

"Lettin' the cat outta the bag is a whole lot easier 'n puttin' it back in."

-- Will Rogers

December 2016's article, "[Packages versus Nucs: Want to Fight About It?](#)", covered the pros and cons of different ways for new beekeepers to acquire their first honey bees. Since we are in the middle of package bee season, this month we'll go over some tips for no-fuss, no-muss installation of packages.

First let me point out that installing bee packages gets much more attention and creates a lot more angst than it deserves. If someone can shake popcorn out of a bag, they can install a package of honey bees. We don't pass out Nobel Prizes for microwaving popcorn, nor should we give a second thought to dumping bees into a box. It isn't a big deal.

HOWEVER – for a brand new beekeeper, the process of installing that first package represents far more than simply dumping bees into a box. Something extremely significant happens at the precise moment that the bees go from being confined inside the cage to being released outside of it. At that single instant, we, nobody else, are responsible for all that follows, just as Pandora was responsible for opening that stupid box. There is no going back now. Those bees are not going to reverse themselves and return to the cage. The thought going through our mind is not, "This is so exciting!" Instead it is "What have I done???"

At that singular moment, we become a **beekeeper** and our world will never be exactly the same again.

Pieces of the puzzle

A typical honey bee package is about the size of a very large shoebox. The top, bottom and ends are thin wood; the sides are window screen. There are two vertical supports in the middle of the package, one on each side. Between them is a horizontal bar that the syrup can rests on.

In the center of the top is a round hole, exactly the right size to hold a large can. On one end, the can rests on the horizontal bar



These two 3-pound packages are tacked together by two wooden slats. The bees inside the cage are festooned around a syrup can and the queen cage.

described above. The other end is flush with the wooden top. The can is filled with sugar syrup. The bottom end is punctured with tiny holes, allowing the bees access to the syrup inside. The can contains enough syrup to last several days to a week.

The top end of the syrup can is covered by a piece of thin wood or cardboard. This cover is securely stapled to the wooden top, preventing the can from accidentally slipping out and thereby releasing the bees. When getting bees by mail, the shipping label is affixed to the cover.

A queen cage, with a mated queen inside, is suspended alongside the can by a plastic or metal strap. The end of the strap is secured by stapling it to the wooden top of the box. The queen cage has a hole in each end that is plugged with a small cork. At one end, a large blob of white sugar candy also blocks access to the hole from the inside.

Three pounds of honey bees are enclosed inside the screened box. The bees are mostly festooned in a cone-shaped blob surrounding the can and queen cage. Three pounds of bees is assumed to equal ten thousand individual bees; feel free to count them if you want to verify that. Actually, packages are overfilled a bit by the producer to account for natural die-off so the box will contain more than three pounds of bees.

There will be dead bees on the bottom of the package because honey bees are not



A package, without bees, is made with a wooden top, bottom and ends; screened sides; syrup can; queen cage and a cardboard cover.

immortal. Some die every day, and in the warm months all worker bees will die within six weeks. On average, they'll die at the same rate they are born, i.e. a couple of thousand or so per day. At roughly 750 bees per cup, two cups of dead bees per day is not anything to get excited about. However if the package has more dead bees than live ones, the buyer should choose a different one.

Suppliers often use two long wooden slats to tack two packages together with several inches of space between them. This allows two packages to be picked up and handled at the same time, saving effort, but more importantly it ensures that adequate ventilation space exists between packages. (One of the infinite number of things that aspiring beekeepers may not yet appreciate is the fact that honey bee colonies generate a whole lot of heat. They can easily both suffocate and cook to death if large numbers of them are confined in a poorly ventilated space.) The slats can easily be removed, so just because two packages are shipped together it doesn't mean that they must be sold together.

Unlike glass Coke bottles, packages cannot be returned to the store once they are emptied. Refilling packages would introduce the risk of spreading disease so packages are designed to be used only once. But save your old packages, complete with can and queen cage, because they make terrific show-and-tell props when teaching others about honey bees.

A recent innovation is the use of all-plastic bee packages. The sides snap together so are much easier for producers to store and assemble as needed. They work the same as traditional packages and are also intended for one use only.

