

# Images of *Nosema ceranae* in bees from North Dakota.

Honey Bees were sent to Jim Amrine by Gary Mackrill in Sep 2007.

Gary wanted to know how many spores were present; he had sent some to Beltsville and wanted an independent check.

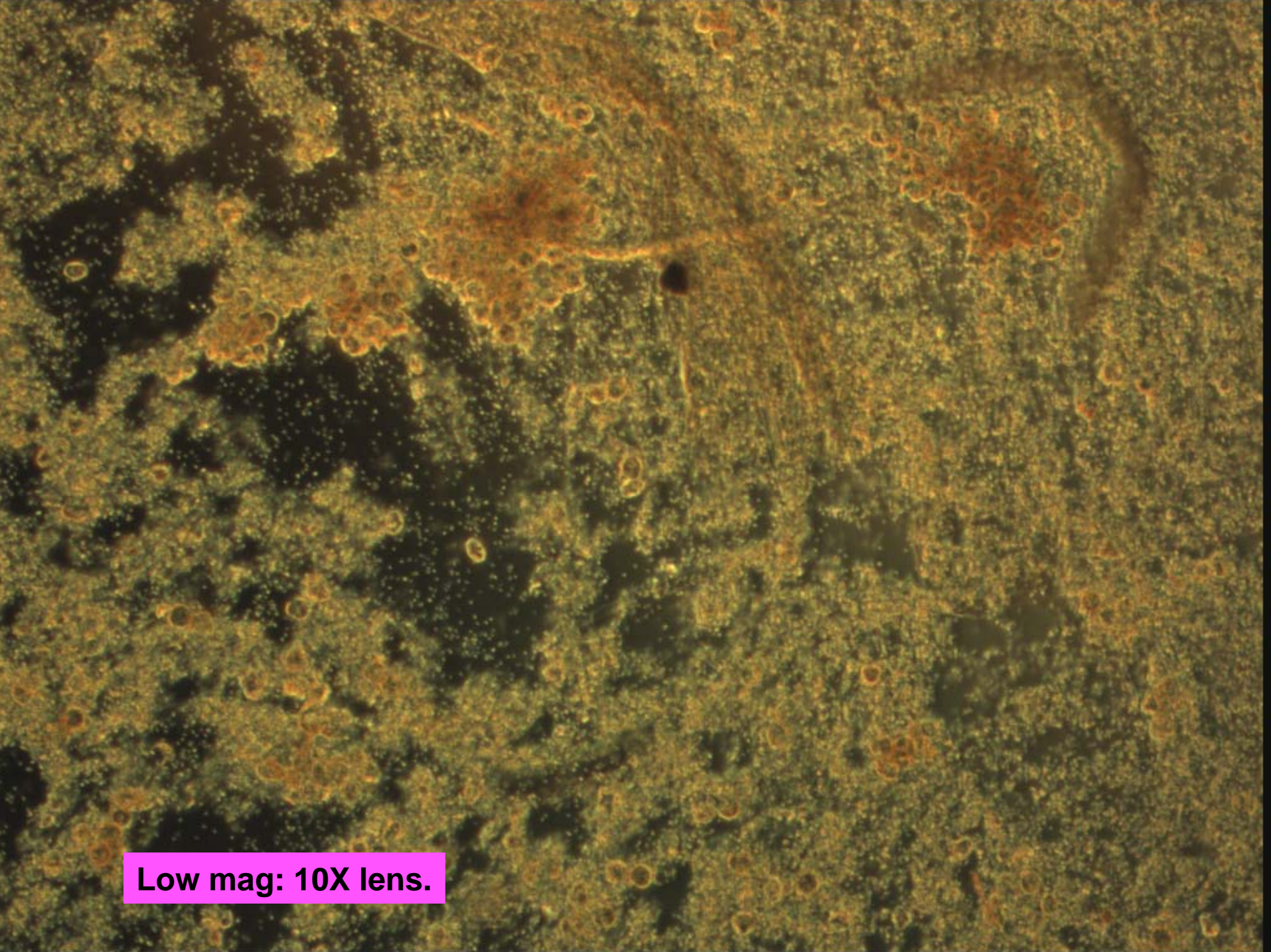
Several things were done:

A slurry of bees was made by putting 20 abdomens from each source into a blender then blending to liquefaction. Two other samples were 10 bees then 50 bees.

