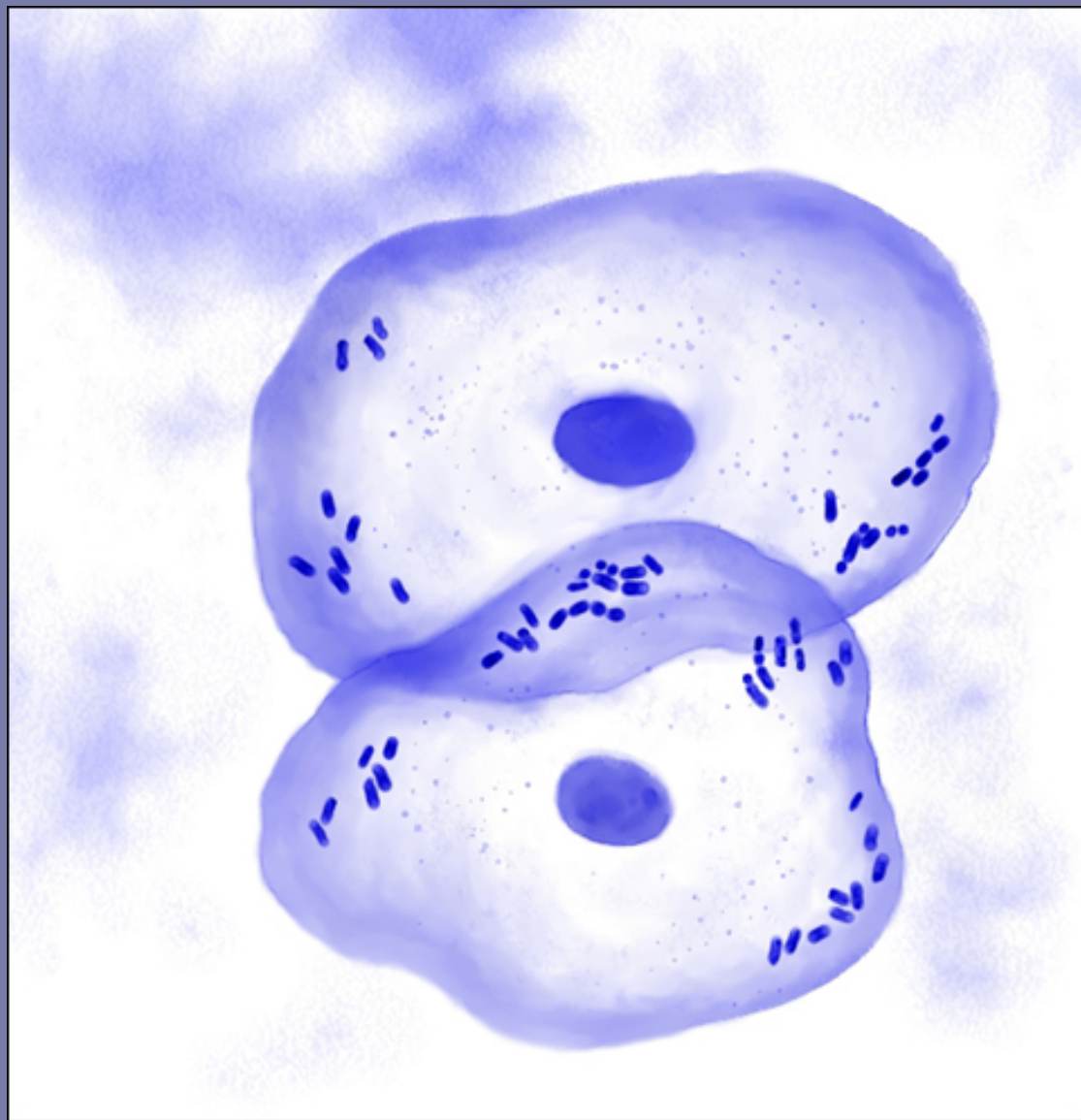


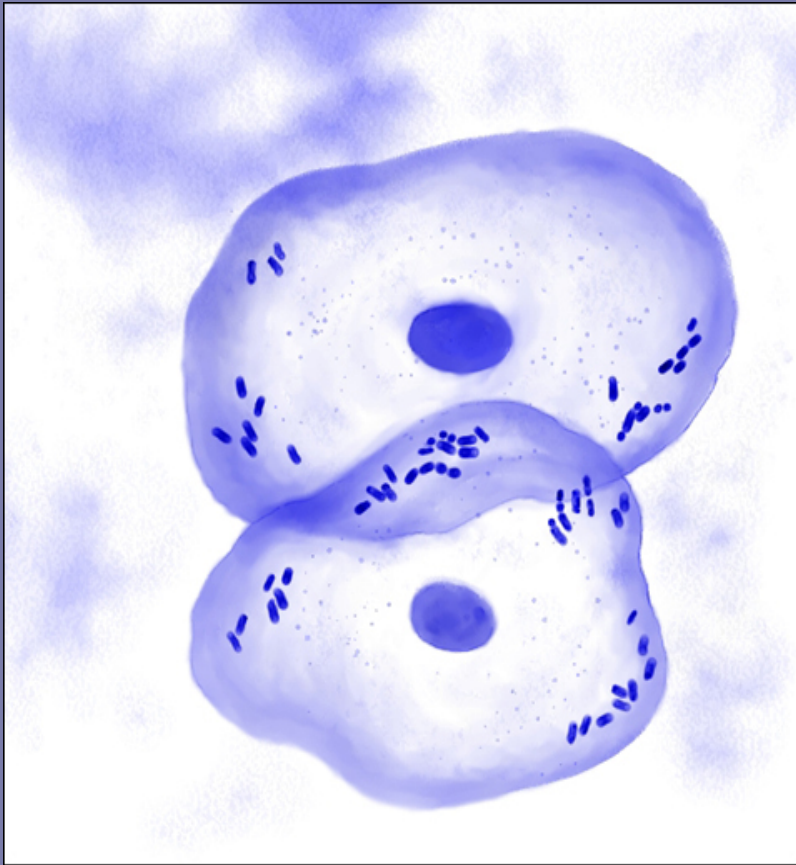
# Bio Sci 4 Microbiology Laboratory Exam #1

