

## **Roger Patterson Method of Colony Increase.**

I have used this method, or parts of it, for making colony increase since the early/mid 1970's, but I doubt if you will find much of it in a book, or not a modern one anyway. It brings together into one basic method several manipulations that could be used in isolation. For ease of identification I have given the whole system my name, but as is well known, there is little new in beekeeping, just different ways of achieving the same result.

I have developed the full method over several years, mainly in response to my needs. I like it because in most years in my area of West Sussex, from one strong colony that came out of one winter, I can usually produce around 10 colonies that are strong enough to go into the next winter, with a good chance of survival. In other parts of the country it may be less, because the summers are shorter, but the rate of increase should still be acceptable. It can be modified in many ways to suit the individual beekeeper and their situation, e.g. if you want fewer but stronger colonies, you can do it.

I have decided to write about it because I get frustrated at constantly hearing and reading that in the U.K. we can't produce enough bees to satisfy the needs of beginners, and that bee farmers need to import bees to make up losses. It seems to me their problem is they must have bees early, but with this method you can. It also avoids the possibility of importing pests and disease we haven't got, or bees that are not best suited to our conditions. This is a simple method that costs little, but is very productive. If you are skilful you can have bees, queens and a reasonable crop of honey from the same colony. If you can afford to use several colonies you can combine the efforts of them and improve the output as I do and I indicate later.

I refer to "colonies" and "nucs". In general I have used "nuc" soon after setting a new colony up, but "colony" when it is established.

### **In Summary.**

I know it is unusual to put the summary at the beginning, but there is a lot of information here, some of which the reader may not be familiar with. Once the whole concept is understood the knowledgeable and skilful beekeeper will see this as a basic system they will be able to modify in many ways. It is very simple, but there are so many possibilities, hence the lengthy description. I hope the inexperienced reader won't be confused or put off. All we are doing is starting with a strong colony in the spring. At intervals during the summer we are taking two nucs off it at a time, giving each a queen cell and drawn comb, placing them at the side of the parent colony, then moving the parent colony to another stand in the same apiary. The flying bees from the parent colony are distributed between the two nucs.

When they have built up, the earlier pair(s) of nucs can have brood or bees removed to make up or augment other colonies.

### **The method.**

From the parent colony and those made up from it I move combs of brood and food between the colonies and I also bleed bees off some to populate others. I know this is frowned upon by a few, but I think it makes management more flexible and I have never had any problems.

This method works well because all the bees are kept in the same apiary, which is what I describe here. It won't work so well if bees are moved to an out apiary because I often rely in bleeding flying bees off one colony to bolster another, but it can be modified.

Like many things I do in beekeeping, this is part of my management system, where different bits fit together, but can be adjusted if needed.

I list below some of the things I do and the knowledge needed to make this system work well.

- There is a lot of movement of bees and combs, so you need to be able to recognise Foul Brood and know how to deal with it.
- Most of my brood combs are drawn out from foundation above a queen excluder in brood boxes used as supers. When extracted, I have much better brood combs than if foundation is placed in the brood box. Comb gives much quicker build-up than foundation does. If a colony needs feeding I have combs of food available, without having to make syrup or wait for the evening to feed.
- Most beekeepers will have some empty used brood combs. These can be used if they are in good condition and the usual precautions are taken.
- I rear queens throughout the summer, so together with natural Q/Cs when available, I have plenty of queens or Q/Cs to use.
- A frame of brood becomes three frames of bees when it emerges. You can fairly accurately predict when you will get an increase in the adult bee population.
- If queens get mated fairly quickly you can set out a timetable with reasonable accuracy.
- At times there can be rapid expansion in some colonies, especially 3-4 weeks after a young queen has come into lay and she has empty comb available to her. The colony that is comfortable in a nuc box today, but has a high percentage of sealed brood, could be absolutely bursting in 7-10 days time.
- Sealed brood generates some warmth and needs less bees to look after it than unsealed brood does. It also ensures quicker build up.

