



Introduction to beekeeping

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NCSBA Master Beekeeper

CCBA Vice-president

12/16/2017



Est. 2004

Caswell County Beekeepers Association

Meets 4th Thursday of each month except November and December

7:00PM to 8:30PM in the basement of the agriculture building

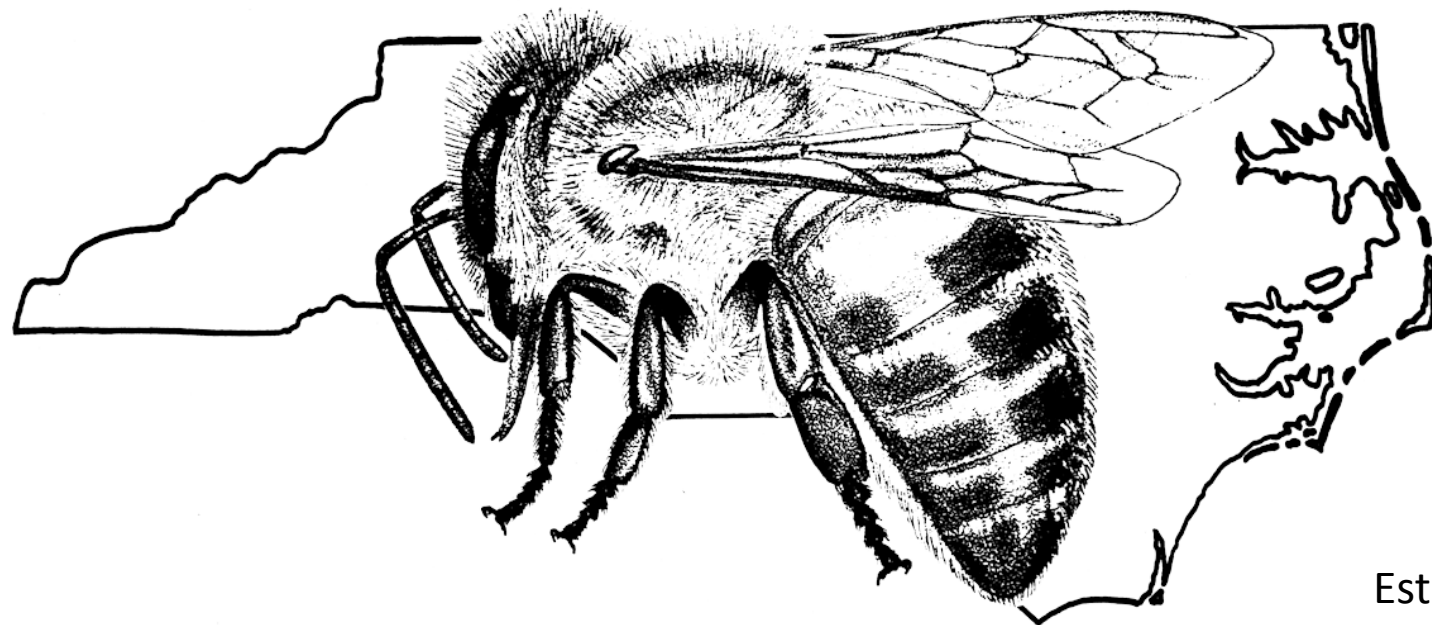
Membership is \$10/year

Next meeting is January 25, 2018

<http://caswellcountybeekeepers.org/>



- Monthly meetings with interesting and timely topics
- Great speakers
- Fellowship and support from other beekeepers
- Bee school
- Hoedown
- Workshops and field days
- Provide public education
- Chapter of NCSBA



