

# STAHLMAN BEEKEEPING

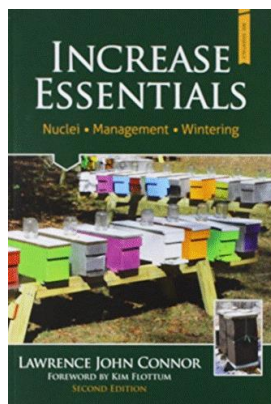
## NOTES FOR 2023

Vol. 5 Issue # 9 Making Hive Increases March 4, 2023

There are two periods in the beekeeping year when most beekeepers make hive increases. However if the condition in the sidebar exist, splits can be made almost anytime.

Spring: Colonies of bees are in a growth period. Queens are laying well and hive populations are exploding. Many splitting methods are available to the beekeeper that wants to increase hive numbers or replace hives that died out over winter.

This short essay on splits can in no way cover the subject of hive increases!



I would recommend the book “Increase Essentials” by Larry Connor. It is available on-line.

A good reason to buy Larry Connor’s book is the information on different methods and how one can manage nucs.

One can try by making mistakes and learning from them.

But the cost of the book is less than the cost of “gaining experience by learning from mistakes,

failures and loss of time and effort.” *I do not get a commission from Larry for any books sold!* He is a beekeeper’s beekeeper! He is solid on facts and information.

Making splits and increasing hive numbers is possible because the biology of the honeybee allow humans to take advantage of their strong instinct to survive.

Thus, it was possible for beekeepers like C.C. Miller to start with 9 hives and increase them to 56 hives in the same year.

That would not fit the picture for me or many of you. Many of us have no desire to have a large number of hives but we do want to replace a dead-out hive or make some modest increase in hive numbers.

Some basics I have learned: C.C. Miller was a very smart beekeeper! His observations are as valid today as they were in his day of 100 years ago. He died in 1920.

### IMPORTANT POINTS

#### Making splits

A swarm is a natural split. Many bee books refer to splitting a hive as an artificial increase of a colony of bees.

Almost all methods used to make splits indicates the following conditions must exist:

- Colonies should be populous and raising brood.
- The weather should be warm allowing bees to fly.
- Nectar and pollen should be available in good amounts.
- Adult drones should be present.
- The best time is during the natural swarming period.

Cold weather in California can have a domino effect on Commercial beekeepers and you..

Many commercial beekeepers pollinate almonds, produce queens, and sell package bees. They also ship bees from California to many other states including some back to southern states that provide bees for packages.

Expect delays in getting packages this spring.

He worked with bees – not against them. His methods were simple and when repeated still work as they did over 100 years ago.

It is a waste to try to make splits or raise a hive of bees with a small bee population. I sold queens at one time in my life and had a customer who had this idea: Buy one three pound package of bees and two queens. The plan was to introduce the three queens (one came with the package) to one pound of bees put into three nuc boxes. The idea sounds pretty good: Buy a package of bees for \$140.00 and two queens for \$35.00 each. The beekeeper spends \$210.00 for bees plus equipment cost. The beekeeper did not realize that is not the way honeybees make splits. Three weak colonies vs. one strong hive that could have built up a strong bee population would indicate as Moses Quinby would say, “that thinking has a rail off its fence.”

Things to consider:

- Bee population grows rapidly when a large population of both nurse bees and foraging bees are present and the colony has a productive queen and food.
- A hive with a brood break will lack the ability to replace bees that die until they have a queen laying eggs and eggs become adult bees.
- Small populations of honeybees cannot produce the heat required to keep the brood nest temperatures at brood rearing requirement of 92°F.
- Small populations of honeybees cannot build enough comb, do a good job of feeding developing larvae, and foraging for enough food to do a good job of building bee populations. Thus, buildup of a week hive population and resources will be slow.
- And finally, drawn comb is an advantage to any new hive started with packages. If bees must build comb before eggs are laid – What impact will this have on a hive’s progress? Answer – slow it down.

Additional items to consider regarding the subject “the queen bee.”

