

State and Local

Expert says African killer bees will arrive in U.S. within 2 years

By Jade Boyd
Reporter

In 1956 Dr. W.E. Kerr brought 26 African honey bee queens to Brazil. He planned to cross-breed them with Brazil's existing European bees to produce a hybrid bee strain that would yield more honey.

The next year most of these queens were accidentally released into the wild and, for a decade, no one noticed the consequences.

But by the early '70s researchers and beekeepers in Brazil realized that the bees were thriving and seriously affecting the Brazilian honey crop. The new bees also were extremely aggressive.

Killer bees had been released. "He (Kerr) selected queens from African stock, knowing that they were much more aggressive," said Dr. John Thomas, an entomologist with the Texas Agricultural Extension Service. "He was looking for a bee that would work longer hours in the tropics."

Thomas estimates the killer bees will arrive in the United States from Mexico by late 1989 or early 1990. Other estimates range from as early as this year to as late as 1994. In Texas, Brownsville is likely to witness the bees first because of easy access from the coastal plains.

Thomas is one of 19 members of the Texas Africanized Honey Bee Advisory Committee. Some are from the Texas Department of Health; others represent the Texas Department of Parks and Wildlife. Members of the Texas Farm Bureau and commercial beekeepers from the state also sit on the committee.

The main goal of the committee is to educate police, firefighters and beekeepers around the state about the dangers killer bees present.

Thomas said the committee expects the worst problems with killer bees in urban areas where the bees are likely to come in contact with large numbers of people.

"Once it has been confirmed that the bee is in an area, respect bees," Thomas said. "Don't mess with them. If you see some, report them."

Honey bees are not native to North or South America. However, several races of European bees have thrived in the Western Hemisphere since their introduction to the Colonies in 1621.

"In tests designed to measure the level of reaction to the alarm pheromone, they (African honey bees) are 10 to 15 times more reactive than the European," Thomas said.

Alarm pheromones are released when a hive is disturbed; they are a signal to the bees to protect the hive from predators.

Thomas likened the Africans' aggressive reac-

tions to those of a red wasp or yellowjacket, but because of the larger number of honey bees in a hive, the danger is greater.

"If you disturb an African colony you're going to get 100 to 200 stings," he said. "When you disturb a European, you may get two or three."

In addition to being more aggressive, African honey bees are more reproductive and more resilient than European honey bees. In the 30 years since their escape from captivity, killer bees have spread from Sao Paulo, Brazil, throughout South America. Their trek north has been confirmed in the Yucatan Peninsula of Mexico.

"I know that there has been a proposal to establish a bee regulated zone in Mexico at the Isthmus of Tehuantepec," Thomas said. "This was an \$18 million proposal. It was put together last year and presented to Congress."

In April, Congress asked for a revised proposal with a smaller budget, Thomas said.

The Isthmus of Tehuantepec is between Veracruz and the Yucatan Peninsula. It is about 130 miles wide and separates the Gulf of Mexico from the Pacific Ocean.

"About a month ago I saw an altered proposal which cut down the number of research efforts, but essentially kept four (geographic) areas," Thomas said. "They selected the most likely routes the bee would go through the Isthmus of Tehuantepec and they concentrated their management tactics in three areas, feeling that most of the bees would have to go through these three areas. Rather than setting up a barrier that was about 100 miles wide across that whole land area, they tried to speculate: If the bees come through, where will they come through?"

Thomas said he expected the agreement to be announced last Wednesday.

To date, Thomas knows of only two confirmed reports of killer bees in the United States.

This April a hive was brought into Panama City, Fla., on a South American freighter. The hive was later destroyed.

In Kern County, Calif., in 1984, an African hive arrived in a load of Venezuelan pipe and went undiscovered for about one year. The state of California declared the bees eradicated 12 months later. Twenty-two hives were destroyed and while exact figures are not available, Thomas estimates the state spent close to \$1 million.

African honey bees are different from the European bees that domestic honey producers raise. For centuries, honey producers have tried to breed certain traits into their bees: gentleness, high honey production and absence of swarming.

