

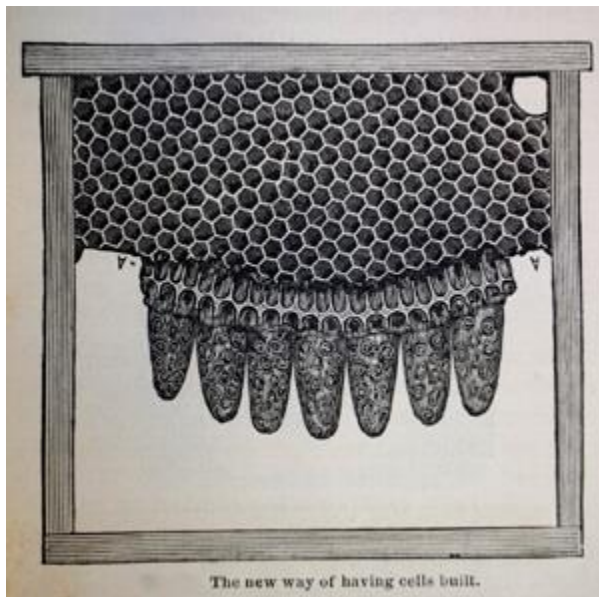
# Stahlman Beekeeping Notes for 2022

Alley & Miller queen rearing  
methods



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As I have mentioned in an earlier edition, there are many methods used to raise queens. I like simple methods that will work.



## The Henry Alley Method

I am sharing this method from his book published in 1883 called "The Beekeeper Handy Book or Twenty-two Years of Queen Rearing Experience."

This method was commonly used in the late 1800's. It fell out of favor with queen producers because the book "Scientific Queen-Rearing" which was published in 1889 written by G.M. Doolittle provided a way to raise queens in larger numbers using a frame and cell bar which could hold queen cell cups. That method also required the beekeeper to learn how to graft young larvae from the

brood comb into a queen cell cup.

This is an illustration from Alley's book and it shows clearly what can be done with a strip of young larva attached to comb inside a standard frame.

- This method allows for some control over the number of cells to be made by the bees.
- If you can cut a strip of comb containing eggs or young larva with a warm knife from a brood frame, you can raise some nice queen cells.
- A strip of comb with eggs or young larva can be moved from a frame with no damage to the brood and attached to a top bar or as shown here some comb with hot wax.
- One modern limitation of this method is it will not work with plastic foundation.
- This method still requires a queen-less hive to create the queen cells.

## How to use the method:

The Alley method is a simple way of producing queen cells in small quantities suitable for the ordinary beekeeper.

As with all attempts to raise queens a beekeeper must do some planning on when to do certain things. Of prime concern is creating an environment for nurse bees to feed young larvae to become queens.

There are several steps the beekeeper must do in both the Alley and Miller method described in this note: [Set up a hive that will provide the wax comb with eggs & larvae then create a hive that will build queen cells]

1. Start with a hive from which eggs or larvae are to be taken. It is easiest to place a frame of unwired beeswax foundation in the selected hive for the bees to draw out cells and the queen to begin laying eggs. Once eggs are seen move to the next step.
2. A day before removing eggs and larvae from the mother hive, a beekeeper needs to create a queenless hive that will build the queen cells. This is called the cell builder hive.

A cell builder hive is important in supplying all the requirements for the nurse bees to build queen cells.

- a) It must be queenless.
- b) It must be well supplied with food – pollen and honey or sugar syrup. In fact a frame can be selected from a hive that contains the supplies. This frame is placed next to the cells containing the larvae or eggs to be made into queens.
- c) It must be well supplied with young nurse bees.
- d) **The success of building good queen cells is dependent upon the bee population and amount of food in the cell builder hive!**

### 3. The day of moving eggs and larvae to the cell builder hive.

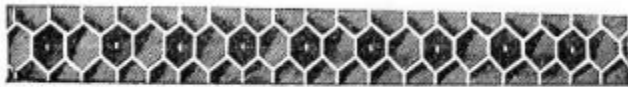


FIG. 5. Comb containing eggs in alternate cells.

The following is the way Alley describes the process.

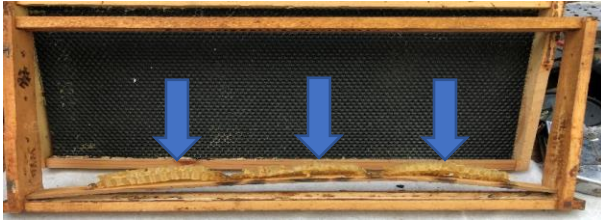
Using a newly built brood comb containing eggs or young larvae, cut the comb into strips only one

cell wide. (The illustration above is from the book) Remember that brood comb has two sides. He laid the cut strip on a flat surface and squashed every other egg or larvae. This is shown above. This would leave a space between each queen cell.

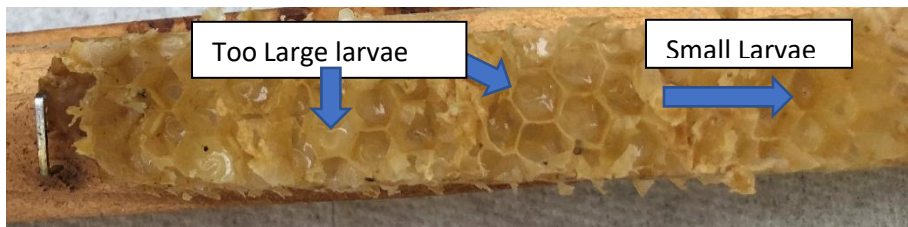
He attached the comb with the cells facing down to the bottom edge of brood comb. Following this, he placed the frame into a strong queenless colony.