Est. 1917

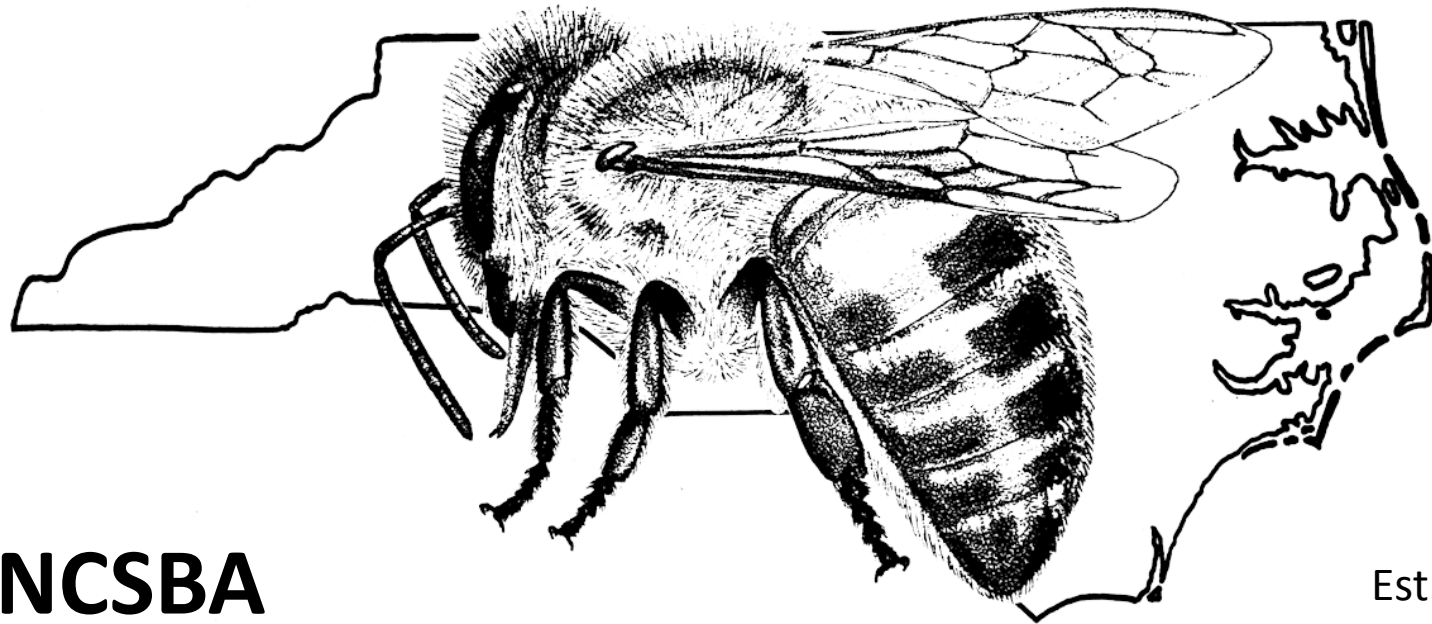
North Carolina Beekeepers Association

Meets two times a year – Spring and Summer conferences

Membership is \$15/year

Next meeting is March 1-3, 2018 in New Bern, NC

<https://www.ncbeekeepers.org/>



NCSBA

Est. 1917

- largest and one of the most active state beekeeping organizations in the country (4000+ members)
- Master Beekeeper Program
- Honey Bee Exhibit at the Asheboro Zoo
- Certified Honey Producer Program
- Honey contest
- Supports the Apiculture Science program at NCSU
- Conferences have great speakers, educational talks, and workshops



Discussion today

- Honey bees
- Equipment
- Where to buy equipment and bees
- Cost
- Education
- Questions



Terms

- Queen
- Worker bee
- Drone
- Brood
- Egg
- Pupae
- Larvae
- Beeswax
- Burr comb
- Drawn comb
- Propolis
- Royal jelly
- Swarm
- Nuc
- Package
- Deep hive body
- Super
- Bottom board
- Foundation
- Inner cover
- Top cover
- Frame
- Pollen
- Cells
- Apiary
- Bee space
- Veil
- Hive tool
- Smoker
- Supersedure
- Cluster
- CCD
- Colony
- Nectar flow



Honey bees

Honey bees caste



Drone



Queen



Worker

Stings

- Stinger
 - Worker bee only
 - barbed w/venom sac
- Prevention
 - clothing
- Reaction
 - Normal
 - Large local
 - Systemic
- Treatment
 - Antihistamine
 - Ice, elevation
 - Epi pen (emergency)



When working with bees, avoid strong odors, fast movements, vibrations.
Remove stinger promptly and smoke to cover pheromone

Queen

- Primary job to lays eggs
- Communicates by pheromones
- Usually only one in a colony



Worker bee

- Sterile females
- Perform all tasks to maintain hive
- Only honey bee usually seen



