

NEW BEEKEEPER TRAINING
MANAGED MENTORING

Sunshine Hill FARM LLC

Sunshine Hill Farm, LLC

Dealing with Deadouts | November 7th, 2026

PA STATE Beekeepers Conference
2026 State College, PA



Dealing with Deadouts

Leading reasons colonies perish

Forensics and Recovery

NOVEMBER 7, 2026



15+ year hobbyist beekeeper – 15 to 20 hives

EAS Master Beekeeper

Past President – NWNJBA

Day Job > IT Adminstrator, Paper Strategies Inc.

INTRODUCTION – Kevin Inglin

Our Home Yard

www.bkcorner.com
THE Beekeeper's CORNER PODCAST

EASTERN APICULTURAL SOCIETY

BUCKS COUNTY BEEKEEPERS ASSOCIATION

BABA boston area beekeepers association

NORTHERN LIGHTS BEEKEEPING
2023 WAS/CDBA Conference, Calgary

NORTHWEST NEW JERSEY BEEKEEPERS ASSOCIATION

HIVE MIND MWNJBA

SUSSEX COUNTY BEEKEEPERS ASSOC.

Susquehanna Beekeepers Association

Maryland State Beekeepers Association
Dedicated to beekeeping since 1908

THANK YOU FOR THE OPPORTUNITY

HAWAI'I BEEKEEPERS' ASSOCIATION

New Jersey Beekeepers Association

Raritan Valley Beekeepers Association

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Omaha Bee Club
Est 2010
Helping Beekeepers Be Successful

Essex County Beekeepers Society, Inc

TRINITY VALLEY BEEKEEPERS ASSOCIATION · Dallas, Texas

LONG ISLAND BEEKEEPERS CLUB

DC Beekeepers Alliance
We're Capital Beekeepers!

PAWTUCKAWAY beekeepers association

BEECON 2025 Brooklyn

NY BEE CLUB

MORRIS & SOMERSET COUNTY BEEKEEPERS ASSOCIATION

BERKS COUNTY SCHUYLKILL COUNTY BEEKEEPERS ASSOCIATION

Rock County Beekeepers

HUMBOLDT COUNTY BEEKEEPERS ASSOCIATION

JAN > 2027

The BEE 27 EXPO

MANAGED MENTORING PROGRAM

FOR GETTING STARTED IN BEEKEEPING

A free program for getting started in beekeeping. For clubs and new beekeepers.



Teaching beekeepers from scratch….

- I want bees, to bees in the box
- Bees in the box to box full grown
- Full grown to overwinter
- Start of season two and all that follows

Self-Serve Succinct Video Lessons
Supported with Online Meetings

Clubs can organize period in-person visits

www.managedmentoring.com

THE BEEKEEPERS CORNER PODCAST

THE VIBE IS TWO BEEKEEPERS MEET AT THE CORNER COFFEE PLACE



First episode – April 2010
305 Episodes and still going strong

Focus on hobby beekeeping topics, colony management and industry news coverage

Many interviews with prominent beekeepers over the years in the back catalog

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www.bkcorner.org

Kevin Moment

PRESENTATION ACCESS

- This presentation is available for download

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To save you the trouble of taking photos of slides you may want to reference later, we've made the full presentation available online

Please feel free to access it anytime through our website.




DEADOUT MINDSET
FACTORS OF DEATH
HIVE AUTOPSY
MAKING ENTRY
DIGGING DEEPER
DEADOUT RECOVERY

READ OUT MINDSET

FROM DISCOVERY TO RECOVERY

TURNING A LOSS INTO A LEARNING EXPERIENCE

- **Losses are Tough**
  - Every beekeeper feels the sting of a perished colony
- **Turn losses into an opportunity to learn and improve**
  - Learned insights help you adjust your management to prevent future losses
    - Failing to learn from a loss is a missed opportunity that could doom you to repeat it




IT'S TIME FOR
CSI
COMB SCENE INVESTIGATION

START WITH WHAT YOU KNOW: AUTOPSY MINDSET

PRECONCEIVED NOTIONS ACT AS INVESTIGATIVE ACUMEN, NOT BIAS



- **Use what you know**
  - Before you start, consider what might have happened
  - Think of things that cause colonies to perish
    - Queen failures, Predators, Environmental stressors, Starvation, Sickness, **Impacts from VARROA**
  - Consider how these might manifest
    - Use what you know as an input to the investigation, *just like a crime scene detective*

It is **especially important** to understand impacts of Varroa Mites

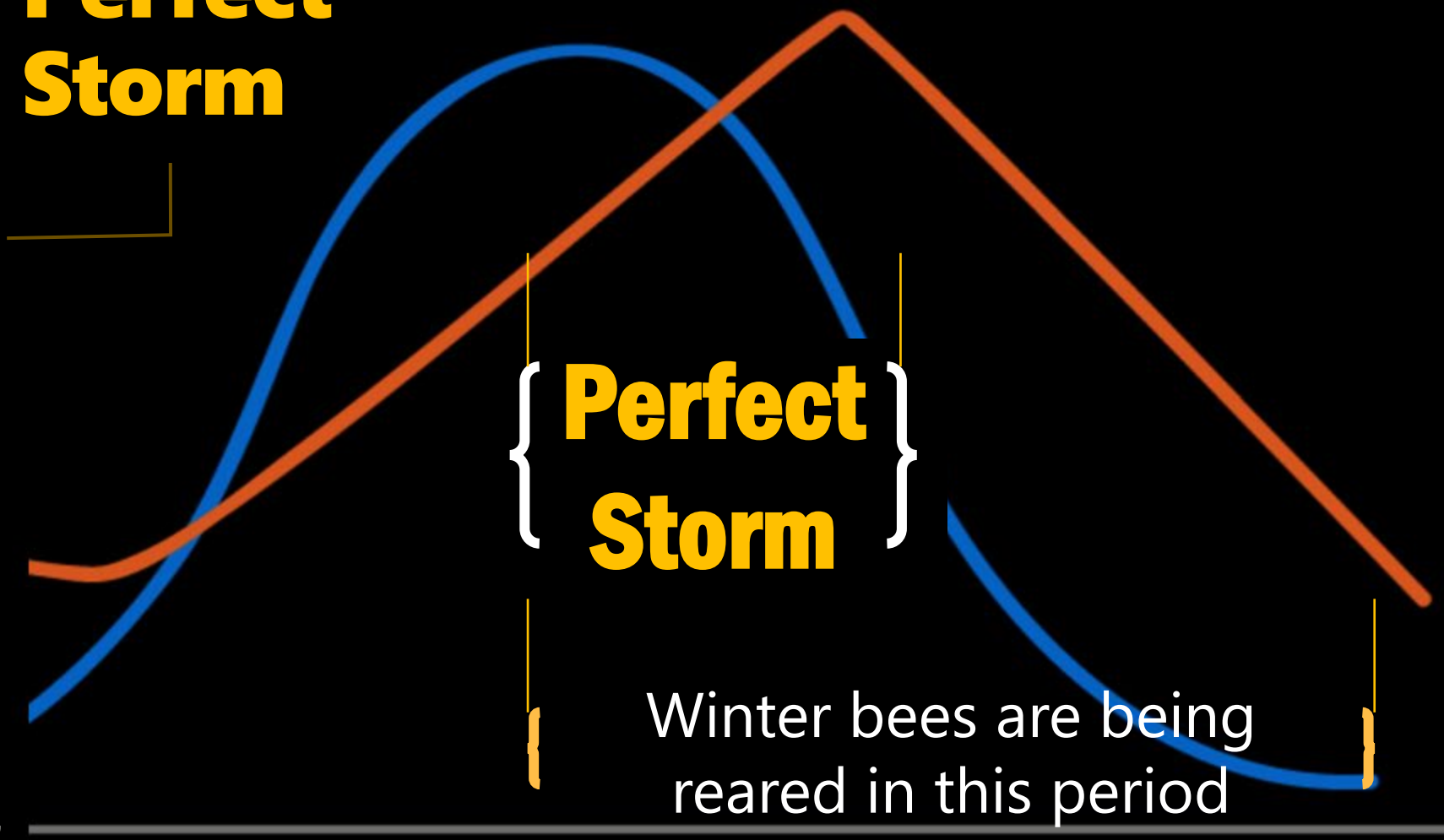
Failure to protect winter bees… a common mistake



VISUALIZING THE RISK

The Perfect Storm emphasizes that we should always remain vigilant, but **we have a higher risk** when it comes to protecting our winter bees for overwinter survivability

The Perfect Storm

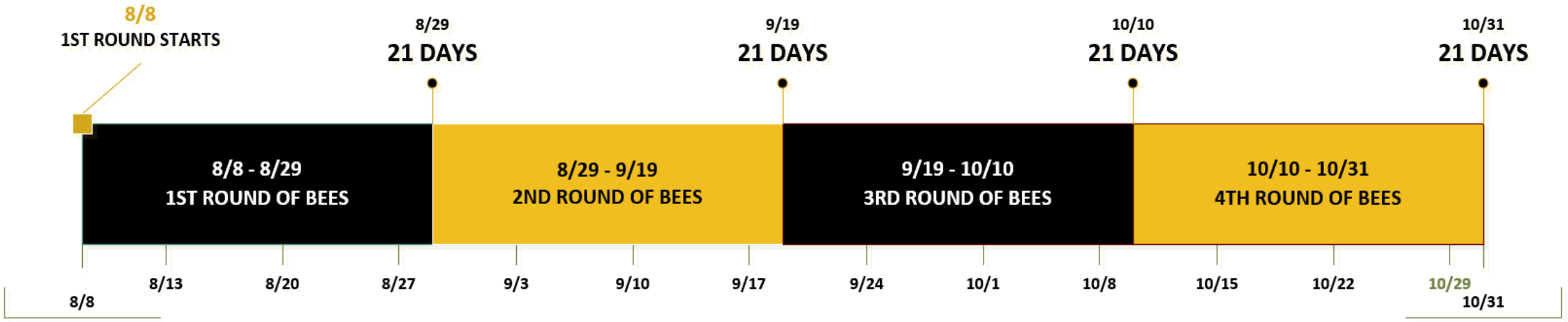


THE INSIDIOUS VARROA MITE

PROTECTING WINTER BEES (TIMING)

- **August through October**
  - There are about 4 to 5 generations of bees before winter bees go into a cluster during cold months
    - In this 84 days window bees change over from short term lifespans to ones that will live overwinter – they physically change in several way

Failure to protect these bees leads to colony losses



WHEN COLONY RISK IS THE GREATEST

SUMMATION: THE SECOND HALF OF THE YEAR IS THE CONCERN

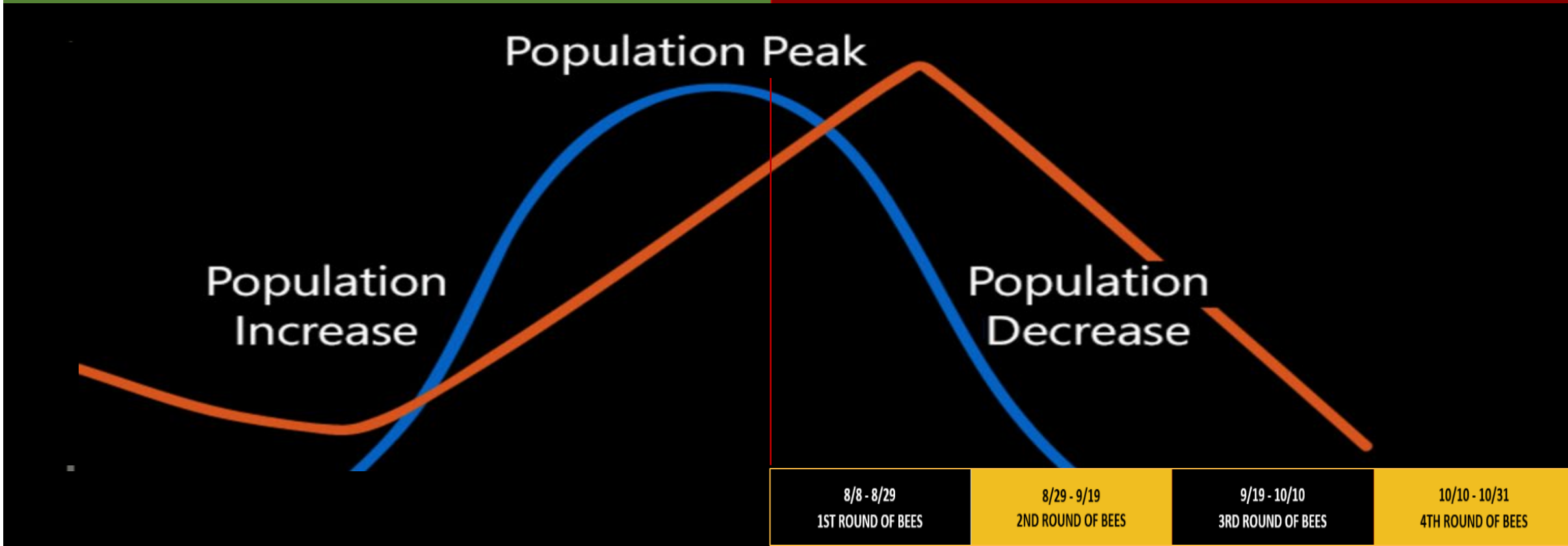
MITE RISK

Low Risk

- *Colony Growth*
  - Low mite counts with high population of recycled 'fresh' bees

