

DESCRIPTION OF THE NYMPH OF *ULMERITUS (U.) SAOPAULENSIS*
(TRAVER, 1946) FROM SOUTHEASTERN BRAZIL
(EPHEMEROPTERA, LEPTOPHLEBIIDAE, ATALOPHLEBIINAE)

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ABSTRACT. The ultimate instar nymph of *Ulmeritus (U.) saopaulensis* is for the first time described and figured, based on reared specimens from Minas Gerais State, Brazil. Notes on its biology and relationship with other species with nymphs known are added.

KEYWORDS. ATALOPHLEBIINAE; BRAZIL; LEPTOPHLEBIIDAE; NYMPH; *ULMERITUS SAOPAULENSIS*.

The neotropical mayfly genus *Ulmeritus* Traver, 1956 includes nine described species, four of which occur in Brazil (HUBBARD, 1982). TRAVER (1959) split the genus into three subgenera: *Ulmeritus* s.s., *Pseudoulmeritus* and *Ulmeritoides*. Only the nymph of the type-species *Ulmeritus (U.) carbonelli* Traver, 1956 was known (TRAVER, 1956).

DEMOULIN (1955), under the heading of "*Homothraulius* sp.", described and figured nymphs which share many morphological characters with *Ulmeritus* (TRAVER, 1956). TRAVER (1960) and HUBBARD & PETERS (1981) asserted that Demoulin's nymph is not *Homothraulius*, and TRAVER & EDMUNDS (1967) considered it an "*Ulmeritus*-like nymph".

In the present paper, the last instar nymph of *Ulmeritus (U.) saopaulensis* is described from Minas Gerais, southeastern Brazil. This species was originally described based on adults from São Paulo and Minas Gerais (TRAVER, 1946). Nymphs were identified by rearing some of them to adult stage.

***Ulmeritus (U.) saopaulensis* (Traver, 1946)**

(Figs. 1-8)

Mature nymph (in alcohol). General colouration brown. Head and body somewhat depressed.

Head as wide as abdomen. Head capsule narrowed anteriorly. Ocelli white, with inner margins black. Eyes black. A dark brown transverse band behind ocelli. Antenna 1 1/2 times as long as head. Labrum and clypeus half as broad as head. Labrum covered with thin setae, mainly on dorsal side; anteromedian emargination without median denticle. Mandibles asymmetrical, with a row of bristles on outer margin, molar surface darker; incisors of right mandible with 2 and 3 apical teeth, respectively, both incisors of left mandible with 3 apical teeth; prostheca of left mandible reduced, piliform. Maxilla with a row of bristles on inner and distal margins; a sharp spine present on inner distal angle of galea-lacinial region; maxillary palp 3-jointed, basal

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and middle joints subequal in length, distal joint smaller and heavily setose. Superlingua of hypopharynx slightly curved apically, with long setae along anterior margin. Labium broad; inner margin of paraglossa rounded; labial palp 3-jointed, middle joint with 4 apical thick setae, distal joint reduced.

Thorax brown; median line pale brown. Pronotum as wide as head, with a dark brown lateral spot near anterior margin; prosternum reduced, forecoxae approximated. Mesonotum with a dark brown spot on antero-lateral angles. Legs brown, slightly darker along lateral margins and near tips of femora and tibiae; black spots on apex of femora; a ventral brown spot on forefemur; tibia and tarsus of prothoracic leg dark brown. Forewing pads extending to the third abdominal segment. Apex of claws hooked, denticles progressively larger apically.

Abdomen uniformly brown. Gills dark grey, bilamellate with deeply fringed margins, present on segments 1-7; last pair smallest. Posterolateral spines present on segments 3-9, more developed on segments 5-9. Tergites with a row of small teeth on the posterior margin; segments 8-9 with a lateral row of 9-12 spines, and some others irregularly distributed. Sternites with a median dark brown spot. Median filament longer than cerci.

Measurements (in mm). Body length, 9.2 - 10.4; length of prothoracic leg, 4.9 (femur, 2.1; tibia, 1.9; tarsus, 0.6; claw, 0.3); mesothoracic leg, 4.9 (femur, 2.2; tibia, 1.8; tarsus, 0.6; claw, 0.3); metathoracic leg, 5.6 (femur, 2.4; tibia, 2.1; tarsus, 0.8; claw, 0.3); cercus, *ca.* 14.0; median filament, *ca.* 18.0.

