

DESCRIPTION OF THE NYMPH OF
ENALLAGMA MINUSCULUM
(ODONATA: COENAGRIONIDAE)¹

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ABSTRACT

The nymph of *Enallagma minusculum* Morse is described from reared specimens collected at White Lake, North Carolina. It differs from all other described North American *Enallagma* nymphs in that the gill tips are rounded.

Enallagma minusculum Morse has been recorded from Nova Scotia, New Brunswick and from Maine to Massachusetts and New York (Walker 1953). Cuyler (1968) reported it as abundant in southeastern North Carolina. The nymph heretofore has been undescribed. On 21 May 1974 we collected numerous adults and 17 nymphs from White Lake, Bladen Co., North Carolina. From the 17 nymphs, 6 males and 6 females emerged. The remaining 5 nymphs were preserved. The following description of the last-instar nymph of *Enallagma minusculum* is based on the above material.

DESCRIPTION

General body color in life light green, integument translucent. Head width (maximal across eyes) twice the head length (from base of antenna to posterolateral corner). Antennae slightly longer than head, in life segments 1 and 2 very light brown, remaining segments pale, in preserved nymphs all segments unicolorous. Relative lengths of antennal segments approximately 13:17:25:13:10:15. Eyes very dark and unpatterned. Posterolateral corners of head with 12-16 stout setae. Hinge of retracted labium lies between mesocoxae. Palpal setae usually 5 (one specimen with 7 on one palpal lobe and 5 on the other); premental setae 1-4, but usually 2 or 3. Thorax without dark markings. Femora with 2 subapical light brown bands in life, only 1 apparent in preserved nymphs. Metafemur extends to posterior margin of abdominal segment 4. Wing pads translucent, tips overlying posterior of 4 or anterior of abdominal segment 5. Abdomen cylindrical, twice as long as wing pads. Live nymphs often with a row of dark lateral spots on abdominal segments 1-8 or 9, pigment concentrated posteriorly, above and below lateral carinae; spots not evident in exuviae or most preserved nymphs. Lateral carinae of segments 7 and 8 with 3-4 setae, segments anterior to these with at most 2 discernible setae, usually none. Venter of segments 4 or 5-10 with small, dark setae increasing in number posteriorly. Segments 5-10 with short, dark setae on dorsum; segments 2-4 (underlying wing pads) with long pale dorsal setae which usually are at least twice as long as distance between adjacent setal bases. Gills about

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3.7 times as long as wide; tracheae darkly pigmented, evenly dispersed and branched throughout gill; extra-tracheal pigment only at center of gill in shape of a small spot, often very faint (Fig. 1). Gill tips rounded; ventral margin of lateral gills with a series of 20-28 stout proximal setae; dorsal margin of median gill with 5-7 stout setae.

Measurements (mm): total length (nymphs) 9.5-9.7; head width (nymphs) 2.61-2.77; metafemur length (nymphs and exuviae, N=17) average 2.23, range 2.11-2.46; lateral gill length (nymphs and exuviae, N=17) average 3.5, range 3.1-3.9.

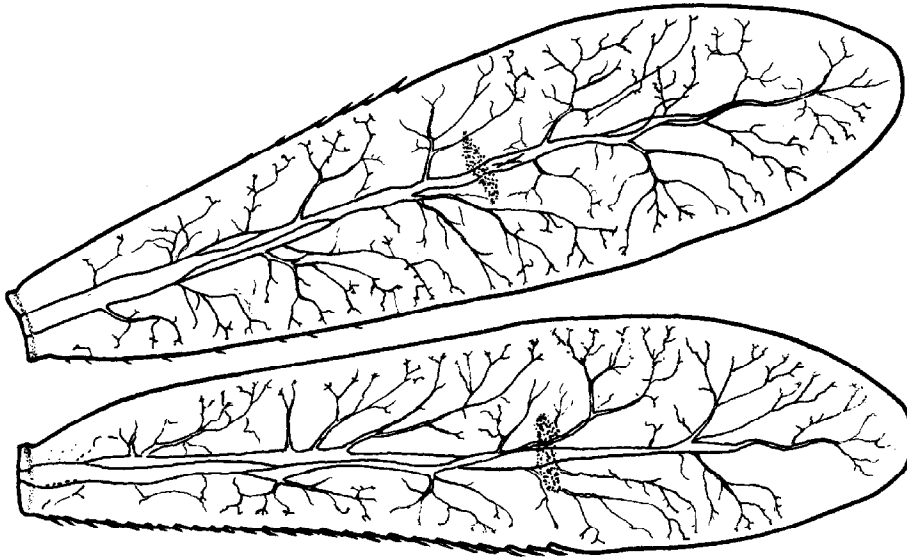


Fig. 1. Lateral view of median (upper) and left lateral gill of *Enallagma minusculum*.

DISCUSSION

The nymph of *E. minusculum* differs from all other described *Enallagma* nymphs in that the gill tips are broadly rounded (Fig. 1). The gills of *E. carunculatum* Morse approach this condition, but are actually broadly pointed (see Walker 1953: plate 41). *E. minusculum* gills also differ from other species in which adult males are blue (the *cyathigerum* and *praevarum* groups of Donnelly, 1963) in that the dorsal series of setae on the median gill is much shorter than the ventral series of setae on the lateral gills (Fig. 1). In this respect, *minusculum* is similar to the known nymphs of the orange species (*signatum-vesperum* group).

White Lake is a clear, oligotrophic sand-bottomed lake located on the Atlantic coastal plain, elevation 60 feet, 34° 38' N. lat., 78° 29' W. long. The nymphs were collected along the developed east shore at depths of 60-90 cm in sparse mats of submerged vegetation among the cypress trees. *Enallagma weewa* Byers, *E. signatum* (Hagen) and *E. vesperum* Calvert were present also.

ACKNOWLEDGEMENT

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