Higher Risk

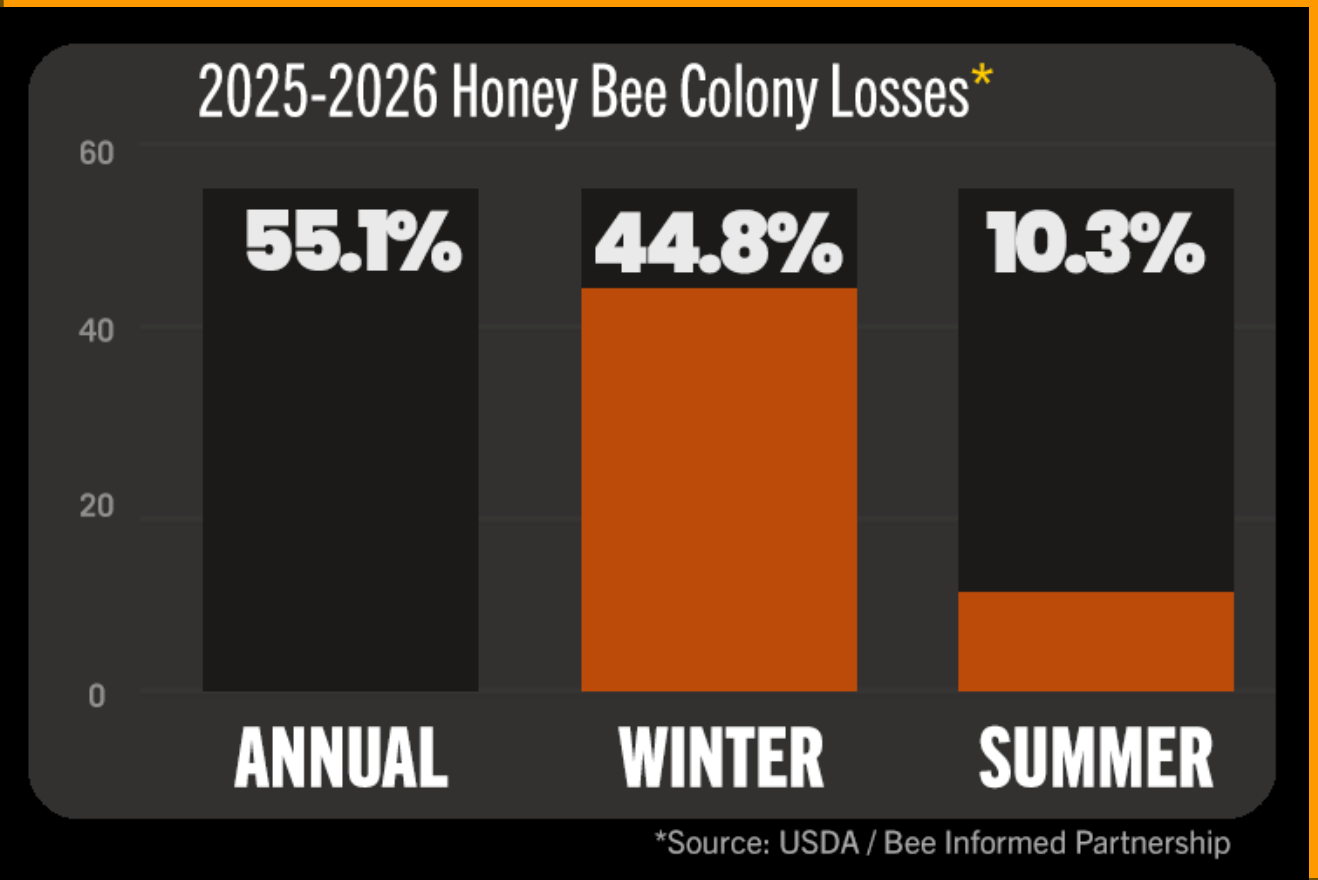
- ***Colony Decline** through Overwinter*
  - Possibility for high mite impacts and compromise to the ability for a colony to overwinter



LOSSES IN 2nd Half

Colony loss is a year-round phenomenon

It is especially possible as summer progresses to fall >



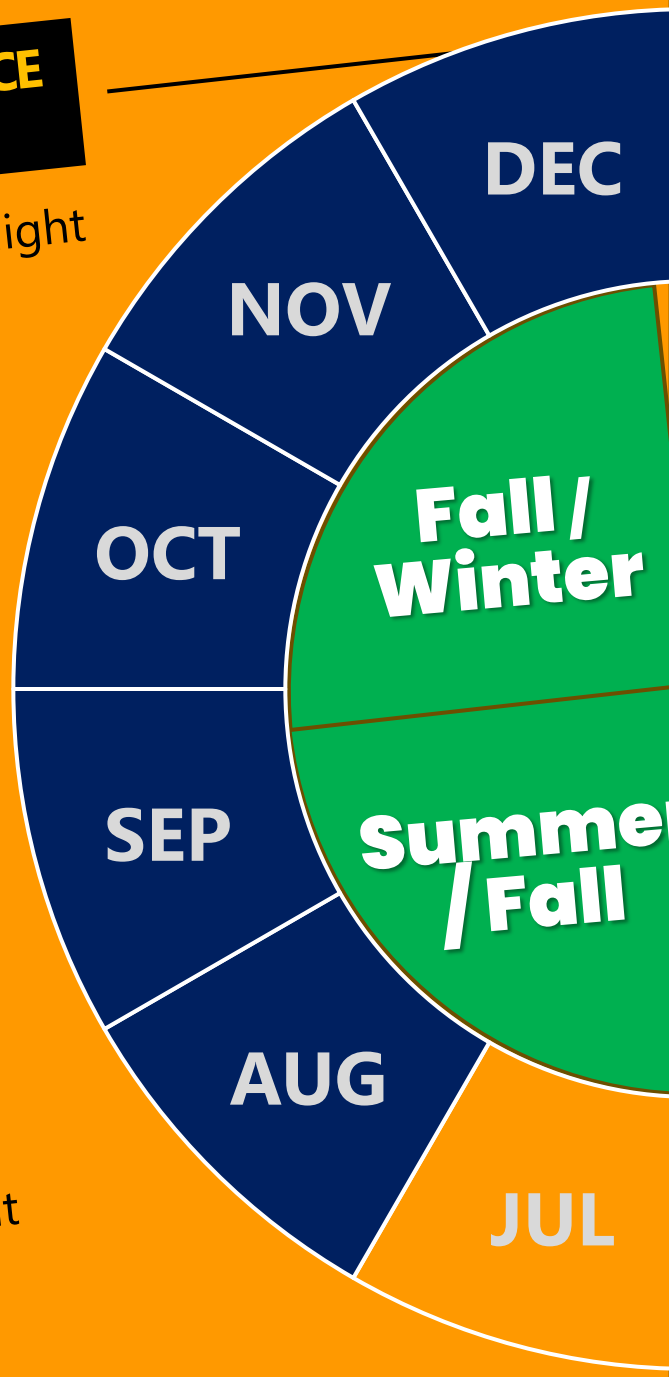
WINTER SOLSTICE
December 21

Shortest Day, Longest Night

Daylight gets shorter >

FALL EQUINOX
September 21

Equal Day and Night



es*

10.3%

SUMMER

e Informed Partnership

A SUMMER DEATH EXAMPLE



Colony damage due to a storm – tree strike

es*

10.3%

SUMMER

e Informed Partnership

A SUMMER DEATH EXAMPLE



I reset it and thought everything was going to be ok

A SUMMER DEATH EXAMPLE



- **This colony perished**
  - Forensics indicate that it went queenless
    - *Perhaps the queen was killed*
  - *I went on vacation*
    - *Then had another family event*
    - *When I got back to it, it was being robbed out*
  - *I did an autopsy (September)*
    - *It had many queen cups and cells – there were **no dead bees***
    - *It appears it went queenless and dwindled – the bees **absconded***
    - *Chock it up to an errant summer death*

SUMMER LOSS REASONS



- **Some reasons for summer losses**
  - Weather Related
    - Extreme heat*, drought, storms, flooding, etc
  - Pesticide Exposures
  - Forage / Water Scarcity
  - Queen Failure
    - 2.5 Year Queen Event
  - **Absconding due to varroa mite pressures**
  - Beekeeper error

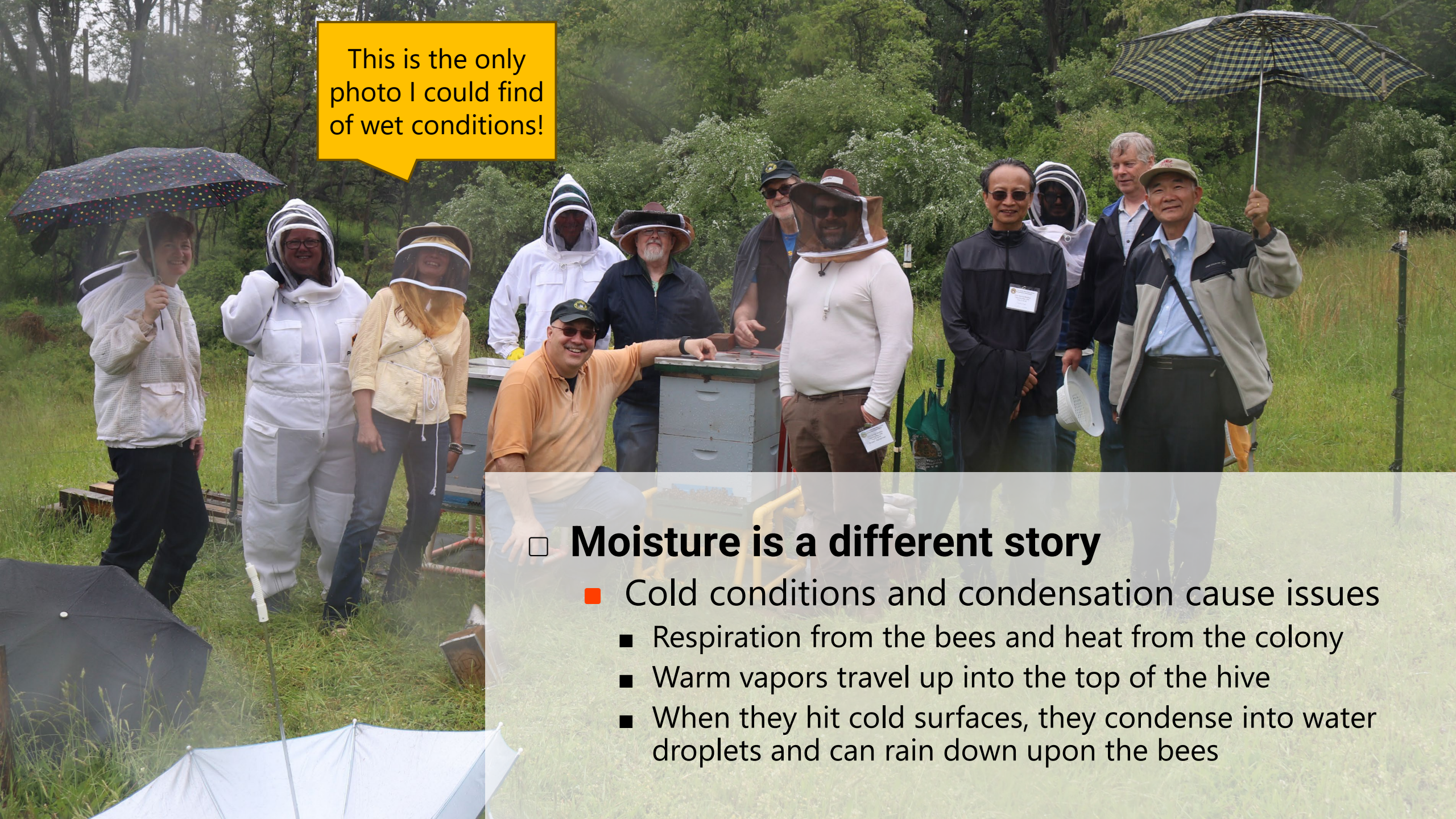
THE TAKEAWAY

As you being your review, survey the scene, apply your depth of knowledge, and trace back to what you know

FACTORS OF DEATH

- **Cold snaps, or extended cold periods do not kill bees**
  - While Bees are tropical in origin, they have adapted to cold weather
    - If bees can survive in Canada and the Northern US, they can handle some cool weather that happens in the southern states
    - They are not as adapted to cold as the bees in the North, but they get through it





- **Moisture is a different story**
  - Cold conditions and condensation cause issues
    - Respiration from the bees and heat from the colony
    - Warm vapors travel up into the top of the hive
    - When they hit cold surfaces, they condense into water droplets and can rain down upon the bees

FIRST THINGS FIRST: ARE THEY DEAD?

SOMETIMES ITS NOT SO OBVIOUS – WHAT KILLED A HIVE



Many times, you cannot tell from the outside

A TOOL TO SEE INSIDE: ENDOSCOPE (aka borescope)

INEXPENSIVE PIECE OF EQUIPMENT FOR YOUR PHONE







ARE THESE HIVES ALIVE *(Non-flying day)* HOW CAN YOU TELL?

ANSWER: ONE IS, THE OTHER IS NOT





FLIR CELL PHONE ADD ON

LEFT GOOD

RI T DEAD



FLIR

48.6 °F

The hive on the right had perished and has no heat signature


What are the bright dots?

- **Avoid Banging on the Hive**
  - This is not a great way to test
    - The bees will come to defend
    - These bees will chill
    - There is a high probability they may perish
  - Consider a stethoscope
    - They can be found cheaply in second-hand stores
      - Look for the LITTMAN BRAND
    - You can listen through the woodenware and you will hear the bees
- **Broodminder Sensors**
  - Employ sensors that show the heat coming off the colony



WHEN YOU ARE SURE A COLONY HAS PERISHED

USE PROPER BIO-SECURITY



- **Close off hive equipment**
  - Until you know why a colony perished, it is good practice to close it off from incursion
  - Your 'winter' features flights during the day *(ours not so much)*
    - Bees are quite keen to explore nearby colonies for resources when there is nothing out there
  - Prevent unwanted contact
    - If something was wrong inside, this prevents unwanted contact

IF THEY ARE DEAD – CHECK THE RECORDS

GET FAMILIAR WITH THE HIVE HISTORY

You do have records, right?

Hive Name: Cedar Hive **Date:** 07/06/25 **Inspection Form#:** 7 **Pad#:** 12

Time of Day	10:36	**Temp**	82 °	**Hive ID/Yard**	Home	**Traffic at Entrance**	⊘ L M **H**
Weather	☐ Sunny | ☐ Cloudy | ☐ Partly Cloudy | ☐ Light Rain | ☐ Humid | ☐ Dry | ☐ Light Breeze | ☐ Windy						
Hive Type	☐ [**8**/10] Frame | ☐ All Medium | ☐ [5/6] Frame Nuc | ☐ Top Bar | ☐ Warre | ☐ National | ☐ Layens						
Configuration	Deep 0 1 **2** 3 4 5 | Medium 0 1 **2** 3 4 5 | Shallow 0 1 2					**Entrance Reducer**	< ^ **>** **Slatted Rack** ☐
Bottom Board	☐ Solid | ☐ Screened	**Feeder?**	**N/A** | ☐ Entrance | ☐ Internal | ☐ Top | ☐ Zip/Jar | ☐ Other				

INSPECTION OBSERVATIONS: **Type of Inspection:** ☐ External only | ☐ Superficial | ☐ Extensive

Reason for / Objective of the inspection.

