

ABSTRACT

A Morphological and Molecular Survey of *Gambusia sp.* in Certain Jamaican Rivers

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Length-weight relationship, standard length, gonopodium length and the lengths and numbers of certain elements of the distal tip of the gonopodium were examined in populations of *Gambusia puncticulata* Poey 1854, *Gambusia wrayi* Regan 1913 and *Gambusia melapleura* Gosse 1851. These parameters were compared between two flow regimes. Standard length and the lengths and numbers of certain distal tip elements were observed to be significantly different between flow regimes. Gonopodium length only differed in one species between the two flow regimes. Gonopodium length displayed negative allometry in relation to standard length. Most distal tip elements were strongly correlated with standard length, gonopodium length and the length of the hook on ray 4p of the gonopodium. The lengths of the distal tip elements also displayed negative allometry in relation to gonopodium length and standard length.

Analysis of a 428 base pair portion of the mitochondrial cytochrome b gene revealed that *G. melapleura* populations were more genetically distinct than *G. wrayi* or *G. puncticulata* populations. Sample sizes were too small to assess if morphological differences had a genetic basis.

Keywords: Kerri-Ann Laliqne Bennett; variation in vertebrate genitalia; fish morphometrics and meristics.