- Making a split using either a queen or a queen cell.
  - The advantage of using a queen to start a new hive split is to speed up the population growth cycle.
  - One common way and I think very good way to make a split is to use swarm queen cells.
    - A hive about to swarm will build a number of queen cells mostly located near the edge or bottom of a frame.
    - The number in many cases is a dozen – sometimes a lot more.
    - Swarm cells are ideal for starting a split because they are near to emerging – often just a day or so. They are well fed and usually swarm queen cells are larger than emergency queen cells.
    - Some queen operations sell queen cells. (Not for beginning beekeepers) They require careful handling and are easily damaged.

- Let the bees raise a queen.
  - If eggs and young larva are available in a split without a queen, the bees will build emergency queen cells. (Bees will not build queen cells if the queen pheromone is present.)
  - This will result in a brood break as well as a delay in the development of the split. Splits building and caring for queen cells must have plenty of food stores – pollen and honey or sugar syrup supplied in a feeder. This is the key for well-developed virgin queens.

The mother hive provides frames of brood and in some cases foraging bees:



- To make a split successfully one must start with a good strong hive of bees. If a hive is weak, wait until the bee population can be split at a later time.
- For faster development, a mated queen can be used with almost any method used to make a split.
- When a hive is split into two equal parts, both new hives will require time to build up. Timing is important if the goal is to get a honey crop.
- Often the consequences of splitting results in 1) loss of a honey crop and 2) a set-back for both of the hives created. It takes time for both to build into strong colonies.

Selecting a method:

First, swarming season comes right at you – often when you least expect it. If planning to make splits and increase hive numbers, it is now time to buy or build hive bodies, bottom boards, inner covers, top covers, frames and add foundation to frames. They should be on hand now!

**My first choice for making a split in early spring is called “A Vertical Split.”**

Splits are easy to do – such as a walk-away-split but there are methods one can use that do not cause a set-back for the “Mother Hive.” Both of the methods I use reduce the recovery time of the mother hive or hives. “Mother hives” will be productive shortly after giving up frames of brood or foraging bees.

**Equipment needed and the steps to take!**

- One piece of equipment required is **“a double screen board”** -- sometimes referred to as a Snelgrove board. This is not a queen excluder. It has two screens separated by a space of  $\frac{3}{8}$ ” or more. It prevents bees from touching each other. It allows warm air to pass thru to provide warmth to the bees above it. It has many uses such as: it is a means of swarm control, it will separate two queen colonies of bees on the same bottom board, it is used to make increases and sometimes it is used to raise queens.



This is a normal hive with a number of bees located in both the upper and lower brood chamber. This is called “the mother hive.”

I am sharing only two ways to make splits. There are many

ways!

The way I have used it: I bring four replacement frames, an empty super and division board feeder to the hive being used in the split plus the double screen.