Slide Show prepared by  
Alice Litton

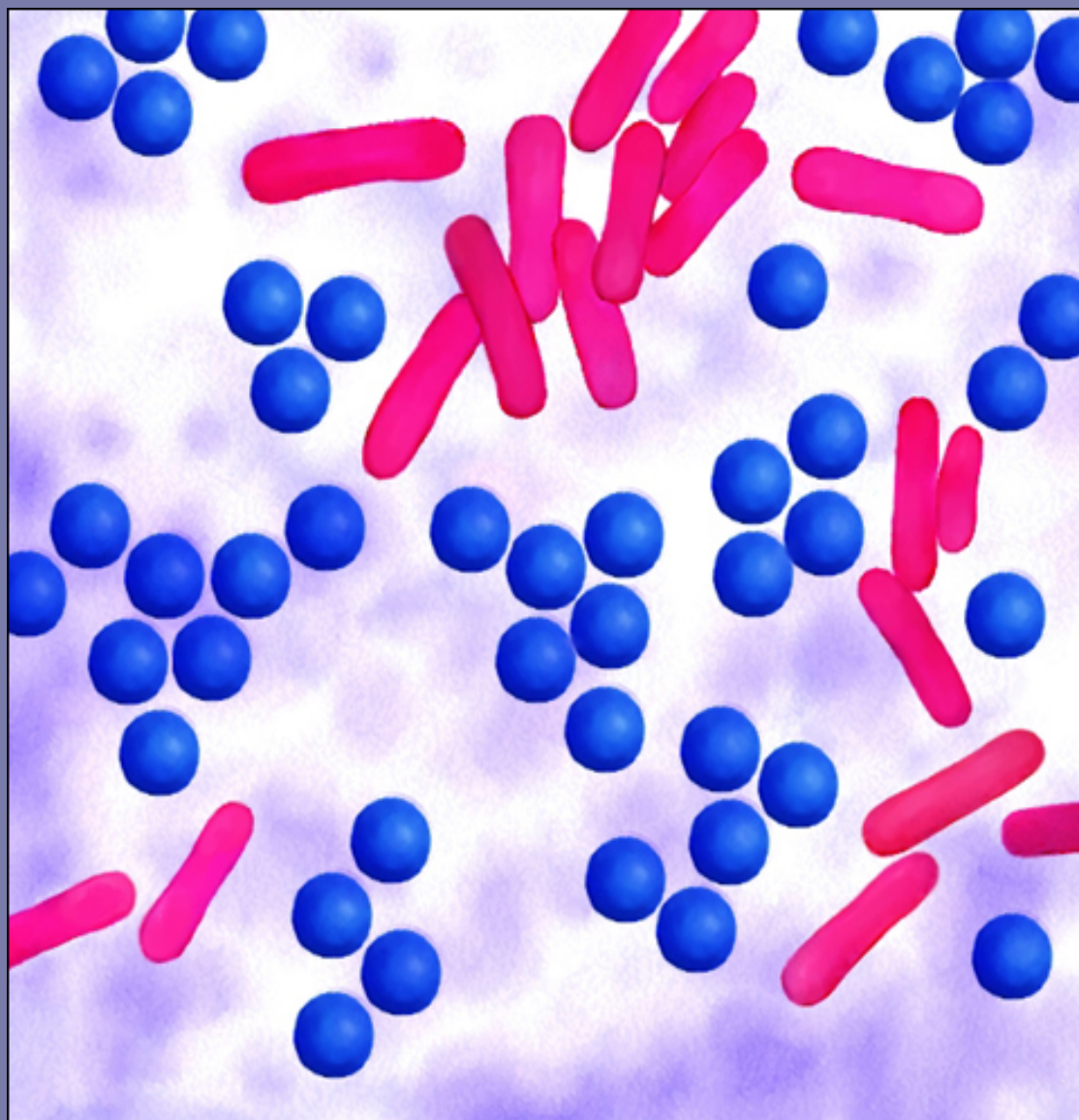
***“Use at your own risk!”***



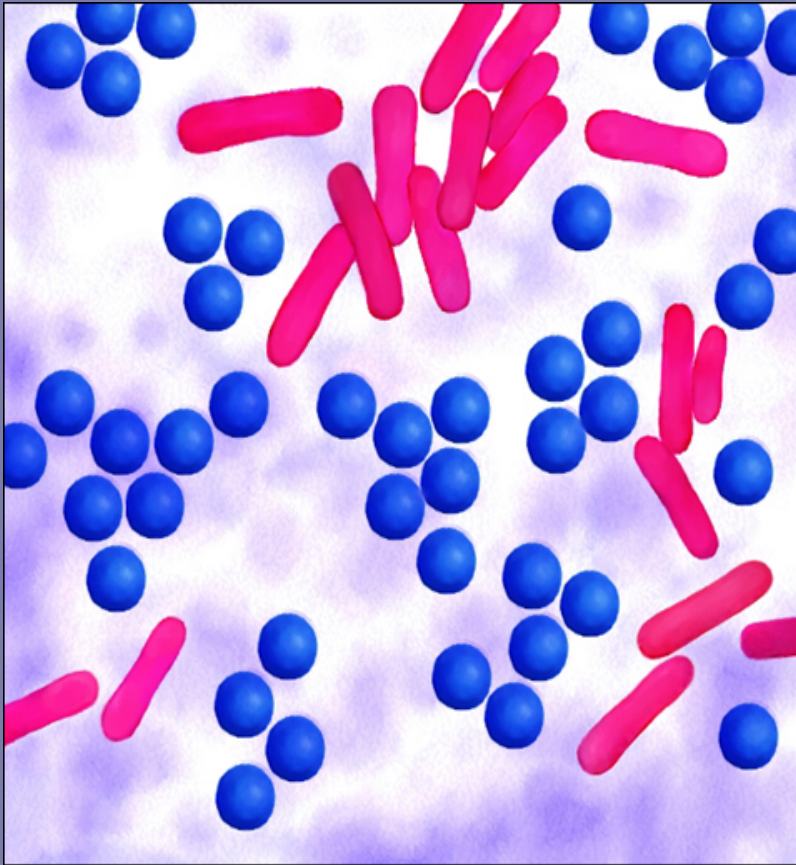
# Methylene Blue Direct Stain



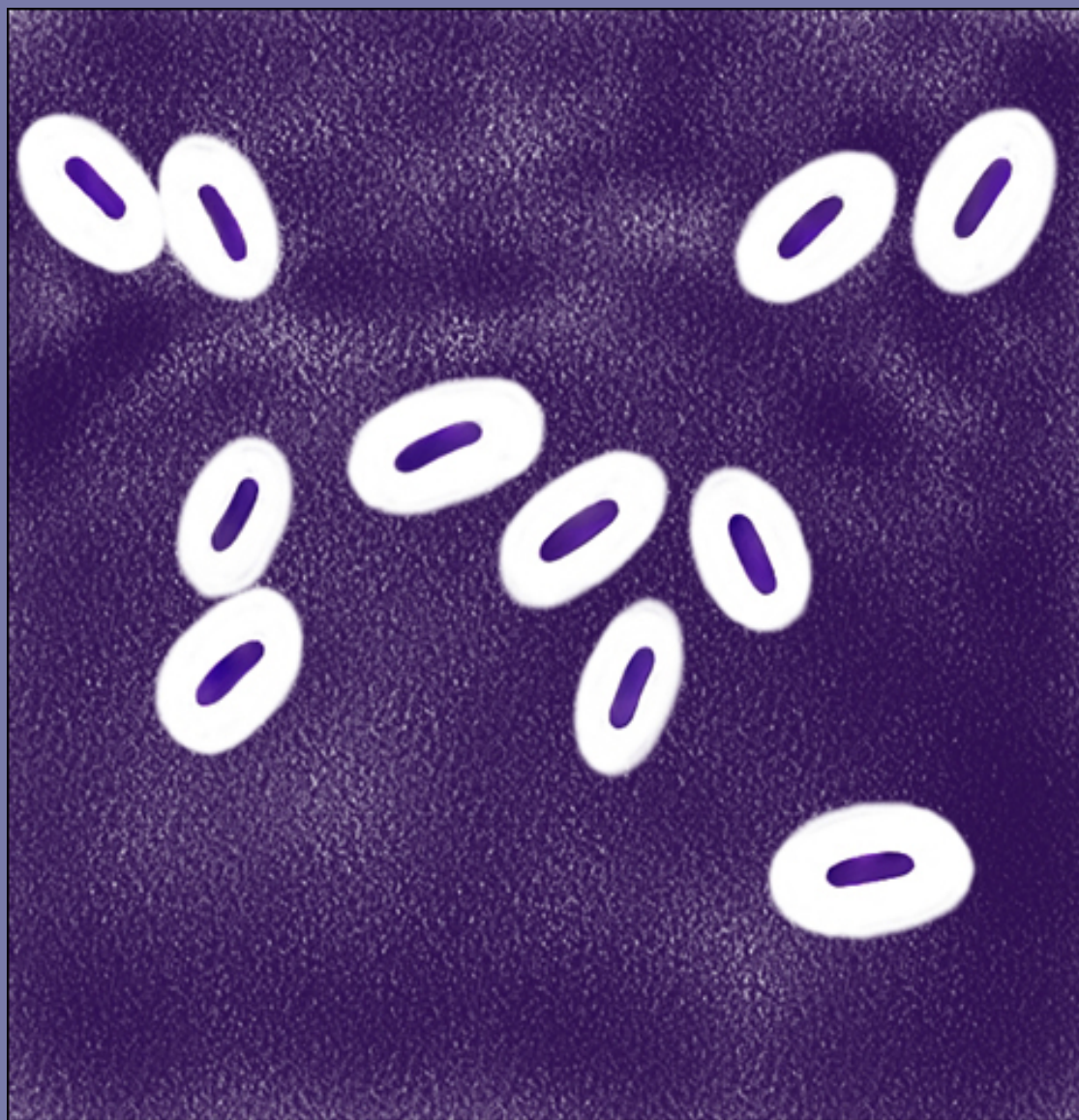
Eukaryotic cheek cells  
with Prokaryotic  
bacteria.



