

Walk Away Splits⁺

Steps you can take for graft-free
queen rearing



Photo: EClG productions

Objective for today is to answer...

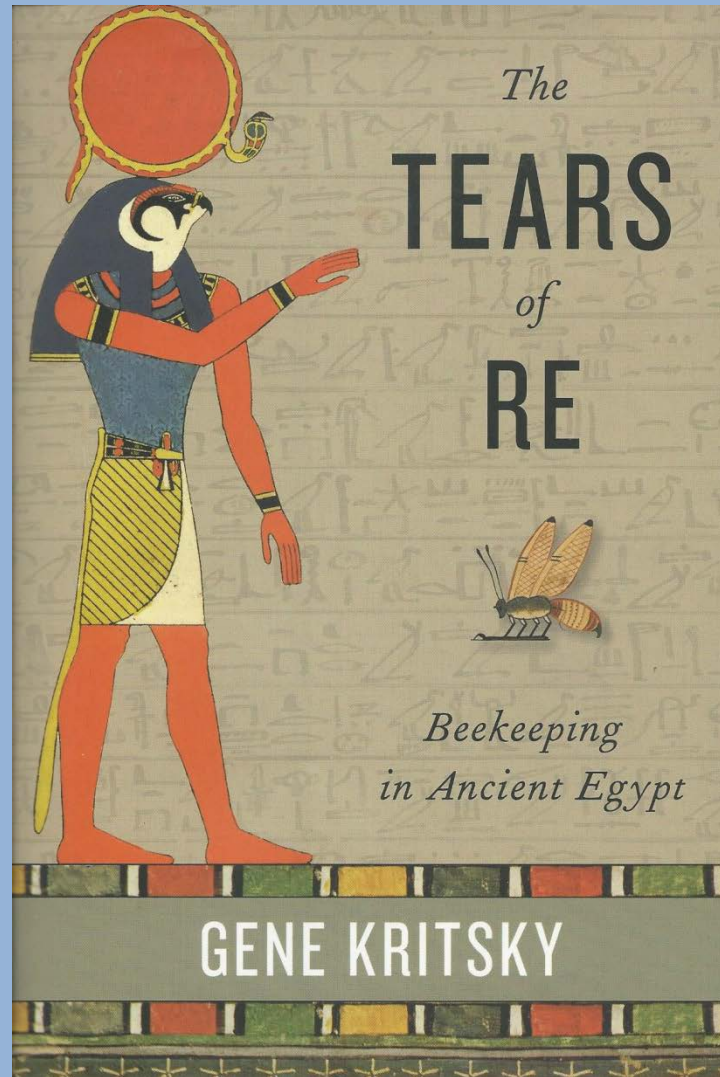
- What is a split
- Why raise local queens
- Why the walk away split
- How do you prepare
- How is it done

A split is a division of a colony

- Split is one way to divide a colony
- A nuc is the result of a split/division



Splits have a long history



Splits without stress

You don't have to



- ✓ Find the right aged larvae
- ✓ Worry about damaging the larvae while grafting
- ✓ Find the queen

Why Raise your Own Queens?

✚ The best queens are those you raise yourself

- Better acceptance
- Better chance of winter survival
- Adapted to your climate
- Select for desirable traits
- Cost effective
- No special equipment
- Queen bank
- Very rewarding



Glenn Apiaries

Why split your colony?

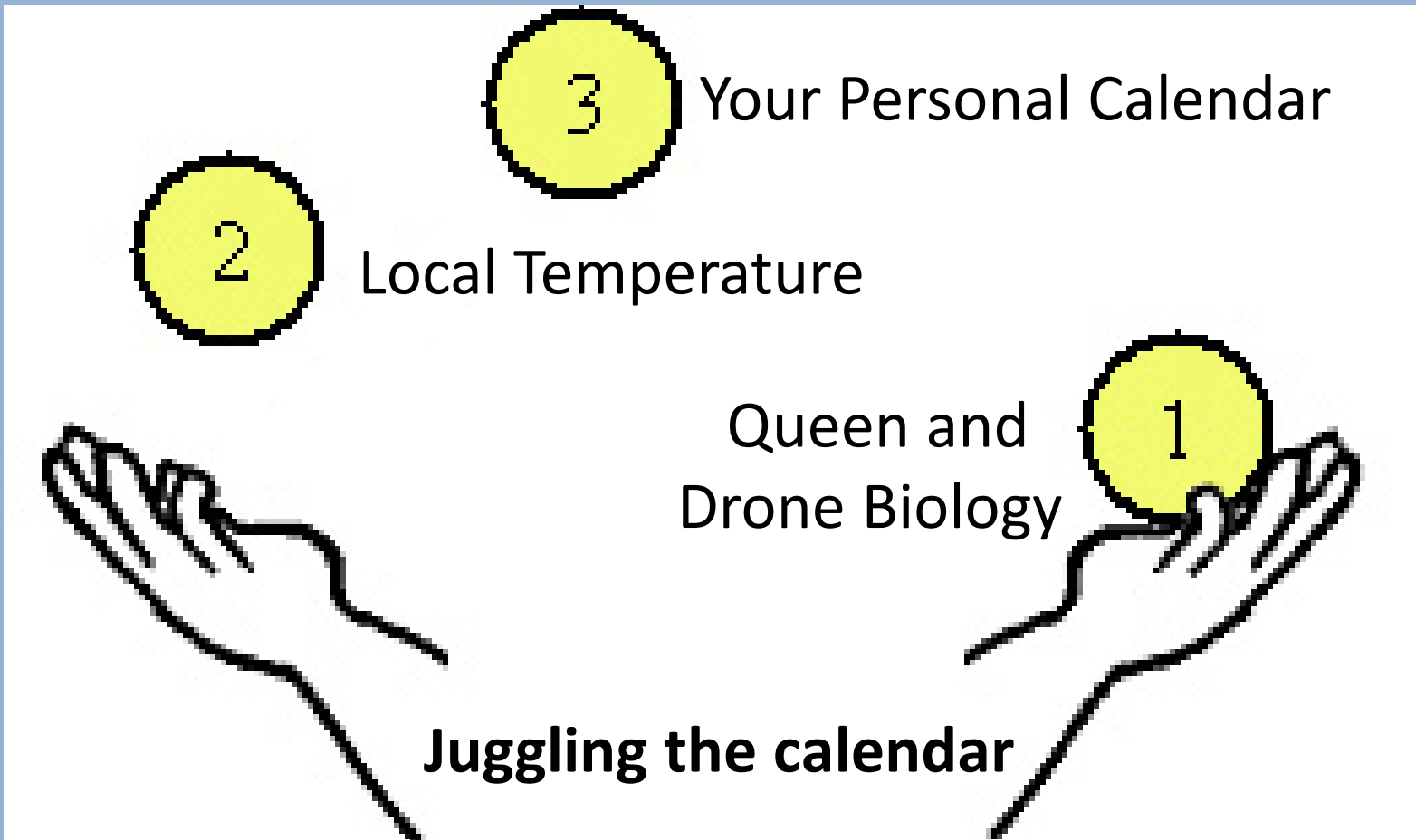


A walk away split requires
advance preparation before making your
division

Preparation

- Make a calendar based on your target queen mating date
- Deal with Varroa mites
- Select a breeder colony
- Gather your materials
- Decide on location for the split/nuc

