



The nymph of *Tortopus harrisi* Traver (Ephemeroptera: Polymitarcyidae)

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Polymitarcyidae is a family of burrowing mayflies (Ephemeroptera: Ephemeroidea) distributed throughout the world but with highest diversity in the Neotropics. *Tortopus* Needham & Murphy, with a Panamerican distribution, is known from twelve species described in the adult stage. Nymphs are only known for three species: *T. puella* (Pictet), *T. obscuripennis* Domínguez and *T. sarae* Domínguez, and present a rather homogeneous morphology (Molineri 2008). They were firstly described for *T. puella* by Scott *et al.* (1959) and later Molineri (2008) described the other two. Both studies reported that these species burrow U-shaped tunnels in clay banks of rivers and streams, thus preventing them from being sampled in most limnological studies (that use surbers, drags, or drift nets).

The aim of the present contribution is to describe and illustrate the previously unknown nymph of *Tortopus harrisi* Traver that shows important anatomical differences with the other nymphs known in the genus. This morphological differentiation suggests a different habitat use by these nymphs, sampled with drag and surber samplers in sandy substrate. New locality records are given for *T. harrisi* in Brazil.

The nymphs are preserved in alcohol, mouthparts, legs and genital rudiments were mounted in microscope slides with Canada Balsam. Drawings were made with a camera lucida attached to a stereo microscope. The material is deposited in CUIC (Cornell University Insect Collection, Ithaca, NY), IML (Instituto Miguel Lillo, Tucumán) and in MZSP (Museu de Zoologia da Universidade de São Paulo, São Paulo). Catalogs and bibliography were consulted at Ephemeroptera Galactica (Hubbard 2009).

Tortopus harrisi Traver

T. harrisi Traver 1950: 604; Domínguez 1985: 69; Domínguez *et al.* 2006: 585.

Material examined: holotype male imago (CUIC slides No. 3031) from: Brazil, Mato Grosso, 23-XII-19, R.G. Harris col. New material: 1 nymph (IML) from Brazil, Mato Grosso do Sul, Dois Irmãos river, Dois Irmãos do Buriti, 20°31'53"S, 55°34'37"W, drag, 15-IX-2006, D. S. Barbosa & D. Fassini; and 1 nymph (MZSP) same data except river Miranda, Jardim, 21°28'56"S, 56°07'13"W), surber sampler, 10-I-2006.

Mature nymph. Length. Male: body, 12.0–13.0 mm; cerci, 10.0–11.0 mm; caudal filament, 4.0 mm. Head with two large submedian oval tufts of short setae anterior to lateral ocelli (t in Fig. 1); frontal ridge relatively straight in dorsal view (Fig. 1); fronto-clipeal region straight not surpassing mandibular tusks ventrally (arrows in Figs. 1–2); mandibular tusks straight (Figs. 1–2), with very few setae dorsally, mainly restricted to a subdistal group of seven rigid setae (Figs. 6–7); inner margin with two large tubercles (subdistal and submedian, Figs. 6–7); maxillae with a relatively large ventral gill (g in Fig. 8). Thorax. Pronotum with narrow anterior ring (0.25–0.26 of total length of pronotum); antero-lateral corners acutely projected. Legs. Foreleg with tibia-tarsus strongly flattened with a small dorso-distal projection (0.35–0.40 of total length of claw) (Fig. 12), ventral surface with two long U-shaped rows of filtering setae; fore femur with anterobasal short U-shaped row of filtering setae and an immediately posterior small group of simple setae. Middle leg with long setae on anterior and posterior (functionally ventral and dorsal, respectively) margins of femur, anterior margin of tibia and tarsus; apical third of tibia and tarsus completely covered with strong setae, apex of tibia with a brush of thick setae ventrally. Hind leg with short strong setae on posterior margin, and transverse subdistal row of short setae on dorsal surface; hind tibia and tarsus with long setae on posterior margin, anterior margin covered with short and strong setae. All tarsal claws slender and curved, without denticles. Abdomen. Gill I single, small and elongated (Fig. 9), remaining