

# THE HIVE TOOL

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**President Frame**

Last month I wrote about some of the factors that affect the honey crop - location, the weather, the colonies themselves. As I write this, we are in the first week of the locust bloom in my locale and the weather is not what I'd hoped for. It's overcast, rainy and cool with temperatures in the low 60's. Yesterday, as I went out to put more supers on the bees, the locusts were beautiful, in full bloom, but the activity at the hives' entrances was minimal - too cold! Today was better, still cool, but sunny and the bees were flying voraciously. It was such a nice day I had three swarms! And the strangest thing happened. As I arrived at one of my apiaries I immediately spotted a large swarm in a small tree off by itself, very obvious hanging there and I knew it would be easy to catch. Then, as I stepped out of the truck, I heard that infrequent but familiar sound. Thousands of bees were pouring out of a hive and taking to the air. A swarm! A sight to behold! As I watched the swirling mass of airborne bees to see where they'd go, where they might land, I saw something I'd never seen before. They settled in with and joined the swarm already hanging in the tree! Had they come from the same colony? I had no way of knowing for sure. What I did know for sure was that I now had a tremendous swarm threatening to break the limb on which it was hanging. (I have pictures of this!) I was able to cut the branch without dislodging too many bees and get 'the swarm' into a waiting box (actually two boxes!) No problems; what fun! Once again, the bees both delight and confound me. I'm still a little disgruntled about the weather, but hiving that swarm sort of takes the edge off it. It remains to be seen how the cool weather will affect the final honey crop. I suspect I'll be pleased with whatever I get.

Over the past two years as we've learned more and more about the plight of pollinators and honey bees in particular another strange thing seems to be happening - more and more people are taking up beekeeping. Go figure. It seems counter-intuitive. Why would anyone want to start beekeeping when all the news about keeping bees is so bad? Again, I'm baffled but at the same time amazed and thankful. And the best part of it all is this: these new beekeepers are approaching beekeeping with new eyes and new attitudes; they seem to be coming into beekeeping from a different trajectory. They are looking for new ways to keep bees to avoid the problems that plague so many established beekeepers. What could be

better at a time like this than the infusion of fresh new ideas? And what seems to unite these new-bees (as we affectionately call them), is the idea that honey bees are part of a larger natural environment that needs to be protected and sustained and they have rolled up their sleeves to get down to work and do their part, as beekeepers. An old-timer like myself finds this refreshing and exciting; I find my own attitudes and practices evolving as I learn more about "sustainable" beekeeping. The funny thing is, it all feels familiar to me, like this is the beekeeping I've always wanted to practice - doing what is best for the bees first and what is convenient or expedient for me second. Believe me, I'm still learning. But that's been my attitude from the start, that I'd never know all there is to know about honey bees or beekeeping and that they would continue to surprise and amaze me endlessly.

It is not surprising then that several months ago a "new-bee" made a suggestion at one of our meetings. Linda Allman, our librarian, was telling us about some new books she had purchased for our library, one of them being Ross Conrad's Natural Beekeeping, when this new beekeeper spoke up and said, "Why don't you get him to speak at one of our meetings. I've heard him speak and he's really good." I made a note of that remark. And I'm pleased to tell you Ross Conrad will be our speaker this month. Furthermore, I've read his book and can say without qualification you need to hear what Ross has to say about natural and sustainable approaches to beekeeping. To quote Ross from his introduction in the book: "The more options we as beekeepers have at our disposal, the greater the opportunity for flexibility, something that is sorely needed today to help us adapt successfully to changes and events that challenge our beekeeping. . . .I see the activity of beekeeping in much the same way that I view activities like gardening and raising children. There is no single correct approach that applies to everyone. Each one of us who participates in the craft of apiculture will develop approaches and techniques that are unique to our particular needs, styles, and situations. As with gardening and child rearing, how individuals approach beekeeping will depend on their resources, knowledge, purpose, level of confidence and philosophies for becoming involved in the activity. . . .No matter our reasons for keeping bees, it is beneficial to seek out beekeeping information from a variety of sources and to choose those forms of hive management that best fit our personal situation, goals, and finances." I could not agree more wholeheartedly. Ross will join us for our open hive demonstration at 6:00pm in the ORNC bee yard and will demonstrate how to set up a nucleus colony and answer your questions. Please join us. Copies of his book will be available for purchase as well.

Good beekeeping to you!

