

The River Current News

Nature Notes:

Honeybee Economies

There's nothing like dead bodies to remind one of the importance of being good neighbors. In this case, we had thousands of dead bodies in a heap on the ground, mixed with wax and honey. Our brand new honeybee colony, (*Apis Mellifera*) which we had nurtured, or rather, nurtured itself like the complex organism it is, mysteriously died two weeks ago. My partner AJ and I had been heading out for dinner on a rainy Saturday evening, and noticed the forager bees, which normally go into the hive carrying pollen on their legs and nectar in their stomachs, clustered on the outside of the box. Unable to walk straight, or even fly for more than a few inches, they massed together in a confused panic next to the hive entrance. They appeared drunk.

This wasn't Colony Collapse Disorder, in which foraging workers can't find their way back to their hive; CCD has affected commercial beekeepers across the United States this year, and thousands of hives have died as a result of the foragers not being able to find their way back. Rumors circled about the causes: the bees got confused by cell tower transmissions; or UV light confused them. The erroneous cell phone story grew out of a mistranslated German biologist's paper, in which he took a portable phone (not a cell phone) and put it into a bee hive to see what would happen when it rang. I don't know the results of his experiment, or if the bees answered the phone, but the mistranslation was retracted. There are some general theories concerning Colony Collapse Disorder—that it's a brand new disease, or that it's caused by nutrition problems, or pesticide

load--and scientists are hoping that autopsy results will give them the answer soon. In the meantime, we had a dead hive.

Our cause wasn't hard to fathom: the bees exhibited classic symptoms of pesticide poisoning. A worker went out to collect pollen, came back, did a tiny bee dance near the entrance to the hive to instruct the other workers exactly where the pollen or nectar was, and off they all went. Thousands of bees collected pollen and nectar from the source, which must have been freshly sprayed with poison. Tiny creatures, with an average of a four week lifespan, as AJ says, "it doesn't take a lot to kill bees." The poisoned workers came back to the hive, regurgitated their nectar into the honeycombs, deposited their pollen; the bees inside collected the nectar and pollen in varying amounts and fed it to the developing brood inside the hive, effectively killing everyone. It was a slow death, too, by the looks of it.

One afternoon last week we began cleaning out the hive. Wax absorbs poison, so those wax honeycombs installed for the bees so they wouldn't have to spend time building their own comb had to go. As we scraped the wax out of the wood frames, the poisoned nectar gushed out of the cells, along with dead and decomposing bees. I marveled how such a small insect could smell so foul. My thoughts turned to the miracle of bees: how bees fan nectar to dry the moisture out of it, turning it essentially into the sugary syrup called honey. How bees don't hibernate, but cluster in a ball in winter, and regulate their temperature as one large organism, surviving even frigid New England winters. How they produce wax to make honeycomb from 8 paired glands on their abdomens. How mites wiped out all the wild bees in

Massachusetts where I used to live, making pollination of the apple crops dependent upon kept hives. I recalled how the jars of honey that AJ had collected the summer before seemed like small miracles during our harsh Duvall winter, with the scent of evergreen hovering in our tea. In the ensuing weeks, we'd find someone who had an extra hive to sell us, and AJ would capture a swarm, too; we'd have bees once again.

For now, though, all we had was the smell of death mingled with the scent of fermented honey, and the words of biology-watcher Lewis Thomas in my head: "it is not a new thing for man to invent an existence that he imagines to be above the rest of life."

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