

# Wing color not just for looks

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Harvard and Russian researchers have documented natural selection's role in the creation of new species through a process called reinforcement, where butterfly wing colors differ enough to avoid confusion with other species at mating time, helping the butterflies avoid creating less-fit hybrid offspring.

Though more distantly related species tend to be more physically distinct, researchers found this was not the case with species of the blue butterfly *Agrodiaetus*, found in a broad swath across much of Central

Asia and Europe. Researchers found instead that species that might be expected to have the most trouble telling each other apart had the greatest differences in wing color.

That meant that newly diverged species living in the same area that could still mate and have hybrid young had more distinctive wing colors than other closely-related species that had diverged at an earlier time, as well as those living in different areas from each other.

Hessel Professor of Biology Naomi Pierce said a critical factor in this research is the fact that the butterflies are still closely related enough that they can - and sometimes do - interbreed. The hybrids created by this interbreeding, however, are less fit than the parents. That makes it advantageous for parents to ensure more offspring will survive by developing distinguishing characteristics, such as male wing color, and thereby avoiding the costly mistake of mating outside their own species.

"The fact that the hybrids are less viable drives the divergence between the parent species," Pierce said. "Wing colors must be one of the first traits the butterflies use to recognize the right mate."

The research was published in the July 21, 2005 issue of the journal *Nature*.

Source: Harvard University

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