

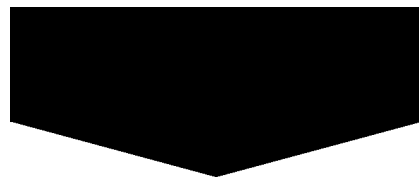
**ALAMEDA COUNTY VECTOR CONTROL SERVICES DISTRICT**

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*A Guide to Control*



We owe a debt of thanks to the individuals and organizations that dedicated much time and energy to make the Alameda County Africanized Honey Bee Task Force a success. Though the job will not be complete until we are sure the bees will not come here or actually arrive.

- Alameda County Agriculture Department: Jim Newey
- Alameda County Vector Control: Roberta Frick, Jeff Hardman, Janet Myers, Harry Scott, Dan Wilson
- Crane Pest Control: Paul Cooper
- Alameda County Beekeepers Assn: Pat Homen
- UC Cooperative Extension: Rasjidah Franklin
- Ideal Pest Control: Fred Tetsal
- USDA: Robert Bullock
- Alameda County Mosquito Abatement: Patrick Turney
- Oakland Fire Department: Don Meston
- East Bay Regional Park District: Nancy Brownfield
- Fremont Parks: Judy Felber
- San Lorenzo USD: Lois Roach
- Eden Garden Club: Carol Clapp
- Pest Control Operators of California: Erik Paulsen
- CDFA: Cliff Ramos
- OES: Terry Gitlin
- EMS: Diane Akers

Many others spent hours working out our response strategy and helping everyone stay up to date with the issues surrounding the Africanized Honey Bee migration into California.

## Stinging Reactions

### Stinging Reactions

Normal and allergic reactions to stings can vary enormously from individual to individual. Normal reactions are those that virtually everybody experiences and are characterized mainly by pain and burning that typically are intense for a few minutes and then decrease over time. After the intense pain decreases a redness and swelling are often observed and these can last several hours to a day or more. Normal reactions, though painful and frightening to some people, usually accomplish the goals of the insect and cause the stung person to retreat and stop disturbing the insect or its nest.

### Normal, non-allergic reactions at the time of the sting:

- Pain, sometimes sharp and piercing

- Burning, or itching burn
- Redness (erythema) around the sting site
- A white area (wheal) immediately surrounding the sting puncture mark
- Swelling (edema)
- Tenderness to touch

### Normal, non-allergic reactions hours or days after the sting

- Itching
- Residual redness
- A small brown or red damage spot at the puncture site
- Swelling at the sting site

### If you suspect that you may be allergic to insect stings you should consult a physician.

### BEE STING KITS ARE ONLY AVAILABLE WITH A PHYSICIAN'S PRESCRIPTION.

### Predicted Number of Stings To Provide a Lethal Dose of Venom:

#### Body Weight Number of Stings

- Child of 22 lbs 190
- Child of 66 lbs 570
- Adult of 132 lbs 1140
- Adult of 198 lbs 1710



# Alameda County Africanized Honey Bee Task Force Newsletter

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### Special points of interest:

- Africanized Honey Bee Migration Slowed to Virtual "Standstill."
- Who is Going to Respond to AHB Problems in Alameda County?
- Removing bee stings "speed matters, method doesn't"

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## Africanized Honey Bee Migration Slowed to Virtual "Standstill."

Africanized honeybees (AHB) were imported from Africa to Brazil in 1956 as part of a research project to genetically strengthen the existing European honeybee, and make them more adaptable to the tropical climate. In 1957, they were released from an apiary in Brazil and have spread and multiplied. The first swarms in the United States were detected in Texas in October of 1990 and have since continued to spread to other states.

On October 24th, 1994, the first swarm was detected in Blythe, CA. Eleven swarms were detected during the next year in Southern California and the first established hive was found in El Centro on October 5th, 1995.

Two massive stinging

incidents in 1995 in Arizona resulted in the death of an 88 year-old woman in Apache Junction and the death of a man in his sixties in Cave Creek (the third confirmed death attributed to the AHB in the U.S.).