Drone

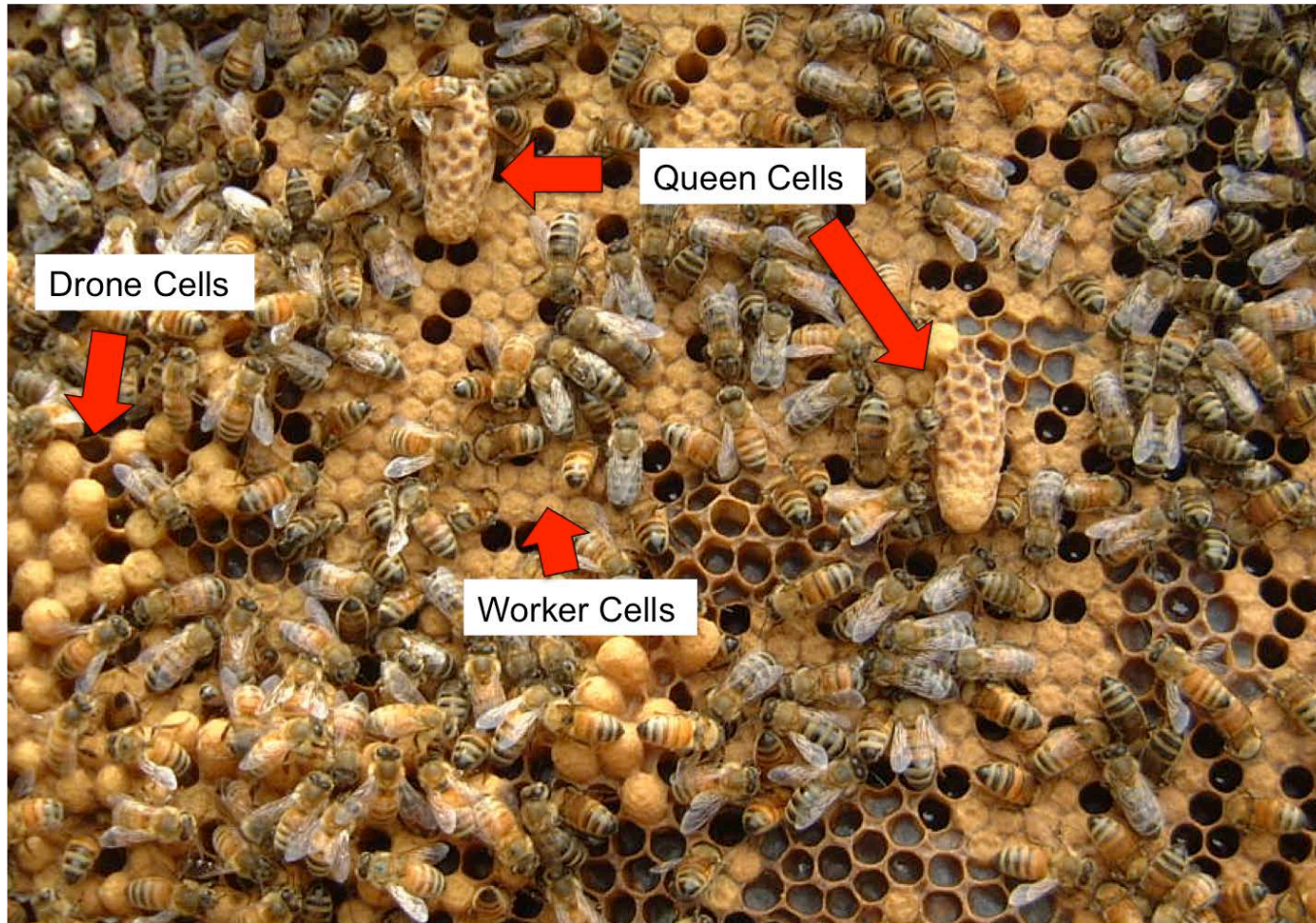
- Only job to mate with queen
- “seasonal”