## CMBA News

CMBA is hosting the Maryland State Beekeeper's Association summer meeting on Saturday, June 7th here at Oregon Ridge Nature Center beginning at 8:30am with coffee and donuts. The featured speaker will be Kim Flottum, Editor of Bee Culture magazine. There will be other speakers as well and the latest information on CCD and managing honey bees, including three different open hive demonstrations for all levels of beekeepers, beginners to old-timers. You may purchase a deli sandwich lunch when you arrive for delivery at noon, so you won't need to go out for lunch or bring one. Spend the day with other beekeepers from around the state and learn about what's happening with the bees both locally and nationally.

CMBA will NOT hold a general membership meeting in July (nor will there be a newsletter published in July or August). Instead, we WILL have our annual picnic on Saturday, July 19th starting at 2:00pm. Family and friends are welcome; this is a social event for everyone! We'll be heading up across the border into the friendly beekeeping state of Pennsylvania to the home of David Papke/Sue Duling (it's a 25 minute drive up I-83 from ORNC). Afternoon activities will include open hive demos and discussions, extracting and comb honey demonstrations, fun and games, and possibly a visit from a local queen-breeder raising Russian bees. Best of all, it's a day to relax and socialize with other CMBA members and their families. Bring a covered dish to share; CMBA will provide hamburgers and hot dogs and the fixings, water and soft drinks, and place settings. Bring your appetite and a friend. Stay as long as you like; we'll eat around 5:00pm. Directions are printed elsewhere in this issue of The Hive Tool.

CMBA's next regularly scheduled meeting (after June 3rd) will be Tuesday, August 5th, at 7:30pm. We'll start with an open hive demonstration at 6:00pm for anyone who wants to go through the hives at ORNC and ask questions or talk about what's happening with the bees at this time of the year. We've not held an August meeting for several years but we'd like to this year. Among other things, we'll talk about preparing exhibits for the state fair (did someone say "State Fair!") and answer any questions you have.

CMBA needs volunteers for the honey exhibit at the Maryland State Fair, Friday August 22nd-Monday, Sept. 1st. This is the most important event of the year from an educational point of view. This is our best opportunity to inform the public and correct misconceptions about beekeeping and to enlist new beekeepers. Come and share your experience and knowledge, whatever it may be, with the public, most of whom have never met a beekeeper. Everyone who has volunteered in the past agrees this is a fun and rewarding and worthwhile experience. You can sign up at our meetings, the picnic or call Steve McDaniel who is coordinating the volunteers and dates.

CMBA published a membership directory last month. Every organization like ours should have a directory for their members to contact one another and for other pertinent information. It has come to our attention that the directory contains some errors and omissions which we would like to correct. We need your help here! The best way to inform us of a correction is to write it down on a piece of paper and give it to (or send it to) Mike Spencer or one of the CMBA officers. We will publish an Addendum to the directory in the September newsletter. We apologize for any mistakes. Help us make the directory as accurate as possible.

CMBA is your organization. Everyone should take an active role in it to make it function well. In addition to paying your dues, consider how you might contribute otherwise and let us know. We always welcome your suggestions and involvement. Let us know about your beekeeping, however it is, and how we might help or assist you.

### More Matings Mean Better Queens More Is Always Better

By David Tarp

Reprinted from Bee Culture May 2008

The success of the "reign" of a honey bee queen appears to be determined to a large degree by the number of times she mates with drone bees.

That is what research by scientists in the Department of Entomology and W.M. Keck Center for Behavioral Biology at North Carolina State University suggests. Dr. Freddie-Jeanne Richard, a post-doctoral research associate; Dr. David Tarp, assistant professor and North Carolina Cooperative Extension apiculturist; and Dr. Christina Grozinger, assistant professor of insect genomics, found that the number of times a honey bee queen mates is a key factor in determining how attractive the queen is to the worker bees of a hive. Their research was published October 3 in the online scientific journal PLoS ONE.

A honey bee queen mates early in her life, Tarp explained, but usually with multiple partners, the drones of another bee colony. Richard, Tarp, and Grozinger found that the number of partners appears to be a key factor in making the queen attractive to the worker bees of a colony - the more partners, the more attractive the queen is and the longer her reign is likely to be.

The scientists also conducted experiments that suggest that the number of times a queen mates is a factor in altering the composition of a pheromone, or chemical signal, the queen produces. It is the composition of this pheromone that appears to attract the worker bees of a hive.

A honey bee colony consists of a single queen and several thousand sterile worker bees. Throughout most of her life, the queen's job is to lay eggs. However, early in a queen's life, she makes several mating flights. On these flights, she mates - in midair - with anywhere from one to

more than 40 drones. The average number of drones with which a queen mates is 12. The queen stores the semen from her mating flights for the remainder of her life, two to three years for a long-lived queen. However, some queens are not so long-lived. They are rejected by the workers of the hive. The research of Richard, Tarpy, and Grozinger sheds light on this rejection mechanism.