Step One: Comb management

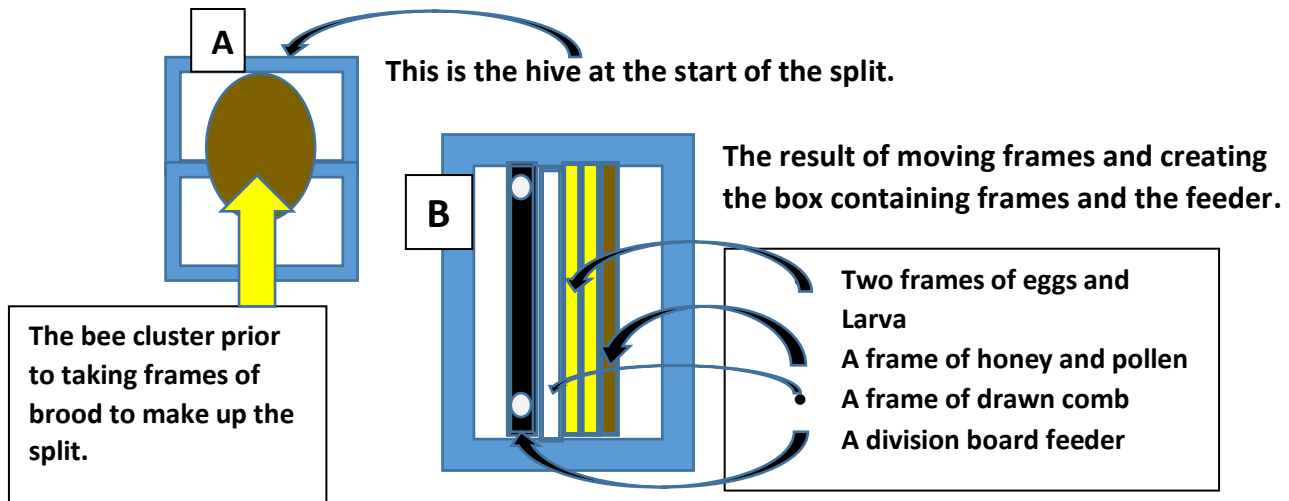


- I open the hive to select two frames of eggs, larva and bees.
- I check to make sure the queen is not on these frames.
- I place the removed frames in the box I am going to use as the split. This box will be placed above the double screen board which will be placed on the “Mother Hive.”
- I need to add two more frames so I will have at least four frames in my new split. One frame should contain honey and one frame can be an empty frame of drawn comb or foundation.

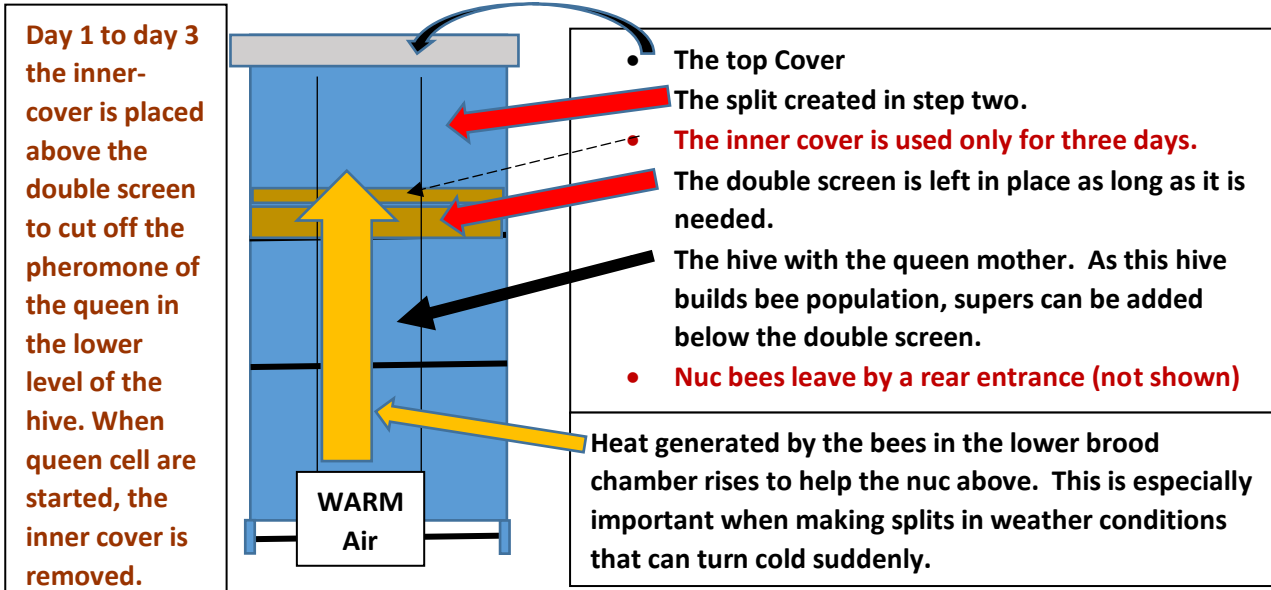
- The chimney effect: Heat rises and all brood must be located in the center of all boxes so the chimney effect is effective.

This method of splitting a hive uses the heat generated in the “mother hive” to help “the split hive” keep brood warm. Any replacement frames placed in the “mother hive” should be near the outside walls.

Step Two: Set up the vertical split: “A diagram to help explain the process as I use it.”



### Step Three: Putting everything together



One other note must be made regarding this method of splitting a hive.

The upper nuc must have a way for bees to leave. Double screen boards have a notch in the upper level opposite the entrance side of the hive. Bees can fly and the new queen can leave the nuc to mate. In this way the nuc is independent from the hive below.

The upper split can be inspected in three days to make sure the bees have built queen cells. There are many options available for the beekeeper to manage a hive like this.

The new nuc can be set off the mother hive almost anytime weather conditions improve or the new queen is laying eggs. Frames can be added making this split one more hive in the apiary or consider this method as useful to makeup nucs to sell.