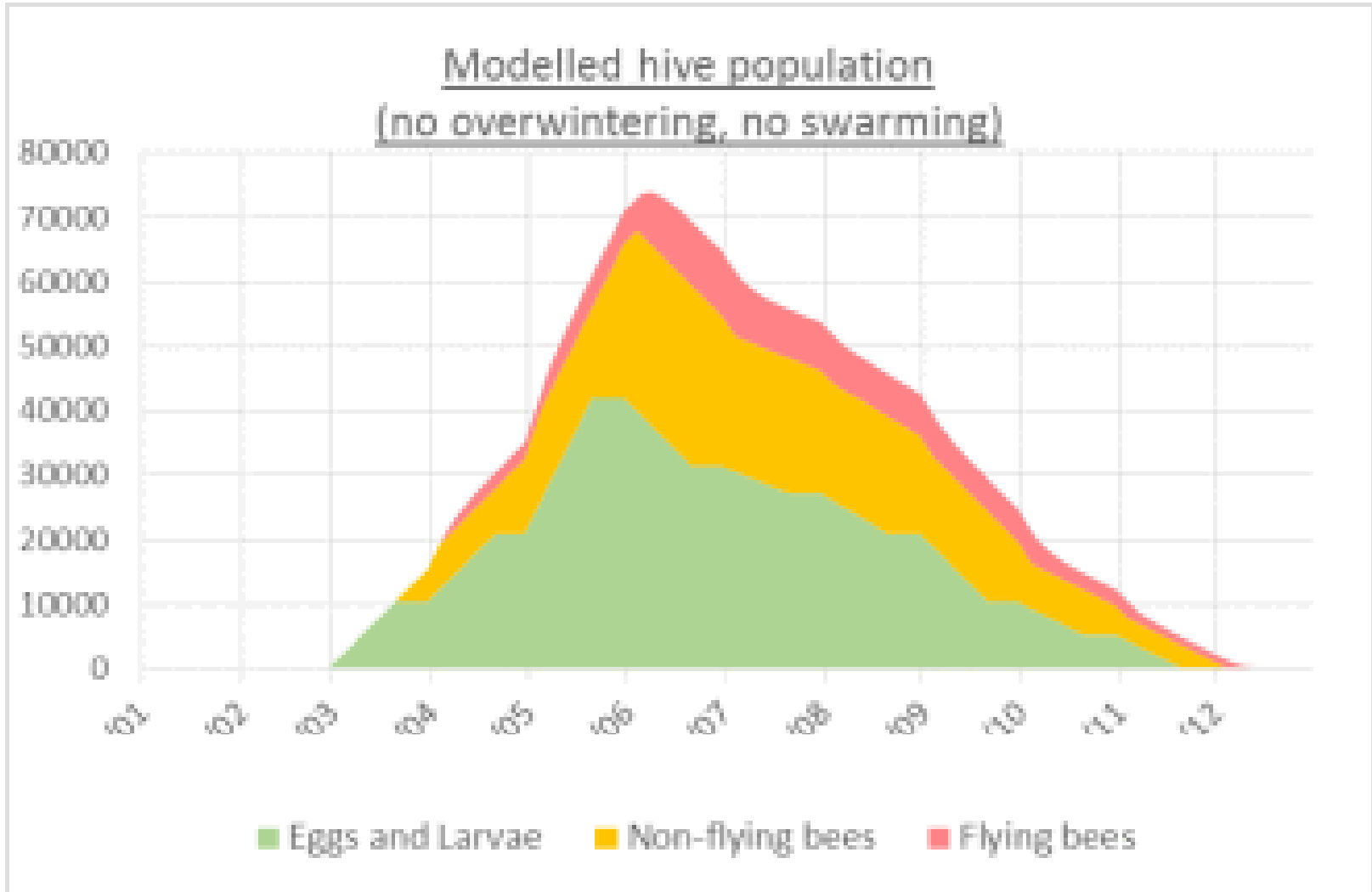
Lifecycle

- Development (egg-larva-pupa-adult)
 - Queen 16 days
 - Worker 21 days
 - Drone 24 days
- Lifespan
 - Queen 2-5 years
 - Worker 6 weeks to 5-6 months
 - Drone weeks to months

Bee Brood



Population



Honey



- *The sweet fluid produced by honey bees from the nectar of flowers.*
- *Worker honey bees transform the floral nectar that they gather into honey by adding enzymes to the nectar and reducing the moisture.*

Honey Season & Harvest

- Honey flow starts with spring blooms. Harvest in late June- July
- Single bee makes 1/12 tsp in its lifetime
- To make one pound of honey, honey bees must tap 2,000,000 flowers.
- To make one pound of honey, honeybees must gather 10 pounds of nectar.
- Average 60 lbs surplus honey per colony.

