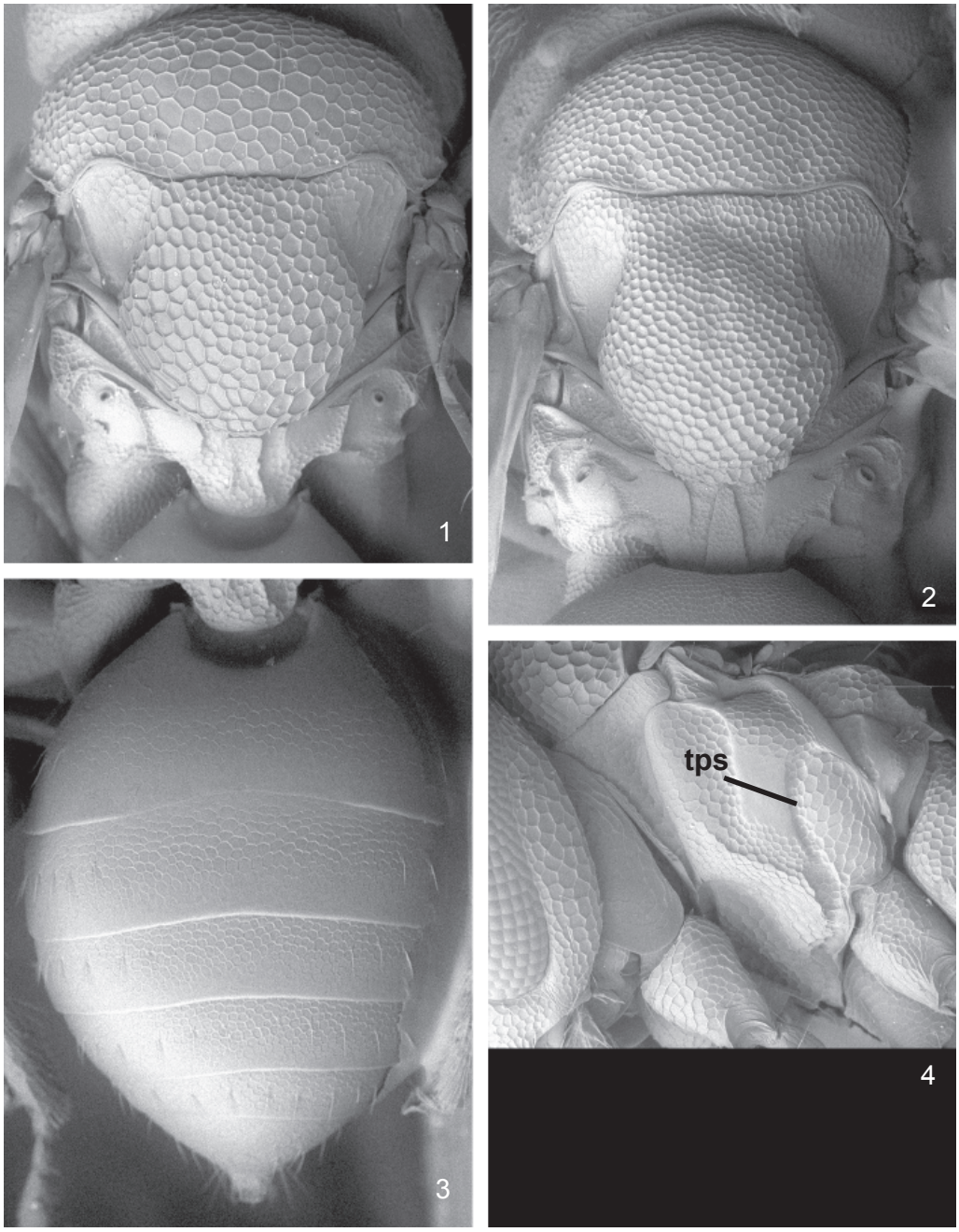
Discussion. *Klyngon* gen. nov. belongs in subfamily Entedoninae. The five-segmented antennal flagellum, the submarginal vein with two strong setae, the break between submarginal and marginal veins, the two pairs of setae on midlobe of mesoscutum, the single pair of setae on scutellum, confirm such a placement. However, it is an odd genus with diagnostic features combined from different groups. For example the head in frontal view (Fig. 5) strongly resembles that of many pteromalids and some tetrastichines, mainly due to the lack of frontal suture; the delimited clypeus and strongly reduced pronotum are also found in the genus *Omphale* Haliday, 1833 and related genera (Hansson 2004) and in some genera in the tribe Euderomphalini (Hansson & LaSalle 2003); the structure of the propodeum, i.e. the strong plicae, the strong median carina with reticulate grooves lateral to the median carina, and the produced nucha resembles the propodeum in *Paracrias* Ashmead, 1904 (Hansson 2002) and *Horismenus* Walker, 1843, and in some species of *Pediobius* Walker, 1846 (Hansson 2002).

