

Healthy and Sick Bees

(Pictures for the diagnostic)



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- Viral diseases
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- Calkbrood
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Healthy Bees



Worker development (VS)



Egg
(3 Days)

Larva
(6 Days)

Pupa
(12 Days)

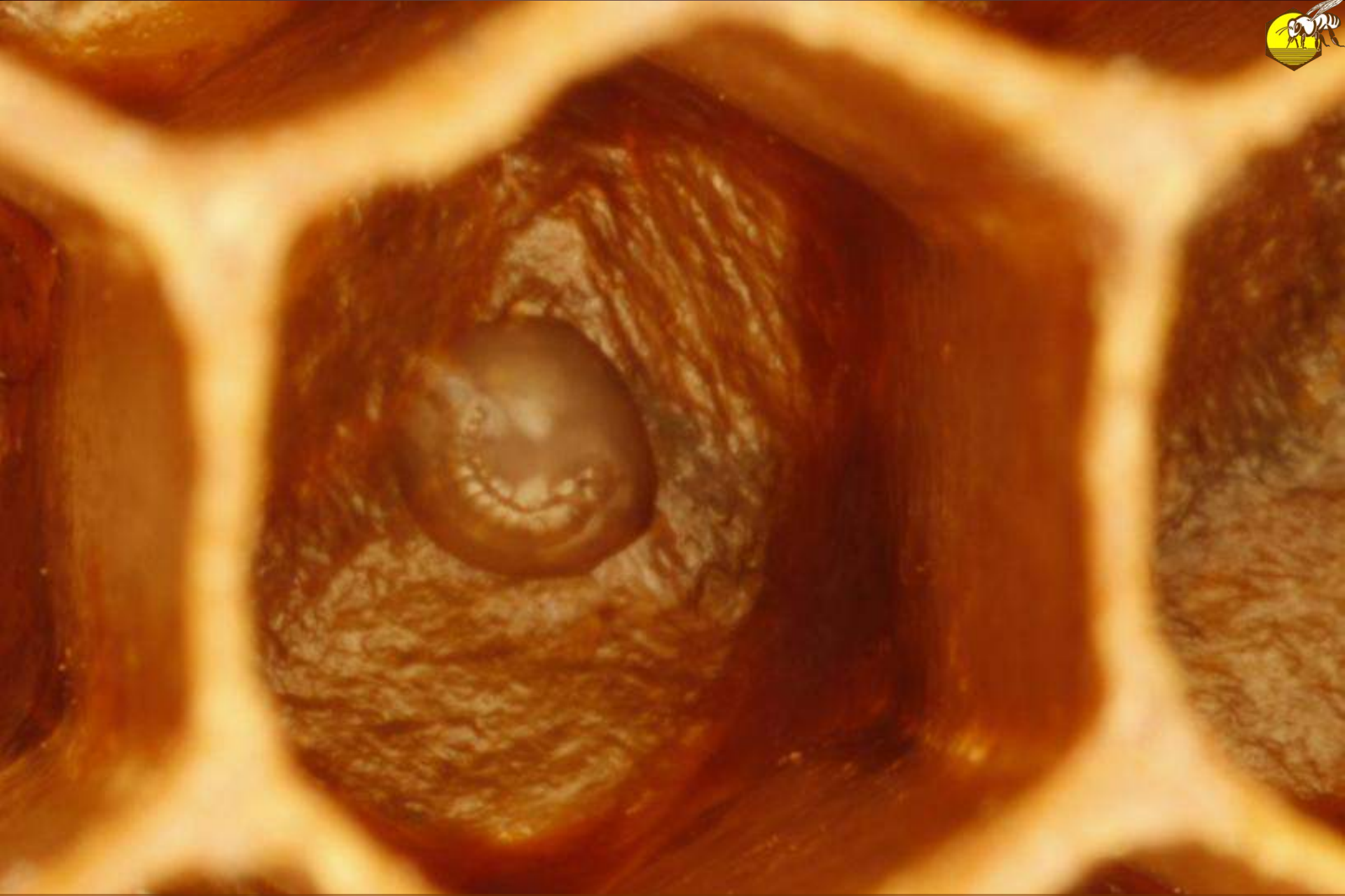
Fleshly
emerging



Eggs and very young larva (vs)



Eggs in cells (vs)



Larva one day old (vs)



Worker brood in various larval stages (VS)



Open workerbrood (left up cells with honey) (vs)



Brood just before sealing (note the single empty cell)

(VS)



