



Waiting for a Queen to Fly

INSIDE
THE
SEX
LIVES
AND
SURVIVAL
OF
THE
HONEY
BEES
OF

by SASHA CHAPMAN photography DEREK SHAPTON

GEORGINA
ISLAND



1. COLONY:

A COUNTRY OR AREA UNDER THE FULL OR PARTIAL POLITICAL CONTROL OF ANOTHER COUNTRY AND OCCUPIED BY SETTLERS FROM THAT COUNTRY.

We can smell the honey on the comb as we leave the cool shade of the forest and walk into the sunny bee yard, the whine-buzz of bees so loud in our ears it drowns out the metallic whir of cicadas. Darla Trumble starts pulling apart a hive, frame by frame, to take the honeycomb back to her house. Robber bees from another hive join the heist. The workers seem too busy to notice, too intent on bringing home the fat orange globs of goldenrod pollen.

The summer has been cold and wet, but oh this golden September day is sweet and hot. It catches us by surprise, this warmth, after digging out hats and mitts from the boxes in the basement. Darla calls it an Indian summer day. But then she calls herself an Indian too.

Darla is a member of the Chippewas of Georgina Island, on Lake Simcoe, Ont. I am a white woman, a cottager from the mainland, uncomfortable using such language, words I grew up with and repeated thoughtlessly for years. Because who doesn't love an Indian summer, I might have said once. Such transgressions are especially insidious when they go unrecognized by the transgressor. I am struck by how language, a bridge between people, can also drive a wedge between them.

Yet there are plenty of commonalities in our upbringing. Darla and I both grew up on the sandy, willow-wept shores of

Lake Simcoe. Learned to swim on its shallow sandbars. Our cousins taught us both to fish in this lake. Our fathers to find our way through the thick bush. My mother bakes the best bread, of course: farmhouse style. Darla's mother fries bannock so good her son-in-law wrote a song about it.

But I spend only my summers here. When I go home to my house in the city, the sun will be setting sooner behind the treed silhouette of Sibbald Point. The north wind will be whistling insistently through the shivering poplars and maples as the cold nights yellow and redden their papery leaves. The Trumbles will stay put. Darla and her husband, Andrew Gibson, will stock the pantry for the weeks when they will be island-bound, when the ferry stops running, but before the ice road is safe to cross.

Then Georgina Island's beekeepers will wrap the hives for winter and thank their bees for this year's contribution to the pantry. Darla will smudge hers, burning sage, cedar, tobacco, and sweetgrass, and hoping and praying that they make it to spring. Paul Kelly, her beekeeping mentor, will pat the tops of each of his hives, peering into the toonie-sized cut-out in the winter wrap the way a parent might look in on a sleeping child.

Another thing Darla and I share: a deep respect for the water and ice that lies between us. We know to test the ice carefully before venturing across. I'd heard stories about people drowning in this lake, stories about people that other people knew, but they were always too far removed from my own experience to seem real. More real: the sting of my mother's slap on my wet back when my cousin and my 12-year-old self paddled back from the island in a storm, chased by thunderclouds.

Darla laughed when I told her this: "Of course she was mad!" Darla lost a grandfather to the lake. >>



THERE IS
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LIVES BENEATH
YOUR PALM



Smoke helps beekeepers Paul Kelly (bottom right) and Darla Trumble (top right) control the bees when working with the hive. When they are transporting the queens (marked with dots for easy spotting; this year in pink) the bees are contained in small queen cages (top) with attendants— young worker bees who care for the queen—and a little bit of food.





Bee status update

It's a hard time to be a bee. Across Canada, the long-term acceptable loss rate for honeybees over winter is 15 per cent. But according to the Canadian Association of Professional Apiculturists' 2018 report, national loss is up to 33 per cent, and as high as 46 per cent in some provinces. Threats include a decrease in available food sources for bees because of changing land use and climate change, as well as Varroa mites—the biggest problem that beekeepers can control, says Paul Kelly, of the University of Guelph. Effects from insecticide seed coatings in the environment seem less acute now versus six or seven years ago, he says, perhaps due to changes in regulations. How to help? Buy local honey, and naturalize your lot with native plants such as asters, goldenrod, and sumac, as well as apple trees, basswood, and maples.
—Liann Bobecko

the genetics of a bee race, you need to be able to control the local drone (or male stud) population, explains Paul, as we drive out to a bee yard, an isolated spot at the north end of Georgina. This is especially important because “gentleness” is a trait passed down by drones, and not by the queens they mate with.

Paul is the head apiarist at the University of Guelph and a living encyclopedia of bee knowledge, the kind of guy who has learned how to blow smoke rings out of his bee smoker and who will pop a drone in his mouth as a party trick only to let it fly out again unharmed. (Unlike worker bees, they don't have stingers, so this is not as crazy as it sounds.) He's also the creator of the popular Paul Kelly Bee Belt, a magnetized leather belt that carries tools needed for the trade—such as an all-purpose pry bar along with cages and markers to help keep track of queens. The belt is what passes for fashion among beekeepers.

