A POSSIBLE ANDROMORPH OF *LIBELLULA JESSEANA* WILLIAMSON (ANISOPTERA: LIBELLULIDAE)

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Abstract – A possible andromorph in *L. jesseana* is described. Common in some genera of Zygoptera, andromorphs are rare among the Anisoptera. Further studies are required to estimate andromorph frequency, and to determine whether sufficient selective pressure exists to maintain andromorphs in this sp.

Introduction

In damselflies, two female morphs often occur where one morph is coloured, and often patterned like the conspecific male (hereafter andromorph, but see HILTON, 1987, for other terminology). The other "heteromorph" is neither patterned nor coloured like the male. Breeding experiments have demonstrated that morph type is heritable (JOHNSON, 1964, 1966; CORDERO, 1990). Observations of andromorphs among the Anisoptera are rare, and generally restricted to certain genera (KUMAR, 1988; KOTARAC, 1996).

Herein, I describe a possible andromorph in Libellula jesseana. This is a rare dragonfly in North America, apparently endemic to Florida (DUNK-LE, 1989; W. Mauffray, pers. comm.). It is found in certain sand bottomed lakes in eastern Florida, South to Palm Beach. Immatures closely resemble those of *L* auripennis. Females of this species are sexually dichromatic, and closely resemble those of *L* auripennis. DUNKLE (1989) reports that females of the two species are so similar that they can only be distinguished if they are observed copulating. A complete description of the two species is reported by BYERS (1930).

Observations and discussion

As part of a larger effort to reconstruct the phylogeny of the genus, specimens of *L. auripennis* and *L. jesseana* were collected for DNA analyses. Both species were observed breeding sympatrically at Sheelar Lake in Gold Head State Park near Keystone Heights, Florida. On 23 May 1996, a female *L. jesseana* closely resembling a male in size (51.9 mm total body length) and colour with a pale blue abdomen, black face, deep orange wings was observed ovipositing approximately 1 m from shore. The resident territorial male non-contact guarded, and hovered approximately 1 m from the ovi-positing female. The female was collected and preserved in non-denatured ethanol.

Andromorphs are relatively uncommon and their frequency is variable among populations. FORBES et al. (1995) found the frequency of andromorphic female damselflies (Nehalennia irene) ranged from 2.1-28.1% between populations and varied positively with male densities. They also argued that andromorphic females benefited by reduced conspecific male harassment. Alternatively, andromorphic females may benefit by reduced mortality from visual predators (JOHNSON, 1975; ROBERTSON, 1985) although differential mortality has not been demonstrated (FINCKE, 1988; THOMPSON, 1989). Finally, andromorphs may enjoy reduced harassment by heterospecific males (DeMARCHI, 1990; FORBES, 1991). This last explanation is a particularly attractive explanation given the close morphological and chromatic similarity between L. jesseana and females of the sympatric species L. auripennis.

That this is the only observation of andromorphy in *L. jesseana* suggests that it is extremely uncommon. However, given the heritability of morph type in damselflies (JOHNSON, 1964, 1966; CORDERO, 1990), the potential for andromorphy to evolve in *L. jesseana* clearly exists. Further studies are required to estimate the frequency of andromorphy in *L. jesseana* populations, and to determine whether there is sufficient selective pressure for it to be maintained in this species, or whether it is simply an artifact of recurrent mutation.

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