

## *Guajirolus*, a New Genus of Neotropical Baetidae (Ephemeroptera)

R. W. FLOWERS



FLOWERS, R. W.: *Guajirolus*, a new genus of Neotropical Baetidae (Ephemeroptera)

Studies on Neotropical Fauna and Environment 20 (1985): pp. 27-31.

A new genus and species of Baetidae, *Guajirolus ektrapelogglossa*, is described based on nymphs and adults collected in Colombia and Panama. *Guajirolus* has also been reported from the Peruvian Amazon.

R. W. Flowers, Entomology and Structural Pest Control, Florida, A & M University, Tallahassee, Florida 32307, USA.

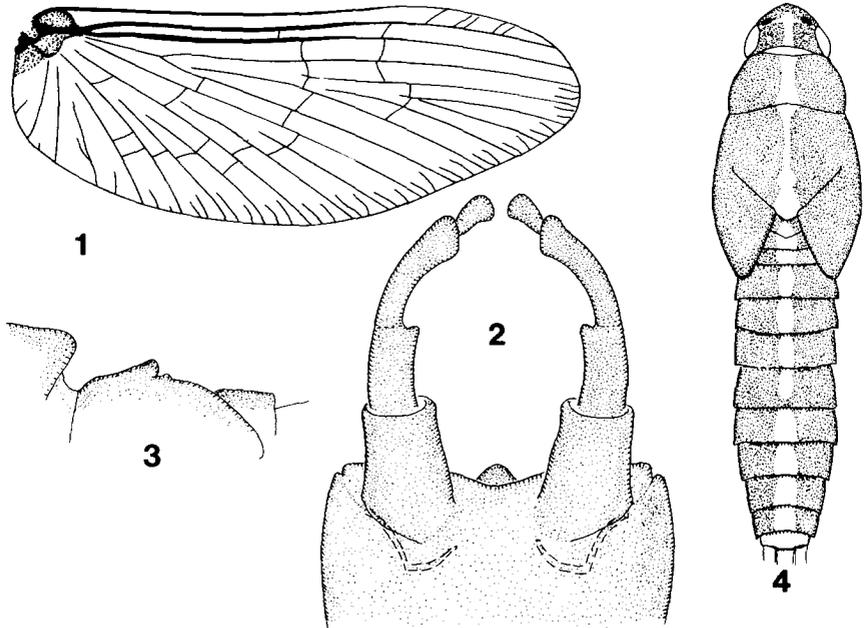
Roback (1966) illustrated the mouthparts of a remarkable baetid nymph collected in the Peruvian Amazon. Specimens, which he designated "Genus 3 nr. *Pseudocloeon*", were found in the Tulumayo River. In 1977, I collected similar nymphs from 4 localities in Panama and in 1981 Dr. Gabriel Roldan collected one nymph in northern Colombia. Study of some adult mayflies light-trapped at one of the Panama localities permits the association of male and female imagos with the nymphs on the basis of color patterns. Although the adult is a rather typical "*Pseudocloeon*-like" baetid, the nymph possesses a number of striking morphological characters which separate it from any other known genus of Baetidae.

### ***Guajirolus***, new genus

"Genus 3 nr. *Pseudocloeon*" of Roback, 1966

Imago. Length of male: body, 4.9-5.4 mm; fore wings, 5.5-5.7 mm. Length of female: body, 5.1-5.8 mm; fore wings, 4.5-4.8 mm. Turbinate eyes of male oval, on low stalk; height of stalk  $\frac{1}{2}$  eye diameter. Leg I of male with tibia twice length of femur, tarsus  $\frac{3}{4}$  length of tibia; tarsus with 4 segments decreasing in length distally. Legs II and III with tibiae twice as long as femora; tarsi  $\frac{1}{4}$  as long as tibiae; tarsal segments 1 (fused to tibia), 2 and 4 subequal and longer than segment 3. Fore wing (Fig. 1) with paired marginal intercalaries; hind wing lacking. Metanotum with metascutellar hump as in Fig. 3. Male genitalia as in Fig. 2.