Checking colony

- ☐ **You likely keep records of some kind** (*this is a screen capture of one of my hive inspection forms*)
  - Take some time before you start your autopsy to get familiar with the hive history

IF THEY ARE DEAD – DON'T PROCRASTINATE

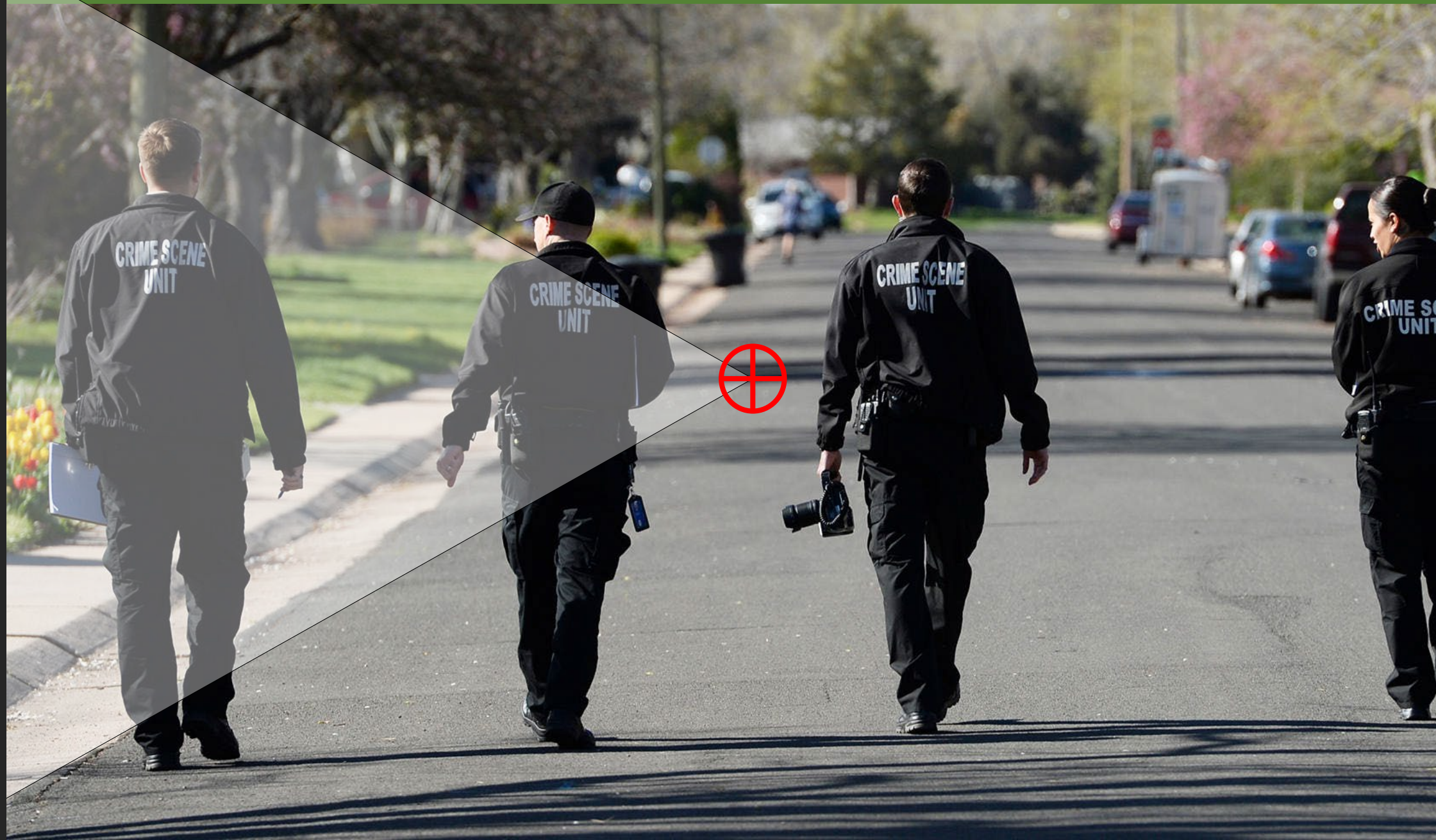
EVIDENCE DETERIORATES WITH TIME

- **Time is not on your side** *….contrary to what Mick Jagger says* 
  - Time is not your ally when assessing a dead colony.
    - The longer deceased bees remain in place, the more the original story fades
    - Waiting too long invites misinterpretation because the scene changes rapidly with temperature, moisture, pests, and other environmental factors
  - Fresh Evidence Matters: Degradation Happens Quickly
    - With death, no colony remains to regulate the hive environment
      - Conditions such as mold, moisture accumulation, or pest intrusion often appear after the bees have died in the equipment where bees are not regulating the atmosphere
  - Regular checks are a good practice
      - *It happens…* A colony can be dead for weeks before you notice, and by then most meaningful evidence has deteriorated
      - Frequent monitoring ensures you capture the hive's condition while the clues are still intact

HIVE AUTOPSY

Start Wide

Do not ignore the larger picture



Start Wide

Survey the Apiary for clues, before diving in



Start Wide

Survey the Apiary for clues, before diving in



- **Check the Surroundings**
  - Look at the ground
    - Bees on the ground like this could signify a pesticide kill
  - Look at the equipment
  - Don't overlook anything that could play a factor
- **Bear Attack**
  - If it is a bear attack (obvious example)…
    - There's not much reason to do an internal inspection

Start Wide

Survey the Apiary for clues, before diving in



- **Something Else**
  - But you could find this, or something like it
    - Look for pest incursions (footprints, scratches, scat)
    - Look for signs of a tussle
    - Look for fecal staining or cleansing marks on the equipment/ground/snow
    - Equipment Problems and/or Malfunctions
  - Before taking off the roof
    - Do not neglect to do a cursory wide scene survey

Start Wide

Pesticide Kill in a Peach Orchard (after spraying)



- The grower neglected to tell the beekeeper (*me*) they were spraying their peach orchard on the grounds

Start Wide

Discovery of fecal stains on the exterior and interior





Start Wide

- **Houston, we have a problem**
  - Sometimes events happen where bees are sequestered too long
    - This is stressful for colony inhabitants
  - Nosema and/or other situations lead to gastric distress
  - Spotting is present on the outside (and inside) of hive equipment
    - As well as on the ground and throughout the apiary
      - Some spotting is normal (they must excrete waste after all)
    - Egregious spotting and streaking are signs of distress – *especially when the colony inside has perished*



Start Wide



Start Wide

Sometimes it is subtle… *Robbing Stains*



Start Wide

Other times it is not so subtle







Intermediate

Before Making Entry…



- **Check the Landing**
  - Normally some dead bees
    - This is a sign of colony life
    - During warm-ish periods, bees drag out the dead
    - If you do not see dead bees, the colony might not be alive

Kevin Moment

- **Sweep off your entrances (Snow or Not)**
  - During cold periods, as you check on your colonies sweep off the landing board
    - Secondarily, come back after a warmish day (after the bees have been flying)
    - As bees were flying, they should have also drug out some dead bees on the landing
    - Undertakers out of service: if you see no bees, that colony could have a problem

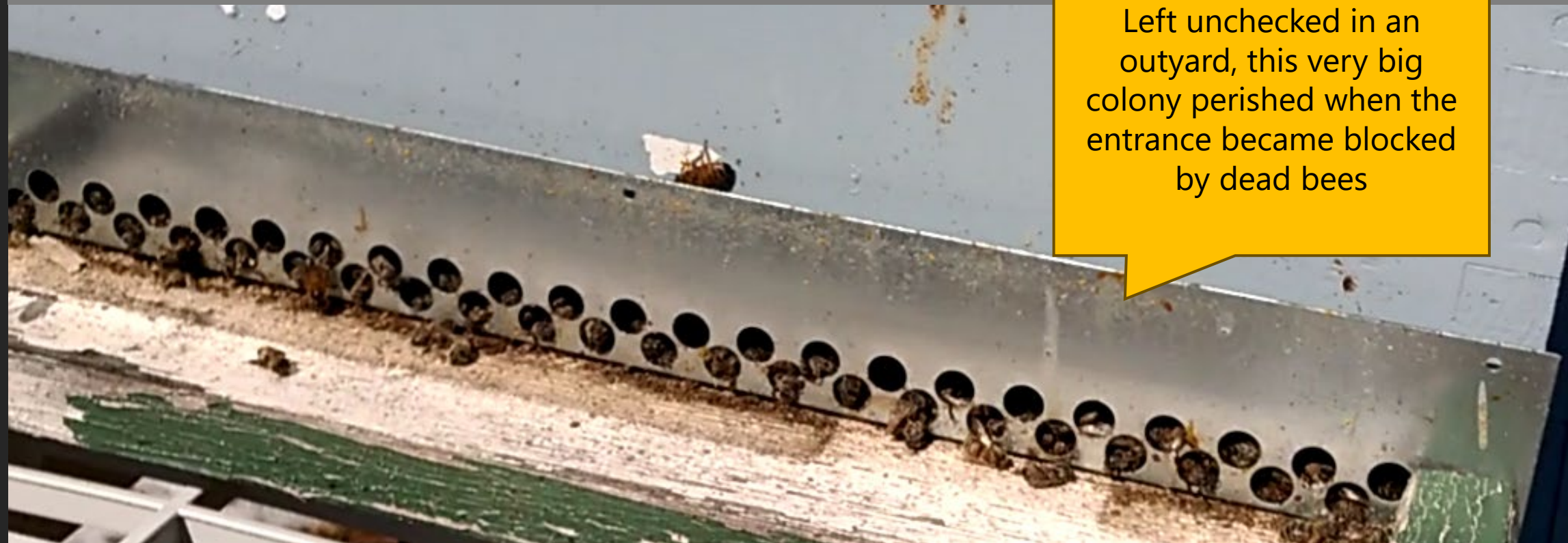


Intermediate

COLONIES PERISH DUE TO CLOGGED ENTRANCES

FINDING: BEES PILED UP, BLOCKING AIRFLOW

- **Blocked entrances (in the extreme) will kill colonies**
  - Results in airflow restriction and atmosphere problems within
    - Rising CO2 levels, moisture problems, occur – eventually killing the colony



Left unchecked in an outyard, this very big colony perished when the entrance became blocked by dead bees

Intermediate

COLONIES PERISH DUE TO CLOGGED ENTRANCES

THIS WAS A HIVE SUFFOCATION - *AND YES, THIS ONE HURT*



Intermediate

“BEE PILE” APPEARANCE RULE OF THUMB

BIG PILE = SUDDEN DIE OFF | SCATTERED = SLOWER DEMISE





MAKING ENTRY

Go Inside



Remove the Roof

- **Remove the roof**
  - Look under the roof – and on top of the inner cover
  - What does it tell you?
    - Anything dead on the cover?
    - Signs of water collection?
    - Pests on the top
      - What are the pests?
        - Spiders, Mites, Earwigs, Ants, mice, (Texas things!)
      - Sometimes the type of pests give clues about how long they have been inhabiting the space
  - Do you see bees in the inner cover hole?

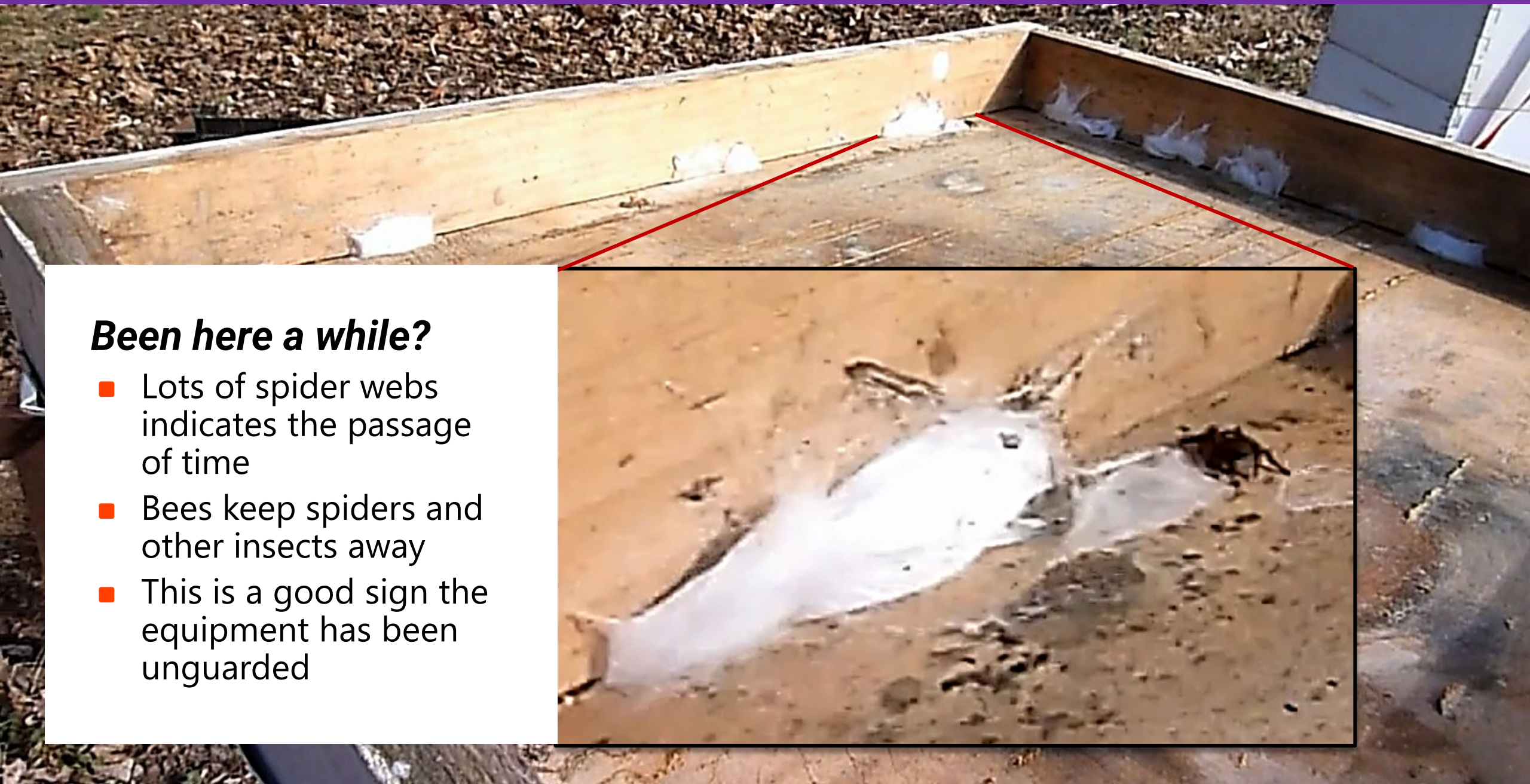
GO Inside

- Dead bees on the inner cover, not too concerning and rather common
- This colony of bees died right under the inner cover hole



Remove the Roof

What might we guess about the presence of these spider nests?