***Klyngon jimenezi* sp. nov.**

(Figs 1, 3–5, 7, 9–12)

Type material. Holotype female labeled "Costa Rica: Guanacaste, Hojancha, ACT, Reserva Forestal Monte Alto, camino-albergue, 500 m, 25.vii.2001, I. Jiménez, LN 221650/382750, en agallas de Serjania mexicana" (INBio). Paratypes: 4 females 7 males with same label data as holotype (BMNH, CH, INBio, MIUCR); 1 female "Costa Rica: Guanacaste, Bagaces, Parque Nacional Palo Verde, Sct Palo Verde, 40 m, 8–17.ii.2001, I. Jiménez, LN 388400/259050, #61364" (USNM); 1 female "Costa Rica: Alajuela, Parque Nacional Arenal, La Peninsula, 10º27'N, 84º45'W, 600 m, 25.ii.2003, J.S. Noyes" (BMNH); 1 female "Costa Rica; Limón, Valle La Estrella, 100 m, 8.iv–15.v.1994, G. Carballo, LN 184600/643300, #3146" (INBio); 1 female from same locality as previous but collected 17.vii.2000 (CH).

Diagnosis. Female flagellum with a two-segmented clava (Fig. 9), male with all five flagellomeres distinctly separated (Fig. 10); malar space narrow, 0.1× as wide of height of eye in female, 0.3× in male; reticulation on thoracic dorsum with comparatively larger meshes (Fig. 1) (as compared to *Klyngon bouceki* sp. nov.); fore wing with a complete infuscate band medially.



Figs 1–4. *Klyngon jimenezi* gen. et sp. nov., thoracic dorsum, female paratype (1). *K. bouceki* gen. et sp. nov., thoracic dorsum, female holotype (2). *K. jimenezi* gen. et sp. nov., gaster, dorsal, female paratype (3). *K. jimenezi* gen. et sp. nov., mesosoma, lateral, female holotype (tps, transepimeral sulcus) (4).

DESCRIPTION. Length female 1.4–1.6 mm, male 1.0–1.3 mm.

Scape yellowish-brown, remainder of antenna dark brown. Frons and vertex weak metallic bluish-green. Mesoscutum weak golden with some parts weak metallic bluish-green, to completely weak golden. Scutellum with posterior 2/3 weak golden and anterior 1/3 weak metallic bluish-green, to completely weak golden. Propodeum weak golden. Coxae weak metallic bluish-green; femora and tibiae dark brown with metallic tinges; tarsal segments 1–3 white, segment 4 dark brown. Fore wing with median 1/5 infuscate from marginal vein to posterior margin of wing. Gaster with 1st tergite weak metallic bluish-green, remaining tergites weak golden-purple.

Antennae as in Figs 9, 10. Frons and vertex with strong reticulation. Occipital margin with a sharp edge. Eyes bare. Ratios of: height of eye/malar space/width of mouth opening female 8.8/1.0/4.4, male 3.2/1.0/2.0; distances between posterior ocelli/between posterior ocellus and eye/between posterior ocelli and occipital margin 4.3/2.0/1.0; width of head/width of thorax across shoulders 1.2.

