

BEEKEEPING ADVENTURES IN NEBRASKA

Author: Kirsten Traynor

Photographer: Dr. Marion Ellis

Image Editor: Michael Traynor

My husband and I had a strong desire to learn how to raise our own queens. We had heard a lot about the benefits about breeding for locally adapted queens. Searching for a course online, we learned about the workshops run by Dr. Marion Ellis at the University of Nebraska. The queen rearing course was to be taught by Dr. Marla Spivak, whose Minnesota hygienic queens have received such positive reviews. We had just recently installed a few of the Minnesota hygienic queens in our apiary. To raise daughters come spring, we wanted to learn how to graft.

DAY 1:

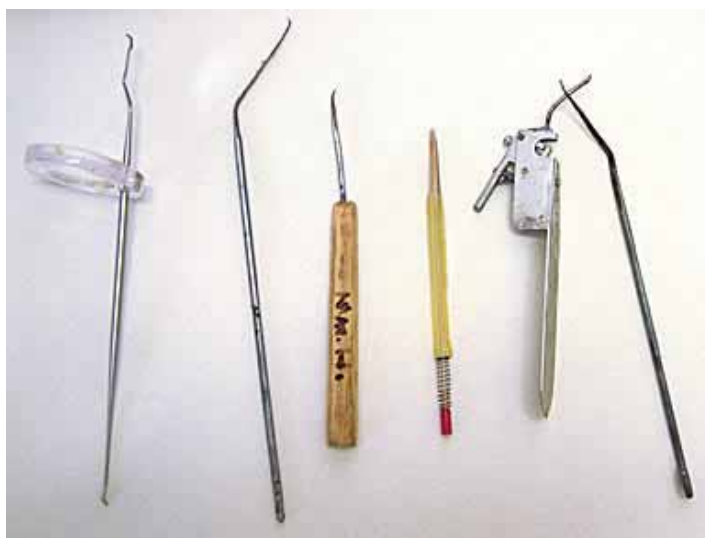
On the first morning of the Queen Rearing course, Dr. Spivak discussed queen biology and hygienic behavior. She spoke about selecting for the best breeder queens that met your specific needs. She talked at length about the importance of drones, which provide 50% of the genetic material to each worker, but are often overlooked in a breeding program. After an intense morning of discussion, we broke for lunch in the sunny courtyard. Four meals, refreshments and training materials were included in the \$85 registration fee for the two-day queen rearing. Every participant received Dr. Spivak's excellent book "Successful Queen Rearing: A Short



Dr. Marla Spivak (far left) and students of the queen rearing course each displaying a half bar of newly grafted larvae or grafting tools.

Course," which includes detailed equipment diagrams for building your own queen rearing supplies.

In the afternoon, Dr. Spivak and her technician Gary Reuter explained how they used the Doolittle method for successful queen rearing. They demonstrated how they placed the newly grafted larvae into a Swarm Box. Twenty-four hours later the grafted queen cups would be removed and you could tell if they had been accepted because the queen cups would be considerably drawn out and packed with royal jelly. Then the cells would be placed in a finishing colony for continued development.



LEFT: A selection of different grafting tools. There are many choices for the beekeeper. The author prefers the Chinese grafting tool, which is fourth from the left. It has a small flexible tongue-like tip, that easily slips under a young larva, allowing you to lift it on a bed of royal jelly. To deposit it in the queen cup, simply depress the red plunger and a bamboo nib gently nudges the larva into the queen cup.



LEFT: Dinner was served outside the bee lab on long tables. We had gorgeous weather and the trees provided dappled shade. Animated discussions flowed freely between beekeepers with a few hives out back to large commercial operators.

Dr. Marla Spivak, Dr. Marion Ellis and Gary Reuter offered insightful commentary and answered our many questions.

Throughout the day conversations occurred between large well known beekeepers, sideliners, and hobbyists. We finished the day with a pleasant dinner at the field lab, a short drive from the main building. Filled with excitement and new information, the 20 course participants chatted eagerly about beekeeping over dinner. Around 7:30 p.m. most departed for a good night's rest.