- The brood in a colony that is weak in bees may have poor nutrition, leaving it vulnerable to chalk brood & perhaps EFB. Keep colonies or nucs strong in bees.
- My queens are non-prolific and in general I keep my bees on single brood depth National boxes throughout the year. I guess that more prolific queens may allow you to make more colonies, but they may need feeding in poor weather in order to do so.
- If you swap places with colonies to divert flying bees from one colony to another I suggest caging the queen for 24 hours, otherwise the incoming bees may overwhelm her.
- If a hive is moved, with nothing left in its place the flying bees will disperse between the closest hives.
- A colony that has been recently made up, or has been moved with the intention of losing or gaining flying bees, will be out of balance. In a short time the colony will adjust, so bringing it back into balance.
- A colony that is moved with the intention of losing the flying bees will be vulnerable to robbing in a nectar dearth, so always reduce entrances.
- I dislike feeding during the active season. My bees are frugal enough they rarely need it, but some of what is happening with this system, such as the removal of flying bees is false, therefore you may occasionally have a food shortage. I prefer to use frames of food from other colonies than feed.
- You will have several small nuclei. In general the smaller the colony the more variable the food situation can be, often going from the point of starvation to being packed out with food very quickly, the latter often a problem if there is little unsealed brood to feed and a nectar flow on.
- Avoid placing a nuc in full sun, as the colony will struggle to ventilate it. The shade is much better for them
- Non-prolific queens will lay up a B.S. brood frame in about 2 days, prolific rather quicker. This is useful knowledge when timing operations.
- Bees from two colonies will often fight, those from three or more usually won't.
- Flying bees or a returning queen will be attracted to a colony with fanning bees, or the one that is fanning the most.
- Don't inspect a colony that is near another where a queen may be on an orientation or mating flight. For safety avoid inspection between 10.0am and 6.0pm. You may be a marker that wasn't there before and colonies that have been opened will be fanning, so may confuse a returning queen.
- Don't move colonies with a virgin queen in, for the same reasons as above.

- Never think that nucs won't swarm.
- As with much of beekeeping the beekeeper needs to be reasonably knowledgeable and capable of lateral thinking. At times you need to know what will happen in, say, 4, 10 or 16 days time, because in some cases you can look at a nuc one week and think it's O.K., but the next week it could be bursting with bees, starved or robbed out.

The above may seem daunting at first, but I have learnt a lot from observation and making mistakes. All I am doing is passing the information on to you, in the hope that you understand the reasons why I do things the way I do and how my management system has developed to allow me to be flexible.

If you do something different from the "standard teaching" and develop your own techniques, you obviously need to know what bees are likely to do in response to your actions. That comes with a little observation, lateral thinking and experience, but you need to know what I call the "basics", i.e. life cycles, swarming process, disease recognition, etc. All beekeepers should know these anyway, but the skill and information gained by doing new things and making mistakes will help you modify this system of colony increase.

We are often told that bees do "this, that or something else", almost without variation. It is when you do manipulations like I explain here, where you often have two colonies in the same apiary that appear identical, you treat them both the same way and they respond quite differently, that you realise that bees don't always do as they are supposed to.

This system can be kept going throughout the summer, but can be stopped at any point.

The basic method has been demonstrated at the Wisborough Green BKA teaching apiary on many occasions. The good point about demonstrating something of this nature is that attendees can see the progress of colonies throughout the season.

In an attempt to make it easier to understand, I describe it in stages with diagrams and photographs to help you. If you don't understand something then please don't abandon it, but keep going as it really is quite simple. It may pay to set it up on different slides on PowerPoint, where each slide is a stage or movement. I do give summaries of what has happened to help you.

I suggest starting at the earliest you can start rearing queens in the spring. This will depend on the year and the part of the country you are in. In West Sussex I can usually start in the first week in May, but in general a couple of weeks after drones emerge is usually O.K. If you hear of swarms in your area, then you can start.

For those who want to get a maximum number of colonies during a summer I have gone for a best case. You may have to pull back a bit depending on the availability of Q/Cs, your needs, the weather or the success of queen mating.