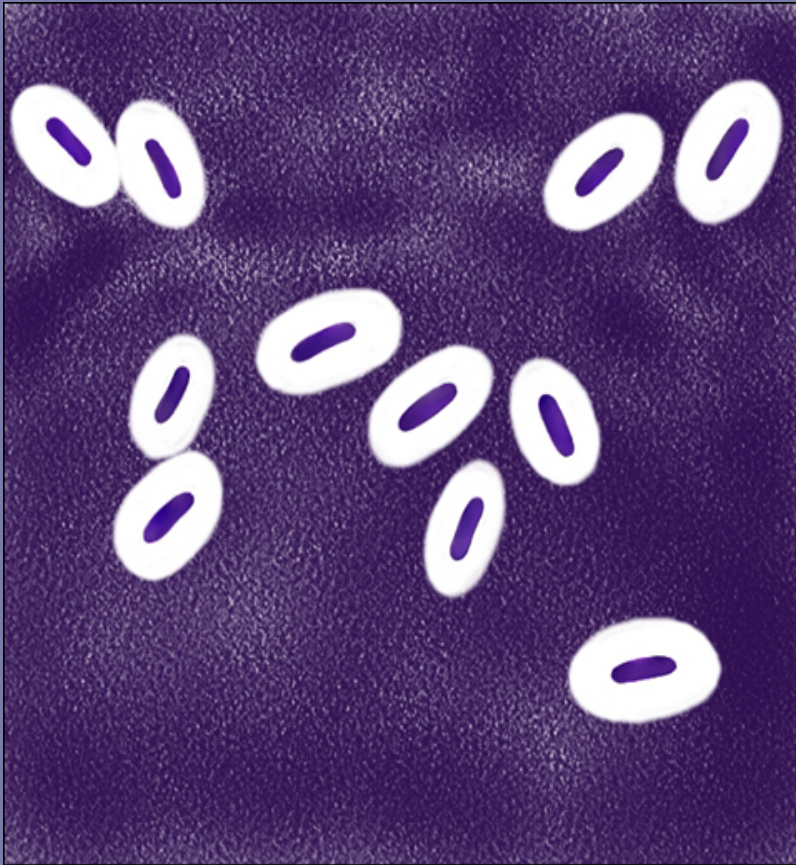
# Acid-Fast Stain



- Acid-fast cells (Mycobacterium) stain red and non-acid fast cell (Staphylococcus) stain blue



# India Ink Capsule Stain



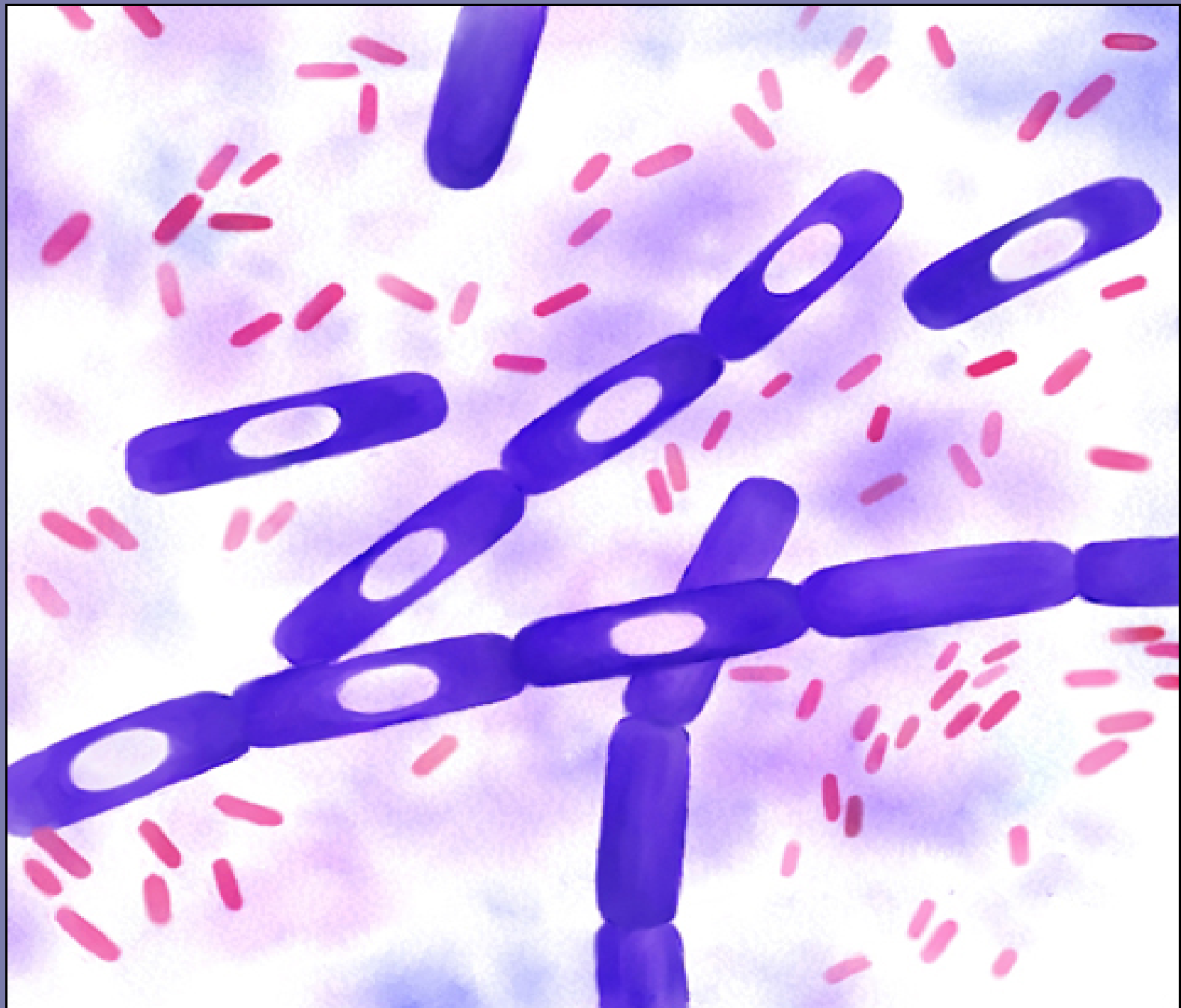
- India Ink capsule stain of *Klebsiella pneumoniae* showing white capsules (Glycocalyx) surrounding the purple cells.



