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THE RANGE OF HUMAN ATTITUDES TO BEES

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Love, hate or fear

The *Nursing Times* recently published an article⁹ on "Phobia of bees and wasps", which described the case histories of two patients suffering from this complaint, including their cure. With some surprise I realized that I had never before come across an account of such a phobia, although I have monitored many thousands of scientific and technical publications written by people who handle bees for one reason or another.

This article is written because of the lack of published information on a subject which is of interest, and indeed of economic significance, to beekeepers all over the world. It is not a study in depth, but I hope that it may encourage someone with the necessary competence to undertake such a study.

Fear of being stung seems to be the paramount negative psychological reaction, although the buzzing of bees on its own can cause distress in a good many normal people. Bees, wasps and hornets all induce fear; the sufferer does not usually discriminate. Last summer a 28-year-old computer mathematician died within an hour of saying that he had been stung by a wasp. "The post mortem examination revealed acute myocarditis, allied to bronchial asthma. . . . Apparently, he had a phobia about insects and sheer terror at the mistaken belief he had been stung by a wasp upset the

action of his heart . . . he was literally frightened to death." The sudden pain which felt like a sting was in fact caused by heart action.

Of the two sufferers discussed in the *Nursing Times*, one had been badly stung by wasps at the age of 11. The other seemed to have learned a fear of bees from an aunt. In the end "she would not go out during the day unless accompanied by an adult. Even hanging out her washing was a major trial. She would do her washing at 4.30 a.m. before the bees and wasps were about; then she would place all her damp clothes in small bundles of three or four items, dash out to her drying area, hang up these few items and dash back into her house. The process was repeated until all her clothes were hung out—she didn't care what the neighbours might think. All the windows of her home were kept shut—however hot the day. . . . Being outside was even worse. There were more bees and wasps there and she was hypersensitive to their stimuli. Movements from flowers, buzzing noises (she was unable to differentiate between flies and wasps and bees), colour, angry yellow and black stripes—she would notice all these long before other people". The application of behaviour therapy to both these patients is described in detail; it included graduated exposure to situations that caused anxiety or panic, and was entirely successful. Research into the treatment of phobias in general, at the Maudsley Hospital and Institute of Psychiatry, London, has included insect and other animal phobias⁷.

There is a very wide spectrum of psychological reaction to bees: at one extreme, cited above, is phobia—pathological fear. Akin to this is hatred; there is a recent report from Portugal⁹ of 13 court actions brought during the past ten years against beekeepers who, it was alleged, had contravened legislation relating to the siting of hives: the hives were too close to the plaintiffs—whom the author refers to as "apiphobic", in contrast to the beekeepers, who are "apiphilic". An Austrian bee journal¹¹ recently published an article on the fear of bees in general, and a German journal one on people's fear of bees as a threat to the future of beekeeping¹².

In many different countries, there are "apiphilic" beekeepers who show a devotion to bees so strong that "love" is the only proper word for it. Physical contact with bees, on the hands—or the face or other parts of the body—gives positive pleasure.

Effects of being stung

There are certain physiological effects of a bee sting. When a worker honeybee stings another bee or a soft-skinned animal, she can often withdraw her sting. But the two shafts of the sting are barbed, and the bee cannot usually retract them from the tougher human skin; so they remain in place, and their action speeds up the in-flow of venom through the puncture in the skin. If the penetration is only slight, for instance when the skin is covered by clothing, the bee may be able to withdraw her sting; if not, she normally dies shortly afterwards, the sting having been torn away from the rest of her body. In some circumstances there may be a real danger from a bee sting; if the person is allergic to bees, or if the sting is on a sensitive area such as the eye, or inside the mouth where subsequent swelling might impair breathing. *The Guinness book of world records* (1973) quotes the greatest number of bee stings sustained by a surviving human subject as 2443.

Normally the sharp pain at the site of the sting lasts only for a few seconds or a few minutes; it may be followed by swelling that last one or more days. A beekeeper becomes familiar with the course of events. When working with bees, he learns to continue his operations after being stung, keeping his hands steady in spite of any pain.

Calm or panic

The beekeeper's veil not only prevents bees stinging his face; it also prevents bees getting caught in the hair. This is not particularly dangerous, but quite commonly evokes fear, partly because of the high-pitched note a bee makes when it is constrained — about an octave above the normal flight-tone¹⁰, which itself is attractive to many people.

A number of Sylvia Plath's poems⁸ describe beekeepers' reactions to bees. At one extreme, she and a partner are manipulating a colony, competent and calm in their bee suits:

Bare-handed, I hand the combs.
The man in white smiles, bare-handed.
Our cheesecloth gauntlets neat and sweet,
The throats of our wrists brave lilies.