Getting Ready

Before the bee packages arrive, fully prepare the hives where they are to be housed. They should have been painted well in advance so that all fumes have dissipated. The stand should be in an appropriate location (e.g., a sunny spot away from human traffic). The bottom board, first box with frames, feeder and cover should all be in place.

I have heard of folks who set everything up

in the yard several weeks ahead of time. Then when trouble-maker neighbors complain about being attacked by “those bees”, the not-yet-beekeeper gleefully opens the box to show that nobody is home. Whether this would stop complaints or not remains to be seen, but it would give you advance notice of impending grief.

Mix a gallon of sugar syrup per hive, using one part regular ol’ white granulated table sugar to one part water. Granulated white sugar is the purest form available on the market (it is pure sucrose with virtually no non-digestible impurities) and therefore is the best all-around carbohydrate to feed bees. It doesn’t matter whether the parts are measured as weight to weight or volume to volume because it works out about the same either way. It also doesn’t matter if we make the syrup a little too thick or a little too thin – the sugar content of nectar varies a good bit depending on the floral source so the bees aren’t looking for a precise formula.

Boil the water, remove from heat, then add the sugar. Stir until it all dissolves. **Never cook sugar intended for bee food!** Overheating can produce hydroxymethylfurfural (HMF), which is harmful to bees. Allow plenty of time for the syrup to cool before feeding to the bees – making it the day before they arrive would be a good idea.

Note that we want to feed packages a relatively thin (1-to-1) sugar syrup. At this concentration, the syrup does three things:

1. Stimulates the queen to lay eggs
2. Stimulates the worker bee wax glands, allowing them to build the critical comb they need for survival
3. Provides nutrition and thus prevents starvation, both now and later

The third objective could be accomplished with thicker syrup, candy boards, dry sugar, etc. but those wouldn’t address the first two goals. So packages need thin syrup. More information on feeding (when to start, when to stop, what to feed, etc.) is found in [“Yum Yum, Eat ‘Em Up!”](#)

Go through a dry run of the installation

process, complete with smoker and veil. Write down any questions you may have about things that aren’t clear. Send those questions to your bee mentor ahead of time so they can be answered before you do this for real.

Package Day

If you are getting bees by US mail, you’ll get a phone call at 6:00 a.m. from your postmaster. She’ll say, “Come get your darling bees!” (or maybe she’ll use another “d” word). That “rain or snow or dark of night” motto doesn’t say anything about honey bees. Retrieve them as soon as possible, because I guarantee that you will handle them and store them with much more loving care than the mail folks will. There will likely be straggler bees on the outside of the package that came along for the ride. Those, even more than the bees inside the package, are the ones that will upset normal people. We don’t want to find out what upset postal employees may do with our bees or where they may put them.

If you’ve ordered from a local bee store, you can pick up your bees at your leisure anytime on pick-up day. Earlier is better than later, though, because you’ll get the best selection and your bees will get more attentive care.

Package day at the bee store is very hectic. It is not the time to buy equipment or ask lots of questions. Both of those should be done well in advance. Think about it: A typical busy day may see twenty or thirty customers. But 600 packages to be picked up means around 300 customers come to the store in one or two days. The staff cannot give everyone special attention on package day – the math (hours in the day divided by number of customers) just doesn’t work out. Since you’ve paid in advance, you’ll simply give your name, select a package of bees, say, “Thank you very much!” and leave. Easy.

Tip: Do not carry the package by holding the screened sides. If you do, you’ll discover that honey bees have stingers and they know how to use them.

Once you’ve picked up your packages, those

bees are yours, nobody else's. If they die after you walk out the door, it is on you, not the bee store. Believe it or not, the percentage mark-up on bee packages is not very high, so resellers cannot afford to play Santa Claus and replace bees that you have killed, even if you did so through innocent ignorance. So transport them home with the same care you would give a baby. Don't leave them in a hot trunk while you make a "quick" stop at Wal-Mart. Mist the screen on the cage every few hours with water or thin sugar syrup to keep the bees from dehydrating. Store the package in a cool dark place, away from drafts and disturbances.

Going from Inside to Outside

The best time to install package bees is in the evening. That way the bees will be more inclined to settle into their new home instead of thinking about exploring. It should still be light enough to clearly see what you are doing, but if you finish right as the sun goes down, that would be absolutely perfect. Assuming everything is set up and ready to go, I can quite easily install a package in a minute or two but if you've never done it before, give yourself at least an hour.