Killer bees evolved in an extremely hostile Af-

rican environment for thousands of years before being transplanted to South America. Droughts, deserts and a large number of predators made survival for the bees very difficult.

"The only bees that came out of that kind of environmental selection were bees that were extremely mean," Thomas said. "They convert nearly all of their resources — nectar and pollen — into brood (eggs and larvae). They have a tendency not to hoard honey and they won't tolerate large numbers (in the hive) because they swarm so much."

A swarm takes place when the queen that is in the hive fertilizes a queen egg. Then the old queen and about half of the bees in that hive leave. Killer bees swarm six to 12 times more often than domestic bees.

"The thing that has baffled many scientists that have been down there (South and Central America) is the fact that the African honey bee has been able to keep itself isolated to the extent that it has. It has maintained that mean characteristic while moving over the 2,800 to 3,000 miles that it has traveled from 1957 to 1987," Thomas said. "In that 30 years the bee has changed very little."

Recent studies of the mating habits of killer bees answer some of these questions.

African drones, or males, mate longer hours daily than do European drones. They may mate with either African or European queens. When they mate with European queens, the resulting offspring is a hybrid, containing characteristics of both races.

However, the mating flight of the African queen occurs late in the day, after the European drones have stopped flying. The probability of an African queen mating with a European drone is very remote, Thomas said.

When African bees move into an area, they also affect European drone production, eventually bringing it to a halt.

"Then, whenever either the Africans or the Europeans produce virgin queens, they've only got African males to mate with," Thomas said. "This was only determined in the last three or four years."

Armed with this information, experts hope to have a chance to stop the killer bees in Mexico before they reach the United States. Scientists are genetically selecting and breeding large numbers of late-flying European drones. They would then release these drones in target areas.

"The idea basically is to have such a high population of domestic drones that the probability of either European or African queens mating with African drones would be very remote," he said.

A&M researchers work in Honduras training farmers

By Patricia Carroll
Reporter

Acting somewhat like a miniature Peace Corps, a group of 15 Texas A&M faculty members and A&M Agricultural Extension Service personnel served two weeks in Honduras as part of an international agricultural development training group.

The program was awarded to A&M through a Title XII strengthening grant funded by the U.S. government, said Eugenia Floyd, a veterinary clinical associate at A&M.

Before leaving for Honduras on May 21, the group received cross-cultural training on campus which served as an overview of international project funding services and past international programs.

Because of her interest in animals, Floyd said, the Fondo Gaudero, or "cattle funding" project, was most enjoyable.

"This was a cooperative program established to involve the peasants in cattle production," she said.

Breeding farms are set up and cattle are loaned to the peasants, who may pay back the loans with animals or with money made in sales, she said.

"The purpose was to extend livestock production among small farmers," she said.

Many more women's programs are being developed because in the past most projects have been aimed at male farmers, Floyd said.

Among these programs was a canning project that taught women how to make jellies and other canned goods and how to market them, she said.

While in Honduras, one of the biggest problems Floyd observed was deforestation, she said.

"Small farmers practice a 'slash and burn' type of agriculture," she said. "They cut down the forest, plant for a couple of years and then move on. This causes terrible damage to the land."

Floyd said a forestry school in Honduras has been funded to teach farmers a more sedentary type of agriculture to help preserve the land.

The U.S. Agency for International Development, (AID), is funding a number of projects in Honduras because of growing concern for the country's development, Floyd said.

"We chose Honduras because it is a sort of hotbed for devel-

"I think all of us who went have an expanded consciousness of what potentials really are for developing countries."

— Eugenia Floyd, A&M veterinary clinical associate

opment right now and because of the great variety of projects there," she said.

Floyd's goal, she said, is to work on an international research project in the field of cattle disease. Floyd has a doctorate in veterinary medicine from the University of Georgia and is working on her Ph.D. in pathology at A&M.

"You read about such development projects in the paper, but the news is so select," she said. "I think all of us who went have an expanded consciousness of what potentials really are for developing countries."

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