

“If you throw a frog in a pot of boiling water, it will hop right out. But if you put that frog in a pot of tepid water and slowly warm it, the frog doesn't figure out what's going on until it's too late. Boiled frog. It's just a matter of working by slow degrees.”

— Stephenie Meyer, although original source of the frog/pot parable is ancient and unknown.¹

When I first became a beekeeper back in 2005, there was a great concern about so-called Africanized honey bees steadily marching toward North Carolina. One of my motivations for studying as much as I could about honey bees was so that I could be one of the survivors when the wave of “killer bees” finally washed through my neighborhood. From my extensive research and taking into account the estimates of apiculture experts, it was clear at that time that I had a little more than five years to enjoy beekeeping before the little stinging Africanized devils migrated into Piedmont NC, at least seasonally. That would ruin my hobby and I would then move on to stamp collecting or crawfish aquaculture.

Fortunately, the death march slowed considerably and the invasive wave of Africanized bees isn't yet lapping at the borders of North Carolina. But instead of them coming to our state through natural territory expansion, I see signs that they are being introduced by beekeepers who may be uninformed, arrogant, sociopathically self-serving or worse.

Brief history

For those who missed out on the information campaign that this topic received twenty-plus years ago (including the horror movies *The Swarm*, *Killer Bees* and others),

Brazilian researcher Dr. Warwick Kerr wanted to breed a honey bee that would do well in the tropics. European honey bees are well-suited to temperate regions: they thrive in a 4-season environment but don't do well in extreme humidity (making it difficult to cure honey) and in places with dry season/wet season weather cycles. In 1956, Dr. Kerr brought *Apis mellifera scutellata* queens from southern Africa to his research apiary in Brazil in order to cross-breed them with other races in search of a worthwhile tropical-adapted hybrid.

It is important to note that Africa has at least eleven races of honey bees: *A. m. scutellata*, *A. m. intermissa*, *A. m. capensis*, *A. m. adonsonii*, *A. m. jemenitica*, *A. m. larmarckii*, *A. m. litorea*, *A. m. monticola*, *A. m. sahariensis*, *A. m. simensis* and *A. m. unicolor*, each with their own distinct set of characteristics and temperament, ranging from gentle as lambs to the spawn of Satan. The ones that Dr. Kerr imported were *A. m. scutellata*. In the Americas, the progeny of those bees have been sloppily labelled “African/Africanized honey bees” (AHB) even though that label isn't genuinely distinctive. But for simplicity and conventionality, that title is used here too.

A year after their importation, a dozen or so *A. m. scutellata* swarms escaped from Dr. Kerr's apiary. The popular story is that a visiting apiculturist noticed that the research hives had queen excluders above the bottom boards and, thinking that was a mistake, removed them.

The escaped swarms thrived in Brazil and *A. m. scutellata*'s range rapidly expanded, moving both north and south. This fact is important because when the southern incursion reached mid-Argentina, at the latitude in the southern hemisphere roughly equivalent to North Carolina's latitude in the northern hemisphere,

pot of water where the water temperature is gradually increased will jump out when the temperature becomes uncomfortable. Frogs aren't inherently stupid. But IF the story were true, it would provide a profound teaching moment!

¹ The frog-in-the-pot parable is a complete myth that has been around for a very long time. In the mid-1800s, people experimented with live frogs and found that contrary to the cute allegory, a frog dropped into boiling water will die from... being dropped into boiling water. Who knew??? A frog in a

the migration stopped. Why? Nobody knows for sure, but we hope that whatever the reason, it will also keep Africanized bees from becoming embedded as the feral honey bee of North Carolina.

Initially, the hope was that the *A. m. scutellata*'s genetics would be watered down by interbreeding with European honey bees as the wave moved north, but that did not happen. Instead, the bees did hybridize along the advancing front, but hybrids aren't "fit" compared to pure-bloods so the hybridized genetics are displaced by the pure *scutellata* genes once the European/African hybrid zone passes through an area.

The shockingly rapid expansion of *A. m. scutellata*'s range is due to a number of genetic characteristics that ensure the imported bees will always dominate and displace European bees. For example, *A. m. scutellata* may swarm ten times a year; their queens preferentially mate with *scutellata* drones; they aren't picky about nest sites and will nest in such places as in-ground water-meter boxes; swarms readily invade and usurp other colonies; and when conditions are unfavorable, the colony readily absconds and migrates to a more favorable location. All of these things ensure that when *scutellata* becomes embedded in an area, they will quickly dominate the feral honey bee population.

