Just Thinking About

The Silver Garden Spider

by Christopher K. Starr and Jo-Anne Sewlal

Argiope is a worldwide genus of about 80 or 85 species often found in gardens and other relatively open spaces, which gives them their common name...Garden spiders. Large, attractively conspicuous and often quite common, they are familiar creatures in many parts of the world. Many people probably think of them as typical spiders.

Certainly, the one species found here, *Argiope argentata*, the silver garden spider pictured above, is familiar to Anguillians. It is found throughout the island but especially abundant on Windward Point. Outside of the island, it extends from the southernmost parts of the USA to central Argentina.

Like all spiders, it feeds on fresh prey — there are no vegetarian spiders — and like all garden spiders it spins a typical orb web to catch them. These attractive spiders spend most of their time sitting head-down in the center of the web, just waiting for a flying or jumping insect to blunder into their sticky strands. They then quickly wrap the prey in additional silk, spun at the moment for the purpose of holding it in place and deliver a venomous bite to completely immobilize it. Or the spider may bite the prey before wrapping it.

It would be tedious to sit and watch for the act of predation, but it can be observed without the long wait. Simply take a small or medium grasshopper and throw it gently against the strands of the web. Once tangled in the web, its struggles will send vibrations that guide the spider unerringly to its position. Incidentally, you should not think of this little demonstration as cruel to the grasshopper. It is simply arranging for a natural process to take place at your convenience.

We are often asked whether this spider is poisonous. A strictly biological answer is that it is of course poisonous, but that is not quite what most people are asking. They really want to know whether it is dangerously poisonous to us. It is not. To a bug, the Garden Spider's bite is deadly, but to a human — roughly one million times as large — it is nothing special...medically insignificant. Much the same could be said of all but a handful of spider species worldwide.

Farmers and gardeners should certainly regard the garden spider as their friend. Although it is a generalist predator and does not especially focus on pests, any species that arises in extraordinary numbers will naturally fall prey to the spider in extraordinary numbers. We always advise people to treat the garden spider as a beneficial ornament in the environment, not to be bothered or removed.

What do spiders do if threatened by a predator? Answer this for yourself by poking one of them, if not with your finger, then with a grass stem or the blunt end of a pencil. The spider will show a variety of responses, from switching rapidly to the other side of the web to shaking the web (and herself) very fast to dropping down on a silk dragline. Individuals are quite unpredictable in their responses, which certainly makes good biological sense.

One feature of this spider's web is puzzling. As some other Garden Spiders, *Argiope argentatas* often add a dense diagonal band of silk to one or more quarters of their web. The function of these stabilimenta (singular: stabilimentum) remains uncertain. They certainly do not help to hold prey, and it is unlikely that they strengthen the web. One suggestion is that a stabilimentum serves to camouflage the spider by disrupting her outline. After all, from the point of view of a lizard or bird, a Garden Spider is a significant, juicy piece of meat, so they certainly need ways to protect themselves sitting there out in the open.

If this idea is right, we should expect spiders that are more bothered by potential predators to build more and/or larger stabilimenta. To test this, we subjected some Garden Spiders on Windward Point to a bit of physical harassment similar to unsuccessful predator lunges of a bird or lizard — over four days. We then compared stabilimentum production with that in similar spiders who had been left alone. Our results showed no difference, so these stabilimenta's functions are still unknown.

Up to now we have referred to a big, conspicuous spider resting in the center of her web. Her web? Yes, the spider that attracts our attention is the female. The male is a tiny, reddish creature commonly found in the female's web, but one has to really look for him. This situation, in which the female and male of a species are strikingly different, is known as sexual dimorphism.

Other, much smaller spiders are also often found in the Garden Spider's web. These are members of the genus *Argyrodes*, quite a different family, who live by stealing bits of food from the Garden Spider. Our garden spider's web, then, forms a little community in itself.

Christopher K. Starr. Senior Lecturer in Entomology at the Trinidad campus of the University of the West Indies, is a specialist in social insect biology, with a serious side-interest in other insects and arachnids, including spiders. He has done field work in North America, Southeast Asia and West Africa, in addition to the New World tropics. Jo-Anne N. Sewlal. PhD student at the University of the West Indies, has been engaged in a survey of spiders of the Eastern Caribbean. She writes extensively for Caribbean publications on natural history, ecology and conservation. They recently spent time studying the habits of spiders and Anguilla's one species of social wasps and (at the invitation of the Anguilla Department of the Environment) made a first survey of the spider fauna.