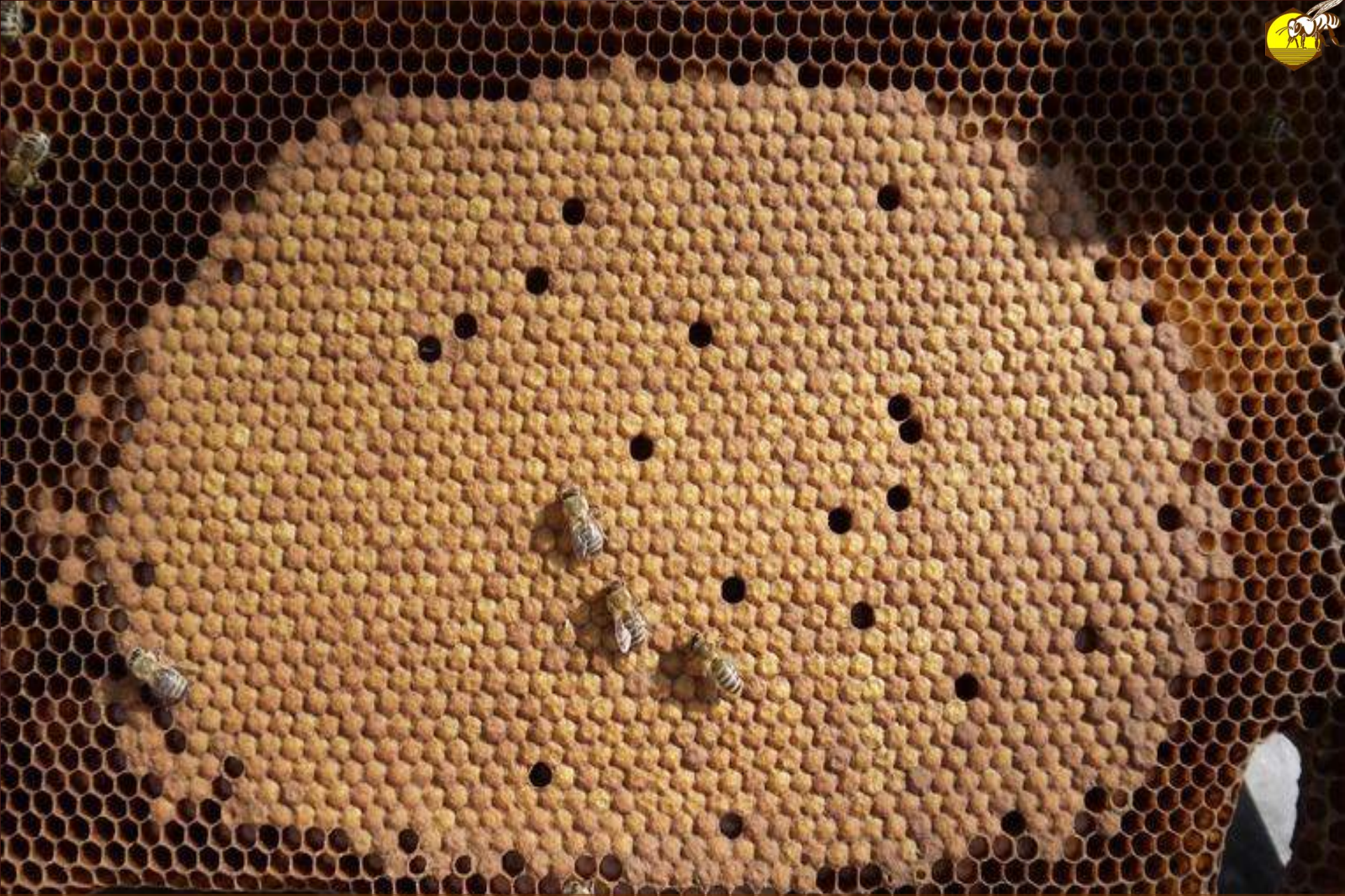
Sealed brood (vs)



Porous wax capping over sealed brood (DT)



Healthy pupa at the stage when eyes become
pigmented (vs)



Sealed brood with few empty cells - it looks very healthy

(DT)



Eggs are being laid and bees are hatching at the
centre of the comb (DT)



Hatching workerbee (vs)



Hatching workerbee (vs)



Hatching workerbee (vs)



First minutes of adult life_(vs)



Drone brood (vs)



Drone brood before hatching (DT)



Young drones (vs)



Queen cups (HG)



Queen cells (DT)



Queenbee with royal court of workers (DT)



Beebread (stored pollen)
and honey cells near the brood (DT)



Sealed honey cells _(DT)