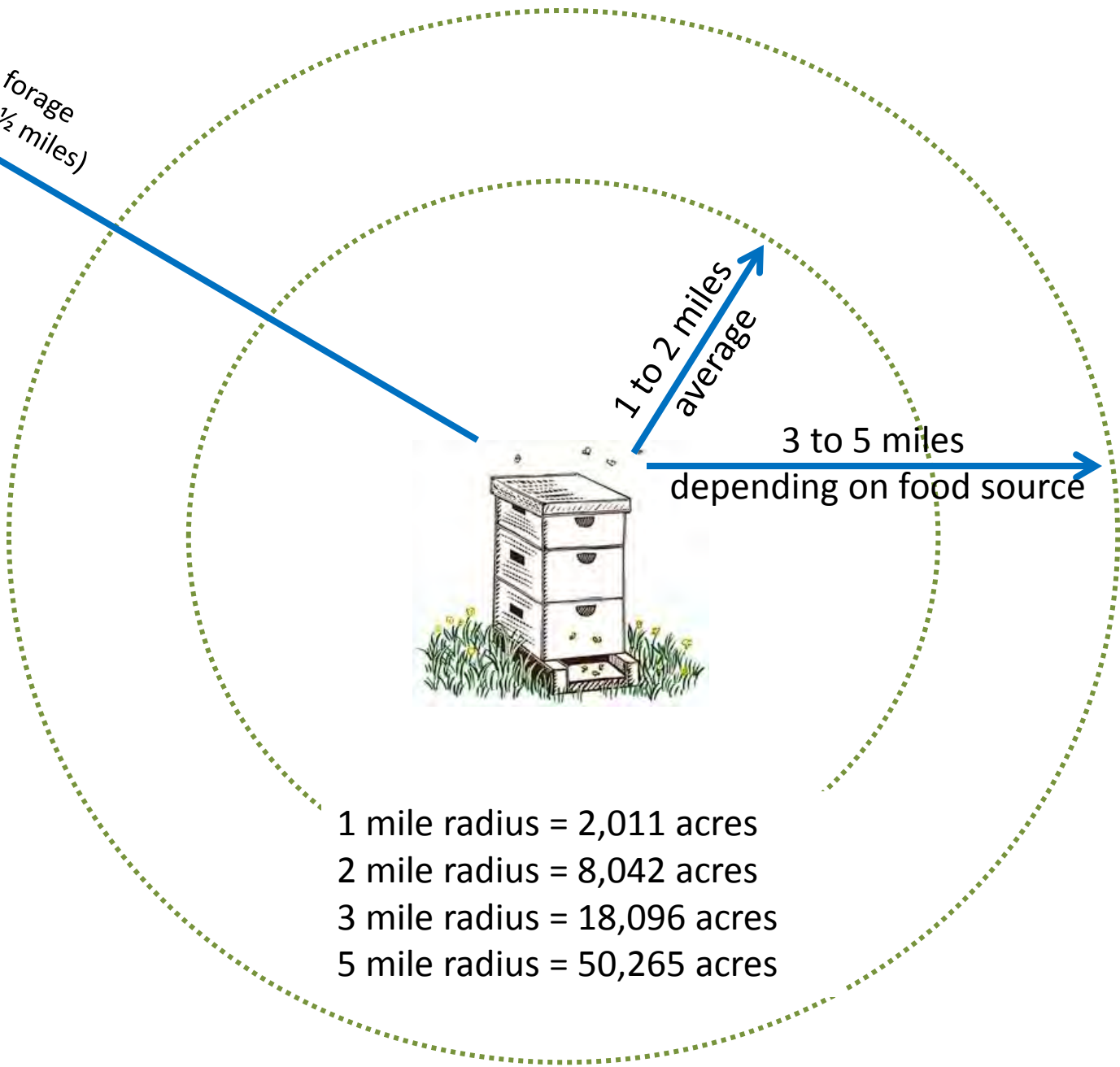
Food Sources



Nectar & Pollen Sources

- Red Maples
- Redbuds
- TULIP POPLAR
- Magnolia
- Sourwood
- Sumac
- Apple
- Flowering herbs
- Garden veggies & fruits
- Pear
- Plum
- Blueberries
- Blackberries
- Clover
- Aster
- Goldenrod
- **Blooming weeds!**

Known to forage
12 km+ (7 ½ miles)



1 to 2 miles
average

3 to 5 miles
depending on food source

1 mile radius = 2,011 acres
2 mile radius = 8,042 acres
3 mile radius = 18,096 acres
5 mile radius = 50,265 acres

