

Trinity Swarm

From time to time, a colony of honey bees arrives at a group decision to reproduce the hive, for the queen and most of the workers to move away from their current hive and seek a new structure in which to continue their work: building wax comb, raising young, storing honey. And, yes, it's a *group decision*, a consensus of the *hive mind*. Though the "queen" does all the egg-laying and provides a pheromonal scent environment that helps to organize many of the hive activities, she herself is directed by the *spirit of the hive*. In fact, it is a *weakening of the distribution of a particular queen pheromone*, which is spread among the bees as they contact one another in the close quarters of their hive, that contributes to the urge to swarm: too weak a queen, too large a colony, *too little pheromone to go around* ... time to cast a swarm.

The decision to move is made before it is known exactly where the colony will actually go. In fact, the *swarm* (which is the name given to this generally *very docile and non-aggressive* group of bees) flies forth in unison from the hive and congregates on a structure just a short distance from the hive they've left, the only hive they've ever known. They hang together in a clump on a tree limb or building or a blue awning in the plaza of Trinity Medical Center. Only then does the search begin in earnest to determine exactly where the colony will go to set up shop and build a new home for itself and live. This decision must be made quickly once the swarm is cast: the colony has no honey comb now, they are exposed and vulnerable to the weather and other threats ... a day or so, a few at most, if they are to succeed and survive.



The members of the *swarm*, by the way, include the queen as well as the majority (maybe 10,000 or so) of the workers who leave the hive. [The group of bees who stay behind in the abandoned hive structure renew themselves by *raising a new queen*, whose larval development in her special wax cell had already been started many days before, as the decision to reproduce the hive was forming in the *hive mind*. The life of the *former hive* goes on as the new adult queen emerges, flies out into the world and mates, and then returns to fill her role as the reproductive unit of the colony, restoring the life of the abandoned hive.]

On the surface of a swarm cluster, repetitive motions can be clearly seen: a number of bees are busy, running in jagged circles. A close look reveals that they are performing the "*waggle dance*", described in 1967 by Karl von Frisch, who was later awarded the Nobel Prize

for his discovery of this symbolic communication, this language of honey bees.

Using this language (when the bees have a hive), forager bees inform their hive-mates of the location and quality of *flowers where nectar and pollen can be gathered*. The information being shared on the surface of the swarm cluster, however, is of much more immediate importance: *where to re-locate, where to set up a new hive, in a structure whose quality and access to critical resources will allow the colony to continue to thrive and to grow again*.



Many potential locations in the surrounding area are examined closely by the scout bees, who fly far and wide, inspect potential sites (hollow trees, clefts in rocks, unoccupied man-made structures) and report back to the swarm about their assessment (communicating location via direction and distance cues in their dances and quality of structure via vigor and duration of their performances). Taking all this in, the bees come to a consensus (the *hive mind* is here termed *swarm intelligence*), a decision is made, and off they fly in a large group, loud and filling a small part of the sky (yet, still, generally non-aggressive) and move in unison to the place agreed upon.

Upon arrival, they enter the new structure and begin at once to assemble their elaborate wax comb and resume the intricate work that they have always done with such seeming ease, making every effort to thrive in the new location they have chosen.

Sometimes, however, this is what happens: As a swarm hangs clustered in deliberative council - in this case under a blue awning in the plaza at Trinity M.C. - instead of choosing a site close to the former hive and swarm cluster, a new option comes into play.



By circumstance and opportunity, an unexpected solution for the relocation is exercised. Instead of flying to a place nearby, the swarm finds itself carefully packed and moved across town, down Hwy 280, where the colony re-establishes itself in the empty shell of a beautiful building, restoring itself in a place that already has a name:

Apiopolis



References:

[Karl von Frisch 1973 Nobel Lecture : *Decoding the Language of the Bee*](#)

[Tom Seeley : *Group Decision Making in Honey Bee Swarms*](#)

[Maurice Maeterlinck - *The Life of the Bee* - 1901 - full text](#)

[Maurice Maeterlinck - *The Swarm*](#)

[Honeybee Neurobiology - *imagessays* webpage](#)

[website : *imagessays.com*](#)