

Rupture between man and bee?

U.S. bee population faces catastrophic decline

Zakariya Wright

Muslims seem to have a special affinity with bees. The honorable Prophet Muhammad was said to be fond of honey, and prohibited his followers from killing bees,¹ a command later repeated by Abu Bakr al-Sadiq to Yazid Ibn Abi Sufian, then a general in the Muslim army: “Do not burn bees and do not scatter them.”² Ali Ibn Abi Talib was sometimes called “commander of the bees” because he was on occasion followed by a swarm of bees, once causing a group of people to embrace Islam on witnessing the miracle.³ The renowned Turkish poet Yunus Emre (d. 1320) claimed that bees hummed blessings on the Prophet when entering their hive; and others wrote that it was such praise that gave honey its sweetness.⁴

The scientific community, drawing on the testimony of beekeepers over recent years, has produced some alarming statistics concerning a sharp decline in bee populations in Europe and America. The article included below summarizes this data, and attempts to explain why some 80 percent of bees have been dying in U.S. colonies. The death of large numbers of bees is alarming because they are said to be a “keystone species”: the health of the bee population is indicative of the health of human population.

Given the love for bees in the Prophetic tradition, how are Muslims to read this apparent rupture between man and bee? Even if we might shy from presuming to know the Divine plan in this particular event, it is useful to remind ourselves of God’s words concerning the bee:

And your Lord inspired the bee, saying: ‘Take your habitations in the mountains and in the trees and in what they erect. Then eat of all fruits, and follow the ways of your Lord made easy for you.’ There comes forth from their bellies a drink of varying color wherein is healing for men. Verily, in this is indeed a sign for people who think. (Qur’an, 16:68-69)

God reminds us here that bees are endowed with a specific mercy for mankind. Indeed, the honey produced by bees has certain medicinal values attested to in Prophetic narrations.⁵ Some say the “drink” proceeding from bees may actually refer to “Bee Venom” used in apitherapy (or Bee Venom Therapy) used in the treatment of asthma, physical injuries and cirrhosis, among other things.⁶ The Divine mercy implicit in these verses of the Qur’an extends beyond the medicinal value of bees. Qur’anic exegeses explain that it is only the command and guidance of God which inspires bees to live among humans in the first place, or to find their way back to such places after leaving them. According to the famous *Tafsir al-Jalalayn*, God must command bees to live in the habitations humans erect for them, otherwise they “would not resort to these places.” Ibn Kathir’s exegesis also explains that their “follow[ing] the ways of your Lord” refers to bees’ ability to find their way back to their hives after searching for pollen miles away.

As the article below details, great numbers of bees are leaving their hives, possibly becoming disorientated outside and finding themselves unable to return. If we accept that the movements of bees, as with all creation, are guided by Divine care, how do we explain this catastrophe? Given that bees living among us is a clear mercy, the withdrawal of this mercy must be our own fault; as the Qur'an says, "Verily never will God change the condition of a people until they change it themselves" (13:11).

We hope such details outlined above underscore the significance of threat to the bee population. This article resonates with Qur'anic logic in explaining the disappearance of bees by indicting human greed and our deplorable treatment of this valuable species.

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Give Bees a Chance, by Pat Thomas

The Ecologist, July, 2007; reprinted in *Ode Magazine*, Jan-Feb, 2008.

Reports of catastrophic declines in the bee population have scientists buzzing. Is it mites? GM crops? Mobile phones? Habitat loss? Here's what the plight of the humble bee says about our own relationship to nature.

Forget everything you thought you knew about the sedate and rarefied world of beekeeping. Bees are big business. In 2006, a Cornell University study found that in the U.S., bees annually pollinate more than \$14 billion worth of seeds and crops—mostly fruit, vegetables and nuts. In the UK, they are responsible for the pollination of \$420 million worth of food crops.

Bees' role in the natural order of our world is crucial, and their importance as pollinators, both for agriculture and for wild plants, can't be underestimated. Nor can it simply be quantified in monetary terms. Bees are what is known as a "keystone species," ensuring the continued reproduction and survival not only of plants but of other organisms that depend on those plants for survival. Once a keystone species disappears, other species begin to disappear too—thus Albert Einstein's apocalyptic and, these days, oft-quoted view: "If the bee disappeared off the surface of the globe, then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man."

This vision may be coming true. Our bees are dying—in record numbers. The recent disappearance of catastrophic numbers of bees from their colonies, in the U.S. especially but also in Europe, has been dubbed Colony Collapse Disorder (CCD). The most striking symptom of CCD is that the bees appear to die away from the hive. One day they fly away and never return. Those few that are left behind, say scientists, are ill indeed. Virtually every known bee virus can be found in their bodies; some are carrying five or six viruses, as well as several fungal infections, at the same time. [...] With CCD, average colony losses have been reported at 70 to 80 percent. Theories abound as to why

the bees are dying, but so far none explains it, or provides a clue about how to remedy the situation.

Perhaps our search for the cause is too narrow. If we want to understand why bees are dying off, then a first step would be to examine the myriad ways we have exploited them and corrupted their natural behavior for our own convenience.

