Is Natural Really Natural?

Jennifer **Berry**

When the most recent and well-publicized phenomenon of honey bee disappearance, termed Colony Collapse Disorder (CCD), began, it gave rise to serious concerns not only among those in the commercial beekeeping industry, but also among environmentalists, academics, and even the mainstream media and general public, as well.

Bees were dying at alarming rates. Large commercial beekeeping operations, having sustained crippling losses, were on the brink of bankruptcy. And, thousands of acres of pollinator-dependant crops were in jeopardy. Theories and rumors quickly arose as to why colonies were dying. In response, researchers raced across affected areas to collect samples and begin their investigations. The initial, knee jerk blame claims, ranging from cellular emissions and high-voltage power lines to UFOs and the wrath of God, began to fill the airwaves. However, cooler heads prevailed and the Coordinated Agricultural Project (CAP) was started to actually examine the facts; just the facts ma'am. The project attracted 17 institutions from across the U.S. to study why bees were dying, and, hopefully, to find a cure. For four years, nutrition, disease, mites, environmental toxins, miticides, habitat loss, along with other potential culprits have been investigated. The conclusion; there is no single "smoking gun," but that the causation of the syndrome seems to be a combination of stresses on the bees, chiefly from varroa mites and chemicals (in the hive and environment). Many of us sensed this all along. But, because of the project, we now have a much better understanding of honey bees and the effects of these stresses than we did back in 2007. This is a good thing!

However, this article is not about the outcome of the CAP research, but, instead, it is about a silver lining, or positive twist, so to say, that has spun off from the CCD disaster.

As bees were dying, the media jumped and jumped hard. News vans rolled into apiaries. Reporters and camera folk scrambled in search of beekeepers to interview. Jackets and ties were donned, shirts tucked in, lipstick and makeup applied, sound checked, cameras rolled, lenses focused, and mics turned on: "In, 3, 2, 1..."

> "Hello this is Melinda Jo Johnson standing in a field that used to have 100s of healthy, honey bee colonies. But, that's not the case today. Instead, the boxes you see behind me [camera pans] – are empty. Why are they empty, you ask? Well, for some unknown reason, all the bees have left or died. What does this mean for us? Could the bees be the proverbial 'canaries in the coal mine'? Is this a sign – some manifestation of global warming? And, without bees to pollinate the fruits and vegetables that we eat, will mankind starve? These, along with many other questions, may never be fully answered, but beekeepers and researchers alike are struggling to find out what is happening to the bees. Let's just hope it's not too late. Back to you, John, in the studio." And . . ., fade to black.

News reporters from the big guys (Fox, CNN, ABC, NBC, CBS) to the neighborhood stations were all racing to do a story. The newspaper and magazine giants were involved as well. Movies and shorts were filmed, and books were written. Even the local journalism majors in high schools and colleges were writing about CCD. And, with this blitz of media attention, the plight of honey bees reached a huge audience of non-beekeepers. This is the positive twist mentioned earlier; the CCD frenzy facilitated mass public awareness of the importance of bees and pollination. YES!!!

Then a second wave crashed in as individuals from all backgrounds wanted to become beekeepers. Interested folks started reading books on honey bees, joining beekeeping clubs and associations, buying equipment, and taking bee classes across the country. A few wanted to help to save the bees. Others sought a hobby for their kids. Some wanted to ensure the pollination of their farm, orchard or garden while others just wanted bees for the fun of seeing them flying to and from their porch, deck, rooftop or backyard. And, the trend still continues today.

Now, let's turn back to CCD. When symptoms first appeared, it resembled classic, in-field pesticide poisoning. Remember, there were no adult "forager" bees present. There were only brood, a queen and young bees. Plus, secondary scavengers or robbers were not present. As mentioned, pesticides were certainly a part of the problem, but it is much more complicated than that. Yet, at least early on, pesticides received the brunt of the blame. In response, a purist, "all natural" movement arose. Beekeepers, especially new ones, began to stay completely away from any chemical use. This new level of public awareness led to an upsurge of new beekeepers, who in turn, fueled the natural beekeeping movement. Maybe a stretch but seems like a logical stream of events to me.

However, the concept of "natural" beekeeping is not new. Many beekeepers have been claiming their naturalness for decades now. Yet, it has, irrefutably, gained much more attention recently. This is a good thing. Beekeeping should be more natural because beekeeping is so natural to begin with . . . Or, is it?

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gular, circular, or hexagonal, we keep bees in a box. Is that natural? Then, we put that bee box or boxes where we want them, next to our garden, gazebo or lining an open field. On average, feral hives tend to be a good distance apart, yet we (beekeepers) line them up, sometimes even side-by-side, for convenience. Natural? Next, during the Spring months, we take swarm prevention measures (cutting queen cells, rotating hive boxes, and adding more space) because we don't want to loose our foraging force. How natural is that? What about the idea of harvesting honey, pollen or propolis? Taking something away from the bees for which they have worked so very hard doesn't seem very natural. Then we re-queen to address issues of defensiveness, poor colony strength, hygiene against pests, low honey production, or simply because she's a year old or the wrong color. Does this sound natural? What about even lifting the lid and inspecting the colony? How natural would it be for the wall of a tree cavity to pop off and magic forest hands to reach in and rearrange "the furniture" in a feral hive?

In the end, keeping bees isn't very natural, is it? So, where do we draw the line between using bees as factors of production and treating them as fellow creatures of this planet? What really defines natural beekeeping? How about we do the best we can to keep our bees healthy and alive for their own sake as well as for the benefits to humans from their amazing abilities. Ok, the definition probably needs a little more work, but, it's a start.

