

INVESTIGATING ORIGINS

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“Hybridization Creates New Species”

When new species appear suddenly in the fossil record, scientists automatically ascribe the new appearance to evolution in the classical Darwinian style. However, it is now known that brand-new, viable, reproducing species can suddenly appear not necessarily through evolution and survival of the fittest, but through the hybridization of separate, already-existing species.

An example of this was observed by Jesús Mavárez of the Smithsonian Tropical Research Institute in Panama. He discovered that a black South American butterfly with bold stripes originated in the wild from the crossing of two other species of the same genus. The new species, known by its scientific name of *Heliconius heurippa*, is the product of two other butterfly species of the genus *Heliconius*, but prefers to mate with others displaying the same type of bold stripes, thus preserving the new species distinct from its two parent species (Milius 2006: 371).

Mavárez had suspected that *H. heurippa* was the product of the hybridization of *Heliconius cydno* and *Heliconius melpomene*, because *H. heurippa*'s genetic code showed genetic markers similar to the two other species. Mavárez and his colleagues crossed *H. cydno* and *H. melpomene* in the laboratory and then back-crossed some of the offspring with *H. cydno* and then bred those offspring. The procedure re-created the distinctive stripe pattern of the wild specimens of *H. heurippa* (Ibid. 371-2).

The team then tried to determine why the newly created species, *H. heurippa*, didn't get absorbed back into the parent species by breeding in the wild with individual butterflies from the *cydno* and *melpomene* species. In a laboratory at the University of the Andes in Colombia, Mavárez and his team set up courtship tests in which they discovered that male *heurippa* were at least twice as likely to try to mate with females of their own species than with *cydno* and *melpomene* females (Ibid. 372).

Bruce McPherson of Pennsylvania State University, who has studied how some flies form new species via hybridization, commented: “In animals, the dogma has been [that] hybridization is a dead end—it's not important for creating species.” Mavárez's discovery, however, shows that hybridization “can be a much more important source of new species than people have recognized” (Ibid. 371).

Hybridization does not occur solely among fly species and butterfly species. For example, botanists have long known that new plant species arise from interbreeding, especially when the hybrids end up with more chromosomes than their parent species (Ibid.). Loren Rieseberg of Indiana University, Bloomington, an expert on the hybridization of sunflowers, referred to Mavárez's experiments as “very thorough and elegant” (Ibid. 372).

We thus have empirical evidence that hybridization creates new species in the wild. This is not theory, as is the case when scientists see a new creature appearing in the fossil record and ascribe its sudden origin to classical Darwinian evolution. Hybridization is observable fact, both in the wild and in the laboratory.

Reference:

Milius, S. 2006. “Mixed Butterflies.” *Science News* 169, no. 24.

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