

Killer bees carried mites into upstate New York

ITHACA, NY. — When some honey bees from Brazil, inappropriately dubbed "killer" bees, escaped from a ship in upstate New York last year, they were carrying deadly mites. Although the bees have since died, Cornell University scientists are conducting an intensive hunt to determine whether any New York colonies have become infested with the dreaded Asian bee mite.

The nasty bees themselves are not the object of the pursuit since only worker bees escaped and they are unable to produce any young.

It's the deadly mites they carry that are a potential menace to the honey bees of our nation and that's a threat to the nation's honey crop and more than 50 crops dependent on insect pollination, of which honey bees are the most efficient, says a Cornell entomologist, one of the nation's leading bee experts.

About a year ago, a freighter from Brazil docked in Oswego, New York, and a colony of Africanized bees, sometimes called "killer" bees because of their aggressive behavior, was discovered thriving on board. Although the colony and the queen were destroyed, it is feared that several bees may have escaped.

Cornell scientists are trying to determine if any of those bees jumped ship and carried the bloodthirsty Asian bee mite, *Varroa jacobsoni*, to the mainland. The scientists are combing a one-mile radius of the Lake Ontario port, trying to capture every single honey bee colony in search of Africanized bees and bee mites.

Within the one-mile radius, rewards for honey bee colonies are being offered, and Cornell scientists are tracking down colonies by chasing honey bees as they make "bee lines" for home.

"We do not consider the escape of the Africanized bees themselves to be any threat at all," stresses Roger Morse, director of the Dyce Laboratory for Honey Bee Studies in the New York State College of Agriculture and Life Sciences at Cornell. "Our objective is to determine whether the Africanized bees made it to any honey bee colonies and contaminated them with the deadly *Varroa* mites."

In fact, so-called "killer" bees are not anything of the sort, Morse is quick to point out. "They are certainly nasty little bees but they are greatly misunderstood," says the Cornell expert, one of a few scientists in the nation with a great deal of experience with Africanized bees.

When African bees were transported to Brazil in 1956 for a research project, some escaped. Being more dominant than the gentler native bees, they eventually "conquered" the queens,

thereby "Africanizing" the bee population. Bees in South America came to be known, therefore, as Africanized bees.

Although such bees are as efficient pollinators as the European bees that inhabit the U.S., they are often more fierce. Yet, they look the same and their stings are no more venomous.

"In fact, the only way we can tell the difference is by their size: Africanized bees are about 10 percent smaller," Morse explains.

In the trophies, these bees have picked up the slanderous nickname "killer bees" because they are easily aroused and sting with only a little provocation. The Africanized bees also swarm about twice as frequently as European bees, thus they are able to reproduce and colonize new territory rapidly.

It's estimated that the Africanized bees are migrating north from Central America at about 200 miles a year. They are predicted to enter the U.S. in large numbers by 1990.

"Their invasion of the U.S. is inevitable, yet I am not in the least worried about them being here, except for the mites they carry and the fear that so many people have of them," says Morse, a member of the National Advisory Committee of Bee Affairs for the Animal Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture.

APHIS is conducting surveys throughout the nation to hunt down any Africanized bees or *Varroa* bee mites. Morse's work in Oswego has been in cooperation with APHIS officials.

Morse suspects that Africanized bees in temperate climates will prove to be much less vicious than

they are in tropical areas. In Argentina, for example, where the climate is similar to that of the U.S., Africanized bees are hardly more aggressive than European bees and the Argentinians have not reported problems associated with them. In South Africa, where the bees come from, there also are no reported problems. In tropical Brazil, the bees are undoubtedly easier to anger and quicker to sting. Yet beekeepers have learned to manage their hives very successfully, Morse points out.

"Evidently, the closer the bees are to the equator, the more ferocious they act," Morse observes.

There also is some evidence that suggests that "killer" bees would not survive a winter very well.

The imminent threat, therefore, is the Asian bee mite. Evidently, the mites are not deadly to the Africanized bees but could cripple and deform honey bees in the U.S. by feeding on bee pupae, sucking blood from between adult bee segments, and by attacking drone bees that fertilize queen bees.

Thus far, the Cornell scientists have not yet found any Africanized bees or Asian bee mites in the hives that they have examined from Oswego, but they will continue to monitor the area for the rest of the summer. APHIS probably will follow up by surveying the five-mile radius of the port for another five years.

"A potential problem of this magnitude must be taken very seriously," Morse warns. "These mites have already caused extensive honey bee colony deaths in more than 35 nations, including countries in Europe, Asia, South America, and Africa. It is probably inevitable that they will make it to

the U.S."

Morse stresses, therefore, that it is essential to learn how to cope with these pests. Cornell is the only institution concentrating research on the deadly mite.

Morse and his graduate students not only are surveying the Oswego area and examining the honey bees that are found, but also are releasing marked bees at the port to determine if bees new to an area can find colonies. About 5,000 bees were released at varying distances from known colonies. Only five bees found hives and they were very close—only 25 yards away.

"This tells us that lost bees do


not have a great ability to find a colony unless it is very close," Morse observes.

Members of his group, both at Cornell and in Brazil, also are studying the biology and control of the mite, trying to come up with a miticide that will exterminate the mite without harming honey bees or leaving a harmful residue.

"The spread of the *Varroa jacobsoni* bee mite is just one example of how increased air and sea traffic around the globe is spreading pests and diseases around the planet at a horrendous rate. As a result, American agriculture is continually being threatened," Morse concludes.

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