Considerations for Target Date



Queen biology affects the target mating date

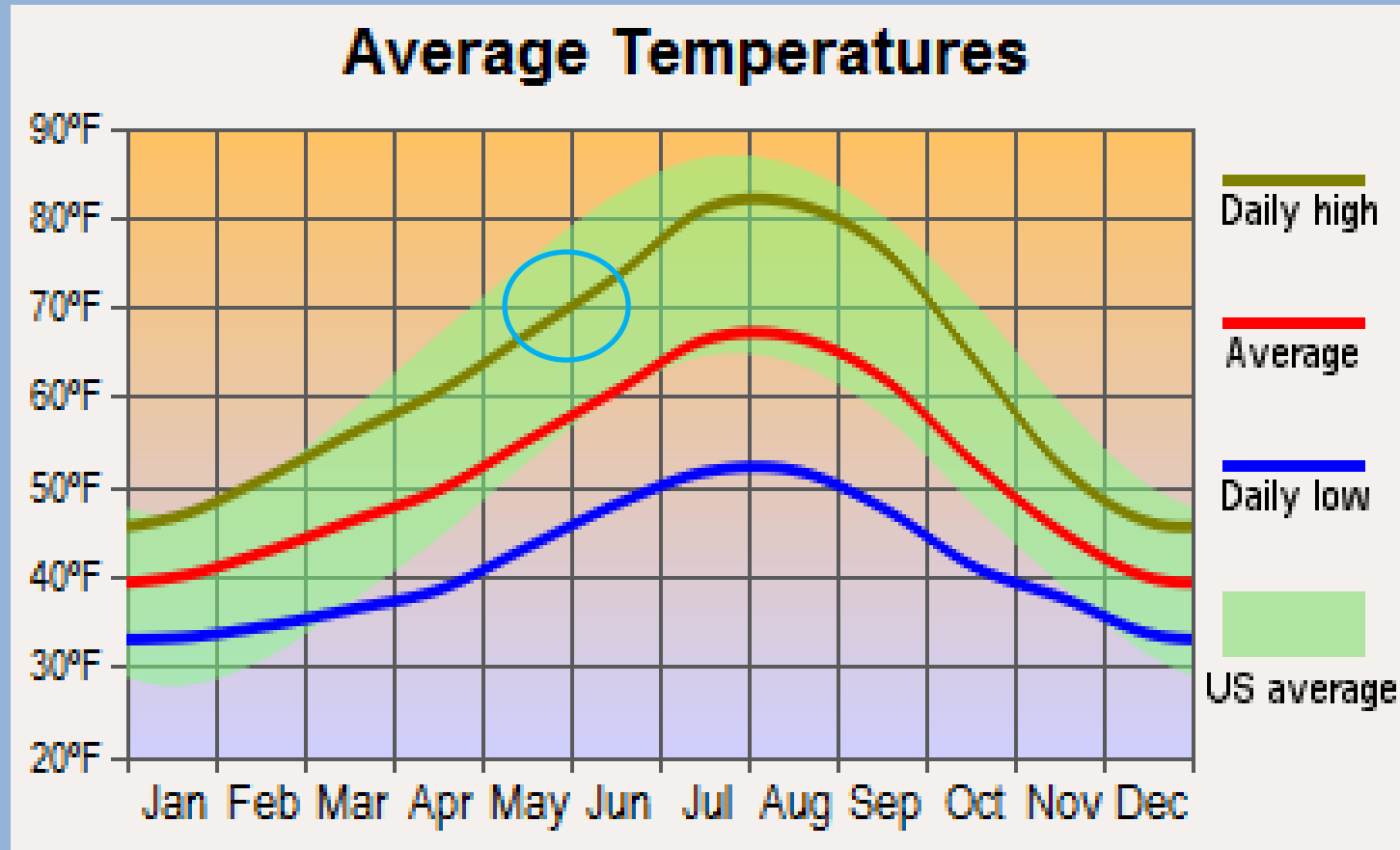


- She needs 69F to 70F minimum temperature before her mating flight
- 5 days for her body to be able to fly (exoskeleton) after she emerges
- Mating flight
- 5/6 days before egg laying starts

If you see either emerging drone brood or drones on the landing board you are ready to start your split



69F arrives late May/early June for central Willamette valley



Ideal split conditions

Not windy or
raining

Temperature
close to 70F



Your personal calendar

January	February	March
April	May	June
July	August	September
October	November	December

- Lot of flexibility time-wise
- Day 4 is NOT flexible

Walk Away Split⁺ Calendar



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Early-March		Start feeding breeder colony protein/carbohydrates	
Target mating day:			
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Why I Use May 22nd as the Mating Target Date?

- Temperature 69F
- First date of the queen's 2 week mating window
- Greater opportunity to take advantage of the blackberry nectar flow
- Time for a second attempt: weather didn't cooperate or time for a second attempt

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Preparation: Deal with Varroa

Your resource: Tools for Varroa Management



<http://honeybeehealthcoalition/org/varroa>

Videos

Varroa Videos

Watch our series of videos that demonstrate step-by-step application of all controls covered in this guide.



