"Artistic" Spiders Trap Prey with Light, Study Finds

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for National Geographic News

The crosses, zigzags, and spirals woven by some spiders have long puzzled web watchers. But those seemingly superfluous decorations may be traps that use light to **lure** prey, a new study of Australian spiders finds.

"We really wanted to find out why the spiders were making a **substantial** investment in decorating their webs," said study co-author Dieter Hochuli at the University of Sydney in Australia.

Some experts have suggested the designs are meant to flag the web's presence so large animals do not walk or fly into them. Others argue that the designs themselves lure prey. The study appears in this month's issue of the *Biological Journal of the Linnean Society.*

Ensnared

Many flower species reflect ultraviolet light, which insects use to identify food sources.

If spider webs reflect the same light, it would suggest that the spiders' webs are **mimicking** the properties of flowers and tricking insects into coming closer.

Hochuli and colleagues coated Saint Andrew's Cross webs in gardens near the University of Sydney with an ultraviolet filtering plastic. They then monitored what insects were caught daily in both filtered and unfiltered webs.

Flies, bees, wasps, and mosquitoes were all common catches on both filtered and unfiltered webs. In filtered webs, the overall numbers of most species dropped.

Mosquitoes, which do not see ultraviolet light, were unaffected by the filters.

Light Trap

The team concluded that the webs may be essentially setting a "light trap," where the reflection of the web strands lure passing insects to their deaths.

"Interestingly, the webs [decorated with crosses] were a little more **sophisticated** than we first thought," Hochuli said.

"The spiders seem to **be exploiting** the sensitivity of some prey to UV light in particular. When we filtered different components of the visual spectrum from webs ... we dramatically altered prey-capture rates," he said.

Catherine Craig, an entomologist at Harvard University, who was not involved with the study, said, "This confirms the research that I did earlier in the field and laboratory. UV-reflecting decorations spun by [this] species appear to attract **prey**."

The next step is to further explore the effect of the decoration pattern itself, she said