As of this date, October 2001, the AHB has migrated as far north as San Luis Obispo County. Many stinging incidents, as well as one death have been attributed to the AHB in California. The colonized area is approximately 48,900 square miles and includes San Bernardino, Imperial, San Diego, Riverside, Los Angeles, Kern, Ventura, and Orange County, as well as Laughlin, and Las Vegas

Nevada. *This is predominantly the same areas they*



Map Courtesy of "Sting Shield®"

*have occupied for the last two years.* There is much speculation as to why the migratory progress has slowed. It could be that this topographical area is the habitat best suited for the AHB. It could also be that the AHB is slowly building up population densities that facilitate their being propelled into new habitable areas. Only time will tell!

## Who is Going to Respond to AHB Problems in Alameda County?

The trend since the arrival of the AHB's in the USA has been that local government will assist the general public in dealing with the problems related to the AHB. This will be a transitional period that has the affect of allowing the pri-

vate pest control industry to "gear-up" to deal with these aggressive bees.

We are well prepared in Alameda County for the AHB. The "Alameda County AHB Taskforce" was initiated in 1993 to

mitigate the impact of the arrival of these bees. Our county "response plan" was finalized and approved by the Alameda County Board of Supervisors in 2000. The plan was a joint effort between private industry and local government.

# Africanized Honey Bees in The United States

The first **land-migrating swarm** of Africanized bees was detected in the US on October 15, 1990. These bees were captured in a baited trap at the border town of Hidalgo, Texas. AHB colonies were first reported in Arizona and New Mexico in 1993 and Nevada in 1998. The first California discovery was in October of 1994; one year later over 8,000 square miles of Imperial, Riverside and northeastern San Diego counties were declared officially colonized.

To date, some 139 counties in Texas, 9 counties in New Mexico, all 15 counties in Arizona, 3 counties in Nevada, and 8 counties in California have reported Africanized honey bee finds.

Many scientists believe Africanized bees will continue to spread and successfully over-winter in the US's southern tier states.

Gregg and Harrison counties were added recently to the Texas state quarantine, restricting the movement of commercial bee operations following the detection of Africanized honey bees. The addition makes 139 counties in Texas now quarantined for Africanized honey bees, according to Paul Jackson, chief inspector for the



Texas Apiary Inspection Service, a unit of the Texas Agricultural Experiment Station.

## Are Africanized Bees Dangerous?

Africanized bees sometimes attack people and animals who unwarily stray into the territory they defend around their nests. Many serious stinging incidents have resulted in life-threatening injury and death.

Though their venom is no more potent than that of our domesticated European honey bee, Africanized bees respond in greater numbers and pursue intruders for greater distances. Also, disturbed

colonies may remain agitated for as long as 24 hours, attacking perceived threats up to a quarter mile from the hive. Any person or animal in the patrolled area is vulnerable. **THE NEST, ITSELF, NEED NOT BE DISTURBED.** Africanized bees may respond aggressively to everyday occurrences such as vibrations generated by passing vehicles, power equipment, and even foot traffic.

**THE NEST, ITSELF, NEED NOT BE DISTURBED!**

When disturbed, individual bees emit iso-pentyl acetate, the honey bee "alarm" pheromone, and high concentrations are deposited with the stinger at the sting site. Pheromones are chemicals produced by animals allowing individuals of a species to communicate. This one acts as an airborne chemical beacon to other bees, who "pile on" in ever increasing numbers.

## Why do Africanized Bees Colonize New Areas?



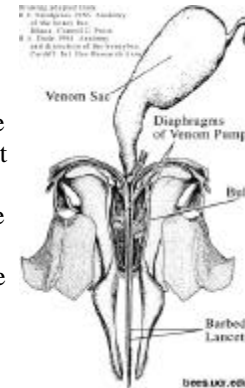
The AHB's nature is to continue to pervade suitable habitats by swarming—the process by which colonies replicate. The original queen leaves the hive with about half the population of the nest to begin a new colony. A new queen is reared by the remaining bees in the original nest. Through swarming, the population density in an area increases until

limited by natural disasters (e.g., fire) or density dependent environmental factors, such as food, water, and certain communicable diseases. Resource competition with other bee species or colonies may also limit the number of nests in a given area. Africanized bees are less selective (but more prolific) than our native bees when choosing nesting sites.

