

## A New Species of *Hermanella* (Ephemeroptera: Leptophlebiidae: Atalophlebiinae) from Southeastern Brazil

by

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A new species of *Hermanella* (*Guayakia*), *H. froehlichi* is described from Brazil, based on imagines and nymphs. Diagnostic morphological characters of both nymphs and imagines are illustrated.

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### INTRODUCTION

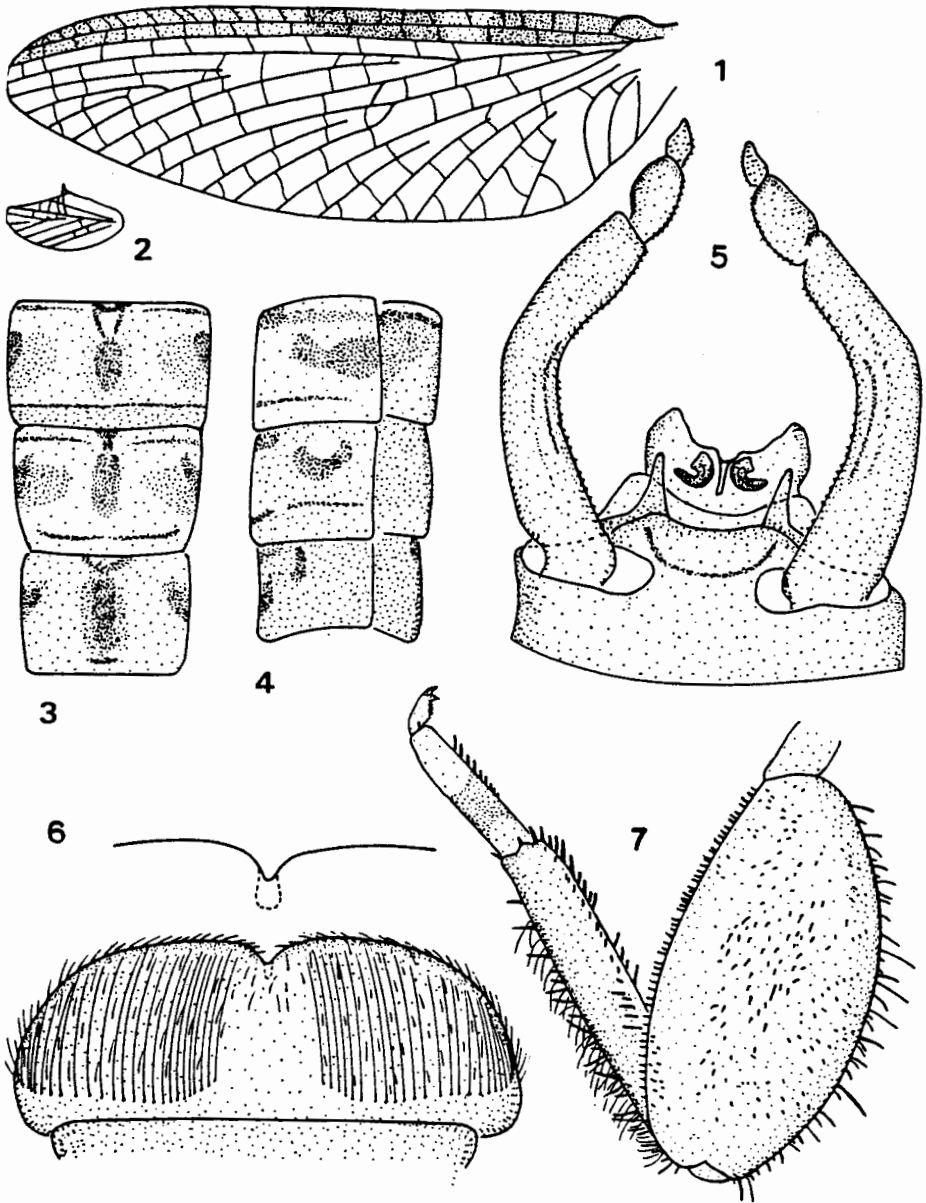
The genus *Hermanella* was established by Needham and Murphy (1942) based on nymphs from northeastern Argentina. Dominguez and Flowers (1989) revised *Hermanella*, described the adult of the type species and established two new subgenera. We are describing a new species based on nymphs and adults and assigning the new species to the subgenus *Hermanella* (*Guayakia*). The abbreviations used for deposition of types are: Instituto - Fundación Miguel Lillo (IFML); Instituto Nacional de Pesquisas da Amazônia (INPA); Florida A and M University (FAMU), and Universidade de São Paulo (USP).

#### *Hermanella* (*Guayakia*) *froehlichi*, sp. n. (Figs. 1-7)

*Male imago* (In alcohol). Length (mm): body, 8.2-9.2; fore wings, 8.2-8.7; hind wings, 1.4-1.5. General coloration light orange-brown; wings (Figs. 1-2) hyaline, C and Sc area tinged with light orange-brown.