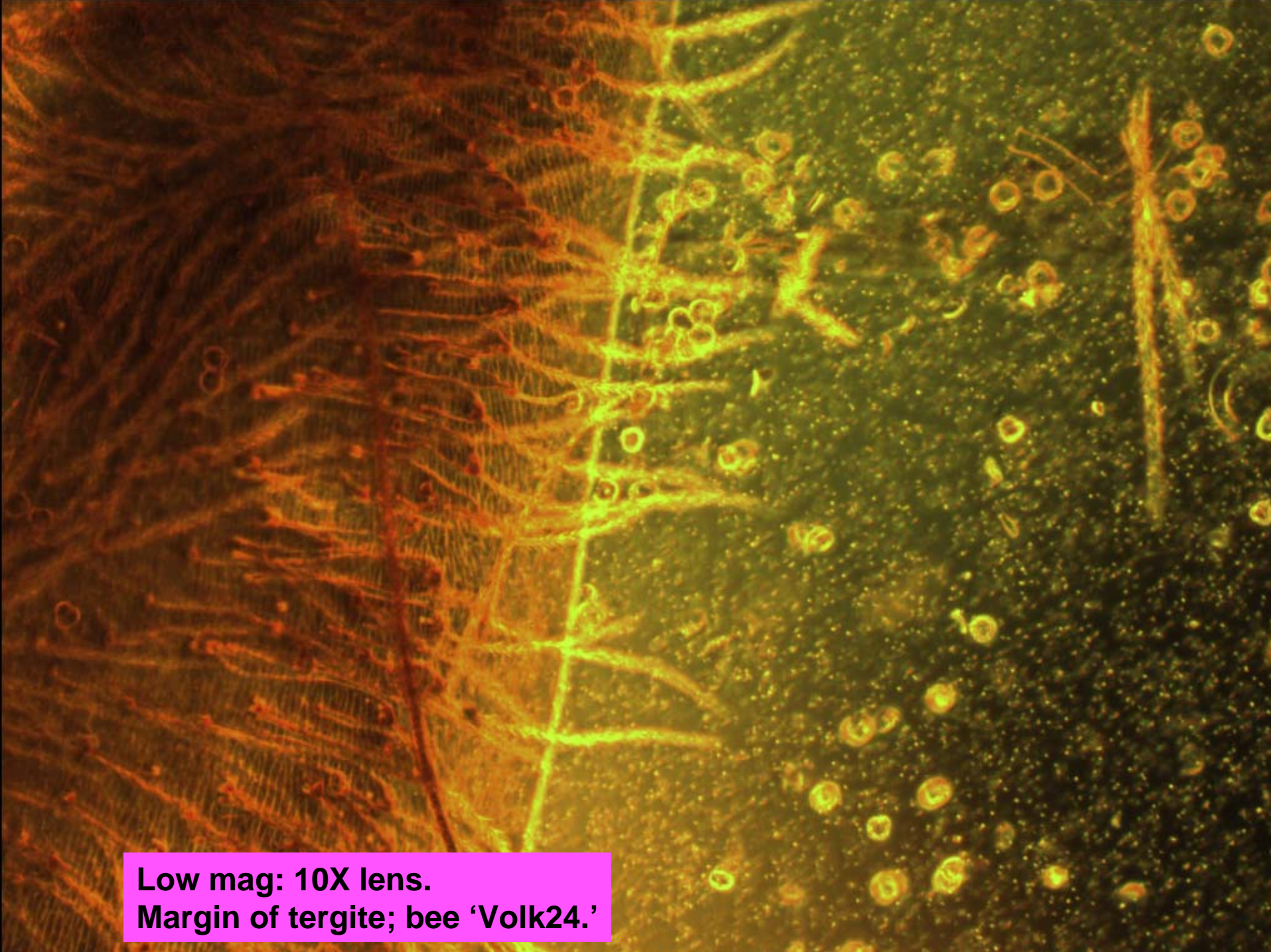
Almost no spores were seen in bees from the honey house.