Been here a while?

- Lots of spider webs indicates the passage of time
- Bees keep spiders and other insects away
- This is a good sign the equipment has been unguarded

GO Inside



Remove the Inner Cover

- **Look on the tops of the frames**
  - Is there any water, feces, or elements that do not belong there?
  - Look for water staining, mold, slimy woodenware
- **Are there any odors**
  - Do you smell anything when the cover is removed?

Go Inside



Remove the Inner Cover

- **Remove the cover**
  - Look on the underside
  - Look on the tops of the frames
    - Anything unusual?
  - Are there dead bees?
    - Where are they?
  - What is the appearance of the dead bees
    - Are they normal looking?
    - Are they dried up, moldy, wet, hollow, shrunken, fresh looking…?

Go Inside



Reading the Frames

- **Read from above before disturbing**
  - Look into the gaps
    - Are there bees into the gaps?
    - Where are they – how many are they?
  - Devise how you are going to make entry
  - Look to preserve how they are holding onto the comb



PLAN YOUR ENTRY

- **Enter away from where you see the cluster**
  - As you inspect, you are trying to preserve the state of the bees position
    - Look at each frame, determine what it tells you about that progression
  - Work your way into the frames where the bees are
  - Make a gap by removing empty combs as you go

Kevin Moment



- **Why wear a suit?**
  - Sometimes you are in a live apiary reviewing a dead colony that is near live hives
  - You could move it to another location for the review
    - Moving however disturb things
    - So *sometimes*, yes, you wear protective equipment looking through a dead hive



OPEN LIKE A BOOK

- **Pull the frames out together**
  - Bring both frames (with the collection of bees) up together
  - They separate them like you are **opening a book**
    - Either spread them from the top bar, or the bottom bar
    - Doing it this way allows you to see how they were positioned on the honeycomb

CSI:
COMB SCENE INVESTIGATION

THE BEES STAY PUT AND YOU CAN READ THE SITUATION



CSI:
COMB SCENE INVESTIGATION

INSPECT THE BEES, WHAT DO THEY LOOK LIKE?



CSI:
COMB SCENE INVESTIGATION

VISIBLE DECAY SIGNIFIES PASSAGE OF TIME



CSI:
COMB SCENE INVESTIGATION

WET BEES: MAYBE MOISTURE EXPOSURE POST DEATH



CSI:
COMB SCENE INVESTIGATION

WHY ARE THEY ARRANGED THIS WAY?



CSI:
COMB SCENE INVESTIGATION

IS THERE A QUEEN PRESENT?



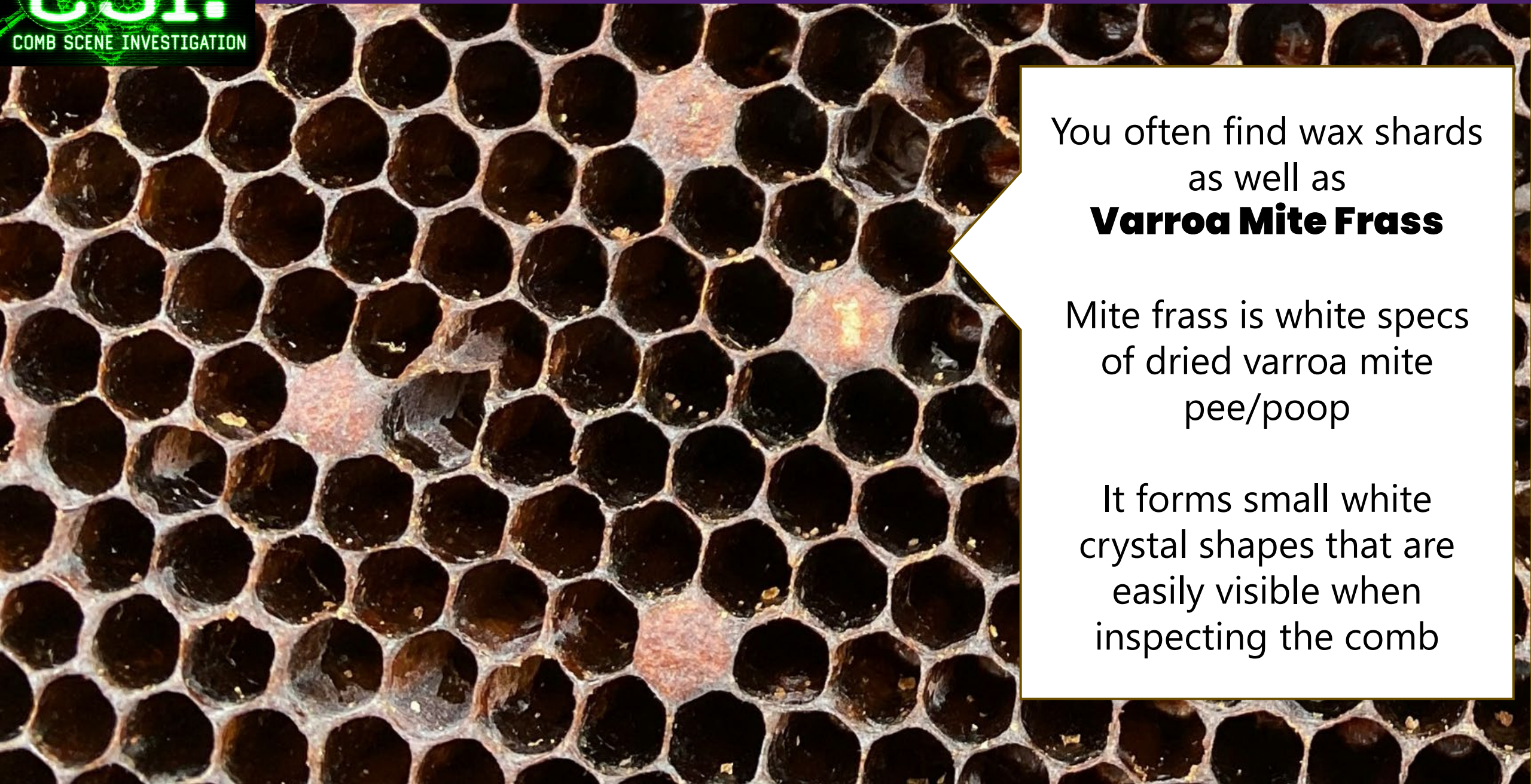
CSI:
COMB SCENE INVESTIGATION

VESTIGES OF BROOD APPEAR SPOTTY – HOLES?



CSI:
COMB SCENE INVESTIGATION

MITE FRASS (Droppings) IN THE COMB



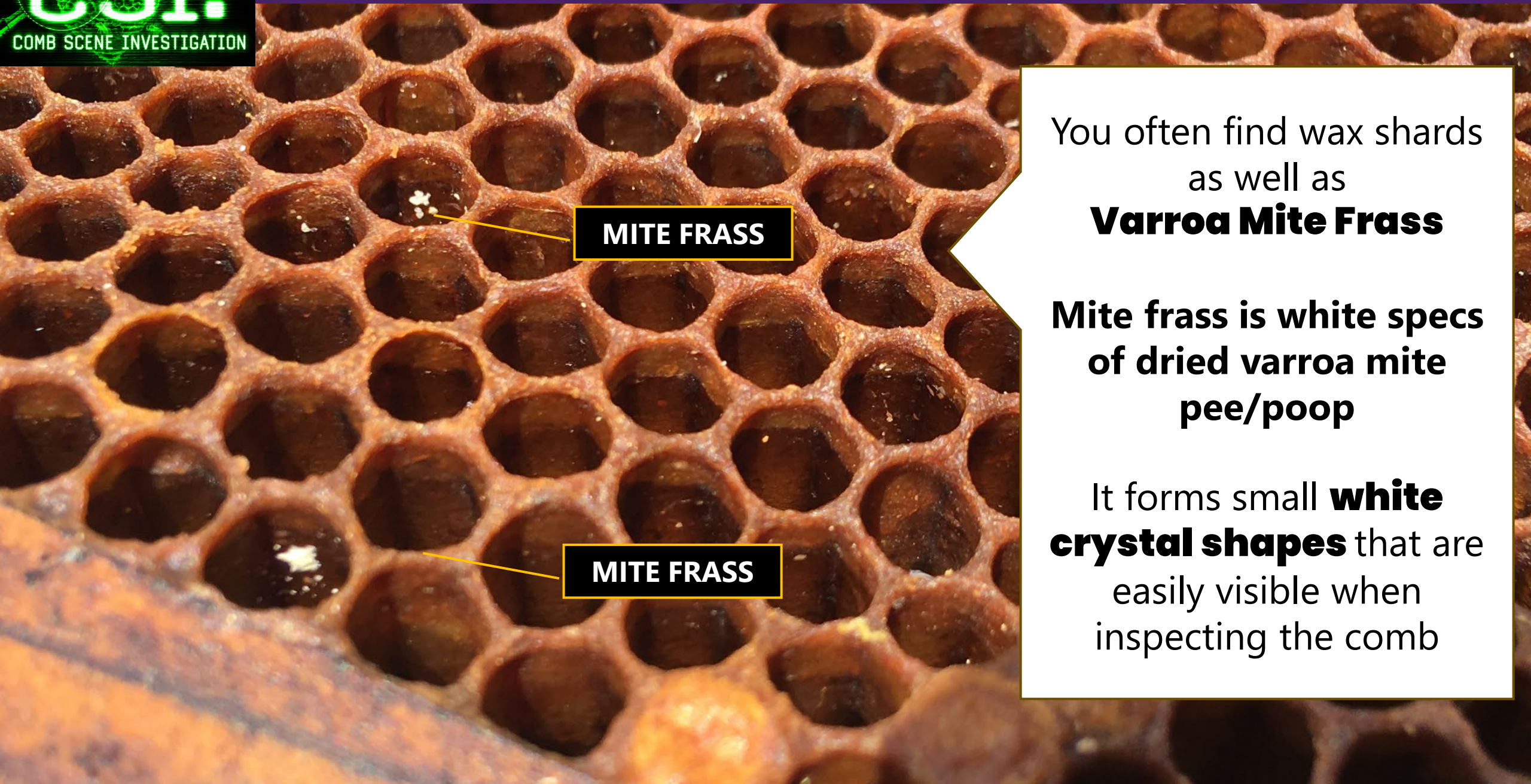
You often find wax shards as well as
Varroa Mite Frass

Mite frass is white specs of dried varroa mite pee/poop

It forms small white crystal shapes that are easily visible when inspecting the comb

MITE FRASS (Droppings) IN THE COMB

CSI:
COMB SCENE INVESTIGATION



You often find wax shards as well as **Varroa Mite Frass**

Mite frass is white specs of dried varroa mite pee/poop

It forms small **white crystal shapes** that are easily visible when inspecting the comb

CSI:
COMB SCENE INVESTIGATION

This bee did not get out either

Image credit: Dianna Harter (Facebook: Friend Beekeeping for Beginners)

Bees with their Tongue (Proboscis) Out

Can signify a few things:

- **Starvation:** Death from cold or starvation before emergence
  - Note the capping ring around the body
  - This bee was emerging from the cell but did not get out
- **Pesticide Kill:** Often on the ground outside





Bees partially emerged

Quite Common:

- Bees in development often get an assist from workers to emerge from the capping
- Without an abundance of workers, they sometimes never get out
- You'll find bees like this trapped in their cells
- Often accompanied by spotty brood patterns in the vicinity

CSI:
COMB SCENE INVESTIGATION

DEAD COLONY ALONGSIDE FOOD: WHY?



SMALL CLUSTERS: COLONY DWINDLE



PLAUSIBLE CAUSES OF DWINDLE

- CLUSTER TOO SMALL – not enough bees to maintain heat
- ILLNESS SECONDARY TO VARROA – bees were sick and attrition occurred
  - Parasitized nurse bees pass viruses down, shortening winter bee lifespans
- ENVIRONMENTAL STRESSORS – extended exposure to cold conditions
  - Dripping **moisture** chills bees one by one, breaking the cluster.

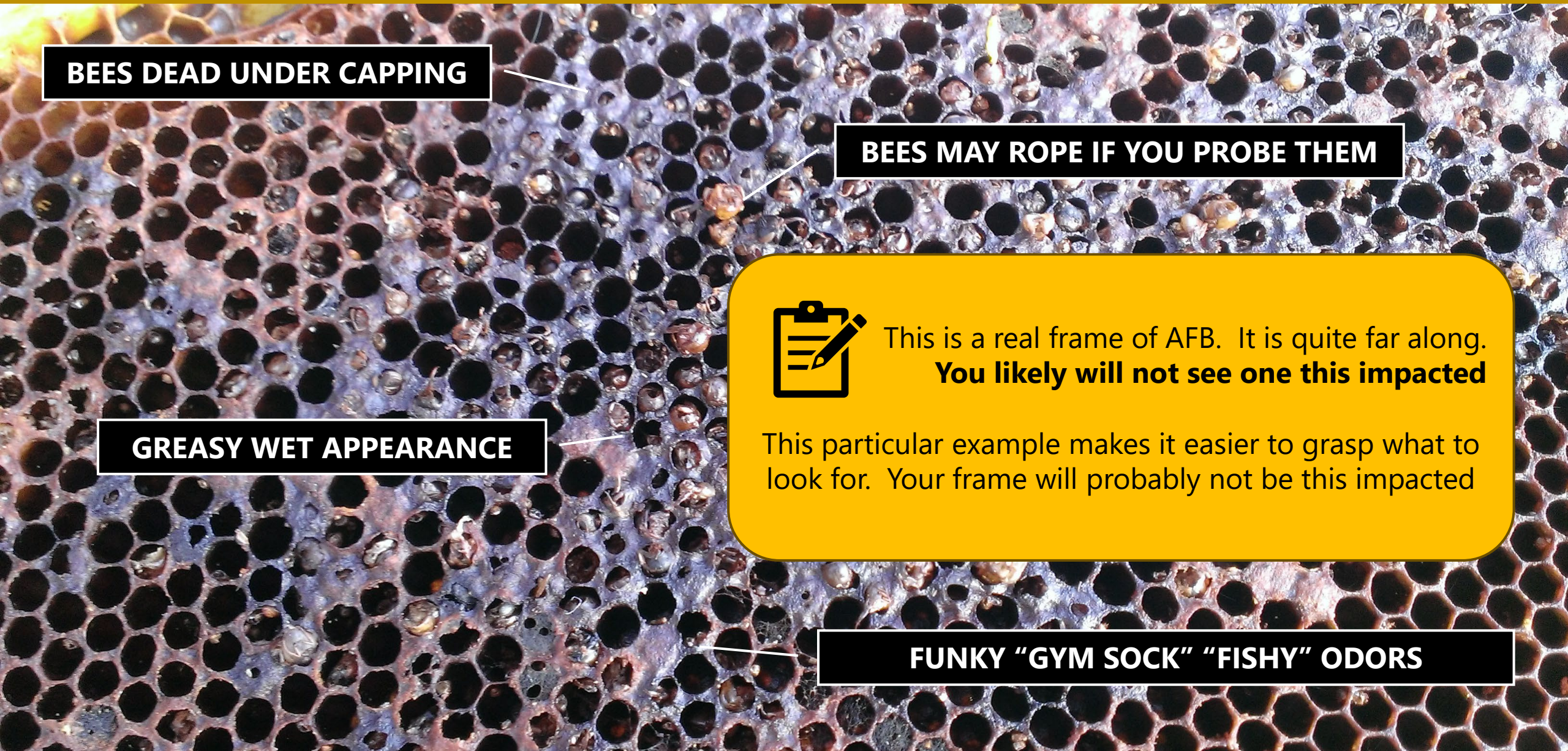
Kevin Moment

- **PHOTOS**
  - Have you noticed the photo evidence images?
  - These are shots I have collected over time
  - **Photographic evidence is invaluable**
    - It is such an incredible learning tool
  - Use your phone and document what you are finding along the way



