

# Making Splits

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# INCREASE ESSENTIALS

Nuclei • Management • Wintering



LAWRENCE JOHN CONNOR

FOREWORD BY KIM FLOTTUM

SECOND EDITION





# Keys to Solid Beekeeping

- ▶ Constantly evaluate honey productions from bee yards
- ▶ Push your mean honey production to be better all of the time
- ▶ Understand that colony loss is a reality – accept that 25% loss may be normal
- ▶ Use increases (splits) to either keep number of colonies stable through time, or to increase the size of your operation

# Definitions

- ▶ A split is separating the two hive bodies from a colony to make two colonies
- ▶ A nuc is a fully balanced but miniature colony
- ▶ An increase is simply adding to the number of colonies that you manage

# Why Make Splits and Nucs?

- ▶ To grow your business
- ▶ To replace winter losses
- ▶ Foolproof requeening
- ▶ Management tool for swarm prevention
- ▶ Queen rearing / mating nuc



# Things Needed to Make Splits

- ▶ Strong and productive colonies (A and B students) coming out of the winter are kept as your honey primary producing colonies (manage these for swarming)
- ▶ Poorer colonies – your C students and lower are all candidates for splits
- ▶ Queens or queen cells
- ▶ Nucleus hive bodies (or other hive sizes)
- ▶ A location for new nucs that is far from source yard (> 3 miles)

# Basic Rules to Making Nucs

- ▶ Make them in middle of the day when field bees are out of the hive
- ▶ Keep the nuc in progress protected from the sun to avoid baking uncapped brood
- ▶ Use a minimum amount of smoke
- ▶ Nucs should have reduced entrances and/or robber screens

# How to Make Splits

## Two colonies from one hive

### Side by Side Splits

- ▶ Put 2 floors near original hive
- ▶ Put empty box on each floor
- ▶ Put half the food into each box
- ▶ Put half the brood into each box
- ▶ One box gets the queen
- ▶ Other box gets a mated queen or a mature queen cell



# How to Make Splits

## Two colonies from one hive

### Walk Away Splits

- ▶ Split into equal halves as in side-by-side splits
- ▶ Move from original hive site (miles)
- ▶ Leave alone for two weeks
- ▶ Queenless halve will raise a queen

# How to Make Splits

## Varying Broodless Periods

- ▶ For a split raising a queen from young brood: it will take 12-16 days for queen to emerge, another 6-8 days to mate, and 3-5 days to lay eggs after mating
- ▶ Total period without new brood production will be at least **21 days**
- ▶ **RISK: The bee population diminishes too fast!**

# How to Make Splits

## Varying Broodless Periods

- ▶ For a split raising a queen from a mature cell: it will take 2 days for queen to emerge, another 6-8 days to mate, and 3-5 days to lay eggs after mating
- ▶ Total period without new brood production will be at least **11-15 days**
- ▶ **RISK: The bee population diminishes, but not as dramatic as previous method.**



# How to Make Splits

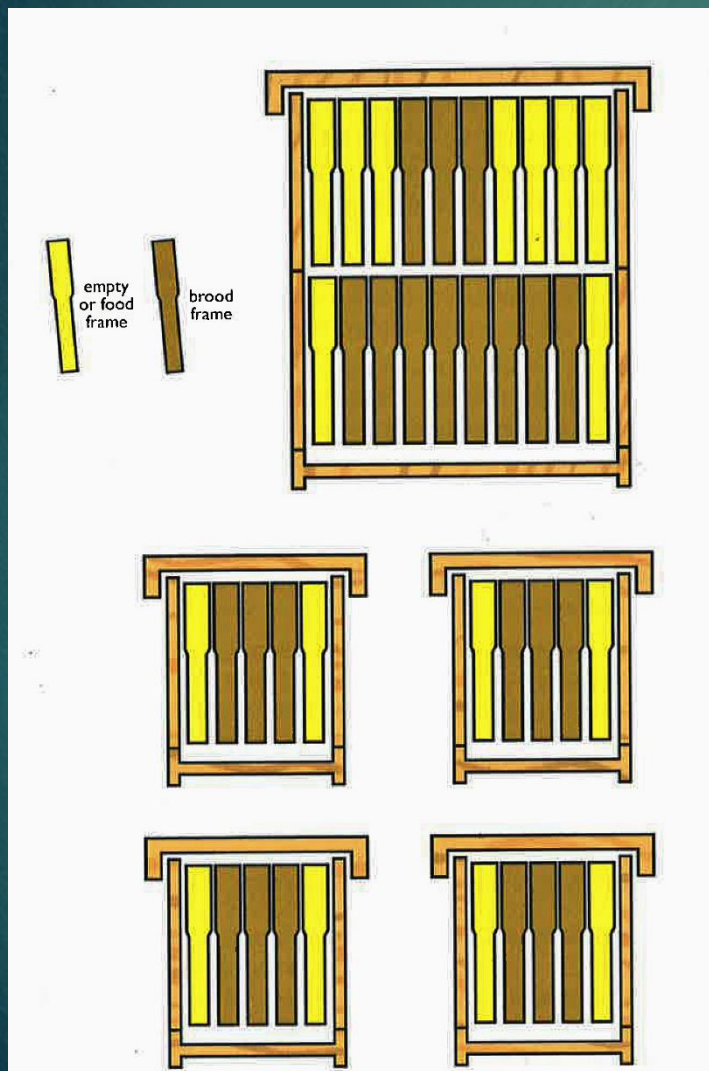
## Varying Broodless Periods

- ▶ For a split given a caged mated queen: it will take 2-5 days for candy release from cage, another 3-5 days to lay eggs
- ▶ Total period without new brood production will be at least **5-10 days**
- ▶ **RISK: Hand release queens to ensure acceptance!**