Some were seen in the 'Striefel' bee yard. A lot of spores were seen in the slurry from the 'Volk' bee yard.

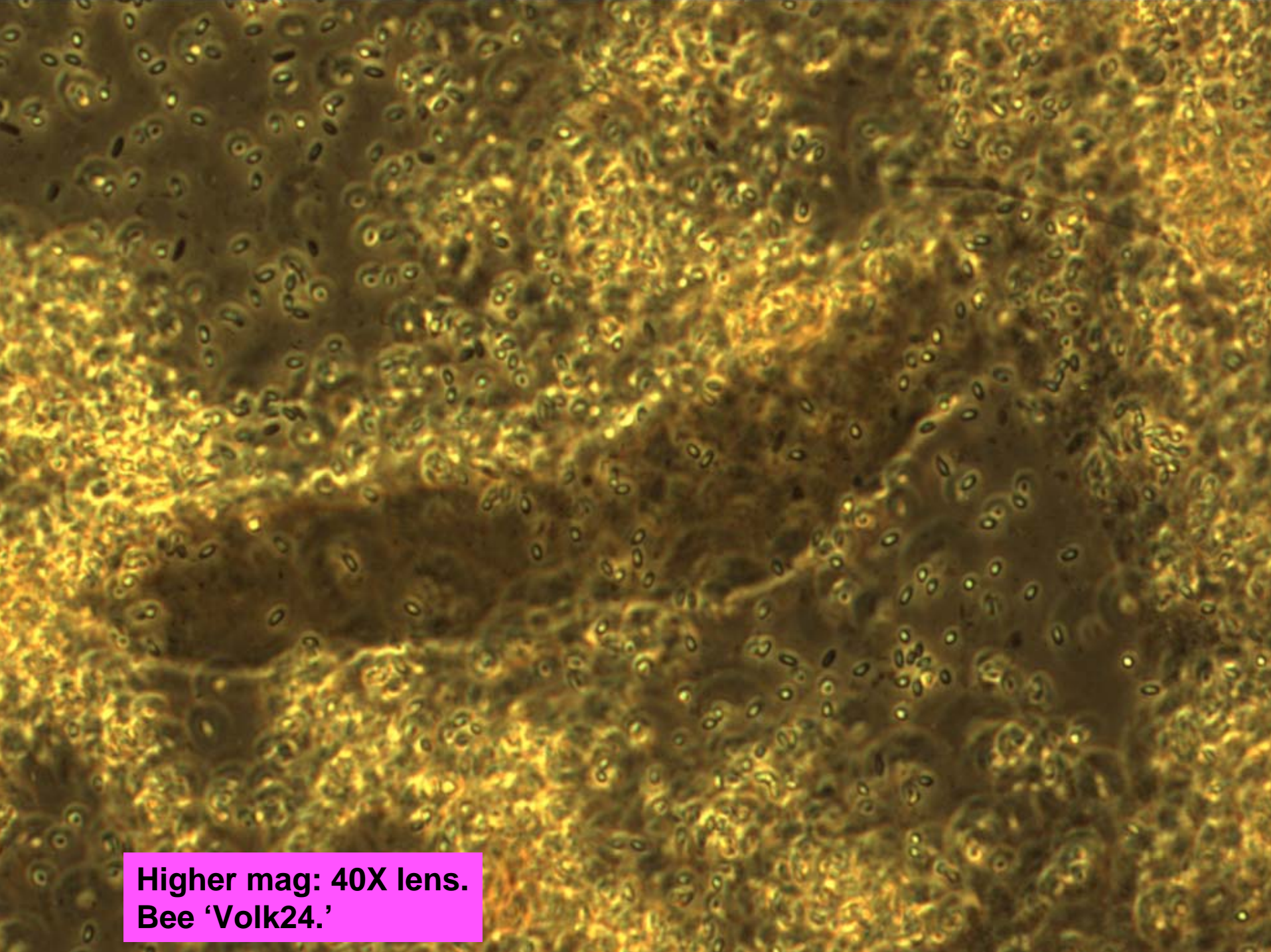
Slides of individual bees were made by opening the abdomen, and putting the gut contents on a slide; the contents were stirred,  $\frac{1}{2}$  put onto a card for DNA study, Iodine stained media added, a coverslip put in place and then examined under 10x and 40x phase microscopy. One or two bees from the honey house had just a few spores (early infection); one bee from Striefel had millions of spores; 3 bees from Volk had millions, and 4 more slides had some spores, representing early infections. An Olympus Q3 camera was used on an Olympus compound microscope to take the photos below