Mature nymph. Length of body 3.6-5.3 mm. Cerci  $\frac{4}{5}$  length of body; terminal filament  $\frac{2}{3}$  length of cerci. Mouthparts: Labrum (Fig. 5) with heavy curved setae on ventral surface at anterior margin, upper surface depressed along

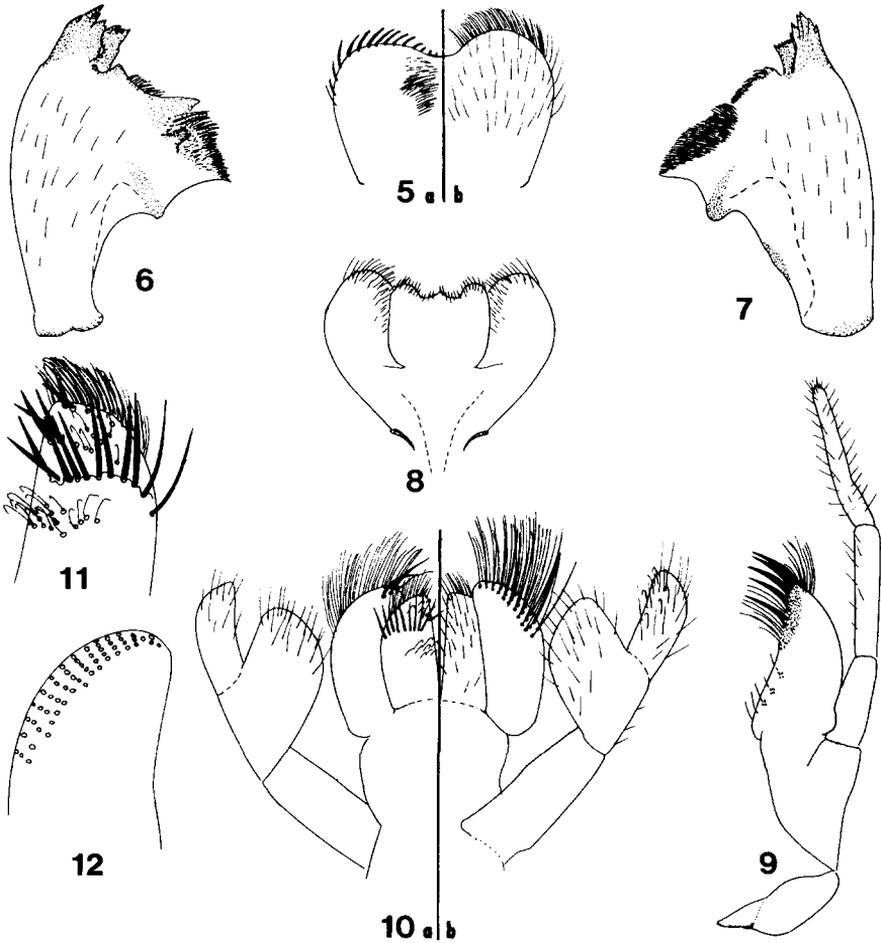


Figs. 1-4. *Guajirolus ekstrapeloglossa*: Figs. 1-3, imago: 1, fore wing; 2, male genitalia, ventral; 3, metathorax, dorsal edge. Fig. 4, nymph.

midline. Mandibles bent posteriorly in apical third, left mandible with a large tooth on ventral surface of molar region (Figs. 6, 7). Maxilla (Fig. 9) with five large spine-like setae on galea-lacinia, apical segment of palpi slightly bent. Hypopharynx as in Fig. 8. Labium (Figs. 10-12) with second segment of palpi greatly enlarged mesally, dorsal surface of glossae with large spine-like setae (Fig. 11). Legs: fore femur with a row of evenly spaced short spine-like setae on dorsal edge and a second row just below on the anterior surface. Middle and hind legs (Fig. 13) with femoral setae restricted to apical third of dorsal edge. Claw (Fig. 14), with a row of small denticles and a large subapical tooth. Abdomen with gills on segments 1 or 2-7. Gill (Figs. 15-16) with serrate margins and fine setae on gill surface. Paraproct as in (Fig. 17). Cerci banded, a fringe of long fine setae on basal 2/3 of inner margin. Terminal filament with long fine setae laterally for 4/5 its length.