ABOVE: A group of beekeepers doing their practice graft at the four grafting stations.



The author and image editor (far left and far right) arranging a mock finishing colony with another beekeeper. Gary Reuter (with beard) looks on to ensure we get it right.

DAY 2:

The following morning we all met at the field lab. Since grafting can take some getting used to, Dr. Spivak arranged for every participant to have a practice grafting session. There were only four grafting stations, so while some grafted the other students engaged in different pursuits, such as arranging a finishing colony, preparing a swarm box, or marking queens.

Once everyone had rotated through all the activities, we broke for lunch. After lunch we grafted again, but this time for real. Dr. Spivak let us look at the grafter larvae under a microscope to see if we had missed any cells and if the larvae were still breathing. Then the queen cells were placed in the finishing colonies. Alternatives to grafting as well as mating yards were discussed. The best method



TOP LEFT: The author grafting with the Chinese grafting tool. The grafting stations were set up, so we had a directional light source for looking into the cells.

TOP RIGHT: Four beekeepers grafting their bar of queen cups. From left: Large commercial beekeeper from Texas, Steve Tipton from Kansas, the author Kirsten Traynor and the image editor Michael Traynor.



for success in queen introduction was also demonstrated. We finished a very successful two day course with another cook-out. As we ate, the air filled with animated discussion. Everyone was excited about having grafted successfully.

Dr. Spivak stressed the importance of queen rearing practices with a statement by C. L. Farrar: "Poorly-reared queens of productive stock will always be inferior to well-reared queens of less-productive stock." We knew that the methods she had taught us in two days would serve us well in our own queen rearing operations.

Our class mates included writers from bee magazines, an entomologist from Boston, Ma., commercial beekeepers, people from the San Francisco, CA area and from all over the USA. We were extremely happy that we had decided to travel 1200 miles by automobile to meet these very interesting people.



LEFT: An entomologist beekeeper from Boston Massachusetts looks at his grafted bar of queen cells under magnification. The image is projected onto the television screen, so he can see if all cells are successfully grafted and the larvae are alive and breathing.

DAY 3:

The next morning we returned to the main building at the Mead, NE location for an intensive three day Master Beekeeping Workshop coordinated by Dr. Marion Ellis. He had arranged a full roster of excellent speakers that included, Dr. Marion Ellis, Dr. Marla Spivak, Gary Reuter, Dr. Larry Conner of Wicwas Press, Dr. Tiffany Heng-Moss from the University of Nebraska, plus many more.

The first morning we heard talks on Social Insects, Honey Bee Colony Life, Bee Anatomy, Honey Bee Behavior and Honey Bee Pheromones in the large lecture auditorium. Approximately 60 beekeepers from around the country participated, including many who had attended the queen rearing workshop. After an intense and informative morning, we broke for lunch, which was included in the \$95 registration fee, along with four other meals, refreshments and a workbook. Coffee, pastries and honey in all varieties from comb, to extracted to creamed were also provided throughout the many breaks.

For the afternoon we headed again to the bee lab, where we split into small groups and rotated through classes on swarm biology, queen introduction, dividing colonies, removing honey, feeding bees, wintering bees, package bees, and pollen collection.



TOP LEFT: Locating a swarm. Conveniently a small swarm landed in the branch of a tree not far from the bee lab. Without brood or honey stores to protect, the cluster of bees are very gentle. An undergraduate student runs her hand over the swarm.

MIDDLE LEFT: The image editor and author stand amidst the flying bees of a departing swarm.

BOTTOM LEFT: Instructor Steve Tipton from the Kansas Beekeepers Association hives the swarm in a five frame nuc box. He points out the few bees on the entrance nasanoving to alert their colony mates of their new home.



Those from the queen rearing workshop were allowed to look at their grafted cells to see how many had been accepted and drawn out during their 24 hours in the swarm box. It was amazing to see that the nurse bees really had drawn out the queen cups almost a ½” and filled them with copious amounts of royal jelly. On average 60% of the grafted larvae were well on their way to becoming queens, a high return for beginning grafters. With practice Dr. Spivak said we should expect around 90% acceptance. We rounded out the evening with an outdoor dinner.