The northern incursion rapidly marched through South and Central America before crossing the Texas border in 1990 and soon afterwards into Southern California. But after the first few years the wave slowed significantly. Africanized bees became embedded in the areas that have more of a rainy season/dry season weather pattern (Southern California, Nevada, Arizona, New Mexico, Texas, for example) but haven't spread much farther east than the western part of Louisiana. However, around 2005 a different cohort came by sea on a cargo ship to Tampa and has spread such that Africanized honey bees are now found throughout Florida. They

are mostly in the middle and southern counties but they are established throughout the state.

Why so bad?

So-called Africanized bees do things in "tens". They typically defend an area ten times farther from their colonies than European bees do (100 feet instead of 10). They respond ten times faster to perceived disturbances, they issue ten times the number of "soldier bees" to deter a perceived offense and they inflict ten times the number of stings. This hyper-defensiveness means that Africanized bees cannot be kept "in polite society." Effective management requires colonies to be widely spaced and kept far away from pets, livestock and people.

Many people foolishly shrug off the hyper-defensive nature of Africanized bees (hey, aren't beekeepers tough?), but that's not the only trait that makes them lousy bees in temperate climates. They swarm as soon as the colony population allows it, often ten times per year. Best management practice requires that honey must be harvested as soon as it is stored by the bees; otherwise, they'll carry it off with a swarm. The bees will abscond if they aren't happy with their surroundings, the frequency of disturbances such as inspections, or who knows what else. They don't understand spring/summer/fall/winter climates and don't proactively prepare for winter.

It is critical to know that the genetic traits that define the Africanized bee are genetically dominant. Cross a sweet, manageable, productive European virgin with an Africanized drone and their offspring will act like daddy. That's important when we consider that bee-breeders in areas with Africanized bees typically assure us that they "flood the area with drones" so that the offspring of their open-mated production queens "aren't Africanized". Considering that Africanized colonies quickly overwhelm an area as described above, "flooding the area with European drones" may (or may not) tend to lessen the percentage of Africanized sperm in the queen's spermatheca

but statistical probability ensures that the Africanized traits will exist in the colony.

Why this topic?

In the 90's and 00's, we were frequently reminded of the demon horde that is headed our way. As the seemingly relentless march toward Piedmont North Carolina slowed significantly, it seems that beekeepers have become complacent, even unaware of, the threat that still exists. In my area, I've even seen a cavalier attitude among some beekeepers with regard to buying queens and even packages and nucs from Africanized zones, notably Texas and Florida. I hear things like, "They aren't so bad" and "My friend in Florida has them without any problem." Then later I hear things like, "Dang, my bees sure are mean... what should I do?" and "My bees chase me back to the truck... what's up with that?"

Won't the suppliers protect us?

My mama taught me many years ago that the only person whom I can genuinely trust to have my interests at heart is me. Texas and Florida bee suppliers are not necessarily "bad people" – they are just trying to stay in business as best they can. Their bees may be great options for people who are in Africanized honey bee areas of the country, basically Southern California to western Louisiana, and Florida. But why on earth would someone in sweet-bee country, such as Piedmont North Carolina, deliberately choose to potentially endanger their children, neighbors and their own reputation by introducing hyper-defensive honey bees into their neighborhoods?

A quick internet search came up with a honey bee supplier in south Florida, halfway between Tampa and Miami, in the heart of Africanized bee territory, who advertises, "The honey bees for sale are properly mated queens from known and purchased Queen Mother stock that are grafted and mated locally."² In

other words, the breeder queens are likely European but the queens for sale are open-mated. So the baby-daddies have Africanized drones among them. And it is the Africanized traits that are genetically dominant.

A major, well-known Texas bee supplier recently said, "The Buckfast are definitely blended in to the super mongrelized population of honeybees that I've got now. They've got all major subspecies of honeybees in their lineage, *Apis mellifera mellifera*, bee of Northern Europe. Some people call it the black bee. *Apis mellifera ligustica*, *Apis mellifera carnica*, and *Apis mellifera caucasica*, and *Apis mellifera scutellata*... all four major subspecies, *Apis mellifera mellifera*, *Apis mellifera ligustica*, *Apis mellifera caucasica*, and *Apis mellifera scutellata* are present in our population."³ So much for the notion of flooding mating yards with European drones to ensure European genetics! Major points, though, for honesty. But since the hyper-defensiveness is a dominant genetic trait, what does the presence of *A. m. scutellata* genes dictate?