**Etymology.** Guajirolus, an Indian tribe in northern Colombia; - olus, L., dim., Masculine.

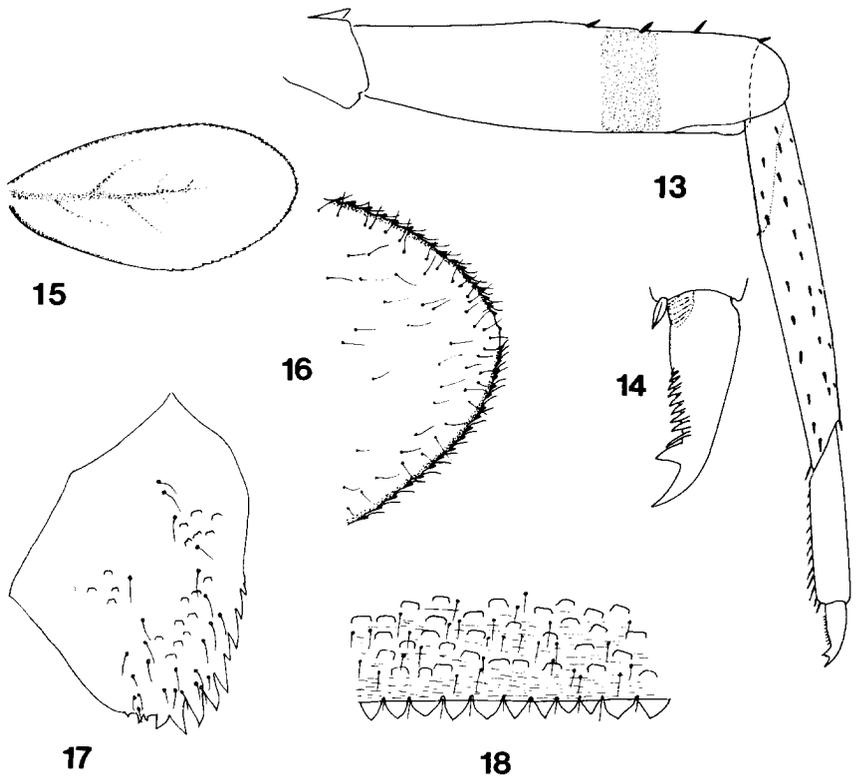
**Type-species.** *Guajirolus ekstrapeloglossa*, sp.n.



Figs. 5-12. *Guajirolus ekstrapeloglossa*, mouthparts of nymph: 5, labrum (a-ventral, b-dorsal); 6, left mandible; 7, right mandible; 8, hypopharynx; 9, maxilla; 10; labium (a-dorsal, b-ventral); 11, glossa of labium, dorsal; 12, paraglossa of labium, ventral with setae removed.

***Guajirolus ekstrapeloglossa* sp. n.**

Male Imago. Length 4.9-5.4 mm. Head orange-tan, antennae white. Eyes: dorsal part of turbinate eyes dark orange-brown, ventral part black. Stalk of turbinate eyes dark brown, bases of ocelli black. Thorax orange-brown, washed with dark brown at rear margin of prothorax and on mesothorax anterior to wing base. Mesoscutellum pale yellow. Legs yellowish-white. Wings hyaline,



Figs. 13-18. *Guajirolus ektrapeloglossa*, nymph: 13, mesothoracic leg; 14, enlargement of mesothoracic claw; 15, gill; 16, apex of gill, enlarged; 17, paraprot; 18, apical edge of abdominal tergum 7.

stained with light brown at base. Abdomen orange-tan, lateral tracheal trunks dark grey. Genitalia tan, forceps becoming pale yellow apically. Cerci yellowish-white.