Material. BRAZIL, Minas Gerais, Tiradentes, Serra de São José, 860-900 m, 1 ultimate stage ♀ nymph and 3 ♂ exuviae, 24.III.1978 (adults emerged on 28.III.1978), S.M. Pereira leg., deposited in the *Departamento de Entomologia, Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.*

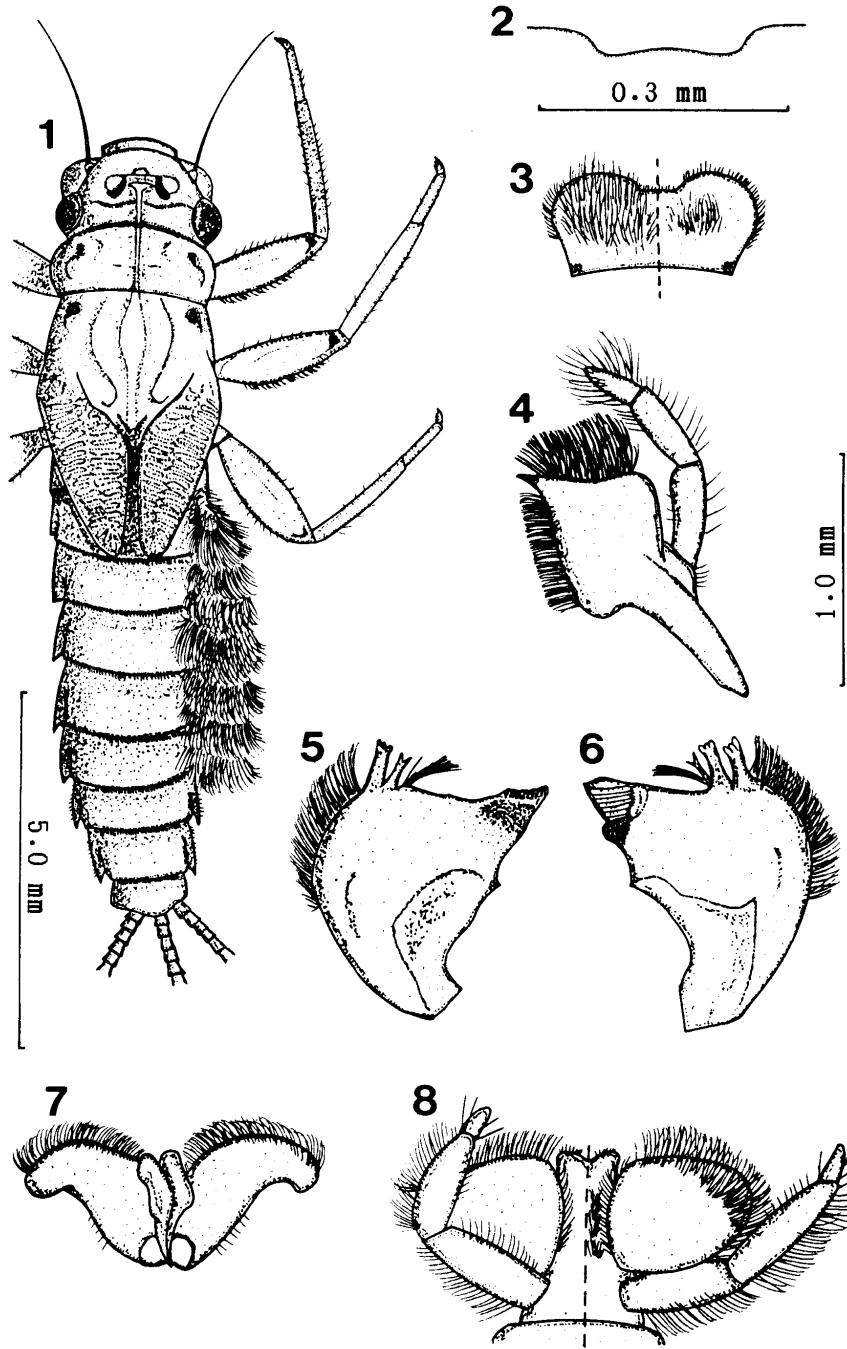
Biology. Nymphs of *U. saopaulensis* were collected in a marsh area with fine sediments and emergent macrophytes, near the *Rio das Mortes*, at *Serra de São José*, Tiradentes, Minas Gerais State. The elevation of the marsh sites sampled ranged between 860 and 900 m. The mayfly faunal components are typically lentic and semi-lentic forms, such as the genera *Asthenopus* Eaton, 1871, *Campsurus* Eaton, 1868 (Polymitarcyidae), *Caenis* Stephens, 1835 (Caenidae) and *Callibaetis* Eaton, 1881 (Baetidae).

