Sexual selection in monogamous species: The head and abdomen of *Platypodinae*

Isak Lerum & Lawrence Kirkendall

What are Platypodinae?

Platypodinae, or pinhole borers, is a subfamily of weevils. They live as monogamous pairs in tunnels dug out of the wood in dead or living plants, where they farm fungi to concentrate nutrients from the generally nutrient poor woody tissues.

A male will dig out an initial tunnel and blocks it with his abdomen facing out. To gain access to the tunnel a female bumps her frons (forehead) against his declivity (end of abdomen).
If both accept, they mate and stay in the tunnel for life.

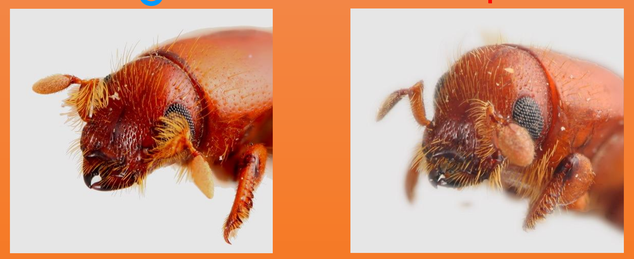
There is a great deal of variation in the frons and declivity across Platypodinae both between species and sexes.
Since they are used in courtship, it is likely that the frons and declivity are important for species recognition, but they could also be used for determining mate quality.

Cenocephalus lrk004

♂ ♀

Tesserocerus dewalquei

♂ ♀

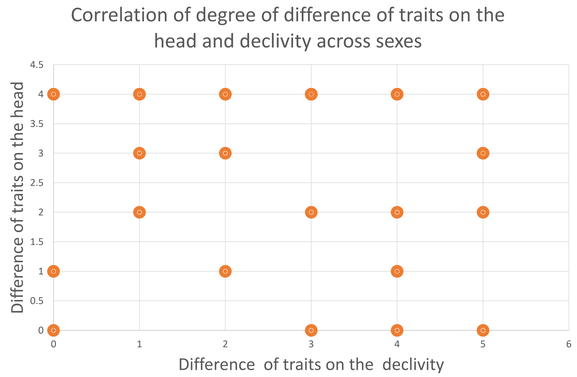


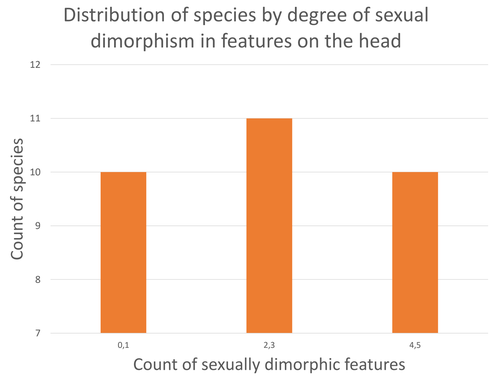
Tesserocranulus nevermanni

♂ ♀

Method

A collection of neotropical species across two genera; Cenocephalus (10 species) and Tesserocerus (20) were examined under microscope. Features of the frons and declivity were scored. The head features was divided into frons shape, frons setation and scape setation (the scape is the first section of the antennae).





Findings

1. The degree of sexual dimorphism of the head and the declivity do not correlate.
2. Two thirds of the species analysed showed strong sexual dimorphism features on the head.
3. In species with sexual dimorphism of the frons shape males trend towards a convex shape while females trend towards a concave shape

References:
UiB emblem from: https://manual.uib.no/en/profile-components/download-uibs-logo-and-emblem/
Images from: http://www.barkbeetles.info/index.php

Contact: Isak.Lerum@student.uib.no

SCAN ME