

Bee Hunting In Highlands Of Scotland

Curious To Find The Home Nests

Ann Chilcott

This article is about a successful hunt for a wild colony of honey bees during the Winter of 2019 in the Highlands of Scotland. I live in the hamlet of Piperhill, which nestles in the county of Nairnshire and lies about 15 miles east of Inverness, the capital city of the Highlands. Up here, we're at about the same latitude as Moscow but it isn't as cold and snowy here as there because we are close to the sea. Still, winters in northern Scotland can seem very long for a beekeeper itching to start the new season. Most of us miss the contact with our bees and we love it when we see them foraging in good weather. Early February 2019, was typical; we experienced two weeks of sub-freezing temperatures.

The weather is changeable though, and the second half of February 2019 was exceptionally warm. A few miles away on the 17th, a friend reported 59°F (15°C) and that day I spotted a butterfly feeding on the sweet box tree, *Boxus sempervirens*, by my doorstep. The bees were out among crocuses and snowdrops, and I spotted a dandelion opening to the sun. A song thrush, *Turdus philmelos*, sang, and blackbirds, *Turdus merula*, were mating, which didn't bode well for them. Raising families long before the reliably warmer days of Spring is risky.

On February 20th, it was cooler, but still mild at around 50°F (10°C) during the day. For exercise and the love of outdoors, I walk whenever I can. This day, I set off on the familiar five-mile circuit that takes me from my doorstep, southward to a crossroads, through parts of Cawdor Woods, and up past fields devoted to a rotational crop growing system. This year, barley, used to make whisky, was grown, but next year oil seed rape or wheat may be cultivated. I walked past many more fields and several farms before arriving back in Piperhill at the opposite end from where I live. Throughout my hike, I walked briskly but was able to study nature along the way. About a mile from home, I heard the sound of a honey bee flying and then landing. It stopped me in my tracks, and I peered around to see where the bee had settled. I spotted her standing motionless on damp grass at the roadside, and I could see that she was drinking water on the surface of "her" blade of grass. I marvelled at her busyness on this winter's day, and waited to watch the



Me (left) and my sister Catriona (right) beside the bee tree.
Photograph by Linton Chilcott.

direction she would take to fly off home bearing her load of water. Alas, I lost sight of her as soon as she flew away.

I was very excited because I suspected that this bee was probably from a wild colony. I knew that there were several managed colonies within a six-mile radius but I also knew that water collection in winter can be an energetically costly job for honey bees so they usually visit water sources near their nests (1). Water is required in large volumes once the queen starts laying again after the Winter solstice. This is because the nurse bees need water to produce the watery, but protein-rich, brood food for the developing larvae. Water may also be needed by bees in Winter to maintain their osmotic balance while feeding on honey, which is an 82% sugar solution. They need to dilute the honey they eat. Some of their water is recycled inside the hive from condensation, but evidently, they sometimes need more water, so they fly out and fetch it from wet spots. From a small study that I conducted in my apiary (2), I know that my bees will fly out to collect



The grassy roadside where I first spotted the first water collector on February 20th.

water in winter when the air temperature is only just above 40°F (4°C). This can be chilly work; I've watched them on the edge of the water dish warming their flight muscles before take-off to fly home.