## What do you need?

There is no specialist equipment needed, just what you would normally expect to find in an apiary, but probably a little more of it.

- A full strong colony with plenty of sealed brood. One that is preparing to swarm is ideal, as you can use the Q/Cs if the colony is good, but this is not essential. If you want the maximum number of colonies during the summer this colony needs to be bursting with bees when you start, with no restriction on space to hinder the queen. The colony needs to be queenright at all times if possible.

For best results I suggest identifying the colony in March. Very often in Spring in my area I get a few days of warm weather where the bees bring in quite large loads of nectar and pollen. If they are short of vertical space they will pack the income around the brood, preventing the queen from laying outside it, so restricting spring build up, which I believe is a major cause of early swarming. To avoid this, you can do one of two things, put two supers on, or add a brood box of comb under the existing brood box. Underneath is preferable to above, as bees naturally expand downwards and will be less restricted. This needs to be done way before you would normally think of supering.

I do not use prolific queens or do any "stimulative" feeding. I just let the bees expand as they would naturally, but of course they shouldn't be short of food.

If you use prolific queens and a double brood box I think you will probably get more colonies than I do. If you do this, then I suggest still making nuc's as described later, as I think they will probably build up quicker with prolific queens. In my experience colonies with prolific queens are more prone to starvation during the summer, so you may need to feed them.

- Several nuc boxes and full hives. I like my own design of nuc box, where I designed out most of the problems I found with other designs. In reality it doesn't matter what you have, providing they are fit for purpose and satisfy your needs. They won't be going off-site, so their condition and weight doesn't matter. I like 5 frame boxes because there can be rapid expansion that may mean the nuc's are quickly crowded, so needing moving to bigger boxes.
- Temporary stands for putting nuc boxes on. These could be anything that is discarded, such as milk/bread/beer crates or supermarket baskets. Please remember these belong to someone, unless you find them in a skip.
- Spare brood combs or foundation. I much prefer the former, which is why I have them drawn out in brood boxes that are used as supers. If you only have foundation, then that will do, but your build-up will be slower

- Queens or Q/Cs. I prefer the latter, because I often use the nucs that are created for queen mating, so they serve two purposes. The life cycle of workers is around 21 days, but a young queen will lay up most of the combs in the fairly small colonies in 7-10 days, meaning that she is doing little for 10-14 days, until that brood emerges. She may as well be removed and used elsewhere for requeening poor colonies. If a ripe Q/C is given soon after the previous queen is removed, the new queen should be laying soon after the brood has emerged and will have several empty combs to lay in, so creating another flush in 3-4 weeks.

I only advocate using "local" bees and would not advise buying queens from outside sources, especially if imported or raised from recently imported stock. You need a supply of Q/Cs, which can be planned for if you want maximum efficiency, or you can wait until there are swarm cells from good colonies if you don't want the maximum number of colonies. I am raising queens regularly, so all new colonies are headed by potentially good queens.

If a Q/C fails to result in a laying queen, then give a fertile queen if you have one, which shouldn't delay progress much, or if you don't have one, then give a frame of largely sealed brood with the bees shaken off and another Q/C. This will set the nuc back 2-3 weeks, which won't be a problem in the early season, but may do later.

- You may need occasional help from other colonies, e.g. frames of food or brood.

That is all you need apart from a bit of luck with the weather, enough knowledge to manage the situation and a good positive attitude to make the best of the opportunities presented. As with a lot of things in beekeeping there is a warning! Please don't blindly follow what I write. This is not "beekeeping by numbers", it is a basic system where I give you the best case - you will have to modify and adjust to suit conditions and circumstances. It may be the weather is bad for 2-3 weeks, meaning that foraging is poor and queens are mated later than expected, as often happens in our fickle climate.

For simplicity I will describe the operation as if the parent colony is always queenright, with Q/Cs, not queens, always going into the new colonies that are created.

There are many options, but I will cause confusion by describing them all, so you must rely on a bit of imagination and your own knowledge of what you can do and how the bees are going to react.

