BEE STINGS by Dewey M. Caron

Bee stings hurt and we react! Beginners with bees are unnecessarily concerned about stings, established beekeepers are often too complacent about bee stings and the general public has an irrational fear of stings. Beekeepers have to get beyond irrational fear and concern about being stung and find a comfort level relative to sting avoidance. The must also educate others about bee stings.

For urban/suburban apiary locations, beekeepers usually need to somehow reassure neighbors, and sometimes public officials, that bee stings are not generally a health hazard (even for presumed allergic individuals), and that honey bee hives in the neighborhood are not a threat. In fact, all of us need bee pollination for our food diversity, diversity in our natural environment and to recognize the key ecological functions of bees. Special efforts, in fact, are needed to assure their continued service to humans.

Ignoring bee sting fears is NOT an option for starting beekeepers. Beekeepers need to educate, starting with themselves, and need to do a better effort in education of the public and elected officials about bees before they become an issue. Once beekeeper hives come into negative focus, the usual resolution is to move the colonies elsewhere. Proper preparation and response starts before problems develop with education!

We generally recognize 3 reactions to bee stings – normal, allergic and toxic. It is only the latter two categories that are of medical significance. Beekeepers, since they are continually exposed to stings, should know and recognize sting reaction variations and talk to family and neighbors about stings. Everyone should know what to do for persons stung, whatever the seriousness of human response. And just as critical, every beekeeper, from the one hive to the 1000+ hive owner, should have an emergency plan, and a backup to the emergency plan, for dealing with bee stings.

**Normal Reaction**

The typical reaction 99% of individuals experience to a bee or wasp sting is to feel pain, develop a hardened elevated wheal, observe redness radiating from sting site (immediately or in first minutes), followed by swelling and then itching developing within the first few hours of a sting. Expression of these 5 components may pass rapidly, such as pain lasting only a couple of minutes or persist up to a week with swelling and itching at the sting site. Individual reactions may vary, even one sting to the next. Multiple stings at one time usually are more irritating. A sting is a body wound and the site may become infected leading to further discomfort.

Treatment may or may not relieve the pain or immediate sting effects. Rapid removal of the honey bee stinger, the only stinging insect to leave its sting in the victim, and applying something cold at the site is usually advisable. The selection of what to use such as ice, cold water or a sting remedy usually provides the best relief, some items like spit, tobacco juice or harsh chemicals like household cleanser, alcohol, petroleum product or the like may
be more harmful than effective while some remedies such as Band-Aid, smoke from the smoker or cosmetic like toothpaste or perfume may be neither harmful nor helpful. The best sting remedy is to give the individual stung sympathy – i.e. do something. Reassure them that all is normal while applying something cooling, so anxiety, discomfort and even fear pass more rapidly.

Swelling at a sting site is to be expected with onset a few minutes to several hours after the initial sting discomfort. It may be dramatic at some sites (such as wrist, face, neck or ankle) and hurt more but if swelling remains in the vicinity of the sting, the reaction can be considered normal. For many individuals, itching with and following decrease in the swelling is often the most discomforting reaction. Over-the-counter sting remedies or first aid sprays or solutions can measurably reduce itching duration and help avoid secondary infection of the wound. Internal or application of external anti-histamines may help some individuals. In fact, some beekeepers prefer to take an anti-histamine (such as Benadryl) before they manipulate their colonies in case they receive stings.

Beekeepers dress to reduce bee stings, especially by choosing to use a bee veil and/or gloves and sturdy, bee-tight clothing to reduce stings or for reduced dosage such as when stung through clothing fabric. Inexpensive protective gear is available for those who work or play outdoors. Otherwise, rapidly exiting an area, melding into dense vegetation or going inside a building is advised to avoid/limit multiple stings.

**Allergic Reaction**

For a small percent of humans, a bee sting may lead to an allergic reaction. Stinging insect allergies can be a critical life-threatening medical emergency because the chemical that the victim cannot handle is injected directly into the victim. Many people consider they are allergic, based on previous sting trauma, other family member reactions, other allergies or sting fears than is actually the case. There is no sure way to determine a real vs. suspected sting allergy without medical confirmation. Reactions may change as one gets more stings, as their body chemistry changes with aging or with other medical health condition changes.