Comment: I thought it good to try to get some pictures of what I did quickly to get some queen cells started. I made no attempt to do it Alley's way but used his principal idea: No grafting involved:

I went thru several hives looking for a frame with a beeswax foundation base. I found a frame with eggs and very young larvae. This frame had vertical support wires. Thus I had to cut comb from the frame from top to bottom. I cut out three strips top to bottom about 1/2 inch wide. And stapled them to a cell bar cut to form a bow in an empty frame. I made a bow because queen cells formed on the strips would



show some tendency to separate themselves.



This is one of the strips stapled to the cell bar. Note the larvae were older than desired but for this trial effort to raise some queens, I

used them. The different age of the larva makes this less than an ideal set up. If the bee feed an older larvae, it will likely not be fed as well as a younger larvae will be fed.



Note the difference in age of the queen cells built. Capped over cells are the older larvae. They will most likely develop and emerge from their cells in another 6 to 7 days.

The uncapped queen cells are still being fed and their development times will be delayed by several days. Maybe emerging 9 to 10 days later.

**This presents a timing issue because one of the older queens will emerge from her cell and begin to kill the other queens if the cells are not moved to mating nucs.** For a person wanting to raise only a few queens, this method works!

## The Miller method

This is a popular choice. It is much like the Alley method but strips of eggs or larva are avoided.

Cells drawn on a starter strip or foundation is going to get the best results. However newly drawn comb in a frame can be used if the queen has started laying eggs in the cells. The cell builder hive will be required.

I start with medium or shallow frames put into my queen mother hive. I place a frame between two frames containing eggs and larvae. This is usually near the center of the brood area. If a honey flow is slow or non-existent, I feed the mother hive to encourage wax building.



This is an example of a starter strip placed in the mother hive. The frame does not need a bottom bar. The saw cut design allows for more edge exposure than if it were cut straight across.



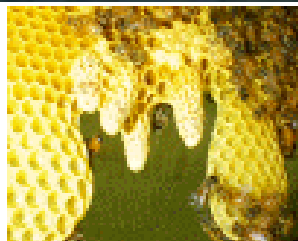
A few days later it should look like this:

Check the cells for young eggs. The location of the eggs is important for deciding how to make cuts in this new comb.

Cutting notches in the comb as shown below!



The wax comb is cut saw tooth fashion to form some "V" shaped edges. Miller discovered that bees select young larvae along the edges of comb to build queen cells. They can build queen cells around the base of the worker cells facing down. Since the saw tooth cuts allow for more cell building edges, more queens can be produced.



As queen cells take shape the bees will continue building comb. Often queen cells will be bunched together at the top of the "V" cut. I like using a full length of a starter strip and cut it when eggs are present. I have seen triangular shaped comb pieces of foundation placed into the cleat of a top bar. I have had problems with some of those falling from the top bar when a clump of bees hang on them.

When cells are ready, a sharp hot knife is used to cut the queen cells from the notches. The picture showing queen cells grouped together requires the beekeeper to make a decision on which ones to save.

Let's just review the steps:

- I) Prepare comb to get the queen to lay the eggs. (Both methods require eggs or young larva in cells).
- II) Once eggs are present the cell builder must be prepared to accept the eggs or larva ASAP. It must be queen-less.
- III) Move comb (either strips with eggs placed into a frame) or a frame prepared with saw tooth edges where young larva or eggs are located to the cell builder hive.
- IV) Two days after the frames have been placed in the cell builder hive, the beekeeper can take a quick look at what the bees have done. One should see queen cells forming over the strips or in the saw tooth areas of the comb. Do not expose the frame to direct sun or keep the frame out of the hive except for a few minutes.
- V) **If the cell builder hive is left unattended, only one queen will survive.** A beekeeper can often get as many as 10 to 15 good queen cells using the Miller Method.
- VI) It is important to have mating nucs prepared to receive capped cells when they are ready to be removed from the cell building hive.

A time line: Put foundation into a hive with a good queen (May take 3-5 days for the bees to build cells and the queen begins to lay.)

Once egg or larva are observed in the new comb the beekeeper is on "Queen Time."

Eggs hatch in 3 days! The young larval stage is a 6 day development period. (Queen Cells are capped by day 9)

From day 9 thru day 16 the new queen completes the pupa stage before emerging from a cell as an adult virgin queen bee. 90% of all insects in the world develop this process of complete metamorphosis-- four stages of growth [egg, larva, pupa and adult].

**The trick with either of these methods is to determine the age of egg or larva the bees select to become queens.**

If several days separate the age of eggs (it is possible to have a virgin queen develop faster from an older egg. Thus, she will destroy the younger developing queens before they can emerge from their cells. Same goes for the age of larva – older larva will emerge before younger larva with the same result – the first out of a queen cell begins the process of fighting to be the one queen survivor. If one wants more than one queen, it is important to move older cells to nucs before they emerge in the cell builder hive.

Queens also develop a bit faster in hot weather. I usually check cells to see when they are capped – I know they are 9 days old. I can then easily determine approximately when I should move them into a mating nuc.

Handle queen cells very gently.

I always want several spare queens developing in nucs - it allows me to replace problem queens or make increases.