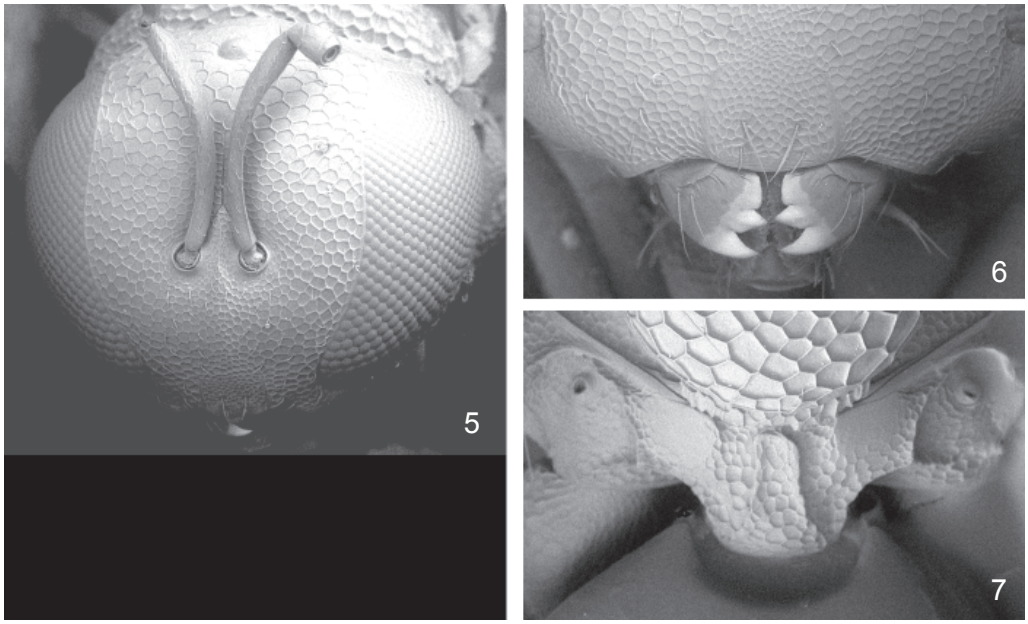
Mesoscutum and scutellum with strong reticulation. Dorsellum strongly reticulate. Fore wing speculum open below. Propodeum as in Fig. 7; propodeal callus with two setae. Ratios of: length of fore wing/length of marginal vein/height of fore wing 1.7/1.0/1.0; length of postmarginal vein/length of stigmal vein 1.0.

Petiole about as long as wide in both sexes, with strong irregular sculpture. Female gaster ovate; tergites in both sexes reticulate with posterior margin smooth (Fig. 3). Ratio length of mesosoma/length of gaster female 0.9–1.0, male 1.0.

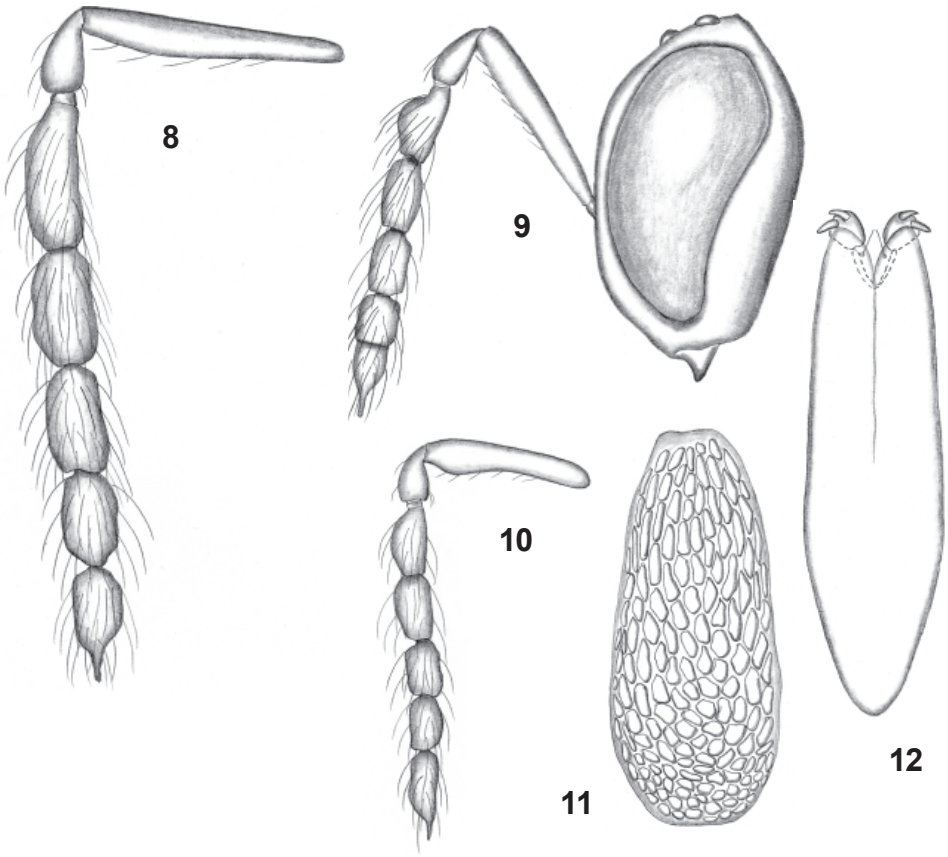
BIOLOGY. Reared from Cecidomyiidae (species unknown) galls on *Serjania mexicana* (Sapindaceae).

