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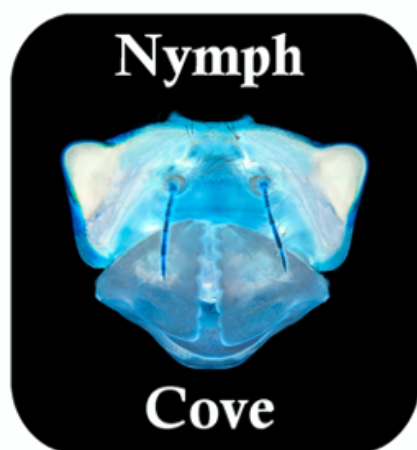
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Nymph Cove: IDENTIFICATION TO GENUS: Aeshnidae (Part II)



By Marla Garrison and Ken J Tennesen

In that last NymphCove article, Aeshnidae Part I, we diagnosed six genera of North American aeshnids. We now take a look at the remaining seven aeshnid genera, in this order: *Anax*, *Gynacantha*, *Triacanthagyna*, *Oplonaeschna*, *Remartinia*, *Aeshna*, and *Rhionaeschna*. These are the aeshnids that are more difficult to untangle. But before we get to those genera, there is an oddball species of *Coryphaeschna* which doesn't quite fit the diagnosis included in the previous installment. In this species, *C. adnexa* (Blue-faced Darner), the posterolateral corners of the head are somewhat rounded; therefore, we need to differentiate it here.

Coryphaeschna (continued)

Head shape in *Coryphaeschna adnexa* does not conform to the quadrangular shape that other species in the genus have, as it is more rounded. This species resembles *Remartinia* more than other

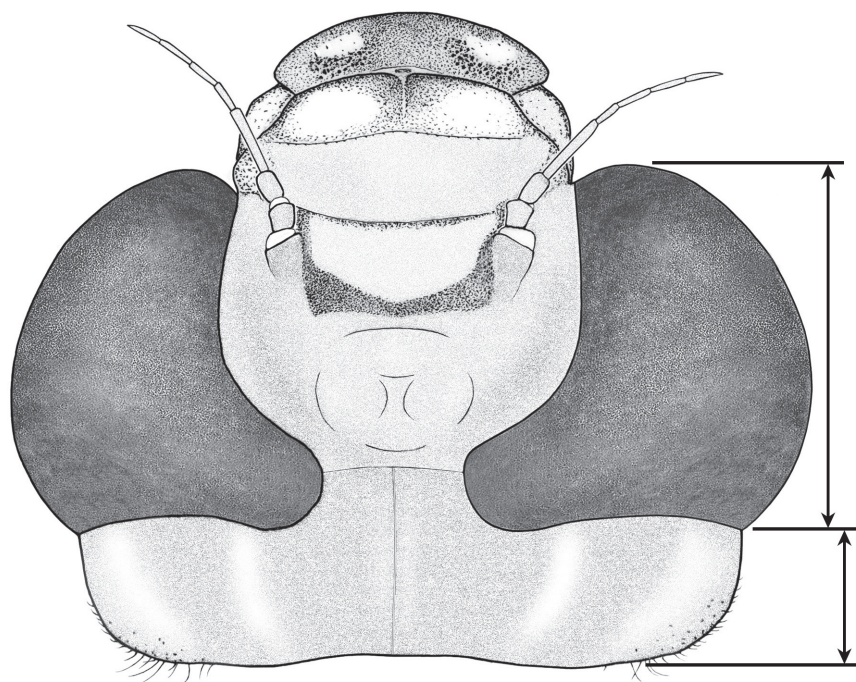


Figure 1. *Anax junius*, head in dorsal view; arrows show relative length of right compound eye compared to head length.

Coryphaeschna species and is diagnosed below under that genus.

Anax

Anax nymphs have larger compound eyes than the other genera. Measured lengthwise, the eyes take up about three-fourths of the lateral margin of the head (Fig. 1). *Anax* nymphs also lack a posterolateral spine on abdominal segment 6, although a few species in the genus *Aeshna* also lack a spine on that segment. This genus is distributed throughout the United States and Canada and is one of the most commonly found aeshnids in vegetated lakes and ponds.