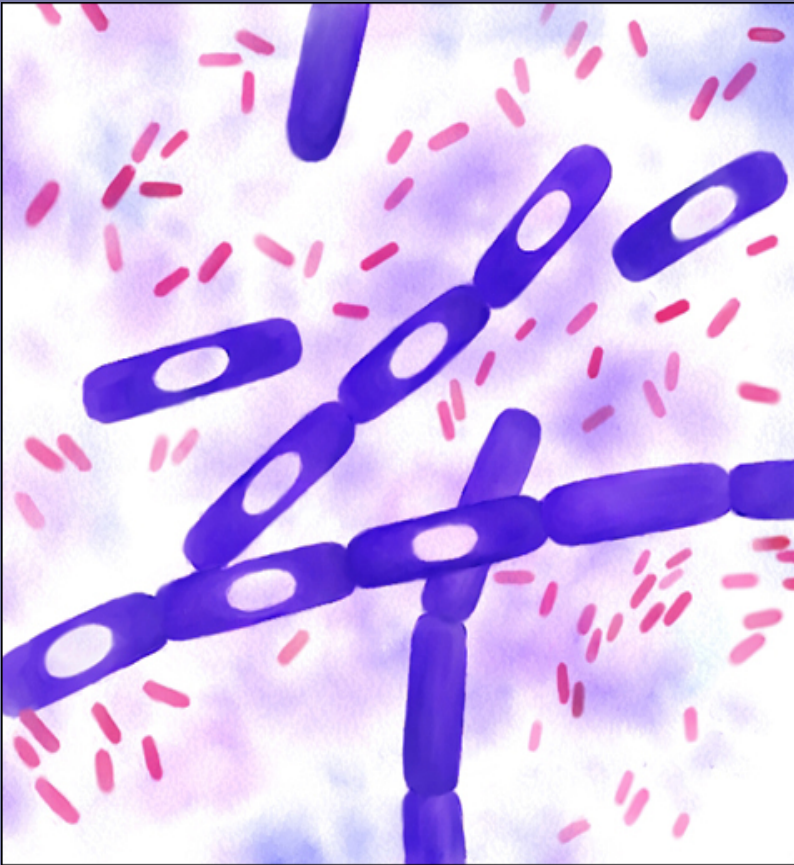
# Dorner Method Endospore Stain



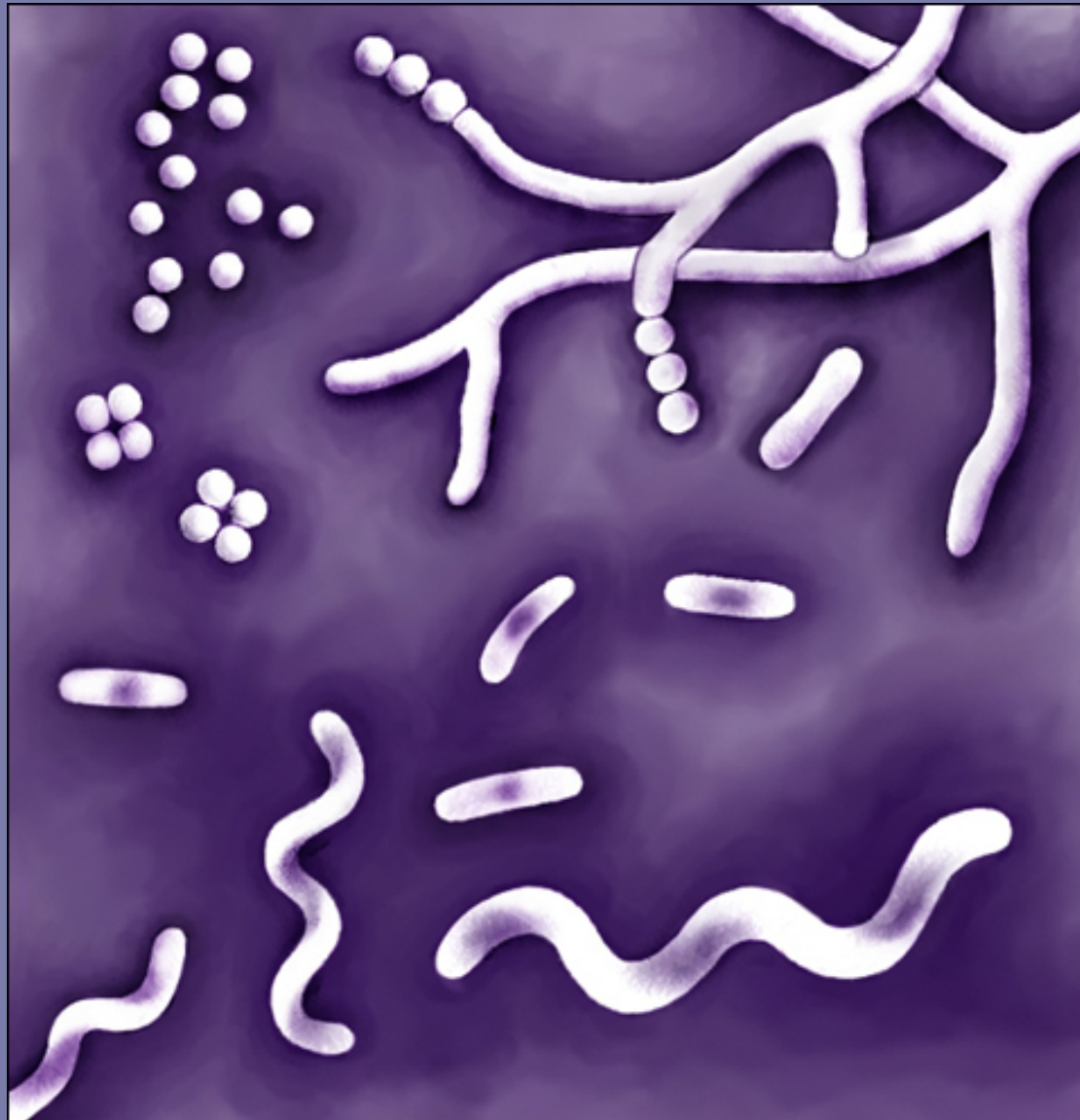
- Dorner Method Endospore Stain showing centrally located ellipsoidal spores of *Bacillus cereus*. Sporangia are not swollen.



# Gram Stain



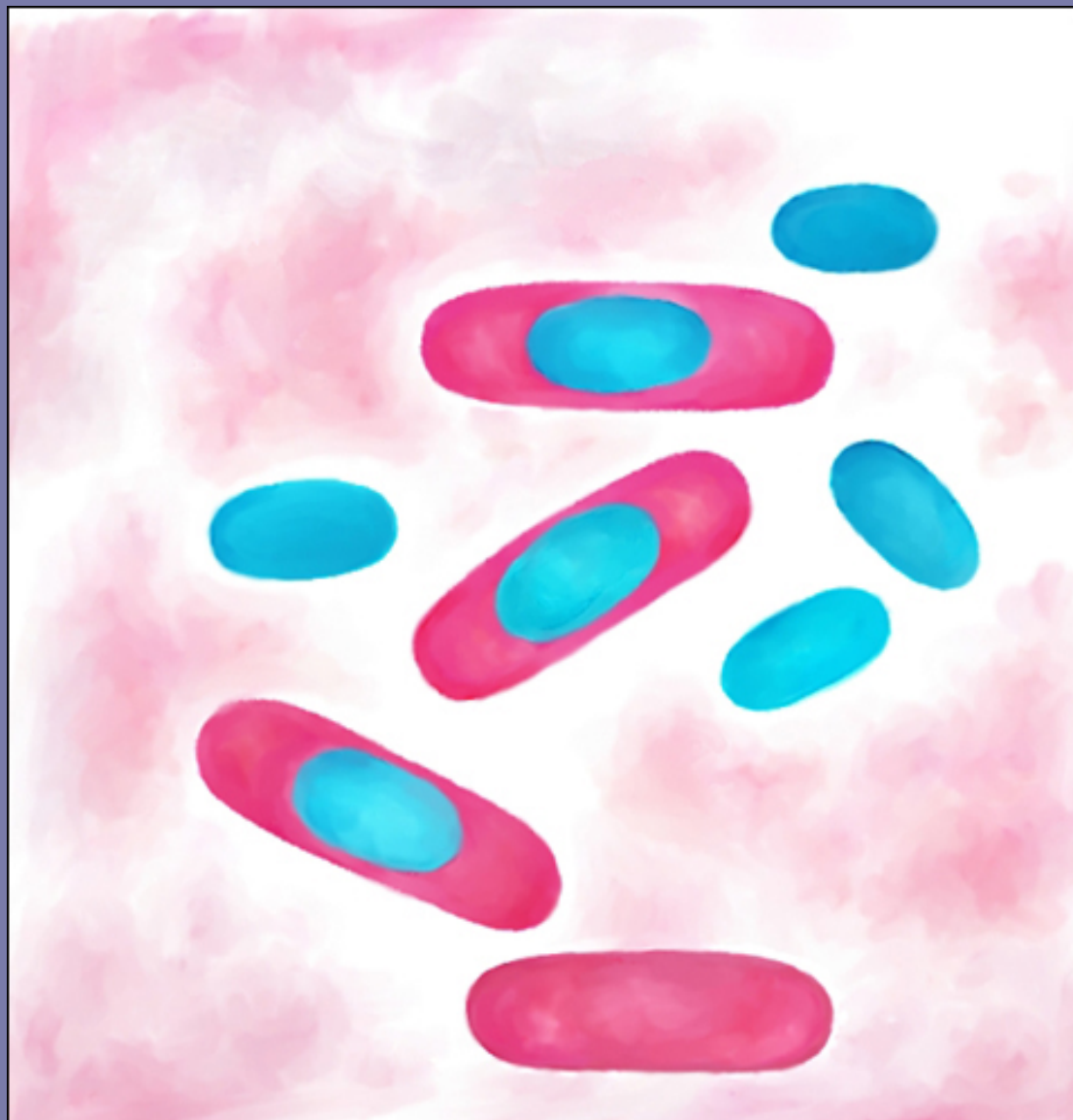
- Mixed smear of *Bacillus cereus* and *Serratia marcescens* showing purple G+ cells with white endospores and pink G- cells.