Harvesting honey

uncapping



extracting







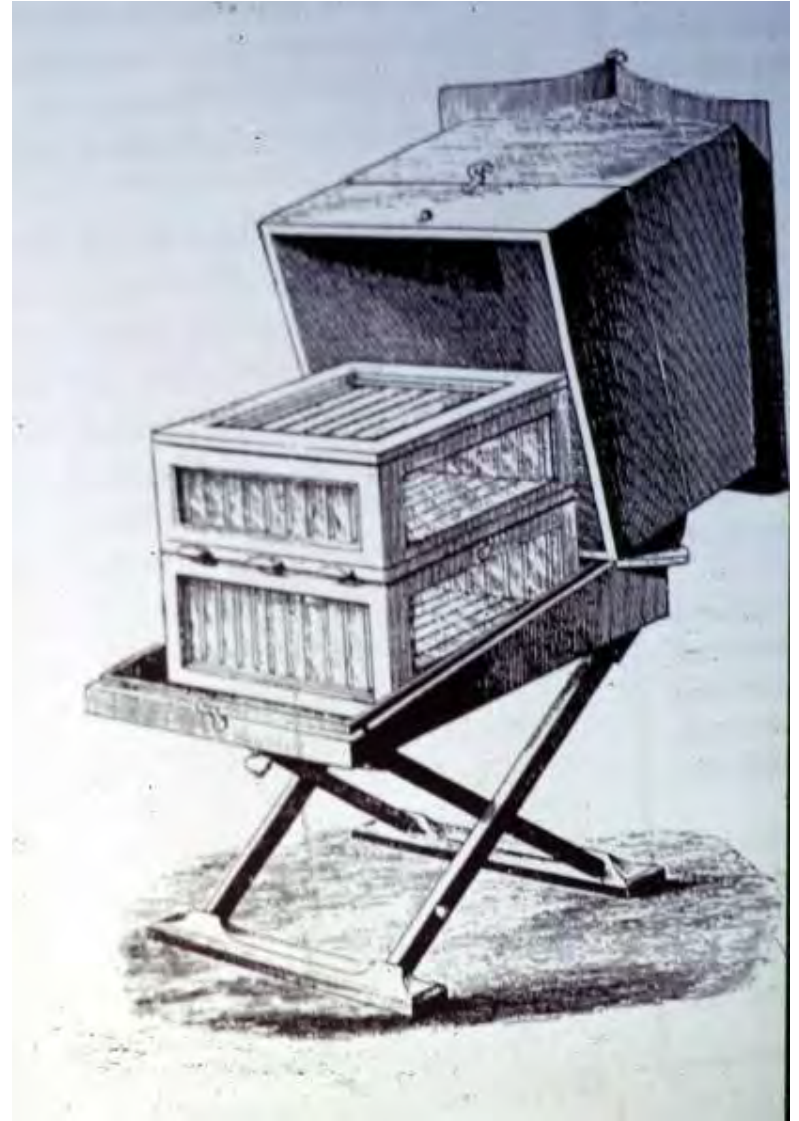
Equipment

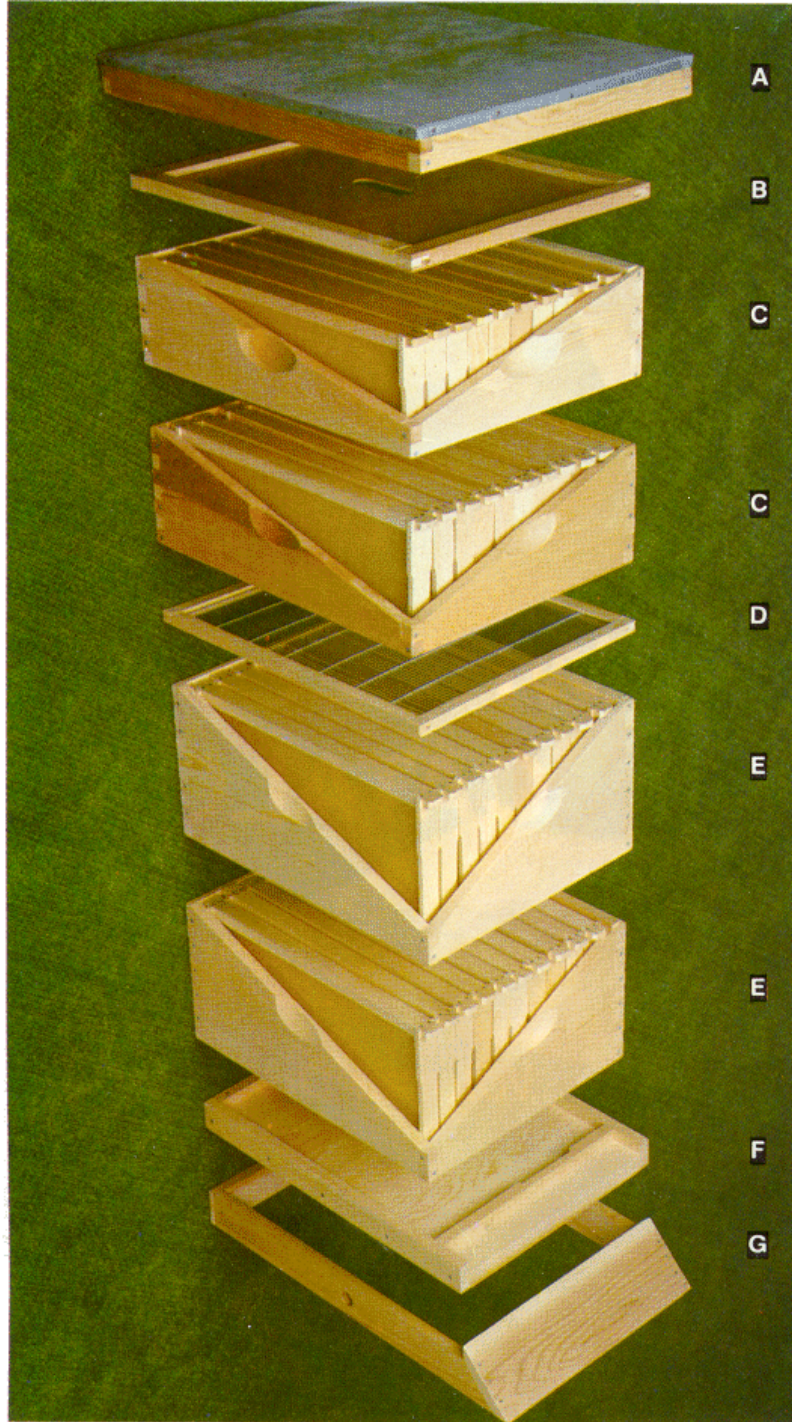
Modern beehive

Modern beekeeping began in 1850s when L.L. Langstroth of Philadelphia designed a hive with movable frames.

Natural spacing between combs in feral colonies was spaced at intervals of 9.53 mm (3/8 inch).

When wooden frames are given to a colony spaced 3/8 inch apart bees will not bridge the gap with wax or propolis.





The modern bee hive is like a highly efficient multistoried factory with each "story" having a specific function. These "stories" work together to provide a home for bees and a honey factory for the beekeeper.

- A) **Hive Cover** — telescoping cover "telescopes" over the sides of the top super to protect the hive. Galvanized covering.
- B) **Inner Cover** — Creates a dead air space for insulation from heat and cold.
- C) **Shallow Supers** — For "surplus" honey storage. Bees store their extra honey in these for the beekeeper to take. 6", 5 1/8" supers, or even hive bodies may be used.
- D) **Queen Excluder** — Keeps the queen bee in the brood chambers as she is too large to pass through the excluder.
- E) **Hive Bodies** — "Brood Chambers" are the bee's living quarters. Queen lays eggs in these chambers and brood is raised. Honey is also stored for the bees' food.
- F) **Bottom Board** — Forms the floor of the hive. Shown with wooden entrance reducer in place to keep mice and some cold out during winter.
- G) **Hive Stand** — Supports the hive off the ground to keep hive bottom dry and insulate hive.

Successful beekeeping means easy manipulation of the frames of brood and honey to provide a "surplus" of honey beyond that needed by the bees to live on and rear their replacements. It is this "surplus" that the beekeeper removes and markets.