[Will Varroa kill my bees?](#)



[IPM](#)



[Sampling methods](#)



[Essential oils](#)



[Apivar](#)



[Apistan or Checkmite+](#)



[Formic acid](#)



[HopGuard](#)



[Oxalic Acid](#)



[Sanitation, screen
bottoms](#)

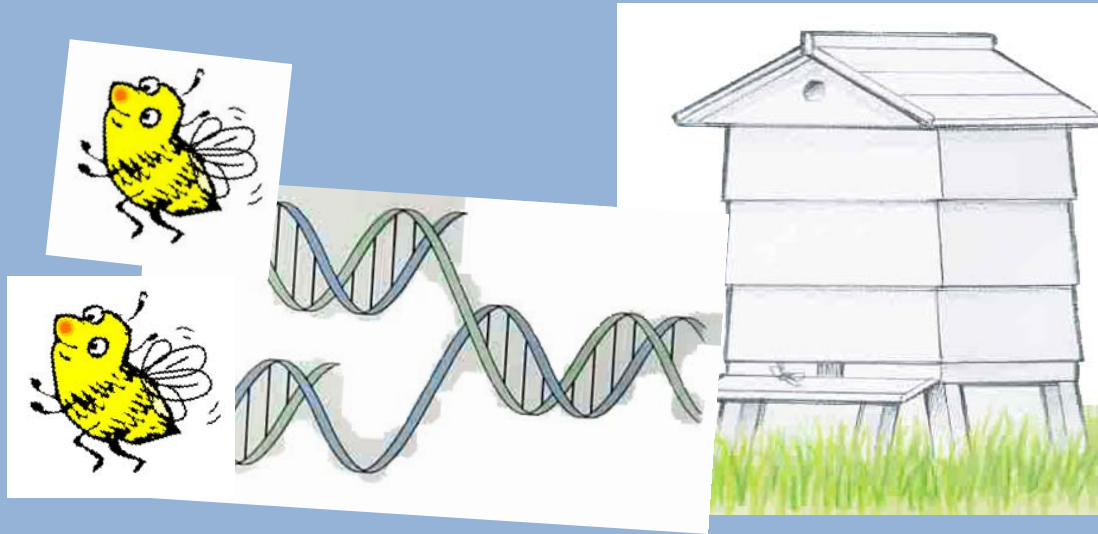


[Drone brood removal](#)



[Requeening](#)

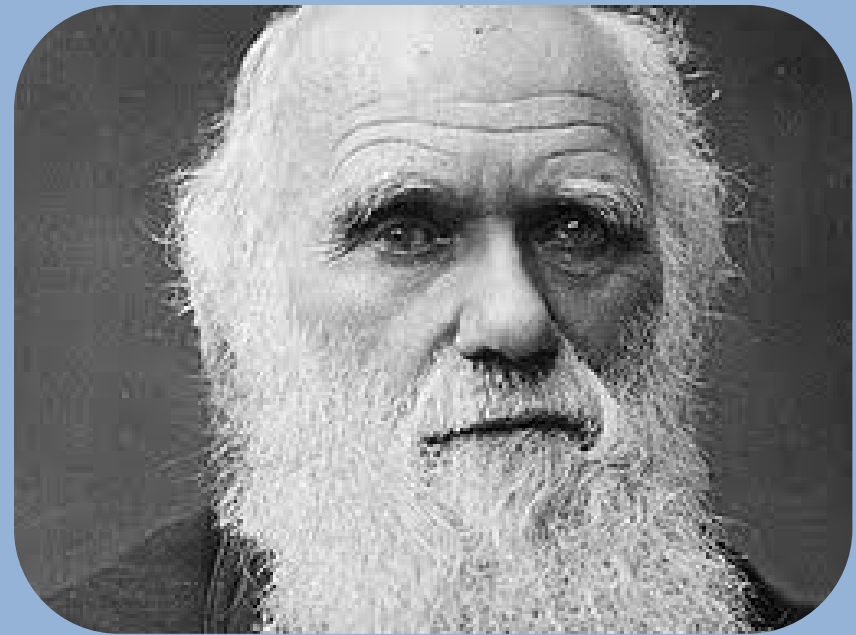
Preparation: Identify the Breeder Colony



Consider the traits important to you:

- Hygienic behavior
- Honey production
- Ability to overwinter
- Gentleness

Which of these hives would Charles Darwin have selected for honey production?



Preparation: Gather materials: Wooden Ware for Future Nuc (box #3)



Empty Deep

OR



Empty Western

With bottom board and a cover

Preparation: Gather materials

1. Queen excluder
2. Marking pen
3. Spray bottle for sugar water



* Multiple splits

Walk Away Split Calendar



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Preparation: Start feeding breeder population about 2 months before starting

“Overcrowding is the secret of your success” Sue Cobey

- Your goal is to build up a strong hive on the verge of swarming: overcrowded with lots of young nurse bees.
- Feed syrup plus pollen/protein supplement
- Continue feeding until your new queen start laying

A happy ending starts with a good beginning

Preparation for feeding



1. Mason jar with three 1/16th inch holes +

2. Granulated sugar

3. Protein patty +



Use protein with pollen if not enough volume and diversity of pollen available

- Pre-made protein patties
- OR • DIY protein patties
 - Make your own and add 5 - 10% real pollen



Betterbee



Betterbee
Radiated pollen



Mann Lake

Preparation for feeding



4. Shim for protein patty



5. Cover with feeding hole

“Quantity and quality of feeding greatly influences the quality of queens”

Sue Cobey



Protein patties



Sugar syrup

Carbohydrate stores feeding
> 50 Degrees

1 Part sugar to 1 part water

Q: Why 1:1 ratio?

Protein feeding tip

- Feed sugar syrup at same time feeding protein
- Without syrup the bees will chew their way through the protein patties just to get to the sugar in them