SERIOUS DISEASE DEATHS: AFB

THIS IS AMERICAN FOULBROOD

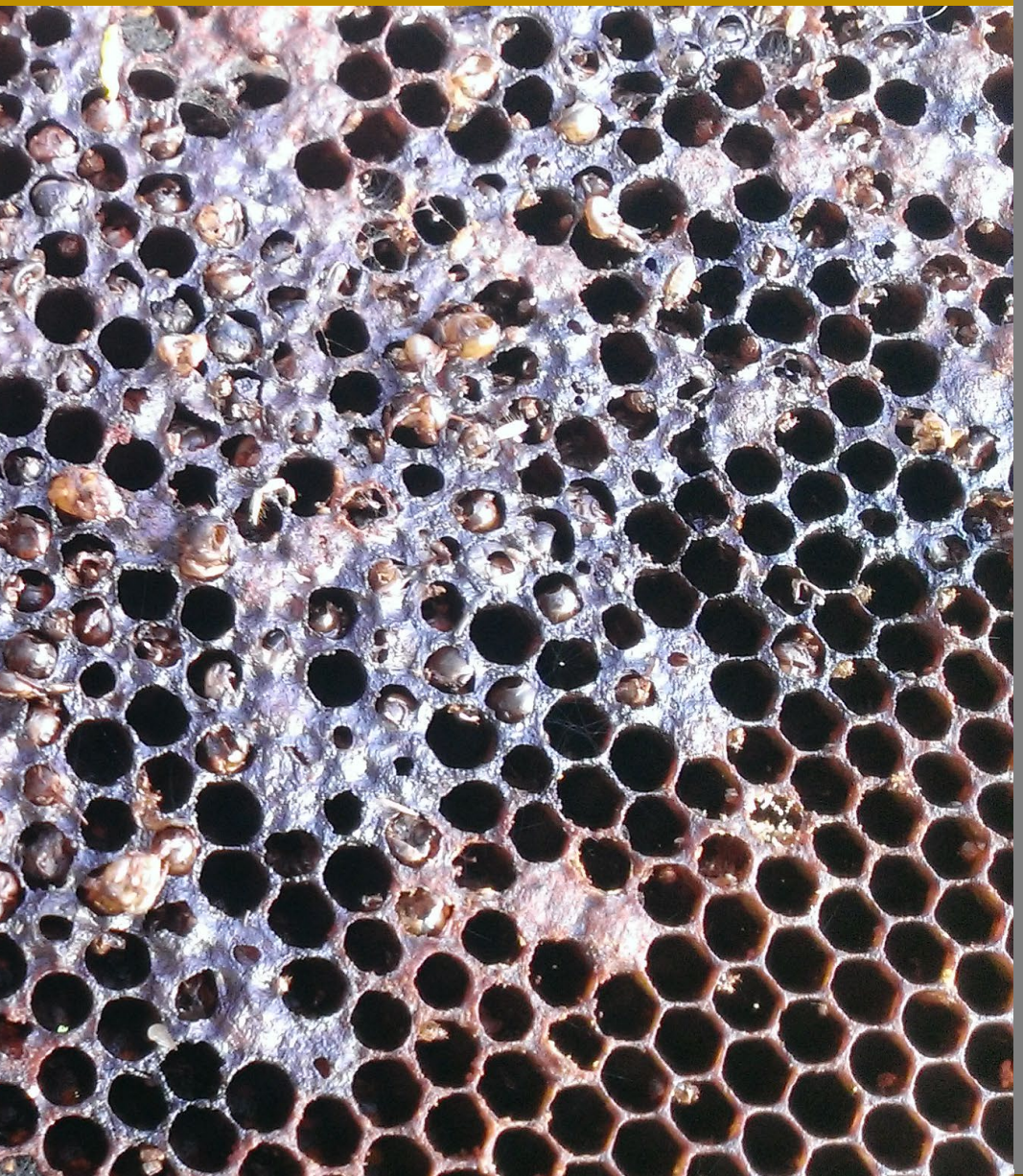


This is a real frame of AFB. It is quite far along.
You likely will not see one this impacted

This particular example makes it easier to grasp what to look for. Your frame will probably not be this impacted

SERIOUS DISEASE DEATHS: AFB

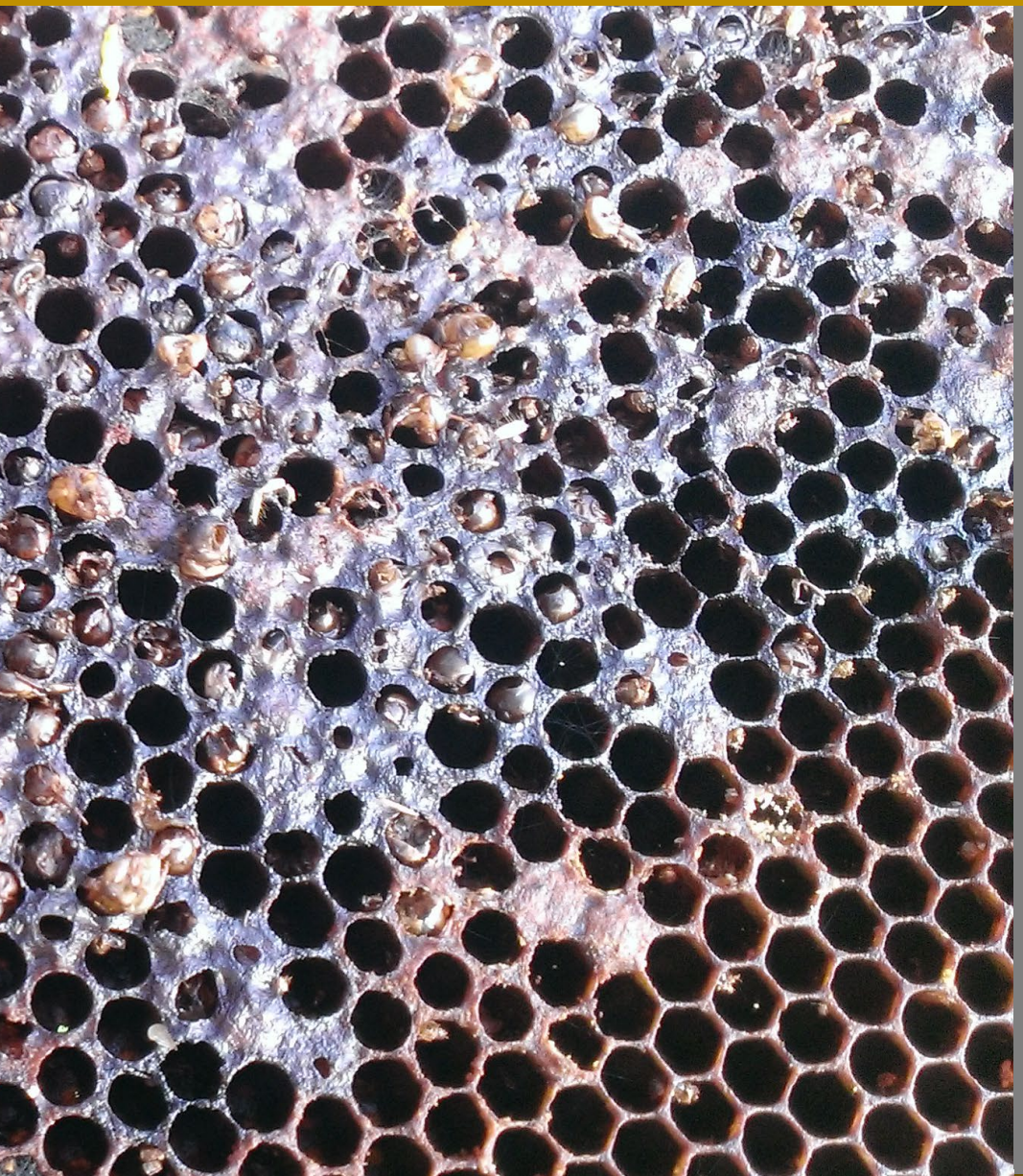
COLD WEATHER DEADOUT – PLAUSIBLE



- **A Risk in Winter**
  - AFB is a result of Paenibacillus larvae, a highly contagious bacterial disease
    - With flying days in winter, bees will visit other hives and spread is plausible
  - Buildup is likely to be slow
    - With less brood the manifestation is slower
    - As bees interact during operational periods the threat builds into a spiral
    - If you do period inspections, you might catch it earlier than death of the whole colony

SERIOUS DISEASE DEATHS: AFB

COLD WEATHER DEADOUT – PLAUSIBLE



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SERIOUS DISEASE DEATHS: AFB

COLD WEATHER DEADOUT – PLAUSIBLE



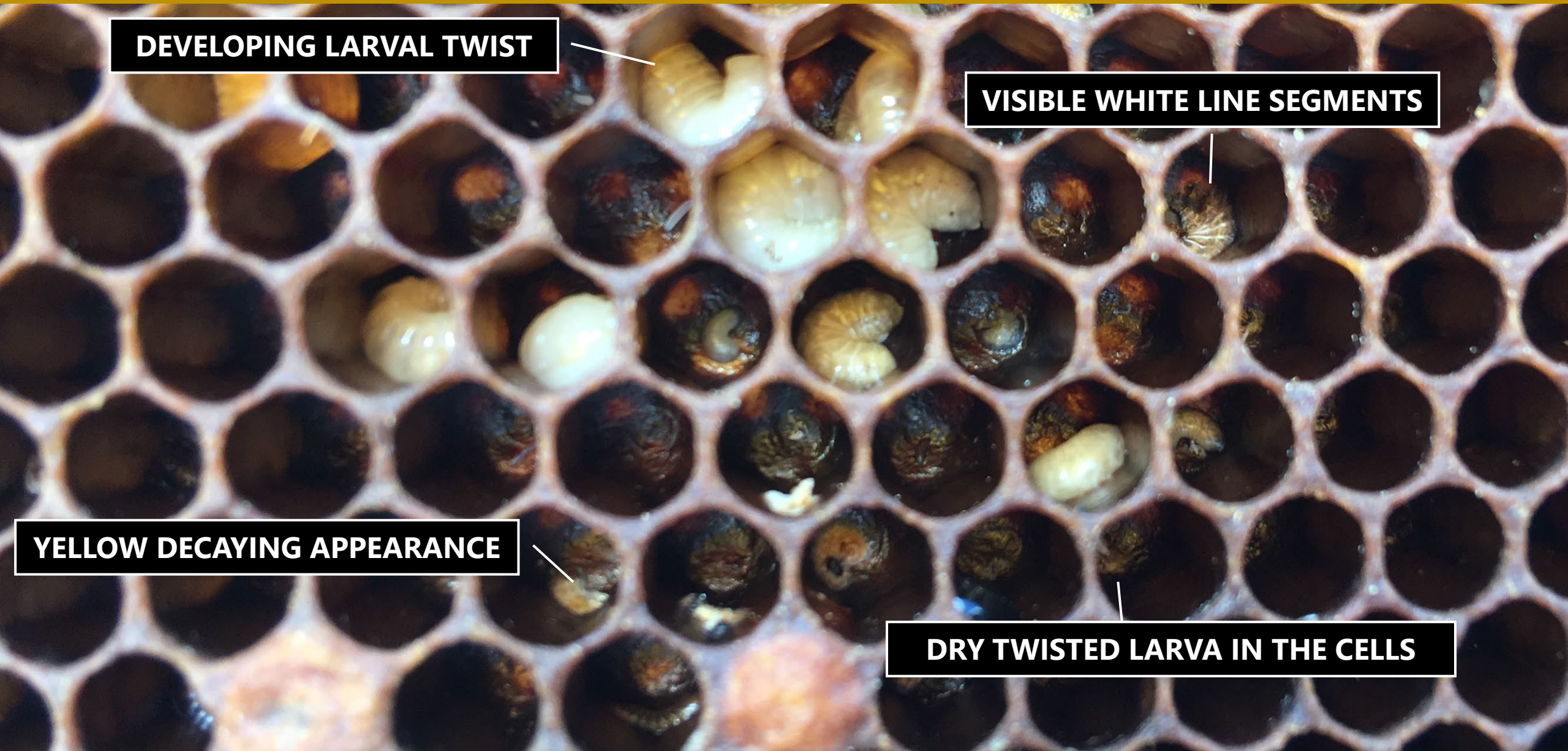
- **CALL YOUR APIARIST**
  - If you suspect you have AFB, you must call your state apiarist
    - They will aide you in resolution
- **Quarantine**

  It should be said again….
  - CLOSE DOWN THE HIVE
    - Until the situation is resolved do not allow access by any errant bees
    - You do not want to contribute to an outbreak in your zone