Sick Bees



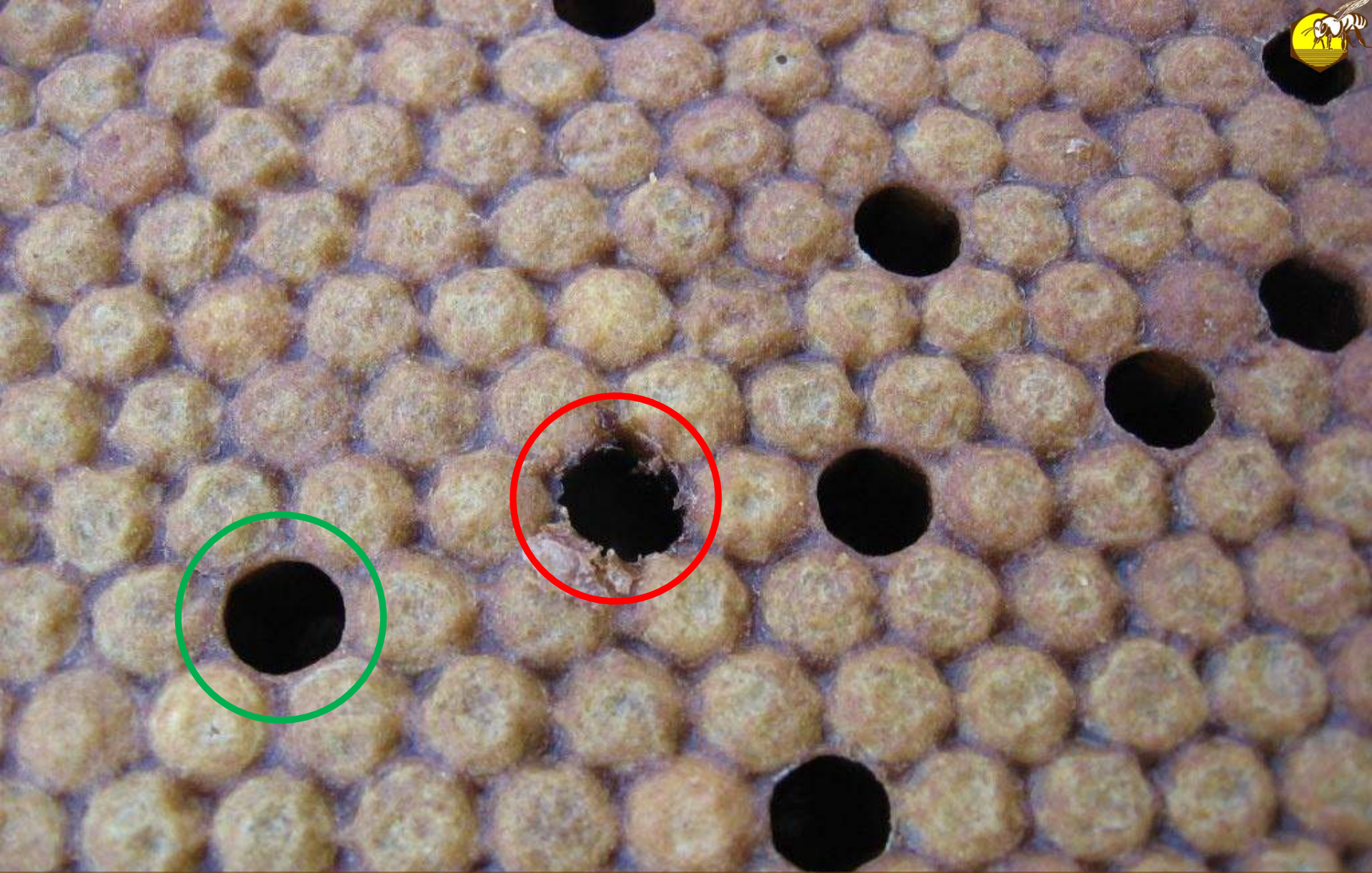
American Foulbrood



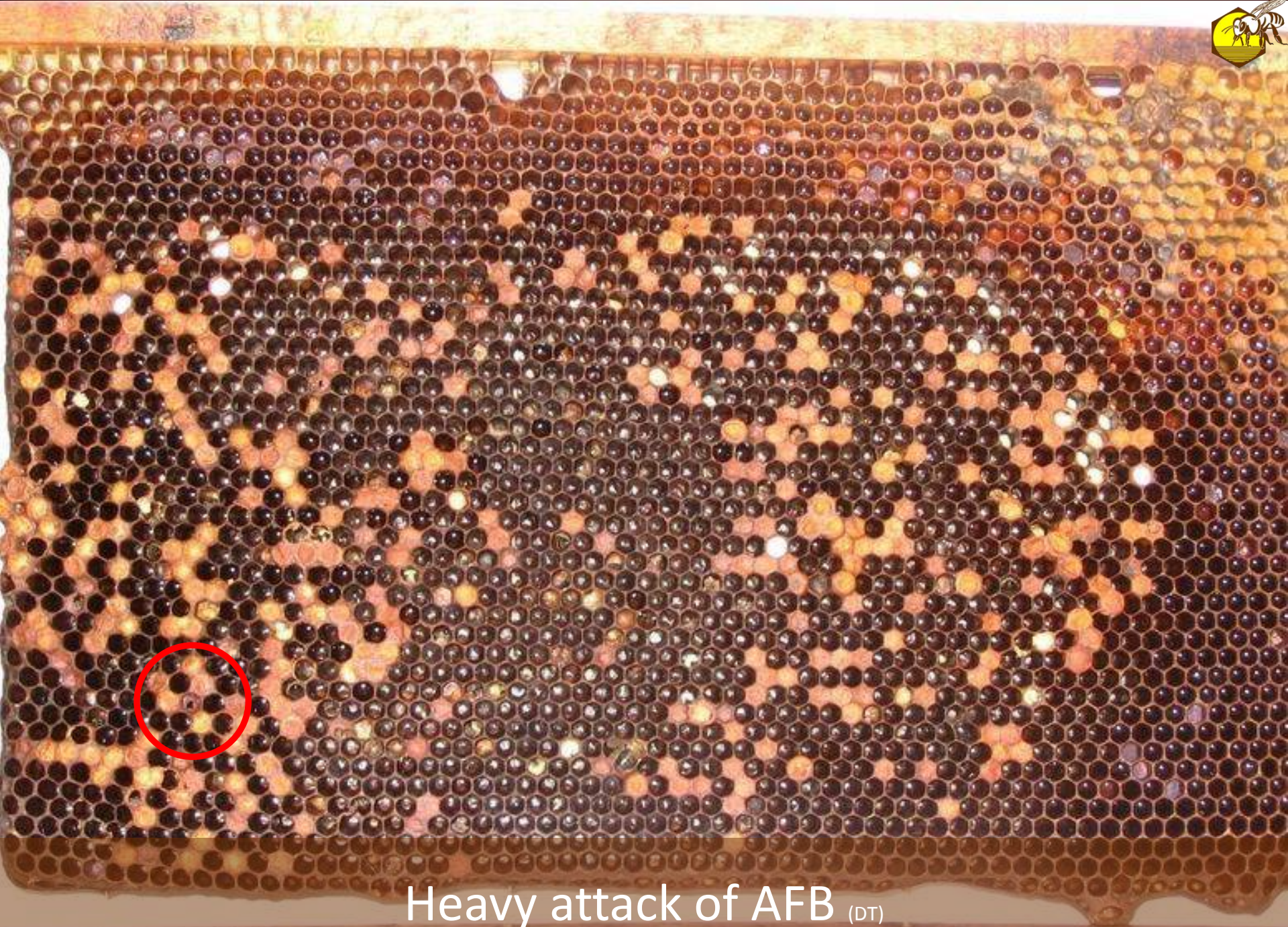
Gaps in brood area - first symptom (DT)



The cell circled in green may been empty for long time (DT)