Because queens mate early in their lives and store semen, it stands to reason that queens that have mated multiple times and accumulate more semen might be more valuable to a colony. But Tarpy said researchers have not studied the impact of the number of times a queen mates on her physiology until now.

To determine the effect mating has on honey bee queens, the scientists artificially inseminated queens. It's difficult to determine the number of times a queen mates under natural conditions. Some queens were inseminated with the semen from one drone, others with the semen from 10 drones. The scientists then put the queens in hives and observed them.

They found that worker bees paid more attention to the multiply inseminated queens. Worker bees demonstrate what is known as a "retinue response" to their queen; they lick her and rub their antennae on her. The retinue response to the multiply inseminated queens was more pronounced.

"This tells us the workers can tell how many drones the queen has mated with," said Grozinger.

Like many animals, honey bees use pheromones to communicate. When Richard analyzed pheromone produced in the mandibular gland of honey bee queens, she found that pheromone composition changes dramatically after queens mate and that the number of times the queen mates appears to be a key factor in determining the extent of pheromone alteration.

Richard added that when worker bees were exposed to pheromone from queens inseminated with semen from one drone and queens inseminated with semen from multiple drones, the workers showed a preference for the pheromone from the multiply inseminated queens.

Richard added that an analysis of the mandibular gland pheromone found differences in the chemical profile of pheromone from once-inseminated and multiply inseminated queens. The scientists also found differences in the two types of queens in brain-expression levels of a behaviorally relevant gene.

"Our results clearly demonstrate that insemination quantity alters queen physiology, queen pheromone profiles and queen-worker interactions," the scientists write in the PLoS One paper.

Tarpy said the research could have implications for bee breeding and for beekeepers. The research suggests that queens that mate with multiple partners are superior, so breeders may want to select for this behavior.

At the same time, beekeepers usually buy mated

queens when they re-queen their hives. Tarpy said it should be possible to devise a test to determine if a queen has mated few or many times. Such a test would help beekeepers determine the quality of the queens they buy

## **Fishing For New Beekeepers**

By James E. Tew

Reprinted from Bee Culture May 2008

Bee Culture is obviously a magazine that provides information about bees. People, who read Bee Culture, read it for beekeeping information and enjoyment. People like me write about bees for people like you. "People" are clearly a major part of this equation. There is a lot of information about bees for people to read, but very, very little information about the nature of people who read about bees.

I readily admit that I am completely unqualified to write about the personality traits of people who become beekeepers and why they choose to follow those instinctual traits, but I can't completely avoid the issue. On an average day, I work more with people who keep bees than I actually work with bees. As beekeeper numbers have steadily declined over the years, I have been forced to visit and re-visit this "people" issue. Earlier this week, I attended a meeting of interested county commissioners and county administrators who were concerned about the general bee shortage. What follows is a collage of disassociated thoughts and comments that dance around the "people" discussion. My fundamental question is, "Why do a few people come to beekeeping, while most others remain fearful and distant?"

### **A discussion of me - Jim Tew**

At first glimpse, that reads arrogantly. I certainly don't mean to leave that impression. Before I talk about others, I sense that I should admit that I don't even fully understand why I came to beekeeping all those years ago. How can I legitimately explore ways to entice others into beekeeping if I can't explain why I did it myself?

Somewhere around 1969 or so I took a general entomology class in undergraduate school. After some military time and while into an entomology degree program, I literally stumbled into a bee class somewhere around 1973. I went bananas for bees. In later years, after I had committed my life to beekeeping, I returned to my first entomology book and to my notes to see what I had written about bees. Why didn't I become beekeepingly passionate in 1969. In 1969, I took simple notes and made simple observations about bees. Absolutely nothing special happened, but I was formally introduced to bees and beekeeping, and it didn't take. About four years later, a second introduction to beekeeping struck me so forcefully that I am still involved all these years later. I am that person who was unaffected in 1969, but completely consumed just four years later. What changed in me and why? I don't know the answers - and I am that very person.

**Unanswered question - Do some people commonly need more than one introduction to beekeeping before taking up the craft?**

**Back at the Commissioners' meeting**

The participants at this meeting were diversified in their backgrounds and responsibilities and all were well aware of the present state of beekeeping. But make no mistake, these people were interested in beekeeping and were potentially supportive of beekeeping - but they were not beekeepers. They seemed to appreciate what you and I feel, but they could not feel it themselves. They had no plans to get their own hives and they certainly had no plans to take any stings. They were there to explore facilitating us but not become one of us. After the meeting discussion had gone on for a bit, one of the quieter participants finally admitted that she was mortally fearful of bees - all bees. I immediately reassured her that her fear was not unusual. Like it or not, most people are logically fearful of bees.