It is important to know that you do not have to install your package "right now." If it is raining or cold, wait until tomorrow or the next day. Just remember to mist the screen every now and then while keeping the package in a pleasantly cool, dark place. Bees travelling through the US mail never get installed until nearly a week after they leave the bee farm. Package bees from a local reseller were picked up on-site in south Georgia less than 24 hours before you got them and were driven through the night directly to the bee store. They can afford to wait for another day or two if the weather isn't optimal.

The installation process is simple and only has a few steps. There are many ways to do it but the method I recommend has the fewest steps and the least chance of going wrong. For this description, I will assume that you are using a Miller-type top feeder, although any in-hive feeder will work well. See page 2 of "[A Few](#)

[More Wintering Tips](#)" for a list of different types of feeders.

1. Put on your veil and any other protective gear that you need to make you feel comfortable. Package bees will be among the most docile you ever encounter and aren't likely to sting, but with bees, never say never. Anyone who says that packages or swarms don't ever sting hasn't handled as many as I have. But it is true that we don't expect them to sting.
2. Light your smoker but ***DO NOT USE IT.*** Smoke will mask the "all is well/come hither" pheromone (Nasonov pheromone) and we don't want to do that – we want the bees to quickly orient to their new home. However it is always a good idea to have a lit smoker on hand just in case things go horribly wrong. So light it but keep it well away from the bees, avoiding getting any smoke on them at any time during the procedure.
3. Remove the outer cover and feeder.
4. Remove three or four frames from the center of the brood box.
5. Remove the cardboard cover from the bee package, the one that is over the top of the syrup can. Set this within reach – you'll be using it again in a moment.
6. Holding the bee package from the wooden ends (never from the screened sides), bump the package gently but firmly on the ground. The bees inside will tumble off of the can.
7. An assistant may be useful for the next few steps. Use your hive tool to pry up the staples that are holding the queen cage strap in place ***BUT KEEP A FINGER ON THE STRAP SO THAT IT DOESN'T FALL INTO THE PACKAGE.***
8. Use your hive tool to pry the can up out of the hole ***WHILE SOMEONE IS HOLDING THE QUEEN CAGE STRAP.*** Remove the can.
9. As you remove the can, pull up the queen cage right behind it. You cannot pull them both out at the same time; the order must be "can" then "queen cage".
10. Set the cardboard cover that you removed



Shake the package with a back-and-forth motion and the bees will tumble out.

in Step 5 back over the hole in the top of the package. This will prevent more bees from escaping. Don't worry about the few bees that are flying around or are on the can. Just don't smash any.

11. Check the queen cage to see if the Big One is still alive. The queen will have several attendants in the cage with her. Some of the attendants may be dead; we don't care about that, it doesn't mean anything. The one that matters is the big long one.
12. Assuming the queen is alive (see *Troubleshooting* below if she is not), remove the cork from the end of the cage that has the white candy.¹ A penknife works

¹ The candy release method is traditional and time-honored but imprecise. The worker bees may eat through the candy and thereby release the queen in a few hours, a few days or "never". An alternative is to leave the cork in the candy end and manually

great to pry the cork out. Some beekeepers suggest pushing a nail through the candy to speed release of the queen. I do not advise this because 1) slower release is often better than speedy release and 2) pushing a nail through the candy is a quick and easy way to accidentally impale the queen inside the cage.

13. Place the queen cage between two centermost frames with the candy end pointed up.² Use a thumbtack in the strap or some other device to suspend the cage between the frames. The cage must be placed such that the worker bees have access to the screen face of the cage and the hole in the candy end.
14. With the queen in place, our attention returns to the package. As we did before, bump the package gently yet firmly on the ground.
15. Remove the cardboard cover.
16. Hold the package over the open hive.
17. Now turn the package over. Lots of bees will fall out into the hive. Shake the package back and forth with a horizontal rocking motion until nearly all the bees have fallen out into the hive. Think of how you might move a toy train back and forth on the tracks – that's the motion you want.
18. A few stragglers will remain in the package. Set it on the ground with the open hole pointing toward the hive entrance. The stragglers will leave the package and join the rest of the colony by the next day.
19. The open hive will look like a bubbling mass of bees on and among the frames. Gently replace the frames you removed in Step 4.

release the queen yourself in three, five or even seven days, ensuring that sufficient time has passed for the bees to become acclimated to their new queen. This alternative method is standard procedure when introducing Russian queens.

