Foraging: the Most Important Task in the Life of the Honey Bee

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Foraging is the most important task in the lifetime of the honey bee. As the bee matures, it's duties and responsibilities to the hive change. The foraging is done by the mature bees of more then 3 weeks old. The bees foraging activities such as water gatherers, collecting resin for propolis, nectar and pollen are essential for the survival of the hive.

Of these, pollination perhaps arguably, is the most important. Not just it's importance to the hive, but the benefits it gives the rest of the world. You've perhaps heard some of the trivia, such as a honey bee might make 10 to a 100 trips a day, visiting as many as a thousand blooms per trip. Or a single bee might visit a million blooms in a lifetime. The honey bees internal pheromone systems dictate what the bees jobs will be. This would account for more then 30% of the bees in the hive, as foragers. The bees that forage will continue this work, until their demise, generally from wearing out a wing, loosing a wing or getting caught in bad weather.

The pollinating bee is directed by other bees, called scout bees, or by other foraging bees that have located on their own, a quality source of pollen. The bees communicate their source by doing the round, wagtail or sickle dance which directs distance (but not elevation) and angle from the hive to the food source. The bees have 5 eyes. Two are compound, similar to that of a house fly. In the color spectrum the bees see most colors, but see Yellow, Blue, Violate and White particularly well and don't see red at all. The other three eye's are in a triangle format and are between the compound eyes used for navigation and see ultraviolet. The bees also have special body hairs called mechanoreceptors, that help them adjust for windspeed, wind direction and better help in gauging distance. The bees flight directions are accurate to within a couple feet. The dancing bee also communicates to fellow bees with taste and taste with their mouth, antennae and pads on their feet. So as the bees follow their directions, they can fine tune the location with sent and taste. Once they have been to the

area, they can recall what the blooms look like, as they will look much like a bulls-eye with the bees vision.

The honey bee is well constructed to hold nearly her own weight in pollen. She's able to pack pollen into a series of plumage type hairs that make a basket-like receptacle on her rear legs. Because she is hairy, she is often seen with pollen on her head and other body parts as well. There are some restrictions as to what flowers bees can and can not pollinate. The flowers are generally made so as to give the bee a reward of sorts, as it makes it's visit. Whether it be nectar or pollen, the bees can take something back to the hive. Some restrictions are made on the bees as their tongue isn't long enough to reach the nectar source in some varieties of flowers, such as red clover. Some plants nectar is a bit acidic, such as tomatoes and the bees prefer something else. Some plants are created so the pollen isn't easily moved or the bee cant get to it. So "buzz pollination" is required and honey bees aren't known for this, bumble bees are.

Pollination

Now, I as well as many other interested and curious beekeepers, we are involved in the planting of perennials that are on the list of flowers the bees like to visit. The thing is, unless there are mass quantities of these blooms, they will only be attended by a very few bees. The bees look for concentrated sources so they become efficient in the gathering process. When a honey bee goes out to forage, it only will collect from a single species; blueberries, dandelions, apples, or clover as examples. Thus, the pollen brought back to the hive by a single bee is from a single plant species. The bees will pollinate different varieties of a plant species, thus you get cross pollination. When a bee becomes a forager, they continue with foraging that plant species until it no longer exists. This makes them experienced and very efficient at gathering from the given plant. When the source runs out, they will take new directions from a bee that's dancing or perhaps stumble onto a new source themselves.

It's hard to imagine what our grocery stores might look without honey bees. It's estimated that 30% to 40% fewer food supplies would then exist. It's difficult to imagine how the human race might survive without honey bees. It's been (spuriously) reported, Albert Einstein came to the conclusion and

once said, "If the honey bees ever become extinct, within four years, so will the human race". Whether he said this or not, there would be a food shortage. With that said, I think Pollination is perhaps more important, than the collection of surplus honey.