# Nigrosine Indirect



- Nigrosine preparation Indirect or negative stain showing cocci, bacilli, spirilla and filamentous.

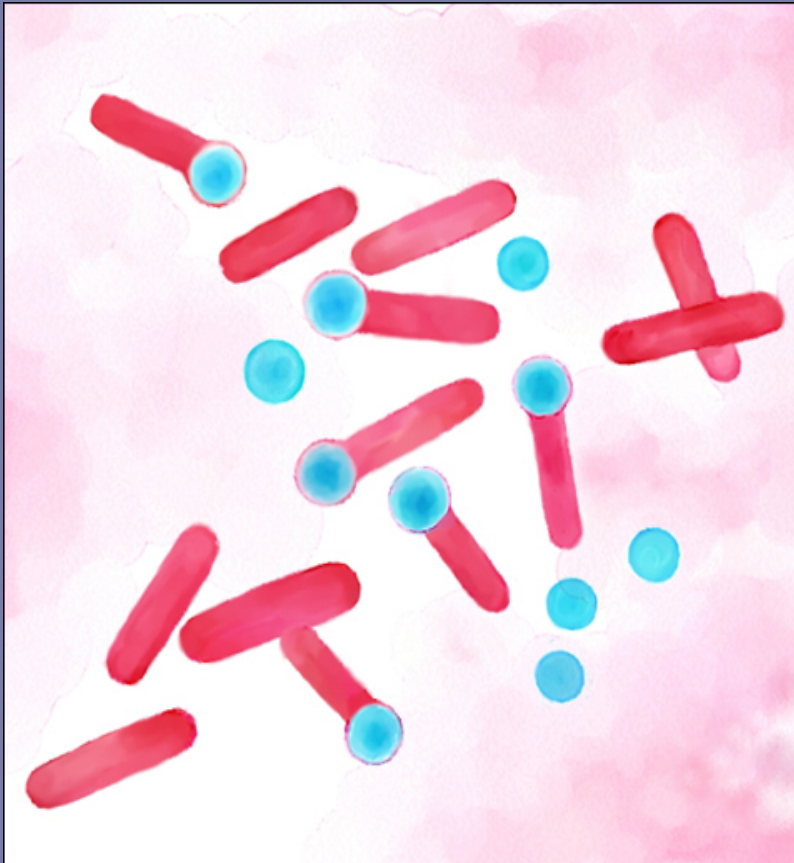


# Malachite Green or Schaffer-Fulton Method

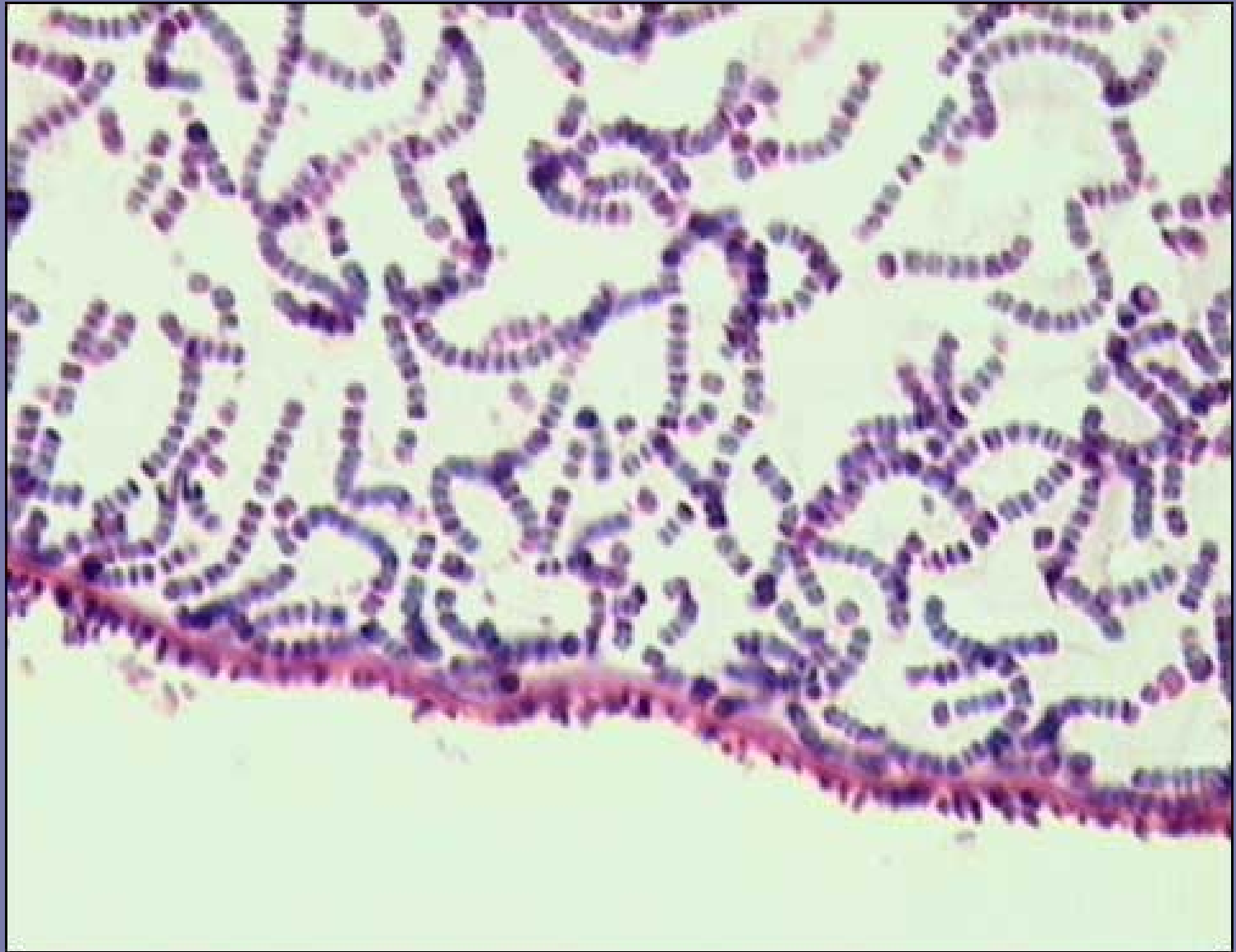


- Endospore stain of *Bacillus subtilis* showing centrally located ellipsoidal spores and non-swollen sporangia.