# How to Make Nucs

- ▶ I encourage you to make nucs with 3 frames of brood (best chance of surviving)
- ▶ Fill out nuc with at least one heavy honey and pollen frame and an empty comb
- ▶ Unit should be fed 50:50 syrup and grown into two full sized brood chambers by late spring or early summer
- ▶ Alternate: Empty combs and a feeder

# Up to 4 Nucs from One Colony



**1** frame of brood for mating nuc

**2** frames of brood for an increase colony

**3** frames to make a split that should produce honey



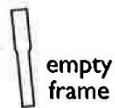
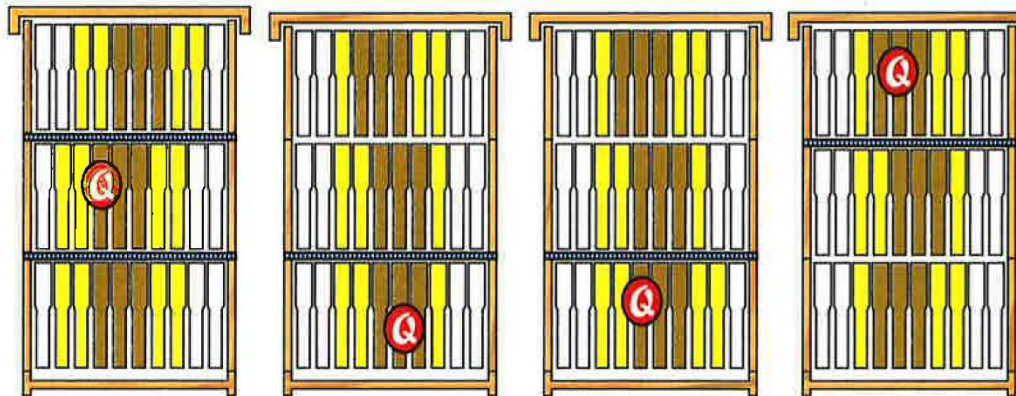
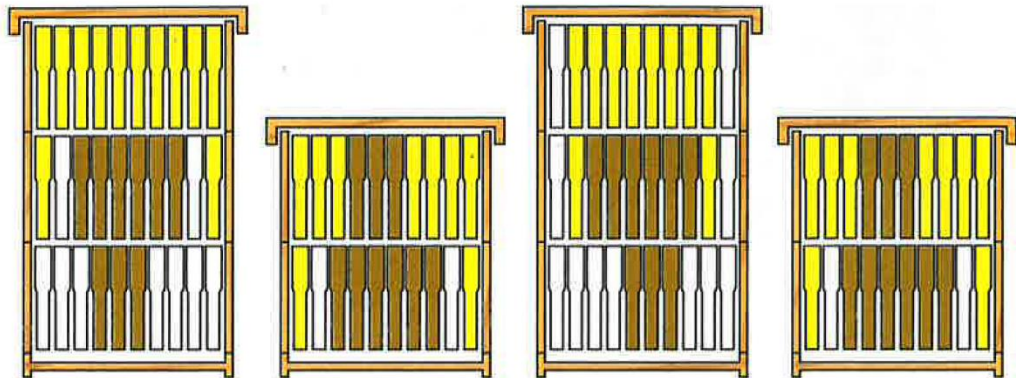
# How to Make Nucs for Sale

- ▶ Add 1 frame of honey
- ▶ Add 2 frames of brood with adhering bees
- ▶ Add a frame of foundation and a division board feeder full of syrup
- ▶ Introduce a queen cell; wait two weeks
- ▶ Remove feeder and add heavy honey from another colony
- ▶ Sell the nuc

# Texas Set-Off Splits

colonies of varying strength  
in the spring time

arrangement after workup:  
each box has 3 frames brood,  
3 frames of honey/pollen, and  
excluders used to pin queen



