

Nuptial colour displacement in Victorian cichlids

Competition between rival male cichlids from Lake Victoria for breeding sites has been suggested to promote colour diversification, which eventually leads to the development of new species.

The new research, which was undertaken by Victorian cichlid gurus Dr Ole Seehausen of the University of Hull and Prof Dolph Schluter of the University of British Columbia suggests that scientists have been overlooking male-male competition for too long.

The paper, which is published today in the Proceedings of the Royal Society of London, studied the distribution of 52 species of haplochromine cichlid at over 40 locations throughout Lake Victoria.

The species which live alongside each other, although closely related, have male colouration which is strikingly different to that of neighbouring species. Some males have blue or yellow colour patterns, while their neighbours might be predominantly red. Many species also have polymorphisms, such as blotched morphs within a single species population.

Seehausen and Schluter say that there is a clear link between male-male competition and the distribution of these colour forms:

"Territories of males of the same colour are negatively associated on the spawning site, and that the distribution of closely related species over habitat islands is determined by nuptial coloration in the fashion predicted by our hypothesis. Whereas among unrelated species those with similar nuptial colour are positively associated, among closely related species those with similar colour are negatively associated and those with different colour are positively associated.

"This implies that negatively frequency-dependent selection on nuptial coloration among closely related species is a sufficiently strong force to override other effects on species distributions."

For more details see: Seehausen O, Schluter D. (2004) - Male-male competition and nuptial-colour displacement as a diversifying force in Lake Victoria cichlid fishes. *Proc R Soc Lond B Biol Sci.* 2004 Jul 7;271(1546):1345-53.

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