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THE RANGE OF HUMAN ATTITUDES TO BEES

by Eva Crane

Bee Research Association, Hill House, Chalfont St. Peter, Gerrards Cross, Bucks, UK SL9 0NR

Love, hate or fear

The Nursing Times recently published an article 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 phobias.

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 Portugal 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 journal 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 beekeeping.

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 lasts 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-tone, which itself is attractive to many people.

A number of Sylvia Plath’s poems 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 swarthy 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!

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 groups. One, including Greek melissa and Sanskrit madhumaka, 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.
SIMULTANEOUS MULTIPLE MATING OF A QUEEN BUMBLE BEE

by VERNON M. KIRK
1633 Elmwood Drive, Brookings, SD 57006, USA*

Multiple mating occurs in bumble bees as well as in honeybees. Hobbs* reported that *Bombus huntii*, like *B. hypnorum*, “often, if not always, mated more than once...; some marked queens mated at least 3 times and many mated at least twice...”. A queen honeybee may mate a number of times during a single half-hour flight†, but some queens may make a second or even a third flight on the same or succeeding days. The copulatory organ of the drone is normally torn away from the rest of his body immediately after intromission, and he falls to the ground to die† (Butler 1967). The next drone that seizes the queen, and mates with her, displaces the remains of the genitalia of his predecessor.

I know of no record of simultaneous multiple mating by bees of either genus, and therefore publish the following observations. About noon on a day in early September 1963, at Florence, South Carolina, I found a female bumble bee crawling across a lawn with three males in attendance. All four insects were vibrating their wings, and it was an intense buzzing sound that had attracted my attention. I was able to watch the activities of the bees closely, apparently without disturbing them. The males were clinging to the back of the much larger female, facing forwards. Two of the males were in conjugation with the female, while the third was attempting copulation from a position between the other two. When I tried to capture the bees in a killing bottle, the third male escaped; the others remained in copulo until about a minute after their capture.

Unfortunately, the specimens were lost when I moved from South Carolina; thus identification of the *Bombus* species, and further examination of the specimens captured, are impossible.

References


* Formerly Entomologist, Pee Dee Experiment Station, Clemson University, Florence, SC.