Morphological variation of an ornament expressed in both sexes of the mosquito *Sabethes cyaneus*

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**ABSTRACT**

**Question:** Do elaborate ornaments expressed in both sexes show patterns of phenotypic variation consistent with selection via mutual mate choice?

**Data description:** Detailed morphometric data on the striking leg ‘paddle’ ornament of the sabethine mosquito *Sabethes cyaneus*: ornament size and shape and size of general morphological traits. Data derive from 80 males and 80 females from a wild-type laboratory colony established with individuals collected in Panama.

**Search method:** Shape variation was analysed using geometric morphometric methods (elliptic Fourier analyses). We investigated sex differences in the relationships between body size on the one hand and leg length, ornament size, and ornament shape on the other, using general linear models. We also explored morphological variation in asymmetry, allometry, and in the magnitude of phenotypic variation across traits.

**Conclusions:** These ornaments showed many of the classic hallmarks of a sexually selected and condition-dependent ornament: (i) phenotypic variation in size was much greater than for any other trait; (ii) the size of the major part of the paddle showed positive allometry; and (iii) the degree of fluctuating asymmetry in one component of the shape of the leg paddles decreased with body size. Remarkably, these patterns were more pronounced in females and sexual dimorphism in size and shape of the leg paddle ornament was slight. Although data on the current pattern of morphological variation alone does not allow firm conclusions about past selection, our results are consistent with the maintenance of these ornaments in both sexes by sexual selection via mutual mate choice.

**Keywords:** allometry, Diptera, elliptic Fourier analysis, sexual selection, signal, variation.

**INTRODUCTION**

The strikingly elaborate ornaments (defined as exaggerated or novel structures used to visually attract mates) possessed by many animal species have inspired much research into the evolution of signals via sexual selection. Most of these studies have been conducted in avian taxa with a particular focus on the elongated, curled, and often brightly coloured tail feathers (Darwin, 1871; Jennions, 1993; Andersson, 1994; Cuervo and Möller, 1999). Factors that affect the
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