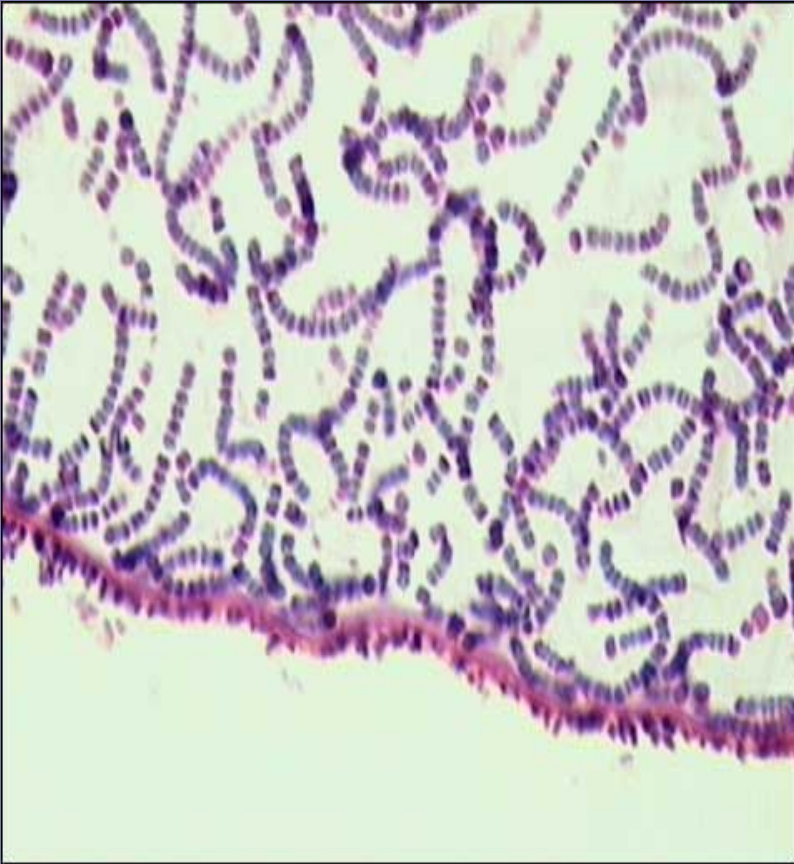
# Malachite Green or Schaffer-Fulton Method



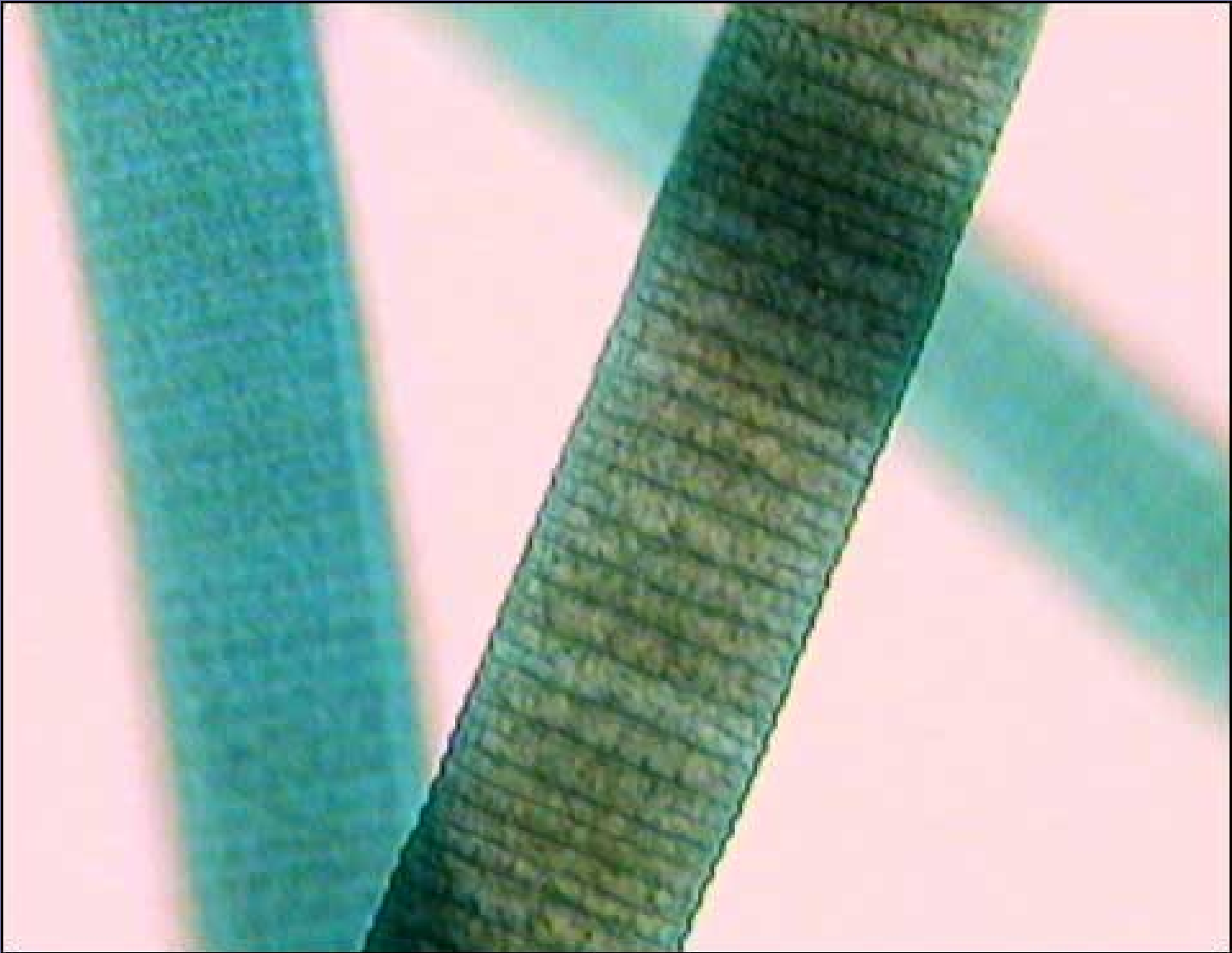
- Endospore stain of *Bacillus sphaericus* showing terminally located spherical spores and swollen sporangia.