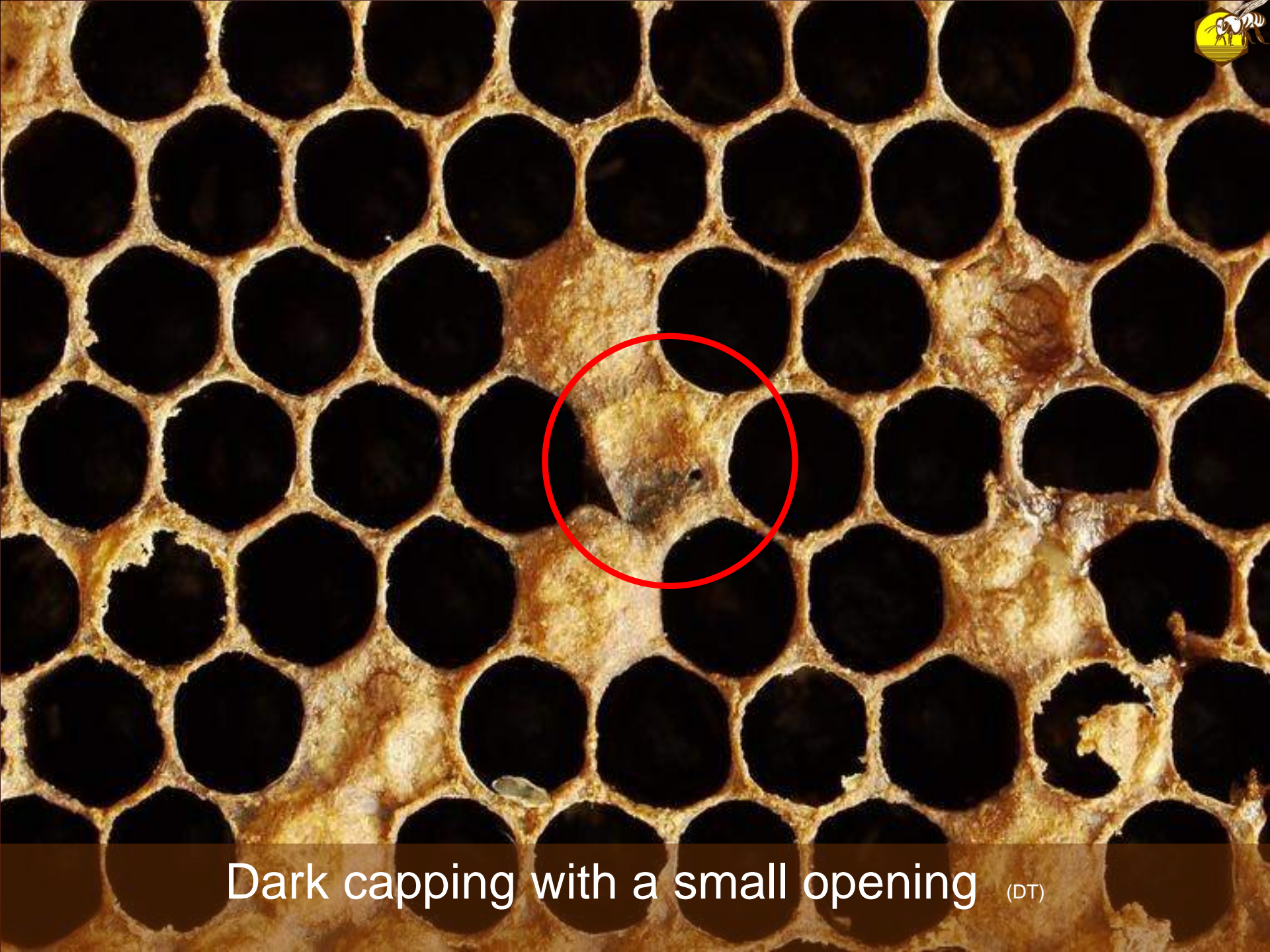
... the cell circled in red was recently opened by
"medicare" patrol _(DT)



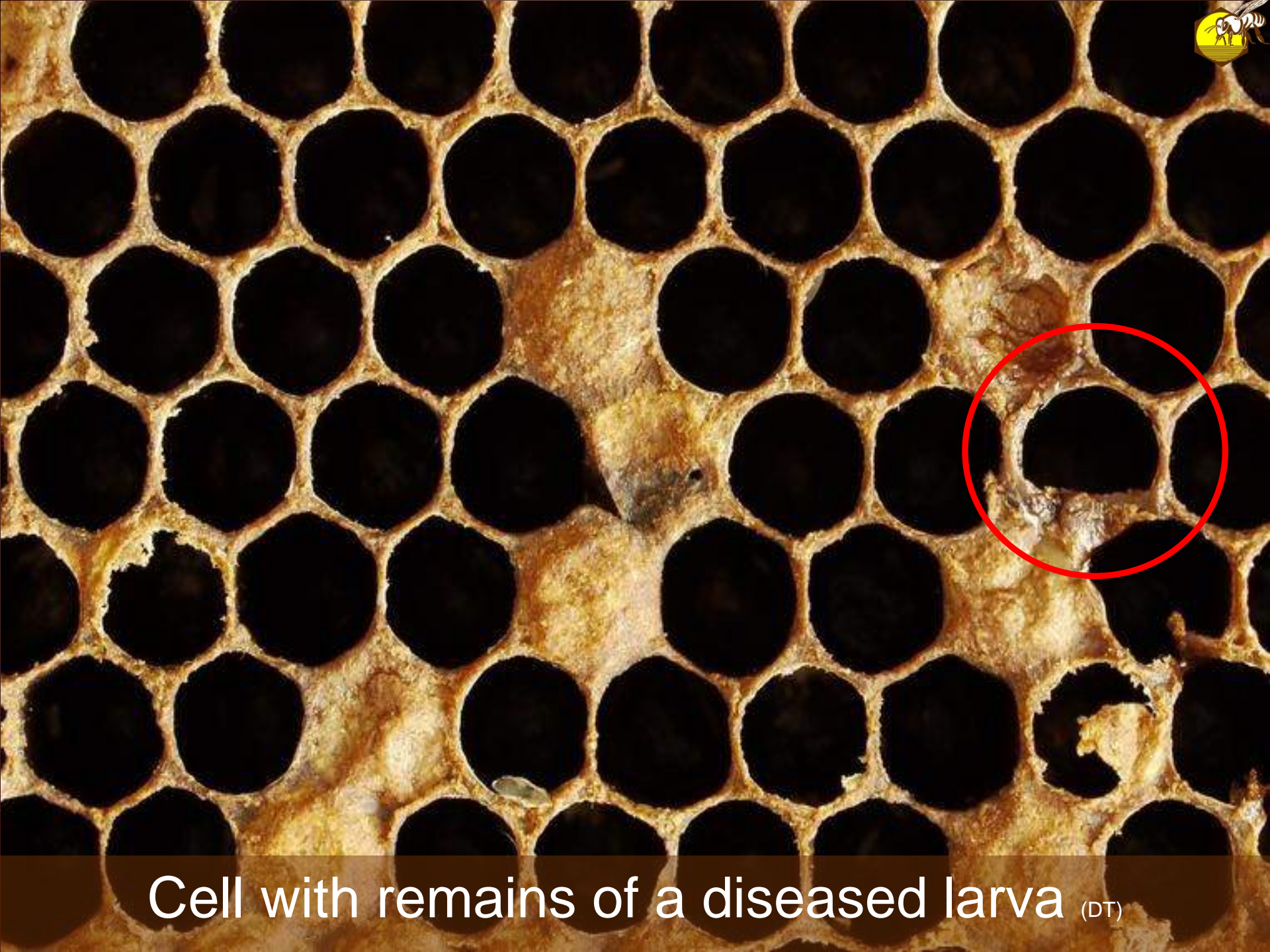
Heavy attack of AFB _(DT)