It doesn't matter at what time of day the various operations are done, but it is better if there are still 2-3 hours of good flying weather left, otherwise there could be an imbalance when bees fly the following day. It is best if the bees decide where they are going before they stop flying for the day, so you have a chance to make adjustments.

Some of the nucs that are made, especially the earlier ones, are similar to what I call "2 frame nucs", which I describe later. For further information on these see Dave Cushman's website <http://www.dave-cushman.net/bee/twoframenuc.html>.

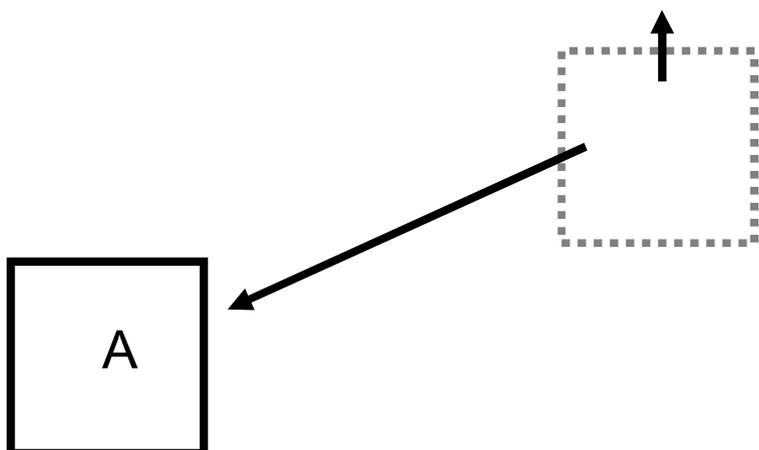
Throughout this article I will call the original parent colony "A" and the nucs created at the same time as "B1" and "B2", "C1" and "C2" and so on. Colony "A" may be on single or double brood. I don't use "brood and a half", but I see no reason why you can't use that too.



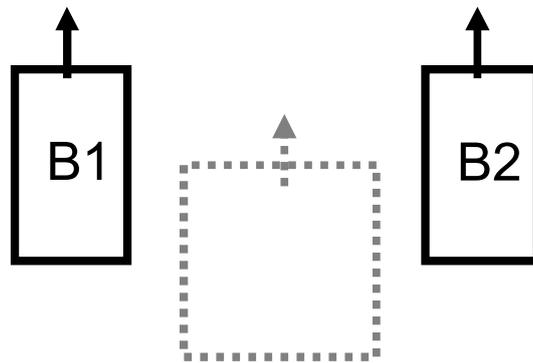
Parent colony "A" needs to be strong in brood and bees.

### **Stage 1. Setting up the first round of nucs.**

- a) Move colony "A" to one side or to the rear as shown below. This needs to be 10 feet or more away. The entrance direction doesn't matter, but it needs to be in a position where you can work and place two nuc boxes for the next pair of nucs .



b) Place 2 empty 5 frame nuc boxes (or full hives) "B1" and "B2" at the side of the original hive "A" position as below. I prefer slightly in front, but it doesn't matter.



c) In both "B1" and "B2" create a "2 frame nuc" from "A". This is one frame of largely sealed brood with adhering bees and one frame of stores. The more brood in the brood combs the better, as this will increase the size of these colonies significantly, which will be a great benefit later. The food combs can come from another colony, but without bees. The queen must stay with "A" so she is continually producing brood. See her - don't guess it!



One good frame of largely sealed brood well covered with bees.



One frame of food both sealed and unsealed. If filled both sides like this it will keep a newly made up nuc, as described, going for a couple of weeks if there is no income.



If there is brood on the food comb such as here, the brood is better if it is sealed.



Two nucs in the process of being made up. They are in my own design of nuc box.



Photo taken at the Wisborough Green BKA teaching apiary in June 2015. The two nucs in the front (arrowed) have been made up a few days earlier from the parent colony, whose stand can just be seen behind the front nuc box. They have been moved further apart on their way to new stands. The parent colony has been moved out of the photo to the right. In the background you can see a number of queen mating nucs.