At the other extreme, she describes the sight of package bees in their travelling box, which evokes a feeling of near panic. Even though "the box is locked, it is dangerous":

I put my eye to the grid.
It is dark, dark,
With the swarmy feeling of African hands
Minute and shrunk for export,
Black on black, angrily clambering.

It is like a Roman mob,
Small, taken one by one, but my god, together!

Learning to fear bees, and not to fear them

Fear of being stung is not innate in animals (or man), but is learned by experience. Some experiments on mimicry¹ showed that toads would eat honeybees or bumble bees offered, but that after being stung many of them rejected the bees (on sight alone) —and also their dronefly mimics, although these have no sting. They were less inclined to reject live bees or droneflies if these were prevented from buzzing, and the same toads would eat dead bees whose stings had been removed.

Neither animals nor primitive peoples can avoid being stung when they raid a bees' nest, although they make efforts to do so³. Bears in northern Canada sometimes get through the electric fence erected by a beekeeper to protect his apiary against them; they are then likely to carry the hive boxes into the woods, away from the centre of bee activity, before they eat the combs².

Children under 8 or 9 are often entranced with bees, and have not learned to fear them. Dislike may well set in by the teens, unless a special interest in bees has been aroused and maintained. In adults with no first-hand knowledge of bees, fear seems to be widespread and out of all proportion to the pain actually inflicted by a sting, which many people have in fact never experienced.

Irrational fear usually disappears when the finite consequences of being stung are learned. Once people start to keep bees, they tend to become so interested that they forget to be afraid, and then learn by experience that the consequences of being stung are much less than their fear suggested. Among those who live with bees, fear is replaced by respect and caution not to behave in ways that would induce stinging. A strong enough incentive can often overcome human fear of bees, and the increase in beekeeping during a sugar shortage is evidence of this.

It can happen in later years that a beekeeper becomes allergic to bee stings. But although this individual is in some real danger, he or she will usually do everything possible to prevent the wife or husband beekeeper-partner from having to "give up the bees", because this would be a great deprivation. The allergy sufferer will learn to be alert to the presence of bees, and to avoid putting himself or herself at risk.

Evidence from language

The evolution of languages can throw some interesting light on early man's attitude to bees. Words used for bees in different Indo-European languages fall into three groups⁶. One, including Greek *mélissa* and Sanskrit *madhukara*, relates to bees as a source of honey. Then there are onomatopoeic words, representing a buzzing or murmuring sound: to this group belong, among modern examples, English, German, Polish (*bee*, *Biene*, *pszczola*). Of the Celtic languages, Irish and Scottish Gaelic also have onomatopoeic words for bee, but in Welsh, Cornish and Breton the bee is named from its capacity to sting: Welsh *gwenyen*, and Cornish and Breton *gwenenen* and *gwenanenn* respectively. It is tempting to think that Greek bees were docile and got honey, whereas Welsh bees were more notable for their stinging than their honey production, but the evidence is too slight. Perhaps the Greeks minded being stung less than the Welsh?

Bumble bees

It is commonly said that the attractiveness to humans of the young of many mammals is linked with a round or flat facial structure: kittens, puppies, lambs (and human infants). In the adult the features are sharper and more elongated. The Bumble Bee Distribution Maps Scheme organized during the past few years by the Bee Research Association has brought us in touch with many people who dislike hive bees, or are neutral towards them, but who have a marked affection for bumble bees, which are rounder and "furry"—and also have a lower-pitched flight note. Bumble bees do not very often sting, and many people are indeed surprised to learn that they can do so, causing neither more nor less pain than a hive bee.

Love banishes fear

The liking for contact with bees finds its extreme expression in wearing what is known as a "bee beard". This is no new thing: Thomas Wildman, who published *A treatise on the management of bees* in 1768, lectured in London wearing a bee beard, and rode on horseback covered with bees. The technique was (and still is) to attach a small cage containing a queen under the chin, or in some other strategic place. Fig. 1 and Fig. 2 show Katherene and Ralph Klebes, Illinois beekeepers, during a beard-making session on Katherene. "I, Ralph, removed the frames. Katherene held her hands on her chest, and I hit the frames one at a time, shaking the bees on her chest, until we had plenty accumulated for a full beard. Katherene moved them with her hands up to her face; around her neck the queen was suspended in a cage . . . It was a bit difficult removing the bees afterwards due to the heat . . . but the beard was removed without any stings."

Such voluntary contact with large numbers of bees is at the very opposite end of the spectrum of human reactions to the pathological fear of them referred to at the start of this article.



Fig. 1. (left) Mrs. K. Klebes, Illinois USA wearing a "bee beard".

Fig. 2. (right) Mrs. Klebes with her face nearly covered by bees.

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