DIGGING DEEPER

IMPACTFUL DISEASE DEATHS: EFB

EUROPEAN FOULBROOD PRESENTATION



IMPACTFUL DISEASE DEATHS: EFB

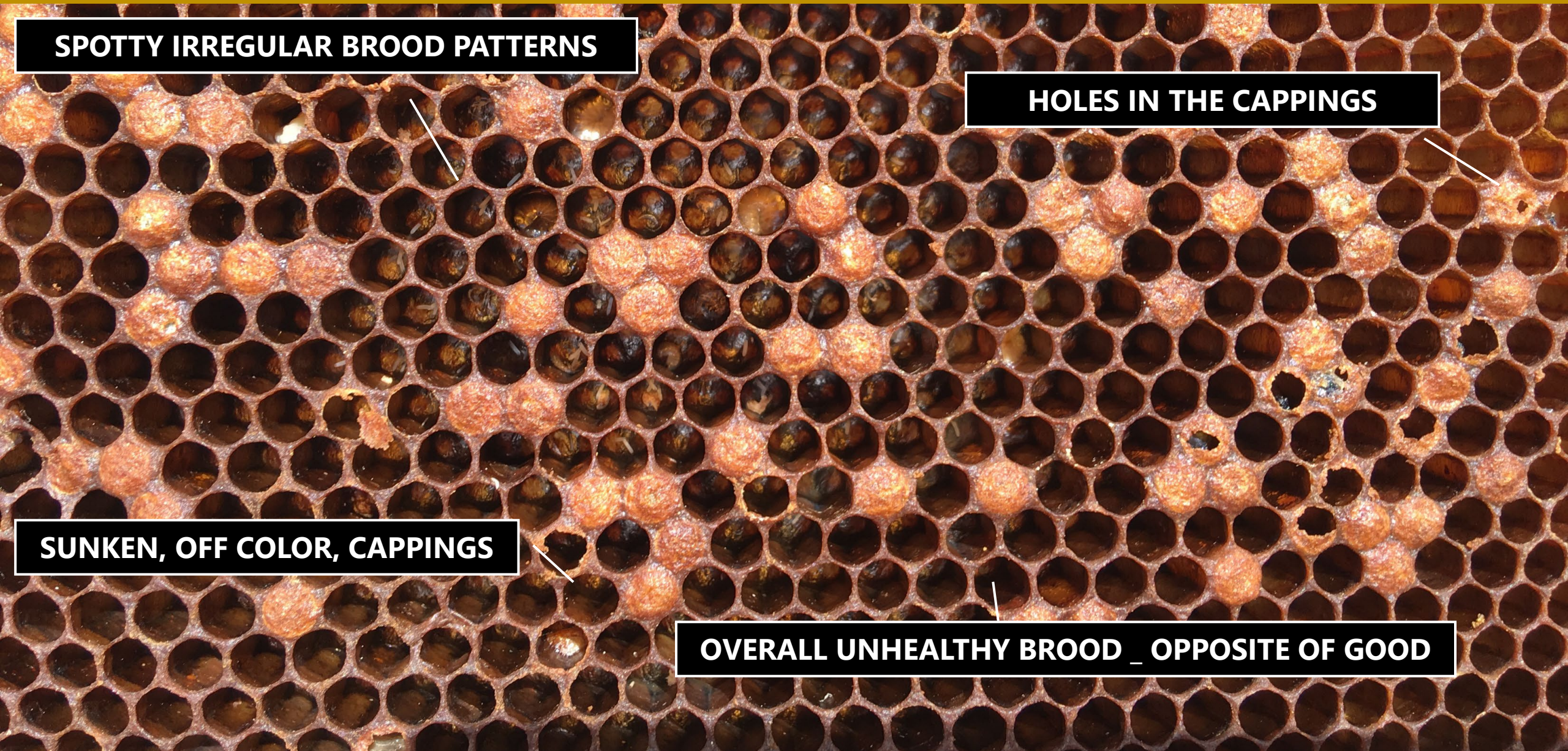
EUROPEAN FOULBROOD



- **EFB: Impact to developing larva**
  - EFB is Melissococcus plutonius, another bacterium disease
    - It is often stated as a **'stress disease"** and manifests in colonies under duress
    - Larva in development are impacted
      - Unlike AFB which impacts capped larva
  - Cold snaps sometimes factor
    - Unexpected cold (and wet) can make colonies contract
      - As they do so, bees under stress are left abandoned exacerbating the issue
    - Often can be coupled with other stressors in colonies that perish

IMPACTFUL CONDITION: BPMS

BEE PARASITIC MITE SYNDROME (aka VARROOSIS)

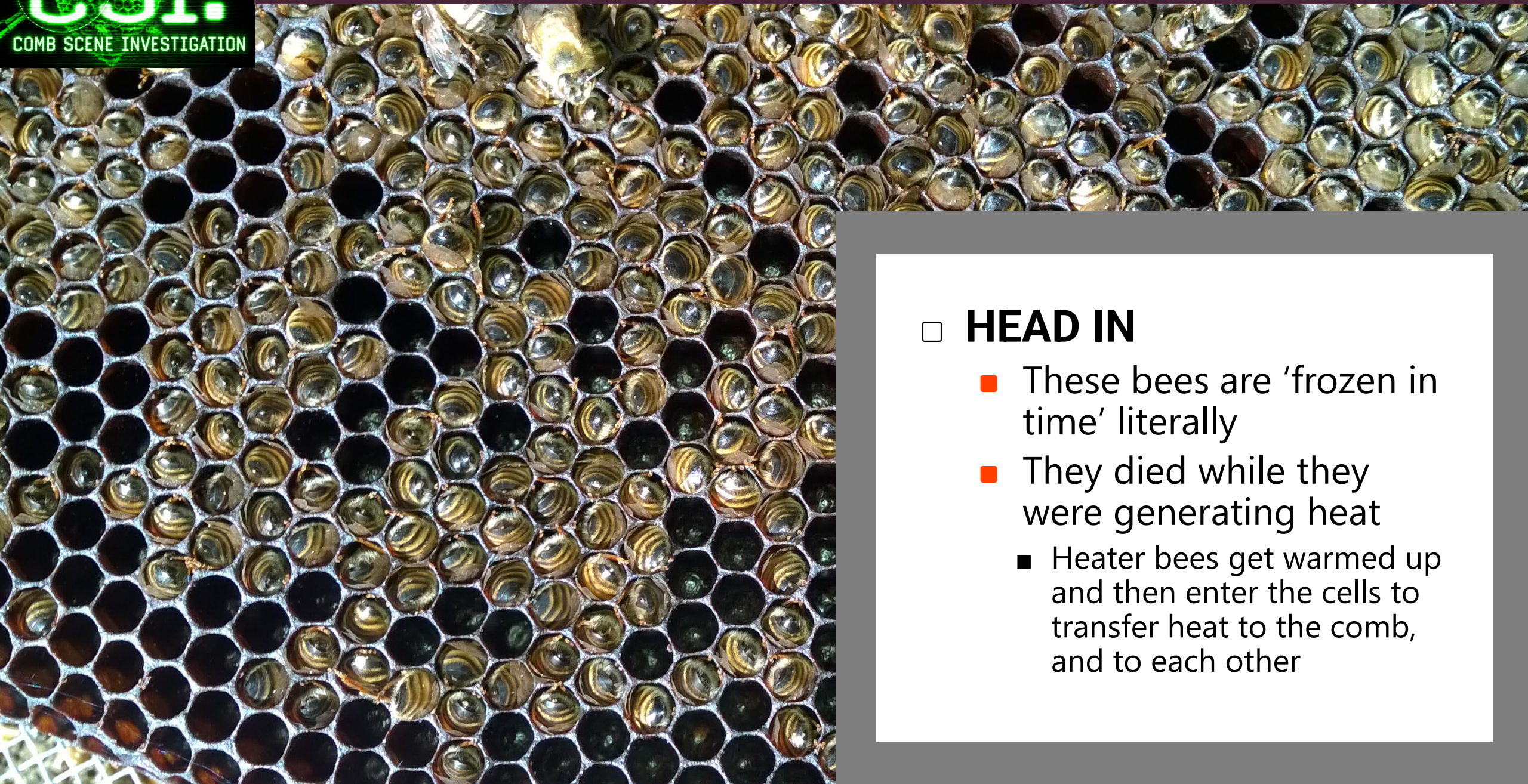


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NO FOOD TO BE FOUND ANYWHERE



CLASSIC SIGN OF STARVATION



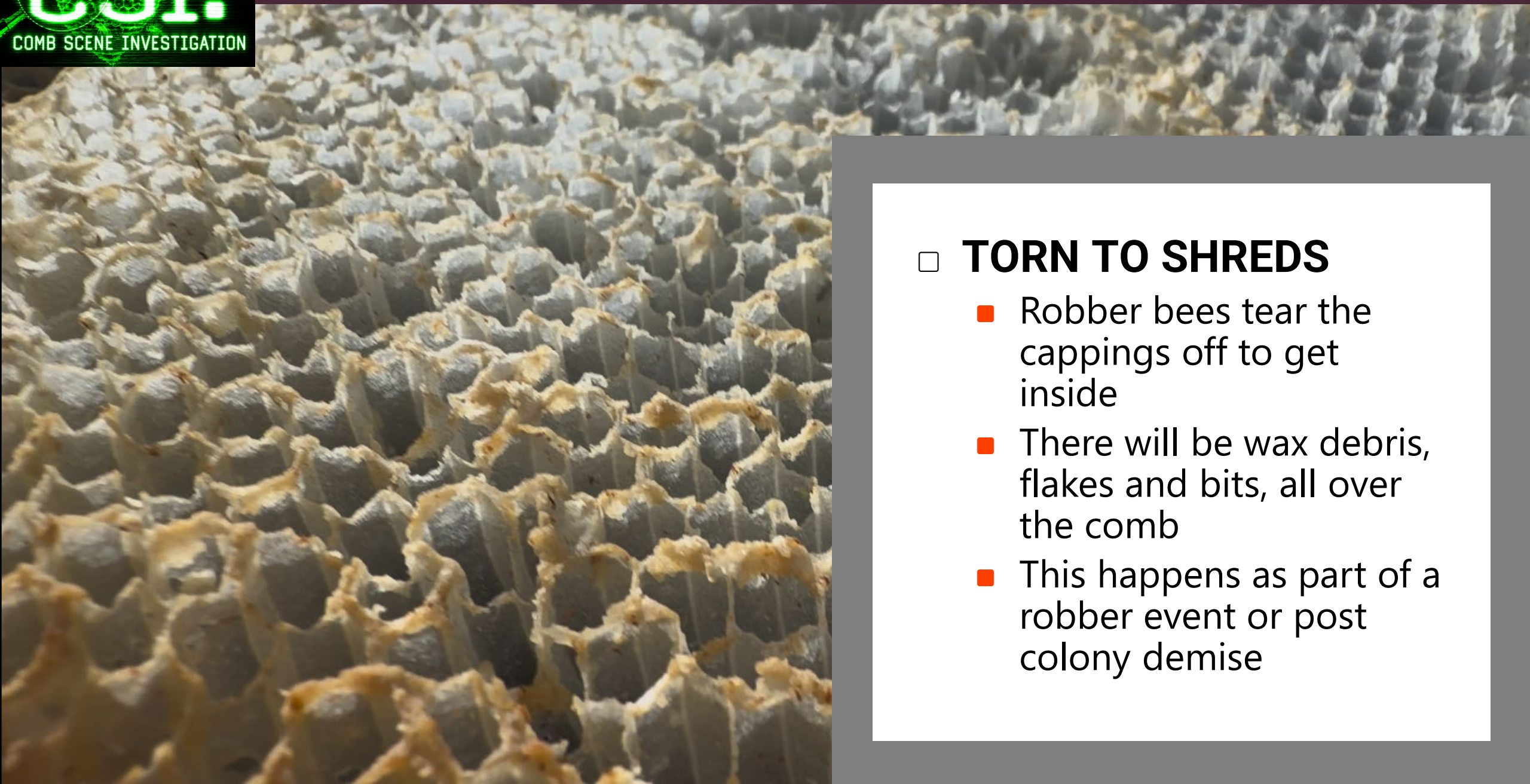
- **HEAD IN**
  - These bees are ‘frozen in time’ literally
  - They died while they were generating heat
    - Heater bees get warmed up and then enter the cells to transfer heat to the comb, and to each other

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GENERAL PERCEPTION: *STARVATION IS ON THE BEEKEEPER*



CLASSIC ROBBING SIGNATURE



- **TORN TO SHREDS**
  - Robber bees tear the cappings off to get inside
  - There will be wax debris, flakes and bits, all over the comb
  - This happens as part of a robber event or post colony demise



WAX MOTH

- This is a greater waxmoth
- There is also a lesser waxmoth

Waxmoths do not kill colonies



WAX MOTH

- Wax moth's are nature's cleanup crew
- They do not get into hive equipment when bees are guarding
- They come in after and lay eggs
  - The larvae consume the food left behind
  - In nature they clean up disease and reset interior spaces for future bees to occupy



WAX MOTH LARVA

- Moths are often found in various sizes as they mature
  - Some are ½" long
  - They grow to 1-inch or bigger
- Identification: **Wax Moths have "legs in the middle"**
- Webbing is present with wax moths
- Tunnels running through the comb are also an indicator

LARVA SPIN COCOONS – THEY LEAVE WEBBING FECES

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COCOONS RESULT IN WOODENWARE “CANOE DIVOTS”





