"The greater the obstacle, the more glory in overcoming it."

— Molière

As we move into summer, swarming pressure should greatly diminish in our Piedmont NC colonies. The summer dearth is here, causing well-behaved colonies to focus on resource conservation and near-term survival, not species expansion (i.e., bee sex). That doesn't mean colonies cannot swarm – "*You never can tell with bees*"[1] – but it is stupid if not suicidal for them to do so.

But what about the ones that got away? All but a small percentage of escaped swarms die in their very first season. Those few that make it to next spring die from Varroa mites and the viruses they vector. However the few that are around at any given time often cause problems by nesting in human-occupied structures (see "Why Swarms Are Bad"). Some people think that honey bees in the wall, audibly humming at night and occasionally breaking through to explore someone's bedroom, is romantic and quaint. Those are not Normal People, certainly not Informed Normal People (INPs). INPs know that bees in the walls of a house, if successful in the short term, means honey in the walls/floors/ceilings. All is well until the bees die from Varroosis. Then nobody is left to keep the honey stores neatly sealed away. Heat softens the wax, allowing the honey to drip; uncured nectar ferments; all that yumminess attracts ants and other pests; etc. The problem isn't necessarily honey bees in the walls -- it is what is left when honey bees are no longer in the walls. The result is bugs and ruined drywall.

Uninformed Normal People (UNPs) typically call an exterminator when faced with honey bee colonies in their walls/floors/ceilings. But killing the bees only does what Varroosis is going to do anyway. The issue of a honey-filled nest remains. But if the nest is going to be properly removed, why kill the bees? If a beekeeper removes the nest and live bees (a procedure called a cut-out), at least a little value is salvaged from the whole experience, plus the homeowner gets the satisfaction of telling their friends how they "saved the bees!"

This fairly new colony of bees has a big problem: it is in a house, where it doesn't belong.

Common misconceptions

Even if we never remove a colony from a structure, every beekeeper should understand how it is correctly done. The reason for that is that beekeepers are the public's go-to source for information on anything related to a critter with wings that goes "buzz". If a neighbor has bees in their walls, they will ask you about it. But from what I've seen and heard, the average beekeeper is perhaps more ignorant on this topic than Normal People are. Likely it goes under the category of "a little knowledge is a dangerous thing." For example, I've seen Facebook posts where beekeepers recommend "vacuuming the bees out of the wall." Yes, bee vacuums are an important tool (as described later) but honey bees cannot be "vacuumed out of the wall." Imagine the suction force that would require! Not only would bees be collected (dead on arrival), but insulation, stud nails, comb and who-knows-what as well!!! That's not the way this is done.

Another romantic myth is that feral bees in structures are "survivor bees" with some mystical protection against Varroa mites, starvation and other issues. That is pure

[1] Winnie the Pooh, A.A. Milne

nonsense. Grandma may say, "those same bees have lived there for 20 years" but, sorry, grandma is uninformed. The colony in the wall dies as described above, the smell of comb attracts a new swarm and the casual observer never notices an absence of bees coming and going at peak times of year. The nest is empty from fall to spring, when people don't expect to see bees flying anyway, and it is repopulated during swarm season.

Yet another uninformed expectation is that feral bees in structures have a whole lot of honey. I've had people tell me, "If you remove the bees, you can keep the honey." They think that means something. In my experience, it is rare for a feral colony to have more than the equivalent of three or four medium frames of honey (roughly twelve to sixteen pounds), often less than that. There are several reasons for this:

1. Colonies that are removed soon after they are first discovered haven't had time to store much honey
2. Colonies on nests that are part of the occupy/die/reoccupy cycle described above are in the same situation – they haven't had lots of time to store honey
3. The space between 2x4 wall studs or floor joists does not offer nearly as much potential comb space/honey storage space as a conventional bee hive does
4. Non-managed colonies swarm when honey stores start to fill up the available comb space

Similar is the notion that extracting bees from structures is a great way to get free bees. In my opinion, it is true that it can be a fun way to get free bees. But a great way to get free bees is by catching swarms (see "Free Bees?"), assuming they are no more than head high, aggregated in a tight clump and a short distance from home. Doing cut-outs is a lot of work. I'm not sure that I've ever done one in less than four hours of hot, sweaty labor, and it can easily take longer. What would you pay to not wriggle around in an attic or crawlspace for four hours? And while you may get a colony that is twice as big as a commercial package, feral colonies aren't likely to be super large – they swarm before they get to that point.

Honey bees are coming and going through a crack where the window casement meets the siding. Is that where the nest is? Nope! It is five feet to the left.

