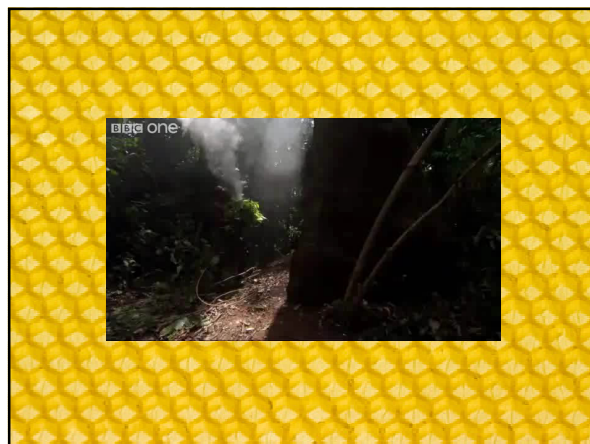



## Class Preparation

- Topics – Bee Diseases and Pests, Preventions, Medications and Alternatives
- Roll sheet
- Agenda
- Handouts
  - Drone Brood Removal for the Management of Varroa destructor
  - Integrated Pest Management for Varroa Destructor
  - Life Cycle of the Varroa Mite
  - Shaking for American Foulbrood04
  - Bee Medications
  - PowerPoint
  - Spares from previous classes
- Display
  - Screened bottom board
  - Sticky board
  - Plastic frame with hiding spaces
  - Drone frame
  - Beetle trap
  - Terramycin patties
  - Para-Moth



## Iron County 4-H

January



### Beekeeping

[www.IronBeekeeper.org](http://www.IronBeekeeper.org)

## Pledge of Allegiance



## 4-H Pledge

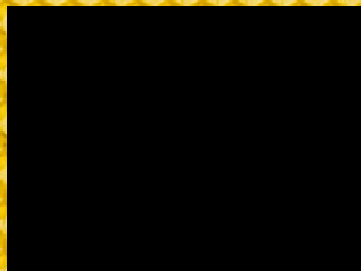
I Pledge  
My Head to clearer thinking,  
My Heart to greater loyalty,  
My Hands to larger service,  
and,  
My Health to better living,  
For my Club, my Community,  
my Country and my World.

## Status Reports

- Hives?
- Bees?
- Protective equipment?
- Tools?
- Working on workbook?
- Reading a book?
- Essay contest?

### Questions?

- Last month's lesson
- Workbook



### Bee Diseases

- American Foulbrood
- European Foulbrood
- Nosema



### Bee Pests

- Varroa Mites
- Tracheal Mites
- Small Hive Beetles
- Greater Wax Moth
- Hornets, yellow jackets, and wasps
- Mice
- Skunks
- Cattle

### Foulbrood and Nosema



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### Chalkbrood, Sacbrood, Moths, Tracheal Mites



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### Waxmoth



### Varroa Mites



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### Small Hive Beetles



The adult beetles are usually found toward the back of the hive on the bottom board, but can often be seen along the frame rests or running along the edges of the inner cover.

The females will lay egg masses in protected crevasses in the hive. The larva feed on the honey and pollen. As they move about the hive they defecate forming a slimy mess which results in the honey fermenting. Once the larva have matured they will leave the hive and burrow into the soil. There they will pupate into adult beetles.

If the infestation is severe enough the bees will abandon the hive.

### Small Hive Beetles



### Phorid Fly



*Apocephalus borealis* is a species of North American parasitoid phorid fly that parasitizes bumblebees, honeybees and paper wasps.

Female flies lay their eggs in the bees, and as the larvae develop they attack the bee's brain and cause the bee to become disoriented, fly at night and exhibit other unusual behaviors. These behaviors eventually result in the death of the bee, but increase the survival and spread of the phorid flies when they emerge from the joint of the head and thorax of the dead bee.

The occurrence of *A. borealis* has been associated with colony collapse disorder.



### Prevention Better Than Cure

- Prevention
  - Never buy used equipment (including nucs) unless you know and trust the seller
  - Keep strong colonies
  - Disease resistant stock
  - Replace queen every 2 years
  - Clean tools between hives
  - Replace frames every 2-3 years
  - Adequate hive ventilation
  - Avoid damp locations
  - Antibiotic treatment



Q

### Bee Disease Treatments

- AFB
  - Do not feed honey to other colonies or allow robbing
  - Burn the hive
  - Irradiation
  - Shaking
- Other diseases:
  - Requeen
  - Reinforce colony with brood from a strong hive
  - Replace old frames



Q

### Bee Pest Treatments

- Varroa Mites
  - Screened bottom boards
  - Cell size (5.4mm vs 4.9mm)
  - Powdered sugar dusting
  - Mite strips (Apistan, etc.)
  - Freeze drone brood
  - Chickens



Q

### Bee Pest Treatments

- Wax Moth
  - Keep strong colonies
  - Never store supers and frames when sticky with honey
  - Freeze or use Para-Moth crystals on stored supers and frames
  - Chickens



Q

### Bee Pest Treatments

- Small Hive Beetles
  - Keep strong colonies
  - Traps
  - Avoid spaces too small for bees to enter
  - Chickens
- Hornets, yellow jackets, & wasps
  - Pan of mineral oil with mirror in bottom

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### Bee Pest Treatments

- Mice
  - Elevate hive so mice can't reach entrance
  - Reduce entrance with metal guards
- Skunks and raccoons
  - Elevate hive so animals can't reach entrance
- Cattle
  - Fence
- Birds



Q



### One More pest



### One More pest



- Follow label directions
- Notify nearby beekeepers before spraying
- Never spray blooming plants including weeds
- Never spray on windy days or allow insecticides to drift onto blooming plants or weeds
- Spray in late afternoon
- Avoid powder insecticides
  - Sevin
  - Ant bait

### Homework

- Study the workbook
- Study a beekeeping book
- Decide how many hives you want
- Buy equipment
- Buy bees
- Apply for a beekeeper's license
- Next meeting – 10 January, 6 pm
  - Melting beeswax
  - Making candles

### Questions?