The other six genera treated below are distinguished mainly by characters on the prementum with a few supplemental abdominal characters.

Gynacantha and *Triacanthagyna*

Gynacantha and *Triacanthagyna* are unique among North American aeshnids by having long stout setae on the labial palpal blades (Fig. 2). In *Gynacantha*, the setae are fewer in number (3 or 4) than in *Triacanthagyna* (7–9), and the end tooth on the labial palp is prominent in *Gynacantha*, small in *Triacanthagyna*. Also, *Gynacantha* lacks a posterolateral spine on abd. seg. 5 whereas a spine is present on seg.

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5 in *Triacanthagyna*. Note: the cerci in *Gynacantha* and *Triacanthagyna* are about the same length as the epiproct, similar to *Coryphaeschna* and *Remartinia* versus much shorter than the epiproct in most other aeshnid genera.

Remartinia

Body and head shape of *Remartinia* is generally similar to other aeshnid genera that have rounded posterolateral corners on the head. *Remartinia* has long cerci (similar to *Coryphaeschna*) compared to the remaining genera which have short cerci (Fig. 3).

Actually, *Remartinia* nymphs resemble those of *Coryphaeschna adnexa* (as noted in our last installment) but can be distinguished by the more broadly rounded corners of the head compared to more abruptly curved corners of *C. adnexa*, and by having uniformly brown legs (sometimes with faint brown markings) versus the strongly patterned legs of *C. adnexa*. Also, the maximum width of the prementum is greater in *Remartinia* than in *C. adnexa* (>4.6 mm vs. <4.6 mm), and the tubercles on the ligula are wider apart (Fig. 4).

Oplonaeschna

Oplonaeschna nymphs have a unique characteristic but it's kind of hidden and requires magnification. They have jagged margins — the lateral margins of the abdomen, the wing sheaths, and the appendages are serrate, giving a minute saw-toothed appearance (Fig 5); our other genera have mostly smooth lateral margins. Two other features that will help are: 1) abd. seg. 5 has a posterolateral spine, unlike *Rhionaeschna* and most species of *Aeshna* with spines only on segs. 6–9; and, 2) the antennae are very short, only about four-tenths head length.

Aeshna vs *Rhionaeschna*

If you haven't tried to identify either of these two genera, you haven't plunged all the way into this family yet! In the past, these two genera were considered one (under *Aeshna*, with various subgenera) but most experts



Figure 2. Labial palps of *Gynacantha* and *Triacanthagyna*; solid arrow indicates apical tooth and open arrow indicates long setae.