Nymphs of *Ulmeritus* are not usual habitants of lentic habitats. EDMUNDS *et al.* (1976) affirmed that this genus occurs mainly in rivers and streams, but they recorded a collection of nymphs from Panama obtained in a pool.

Three nymphs of *U. saopaulensis* were reared in laboratory until emergence. The subimagines emerged between 7:00 PM and 7:30 PM, corroborating the information that Brazilian *Ulmeritus* fly after dark (EDMUNDS *et al.*, 1976).

DISCUSSION

In the nymphal stage, *U. saopaulensis* can be distinguished from *U. carbonelli* by the following characters: body colour pattern; greater relative width of head capsule at apical margin; head as broad as abdomen (Fig. 1); anteromedian emargination of labrum without median denticle (Fig. 2); distal joint of maxillary palp small (Fig. 4); and posterolateral spines present on abdominal segments 3-9 (Fig. 1).



Figs. 1-8. *Ulmeritus (U.) saopaulensis*, ultimate instar female nymph; 1, general aspect (dorsal view, left gills omitted); 2, anteromedian emargination of labrum; 3, labrum (right, dorsal view; left, ventral view); 4, left maxilla (ventral view); 5, right mandible (ventral view); 6, left mandible (ventral view); 7, hypopharynx (ventral view); 8, labium (right, dorsal view; left, ventral view). Figs. 3-8 in same scale.

Nymphs of *U. saopaulensis* resemble those described as "*Homothraulius* sp." by DEMOULIN (1955) in the general shape of body, but differ in lacking the single spine at center of apical depression of labrum (Fig. 2), in possessing a prominent spine at inner apical angle of maxilla (Fig. 4) and in number of abdominal posterolateral spines (Fig. 1). The nymph of *U. saopaulensis* seems to be morphologically intermediate between that of *U. carbonelli* and that figured by Demoulin, considered here as belonging to the genus *Ulmeritus*.

Acknowledgements. The authors wish to express their gratitude to Dr. S.A. Fragoso (*Museu Nacional, UFRJ*), Dr. L.A.P. Gonzaga and Dr. J.L. Nessimian (*Inst. Biologia, UFRJ*) for the critical review of the manuscript. Thanks are extended to Prof. L.B.N. Coelho (*Inst. Biologia, UFRJ*), who helped a great deal with technical advice.

REFERENCES

- DEMOULIN, G. 1955. Une mission biologique belge au Brésil. Éphéméroptères. *Bull. Inst. Roy. Sci. Nat. Belg.* 31(2): 1-32.
- EDMUNDS, G.F., JR.; S.L. JENSEN & L. BERNER. 1976. *The mayflies of North and Central America*. Minneapolis, Univ. Minnesota, X + 330 p.
- HUBBARD, M.D. 1982. Catálogo abreviado de Ephemeroptera da América do Sul. *Papéis Avulsos Zool.* 34(24): 257-282.
- HUBBARD, M.D. & W.L. PETERS. 1981. Ephemeroptera, p. 55-63. In: S.H. HURLBERT, G. RODRÍGUEZ & N.D. SANTOS (eds.) *Aquatic biota of tropical South America. Part I. Arthropoda*, California, Univ. San Diego, XII + 323 p.
- TRAYER, J.R. 1946. Notes on Neotropical mayflies. Part I. Family Baetidae, subfamily Leptophlebiinae. *Revta Ent.* 17(3): 418-436.
- _____. 1956. A new genus of Neotropical mayflies (Ephemeroptera, Leptophlebiidae). *Proc. Ent. Soc. Wash.* 58(1): 1-13.
- _____. 1959. Uruguayan mayflies. Family Leptophlebiidae: Part I. *Revta Soc. Uruguaya Ent.* 3: 1-13.
- _____. 1960. Uruguayan mayflies. Family Leptophlebiidae: Part III. *Revta Soc. Uruguaya Ent.* 4: 73-86.
- TRAYER, J.R. & G.F. EDMUNDS, JR. 1967. Revision of the genus *Thraulodes* (Ephemeroptera: Leptophlebiidae). *Misc. Publ. Entomol. Soc. Am.* 5: 351-395.

Recebido em 23.07.1991; aceito em 29.10.1992.