The second surprise of the meeting was how quickly the group settled on a perpetually unsettling discussion - zoning for restricting bee hive placement. Within the county under discussion, a single beehive could be kept on a lot that was, at least, one acre in size. While not being represented at our meeting, another group of administrators from a local city had implemented policies that were not supportive of bees. Those of us who are beekeepers were asked to explain why such city bans were implemented and how wide-spread they are. How can this fundamental fear of bees be explained to others who don't intuitively understand beekeeping? I was concerned that if we were not able to adequately explain why some cities have such bans, that the supportive group at the meeting would begin to drift away from supporting us. The beekeepers' remarks and explanations at the meeting

seemed to reassure the commissioners and the meeting progressed to other discussion areas.

**Unanswered question - Why are some areas hostile to beekeeping activities while other areas (townships, counties, cities, etc.) are tolerant of beekeepers and their bees?**

**"My Grandmother had a beehive in the garden when I was child."**

Many, many people have prior association with bees and hives but never, themselves, have owned or managed colonies. I frequently hear comments like, "My grandmother had a hive when I was child," or "My Dad had bees years ago, but I don't know what happened to them." Occasionally, people come to beekeeping because they are at a place in their lives where they remember and respect their ancestors. Beekeeping seems to be the right thing to do at that time in their lives. Is there anything our beekeeping industry can do to find these indirectly related people? I don't think so. But certainly these people represent a source of new people. Be ready for them

when they show up at your local bee meeting.

**Jim Tew - again**

Again, I am using myself as an example because I don't know your family situation. My three grown daughters support beekeeping - to an extent - because I am so involved in it and have been for so many years. I doubt that any of the three have seen the inside of a hive within the past 20 years. I don't know what that means. I live and breathe beekeeping, but my daughters are only interested to the degree that they support me emotionally. My three sons-in-law have never seen the inside of a hive and are perfectly happy keeping things that way. Am I doing something wrong? Since my daughters have had countless opportunities to become beekeepers but have never done so, I have given them their space. What else could I do?

But now a new chapter in my life has begun along with a new set of questions. I have two grandchildren (one girl, one boy) and another (unknown gender) due in a couple of months. Their rooms are decorated with bees and bee paraphernalia. They have bee books and bee toys. Clearly, they are too young to actually be around open hives, but I have driven the tractor near enough to active colonies for them to have a look. My four-year old granddaughter is fearful and uncomfortable around the hives. While she has been stung by a single wasp, she has had no bad experiences with my honey bees. (I suppose a sting is a sting.) But my two-year old grandson is the most intriguing. When I take him to my lab to show him live bees in the observation hive, he pulls back and shows apprehension. He looks away from the observation hive. He is uncertain and insecure. I have never forced either of my grandchildren to stay in the area of live bees. We have a look and we keep moving. What is the cause of their negative reactions? Is it some kind of instinct? In their daily lives, they are both consistently exposed to caricatured bees and bee-related stuff. They know all the Winnie the Pooh characters and they have nicely written children's bee books read to them. Yet live bees threaten them. My grandson has never been stung and has only been exposed to bees in a positive way. Is this just their personality or does this reaction portend a beeless future for them? Maybe the question should be, "What is it about me?" Am I am the odd duck in my immediate family?

**Unanswered question - is the propensity to passionately pursue beekeeping genetically driven?**

And even stranger - both my brothers and my Dad are beekeepers. My Mother is truly allergic to stings and must carry a sting kit which she has used numerous times. Obviously, she is not a beekeeper, but like my daughters and my wife, my Mother is supportive of the bee involvement we have. Within my family, we were all introduced to beekeeping by my Uncle Auby. Does having yet another male in my bee family tree mean anything or was it just random luck that my uncle was the beekeeper and not my aunt?

**Okay, okay, where is this going?**

All major Ohio agencies have been reducing beekeeping programs for the past several years. The justification for these reductions is obvious. In 1978, Ohio had something like 10,000-12,000 beekeepers. Today, Ohio has about 3,500 permanent beekeepers. In 1957, Ohio registered 120,000 colonies while today Ohio beekeepers generally maintain about 15,500 colonies. We are a smaller industry so our agency support has been downsized. States across the country report similar prorated reductions. The U.S. beehive population is at about 2.4 million colonies - down from five million about 20-25 years ago. While the beekeeping industry is smaller, the pollination services our industry provides are more important than ever.