Dark capping with a small opening (DT)



Dark capping with a small opening (DT)



Cell with remains of a diseased larva (DT)



Suspicious cell (DT)



Suspicious cell (DT)



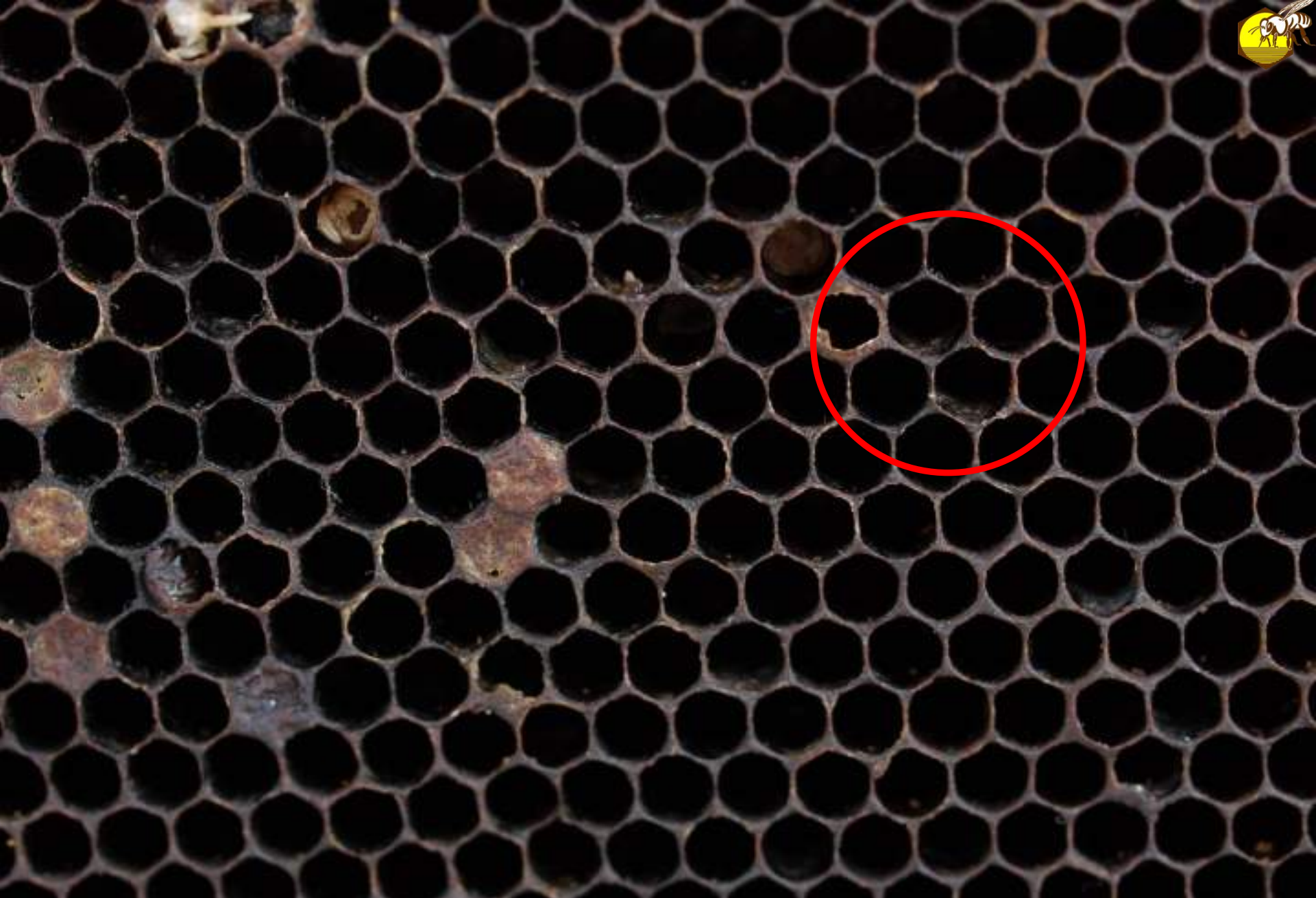
Suspicious cell (DT)



Suspicious cell (DT)



All is revealed. There are 5 billion AFB spores in this diseased cell. (DT)



AFB scales (DT)



Clearly visible AFB scales in relatively fresh comb (DT)



Not AFB scales;
rather, they are faeces of nosema-infected bees (DT)



Faeces
(Nosemosis)

