

# SEXUAL SELECTION

## Summary

The term sexual selection was introduced by Darwin to describe selection resulting from reproductive competition. His motivation was to explain evolution of extravagant traits characterizing many species, such as horns and feathers, occurring mostly in males. According to Darwin, despite costs associated with production and maintenance of such traits, their bearer's fitness can be increased by means of increased reproductive success: horns are used to combat reproductive competitors, and ornamental traits to attract the opposite sex. Researchers found ample evidence consistent with the mechanisms proposed by Darwin, including many examples of increased sexual attractiveness of highly ornamented males. The observation that sexually selected traits are often more pronounced in males than in females can be explained as a consequence of the asymmetry in gamete size. Reproductive success of females, a sex typically producing large gametes, is usually limited by the number of gametes produced,

rather than by the access to mates, but reproductive success of males (typically producing an excess of small gametes) is limited by the access to females, which leads to reproductive competition. While the role of sexual ornaments in increasing male sexual attractiveness is well documented, the reasons why females show preferences for ornamented males are still debated. Leading hypotheses are discussed, including indicator mechanisms, where male ornament carries information about quality of resources or genes carried by males. Sexual selection is not limited to traits which increase mating success: in species where females mate with multiple males, spermatozoa compete for the fertilisation of eggs. This form of post-copulatory sexual selection (referred to as sperm competition) resulted in evolution of many spectacular adaptations parallel to those facilitating pre-copulatory competition. On the macroevolutionary scale, sexual selection has been shown to affect rates of speciation and extinction.