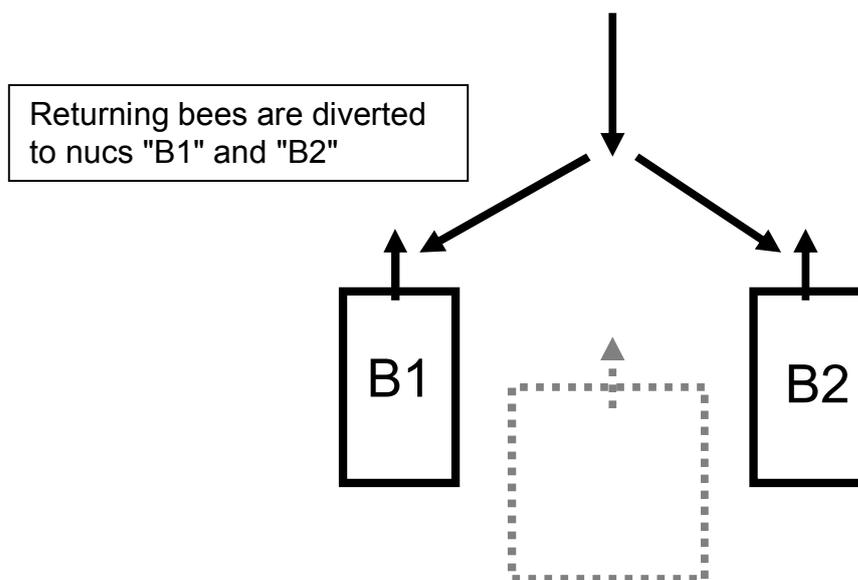
- d) Fill boxes "B1" and "B2" with comb. Nuc boxes must be filled, otherwise if there is a nectar flow any space will quickly be filled with wild comb, which is a nuisance.



Wild comb built in gap where frame was missing, as arrowed.

- e) Make sure "A" has enough stores, as they will lose flying bees, so won't be able to forage for a few days.
- f) To replace the two frames of brood in "A", put two empty combs, preferably separated by a frame or two of brood, in the middle of the brood nest for the queen to lay up. In normal circumstances I don't advise splitting brood in this way, but comb is less of a problem than foundation because the queen can lay in it more quickly and you will be checking the colony regularly anyway. Even though the colony has lost its flying bees these two combs are normally laid up quite quickly. One alternative if you are concerned is to temporarily "park" a couple of frames from "A", without bees, in another colony and put the two empty combs in "A" 4-5 days before taking off nucs "B1" and "B2". This is before colony "A" is moved, but when it still has the flying bees. The "parked" frames can be used for the nuc's. Another alternative is to put the empty combs in another colony for their queen to lay up, then transfer to "A" instead of empty combs. There are many options!

- g) Replace the two food frames with empty combs in whichever hive they were removed from.
- h) Returning foragers from "A" will come back to the original site, but are unable to find the hive. They should divide equally between the two nucs, but often favour one (say, "B1"), which causes more fanning at the entrance, so attracting more flying bees, causing imbalance. If you see this happening, then move the one ("B1") that bees are attracted to the most sideways a few feet for a few minutes, so returning bees are diverted to "B2". When "B1" and "B2" are fanning equally, move "B1" back. You could also cover up the entrance for a few minutes with the roof. I often find less trouble if "B1" and "B2" are made up before moving "A", perhaps because both are fanning equally. This part is very important and needs attention, otherwise one will be very strong, the other very weak. Having said that there may be situations later where a stronger one may be a benefit.



- i) Give "B1" and "B2" a ripe Q/C each. If within about 4 hours of splitting I would protect it, otherwise insert it as it is. Protect if you want to be safe.

**Stage 2. About 3 days after Stage 1.** I do this for every nuc that is made.

Do a quick inspection to see if the queen has emerged. You may have to remove emergency cells. Look for the virgin queen if she has emerged to check that her wings are complete. This is important, as a significant number emerge with deformed wings, so are unable to fly. Leave alone for 14 days, then look for eggs.

