

USU Biologists Explore Evolution of White Coloration of Velvet Ants

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The Thistle-down velvet ant, a type of wasp, is a rare example of a white-colored creature in a desert climate. USU researchers investigated varied explanations for the insect's pale coloration. Joseph S. Wilson.

Wilson and USU colleagues Jeni Sidwell and James Pitts, along with Matthew Forister of the University of Nevada, Reno and Kevin Williams of the California Department of Food and Agriculture, discuss new findings about Thistle-down velvet ant evolution in the July 15, 2020 issue of *Biology Letters*.

"It's logical to assume Thistle-down velvet ants evolved their appearance to hide from predators among fallen creosote fruits," says Joe Wilson, associate professor in the [Department of Biology](#), based at USU's Tooele campus. "But the wasps preceded the arrival of the creosote bush to the American Southwest by millions of years. So we investigated other explanations for their white coloration."

"In the animal kingdom, there are relatively few examples of white being an adaptive color outside of arctic environments," he says. "White coloration can be aposematic, meaning coloring meant to warn or repel predators, but it can also play a role in thermoregulation."

The researchers investigated genetic data. They used reflectance spectrometry to compare spectral reflectance of the wasps and the creosote fruit. With a thermal imaging camera and other probes, the scientists measured the organisms' external and internal temperatures. Sampling extensive data and following varied analyses, the team concluded the velvet ants' white coloration is an adaptation to the hot desert environment, rather than predation pressure.

Read the entire story [here](#).