DOCTORS for the ENVIRONMENT

Don't kill the predators

After focussing on global issues the last few months, I want to turn to something close to our everyday life. Often our own wrong perceptions can be very harmful to friends.

In and around our houses we often see spiders on a wall or hanging in a web. To most of us they are dangerous monstrosities that should be killed.

In South Africa there are as estimated 5000 – 6000 species belonging to 63 families. Spiders belong to the Arachnids and have been around for 500 million years.

Spiders are often regarded as insects but belong to a group of their own with their own characteristics. (Insect characteristics in brackets).

They have eight legs (six) with a two parted body (three parted); they feed on the prey only (live prey and plants) and spiderlings resemble adults from birth and grow by shedding their exoskeletons (metamorphoses – → larva → pupa adult). Spiders don't feed on or damage any plants. (The so called red spider found on roses is not a spider but a mite).

Spiders can either be web bound or free living.

Spider webs vary from the giant engineering masterpieces of the orb web spiders bridging many meters between trees to the untidy webs of the tangled web spiders. The silk thread of a spider is stronger than steel weight per diameter. The web of the black widow is renowned for its great strength. Not all webs are static. The Deinopidae forms an expandable web which the spider will cast over any prey passing by.

Only about 20 species of spider (out of 5000 – 6000) are of medical importance.

The most infamous is the ***black widow spider*** (Latrodectus indistinctus). They are medium sized web bound black spiders with some form of orange red marking on the dorsal abdomen and no red marking on the ventral abdomen. ***The brown widow*** (L geometrius) is of similar appearance but is brown with an orange hour glass marking on the ventral abdomen. The poison x-latrotoxin causes massive peripheral release of neurotransmitters acetylcholine and noradrenalin. (It does not cross the blood brain barrier). Bite sites are painful with respiratory embarrassment, abdominal rigidity, nausea and vomiting and cramps developing within 15-20 minutes. The bite of a brown widow causes only local swelling as the poisons are much weaker.

Black widow envenomation is treated with the specific antivenom. Recently no deaths have been documented.
The bites of the free living spiders are all cytotoxins. The ***sac spiders*** (Cheiracanthium) are free running nocturnal hunters that often come into houses at night. They are implicated in 80% of spiderbites in Gauteng but are regarded as very valuable predators in Israeli cotton fields. Their little sacs serving as daytime hide-outs are often seen in the folds of curtains or on leaves. They are brownish with black faces and an almost translucent appearance. The bite is not painful but leaves two green yellow marks 6mm apart that is initially not painful. It will eventually ulcerate up to a diameter of 10mm and will start healing within 10 days. Victims are most often bitten at night.

The ***Violin spiders*** (Loxosceles) are brick brown to red brown with a characteristic violin shaped mark on the carapace (the head and chest part). They are free running nocturnal hunters biting mainly sleeping victims at night. The bite is initially not painful but causes ulceration with a crater up to 100mm across that takes a long time to heal.

The ***six eye crab spiders*** (Sicarius) occurring in arid regions with low human populations are the most dangerous spiders in the world. They live under rocks where they await prey. They are not aggressive and won't bite easily. The toxin causes massive necrosis at the bite site as well as DIC.

This is not a review article of medically important spiders. Most spiders are harmless and valuable creatures – allies of man in keeping the numbers of insects down. Don't kill them – if you are not sure what spider you are dealing with, just leave it alone to go its way.

The moral of my story is – Don't kill the predators.

Louis Lombaard

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