This is what you want to see



Walk Away Split Calendar

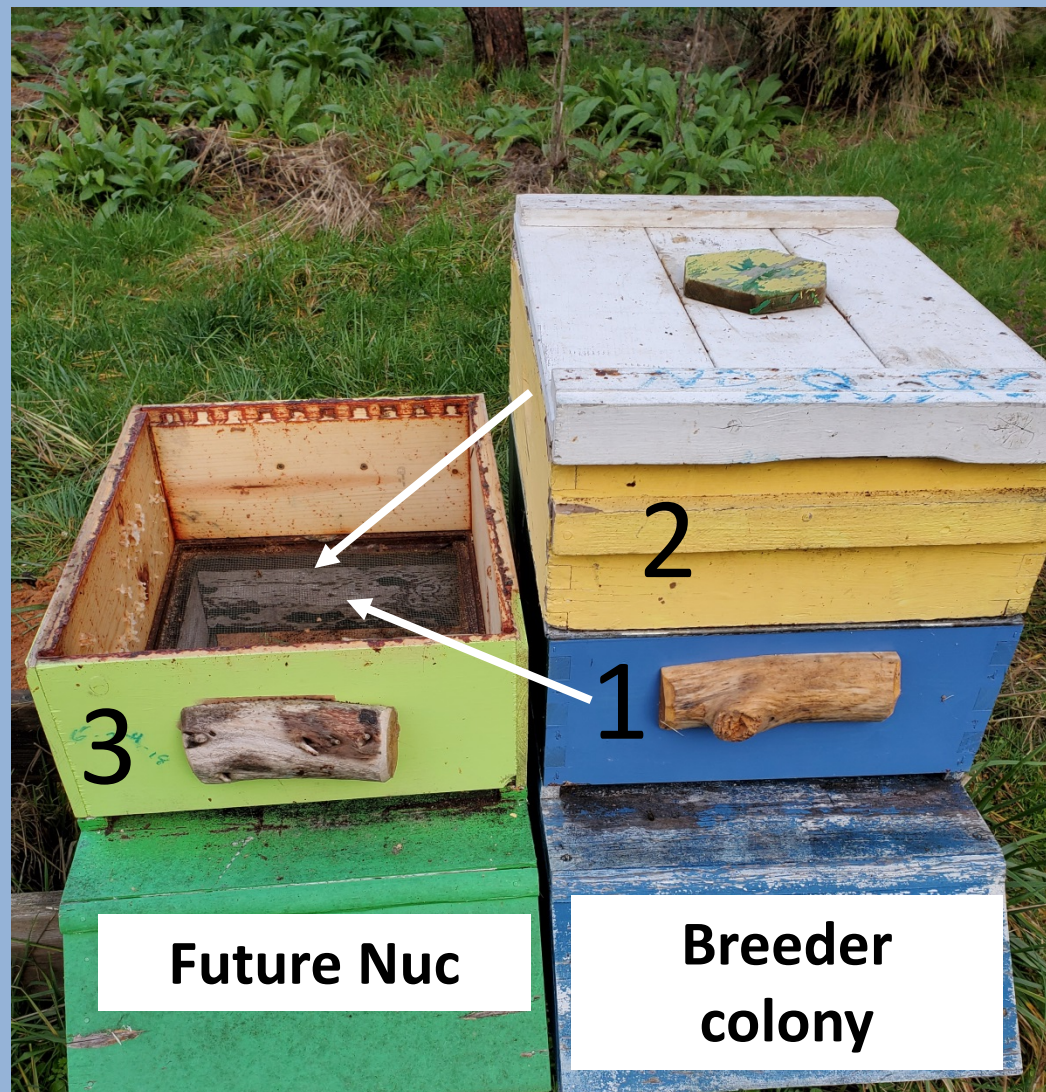


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Goal for Day 1:
Set up future nuc with frames from
parent hive

Sort frames from
boxes #1 and #2
into empty box #3

- Uncapped brood
- 2 frames honey and pollen



+ Before placing a frame in box #3,
ALWAYS BRUSH OFF ALL THE BEES from
the frame back into box #1

Future Nuc Assembled

2 frames of
pollen #'s 2 & 9



At least
1 frame of
honey

3

Why set up the top brood box (#3) this way?

- Nurse bees are highly attracted to uncapped brood (VERY IMPORTANT PRINCIPLE)
- Vast majority of nurse bees will congregate in the upper brood box
- Separating queen and field bees from uncapped brood and nurse bees using a queen excluder is called the Demaree method




**Breeder
colony**

Queen
Excluder



Place a queen excluder on top of box #1
(Demaree method)



Queens, even virgins, can't get through the excluder.

Girls, do you
think all that
feeding
made my
abdomen
too big?

Courtesy of Randy Oliver

What happened to box #2?

Completed nuc/split set up



Uncapped Brood
Honey stores
Pollen
Extra young bees



Capped Brood,
honey, pollen
and
Queen

Walk Away Split



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Goal for Day 2:
Divide the breeder colony and set up
the new division

Day 2: Split day for Box #1



Remove box #1 with the OLD queen and place on its own stand at least 5 feet away from the original location

Why move the Breeder hive to a different location?

- All the field bees will return to the same old location.
- These returning field bees will boost the population in the new division/nuc.

Day 2: Split day for Box #3



1. Box #3 stays in the **original location**
2. Add a shim and a feeding cover
3. Feed protein patty and syrup
4. Reduce entrance

+ Caution: do **not** use Honey B Healthy when feeding divisions

Gossip in box #3



I know the queen was here yesterday; I haven't smelled her since. This is an emergency; we need action **NOW!**

Question: Why continue feeding box #1
for another 3 weeks?

Walk Away Split Calendar

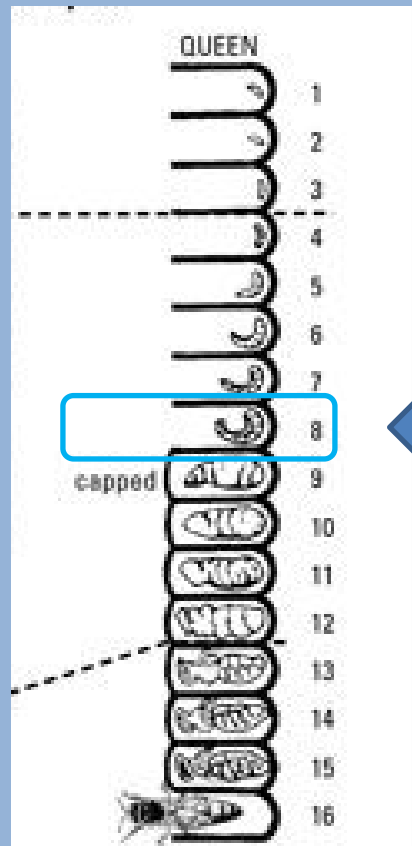


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Goal for Day 4:
Eliminate early capped queens