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SOMETIMES THEY CAN FULLY CONSUME THE HONEYCOMB

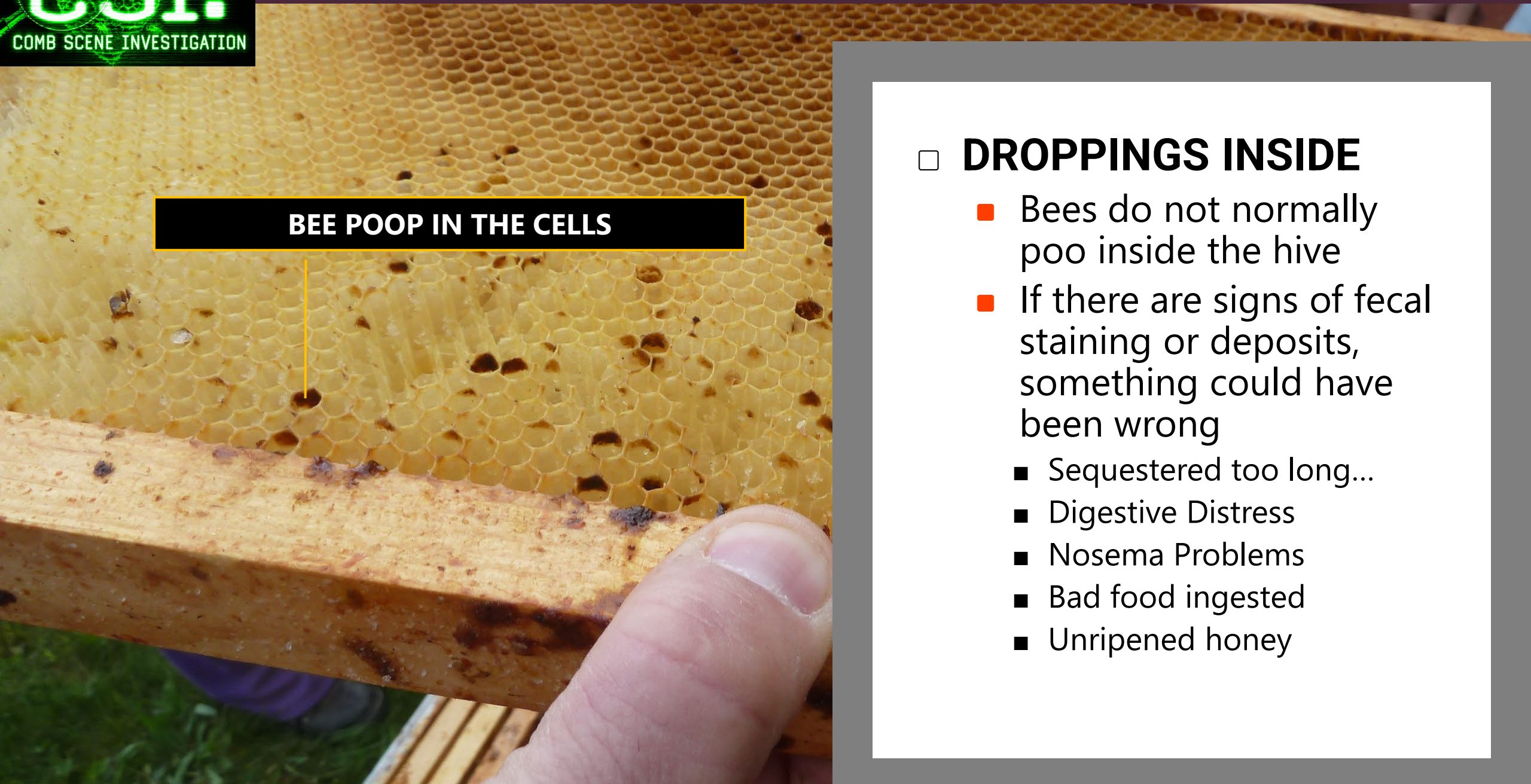


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FEECES INSIDE THE HIVE



FEECES INSIDE THE HIVE



DROPPINGS INSIDE

- Bees do not normally poo inside the hive
- If there are signs of fecal staining or deposits, something could have been wrong
  - Sequestered too long…
  - Digestive Distress
  - Nosema Problems
  - Bad food ingested
  - Unripened honey

MOLD COMES IN MANY FORMS

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MOLD PRESENCE

- This occurs when bees no longer control the environment
- After a colony perishes mold can thrive
  - It shows up in many forms
    - Green coating on the cell face edges
    - Black mold on woodenware
    - Fuzzy white mold (like what is shown)
  - Often present in damp decaying hive interiors

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SMALL HIVE BEETLES (SHB) – CAN KILL FAILING COLONIES



SMALL HIVE BEETLES – *SLIMY OOZY MESSES*

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- **SHB SLIME**
  - Beetles lay eggs
  - Eggs emerge and consume food
  - As they consume food, they excrete waste
  - Their feces contain yeasts and bacteria, especially Kodamaea ohmeri, which rapidly ferment hive resources





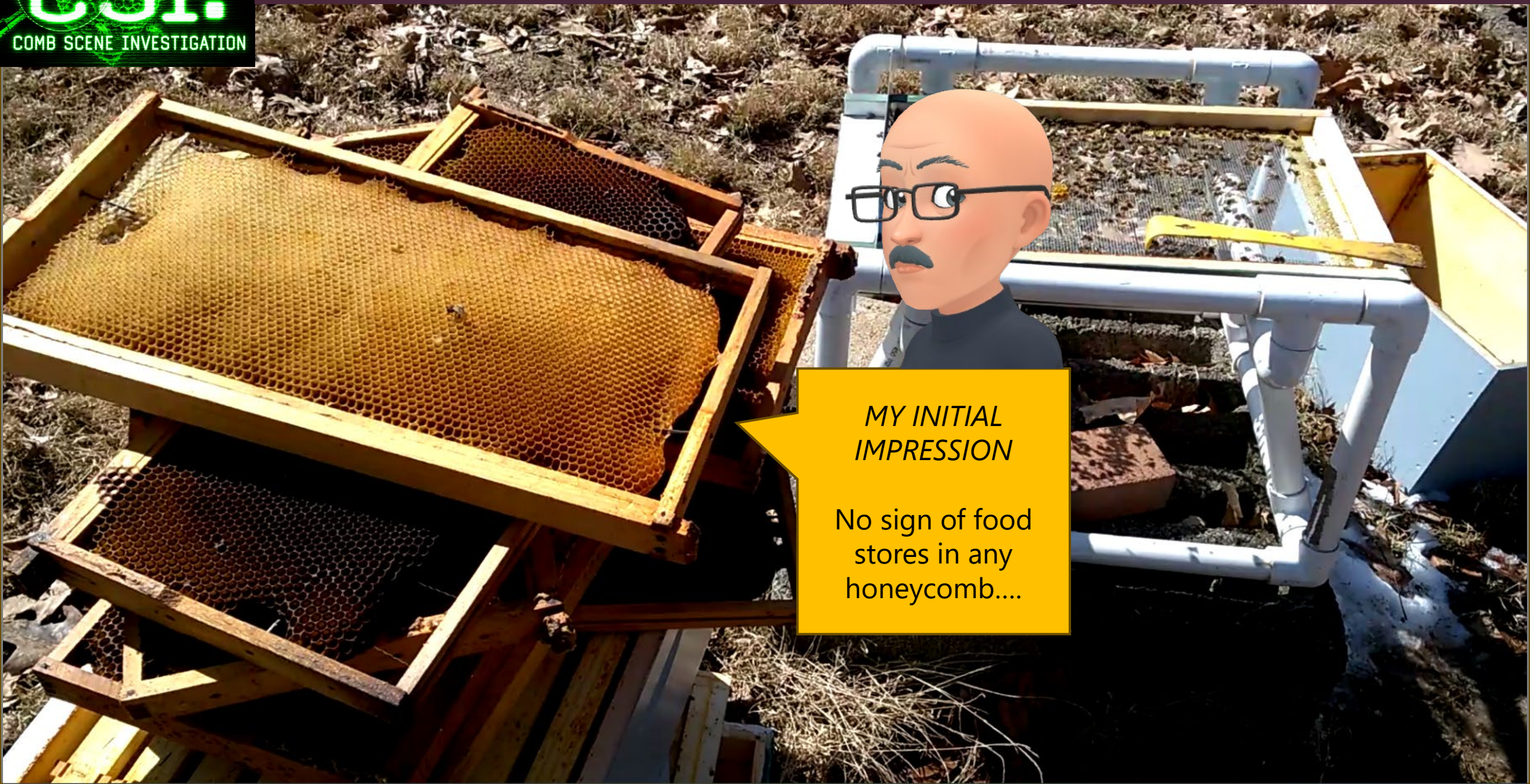


HIVE BEETLE LARVA

- SHB Larva are smaller than wax moth larva
- They have six legs under the front section (not in the middle like moths)
- They have spines in rows on their back
- They have a pair of spines on the far end (opposite the head)
- They have a head capsule which is a different color than the body

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FRAME BY FRAME ASSESSMENT:WHAT IS THE BIG PICTURE?



MY INITIAL IMPRESSION

No sign of food stores in any honeycomb….

THE TAKEAWAY

The frames, the bees, the environment, all have a story to tell. Take your time and examine the findings

BOTTOM BOARDS

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BOTTOM BOARD CONTENTS CAN HOLD EVIDENCE



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SPEND TIME LOOKING THROUGH WIGGLY THINGS



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OFTEN CLUES ARE THERE FOR YOU TO SCRUTINIZE



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LOOK CLOSELY AT THE BEES, WHAT DO THEY LOOK LIKE



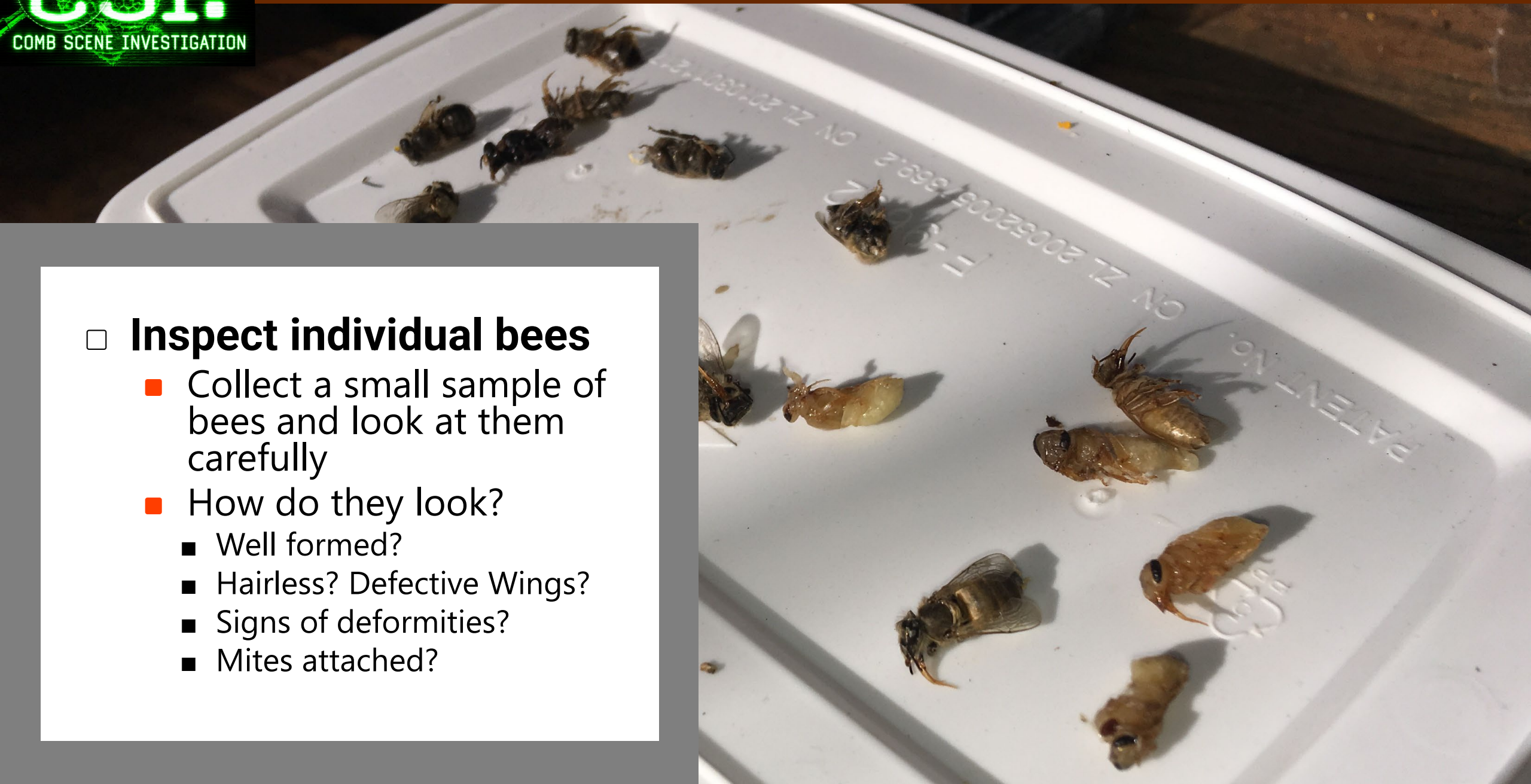


- **These bees were hollow**
  - A microscopic mite consumed the interior contents

INSPECT INDIVIDUAL BEES

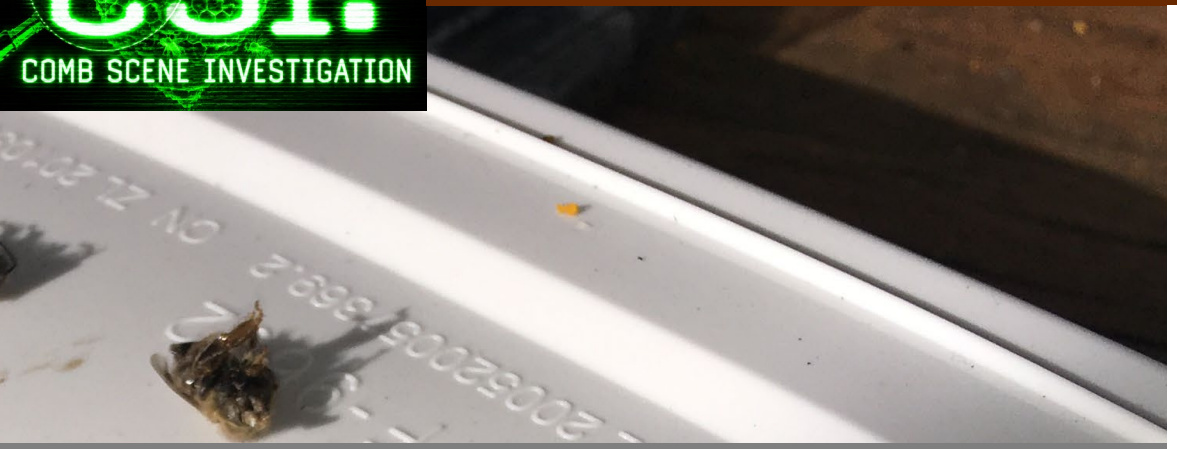
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- **Inspect individual bees**
  - Collect a small sample of bees and look at them carefully
  - How do they look?
    - Well formed?
    - Hairless? Defective Wings?
    - Signs of deformities?
    - Mites attached?



