Errors in Descriptions of Larvae of Thermocnemus Dejean (Coleoptera: Dytiscidae)

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Abstract - Mature larvae identified as Thermocnemus basilaris by culture to adults revealed that larval characters attributed to the species and commonly used in taxonomic literature are incorrect. Species level identifications that are based on published descriptions of T. basilaris and T. nigrofasciatus ornaticollis (as T. ornaticollis) are problematic, even when these are the only two representatives of the genus in a local fauna.

Thermocnemus Crotch is represented in the Southeast by relatively few species with only two, T. basilaris (Harris) and T. ornaticollis (Aubé), reported for Georgia (Turnbow and Smith 1983), Florida (Epler 1996), and North and South Carolina (Brigham 1982). Larson et al. (2009) have placed T. ornaticollis as a junior synonym of T. nigrofasciatus, assigning two subspecies, T. n. nigrofasciatus and T. n. ornaticollis. Mature larvae of the genus Thermocnemus are identified easily (e.g., Barman 1998); and Wilson (1923) described larvae of T. basilaris and T. n. ornaticollis (as T. ornaticollis), providing characters and for identification of the two species when they are the only representatives of the genus. A proximal and lateral fringe of hair-like setae on the mandible of T. n. ornaticollis that are not shown on T. basilaris (Wilson's Figs. 60 and 61, respectively) have been used for identification of the two species in the Southeast (Brigham et al. 1982, Epler 1996). Hinschelwood (1965) relied on the presence (T. basilaris) or absence (T. n. ornaticollis) of two prominent sensilla originating ventrally near the base of the tibiala (Wilson's Figs. 64 and 65, respectively) to identify these species in Wisconsin, and Larson et al. (2000: p. 923) refer readers to Hinschelwood's key in their treatment of larvae.

An examination of mature larvae, collected in central Georgia and identified as Thermocnemus basilaris by culture to adults, revealed that neither character is suitable for species level identification of larvae of Thermocnemus. The mandible of T. basilaris has hair-like sensilla on the same area as shown for T. n. ornaticollis (Wilson 1923). Although Wilson's figures clearly specify a single character based on this character, the mandible of T. basilaris was described in the text as having sensilla similar to those of T. n. ornaticollis. A footnote (Wilson 1923: p. 294)

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stated that "this fringe was accidentally omitted from Figure 50; it should be the same as in Figure 61." The prominent tubular sensilla shown on the labrum near the base of the ligula of *T. basilaris* (Wilson, Fig. 64) are not present on the Georgia material. Consequently, larva of *T. basilaris* and *T. s. ornatica* are likely to be identified as *T. s. ornatica* in Georgia, Florida, and North and South Carolina. The errors in Wilson's study indicate that his descriptions of larval *Dytiscidus* should be used with caution or not at all.

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**Literature Cited**