*Head*: light orange. Upper portion of eyes light orange, lower portion black. Basal 1/3 of ocelli black, median ring light brown, apical 1/3 white. Lateral ocelli twice diameter of median one. Antennae: scape and pedicel light orange, flagellum yellowish washed with gray.

*Thorax*: pronotum light orange with median and paramedian lines and posterior and lateral margins black; mesonotum bright yellow, carinae, sutures and



Figs. 1-7. *Hermanella (Guayakia) froehlichii*. Male imago: 1, fore wing; 2, hind wing; 5, genitalia, ventral. Nymph: 3-4, terga and lateral view of segments 5-7; 6, labrum, with detail of anteromedian emargination; 7, foreleg.

apex of scutellum II darker; metanotum light brown; pleura and sterna yellowish irregularly washed with black especially close to articulation of coxae. Fore wings (Fig. 1) membrane hyaline; costal and subcostal areas light orange-brown, lighter apically. Longitudinal veins light brown, cross veins dark brown. Hind wings (Fig. 2) with costal projection well developed, acute, located slightly more than 1/2 distance from base to apex; vein MP unforked; apex of wings acutely rounded; vein Sc slightly more than 1/2 maximum length of hind wings. Legs: yellow-orange, tarsi yellowish, coxae washed with black; femora I with spot on basal 1/3, apex of tibiae darker. Claws orangish. *Abdomen* (Figs. 3-4): terga and sterna light orange-brown, black stripe on medial line of terga, segments I-IV heavily washed with black, remainder of segments lighter. *Genitalia* (Fig. 5): subgenital plate orange-brown, forceps segments light brown, penis lobes yellowish, spine-like projections grayish-brown. Caudal filaments light yellow, basal articulation darker.

*Female imago*. In alcohol. Length (mm): body, 6.8-8.4; fore wings, 8.5-9.2; hind wings, 1.0-1.4. Similar to male imago except as follows: head grayish-white, eyes black; abdomen light orange.

*Mature nymphs* (In alcohol). Body length: 4.0-5.6 mm. General coloration orange-brown. *Head*: orange-brown. Upper portion of male eyes reddish-brown, lower portion black. Eyes of female black. *Antennae*: scape and pedicel grayish, flagellum yellowish. *Mouthparts*: yellow-brown, except central area of mandibles, galea-lacinia of maxillae, hypopharynx and labium yellowish, and median parts of superlinguae, labial palpi and submentum grayish; labrum (Fig. 6) with a broad V-shaped median emargination. *Thorax*: terga orange-brown irregularly washed with black, pleura and sterna light brown. *Legs* (Fig. 7): light brown, coxae, femora II-III and apex of femora I, basal and subapical bands on tibiae and basal band on tarsi grayish. *Abdomen*: terga brownish, sterna yellowish darker posteriorly, pattern as in male imago. *Gills*: blackish with base and apex whitish. Caudal filaments light brown, lighter apically.

*Etymology*: *froehlich*, dedicated to Dr. C.G. Froehlich, specialist in Plecoptera.

*Variations*: The abdominal color pattern in one the female paratypes is darker than in the Holotype, and in some nymphs and imagines the general coloration is slightly lighter than in the holotype.

*Discussion*: The adults of this species clearly fit in the subgenus *Hermanella* (*Guayakia*); however, the numerous long setae on the outer margins of tibiae II and III of the nymphs do not agree with published diagnostic characters of either subgenus, *Hermanella* (*Guayakia*) having no such setae, and *Hermanella* s.s. having only few scattered setae on all tibiae.

This species can be distinguished from other species of the genus by the

following combination of characters. In the imago: 1) wing length: male imago, 8.2-8.7 mm; female imago, 8.5-9.2 mm; 2) costal and subcostal areas (Fig. 1) of fore wings tinged with orange-brown; 3) abdominal color patterns as in Figs. 3-4; 4) spines on penes (Fig. 5) narrow and strongly curved. In the nymphs: 1) gills blackish with base and apex whitish; 2) legs II and III with numerous long setae on outer margin of tibiae.

*Biology:* The imagines and subimagines were collected at Córrego do Pedregulho at a light trap just at dusk. No nuptial flight was observed. Nymphs were collected on and under medium size rocks.

*Type specimens* (in alcohol). Association of the nymph and imago is by the color markings on the abdomen on specimens from the same locality. Holotype male imago: BRAZIL, São Paulo, Pedregulho, Córrego do Pedregulho, VII/1989; M.J.N. Ferreira, C.G. Froehlich coll.; Allotype female imago, same data as holotype. Paratypes: same data as holotype, except date of collection: 9 male imagines (X/1989), 40 female imagines (XI/1989), 60 nymphs (VII/1989). Holotype, allotype, 2 males, 10 females, 15 nymphal paratypes are deposited at USP; 2 males, 10 females and 15 nymphal paratypes at IFML; 2 males, 10 females and 15 nymphal paratypes at INPA; and 3 males, 10 females and 15 nymphal paratypes at FAMU.

## ACKNOWLEDGEMENTS

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