² The "candy up" or "candy down" argument is one of the more unimportant bits of trivia that beekeepers can fight over. I'm going with "candy up" here because it seems to be the more traditional advice. But truthfully, up, down or sideways should work equally well.

Don't force them into place or else you will smash bees. Instead, let the frames slowly sink into place as the mass of bees moves out of the way.

20. Put the Miller feeder in place directly on top of the open hive.
21. Fill the feeder with 1-to-1 sugar syrup.
22. Place the outer cover directly on top of the feeder.

That's it! You are now a beekeeper!

The First Week or Two

Do not harass the bees unnecessarily for the first week. Until the queen has begun laying, there is nothing tying the bees to that hive so undue stress could possibly cause them to abscond (i.e., the whole colony heads off for greener pastures).

However you must look under the cover every day or so to see how quickly the syrup is disappearing. If it is low, you must refill it. One advantage of Miller feeders is that checking and refilling can be done without disturbing the bees at all.

After five days, you must go into the hive to ensure that the queen has been released from her cage. Don't assume that she has – verify it. Remove the queen cage and release the queen if she isn't free already. To release her, simply remove the cork from the non-candy end of the cage and allow her to walk out onto the top bars of the frames. Then close everything back up again.

After another five days, go back into the hive to assess how things are coming along. By now, the queen should be laying eggs and you may be able to see very young larvae. It isn't necessary to see the actual queen if you see eggs and larvae. Cut away any comb that the bees have built in inappropriately places, such as between two frames cross-ways instead of correctly on the foundation. Close everything back up.

After this initial phase has passed, I encourage brand new beekeepers to explore inside their hives once a week. Don't pay any attention to old grumps who try to tell you not



The bees have built beautiful burr comb (stray comb where it doesn't belong) around this queen cage. This illustrates how much comb can be built in a short period of time.

to disturb your bees that often. How else will you learn? These bees belong to you, not the other way around, so enjoy them. Once you have become a grizzled old beekeeper you can cut back on the number of inspections because you'll know what is going on inside the hive without actually looking, but in the beginning you must get in there and poke around if you are going to be successful. A very good rule is, "Never go into a hive unless you have a reason to do so," but for a new beekeeper, that reason is to **LEARN**.

The Rest of Spring and Summer

Your new colony does not have very many bees in it. It starts with a little over 10,000 and the population dwindles a little every day until the queen's new progeny begin to emerge 21 days after she begins laying. This tiny little colony has to:

1. generate, from the glands in the bees' own bodies, all of the wax it needs to house its brood and stores for the summer dearth, not to mention the coming winter
2. raise enough brood to reach full population size before winter
3. gather pollen to feed all that brood
4. gather water to thermoregulate and humidify the hive to the correct brood-rearing temperature and humidity
5. gather propolis to caulk drafts in the hive and seal out pests and pathogens
6. store away fifty or more pounds of honey

- for the hard days ahead
7. feed itself as it is doing all of this

And yet people ask me, “Do I really need to feed my bees?” The answer to that question is the same as the one asked of dentists: “Do I really need to brush all of my teeth?” No, you only need to take care of the ones you want to keep.

There are really very few things that we as beekeepers can do to “help” our bees. Feeding new colonies is definitely one of those things. If you want to be successful, feed your bees sugar syrup until their comb is fully drawn out and they have enough stores packed away to get them through summer. As mentioned above, see “[Yum Yum, Eat ‘Em Up!](#)” for more information about the right way to feed.

Speaking of drawing out comb, when the foundation in the first deep is about three quarters fully drawn out (e.g. seven frames out of ten), it is time to add another deep box with ten more frames.

Many colonies tend to build “chimney fashion” in the center and ignore the sides. So you’ll also need to move the frames with undrawn foundation on the outer edge of the bottom box toward the center to encourage the bees to draw them out too (e.g., swap drawn-out frame 6 with undrawn frame 10).