Split day 4: Check and eliminate capped queen cells

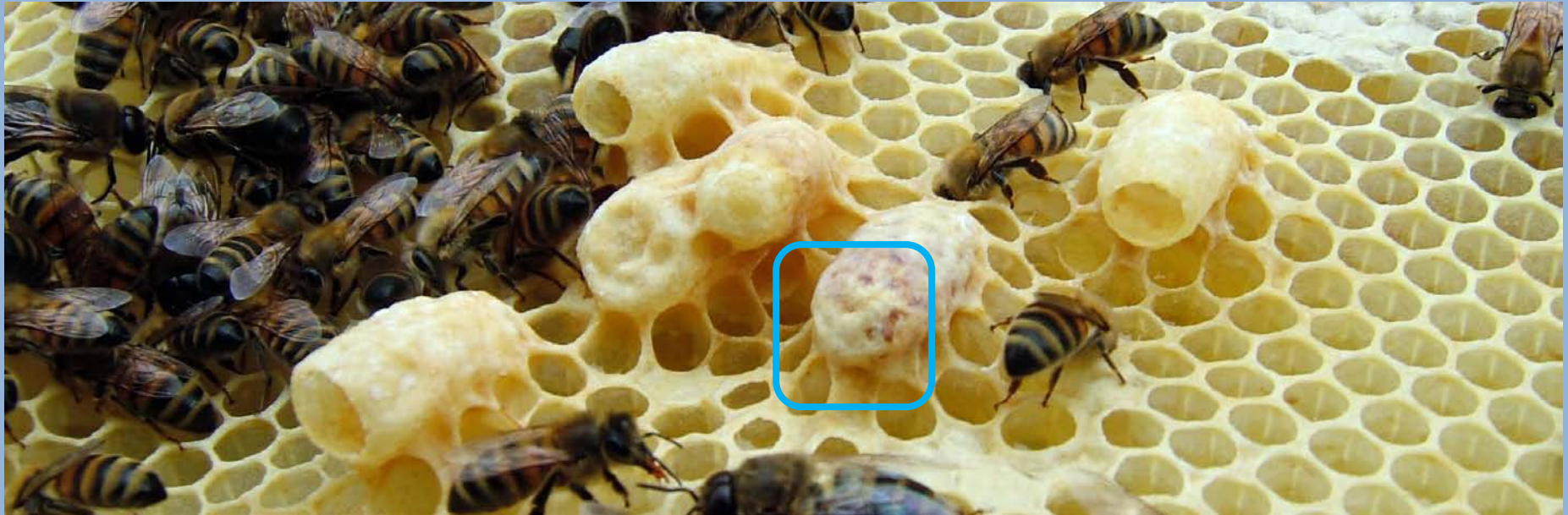


**Day 8 for queen
development**

Select best queen cell for split

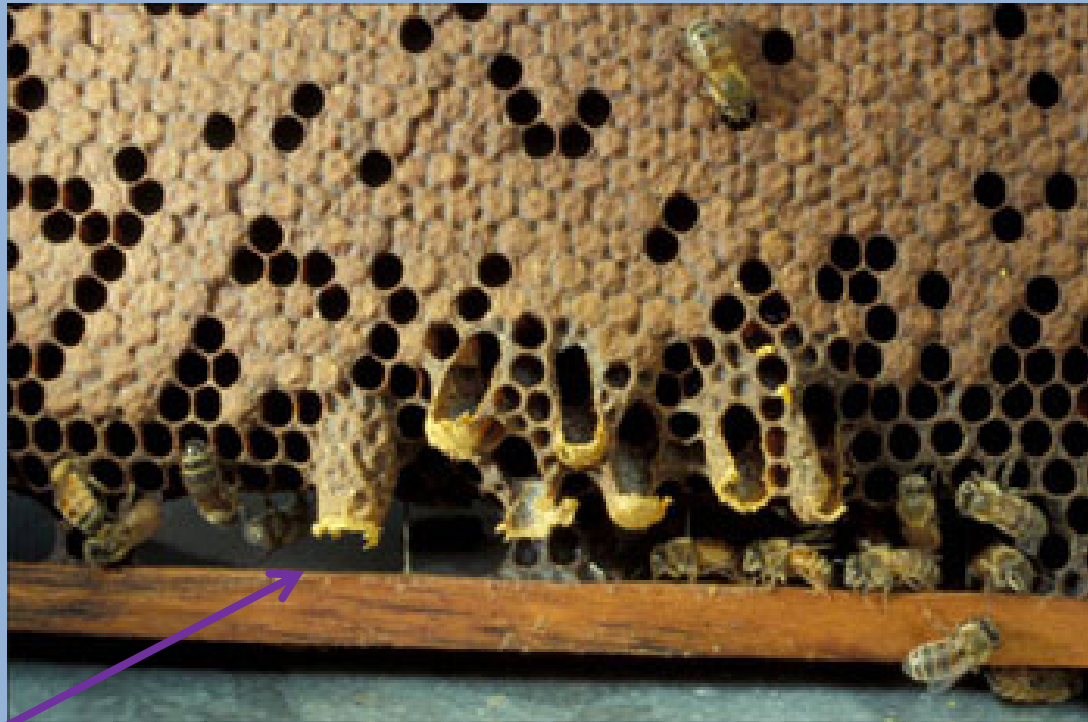


Why don't you want to see this on day 4?



NOTE: Fixed day on your calendar

She will emerge before
everyone else and kill her
sisters



Q: which cell did the first queen
emerge from?

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Queen emerges



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If the weather is poor when the queen is
supposed mate, adjust your calendar
accordingly

Day 22:Wishing her a “bon voyage”



Queen goes on mating flights



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Mating sign

Credit to Greg Carey submission to Bee Culture 2019
calendar

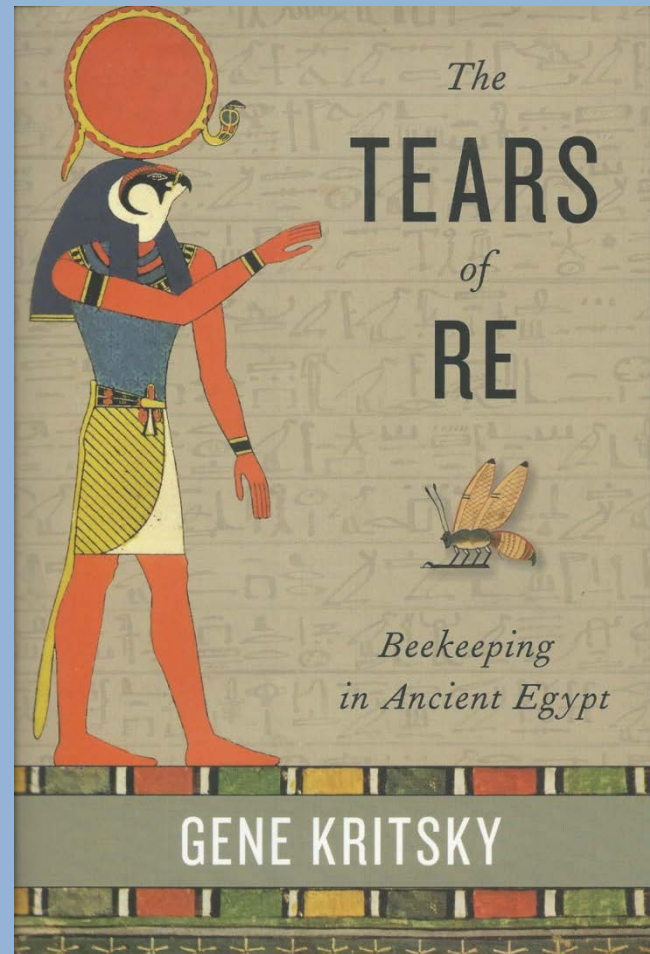
Waiting is the tough part



Seeing this is encouraging



This is kind of like your birthday...



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Success: You did it and
the queen too



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29-36	6/1– 6/8		Opportunity to deal with phoretic Varroa mites before cells capped
42-43	>6/14		<ul style="list-style-type: none">• Check brood pattern• Mark queens
Yeah, you did it and the queen too!			