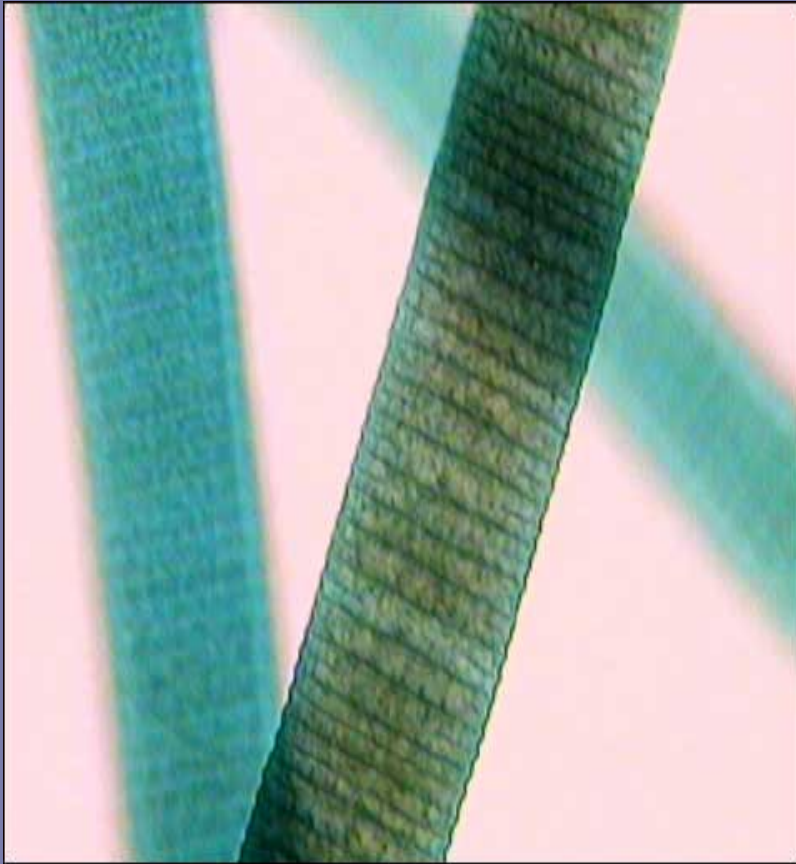
# *Nostoc*



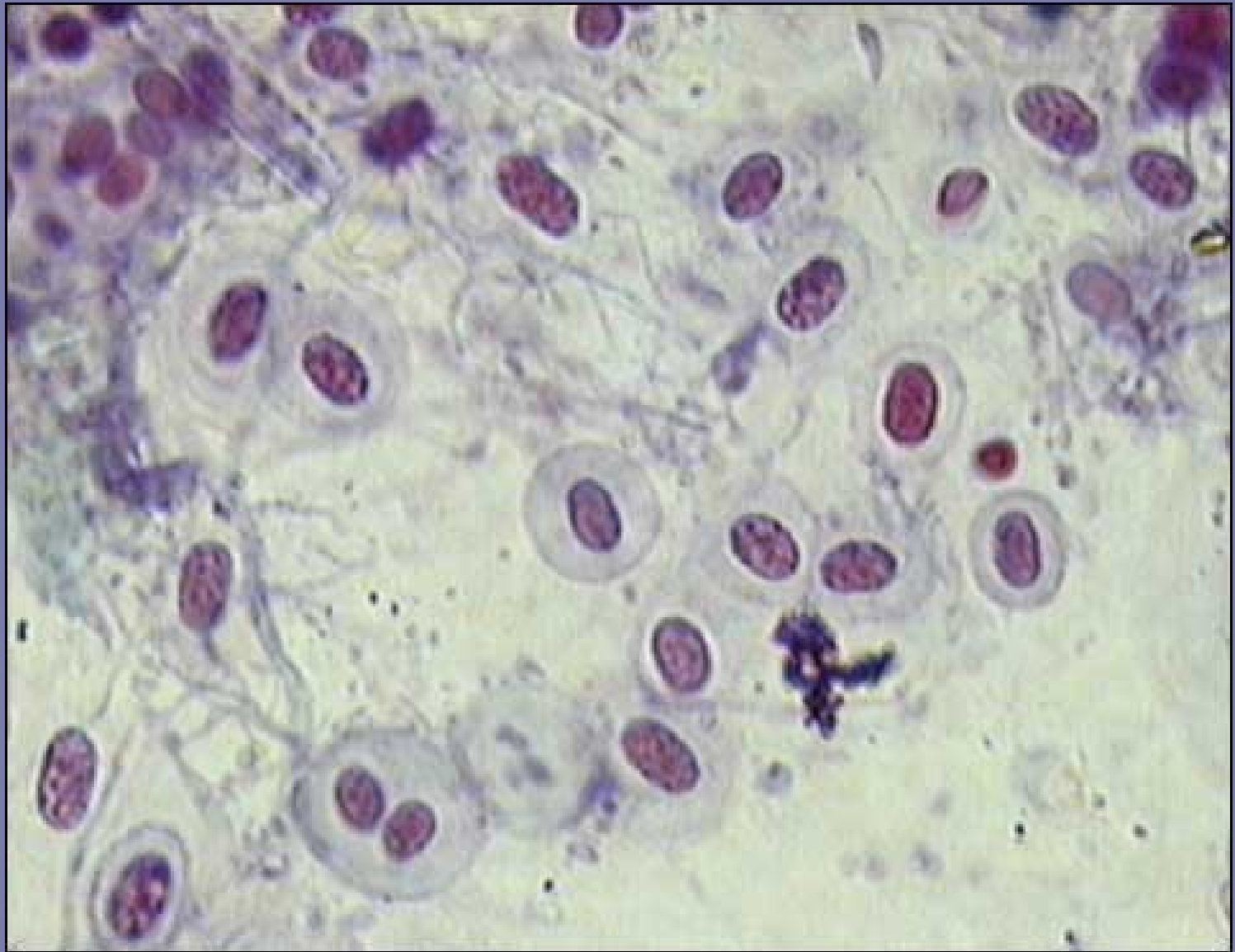
- D. Bacteria
- K. None
- Ph. Cyanobacteria
- Magnified 400x
- Spherical cells arranged in chains (trichomes) and surrounded in a gelatinous matrix or glycocalyx.



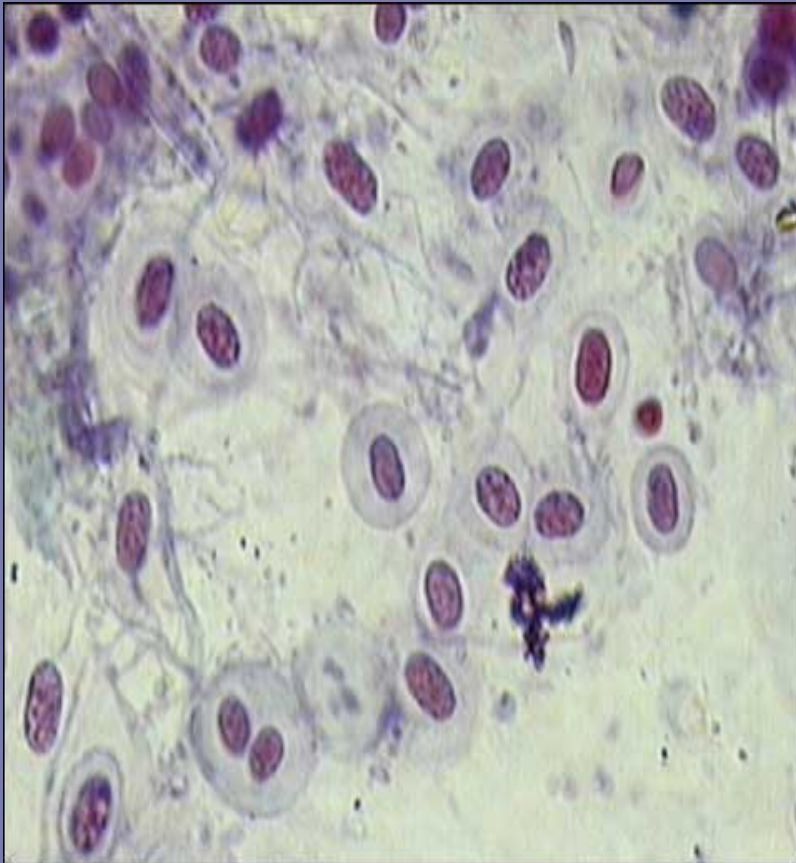
# *Oscillatoria*



- D. Bacteria
- K. None
- Ph. Cyanobacteria
- Magnified 400x
- Individual cells are disc-shaped and are arranged in stacks forming trichomes that appear as long striated rods.



