Africanized Honey Bee

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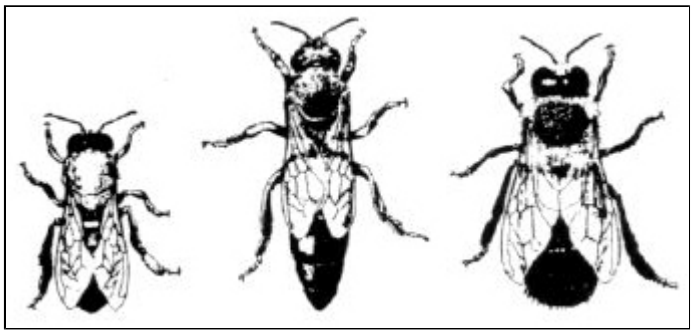
Common Names	Scientific Name
Africanized Honey Bee	*Apismellifera scutellata* (Ruttner)
Killer Bee	

The Africanized Honey Bee (AHB) is a result of mating between African bees and European honey bees of North and South America. In 1956, a geneticist brought African queens to Brazil with the idea of developing a superior honey bee, one more suited to tropical conditions. Unfortunately, bees from 26 experimental colonies headed by African queens swarmed near Sao Paulo, Brazil. The bees interbred in the wild with the European honey bees, resulting in "Africanized" offspring. These bees are moving northward about 100 to 300 miles per year. They have spread throughout most of South America, Mexico, southern parts of Texas, New Mexico, Arizona, and California.

Identification

All honey bee colonies are composed of three castes: a queen, several hundred drones, and from 30,000 to 50,000 workers. Because colonies are highly specialized, no individual bee, including the queen, is capable of living alone or establishing a new colony. The worker bee, which flies from flower to flower, is the most familiar of the three castes. It measures about 3/8- to 1/2-inch long.

Although the AHB looks like our European honey bee, it can be differentiated by a laboratory examination and computer analysis. An identification method called FABIS (Fast Africanized Bee Identification System) is currently being used. First, a bee sample is taken and the wings are measured. Results are then compared with standard European bee wing measurements. If the results indicate a probable positive AHB, a complete body part measuring analysis is conducted.



Adult Honey Bees Consist of Castes

Worker 2/5-3/5 in., Queen 3/5-3/4 in., Drone 3/4-5/8 in.

Life Cycle and Habits

Both European and Africanized queens are responsible for reproduction in their colonies. Their drones mate

with the queens, while the workers, which are sterile females, collect nectar and pollen and defend the colony.

European and Africanized workers have barbed stingers. When either type of bee stings a human, it leaves both the stinger and tiny, attached venom sac. This causes the bee to die soon after. If you are stung, simply scrape the stinger out to remove it.

The venom of an AHB is no more poisonous than that of their European counterparts. However, they are more defensive if provoked. The stinging response of AHBs is 10 times greater than that of European honey bees. Vibrations from motors, such as a power lawn mower or weed whacker, particularly seem to disturb them. When provoked, the bees will wander as far as a quarter mile from their nest to chase an intruder. However, individual AHBs on foraging trips for nectar and pollen are no more likely to sting than our European honey bees - they are not wanton killers.

Africanized honey bees tend to colonize large areas and swarm excessively. Also, the bees will leave the colony completely and move to a new location when conditions in the environment do not suit them - a special trait known as "absconding." Africanized honey bees may abscond on flights of several miles.

Impact on Pollination and Honey

European honey bees that interbreed with AHBs may become harder to manage as pollinators and may produce less honey. This is an important consideration when each year honey bees add at least $10 billion to the value of more than 90 crops in this country. They also produce about $150 million worth of honey each year.

Questions and Answers about AHBs

1. *Are AHBs the same as the "killer bees" of the media news and the movies?*

   Yes and no. The two names do refer to the same bee, but the term "killer bee" is a misnomer that Hollywood picked up and made famous. Africanized honey bees are hybrids of African honey bees brought to Brazil in 1956 and honey bees originally brought to the New World by European colonists. Honey bees are not native to the New World. Because of the way AHBs have been portrayed in the movies, some people expect them to go flying around looking for victims to swoop down on, en masse, causing death and destruction. This is not true. In reality, the chances of being killed by honey bees of any sort are less than the chances of being hit by lightning.

2. *How far will AHBs spread into the United States?*

   Nobody knows for certain at this time. Some scientists believe AHBs will thrive only in the southern United States where the winters are relatively mild. Others believe that AHBs will survive anywhere other honey bees do. According to studies conducted by researchers with the USDA Agricultural Research Service, the situation is likely to mirror what has taken place in Argentina. A southern zone will develop where feral honey bees are almost completely Africanized and a northern zone will continue to be populated almost completely by our more familiar bees. A transition area will likely exist between these two zones in which the two groups interbreed and their behavior will stretch across the entire range of defensiveness.

3. *Where are the AHBs now?*

   As of July 1997, AHBs have spread across much of southern Texas. The AHB is also in the southern parts of New Mexico, Arizona, and California.

4. *How quickly will AHBs spread?*

   The speed with which AHBs spread varies from year to year, depending on the weather, terrain, and the available food supply. Under average conditions, AHBs spread from 100 to 300 miles per year. However, in the past three years, AHB movement has been very slow.

5. *What does an AHB look like?*

   To the untrained eye, an AHB looks just like any other honey bee, about 3/8- to 1/2-inch long. However, trained specialists can distinguish between AHBs and other honey bees.

6. *Is one sting from an AHB deadly?*

   No. One sting from an AHB is no more or less painful or dangerous than a sting from any other honey bee. The venom of the two types of honey bees is almost identical. But AHBs do tend to sting in greater numbers and with less provocation than the honey bees we are used to in the United States.

7. *What makes AHBs and other bees sting?*

   Honey bees generally sting when their nests are threatened. On average, AHBs are likely to sting in greater numbers and will pursue intruders further than other honey bees.

8. *How many times can an AHB sting?*

   Like all honey bees, an AHB can only sting once. They die shortly after stinging because they leave the stinger in the wound with a tiny venom sac attached.

9. *What should I do if I am stung?*

   Above all, stay calm. Remove the stinger if one is present. If anything abnormal happens away from the sting site, seek medical attention.

10. *What should I do if AHBs or other bees start to sting me?*

    Get away as quickly and safely as possible. Cover your head with a jacket or sweater and run to get inside the nearest car or house. AHBs have been known to follow victims as much as a quarter of a mile from the nest or hive.

11. *Am I likely to see AHBs once they move into an area?*

    If you see honey bees now, you will probably see AHBs once they move into the area. If you don't notice honey bees now, you are not likely to see AHBs. The most common sighting is to see a swarm of bees as they look for a new home, either flying about or resting on a tree branch or railing.

    Africanized honey bees are less discriminating than other honey bees when it comes to nesting sites. They will build nests in the ground, in cavities in trees or buildings, under bridges, and in utility boxes if they can find a hole through which to enter. To keep swarms from taking up residence in a building or utility box, seal cracks and holes or cover them with small gauge wire mesh.

12. *Why is the United States Department of Agriculture involved with AHBs?*

Honey bees are a vital link in U.S. agriculture. Many of our crops originated in the Old World and evolved with honey bees as their natural pollinators, so we need to provide them to pollinate these fruits and vegetables now. Domestic honey bees that interbreed with AHBs may become harder to manage as pollinators and may be less effective for producing honey.

13. *What are scientists doing about the AHBs?*

Both USDA and university scientists are studying biology, behavior, and management of the AHBs. Understanding the bee will be important in managing it.

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