"B1" and "B2" can be moved about 3 feet/1 metre at a time for 3-4 days after making up, but not when the queen is likely to be on a mating or orientation flight, otherwise they may come back to find their hive gone and go into another hive.

### **What have we done so far?**

- We now have 3 colonies, parent "A", nucs "B1" and "B2". It is important that all these are strong if possible, "A" because it needs to populate further nucs, "B1" and "B2" because they may be needed to augment later nucs. If parent colony "A" is weaker than desired, then either make the nucs weaker or only produce one.
- Parent colony "A" has been moved. It has only lost a couple of frames of brood and the flying bees. If the operation is done early in the season it will soon recover and can possibly be supered. You will find that within a few days they are flying almost as if they haven't lost any flying bees, because they will adjust their tasks to compensate for having lost their foragers.
- Two nucs "B1" and "B2" have been made from "A" and placed close to the site where "A" has been moved from.
- "B1" and "B2" will collect the flying bees from "A".
- "B1" and "B2" are given a Q/C each.
- It is helpful to keep an eye open for the first few hours. The main thing to go wrong is the imbalance of bees in "B1" and "B2". The quicker you can adjust it the better and if there is equal activity at the entrances within 10-15 minutes it usually works well.
- We have done a similar manipulation to an artificial swarm, apart from losing an extra comb of brood from "A", leaving the queen in the parent colony and created two extra colonies instead of the usual one.

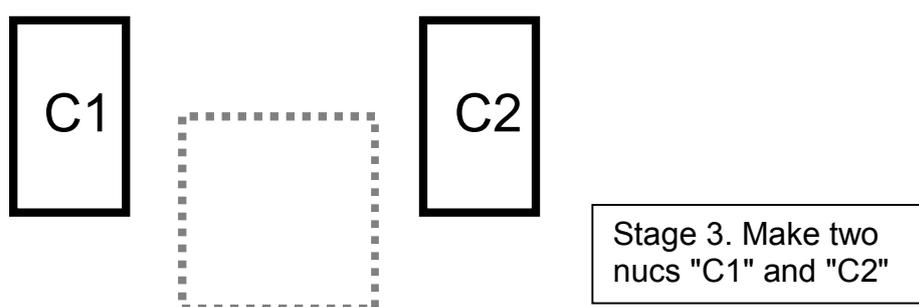
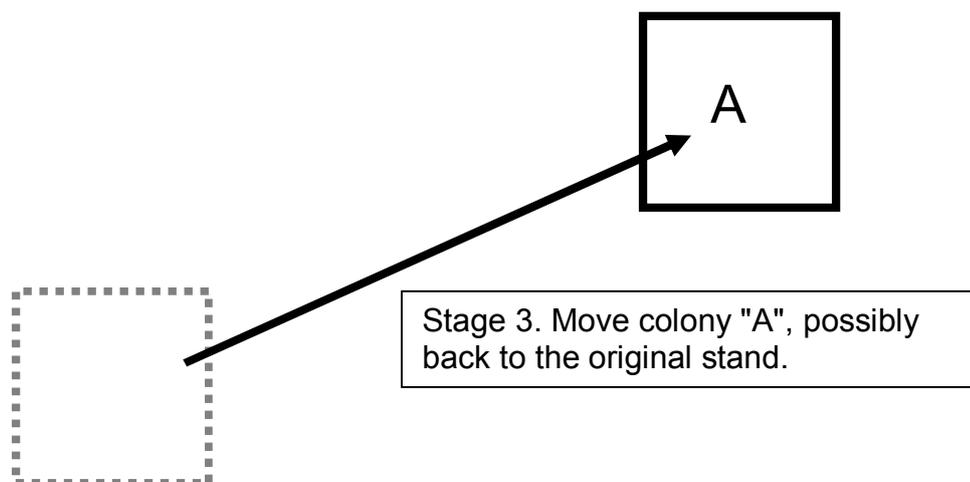
The two nucs "B1" and "B2" will need careful watching, depending on the weather and forage. The boxes are usually quite full of bees, mainly flyers, and with no young brood to feed. If there is a nectar flow they can store it at a very rapid rate, so they may need transferring into full brood boxes and filling up with comb. This is no bad thing as it will provide food for subsequent nucs.