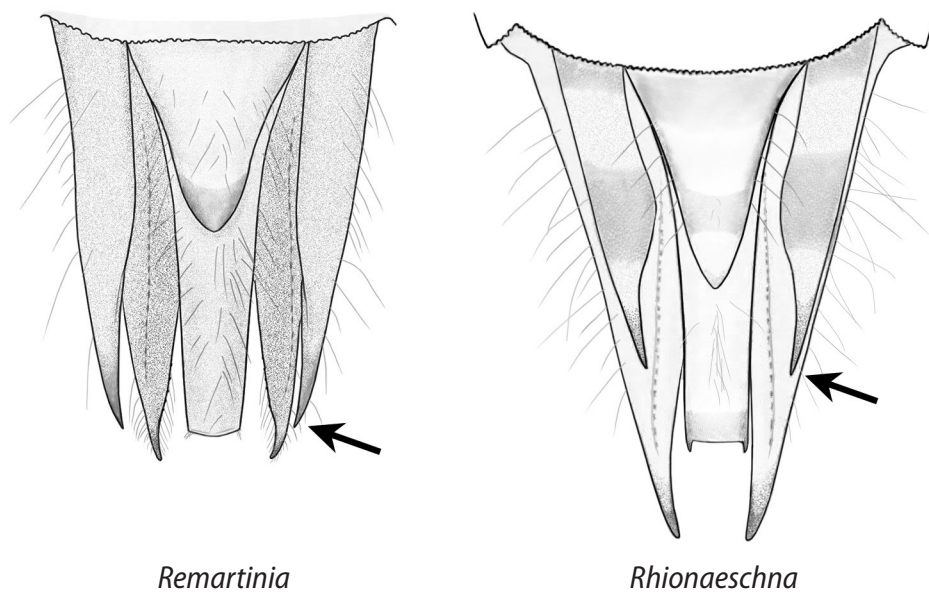


Figure 3. Anal appendages of *Remartinia* and *Rhionaeschna*, showing difference in relative lengths of cerci and epiproct; arrow indicates tip of right cercus.

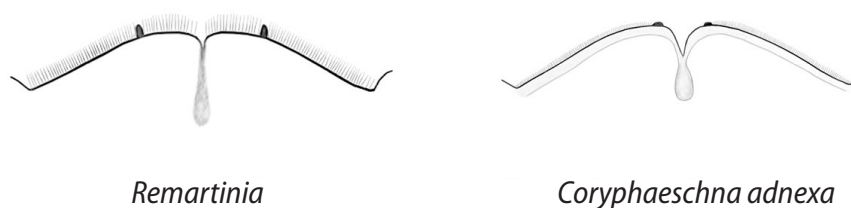


Figure 4. Ligula of *Remartinia* and *Coryphaeschna adnexa*, showing distance between small dark tubercles.

agree on elevating *Rhionaeschna*. So be it, but it does make nymph ID tougher. We have three differences to offer, based on dimensions of the prementum, length of setae on the movable hook, and the

comparative sizes of the ventrolateral sternites on abd. seg. 5:

Prementum length divided by its maximum width is greater than 1.13 in *Aeshna* vs. <1.11 in *Rhionaeschna*.

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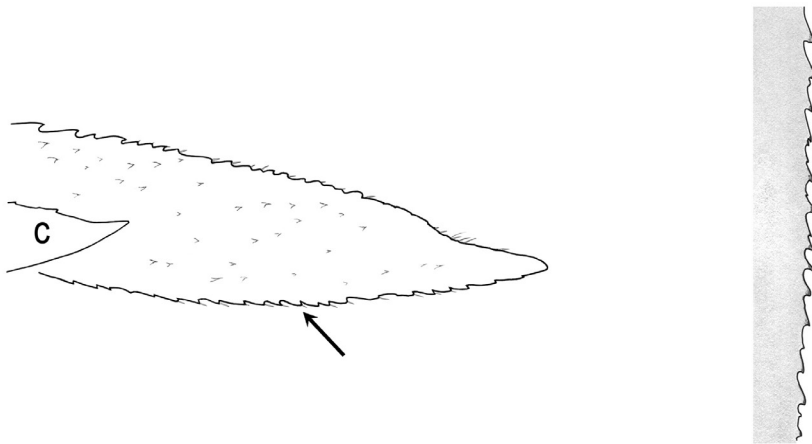


Figure 5. *Oplonaeschna* epiproct in dorsolateral view (left; c = tip of cercus) and outer edge of wing sheath (right), showing saw-toothed margins.

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Ken Tennessen has published over 80 technical papers on Odonata. His recent book, Dragonfly Nymphs of North America, was published by Springer in 2019.

The row of setae on the movable hook consists of only short setae (all shorter than width of movable hook) in *Aeshna* vs. 3–6 long setae (as long or longer than width of movable hook) in *Rhionaeschna* (Fig. 6). (Note: these setae on the movable hook are easily broken off and lost, especially on exuviae)

In *Aeshna*, abdominal segment 5 anterolateral sclerite length is less than half the length of the lateral sternite whereas in *Rhionaeschna* it is greater than half the length of the lateral sternite (Fig. 7).