Many natural and man-made objects have been colonized by AHB swarms. Examples include cavities in hollow trees and rock walls, sheds, porches, crawl spaces, attics and utility meter boxes. The combination of these factors as well as high reproduction rates propel these bees into adjacent environments.

## Removing Bee Stings "Speed Matters, Method Doesn't"

The method used to remove a honey-bee stinger does not affect the quantity of venom received by the subject, according to a study published in the *Lancet* 348:301-302. The result of this study contrasts sharply with conventional advice regarding the immediate treatment of honey bee stings. Probably this advice derives from a misunderstanding of the structure and function of honey bee stings. The sting continues to inject



Honey bee sting

venom, but it is a valve system, not contraction or compression of the venom sac (whose wall contains no muscle) which pumps the venom.

The data here illustrate that the advice that patients should be concerned about how bee stings are removed is counter-productive in terms of minimizing envenomization. The method of removal is irrelevant, but even slight delays in removal caused by concerns over performing it correctly (or getting out a knife blade or credit card) are likely to increase the dose of venom received. The advice should be changed to simply emphasize that the sting should be removed, and as quickly as possible. Advice on bee sting treatment should

not overlook that the most important response to stings from bees defending their nests should be: "get away from the vicinity of the nest." There is an alarm pheromone emitted at the base of a honey bee's sting (Free 1987), which makes other bees more likely to sting, and aids them in locating the victim. This is particularly important with Africanized bees, as they are more likely to respond to the release of alarm pheromone with large numbers of stings. Therefore getting to safety is more important than removing stings immediately, but stings should be removed as soon as possible once a person is away from stinging bees.

(expanded by P. Kirk Visscher, Ph.D. Richard S. Vetter M.S. Department of Entomology, University of California, Riverside, CA from an article published 1996 in *The Lancet* 348:301-302)

## Crockett California: AWOL AHB

An unfortunate event occurred on the 21st of July 1997, when a swarm of bees was discovered on a cargo ship delivering sugarcane from Guatemala at the C&H sugar refinery in Crockett California. (Only twenty miles from our office) The USDA was contacted and they came out to destroy the bees but found that the bees did not like aerosol insecticide being sprayed on them and they flew away. There is a product reg-

istered in California called "Impede" that is specifically for AHB control. Impede is a soap solution that does not alarm the bees and they die comparatively peacefully.

These bees were tested by CDFA and were indeed AHB's. It was not



too difficult for the dreaded killer bees to use human transportation to gain entry into our placid environment. The USDA, local agricultural department and vector control district put out traps and all suspect bees were rounded up for testing. As of yet we have not found any sign of these bees since they jumped ship in Crockett. The "spray" must have worked!

## Chronology



- First reported in Mexico in 1985 (northern Mexico 1987)
- Total Mexican fatalities were 175 reported fatalities from 1988 to 1995
- First AHB discovery in US October 1990 in Hidalgo, Texas
- First US casualty in May 1991 in Brownsville, Texas.
- Texas casualties are 212 confirmed AHB stinging incidents (May 1991 to

- September 1993)
- First US fatality in July 1993 in Harlingen, Texas
- First AHB discovery in Arizona in June 1993 in Tucson
- First Arizona casualty in Tucson 1993 (there were 53 stinging incidents reported in 1993)
- First Arizona fatality in October 1995 in Apache Junction

- First AHB discovery in New Mexico in 1993
- First AHB discovery in California in October 1994 in Blythe
- First California casualty in November 1995 in Palo Verde
- First California fatality in September 1999 in Long Beach
- First AHB Discovery in Nevada in May 1998 in Laughlin
- Total US fatalities are Eight