empty  
frame



honey  
frame



brood  
frame



queen  
excluder



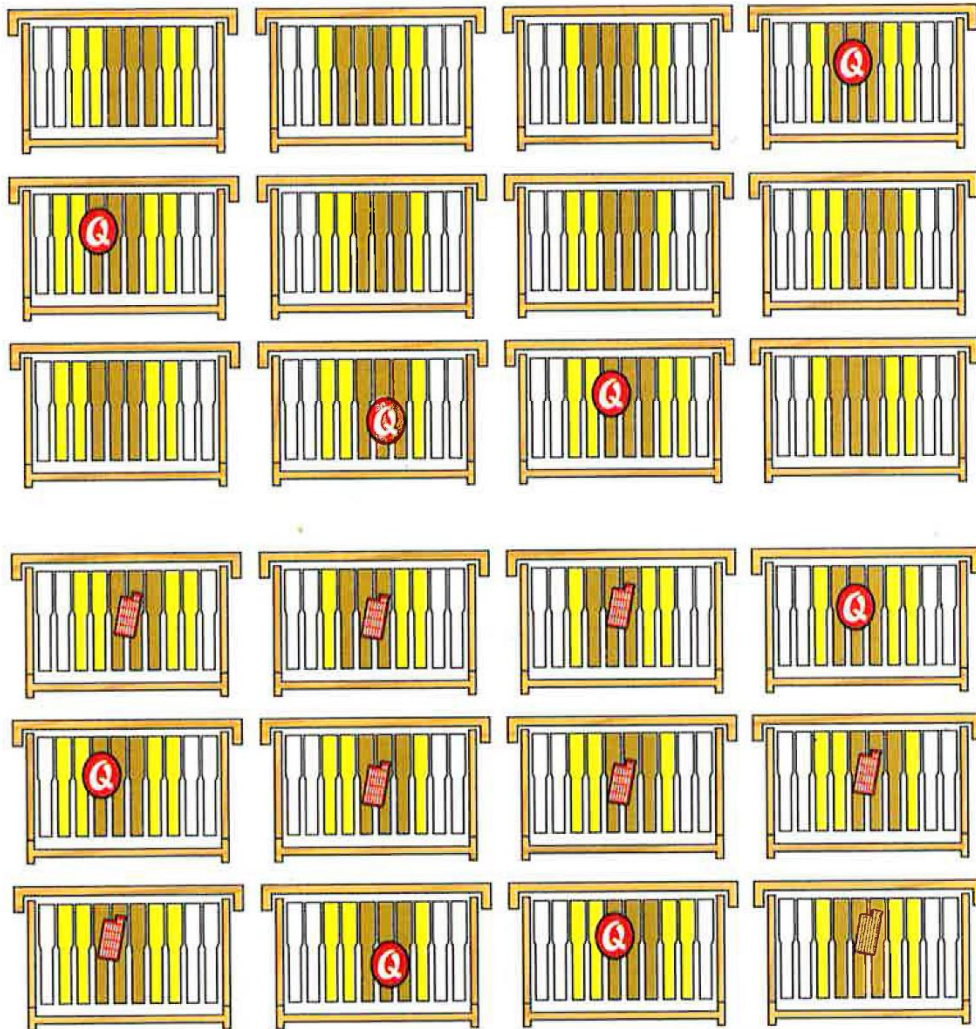
caged  
queen



laying  
queen



# Texas Set-Off Splits



Night after workup: all boxes placed onto bottom boards

Next day: caged queens placed into queenless units



# Your First Time Making Splits

- ▶ Consider only doing it in spring just before swarm season
- ▶ Splits usually respond well to natural flows and can grow to a good size and even produce a surplus honey
- ▶ Although nucs can be made in the summer, the care is much more involved.
- ▶ Wintering nucs is possible, but there is a certain finesse to being successful.
- ▶ Make your first few years of increase during the spring and learn to be good at it; then experiment with other seasons.

# Seasonal Considerations

<i>Attributes</i>	<i>Early</i>	<i>Swarm</i>	<i>Summer</i>
Colony Strength	Lowest bee and brood levels of season	Excellent bee and brood numbers; Swarm season	Strong, but brood rearing declining
Weather Conditions	May be poor	Usually favorable	Extreme heat possible
Drone Numbers	Unpredictable; Early drones may be scarce	Maximum for season	Reduced number and viability
Mites and Pests	Lowest mite number	Increasing varroa & SHB	Highest varroa; Highest SHB

# Spring Nuc Management

- ▶ Usually made during nectar flow (2 frames of brood recommended)
- ▶ Spring nucs are ideal for learning how to grow colonies
- ▶ Add 2<sup>nd</sup> box, or expand to 10-frame equipment as soon as bee population warrants
- ▶ If not sold, given away, or not needed in your operation, it can be overwintered



# Summer Nuc Management

- ▶ Source colony fed a 1:1 sugar syrup one week prior to splitting
- ▶ Nucs should be given 3 frames brood (older larvae or capped). No eggs or very young larvae (likely cannibalized)
- ▶ Nuc is fed 1:1 syrup to stimulate nectar flow and support it during growth
- ▶ Queen introduction much more difficult
- ▶ Can be overwintered as replacement for winter losses

# Summer Nucs for Winter

- ▶ Start nuc with 3 frames of brood – most of these frames will also have pollen and honey.
- ▶ One frame should be eggs and young larvae; the two remaining frames should contain honey and pollen (and placed on the outside positions in the nuc).
- ▶ When the nuc size has grown, add a nuc super with 5 fully drawn combs.
- ▶ These 5 combs need to be fully capped before winter; feed in autumn if necessary; monitor nucs throughout winter and feed fondant or candy boards as needed.