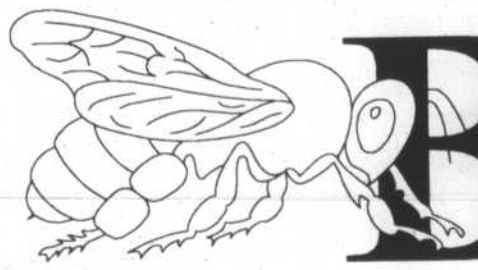

BEEKEEPING:

By Paula Lavigne
Staff Reporter

Standing in the middle of a patch of clover, Marion Ellis looked towards his buzzing swarm of over 300,000 honey bees making their way into their hives.

Ellis, a graduate student in biology, has been a beekeeper for the past 25 years. He spent 15 of those years as the state apiculturist for the Nebraska Department of Agriculture. His focus was controlling diseases prone to honey bees.

And even though beekeeping is a "stinging" occupation, Ellis has been fascinated with it since he was in high school when he started helping out with his grandparents' honey bee colony.

"My mom's got pictures of me when I was a kid with both eyes swelled shut that she likes to show to her friends," he said, laughing.

Ellis, who currently teaches beekeeping classes at the University of Nebraska-Lincoln and takes care of the apiary on east campus, said he was hooked on bees from the start.

"They're fascinating creatures," he said. "You can sure teach young people a lot about biology through them."

Ellis has had several education majors in his classes who want to use bees as a tool for teaching their own students about more than just "the birds and the bees."

"It makes you aware of a lot of things in the natural world. You see the bees coming home with a different pollen color and it makes you start looking around to see what's blooming," he said.

"You learn about insects and that's enjoyable. For a lot of people who live in town, (beekeeping) gives them an excuse to come into the country and, if you're really good at it, you can make a profit."

Ellis said a lot of children raise bees for 4-H projects and some people who tend orchards or gardens for a living use bees for pollination purposes.

For those who are serious about getting started with beekeeping, Ellis said, they need to get in contact with someone who tends bees to learn how the operation works.

The structure of bee life is very similar to human life. An apiary, the place where bees are kept, is like a neighborhood. A hive is the bees' house while a colony is a family of bees that live in a specific hive.

Within the colony, there is a three-tiered cast system. The worker bees have different duties from cleaning cells, guarding the entrance and foraging for pollen and nectar. The workers live five to seven weeks before their wings literally wear out.

The drone bees perform no work in the colony other than mating with the queen whose only duty is to lay eggs — about one every minute or 1500 eggs a day.

"She's referred to as a queen," Ellis said, "but if you think about her life, she's more like a slave."

Ellis said all the work done in the hive is through instinct.

"(Bees) are a social insect and they are able to do things that are really amazing for an insect," he said. "They can communicate where food is located, threats to the hive and the location of a queen."

This communication is carried out in two ways, he said.

The bees use a symbolic dance, Ellis said, which is mainly used for relaying the direction and distance of a food source.

"If the food is within 100 meters, they do a round dance where they circle one way then circle the other way stopping to give the other bees a taste of the nectar," he said.

The bees can also communicate by emitting odors called pheromones that other bees can detect. They can produce up to 16 different pheromones.

"If you approach a colony and bang on the entrance, the bees release a warning scent that makes all the worker bees come to protect the colony," he said.

This is why beekeepers use a smoker when they open the hives, he said. The smoke masks the odor so they won't detect the warning scent and become defensive.

Even though he takes this precaution, Ellis still gets stung almost every day. However, he said after a while a beekeeper could develop a tolerance to the stings.

"I can get stung 20 to 30 times on the arm and just get little red dots," he said. "It always hurts and you say 'ouch' and a few other words you probably shouldn't, but it's something that becomes a minor annoyance after you've worked with bees long enough."

Only one-half of one percent of the population is severely allergic to bee stings. Even if someone is allergic, Ellis said, doctors have medications which can desensitize against bee stings.

Traditionally, he said, beekeepers do take other precautions to avoid bee stings. Wearing coveralls made of light colored smooth material complete with long, thick gloves is the best protection.

"For a beekeeper in Nebraska in 95 degree heat with gloves and overalls on, the biggest threat is overheating," Ellis said, "so most beekeepers will forego all that."

Although Ellis might not wear the additional protection, he said he always wears a veil over his head.

Protection isn't the only thing Ellis, or other beekeepers, worries about. Diseases that can wipe out entire colonies have become a concern.

"Until about 10 years ago, bees had a fairly good resistance to most diseases," he said. "About 1984 we had a parasitic mite introduced to this country, and in 1987 we had a second one that affected honey bees."

Bees aren't native to the United States. They were brought over in the 1600s from Europe, Ellis said, and fortunately left most of their diseases behind. In 1920, the United States prohibited the importation of bees to prevent diseases.

Ellis said if the current diseases weren't detected in time, it could wipe a beekeeper out of business.

"Bees are usually faithful to their colony, but a lot of drifting does go on," he said. "A lot of work needs to be done in developing resistance to the diseases."

Another problem of beekeepers in the Southwest is the famous Africanized or "killer bee" Ellis said. Bees in Nebraska haven't encountered this problem yet.

"Traditionally, Nebraska is a fairly good area for beekeeping," he said.