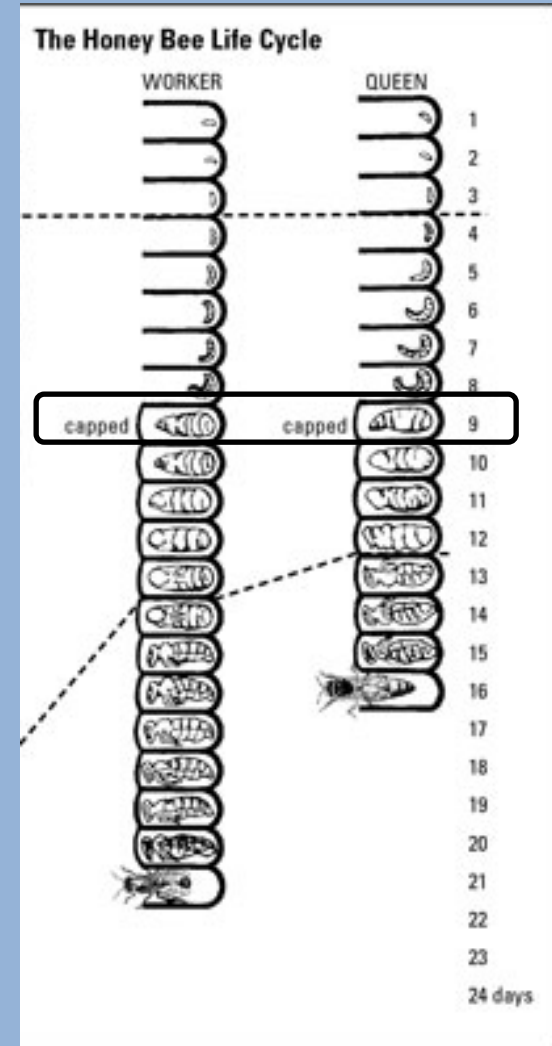


Varroa Management Concept #1

It's not about knocking mite levels down- the trick is to never allow them to get high in the first place.

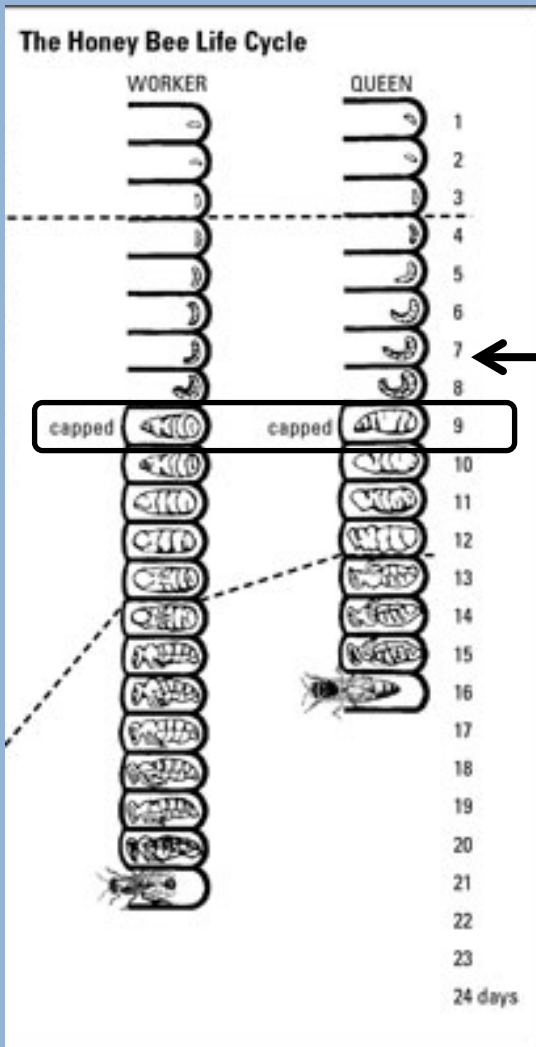
Randy Oliver Scientific Beekeeping

From time she starts laying you have
7 days to deal with Varroa:

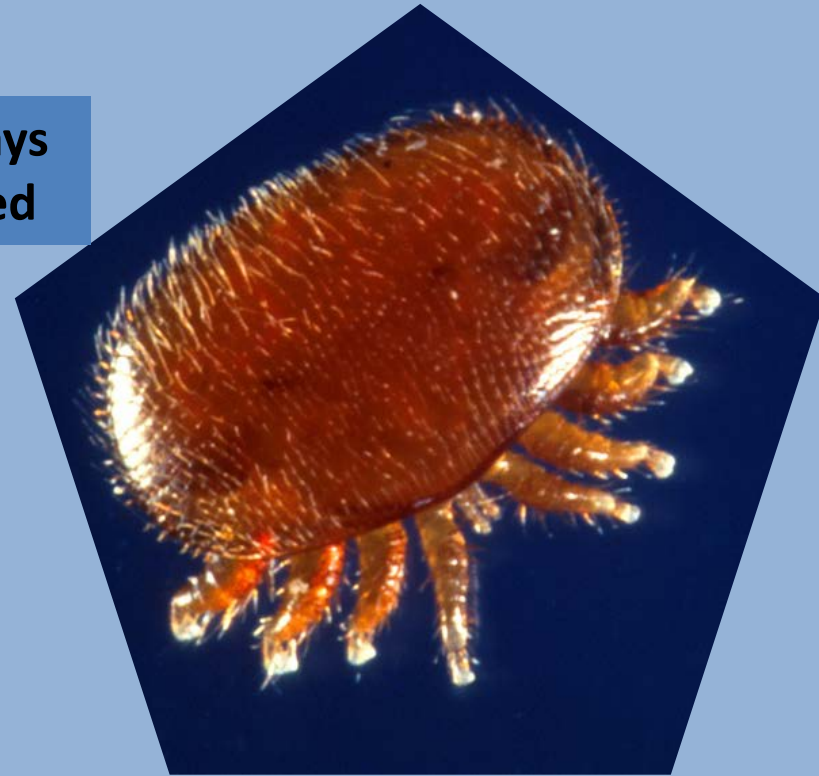
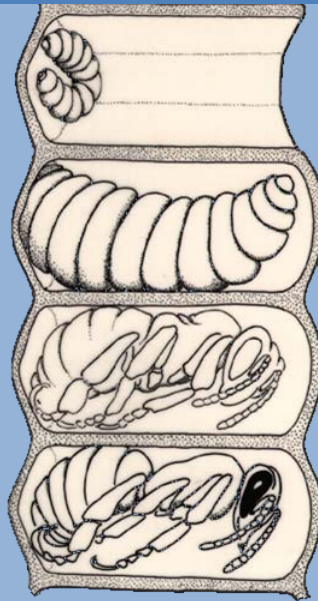


Why do you have to take care of
the *Varroa* mites NOW?