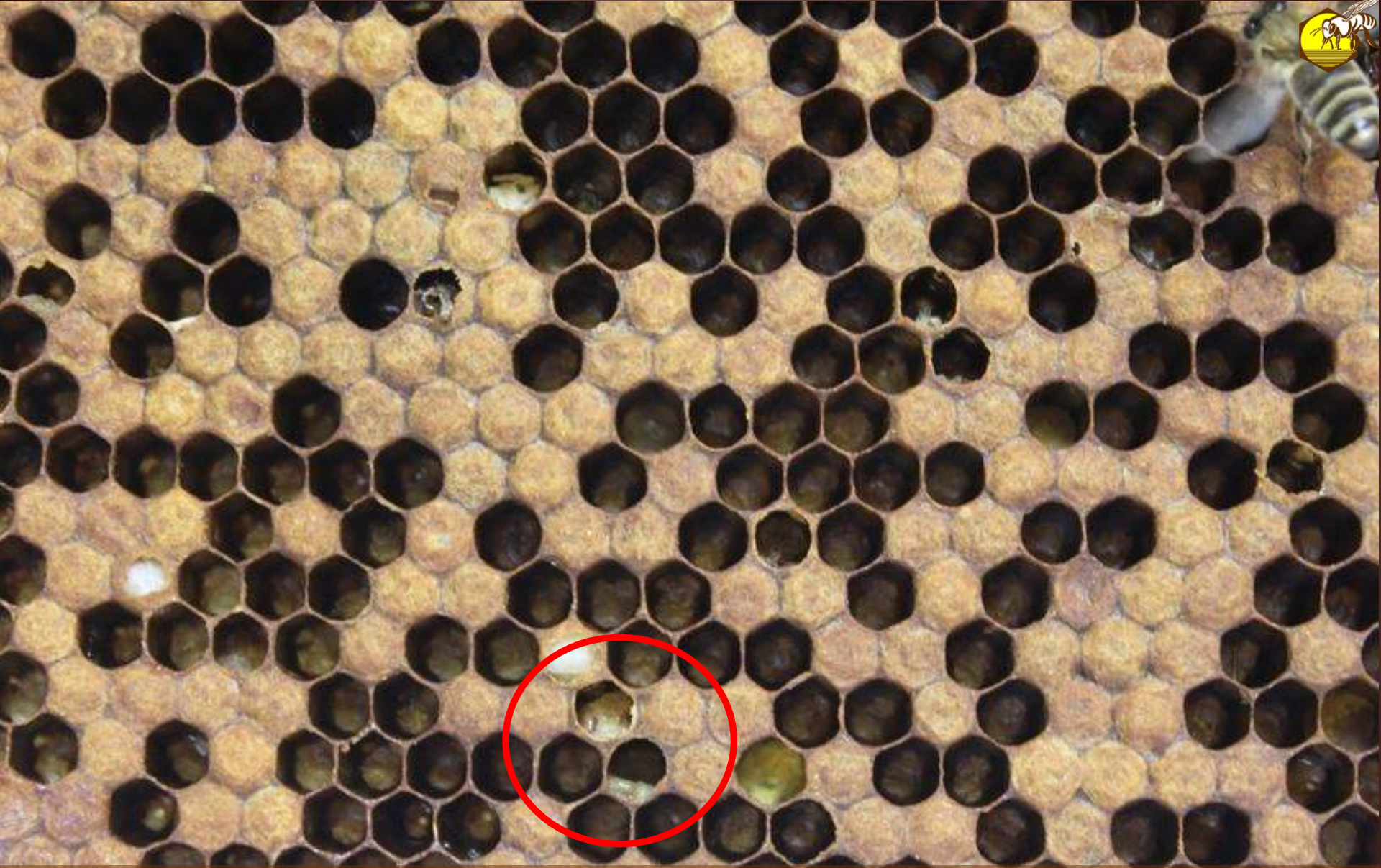
Scales
(AFB) _(DT)



Varroosis



Spoty brood, as in the case of foulbrood.
But be careful! This comb has a heavy Varroa infestation (MK)



Varroa infestation. It is easy to remove the remains of the brood from cells (MK)



Similar holes in the capping, as in the case of AFB, but there are numerous mites inside (MK)



Patrolling *Varroa destructor* females (MK)



Honeybee cells with a new generation of mite (JT)



A new Varroa infestation is starting (JT)



Drone brood is ideal for Varroa reproduction (DT)



Varroa females on bee pupa (vs)



A bee with deformed wings: result of DWV infection connected with *Varroa* infestation. (MK)



A bee with deformed wings: result of DWV infection connected with *Varroa* infestation. (MK)



Adult bees are spreading mites country-wide (vs)



Cleaning behaviour. The pupa in the half opened cell
may be ill or damaged (MK)



Cleaning behaviour. Varroa-sensitive-hygiene (VSH) (MK)



Viral diseases



Sporadically sealed cells may signal a problem (SBV) (DT)



Typical symptom of disease by sack brood virus (SBV)

(DT)



Anterior (head region) of dead larva protrudes (SBV)

(DT)



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Sack blood virus (JD)



Queen cells infected with BQCV (up, circled in red)
vs. healthy queen cells (below, circled in green) _(DT)



BQCV queen cells are "empty". (DT)



Deformed wings: a symptom of DWV _(DT)



Deformed wings: a symptom of DWV _(DT)



A bee suffering paralysis (left) vs. a normal bee (right)

(VS)



Nosemosis



The "old" nosema - *Nosema apis* (DT)



Faeces on top bars (MK)