Female Imago. Length, 5.1-5.8 mm. Head yellowish-tan, eyes black. Antennae pale yellowish-tan. Thorax yellowish-brown, washed with brown as in male imago. Abdomen yellowish-brown with dark tracheae as in male imago. Cerci pale yellow.

Mature Nymph (Fig. 4). Length: body 4.2-5.3 mm; cerci 2.0-2.6 mm. Head brown, a median yellow line from clypeus to occipital margin and another horizontally between compound eyes. Two yellow submedian spots on vertex. Antennae yellow. Thorax brown; a median yellow spot on anterior margin of mesonotum and an elongate yellow spot at midline of posterior margin between wing pads. Metanotum brown with a median yellow band. Legs yellow; femora with a light brown band on apical third. Abdomen brown; terga with

median yellow bands which sometimes do not reach posterior margin. Grey tracheal trunks visible laterally. Tergum 10 yellow. Gills on segments 2-7 only; white, trachea grey. Tergal hind margins with broad denticles (Fig. 18). Caudal filaments yellow, a pale brown band on basal third; cerci with a second pale brown band just beyond the setae.

Holotype: Mature ♂ nymph; PANAMA: Chiriqui Province, Rio Chiriqui, E. of Caldera at power station, 1100' (335 m). 17-XII-1977. R. W. Flowers. Paratypes 6 imago, 4 imagos, same locality and collector, 19-XII-1977 (at light); 1 mature nymph, same locality and collector, 19-XII-1977; 1 nymph, PANAMA: Chiriqui Province, Rio Cochea, E. of Dolega. 900' (275 m) 20-XII-1977. R. W. Flowers; 1 nymph, PANAMA: Canal Zone (now Colon Province, Soberania National Park), Pipeline Road, Rio Frijoles. 50' (15 m) 24-XII-1977. R. W. Flowers; 1 nymph, COLOMBIA: la Guajira Province, Rancheria R., Cerrejon Sta. 20-III-1981. 11:50 H 24°C, G. Roldan. All specimens are preserved in alcohol. The holotype and 11 paratypes are deposited at Florida A&M University. Three paratypes are deposited at the National Museum of Natural History, Washington.

Etymology. ektrapelo-, G., meaning strange; glossa, meaning tongue; noun in apposition.

Biology. Nymphs were collected from both medium sized rivers and small streams. In Panama, I found them on rocky substrates. Water temperatures ranged from 22-24°C. Gut contents consisted of diatoms, algae cells and plant tissue.

Discussion. Based on color patterns and mouthpart morphology, the Colombian and Panamanian nymphs of *Guajirolus* are conspecific. The Peruvian nymphs are not included in *G. ektrapeloglossa* because they have gills on abdominal segment 1 (Roback 1966) and because of differences in color pattern. The Peruvian species will not be described further until additional specimens become available.

The nymph of *Guajirolus* can be immediately distinguished from all other baetid nymphs by the labial palpi and subapical tooth on the claw. Other unique characters are the shape of the lingua of the hypopharynx, the bend in the apical segment of the maxillary palpi and the spines on the labial glossae. The adults of this genus are much less distinctive and, considering the known range, have probably been identified as *Pseudocloeon* more than once in the past. The genitalia are distinguishable from other described "*Pseudocloeon*" genitalia from the Neotropics by the small projection between the forceps and the strong internal projection of the second segment of the forceps. Until the Neotropical baetid fauna is much better known, I will not attempt any speculations about the relationship of *Guajirolus* to other genera.

#### ACKNOWLEDGEMENTS

I thank Dr. Henk Wolda (Smithsonian Tropical Research Institute), Ing. Cecilio Estribi and Ing. Alberto Olmos (RENARE, MIDA) for their assistance during my collecting in Panama. I also thank Michael D. Hubbard for reading the manuscript. This research was financed by a research program (FLAX 79009) of CSRS, USDA).

#### LITERATURE

ROBACK, S. S. 1966. The Catherwood Foundation Peruvian-Amazon Expedition. VI- Ephemeroptera Nymphs. *Monogr. Acad. Nat. Sci. Philadelphia.*, 14: 129-199.