DISTRIBUTION. Costa Rica.

ETYMOLOGY. Named after the collector of the type series, Iván Jiménez, formerly a Hymenoptera parataxonomist at INBio.



Figs 5–7. *Klyngon jimenezi* gen. et sp. nov., head, frontal, female paratype (5). *K. bouceki* gen. et sp. nov., lower part of head incl. clypeus, female paratype (6). *K. jimenezi* gen. et sp. nov., propodeum, female paratype (7).



Figs. 8–12. *Klyngon bouceki* gen. et sp. nov., antenna, female (8). *K. jimenezi* gen. et sp. nov., head and antenna, lateral, female (9). *K. jimenezi* gen. et sp. nov., antenna, male (10). *K. jimenezi* gen. et sp. nov., subgenital plate, male (11). *K. jimenezi* gen. et sp. nov., phallobase, male (12).

***Klyngon bouceki* sp. nov.**
(Figs 2, 6, 8)

Type material. Holotype female labeled "Costa Rica: Alajuela, San Carlos, Parque Nacional Arenal, Sendero Pilón, 650 m, 5.ix–7.x.2000, G. Carballo, LN 269200/458050, #59234" (INBio). Paratypes: following from same locality as holotype but collected 9.iii–7.iv.2000 (1 female, BMNH), 15.iii–5.iv.2001 (1 female, USNM); 1 female "Costa Rica: Guanacaste, Estación Pitilla, 9 km S. Santa Cecilia, 700 m, i.1995, P. Rios, LN 329950/380450, #4498 (CH).

Diagnosis. Female with all five flagellomeres distinctly separated (Fig. 8); malar space wide, 0.4× as wide as height of eye in female; reticulation on thoracic dorsum with comparatively smaller meshes (Fig. 2) (as compared to *Klyngdon jimenezi* sp.nov.); fore wing hyaline.
Description (female). Length of body 1.4–1.6 mm.

Scape yellowish-brown, remainder of antenna dark brown. Frons and vertex weak metallic bluish-green. Mesoscutum weak golden-purple with some parts weak metallic bluish-green, to completely weak golden-purple. Scutellum with posterior 2/3 weak golden-purple and anterior 1/3 weak metallic bluish-green, to completely weak golden-purple. Propodeum weak golden-purplish. Coxae, femora and tibiae weak metallic bluish-green; tarsal segments 1–3 yellowish-brown, segment 4 dark brown. Wings hyaline. Petiole dark. Gaster with 1st tergite weak metallic bluish-green, remaining tergites weak golden-purple.

Antenna as in Fig. 8. Frons and vertex with strong reticulation. Occipital margin with a sharp edge. Eyes bare. Ratios of: height of eye/malar space/width of mouth opening 2.5/1.0/1.9; distances between posterior ocelli/between posterior ocellus and eye/between posterior ocelli and occipital margin 3.3/2.1/1.0; width of head/width of thorax across shoulders 1.2.

Mesoscutum and scutellum with strong reticulation. Dorsellum with strong reticulation. Fore wing speculum open below. Propodeum as in Fig. 2; propodeal callus with two setae. Ratios of: length of fore wing/length of marginal vein/height of fore wing 1.8/1.0/1.0; length of postmarginal vein/length of stigmal vein 1.2.

Petiole about as long as wide, with strong irregular sculpture. Gaster ovate. Ratio length of mesosoma/length of gaster 0.9.

Male. Unknown.

Biology. Unknown.

Distribution. Costa Rica.

Etymology. Named after Zdeněk Bouček, grand old man of chalcidology, and the subject of this celebratory volume of *Acta Societatis Zoologicae Bohemicae*.

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