When the queens start laying they may need the combs moving position to give them space to lay in. In my experience they usually lay in 4-5 combs quite quickly, perhaps in 8-10 days. This means a massive increase in worker population within 5-6 weeks of the colony being set up.

When the queens have mated in "B1" and "B2", I move them at the usual 3 feet/1 metre a day away from their position. I keep them fairly close if I can, perhaps 10-12 feet/3 metres



be with a brood box of foundation if you wish, so providing frames of food. I am in an oil seed rape area, so if the weather is good they will often build these out and fill them.



### **Now what have we got?**

In 3-4 weeks after we started Stage 1, possibly end May/early June.

- Nucs "B1" and "B2" from Stage 1 should have laying queens.
- They have been moved progressively some distance away, but still fairly close together.
- They should have built up sufficiently to have been transferred into full size hives.
- When the first combs of brood from the queens emerges the colonies "B1" and "B2" should be quite strong.
- Parent colony "A" has been moved, possibly back to the original stand. It has had "C1" and "C2" taken from it, with the flying bees distributed evenly.
- We should now have 5 colonies in total.

### What happens from now on?

Depending on the district and the summer you may get a further two rounds of nucs from "A". This gives 8 nucs made from the main colony during the summer.

With a little care "A" can often be split into two at the end of the summer. At least one half will need a young mated queen introduced, so she can lay straight away. If the original queen is still laying well she can be retained, but if she is reducing laying she can be replaced with another young queen. If she is otherwise good, then use her to replace one of your poorer queens elsewhere.

In about 6 weeks from making them up "B1" and "B2" should be in a position to help the later nucs in several ways including:-

- Splitting to provide one or two further nucs.
- Having frames of brood removed to make up further nucs, but put in the position of later nucs, e.g. "C1" and "C2" to collect their flying bees.
- Placing nucs from "A" in the positions of "B1" and "B2" to take flying bees instead of taking them from "A".
- In a nectar flow there will probably be several combs of food. These can be used for other nucs and be replaced with drawn comb in the middle of the brood nests.



Nucs "B1" and "B2" can build up quite fast. This one should have already been transferred to a full box. Nucs like this even with a young queen can swarm. At this stage it can have a comb of brood or food removed to make another nuc, or it can be moved away, with a new nuc put in the position to take the flying bees.



The two poly-nucs on the outsides have built up strongly. They have been brought close together, each had a comb of largely sealed brood and adhering bees taken from them and placed in the central wooden nuc box. It was given a queen cell, a frame of food and drawn comb. The outer poly-nucs were moved, allowing their flying bees to populate the central box.

Note the improvised hive stands - all free!

### **At the end of the summer**

Early August is the latest I normally make increase, as queens are beginning to reduce laying, nectar flows are stopping and some queens stop laying when varroa treatments are used. You can go on later, but if there is no nectar flow you may have to feed. Robbing from bees and wasps may then be a problem, especially with small colonies that may be queenless, where they often lose morale. Quite frankly I think you will be causing more problems than you need if you are too late. The end of July is probably a better time. You will have colonies varying from perhaps 2-3 frames to full size. Once you have stopped making increase you should be looking at strengthening the weaker colonies. If it is reasonably healthy, a 5 frame nuc that is strong in bees has as good a chance of overwintering as a full colony, so that is the minimum to aim at, although it is always worth giving smaller ones a chance, especially if the frames are densely covered in bees, or the queen is good. If you have weak colonies you could take the risk, or unite. I have successfully wintered 3 frame nucs that are well covered with bees on many occasions.

They have a far better chance of survival than 5 or 6 frame nucs that are poorly covered in bees.

I wouldn't change places with colonies to pick up flying bees late in the summer, otherwise you may set off robbing.