Drawing haphazardly from numerous sources, let's consider these general parameters for a natural beekeeping objective: minimal intervention, no toxic chemicals applied to the bees, their hives or apiary, and, finally, taking only what the bees can afford to give without directly putting their quality of life and survival at risk. I'm sure there are hundreds of other additional ideas we could also consider, but let's begin with these.

Not only has there been an explosion of new, natural beekeepers, but there is also more natural beekeeping information available. A good bit, though not all, has been accumulating on the Internet. While doing some background research for this article (and other searches), I came across some seriously **BAD** information on the net. Some of it was just down right **WRONG** from beginning to end! That provoked me to do a quick survey among beekeepers (hobbyist and commercial), honey bee academics and beekeeping supply purveyors. I asked them to answer a simple question: what books or beekeeping information would you recommend to 1) a beginner and 2) a more experienced beekeeper.

Here is the list of titles (in order of most nominations to least):

Beginner information

The Beekeepers Handbook
First Lessons in Beekeeping
The ABC & XYZ of Bee Culture
Honey Bee Biology and Beekeeping
The Hive and the Honey Bee
Backyard Beekeeping
Bee-sentials
A Book of Bees: And How to Keep Them
Beekeeping: A Practical Guide
Hive Management

More Advanced

The Wisdom of the Hive
Honeybee Democracy
The Biology of the Honey Bee
Honeybee Ecology
The Buzz About Bees
Bee Culture Magazine
American Bee Journal

Of course you know this, but not everything you read or see on the Internet is correct!

Anyone can post a blog or YouTube video on his/her practices, thoughts, opinions, conclusions, personal views, belief, ideas, etc. And, because we've been somewhat trained to trust what's in print and other media, subconsciously we expect that it MUST be right! Please be careful while searching information in cyberspace. Especially, if you're a new (newer) beekeeper, start with credible information. Build your foundation of beekeeping knowledge from reliable, sound, and peer reviewed material. Don't buy into some fly-by-night, who's only credible experience is website building, and has had only one bee hive (now a dead-out) in his/her life. Yet, people of this ilk have convinced novice beekeepers to follow their nonsensical beekeeping theories, which invariably leads these new beekeepers to lose their colony, become discouraged, and likely give up beekeeping entirely. Thus, our cause loses a potentially great beekeeper.

Now, I didn't mention feeding above when exploring what is natural beekeeping. Is feeding your colonies natural? There are two obvious camps on this. If you were to call the UGA bee lab with the question of to feed or not to feed, this is what we would recommend: if your colonies are light in stores, feed them! If anyone tells you it is unnatural to feed your bees, walk away. If they write about how they don't feed because they want to stop perpetuating weak genetics and allow only the strong to survive, turn the page. If they blog about the fact they let their bees starve because the bees aren't smart or strong enough to find their own food source, hit the back button.

A rectangular box on a roof top. Natural? (photo by Cindy Hodges

It's early April as I'm writing this. It has been a challenging spring for the bees. Georgia and the southeast experienced a very warm December and January. So, the queens never shut down; in other words, they continued laying eggs through the Winter. These eggs hatched into brood, which were fed copious amounts of honey and pollen before pupating. Then, they emerged into hordes of active, hungry bees with little-to-no food sources in the environment. Then, to compound the crisis, a cold, wet winter returned for several months, which resulted in starving bees across the state. These circumstances also perpetuated the growth of mites, which will be discussed in Part II of this article next time.

For the past three months, we've fed about 800-1000 pounds of sugar per week to keep over 400 colonies alive. If we hadn't, at least 75% of our colonies would have starved, if not more. Their own stores were depleted by February. So, I have to strongly disagree with the naturalist camp who would write off this situation to bad genes, weak genes, or say that the world is better off without these bees. Nope. Sorry. As everyone who relies on agriculture for a living knows, you can't control the weather. And trust me, the lab staff would prefer not to feed; it's time consuming and messy. There are much better things we could be doing with our time and money than mixing up syrup, cleaning and filling jars, and enduring the wrath of hungry bees while swapping out jars in the field. However, I refuse to let bees die when it's within my control to take care of them – even if it calls for "unnatural" practices.

There are a whole host of reasons why a colony may not have enough food to survive the dearth: bad weather, inappropriate hive location, ill-timed swarming, queen injury, poisoning, infections, infestations and other disorders such as a bear attack. Of such circumstances too numerous to list, few have anything to do with the bees having inferior genetics.

A diverse selection of food sources. Natural?

As extension personnel for the University of Georgia, we apply our knowledge and expertise to sift through information and disseminate the most important and applicable to the public. Beekeepers pose questions to our office by phone and email all the time. One common question in the late Winter and early Spring, unfortunately, is, "Why did my bees die?" After a few minutes of discussion we can usually figure out what happened. And, nine times out of 10, it's either starvation or mites. This is probably why I tend to go a bit overboard when talking about feeding and mite control. But, I will say this: If your bees are healthy and surviving without your intervention then, by all means, keep doing what you are or aren't doing. I only know what works here, in the Piedmont region of Georgia, under conditions similar to the lab or my own apiaries. So, our course of action may not be the same as that for beekeepers in other areas of the country or with different situations.

In any case, remember that the bees we have today aren't indigenous to the Americas. Settlers brought them here. Then, we imposed our human management techniques on them, laced our environment with a myriad of toxic chemicals, proceeded to convert vast amounts of natural landscape to golf courses, shopping malls and parking lots, and imported exotic honey bee pathogens and parasites. How can we expect honey bees to thrive on their own under these conditions? How can we stack the odds against them, and then demand that they survive without our help? If our environment was more "natural," then perhaps we could expect honey bees to proliferate more naturally and independently.

Take care of you & your bees! BC

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