Step by step

All that said, removing honey bees from structures is pretty simple and comes down to a half dozen steps:

1) Find the location of the nest

Bees enter and exit a cavity at a spot that allows them to do so. That doesn't mean that the nest is directly behind the opening; that would be too easy! The bees may travel quite a distance up, down or sideways to get to where the colony lives. They could be in the wall, in the ceiling, in the floor, inside cinderblocks or who knows where.

Often the nest can be pinpointed by listening for it. Put an ear to the wall and give it a quick knock, just as you would the side of a hive. An audible buzz means you are in the right vicinity.

Even better, remember that the brood nest is always kept at a cozy 95˚F. An infrared thermometer or FLIR (Forward Looking InfraRed) camera can reveal the location of the nest behind walls/floors/ceilings. Basic FLIR cameras are a couple of hundred bucks but infrared thermometers are around $20 to $30. Find the hotspot and mark the perimeter with a pencil.

Drywall had to be removed to access the honey bee colony in this wall.

If a bee vacuum isn't handy, bees can be brushed off of comb before fitting it into a frame.

2) Gain access

Once we know where the colony is, we must access it. If the bees are inside a cinderblock wall, the strategy may shift from removal to extermination and sealing the cavity up. But other situations are more manageable. Often there is a choice between gaining access from the inside versus the outside (e.g., removing siding versus cutting drywall) or the top versus the bottom (e.g., removing floorboards versus ceiling panels). Cost and practicality should dictate which way to go, considering not only doing the extraction but also repairing the damage afterwards.

In an ideal world, bees in the floor are in the open space between floor joists and are accessible from a crawlspace or unfinished basement, while bees in walls only require a utility knife to remove a small section of drywall. Hope for that.

3) Gently remove bees from comb

For this step a bee vacuum is somewhere between a terrific luxury and an essential piece of equipment. (See "Let's Make a Bee Vac!") Vacuum the bees directly off of the face of the comb, using just enough suction so that they hesitate slightly before being pulled into the hose. Too much suction can easily kill the bees and damage the comb.

Alternatively, the bees can be gently brushed from the comb but then they'll be flying around, a real nuisance. A vacuum not only clears the comb but also packages the bees.

4) Remove the comb

When one comb face is cleared, cut the comb loose at the top, lay it flat on the clean side and vacuum the bees off of the other side. Then move on to the next comb.

A hive tool is usually sufficient for cutting comb but a machete can not only fit into hard-to-reach places, it impresses onlookers.

5) Put comb in frames

Nicely formed comb, especially comb with brood or stores, can be moved with the bees to their new home. Lay the comb on a flat surface. Lay an empty wooden frame (no foundation or wires) over the comb. Use a knife to trim the edges of the comb so that it fits within the borders of the frame. Wrap some heavy-duty rubber bands around the frame, both vertically and horizontally, to hold the comb securely in place. If it droops or sags in the slightest, add some more rubber bands. It must be in the right orientation; the bees cannot and will not fix it later.

The bees will quickly attach this comb to the top/bottom/sides of the frame. They'll also eventually chew through the rubber bands and throw them out of the hive.

6) Dump bees in hive

If you've used a vacuum, you'll now have a

nice container full of bees that you can dump into their new home just like you would a commercial bee package (see "Package Basics" for tips). If you've just used a brush, put the queen in a box along with brood comb from Step 5. The free-flying bees hopefully will find their way to her, as they would when we are collecting a swarm.

That's about it, except for the other stuff

Notice that in the story I've presented here, we've collected the bees and the property owner is left with clean-up and repairs. That's the way that I do it and I don't apologize for it. I'm not a professional carpenter. My role is to be a competent beekeeper. I tell the property owner to remove all traces of the old colony – bits of wax, honey, dead bees, etc. – so there are no smells to attract either pests or another colony seeking a home, and consider filling the space with an appropriate cavity-filler such as spray foam. Then they can arrange to put their house back in proper order however they see fit.

Performing a cut-out isn't rocket science. There are tricks you'll learn each time you do it, but the basic idea is pretty simple as long as you are prepared. The devil can be in the details; these are the things where you say, "Okay, *next time* I'm going to…." Among things to consider and compensate for are:

1) How much space is there to work in? Will it be difficult to maneuver?
2) Is the space unduly hot (e.g., in an attic)?
3) Is there access to electricity?
4) Is equipment ready to go for receiving the new colony?
5) How much should I charge for this job?
6) Where's my First Aid Kit?

I hope this description is encouraging and not dissuading. All beekeepers should perform at least one cut-out so that they can discuss the process intelligently with the general public and give informed advice. Now grab a bee buddy and go for it!

Randall Austin is a NC Master Beekeeper who keeps a few honey bee hives in northern Orange County, NC. He can be reached at s.randall.austin@gmail.com.
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