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Project title :

Mate choosiness plasticity faced with scramble competition in the European grapevine moth

Keywords :

Mate choice, competition, choosiness, protandry, *Lobesia botrana*

Summary (150 words at the maximum):

Most evolutionary models of sexual selection rely on the implicit assumption that individuals can freely identify the best mates in a heterogeneous population. Comparatively, few studies have investigated the mate sampling process. Yet, the opportunity costs arising from scramble competition have far from negligible consequences (Dechaume-Moncharmont et al 2016). The individuals are thus expected to dynamically adjust their choosiness as a function of the strength of the competition and the distribution of available partners. In this study, we propose to investigate the variability (both between and within individuals) of the mate choosiness in *Lobesia botrana* (Lepidoptera: Tortricidae). In this species, the reproductive cycle is characterized by a protandry, adult male emerging first. Through the emerging period, the operational sex-ratio is thus male-biased in the beginning of the reproductive period, and female-biased in the end. In such a context, competitive pressure of individuals for accessing mates varies in time for both sexes. We predict that the female choosiness decreases whereas the male choosiness increases over the reproduction period.

Relevant literature (up to two references):

Dechaume-Moncharmont F.-X., Brom T., and Cézilly F. (2016). Opportunity costs resulting from scramble competition within the choosy sex severely impair mate choosiness. **Animal Behaviour** 114, 249–260.

Muller K., Arenas L., Thiéry D., Moreau J. (2016). Direct benefits from choosing a virgin male in the European grapevine moth, *Lobesia botrana*. **Animal Behaviour** 114, 165-172

Techniques involved in the project:

Behavioral test in controlled conditions, butterfly rearing, life history trait measurements

Desired skills and abilities:

The rearing and behavioural experiments in this species require rigour and meticulous work. Interest for statistical analysis would also be appreciated.

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