Window of opportunity to set back Varroa cycle



Approximately 2 days
before cell is capped



Thymol based products



Walk Away Split Calendar



Advance Preparation			
Late fall/early winter		1. Deal with varroa population <ul style="list-style-type: none">• Reduce Varroa numbers• Treat with Oxalic 2. Select breeder colony3. Gather materials	
Early-March		Start feeding breeder colony protein/carbohydrates	
Target mating day: May 22, 2021			
Day	Date	Breeder colony	Split
1	5/4	<ul style="list-style-type: none">• Remove uncapped brood, honey and pollen frames from upper(#2) and lower(#1) boxes• Consolidate remaining frames from box#2 into box #1 and brush all bees into box #1• Set aside empty box #2• Place queen excluder between box #1 and #3	<ul style="list-style-type: none">• Place frames from boxes #1 and #2 into empty box #3 (split)
2	5/5	<ul style="list-style-type: none">• Remove queen excluder• Take box #1 with old queen and place on its own stand in a new location	<ul style="list-style-type: none">• Remove box #3 and set up on the original stand (our split)• Continue feeding
4	5/7		Eliminate early capped queen cells Select best queen cell for split Multiple queens = separate frames with cells
18	5/21		Queen(s) emerges and exoskeleton hardens over next 5/6 days
22-23	5/25 – 5/26		Queen takes mating flight(s) and her body prepares for egg laying
Continue feeding until queen starts laying eggs			
27-28	5/30 – 5/31		Queen starts laying eggs
29-36	6/1– 6/8		Opportunity to deal with phoretic Varroa mites before cells capped
42-43	>6/14		<ul style="list-style-type: none">• Check brood pattern• Mark queens
Yeah, you did it and the queen too!			



3 weeks after she starts laying:
Mark the queen



Mark your Queens

Will you raise good bees



Years ending:

1 or 6 - **WHITE**

2 or 7 - **YELLOW**

3 or 8 - **RED**

4 or 9 - **GREEN**

5 or 0 - **BLUE**

Mark your queens



2022 Yellow

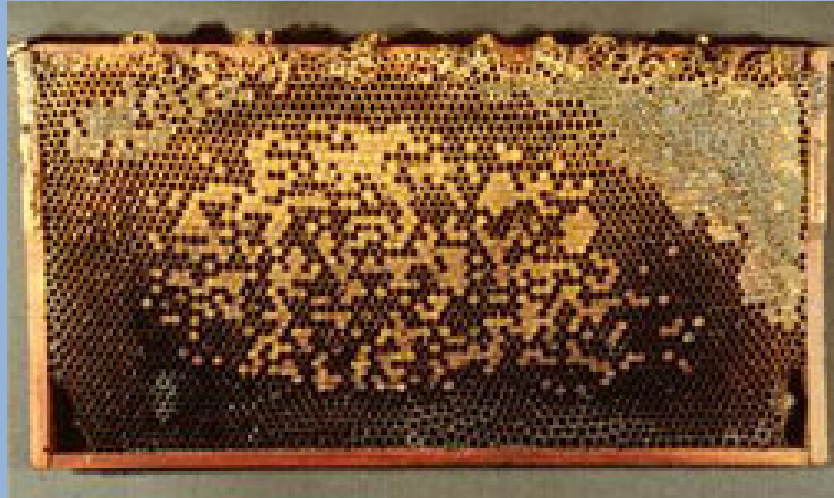
3 weeks after she starts laying:
Check brood pattern



Poor results? Redistribute frames to other hives



Hopelessly broodless



Shot gun brood pattern



Drone layer

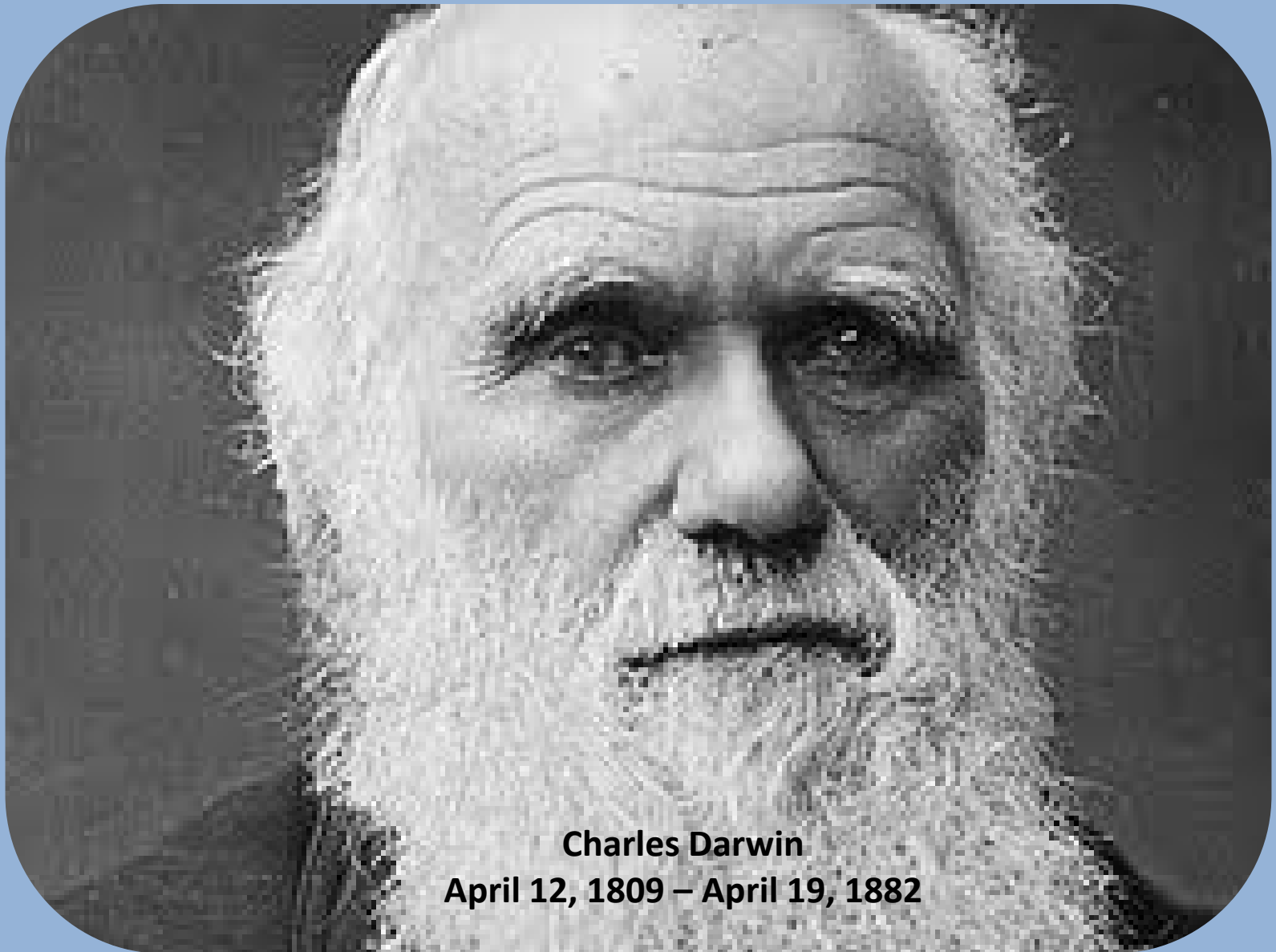
Objective for today is to answer...