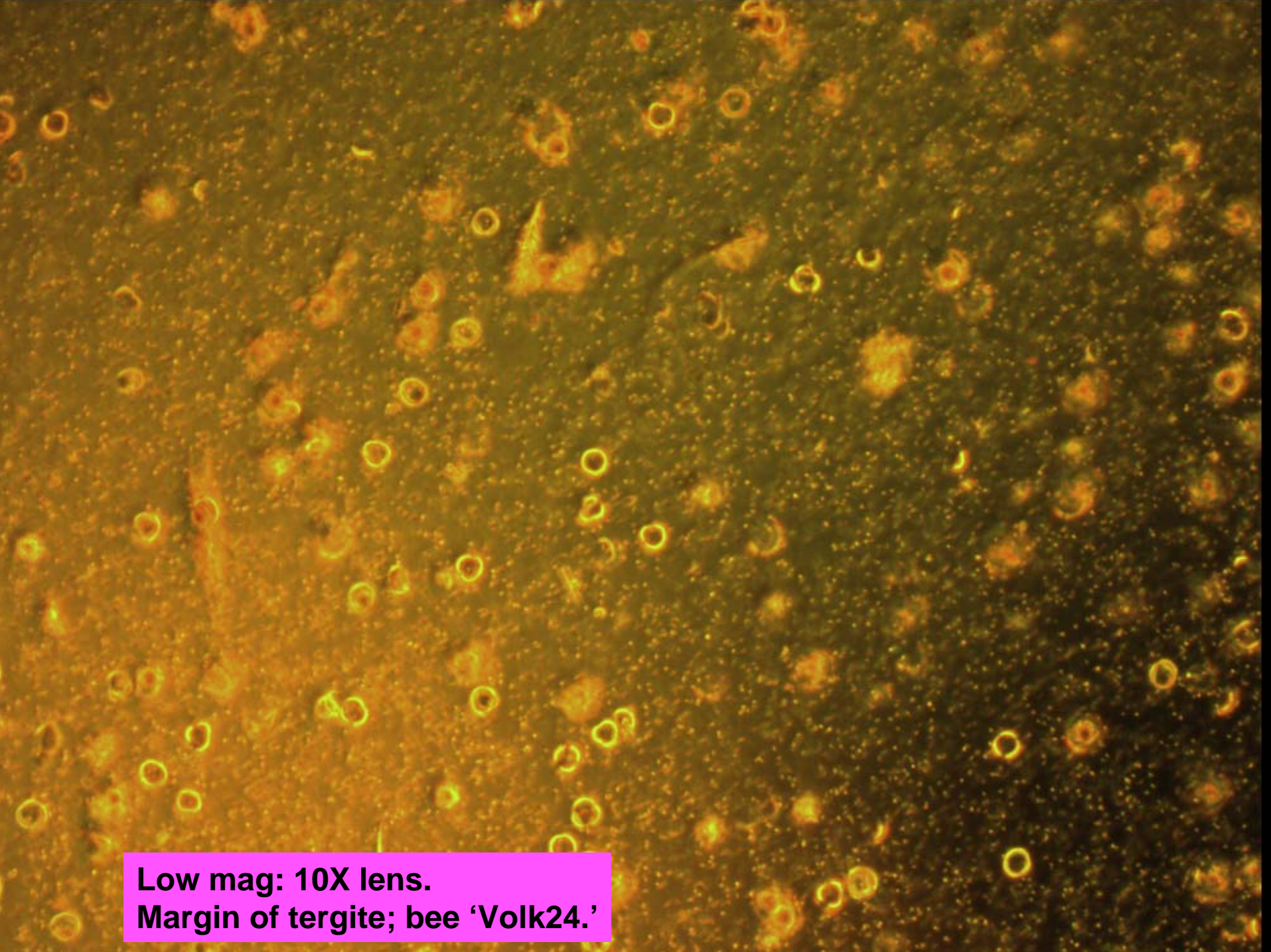
Low mag: 10X lens.