The diagnoses we've provided in NymphCove for the Aeshnidae will get you started, but you might need to check additional characters and diagnoses which can be found in Tennessen (2019). The Aeshnidae Family Habitus on the next page provides a visual overview of all the genera discussed in Aeshnidae Part I and Part II. About all we have to add further is some encouragement— don't give up, this all gets better the more you try. Next time we'll dive into those glorious Corduliidae.

Citations

Tennessen KJ. 2019. *Dragonfly Nymphs of North America: an Identification Guide*. Springer, Switzerland. 620 pages.

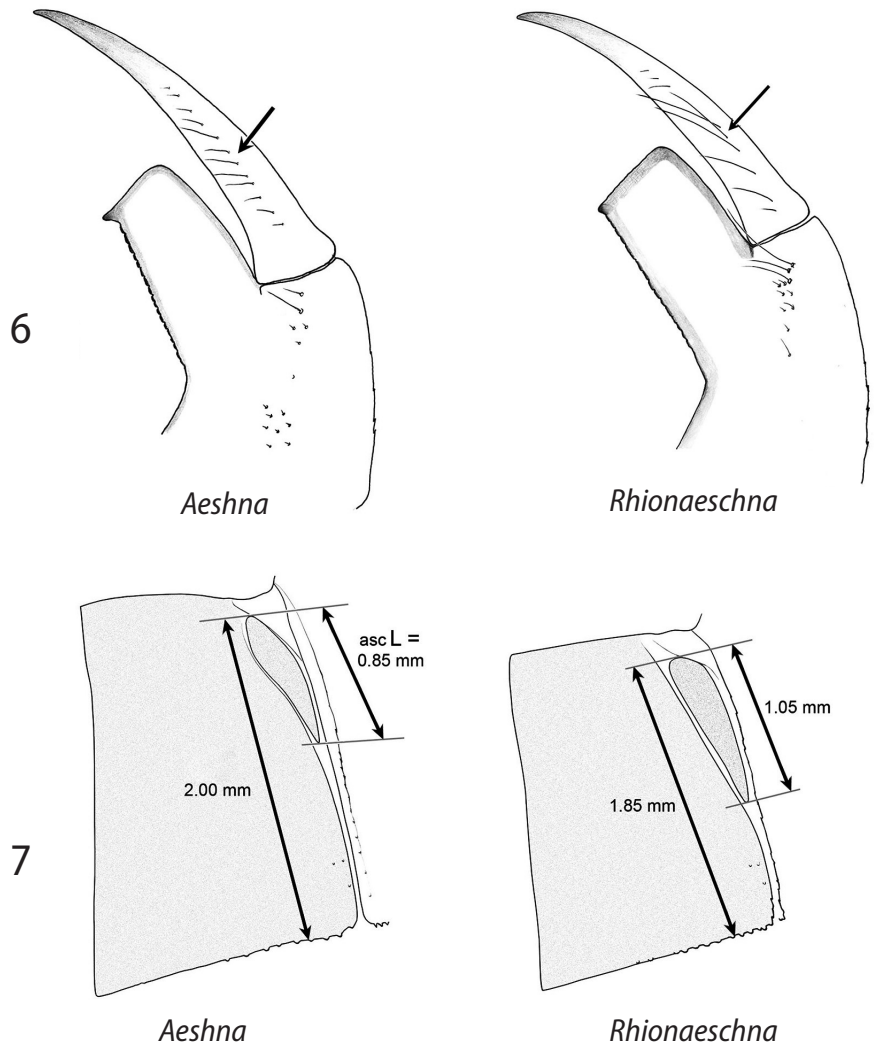


Figure 6 and 7. Movable hook setae (Fig. 6), and relative lengths of ventrolateral sternites, right side in ventral view (Fig. 7), of *Aeshna* and *Rhionaeschna*.

North American Aeshnidae

Habitus Images of the 13 Genera

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Aeshna



Anax



Basiaeschna



Boyeria



Coryphaeschna



Epiaeschna



Gomphaeschna



Gynacantha



Rhionaeschna



Nasiaeschna



Oplonaeschna



Remartinia



Triacanthagyna

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Phyllogomphoides stigmatus (Four-striped Leaftail) pair in copula;
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