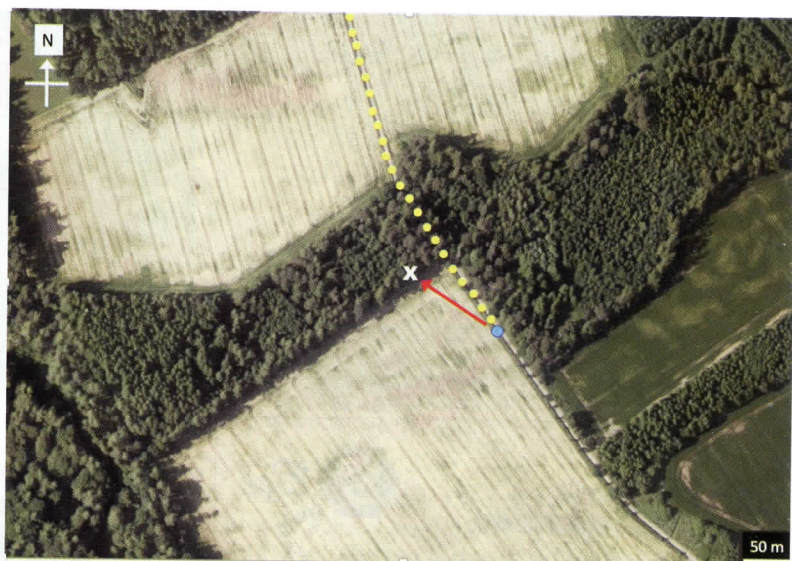
Curious to find the home nest of my water collector, I returned on the next warm afternoon (February 23rd) with my great friend Patricia O'Dwyer who was visiting from Cork in southern Ireland. Not finding any honey bees at the original site, we walked further along the road and searched near some gorse, *Ulex europaeus*, bushes a few feet from the roadside. Gorse is nearly always in bloom and so I wondered if they might just be collecting pollen that day. By the way, regarding gorse, there is a saying over here, "love is out of fashion when gorse is out of bloom." The air was still, so it was easy to hear the familiar sound of flying bees. It didn't take us long to spot two honey bees on wet grass close to gorse and I attempted to catch one in my bee hunting box. This was the first time that I had used the box and clearly, I needed a lot more practice. It was unsuccessful because I'd terminally maimed the poor bee by snapping the door shut on her. However, I tried again and captured the second bee intact. After several minutes feeding on a square of comb filled with sugar water she was released. We could see that she flew off to the north into woodlands, but we couldn't be sure to which side of the road she went. By this time, it was late in the day and getting cold, and she didn't return.

It was also too cold over the next couple of days to do any serious bee hunting, but the weather on February 26th looked promising, and the bees from the home apiary were flying, so I made plans to search hard for the wild colony's nest. I gathered together my bee hunting kit which includes a copy of "Following the Wild Bees" (3), and I invited a team to help me. These investigative expeditions are much more fun, and also easier, with a few friends to help search for the bees' home in the woods.

With my husband Linton and sister Catriona, I set off for the place where I'd first found the water collector bee. My plan was to capture bees from the grass in my black-walnut bee box from the Hudson Valley Bee Supply. I would load up a small square of old brown comb filled with star anise (*Illicium verum*) scented sugar syrup and place it inside the box for the captured bees to feast on. Once they had filled up, I would release the bees and watch carefully the direction of their flights home to get a compass bearing of their "bee line." I would then mark



My bee box with comb loaded with sugar syrup, being visited by dark bees from the wild colony. Author photograph.



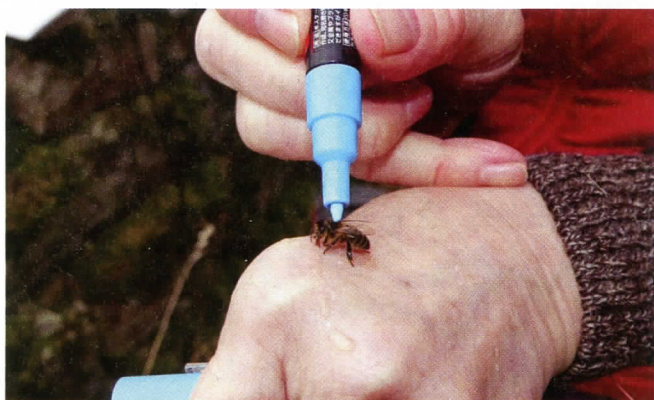
Aerial view showing the path of my southward walk when I discovered the first water collector (yellow dots), the spot where I first observed a water collector and where I later set up my bee hunting station (blue dot), and the bee tree (white X). Google Earth photo provided by T. D. Seeley.

with paint, using different colors, some of the bees and time how long it took them to fly home and return to the comb (i.e., their "away times"). Knowing this, I would estimate the distance to their nest. Then I would capture in the box some of the returning marked bees and move them down the bee line in stages until I discovered their nest.