## The Miller Method (condensed):

C.C. Miller was an advocate of strong hives. Splitting a hive results in making one hive into two weak hives. The Miller Method requires several hives to be used to donate frames and bees to build a new hive. The idea was to keep all hives as strong as possible.

He wrote of taking 9 hives some weak to make 56 new hives in one season and every new hive was strong enough to gather honey during the late honey flow in Illinois.

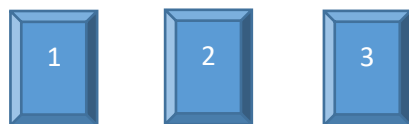
I suggest that a beekeeper with three hives can do something similar. Of course with more resources (colonies of bees) the Miller plan allows for a rapid increase that makes keeping bees profitable.

The key to making splits was this: Take one frame from a strong hive every 9 days and put it as well as other frames from hives into a hive body placed on a bottom board. He then moved a strong hive with foraging bees returning to that spot. He placed the new hive into the location of the moved hive to gather all the foraging bees.

Keep in mind that foraging bees return to the old location of a hive if the old hive is moved just feet away.

It is simple and works with building strong hives fast. Taking a frame of brood from a strong hive does not reduce its population by much. Its bee foraging population is not affected. The moved strong hive loses its foraging bees but these are replaced quickly by its younger bee population as they age and begin to take flight.

Picture this: Three hives with good populations of bees.



It is possible to increase a beeyard from 3 hives to as many hives as beekeeper may want every 9 days by repeating this single operation over and over. Read the steps below and realize that the “new hive #4” is going to be placed where hive #3 is located.

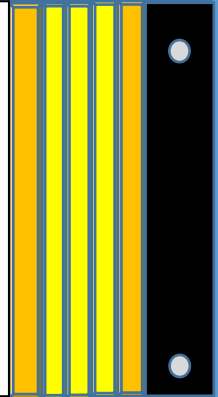
**Step 1**

New empty hive box placed on a bottom board.

**Step 2**

Take one frame of bees and brood especially young brood and some capped brood from hives 1 -2 & 3- Brood frames are colored yellow. Add two frames of foundation or drawn comb - one on either side of the three brood frames colored light orange. Add a feeder colored black.

Open space to add more frames for growth

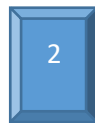
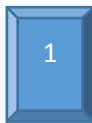


As the nuc is being put together, each hive donating a frame requires a replacement frame. Do not transfer any frame having a queen on it to the nuc.

One method to make sure one does not accidentally get a queen on frames to be transferred.

A day before making the split, take each donor mother hives top box off and shake bees off all frames in front of the hive. Then place a queen excluder above the bottom brood chamber and return the box without bees on the hive. Those young worker bees that were on brood frames will return thru the queen excluder to keep the brood warm. No queen – she will be in the bottom box. Brood frames will have young house bees that will be of the right age to feed larvae and they will produce better queen bees raised in the nuc.

**Step 3** Move hive # 3 to a new location within the bee yard.



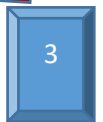
**Step 4** Move the new nuc into the position previously held by hive # 3. It is now numbered #4.

This is hive # 3 moved to its new location. It gave up one frame of brood and its foraging bee population. In 9 days it will have replaced the lost foraging population and with a good laying queen, replace the bee foraging population it gave to hive #4



This is the new hive set up. Hive # 4 takes the place of hive # 3.

This process can be carried out again and again. All that is required is equipment and a wait of 9 days. Next hive to be built would be #5 and it could be started in location # 1. The hive in location #1 would be moved just like hive # 3 to another location within the beeyard. Moving frames from strong hives to weak hives has always been a way to equalize bee populations. Moving foraging bees from one colony to another is also a method of making weak hives stronger.



**What is the advantage of this system?**

- Foraging bees returning to the old hive location will add considerably to the total population of hive # 4 the new split.
- The bees will raise a new queen.
- In 27 days this hive will be able to donate a frame of bees to make another split.
- The new split can also be reinforced if no new increases are made by taking one frame from other hives in 9 days to make it even stronger.

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**The new hive # 4 will**



**Foraging bees returning to the old hive location. And being queenless, the bees will raise a new queen.**