As the number of crops we grow increases, the need for pollinators grows too, and these days beekeepers can make more money renting out bees to pollinate food crops than they have ever been able to make selling homemade honey. Migratory pollination is a multibillion-dollar industry. But transporting bees huge distances in giant 18-wheel juggernauts with the hives stacked on top of each other also stresses the insects out. Higher levels of stress in turn make them more vulnerable to disease. Studies show CCD is most prevalent in transported bees, with losses of up to 90 percent within the colonies. By transporting bees across great distances, beekeepers are also transporting mites and any other parasites, viruses, bacteria and fungi to places they might not otherwise have spread.

Industrial-sized colonies may have greater market value, but they bring the same problems to bees that industrial poultry farmers have visited on their chickens and turkeys: the easy spread of disease.

In addition, the boxy structure of modern commercial hives—which makes it easier to squeeze several colonies into a small space—and the configuration of bee yards have largely been designed for the convenience of human beekeepers and not necessarily with the health and natural biology of the bees in mind.

The natural diet of a bee is pollen and honey—a mixture rich in enzymes, antioxidants and other health-supporting nutrients. But to beef their bees up for the heavy work of pollination, commercial beekeepers feed them on the bee equivalent of protein bars and Lucozade—a mixture of artificial supplements, protein and glucose/fructose syrup. These sticky mixtures are freighted around the country in tankers to wherever the colonies happen to be. This is expensive and occasionally it proves cheaper to kill off whole colonies rather than feed them over the winter. [...]

In a normal colony, the queen can live and produce eggs for several years. In commercial beekeeping, breeding better queens is a profitable business and queens are regularly killed and replaced—as often as every six months. The queen may be subjected to the stress of having her wings clipped to identify her and also to limit “swarming”—when bees leave one colony with a new queen and form another elsewhere (the natural way for bees to ensure their survival and genetic diversity).

To ensure that colonies express the genetic qualities that beekeepers value, however, some virgin queens are artificially inseminated with sperm from crushed males. This practice, while not universal, is gaining in popularity as it becomes more difficult for honeybees to survive naturally. [...]

Pesticides used on food crops and other crops can affect bees, even at sub-lethal doses. Exposure can produce a kind of pesticide intoxication that makes the bees appear “drunk” and disrupts navigation, feeding behavior, memory, learning and egg-laying. Fipronil, for example, impairs the olfactory memory process, which honeybees use to find pollen and nectar. Spinosad can make bumblebees slower foragers even at low doses. The insecticide imidacloprid can cause bees to forget where their hives are located. The French government banned imidacloprid in 1999 due to its toxicity to bees, the effects of which French beekeepers labeled “mad bee disease.” [...]

As stories of CCD become more prominent, other theories emerge. Mobile phones and overhead power lines have been blamed for interfering with bees’ homing radar and preventing them from getting back to their colonies. It is not clear how sound this theory is. Better known is the fact that high background levels of electromagnetic radiation can suppress immune response and disrupt the nervous system in a variety of living creatures. It is unlikely that bees are the exception to the rule.

Having been co-opted into industrial farming, commercial bees have become just another type of farm machinery. But the machinery is breaking down. Ironically, the giant farms that destroy natural habitats and use large quantities of pesticides are the ones that need bees the most, and are at the same time important contributors to their decline.

Bees are sensitive, social creatures that have achieved a high degree of harmony and productivity in their colonies. Their social structure is both dynamic and ordered. They are intelligent, and become more so with age. They learn and remember; they can use visual orientation to estimate the distance from a nectar source while in flight. They construct colonies that are warm in the winter and cool in the summer. They also suffer from occupational diseases, just like we do.

The single coherent thread that connects all the various theories of CCD is a massive failure of these creatures’ immune systems. It is entirely possible that CCD is the inevitable result of an overwhelming, ongoing assault on their immune systems.

Humans have had a symbolic relationship with bees since the insects were domesticated 7,000 years ago, but it is clearly not a relationship of equals. We have long exploited bees for our own ends, even when that wasn’t necessary. Because of our close proximity to bees and our deep reliance on them, any problems in our society—in the way we think and act, in our broader relationship with nature—will also affect theirs. The collapse of the bee population isn’t a scientific riddle to be solved with more and better science and technology. In fact, it could be a frightening vision of our own future.

To view the full article, see <http://www.odemagazine.com/doc/50/give-bees-a-chance>

¹ According to the Sunan of Abu Dawud, the Prophet said, "I prohibit killing four creatures in this earth: ants, bees, hoopoes and sparrow-hawks."

² See Nora Belfedal, "Honey: the Antibiotic of the Future, part 3: Healing 'Bee Venom.'" Islamonline, November 15, 2001.

³ See Annemarie Schimmel, *And Muhammad is His Messenger: the Veneration of the Prophet in Islamic Piety* (UNC Press, 1985), p. 285.

⁴ *Ibid.*, p. 102-104. The latter idea is attributed to the twentieth-century Indian poet Nabibakhsh Baloch..

⁵ See, for example, the section on medicine in *Sahih Bukhari*. Among other things, the Prophet Muhammad prescribed honey for abdominal trouble.

⁶ See Belfedal, "Healing Bee Venom."