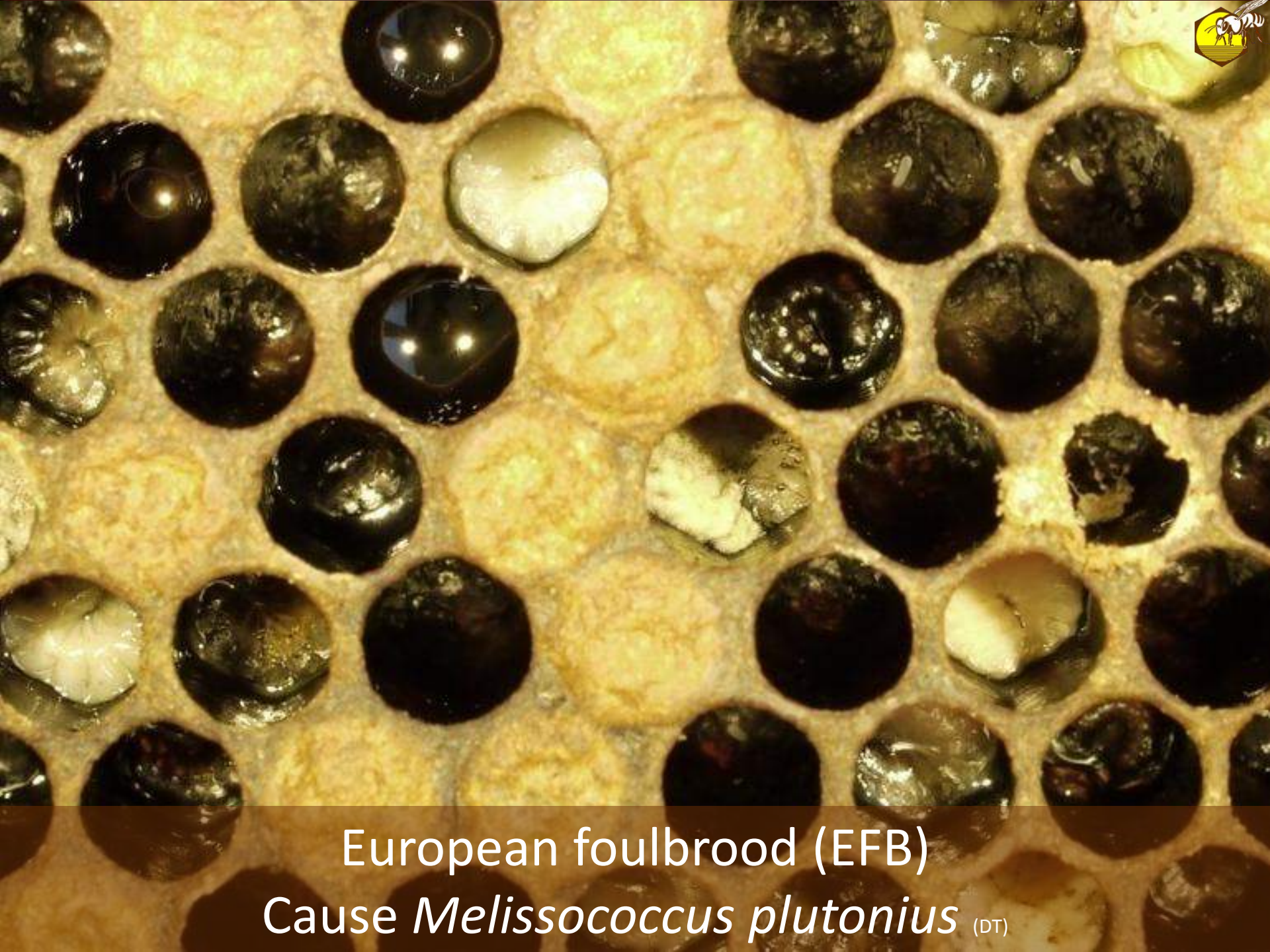
Faeces inside comb cells (DT)



Faeces as a symptom of nosemosis (MK)



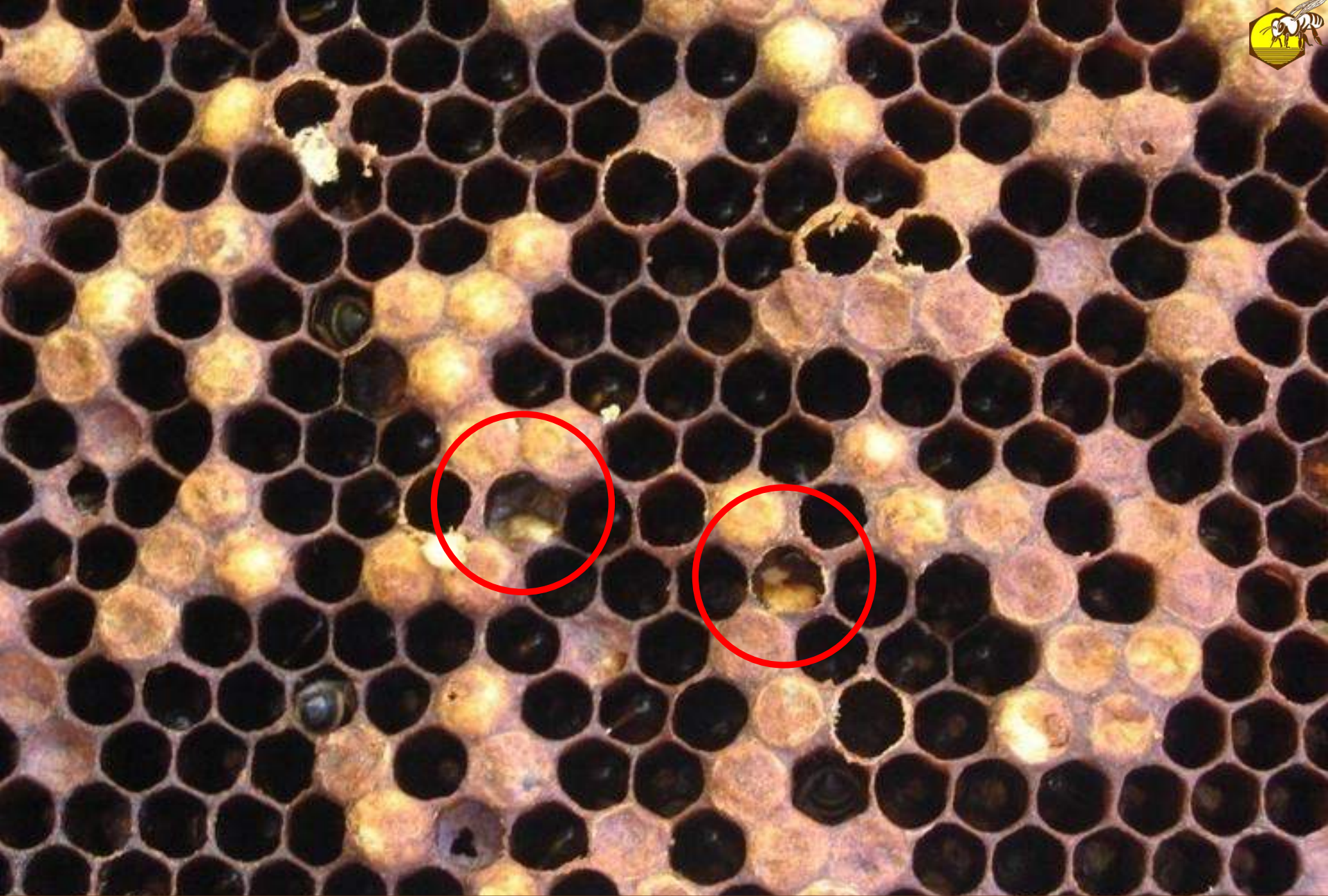
European Foulbrood (EFB)