Components of the Hive

Bee gear



Protective gloves



Hive tool



Frame grip



J-hook hive tool



Beekeepers Veil



Bee brush



Smoker



Why do beekeepers wear white?



Where to buy
equipment and bees

Bee supplies



Chatham, VA



Hillsborough, NC



Moravian Falls, NC



Hackensack, MN

Others:

- Triad Bee Supply
- Tractor Supply Company
- Miller Bee Supply
- Blue Ridge Bee Supply
- Blue Sky Bee Supply

How to obtain bees

- Split bees from another hive
- Catch a swarm
- Remove a colony from a tree or structure
- Purchase a Nucleus (nuc) hive
- Purchase a full hive
- Purchase a package (contains bees and a queen only)

Where to obtain bees

- List of dealers authorize to sell bees – see NCDA&CS Plant Industry Division - Plant Protection Section
- Packages can be bought from bee supply companies – Dadant, Bailey, Brushy Mountain
- Packages and nucs are sold through craigslist, Piedmont Shopper, and NCDA&CS Ag Review
- Nucs can be bought from Local beekeepers (Danny Lashus)

Costs

Cost for 2 hives (no bees)

<u>Hive components (for two hives)</u>	<u>Part no.</u>	<u>Quantity</u>	<u>Cost each</u>	<u>Total</u>
Deep hive body	B50270	2	\$16.95	\$33.90
frames for deep hive body	B75110	2 ctn of 10 frames	\$12.67	\$25.34
wax foundations for deep frames	F35010	2 ctn of 10 sheets	\$13.18	\$26.36
Bottom board	B92101	2	\$19.06	\$38.12
Entrance reducer	B93101	2	\$1.13	\$2.26
Top + inner cover	B11101	2 sets	\$30.08	\$60.16
Hive stand (optional)	M00695	2	\$14.06	\$28.12
Primer	Lowes	1 qt	\$7.98	\$7.98
Exterior latex paint	Lowes	1 qt	\$12.98	\$12.98
Nails for deep hive body	M00731	1 lb	\$2.99	\$2.99
Nails for frames (for top bars)	M00727	1 lb	\$3.35	\$3.35
Nails for frames (for bottom bars and wedges)	M00726	1 lb	\$3.35	\$3.35
Wood glue (Titebond II)	Lowes	1	\$3.98	\$3.98
Total for 2 hives:				\$248.89