INSPECT BEES, COMB, BOTTOM BOARD DEBRIS

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- **Inexpensive Magnifiers**
  - These kids' magnifiers are not bad
  - Up your inspection game with magnification
    - These work quite well with bottom board inspection



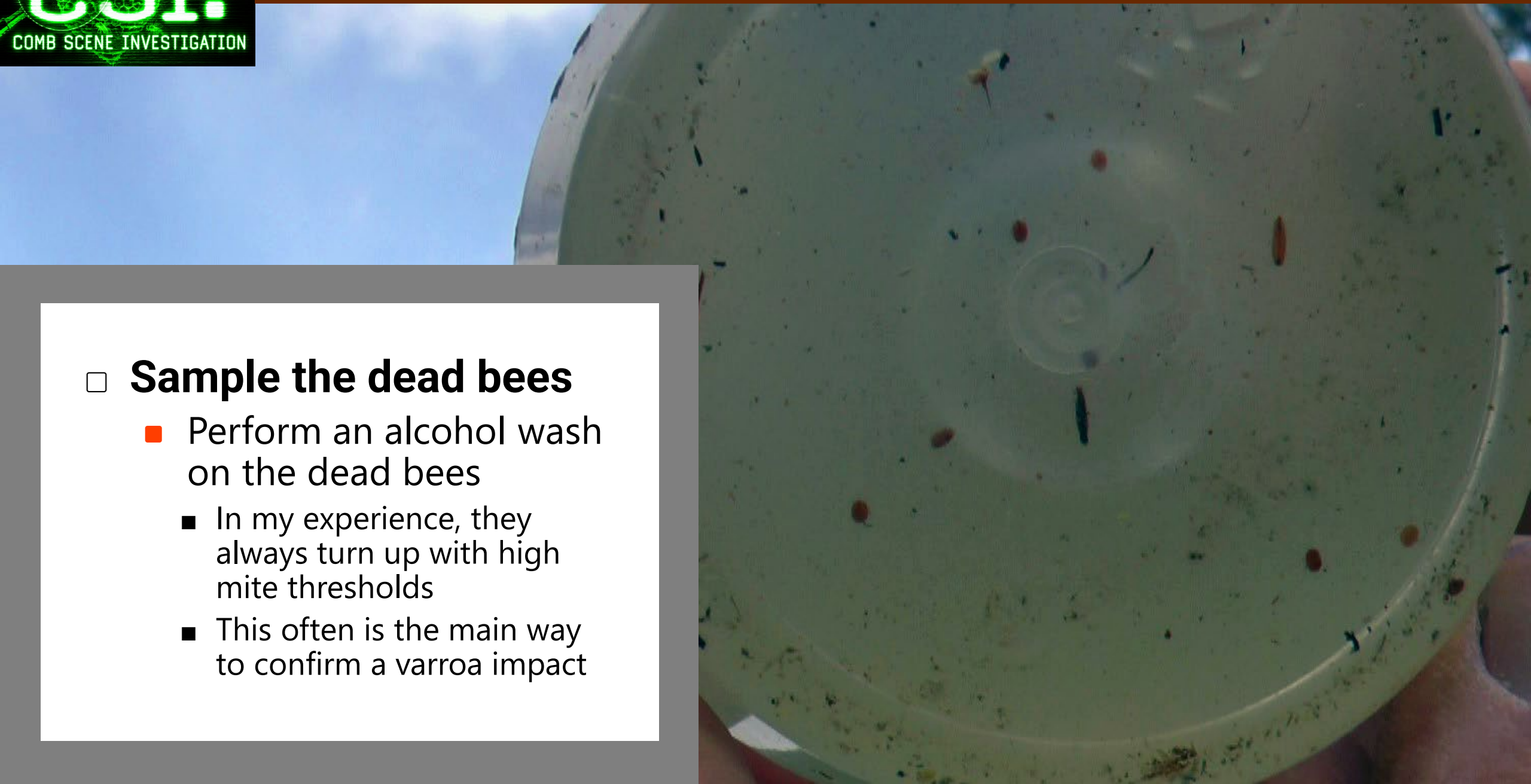






INSPECT INDIVIDUAL BEES

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- **Sample the dead bees**
  - Perform an alcohol wash on the dead bees
    - In my experience, they always turn up with high mite thresholds
    - This often is the main way to confirm a varroa impact

THE TAKEAWAY

Don’t neglect the bottom board. The bees that collect there, often have a lot to tell

READOUT RECOVERY

HONEYCOMB ASSESSMENT: RECLAIM

I WOULD HAVE NO QUALMS ABOUT REUSING THESE



HONEYCOMB ASSESSMENT: PURGE

LOOK AT EACH FRAME, DETERMINE IF IT IS REUSABLE



HONEYCOMB ASSESSMENT: PURGE

LOOK AT EACH FRAME, DETERMINE IF IT IS REUSABLE

- **Cull sketchy brood comb**
  - Honeycomb can hold viruses (even after cold)
    - Afflicted dead bees are sealed in the cells
      - If they were virus laden, they will transmit that to the bees that clean out the carcasses
    - This comb is also structurally a mess



HONEYCOMB ASSESSMENT: PURGE

USE THE LOSS AS AN OPPORTUNITY TO CULL OLD COMB

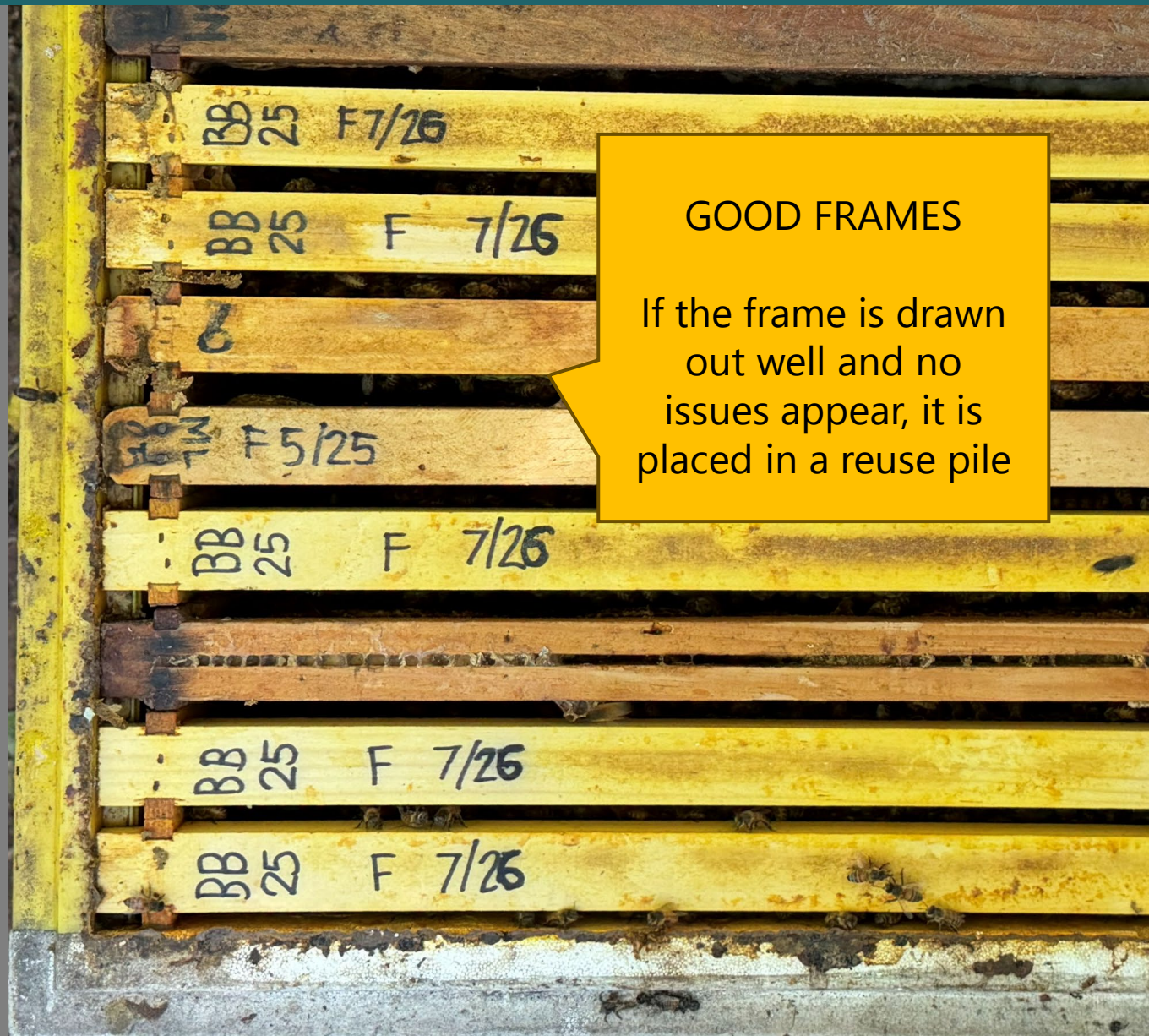
- **Older comb is separated out for removal**
  - Even if it is good….
    - Honeycomb that is 5 years or older is separated out
    - It is taken out of service and replaced with fresh foundation
    - Also poorly formed comb, even if newer, is put to the side



HONEYCOMB ASSESSMENT: PURGE

USE THE LOSS AS AN OPPORTUNITY TO CULL OLD COMB

- **Reusable comb is put to the side**
  - Use this to recolonize the equipment
    - You can also reuse it for Nucs, Splits, etc.
    - If it has a little mold on it, that's ok – bees clean that up
    - If it is gross or off-putting to you in any way, put it in the discard pile



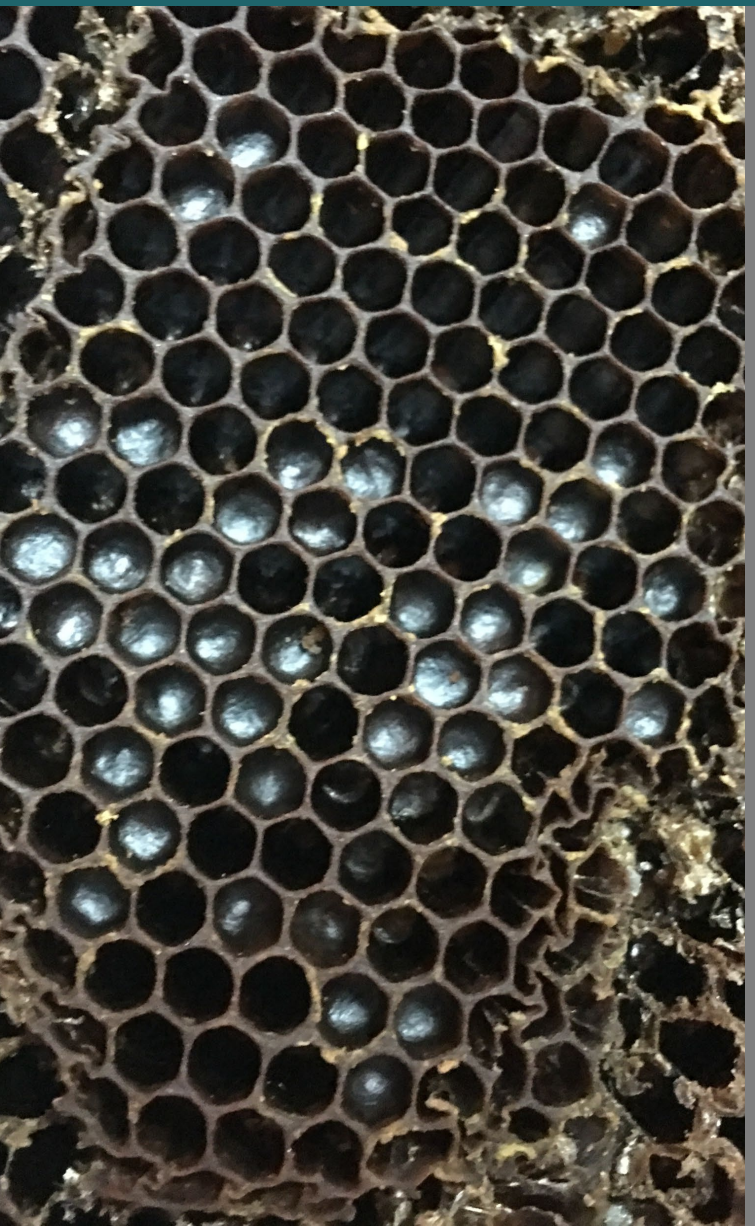
HONEYCOMB ASSESSMENT: PURGE

ENTOMBED POLLEN IS A SIGN SOMETHING IS WRONG



HONEYCOMB ASSESSMENT: PURGE

CULL FRAMES WITH ENTOMBED POLLEN



- **Entombed Pollen**
  - The bees have sealed off what is inside
    - Often when you look you will find pollen underneath
      - **You should pick these apart to know what is there**
  - Frames with this present should be culled
    - There is something wrong and the bees are telling you it is no good- *trust them*



EQUIPMENT ASSESSMENT: PURGE

RETIRE OLD EQUIPMENT: ESPECIALLY IF IT HAD A HAND IN FAILURE

- **Broken Equipment**
  - Thank it for its service and put it on the retirement pile
    - Some equipment can be rehabbed but sometimes it is just time for it to go
  - Rotted Equipment
    - Bottom board go faster than other things
    - Rotted corners gotta go



PRACTICE MODIFICATIONS

GOING INTO COLDER MONTHS WITH OLDER QUEEENS

Red Dot Queen – Circa 2023 (red indicates a year ending in 3) ***If this queen was going into winter in 2026…***




CONCLUSIONS...
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SUMMING UP THE FINDINGS

AFTER THE FULL PROCESS WHAT DO YOU KNOW?

- **Summing Up the Findings**
  - You have collected the evidence, now it is time to assess
- **Facts vs. Clues**
  - What are the things you know for sure?
  - What are the things you cannot prove, but evidence supports?
  - What are your hunches?
- **Determination**
  - From what you know, can you make a conclusion
  - If you cannot make a conclusion, can you make a best guess?

RECOVERY AND CORRECTIVE ACTIONS

WHAT HAS THIS TAUGHT YOU – HOW WILL YOU CHANGE

- **YOU MAY NOT KNOW**
  - Sometimes, even after all the digging, you just cannot be sure
    - Even if that is the outcome, it is still worth the effort
- **Map out your recovery**
  - Go through your equipment, formulate a plan
  - Execute the steps and restart with knowledge of what to do better
    - Keep notes that you can refer back to – so you are not doomed to make the same mistakes
- **Know you are not alone**
  - Losing colonies is unfortunately a common part of beekeeping
  - Exercises like this will aid you in losing less going forward

A ONE IN A MILLION TO LEAVE YOU WITH





QUESTIONS

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THANK YOU FOR YOUR TIME

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