European foulbrood (EFB)
Cause *Melissococcus plutonius* (DT)



EFB symptoms at the open brood stage (DT)



Dead larvae are distinctly malodorous (DT)



"Match test" is negativ (DT)



Chalkbrood



Mummies (former bee pupae) completely covered in
Ascosphaera apis _(DT)



Typical mummies in hive bottom (DT)



Typical mummies in hive bottom (DT)



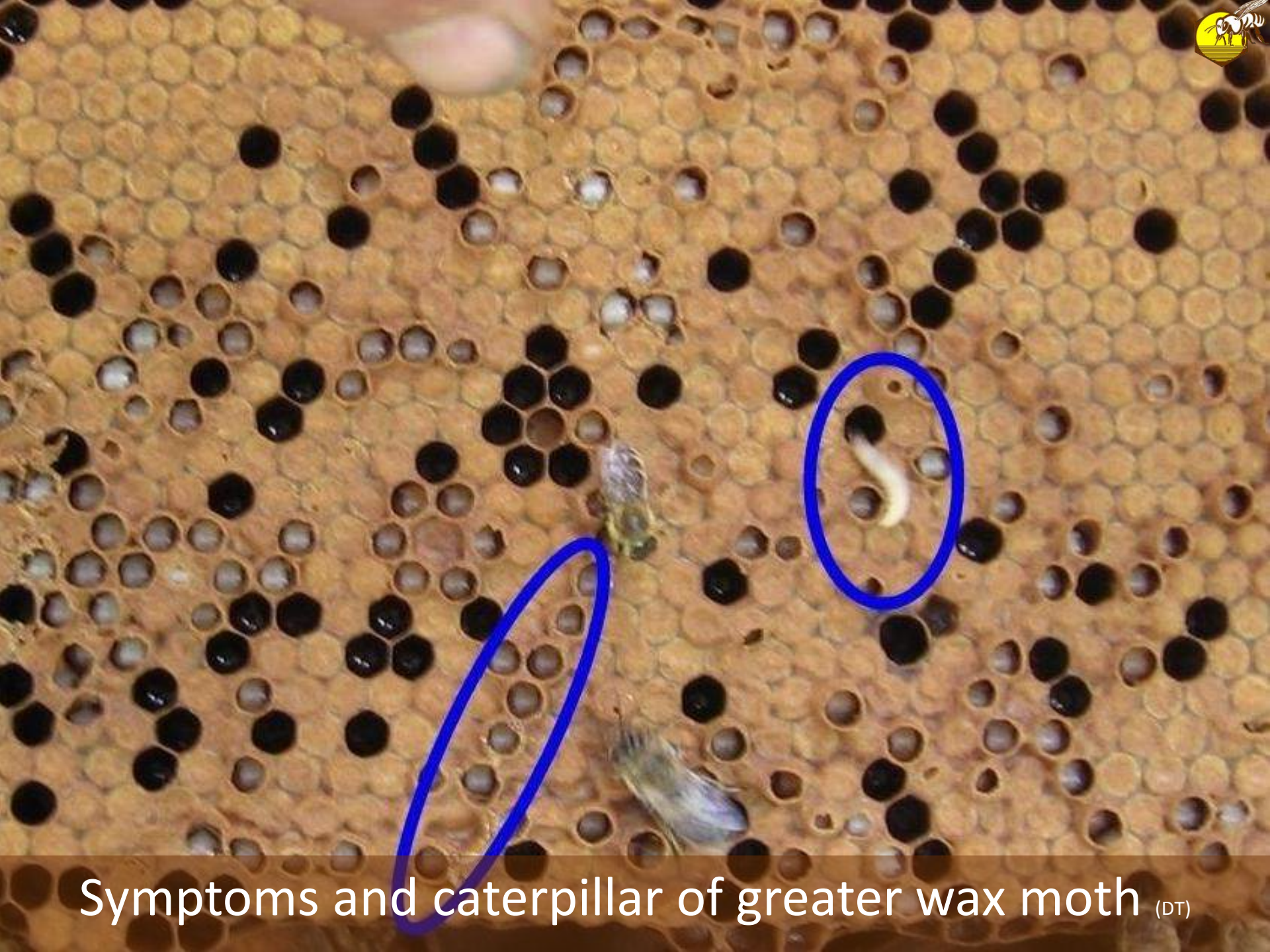
Mummies of chalkbrood (MK)



Enemies



Symptom of little wax moth (DT)



Symptoms and caterpillar of greater wax moth (DT)



Results of wax moth caterpillar activity (DT)



Achroia grisella
can reproduce in blocks of beeswax, too. (DT)



An adult little wax moth, *Achroia grisella* (DT)



Wasps and hornets are predators ... (vs)



... and consume sugar solutions, too (VS)



Remains of shrew activity (DT)



Other problems that can be detected on combs



Drone brood in worker cells - bad queen bee (MK)



Bees have died through starvation (DT)



Mouldy pollen cells (MK)



No problem, only bees' creativity... (DT)



Patchy brood typical of old queen bee (MK)



Cells are empty, without any tissue (MK)

Pictorial Atlas for Honeybee Disease Diagnostics 2014

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