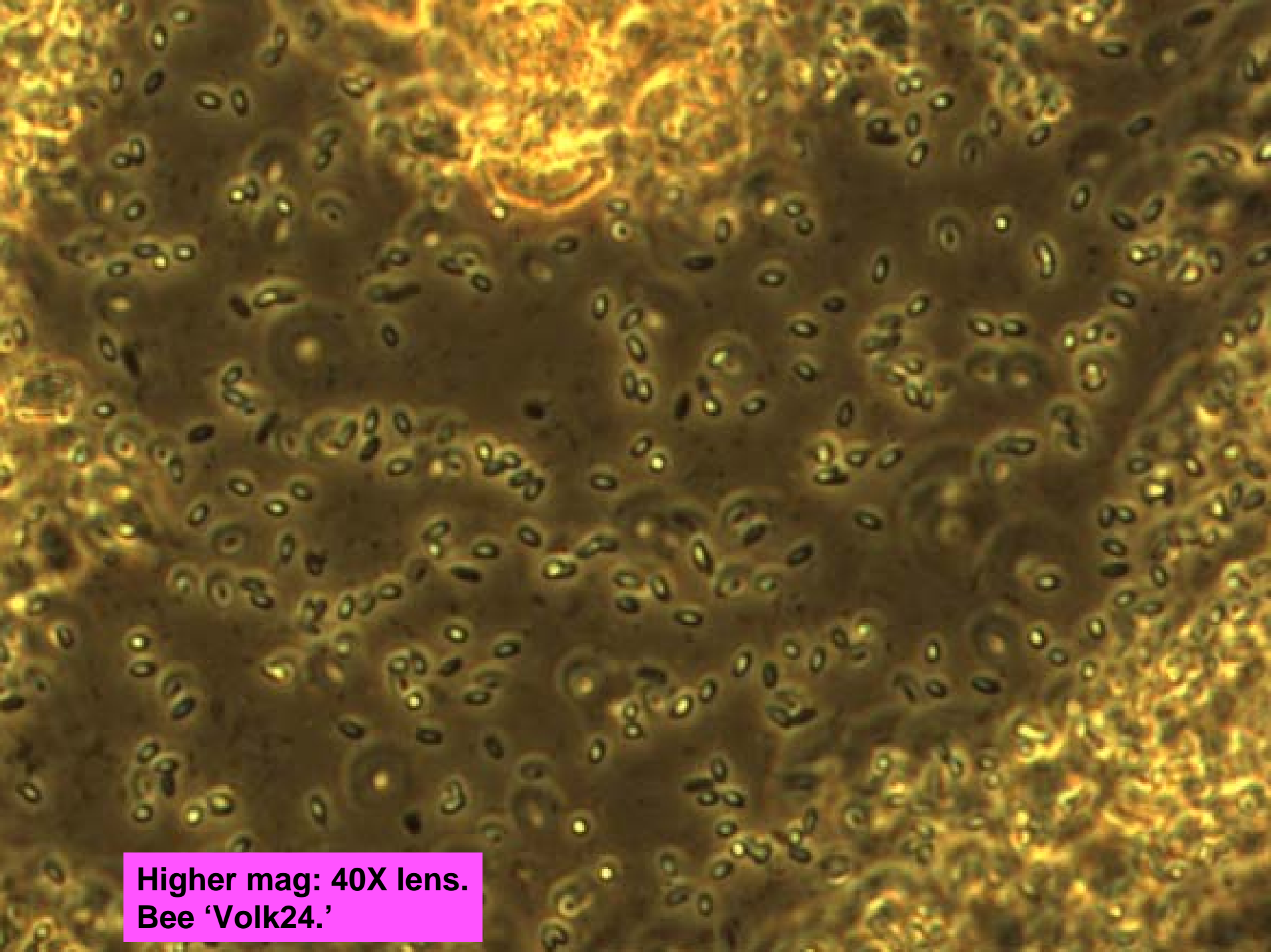
**Low mag: 10X lens.  
Margin of tergite; bee 'Volk24.'**