The reasons for these reductions are numerous and possible topics for other articles, but within this piece, my questions concern how do we scavenge for new beekeepers? What do we look for in a new beekeeper? As an industry - both state and national - how do we advertise for new beekeepers? Is it even possible to advertise for new beekeepers?

**Unanswered question - How does our industry, at the local, state, and national level, search for new beekeepers?**

#### **Introducing beekeeping to the uninitiated**

The meeting I have been discussing above and innumerable other meetings I have attended throughout years past have been held to discuss ways to promote beekeeping to new people. After all this time, no standard procedure has risen to the top. Across the U.S., people seem to be introduced to beekeeping for a host of reasons and programs. If I am very liberal with present U.S. beekeeper numbers, roughly one person per 1,000 people is a beekeeper. I suspect the ratio is less, but it's probably ballpark correct. So how is an industry as small and widespread as ours suppose to interview 1,000 people to find that single one who could become a beekeeper? Bluntly answered - we are not going to do that. We can't do that. As I described in my early account of my move to beekeeping, I didn't even know that I had an interest in beekeeping until I was a young adult. If you had asked me in 1969, I would have said, "no way" but you couldn't keep me away bees in 1973. Same man - different answers.

#### **Some comments and thoughts - which mayor may not be correct**

1. County groups are critical to finding and recruiting new beekeepers. State groups are nearly as important. If these groups maintain high visibility at public events (fairs, garden shows, farm markets) new people will respond. Once they respond, there needs to be a program to support their new interest.
2. New people will come to beekeeping for different reasons - nearly too many reasons to list. So I am increasingly pessimistic about the possibility of developing a universal recruitment program. Beekeeping organizations should be visible, be

courteous, and be consistent. Conduct organized meetings on a regular basis. Submit information and articles to the local newspaper. Even if new people contact a university representative like me, I will quickly recommend that they make contact with the beekeeping organization nearest them. I can only do so much from afar.

3. Primarily, people learn beekeeping from other people. Reading is great - even required - but sooner or later, a hive will have to be opened. Opening a hive is not the same as reading about opening a hive. All questions should be answered and mentors should be available to prevent new people from becoming discouraged and isolated. Bees are expensive and complicated. Don't leave new people unassisted. New beekeepers are like a new colony - fragile at first but strong later.
4. Once a beekeeper does not mean always a beekeeper. An individual's life and an individual's interests change over time. Indeed, an individual's health may change. While it is sad to see an individual fade from beekeeping, it is routine. I can only guess, but, I would expect that the average beekeeper only stays with the craft for about 10 years.

#### **Those of you committed to beekeeping**

I have no science, no technical data. I have only a rudimentary background in psychology and human behavior. But I would not be surprised if those of us who are committed - long term - to beekeeping do not have some fundamental, driving passion that others can only imagine. I don't know what the source of that passion is - genetic, environmental, or learned behavior. I simply don't know, but I see you all the time at meetings, in the media, at county fairs, and at farmers' markets - the dedicated, consumed individuals who would keep bees no matter what the problems.

**Final unanswered question - What is the driving force behind some beekeepers becoming life-long, dedicated beekeepers while other beekeepers fade?**

#### **Are we like fishermen?**

Do we just put out our bait (bait = a highly visible, publicized and well organized local meeting) and wait for new people to come to us or do we, at the local level, aggressively pursue random people in random places with handouts and bee propaganda - or some such? At this time and with our current resources, I suggest that we must use the bait method. The bait method requires patience. At the local level, we can expect to get a few new people to come to beekeeping - not thousands. It would be impractical to canvass the surrounding community with information - most of which would be tossed in the trash - distributing information about local bee functions. The new beekeeper is truly the needle in the haystack.

## **IMPORTANT PHONE NUMBERS**

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## **DATES TO REMEMBER**

**General Meeting – June 3, 2008 – at Oregon Ridge Nature Center. 7:30PM.** The June speaker is Ross Conrad author of the book [Natural Beekeeping](#). We all need to hear what Ross has to say about natural and sustainable approaches to beekeeping. **Note: Open hive demo starts at 6PM.**

**MD State Beekeepers Association – June 7, 2008 – at Oregon Ridge Nature Center 8:30AM.** Kim Flottum, Editor of Bee Culture magazine is the featured speaker and others speakers are on the program. For more information go to the MSBA website: <http://www.msbeea.org>

**Board Meeting – June 16, 2008 – 7 PM at Oregon Ridge Nature Center.**

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