You can take combs of largely sealed brood without bees one at a time from the larger colonies and put in the smaller colonies, perhaps every 7-10 days. This soon builds numbers up and of course they are young bees.



A healthy and well provisioned 5 frame nuc that is strong in bees has a good chance of overwintering.

I work with non-prolific bees and in most years the above is usually achievable without feeding. I suspect that more nucs can be taken from "A" if it had a prolific queen and was on a double brood box, but in a poor season feeding may be required. In this case you could either shorten the time between taking off nucs, or take off three nucs instead of two. Instead of placing them at the side of the original position of "A", place them radially, as in the Cloake method (sometimes erroneously called the Vince Cook method).

This method is very flexible and can easily be modified to suit varying conditions, effectively you can make it up as you go along - I do! Please remember that I have given you what

should happen. If you stick rigidly to it you may have the odd failure, so tweak things in response to the bees and the weather.

I must now come clean and tell you that I often cheat a bit, but I have given you a few hints! If I have given you the impression that everything comes from the one original colony "A" it doesn't always! Why should it? I treat my beekeeping as a whole enterprise, so I use other colonies if I have the opportunity. An example is that if another colony or two can afford to lose a frame of sealed brood or food, as they often can, I will make up a nuc with them and put them in the position of an existing nuc that can afford to lose flying bees, e.g. "B1" and/or "B2". This method is really about making a much higher level of colony increase than is usually taught and not necessarily from one colony.

I hope I have shown that it is so easy to increase the number of colonies and there is no need to buy bees. I think it will benefit local BKAs who might otherwise buy bees from commercial sources to supply beginners with.

The cost is very low, being just the cost of frames and foundation and it is a brilliant teaching opportunity for your members. You can demonstrate lots of things including making increase, uniting, moving colonies to take/lose flying bees, adding/removing brood, introducing queens/queen cells, protecting queen cells and rearing queens. You will have noticed that all of this has been done in the same apiary without the need to shake in extra bees, plug up entrances with grass or place vegetation in front of hives.

Once you have got the colonies through the winter you can take nucs from them the following year to supply your beginners.

If you need to make much larger numbers then simply start with more colonies. You will probably find that more colonies will give you more options, so more colonies in ratio.

I hope I have made this method easy to understand and that I have encouraged you to produce a larger number of colonies than you thought you could.

### **Subsequent to the original article**

For demonstration purposes at the Wisborough Green BKA teaching apiary during 2018 I decided to monitor the progress from one colony as an exercise. It worked brilliantly, giving tuition on several topics including several ways of making increase, adding/removing food and brood combs, introducing queens/queen cells, milking off bees, setting up nucs for wintering and uniting.

In West Sussex we had a good summer in 2018, which probably gave us better results than normal. From one parent colony we produced 10 nucs that were strong enough to go into winter with a good chance of survival. We made 3 more, but queens failed, so they were united to others. I'm sure that if the queens were good these 3 would have been strong enough, with some help.



Photograph taken on 9<sup>th</sup> July 2018 showing parent colony (arrowed yellow) with 2 supers, 2 colonies in full hives (arrowed green) and 8 in nuc boxes.

In June 2018 the queen from the parent colony "disappeared" (one of the modern "queen problems" see <http://www.dave-cushman.net/bee/queenperformanceproblems.html>), so we introduced another laying queen. This gave us a brood break of around 10-12 days, which put the next round of nucs back a couple of weeks, so probably losing us two nucs.

The photograph above shows the situation on 9<sup>th</sup> July 2018. The parent colony had already produced a super and brood box of honey from the early crop (mainly OSR). From that colony we produced 10 strong nucs, several queens, drawn brood combs and about 80lb of honey, this in an area that is usually considered to be middling for a honey crop.

The first two nucs (arrowed green) were full colonies by early July and could have been split or had frames and/or bees removed. We could have pushed harder to get better results, but as it is a teaching apiary we couldn't devote as much time to it as we would have liked. Even so, I think we showed this method works and works well.

Roger Patterson.

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This article is intended for display on Dave Cushman's website [www.dave-cushman.net](http://www.dave-cushman.net)