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INSECT YIELDS CLUES TO EVOLUTION OF SPECIES THROUGH NATURAL SELECTION

Studies of a California insect, the walking stick, are helping to illuminate the process of evolution of new species, according to research published in this week's issue of Nature.

_x000B__x000B_ The insect, Timema cristinae, named for Cristina Sandoval, a researcher at the University of California, Santa Barbara who was the first to discover it, is found in the Santa Ynez Mountains on two types of plants. Essentially the walking sticks have evolved to look like a leaf of the plant they inhabit. Birds and lizards are its main predators. _x000B__x000B_ "You've got to have very good camouflage to trick a bird," said Sandoval, noting that birds have very good vision and are visual predators. _x000B__x000B_ The insect exhibits two genetically determined color patterns. The unstriped insect is more commonly found on the plant Ceanothus spinosus (commonly called blue lilac) and a striped design is more common on those insects inhabiting the plant Adenostoma fasciculatum (commonly called chemise)._x000B__x000B_ According to the study, the research provides the first clear demonstration that host-plant adaptation can promote the parallel evolution of reproductive isolation. The researchers tested hundreds of insects in the lab and found that those inhabiting the same type of plant were more likely to mate with each other than they were to mate with those residing on different plants --

even though they are the same species. The research indicates that habitat may play a crucial role in the early stages of separation into different species (speciation). _x000B__x000B_ "We don't know why, but something about adapting to a host plant -- smell, size, or a combination of things -- drives this reproductive isolation," said Sandoval. "This is an example of speciation in process."_x000B__x000B_Additionally, information from DNA sequences revealed that such divergence in mating preferences and morphology has evolved numerous times in this species, according to the article. Thus, the research indicates that adaptation to different habitats may play both a crucial and repeatable role in the early stages of speciation._x000B__x000B_ Authors Patrick Nosily and Bernard J. Crespi of Simon Fraser University in Burnaby, Canada and Cristina Sandoval, of UC Santa Barbara, collaborated on this research._x000B__x000B_Contact:

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