Instructor Joli Winer of Mid-Con, a beekeeper's supply catalog, demonstrates her pollen cleaning fan that she recently purchased. It blows all the light debris away, leaving only clean pollen behind.



Lunch is served outside the bee lab. We had wonderful weather the entire week.



Dr. Ellis's students demonstrate hiving a package of bees in a ten frame hive.



ABOVE: Different methods of feeding bees are demonstrated. Pictured above is a Ziploc feeder bag and two frame feeders.

RIGHT: How to remove bees from honey supers by brushing, using chemicals, or blowing are demonstrated.



DAY 4:

The following morning we gathered again in the large auditorium for talks on managing bees for honey production, value-added products, and brood diseases and parasites. After lunch we listened to Dr. Ellis' graduate student Nick Aliano speak on adult bee diseases and parasites. We also heard Becky Tipton, a Kansas beekeeper speak about doing youth presentations on bees and beekeeping. Then we headed out to the bee lab for rotating workshops on wax & honey processing, comb honey production (which we were allowed to sample. Dr. Ellis and his graduate students produce fine, light, delicate comb honey that is absolutely scrumptious. It was so good that we purchased some to take back with us to Maryland.), brood disease and varroa detection, queen rearing, and moving bees.



ABOVE: Nick Aliano, a graduate student at the University of Nebraska demonstrates a frame of queen cells raised at the bee lab.

MIDDLE RIGHT: Diagnosing disease. Here some beekeepers examine a frame of American foul brood, smelling the distinctive sour odor.

BOTTOM RIGHT: We all eagerly line up for homemade honey ice cream in four different flavors provided by Becky Tipton and Joli Winer. They even let us try all four flavors.



Honey Processing Facility at the bee lab.





ABOVE LEFT: During dinner Dr. Larry Conner led us in team problem solving. We addressed important issues beekeepers face, such as keeping hives in urban locations.

ABOVE RIGHT: Demonstration of comb honey equipment.

RIGHT: Steve Tipton demonstrates how to tie some navy style knots, so beekeepers can secure their bees into their trucks. The crucial aspects of a good beekeeper's knot is that it can't accidentally come undone, but is easy to open when desired.



DAY 5:

The next morning, our final day, we were back in the air-conditioned auditorium. We listened to a presentation on bee dance language. Then we watched video footage of bees dancing. This we then deciphered to determine the direction and distance the dancing bee referred to. We then headed outside to track the nectar sources. Since Dr. Ellis didn't want us traipsing on a mile trek, he and his students had set up a scaled down version. Using a compass we were able to locate the nectar source from the bee's dance language.

After a short break we saw a presentation on drone biology and bee botany. Then we stopped for lunch and a mead tasting, sampling four varieties that Dr. Ellis and other participants had brewed. During lunch we had a chance to speak with many of Dr. Ellis' entomology students, who spoke avidly of their courses and their native Nebraska. We returned to the auditorium for lectures on beekeeping history, creamed honey, other bees managed for pollination, marketing hive products, beekeeping as a business, stinging insects, and beekeeping in an urban environment.

Finally we said good-bye to Dr. Ellis and his helpful staff of graduate students, who had ensured that the five days ran smoothly. The five-days were intense and information packed. We covered many aspects of beekeeping and marketing, from making soap with beeswax to brewing mead, from diagnosing disease to raising healthy queens. Although we had a 1,200 mile return drive ahead of us, we were thankful that we had come. The week in Nebraska was better than any short course or book, because so much of it was hands on. Our questions were answered, but the knowledge that we gained during the week raised even more. And that is how it should be, for the more you know, the more you realize how little you really know. A healthy perspective that keeps you always questing after more knowledge.

Thank you Dr. Ellis and Dr. Spivak for such an excellent beekeeping experience. We can not thank you enough. To all other beekeepers, we highly recommend traveling out to Nebraska. It is certainly worth it!