

**FIRST DESCRIPTION OF LARVAE OF THE ENIGMATIC WATER MITE
FAMILY RHYNCHOHYDRACARIDAE (PARASITENGONA:
HYDRYPHANTOIDEA)**

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The water mite family Rhynchohydracaridae is restricted to the New World, and has its greatest diversity in the Neotropics. This family includes three subfamilies from streams in North and South America. Four species are known from Brazil. The relationship of rhynchohydracarids to other members of Hydryphantoidea are unclear based on adult morphology alone. Here we describe morphology of the larva of *Clathrosperchon minor* Lundblad, which represents the first time that the larva of a rhynchohydracarid has been described. Two females of *C. minor* were collected from streams in the Park of Caverna do Diabo, in Eldorado, São Paulo, Brazil, on 25 January 2012 and kept in plastic containers at room temperature. Only two eggs were laid by just one female and took 20 days to hatch after oviposition. After hatching, larvae were immediately mounted on glass slides using Hoyer's medium and examined using phase contrast microscopy. We examined two larvae for the following description. The body is white in color; the idiosoma is longer than wide, oval and lightly sclerotized; the dorsal plate bears a great number of irregular platelets distributed along almost the whole extent of the idiosoma; in addition, they have a pair of lateral shields full of platelets that extend along almost the whole integument; there are four pairs of propodosomal setae (*vi*, *ve*, *se*, *vi*), a pair of humeral setae (*c3*) and seven pairs of hysterosomal setae (*c1*, *c2*, *d1*, *d2*, *e1*, *e2*, *f1*); setae *h2* and *ps1* are absent and *ps2* are very short, located above the excretory pore; palps have four segments; solenidia of palp tarsi are long and thin; legs I and II bear distal famuli and euphathidia. Although the larva of *C. minor* retains the plesiotypical complement of setae on the segments of the legs, as is found in all known Hydryphantoidea, the number of movable leg segments is five, instead of six, which is a feature typical to more derived superfamilies. Moreover, the coxal plates are enlarged, covering almost the whole ventral surface; an unusual doubled paired urstigmata is found between coxal plates I and II. The excretory plate is absent. The occurrence of both plesiotypical and more derived characteristics in *C. minor* reflects the paraphyletic nature of Hydryphantoidea, and also suggests that the Rhynchohydracaridae may be more closely related to 'advanced' water mites than other hydryphantoid families. Molecular phylogenetic analysis plus examination of more species of this family are needed to test this hypothesis.

Keywords: Hydrachnidiae, taxonomy, morphology, larva, streams.