Researchers from NUS and China find that female jumping spiders spend more time ogling males with ray reflectors

BY LIM HENG LIANG

ULTRAVIOLET rays cause sunburn, cataracts and skin cancer. But the UV beams, which are invisible to the human eye, are also part of a courting spider’s calling card, researchers here have found.

National University of Singapore Associate Professor Li Daqin has discovered that the rays are very much visible to arachnids and essential for eight-legged courtship rituals.

He has proven, for the first time, that a particular type of UV ray, ultraviolet B (UVB), is used in animal communication.

Its purpose? To get the girls.

Female jumping spiders spent twice the amount of time ogling males with UVB-reflecting markings on their body, compared to situations where the light wave had been filtered out.

The findings were published in the latest issue of the international scientific journal Current Biology, which comes out today.

UV light is divided into various groups categorised according to their wavelengths. UVB light has a much smaller wavelength range compared to other groups.

Dr Li, who is with the university’s department of biological sciences, said the scientific community had long assumed that animals could not detect UVB light due to its small wavelength range and because such rays can harm the eyes.

In fact, UVB receptors needed to see such light have still not been found in animals.

A fellow spider expert, NUS honorary research associate David Court, offered a possible reason for the myopic view: “People themselves are not sensitive to UV light. That’s why it took so long to discover animals that used it for communication.”

The discovery was made after a three-year collaboration among researchers from China and Singapore to determine why male spiders of the species Phintella vittata had UVB-reflecting markings on their bodies.

Prof Li noted that the discovery opened the gates to further investigation on the role of UVB light in animal communication. He expects more studies on UVB light to be made in the future.

Prof Li, who is known as the Spider Man of NUS, hopes to further his research by investigating how the spiders are able to reflect UVB light.

He is also looking at how they protect their eyes from the damaging effects of UV rays.

Such work could one day lead to the development of better sunscreens or treatments for eye damage.

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