Cost for tools and clothing

<u>Tools and clothing</u>	<u>Part no.</u>	<u>Quantity</u>	<u>Cost each</u>	<u>Total</u>
Straight hive tool	M00757	1	\$8.76	\$8.76
J-hook hive tool (optional)	M00856	1	\$10.45	\$10.45
Bee brush (optional)	M00751	1	\$5.25	\$5.25
Smoker	M00927	1	\$41.15	\$41.15
Frame grip	M00748	1	\$9.82	\$9.82
Veil	V01108	1	\$22.95	\$22.95
Gloves	M01098	1 pair	\$19.95	\$19.95
Total:				\$118.33

Prices obtained from Dadant.com on 12/13/2017

Cost for bees

Packages:	\$130.00 [Bailey Bee Supply]
Nucs:	\$150.00 [Danny Lashus]
Full size hive:	\$250 to \$300 [estimate]
Swarms:	Free

Summary

Costs to get started

2 Hives	\$248.89
Tools and clothing	\$118.33
2 Bees (nucs)	\$300.00
	=====
Total	\$667.22 (plus taxes)

Costs after hives are established

<u>Hive components</u>	<u>Part no.</u>	<u>Quantity</u>	<u>Cost each</u>	<u>Total</u>
Deep hive body	B50270	2	\$16.95	\$33.90
frames for deep hive body	B75110	2 ctn of 10	\$12.67	\$25.34
wax foundations for deep frames	F35010	2 ctn of 10 sheets	\$13.18	\$26.36
Shallow hive body (super for honey)	B32201	4	\$14.42	\$57.68
Frames for shallow hive body	B77110	4 ctn of 10	\$12.67	\$50.68
Wax foundation for shallow hive body frames	F35210	4 ctn of 10 sheets	\$8.76	\$35.04
Primer	Lowes	1 qt	\$7.98	\$7.98
Exterior latex paint	Lowes	1 qt	\$12.98	\$12.98
Nails for deep hive body	M00731	1 lb	\$2.99	\$2.99
Nails for frames (for top bars)	M00727	1 lb	\$3.35	-----
Nails for frames (for bottom bars and wedges)	M00726	1 lb	\$3.35	-----
Queen excluder (optional)	M00823	2	\$6.90	\$13.80
Wood glue (Titebond II)	Lowes	1	\$3.98	\$3.98
Total:				\$270.73

Prices obtained from Dadant.com on 12/13/2017

Additional costs

- Feeders
- Extractor
- Uncapper knife
- Honey jars
- Labels
- Medications/treatments
- Additional woodenware (frames, hives, nucs)
- Magazine subscriptions
- Memberships in local/state associations
- Books
- Bee course

Education

Learning about bees and beekeeping

Magazines

- Bee Culture
- American Bee Journal

Books

- First Lessons in Beekeeping
- Beekeeping for Dummies
- The Hive and the Honey Bee
- many others

Online

- Online courses, videos, websites
- Blogs, groups, listservs
- research

Clubs, associations

- CCBA, NCSBA, EAS

Bee course

- CCBA course starts Jan 10

Beekeeping course

9 classes – **January 10 to March 7**

Wednesday evenings

6:30PM to 8:30PM

Field day – Saturday, March 17

Register online at

<http://caswellcountybeekeepers.org/bee-school/>

Cost: \$70.00 – Includes instruction, book, binder, and handouts

\$35.00 – For an additional accompanying family member or friend who will be sharing the book and materials

Topics:

- Jan 10 Introduction to Beekeeping
- Jan 17 Equipment
- Jan 24 About the honey bee
- Jan 31 The colony
- Feb 7 Starting a Honey Bee Colony
- Feb 14 Bees' enemies, pests, and diseases
- Feb 21 Food and water for your bees
- Feb 28 Products of the hive
- Mar 7 Managing your bees
- Mar 17 Field Day



Challenges to beekeeping

- Mites
- Small hive beetles
- Viruses
- Loss of forage
- Stress
- Pesticides
- CCD (colony collapse disorder)

Questions?