

Ouch! That hurts!

By senior teacher, consultant and textbook author
Finn Terkildsen, Skanderborg/Denmark

Summer is usually tantamount to pleasures. We get more and more out of our homes and spend more time outdoors. However, this changed way of life also entails problems, especially if the preceding winter was a mild one.

In Danish nature as well as abroad we encounter a number of small animals that defend themselves by stinging or biting. Such stings often cause itching and irritation, sometimes even actual pain.

We are here talking about animals like ants, wasps, bees, and mosquitoes. Many of us have probably experienced them on summertime trips through the Norwegian and Swedish wilderness.



On the coasts we find the red stinging jellyfish, which - due to its red colour - is easily distinguished from the colourless and transparent ordinary jellyfish that is also found on the beaches.

The stinging jellyfish hurts the bathers by slashing its metres long tentacles across the bathers' bodies. Even free floating tentacles may cause pain.



It is common to all of the stinging animals that their venomous compounds are chemically more or less identical, the only difference being the concentration of the venom.

In general, stings from animals found in Denmark are not lifethreatening. In other countries, however, there are many animals that are extremely dangerous and whose stings are potentially fatal. In the waters around Australia we find several extremely venomous stinging jellyfish.

Several plants use toxin as a defence weapon, too. Who has not tried close contact with a stinging nettle?

But what actually happens when we touch these stinging plants or animals? Let us start by looking at the encounter with a stinging nettle.

Stalks and leaves of the nettles are densely covered with hair. Seen under high magnification they resemble the upper part of a bottle or a needle. When human skin touches the stinging nettle, the points of the hairs break just like a bottle-neck can break. The break has a very sharp cut surface, and just like a knife it easily produces a hole in our skin.

The toxic compound is now seeping from the hairs into the wound, thereby causing a burning sensation. It itches, and small blisters filled with fluid appear on the skin.



The acidity of the seeping fluid is so low that it actually attacks the skin. Still, even though the fluid irritates the skin it is by no means dangerous, not even in high concentrations.

Then why does the plant sting so nastily when we touch it? The reaction is the plant's chemical defence against animals that wish to feed on it, for the plant is rather tasty and, therefore, much coveted by many animals.

Stinging nettles contain several toxins in their stinging hairs and when the tips come off, small amounts of histamine are set free. Histamine is the compound that causes swelling of the skin and itching. The toxin that causes the pain is mainly acetylcholine. Other compounds are serotonin and the organic formic acid.

Ants defend themselves by biting a hole in our skin using their strong mandibles; then they inject formic acid into the hole via the tip on the hind part of their body. This acid can cause itching that resembles the itching caused when your skin gets in touch with urine.

Wasps, bees, and mosquitoes sting. Wasps can sting several times, because their sting is smooth like a sword and therefore easy for the wasp to pull out again. Bees only sting once, because their sting is serrated and, in the attempt to pull it out, the bee will lose the hind part of its body. Therefore, we may find the hind part of a bee body left behind in the skin, still injecting its venom into the wound.



Mosquitoes use their mouth as an instrument to sting and to inject a toxic and a compound that prevents the blood from coagulating; this makes it easier for them to suck blood from the wound.

The large swarms of mosquitoes seen in nature include only males that cannot sting. Only single females sting and suck blood, which they need to develop their eggs.



During the summer, particularly in July and August and times with on-shore wind, we often encounter great numbers of jellyfish. They may cause burning, but only very slightly. But beware of the red stinging jellyfish. They can cause really great pain if you happen to get lashed by their metres long tentacles, which are densely covered with cnidoblasts. The cnidoblasts explode when touched and inject venom into the skin. This causes smarting pain.

In many places of the world we find insects and jellyfish that have much stronger toxins than those populating the Danish fauna; and contact with them may be potentially fatal.



There is a variety of treatments - some better than others.

But now great help is near and efficiently neutralising and removing plant and animal toxins: A product launched by the company Skancard in Skanderborg/Denmark.



The product is named Jelly card. It is a remedy that neutralises the toxin, removes tentacles or stings, and alleviates pain by means of aloe vera gel.