Troubleshooting

With all of the things that can possibly go wrong, I am amazed that honey bees ever survive anything! However almost all of the time, package installations go off without a hitch. But here are some circumstances that may cause you strife.

Yikes, I dropped the queen cage

This may be a beginner’s worst nightmare: after removing the syrup can, you accidentally drop the queen cage into the package. Yikes! How do you get it out? Well, remember what I said about these being your bees? It is up to you to put your big-boy or big-girl pants on and take care of it. The can-sized opening in the package should be large enough for your hand to fit

inside. Just reach in, gently brush away the bees with your fingertips and retrieve the cage. If you can pull that off with panache then bystanders will think that you are a god. I’ve done this enough to know that it looks bad but it really isn’t a big deal at all.

The queen is dead

This one can be very tricky. If the queen inside the cage is dead, perhaps she was mishandled at the bee farm or in transit. But it is much more likely that there is another queen in the package loose among the bees. If the hive that the package was shaken out of at the bee farm had more than one queen (e.g., a mother and daughter), the farm employees would have stopped looking when they found the first one. They would have then shaken a package that included the second queen. The queen in the cage would be completely superfluous to the bees and they would kill her through the screen.

If the problem is #1 (death by natural causes), then getting a replacement queen from the bee supplier will take care of it. But if the problem is really #2 (regicide by the workers), a replacement queen will also be killed, and so will the next replacement, and the next, and so on (see “[I need to buy a queen! Or do I?](#)”) So in this situation, the best thing to do is to get an experienced beekeeper to inspect the package to see whether or not it contains another queen.

Another option is to install the package as usual and wait a week to see if the colony has eggs. If not, wait another week – the second queen may have been a virgin and so needed time to mate before beginning egg-laying.

The bees are trying to kill the queen

This is the same problem as above but is more obvious. If the bees outside the queen’s cage act like they are trying to kill the queen through the screen, then there is another queen in the package. If you continue with the queen introduction without finding and removing the loose queen, the bees will, without question, kill the queen in the cage.

Instead of dooming her to death, sell her on your bee club's e-mail listserv, or, better still, give her to me.

Bees adoring a caged queen can sometimes be confused with bees trying to kill her. In both cases, there will be bees hanging onto the exterior of the queen's cage. If you lightly blow on the bees or brush them with your finger and they move away, they are lovin' bees and mean no harm to the queen. But if they cling fiercely to the screen and refuse to budge, they have murder on their mind. Sometimes you'll even see bees attempting to sting the poor girl directly through the screen; that's a dead giveaway as to their intentions.

Oops, the package was upside down

Bee packages don't have big arrows that say, "This end up!" I will admit that I have accidentally turned one over and dumped the bees on the ground instead of inside the hive. If you do, don't panic. Make sure the queen is installed between two frames inside the hive and dump any bees remaining in the package around her. If all goes well, the bees inside the hive will send out Nasonov pheromone instructing the bees on the outside to come to their new home. They should march right in.

The queen is only laying drones

After a couple of weeks it is possible that you may find nothing but drone brood in your colony. If the weather in south Georgia was bad during the time when mating should have occurred, it is possible that the queen was poorly mated or not mated at all. This isn't common but it does happen. I have seen brand-new queens that needed a little while to start laying properly, so don't judge too hastily. But if the queen is laying nothing but drones and this doesn't improve fairly quickly, you'll need to replace the queen as soon as possible or eliminate her and combine this colony with another one.

Supersedure

Everything is going fine with the new colony build-up but after a month, the bees make

supersedure cells and replace the queen. Although this isn't really what we want, it is normal and happens quite frequently with packages. The important thing is that the bees will have a perfectly fine queen, one that they raised themselves, so there is no problem at all. Just don't go crazy cutting out supersedure cells or you may doom your colony to queenlessness. If all goes well, the new home-grown queen and the old store-bought queen will overlap so there shouldn't be much, if any, break in brood-rearing.

Don't Panic

As the cover of The Hitchhiker's Guide to the Galaxy boldly reminds us, "Don't Panic." People have been installing packages for millions of years... or something like that... (see "[Packages versus Nucs: Want to Fight About It?](#)") If it were as dangerous as it looks, it would be illegal, right?

With those encouraging words I will leave you to it! Have your next of kin send me an e-mail, with photos, if things don't go well!

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