Female workers feed their colony's drones before sending them out into the world. Then these bug-eyed studs follow any physical lines they see—forest edges, hedgerows, power cables—for a few kilometres. They congregate where the lines intersect. And then they wait for a queen to fly by—which is to say they wait for a chance to pop their insides out and drop dead upon ejaculation. “It's kind of gruesome,” says Paul with a chuckle. Drones form a comet as they gather, each one hoping against hope to get lucky. The best way to find these bee bachelor parties, he says, is to hang a small cage with a nubile queen from a helium balloon.

A queen might leave the hive only once in her life, mating with as many as 30 drones on one wild sex trip. Having collected their

2. COLONY:

A GROUP OF PEOPLE OF ONE RACE OR NATIONALITY WHO ARE LIVING IN A FOREIGN PLACE.

In 1990, when Darla was an eight-year-old student at the three-room island school where she now takes great pride in polishing the floors as its caretaker, the University of Guelph began searching for an isolated spot to raise honeybees for research. Long before a Guelph graduate coined the term “colony collapse disorder” in 2006, beekeepers and researchers were looking for ways to breed bees that could be more resistant to disease and pests such as *Varroa destructor*, a tiny arachnid that attaches itself to a bee and feeds on its protein reserves and blood, leaving its host weak and prone to disease. Varroa mite, as it's also called, is thought to be one of the most serious problems facing honeybees worldwide. At Guelph, researchers study honeybees—their behaviour, their genetics, their immune responses—to better understand how to breed and manage resistance to mites. They've found that a bee that grooms itself more often is less likely to become a host. They've introduced selection pressures to breed tidier bees. They've developed a thyme oil formula toxic to the mites, but safe for bees and humans. They've published hundreds of papers and inspired many more.

None of this research would be possible without Paul Kelly, who breeds the bees that the Guelph scientists study—kinder, gentler bees that are calmer and less likely to sting their keeper. To control

When Paul and Darla check the hives, they inspect the honey supers (in the upper boxes) and the brood chamber (in the bottom box), where the queen is free to roam. “We look for eggs, larvae, and pupa and check for disease. We want to make sure everything is going along fine,” says Paul. Darla sells honey and beeswax candles online and from her home on the island.

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emissions in her spermatheca, she can later fertilize her eggs at will, back in her hive, where she will live for up to four years.

Controlling the genetics of a queen is easy—she can be bred or mail-ordered and installed in any queenless hive. But controlling the genetics of her mates is more complicated. On the mainland, drone control can be achieved, imperfectly, by “flooding the area” with your own drones. A few wild drones might mate with a queen, but most sperm will come from your stock. But an island is better. Because honeybees rely on landmarks to help them navigate, they don’t like to venture across a long stretch of open water. An island that was once cleared for farming is better still, with more sun-loving meadow flowers to forage from once the blossoms drop and the trees leaf out.

Georgina, the largest island on Lake Simcoe, made for an ideal location for a field station, but it took two tries, a decade apart, before the band would agree to host the university. The 14 sq. km island has been settled and farmed by Darla’s ancestors for about 160 years, but their history on Snake Island and the surrounding mainland is much longer. Weirs found at the north end of the lake date back 5,000 years. After the War of 1812, almost two million acres of nearby land were allegedly surrendered to the British; out of the proceeds, Joseph Snake and his Chippewa followers purchased Georgina and two other Lake Simcoe islands. Then, after enduring a short but failed government-run farming experiment on the Coldwater-Narrows reserve between Lakes Simcoe and Huron, near present-day Orillia, Snake’s followers retreated to Snake Island and later to Georgina.

Lake Simcoe is a shallow lake, quick to warm up at the beginning of summer and quick to cool off at the end, but it was even shallower then. Back when the band first settled Georgina, they could walk ankle-deep along the shoal from shore to shore, or even pull a wagon across. Wild rice, a staple for the band, grew plentifully in the marshland that ringed the island.

In the 1920s, around the time my grandfather began buying up land on the southern shore and building cottages for his growing family, the completion of the Trent-Severn Waterway began driving up the water table. Half a century later, my father would tell me of men from the island, men tall enough to walk to what we call “The Point” at the eastern edge of our property. I always assumed that these were tall tales, till I learned about the rising water table.

What a difference several feet can make. The new lake levels would have a disastrous effect on the islanders, who could no longer easily get to shore by foot or wagon. They were now cut off from the mainland, unable to come and go as they pleased. And the rising lake drowned the wild rice the band had depended on.

3. COLONY:

A COMMUNITY OF ANIMALS OR PLANTS OF ONE KIND LIVING CLOSE TOGETHER OR FORMING A PHYSICALLY CONNECTED STRUCTURE.

