

VENOM SPITTING BY THE GREEN LYNX SPIDER, *PEUCETIA VIRIDANS* (ARANEAE, OXYOPIDAE)

On fifteen occasions while censusing green lynx spiders [*Peucetia viridans* (Hentz)] in the field I noticed droplets on my face or hand. Closer observation revealed that the liquid was being forcibly expelled by the females from their fangs. Unlike the venom spitting of scytodid spiders, spitting by *Peucetia* does not appear to play a role in prey capture, but most likely serves a defensive function. The spray of *Peucetia* tastes bitter, irritates the human eye, and always feels cool upon the skin. A secondhand account of a single instance of such spitting (Tinkham 1946) has remained unsubstantiated until the present report (see Kaston 1948:41). Tinkham reported "moderately severe chemical conjunctivitis" of the eye of a soldier claiming to have been sprayed by a spider later identified as *Peucetia viridans*. The victim's vision was impaired for two days.

The venom is ejected straight forward from the spread chelicerae, and directionality is achieved only by turning the whole body to face the target. Before spitting, a female shifts her weight posteriorly, lunging slightly forward immediately before or during the release of venom. Afterwards a small droplet sometimes remains on the end of one or both fangs. The spray is linear, with a narrow angular spread. Droplets land on surfaces up to 20 cm from the spider. Attempts to collect droplets on glass slides or in capillary tubes were largely unsuccessful, but it is apparent that the quantity sprayed is variable, from mere traces to large droplets of more than 5 μ l.

The behavior was first noticed at a time of year (late autumn) when mature females constitute the entire population aside from first instar spiderlings; it is not yet known, therefore, whether males and juveniles also spit. Spraying is most reliably elicited upon first approaching a female, by moving in front of her or especially by gently pulling on one of her front legs. If she does not spray immediately, she is unlikely to do so after further prodding or repeated approaches. Usually a female sprays just once, but occasionally she will do so several times in succession, if repeatedly provoked. When multiple spits are elicited, the quantity of liquid released decreases.

Female green lynx spiders actively guard their egg sacs and newly emerged young. Major sac predators in Florida include ants and mantispids (neuropteran brood parasites), whereas salticid spiders feed upon the emerged spiderlings. Older juveniles and mature

lynx spiders are prey of conspecifics, other spider species, and sphecid wasps. Birds, lizards, and snakes are abundant potential predators in *Peucetia* habitats in Florida, although I have never observed encounters between any vertebrate and *Peucetia*. It is not clear whether the spitting is directed towards enemies of the female herself or towards enemies of the young she is guarding. The absence of an accurate aiming mechanism suggests that it is directed towards a large rather than small target. In several dozen interactions between guarding *Peucetia* and ants, and between adult *Peucetia*, I have never observed venom spitting.

Spitting behavior by spiders other than the scytodids is reported neither in general treatises on spider biology (Savory 1928, Gertsch 1949, Bristowe 1941, 1958, Foelix 1982) nor in two major references on arthropod chemical defense (Eisner 1970, Blum 1981). The modified poison glands of the scytodids produce a glue-like substance which is ejected with the venom upon a prey item from a distance of 1-2 cm, sticking the prey to the substrate. Contraction of prosomal muscles is responsible for the forceful expulsion (Foelix 1982). McAlister (1960) has confirmed that this spitting can also serve a defensive function against scorpions.

Spraying of secretions is a fairly common defense among arthropods, which use a wide range of mechanisms and glands of varied origin (Eisner 1970). A reduviid bug, *Platymeris rhadamantus*, and two European vespid wasps, *Vespa germanica* and *V. crabro*, defensively spray secretions that, like *Peucetia*'s venom, are usually injected into prey or enemies.

This note on *Peucetia* is clearly preliminary; the behavior was observed late in the spiders' annual cycle and extensive manipulations were not possible. Further work is required to collect and characterize the spray and to elaborate its natural function and effectiveness. I hope that this note will alert researchers to watch for similar behavior in other oxyopids.

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