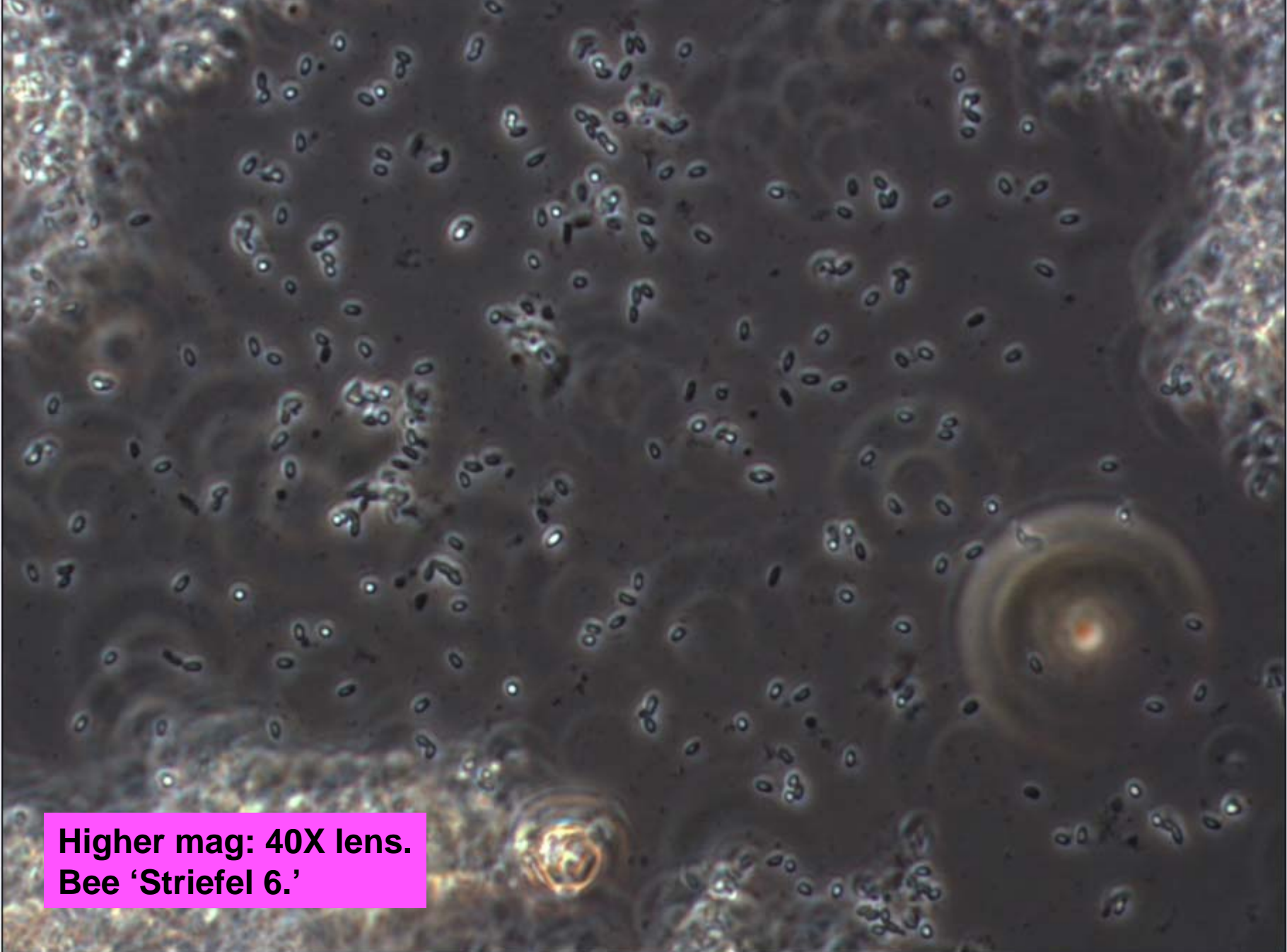
Higher mag: 40X lens.  
Bee 'Volk24.'



**Low mag: 10X lens.  
Margin of tergite; bee 'Volk24.'**



Higher mag: 40X lens.  
Bee 'Volk24.'



Higher mag: 40X lens.  
Bee 'Striefel 6.'