What should we do?

First and foremost, we need to recognize that a threat exists. Think of the frog parable: years ago, we were concerned about being in hot water and we took precautions. Now, there seems to be a drip, drip, drip of Africanized bees coming into North Carolina and we beekeeper-frogs are calmly sitting in the water as the heat rises. Stop it! Educate your fellow beekeepers! Don't look the other way when people bring in potentially Africanized-genetics bees from Texas and Florida, even though those bees may be cheap, convenient, readily available or with unsubstantiated sales claims such as "good with mites"? (Personally, if my wife or grandchildren are attacked in my yard, it will be me that kills the colony, not the mites.)

We also need to become educated once again on the migration of Africanized bees and

² <https://leehoneybee.com/honey-bees-for-sale-cape-coral/>

³ <https://www.beekeepingtodaypodcast.com/bee-weaver-queens-with-danny-weaver-s5-e29/>

what that will mean for North Carolina if they are allowed to become dominant here. Start with the excellent resources on the NCSBA website (www.ncbeekeepers.org) under [Resources > Africanized Honey Bees](#), which includes a link to the [North Carolina Africanized Honey Bee Action Plan](#).

Lastly, one important point needs to be emphasized: There is no reason to keep nasty bees, regardless of what is in their genes. We don't like Africanized bees because they are likely to act uncivilized. For that very same reason, get rid of any bees you have that are uncivilized. There's no need to have their

genetics tested – bad is bad regardless of the cause. Now, with that settled, don't go out and deliberately get bad bees! Would you like for your name to go down in history, along with Dr. Kerr's, as the person who ruined North Carolina hobby beekeeping?

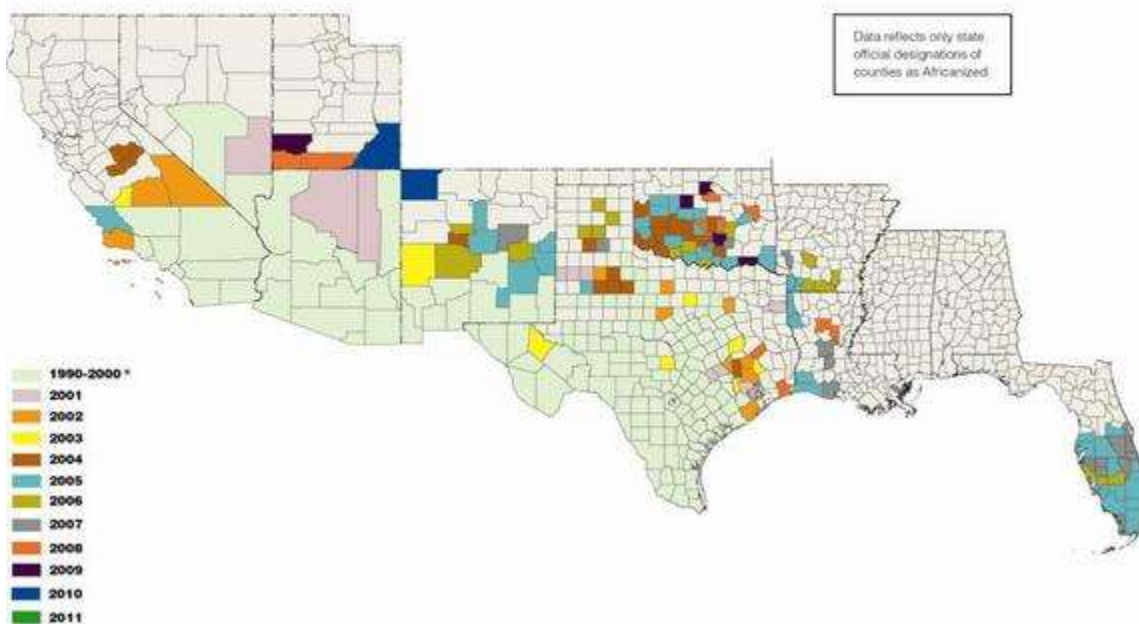
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Spread of Africanized honey bees by year, by county

Updated March 2011

Agricultural Research Service, USDA



The USDA ARS no longer updates its map of AHB expansion – the map shown here is twelve years old. That expansion has slowed considerably but has not stopped. In particular, Florida's northern counties and California counties up to Sacramento are now considered Africanized.