Standing in Darla’s bee yard as the bees work noisily, I remember that the word colony comes from *colere*, meaning “to cultivate” in Latin. It was first used in Late Middle English to describe garrisons of Roman soldiers stationed in England—to describe the colonizers of future colonizers, so to speak. This meaning seems especially relevant as we contemplate Darla’s own bee colonies on this colony of an island, created by a colony of a country. Honeybees, of course, aren’t native to North America. They arrived with colonists in the 1600s, and soon got the nickname “white man’s fly.”

Darla hadn’t planned on keeping bees. She had been interested in interior design when she started her degree in fine arts at Georgian College. But she kept getting sick. Pneumonia, strep throat. She lost weight. Was hospitalized twice. Her mother implored her to move back to the island. So she dropped out and took up a job looking after the island school and driving the school bus on the mainland. She built herself a house on her father’s land, in part with money from the Coldwater Treaty settlement. And then she met the man who would become her beekeeping mentor, Paul.

Paul runs two small university field stations on Lake Simcoe, each with its

own drone line. His enthusiasm for bees is infectious: on Thorah, a smaller nearby island, the program is run in association with local cottagers, who help out in exchange for “bee bucks” that buy them honey or beekeeping supplies. On Georgina, there is no formal volunteer program; instead, Paul returns the favour of yard space in the form of a dozen cases of honey per season for the band’s 300 or so members. He also runs workshops for bee-curious band members and will assist anyone who is interested in setting up a hive of their own.

In 2015, Darla enrolled in Paul’s beekeeping course at Guelph through the Indian Agriculture Program. (Yes, it is still called that.) She and Paul hit it off right away. “I loved the smell of the honey place, oh my goodness,” she recalls. She stirs her honey-laced coffee and looks out over the water towards my family’s cottage on the mainland. We are standing in the campground where Paul has spent the night so that he will have a full day to work in the bee yard. “I fell in love right then and there when you let me pet those bees, Paul.” This is another of Paul’s tricks: smoking the bees till they are calm and then cajoling visitors into petting them. There is something magical about feeling the warm pulse of so many lives beneath your palm.

Darla’s colonies technically aren’t part of the university field station (she has her own thriving honey business), but the more bees on the island the better as far as Paul is concerned. Her colonies are also stocked with University of Guelph drones, which probably mate with Paul’s queens. And the more bees, the more vigorous the plant life. Checking in on another beekeeper’s hives, we pass a well-endowed apple tree, the fruit so heavy the branches are straining against gravity. “There’s a well-pollinated apple tree,” says Paul appreciatively.

On Georgina, it’s easy to forget that bees are under constant threat in other parts of the world. Here, Darla and Paul lose only 10 per cent of their hives over a winter, rather than the 30 per cent average beekeepers endure in other parts of Ontario. Part of this is skilled management and good genetics and breeding practices. But there are other factors on the mainland that can act as stressors: pests and pesticides, habitat loss.

Seven weeks later, on a grey November day, Paul and I catch the ferry to Georgina for the last time this season, to wrap the bees for the winter. We take the last spot on the boat, which is loaded up with construction vehicles, like nearly every other morning that fall: cement trucks and flatbeds carrying hydro poles. Darla’s husband, Andrew, is also on the ferry, bleary-eyed after the night shift as a customs officer in the city. He tells us that four prefab homes have been built on the island in the past few weeks, and a concrete pad has just been poured for a new building by the marina. A few weeks earlier, a band member had bought the western half of my family’s property on the mainland. There is talk of her razing the cabin and build a larger four-season house in its stead. Our neighbours to the east had recently finished building a massive new cottage by the water, one that’s twice the size of the property’s old farmhouse, and were re-foresting the old farm fields that the bees once worked so busily.

Before we tuck in the bees, we deliver boxes of the season’s honey to the band office. It has a strong flavour and strange colour this year, says Paul. Deeper, redder. It makes him wonder what kind of nectar the bees favoured this year, so he sends a sample to Laval University. It turns out the bees have been foraging buckthorn blossoms. The invasive kind.

An hour later, Paul is chipping away at the propolis mounds the bees have built at the entrance of their hives as a barrier against the coming cold. He explains that *pro* means “before” in Greek and *polis* means “city”—in this case, it describes the city of bees inside the hive, huddling together for warmth like a tiny garrison, stingers up and dripping with venom. He replaces the mounds with bevelled pieces of wood and taps the wedges in tight. This, he explains, will do a much better job of keeping the drafts out.

We wrap the hives in black plastic insulation and thank the bees for their work. Now there is nothing left to do but wait. Six long months. Only then will we know which colonies have survived. 🐝

Sasha Chapman is a Toronto-based freelance writer who dreams of one day keeping honeybees of her own.

BEE BY ANDY COOKE FROM THE NOUN PROJECT

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