- What is a split
- Why raise local queens
- Why the walk away split
- How do you prepare
- How is it done

Summary: The best queens are the ones you raise yourself

Raising queens using walk away split⁺ method

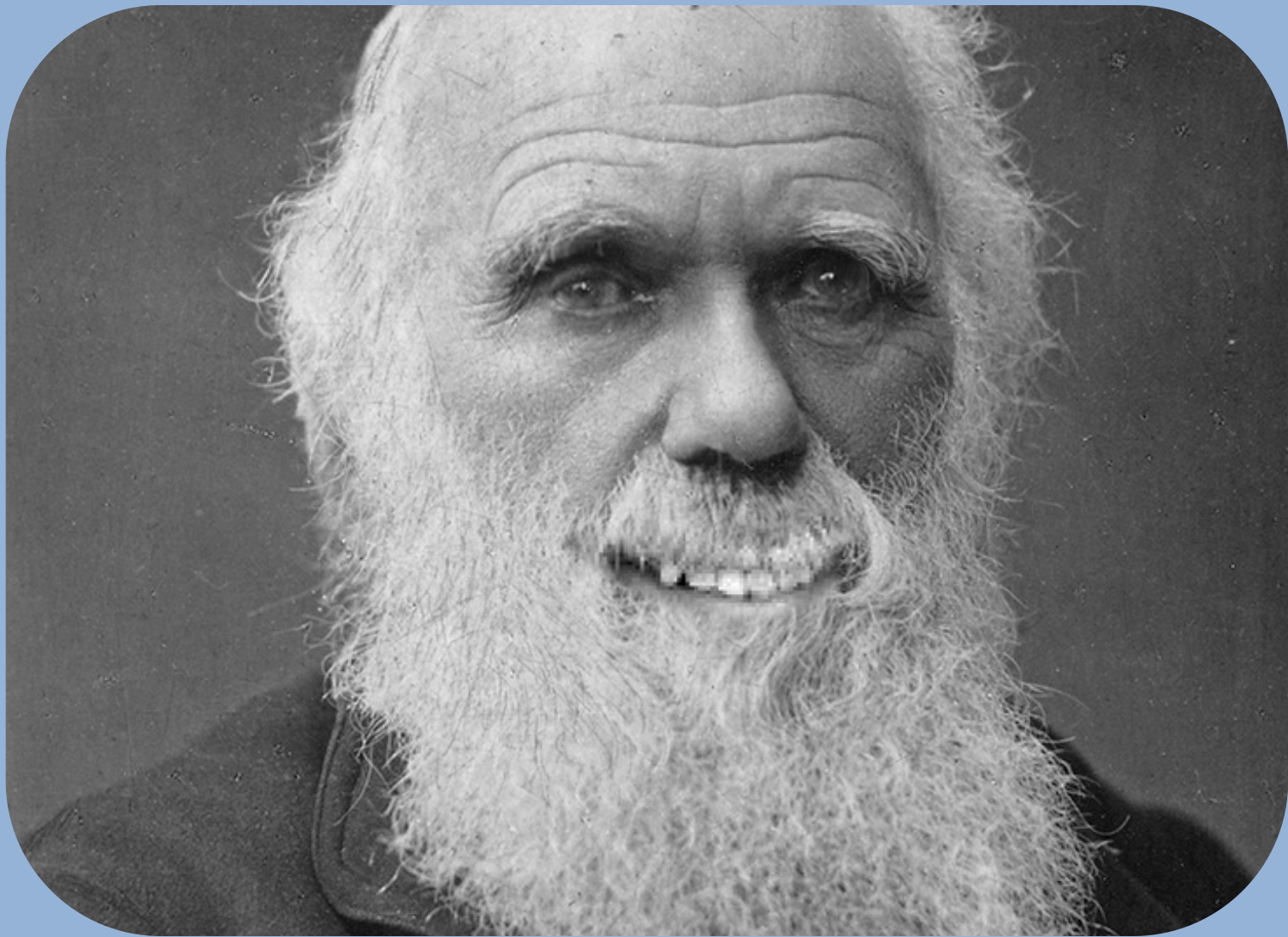
- ❖ Feed early and continuously until queen's pupal stage
- ❖ "Overcrowding (with nurse bees) is your key to success"
- ❖ When sorting frames brush ALL bees into box #1
- ❖ Eliminate early capped queen cells (Use 24 hour larvae)
- ❖ Set Varroa mite population back



Charles Darwin
April 12, 1809 – April 19, 1882

Goals

- Raise locally adapted queens
- Start feeding queens early
- Select from your best colonies
- Learn a new skill

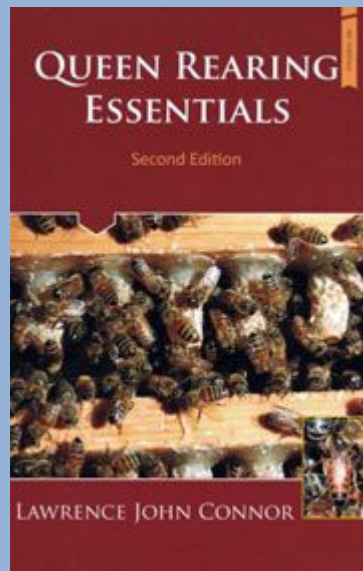


Recommended Books

Better Beekeeping: Kim Flottum



Queen Rearing and Bee Breeding:
Harry Laidlow Jr and Robert Page Jr.



Queen Rearing Essentials 2nd edition:
Lawrence Connor

The End



How did you do?

- I would like to know your experience with Walk away splits.
- Let me know how it worked for you.
- Morris ostrofsky@pacinfo.com

Questions?



(c) Kathy Keatley Garvey

Other applications of this technique

You can

- raise multiple queens from a single colony
- use the funnel to find a queen when nothing else has worked
- do multiple splits
- hive difficult to capture swarms

Mating boxes