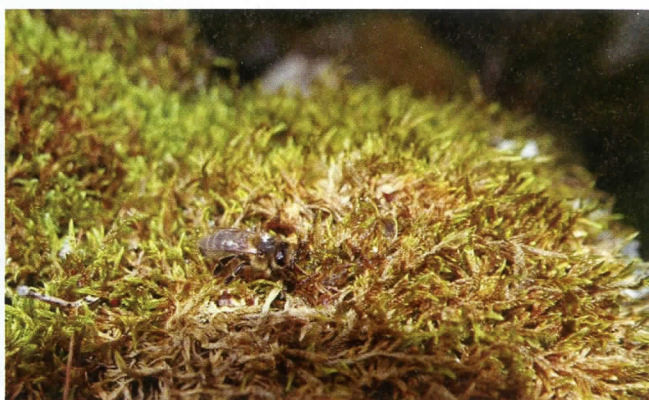
This was the plan, but it was not what actually happened. Linton accidentally knocked over the precariously balanced sugar syrup bottle whose contents splattered out covering my face, hair, and hands, and caused great excitement amongst the bees. They must have thought it was Christmas given the lack of nectar available at that time of year. They loaded up and rushed back home to share with their sisters the good news. Soon lots of bees were landing on me and the mossy, and now syrupy, stone wall. There was a feeding frenzy on. So, I marked them as they landed, and tipped the remaining syrup onto the mossy wall.

I was so absorbed marking bees that I forget to look up to see where they were flying, but Catriona had watched some fly off and shouted excitedly. I stood up to pay attention looking west over a stubble field in the direction of Cawdor Woods where Catriona saw them go. I followed the direction of a bee that flew west for a few feet then suddenly took a sharp right turn in a dog leg to fly north. Just at the moment of my noting the direction, I noticed Linton waving enthusiastically from beside a tall larch tree that is about 100 yards away, and just a few feet from the stone wall that edges the field. He had found the bee tree while examining potential trees close by. This great larch, *Larix europaea*, with a split up its south side, had initially aroused Linton's curiosity and he thought it might provide a good cavity for a honey bee nest. On examining the front, he found the heavily propolised entrance to our wild bee nest and a lot of bee traffic. You can see the copious quantities of propolis coating the entrance which implies that this nest site has been used over a number of years, though not necessarily continuously.

Since finding this bee tree, I consulted with the head



Labelling a bee as she loads up on sugar syrup on my hand.
Photograph by Linton Chilcott.



Bee loading up on sugar syrup sprinkled on moss.
Author photograph.



Bees entering the bee tree bearing loads yellow gorse (*Ulex europaeus*) pollen. Photograph by Linton Chilcott.

forester for Cawdor Estates, on which the bee tree lives, and I put up a bait hive to offer a good home to a swarm that might come to this hive. The larch tree is unhealthy having probably suffered a lightning strike some years ago and it is thought that it may come down in a storm, so it would be good to be able to find out just how these bees are coping with varroa and to learn about their genetic origins. If the bees swarmed, they didn't use the bait hive this year though I saw scout bees investigating it several times when I visited over the summer. The bees were still flying to and from this bee tree in early November 2019 and I hope they will survive winter.

Why this find is so exciting is that it is a widely held belief in the UK that wild colonies of honey bees have not survived due to varroa which came to Scotland in the 1990s. It is now known, through extensive research, that wild colonies of honey bees in the Arnot Forest in New York State (USA) have survived and evolved to cope with varroa. This is also the case for wild colonies in some European forests, so why not in Scottish forests and woodlands? More research is required to investigate the situation further and I intend to hone my bee hunting skills and get out there searching again next season. **BC**

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References:

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