A sting allergy is not a subtle response and it usually shows immediately after being stung (although there can be, rarely, a delayed allergic response). It is a whole body response, manifest at major body organs like skin, lymph system, heart, circulation, nervous and digestive systems. Whole body intense itching, redness, swelling (not merely at site but at neck or extremities), nervousness and/or irritable behavior, upset stomach, severe drop in blood pressure and fainting are the usual extreme manifestations. The latter, loss of consciousness, compared to a whole body response (as long as airways stay open and not constricted with swelling) is life-threatening.

An individual exhibiting an exaggerated response needs to be taken to a medical facility as quickly as possible (within a few minutes rather than hours) for evaluation by a competent person. In most cases, treatment of the lowered blood pressure (injection of epinephrine for example) and perhaps an anti-histamine and replacement of body fluids can lead to normal recovery in a matter of
minutes if treatment begins quickly. Individuals with confirmed allergic response should carry an epipen, available only on prescription, in case a medical facility is not close by, followed by a visit to a medical facility if conditions do not immediately improve and to follow up an allergic response.

The key to handling a possible allergic reaction is to have an emergency plan. Individuals working alone should know what they will first do if they start experiencing an excessive reaction or if someone in the family or the general public has such a response. A cell phone with emergency contacts and knowledge of the most direct route to the closest medical facility would be key important preparations. Having an epipen available is good insurance but medical professionals discourage use of such a device for anyone other than for whom it is prescribed. Liquid anti-histamine might be an option but for the most serious life-threatening reaction, loss of consciousness, it will not be practical. Best advice is get a person exhibiting an immediate, exaggerated reaction to medical professionals, tell them what has happened and let them do what they are trained to do.

Remember individual reactions vary greatly and may change over time. Initially bee sting reactions for beekeepers getting stung on a frequent basis or persons who purposely are stung as part of bee sting therapy, may become worse before becoming commonplace. Stings at certain locations are more painful with more discomfort from swelling. A sting after a period of lack of stings such as over winter are sometimes more irritating and reactive. Larger-scale beekeepers often complain more about mosquito bites than the bee stings – bee stings are a work-place hazard. Multiple sting incidents (except see below for toxic stingings) are no more life-threatening or likely to develop into a sting allergy, than a single sting.

Toxic Reaction

The material a stinging insect injects into a victim, human or animal, is meant to teach a lesson – beware and keep away. The number of bees from a bee hive or stinging wasps from a wild nest of hornets or soldiers defending a mound of fire ants may be extensive with unknowing victims receiving multiple stings in a short time frame. It is possible to die from the accumulated chemical intrusion into the body, what we term a toxic reaction. The amount of foreign chemical a body might tolerate varies with body weight, age, medical condition and a variety of other factors.

Most healthy individuals can survive several hundred bee, ant or wasp stings. Smaller bodied youngsters, older persons with heart, blood circulation or other medical conditions do not have this wide a tolerance. Prompt medical attention may or may not make a difference but the best plan is rapid transport of individuals/animals to a medical facility as fast as possible. We recognize the arrival of Africanized bees (a highly defensive population of honey bees) into an area often by excessive stinging
of animals (our early warning system) or with individuals that inadvertently disturb a nest. Fire ant stings do not immediately react so an individual may receive higher numbers of stings quickly.

Excessive number of stings or rapid onset whole body reactions to single or multiple stings requires transport of the individual to knowledgeable medical professionals as quickly as possible. It may initially be difficult to remove a stinging victim from the vicinity of the stinging situation. Covering them, getting them into a closed vehicle or building and/or out of the immediate vicinity of the stinging insects is the first priority (but be mindful of safety of rescue individuals). Contacting emergency personnel is often the best first response. Do not assume the sting response will be the same as you experience. Observe anyone stung for the first few minutes and if anything excessive or unusual is noted react immediately to insure they get medical/emergency treatment.

Beekeepers use bee veils to avoid stings around the head and neck – here Defensive Africanized honey bees would have resulted in many potential stings without such protection