# *Gloeocapsa*



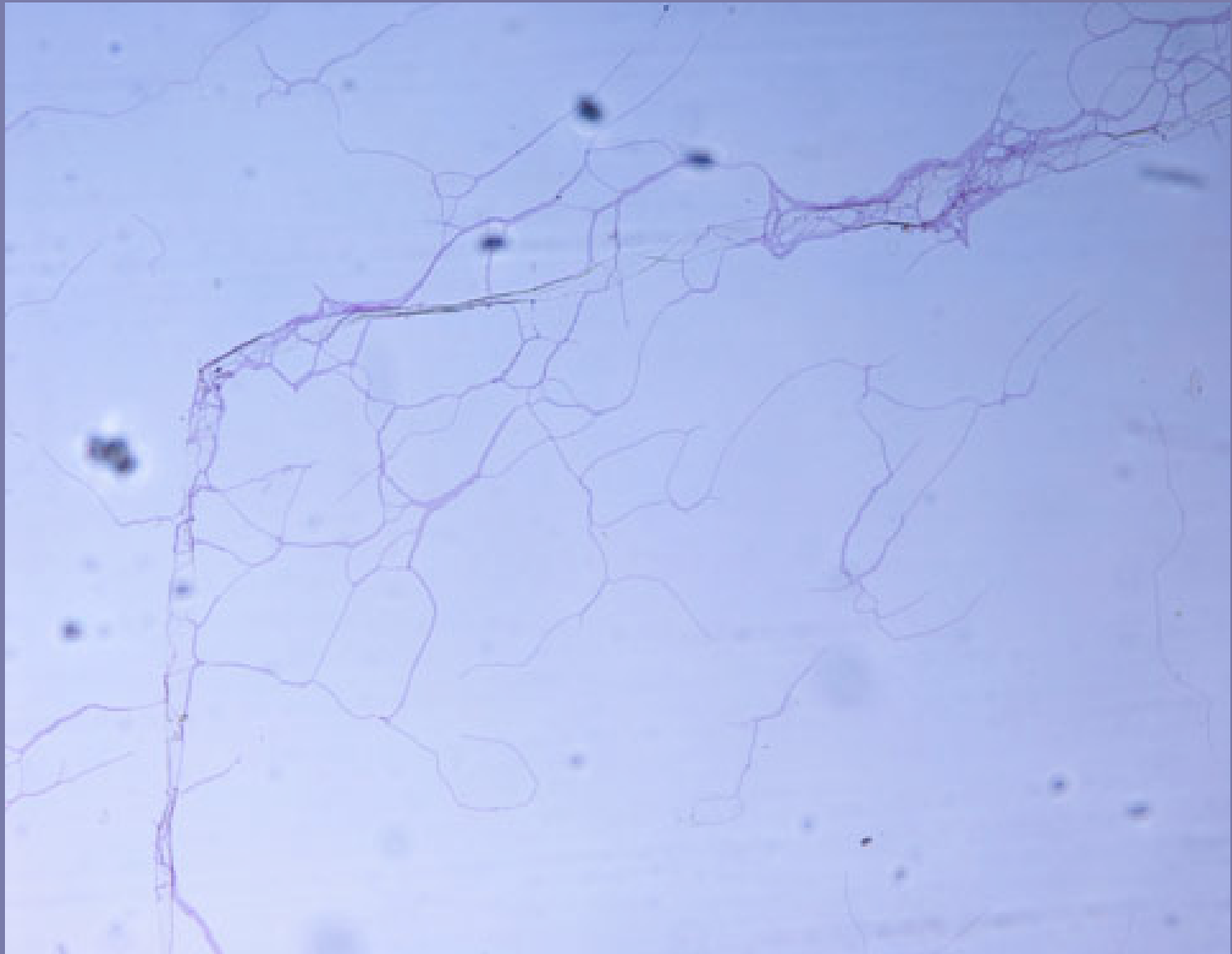
- D. Bacteria
- K. None
- Ph. Cyanobacteria
- Magnified 1000x
- Individual cells are oval-shaped and surrounded by a semi-transparent capsule or glycocalyx. One or more cells/capsule.

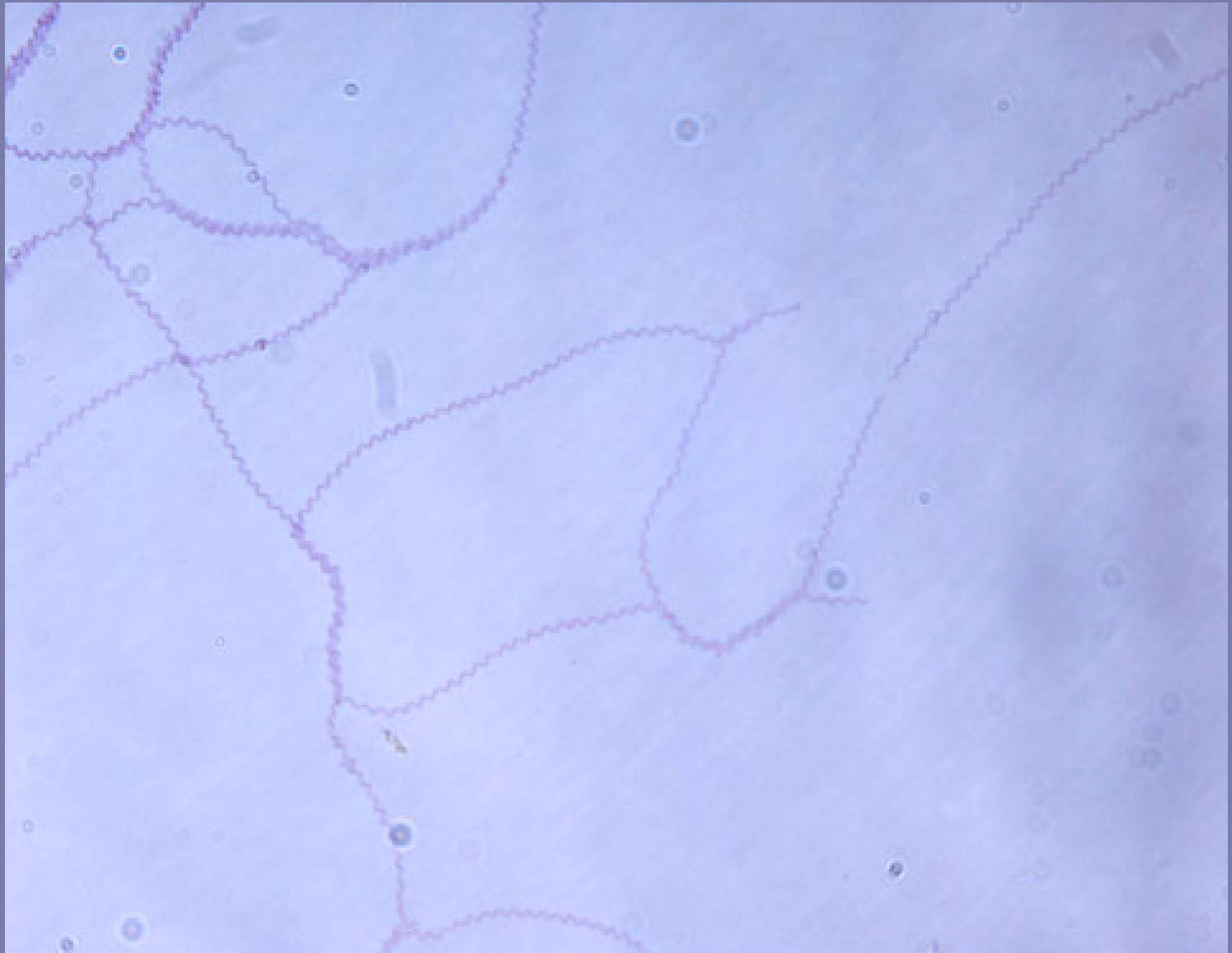


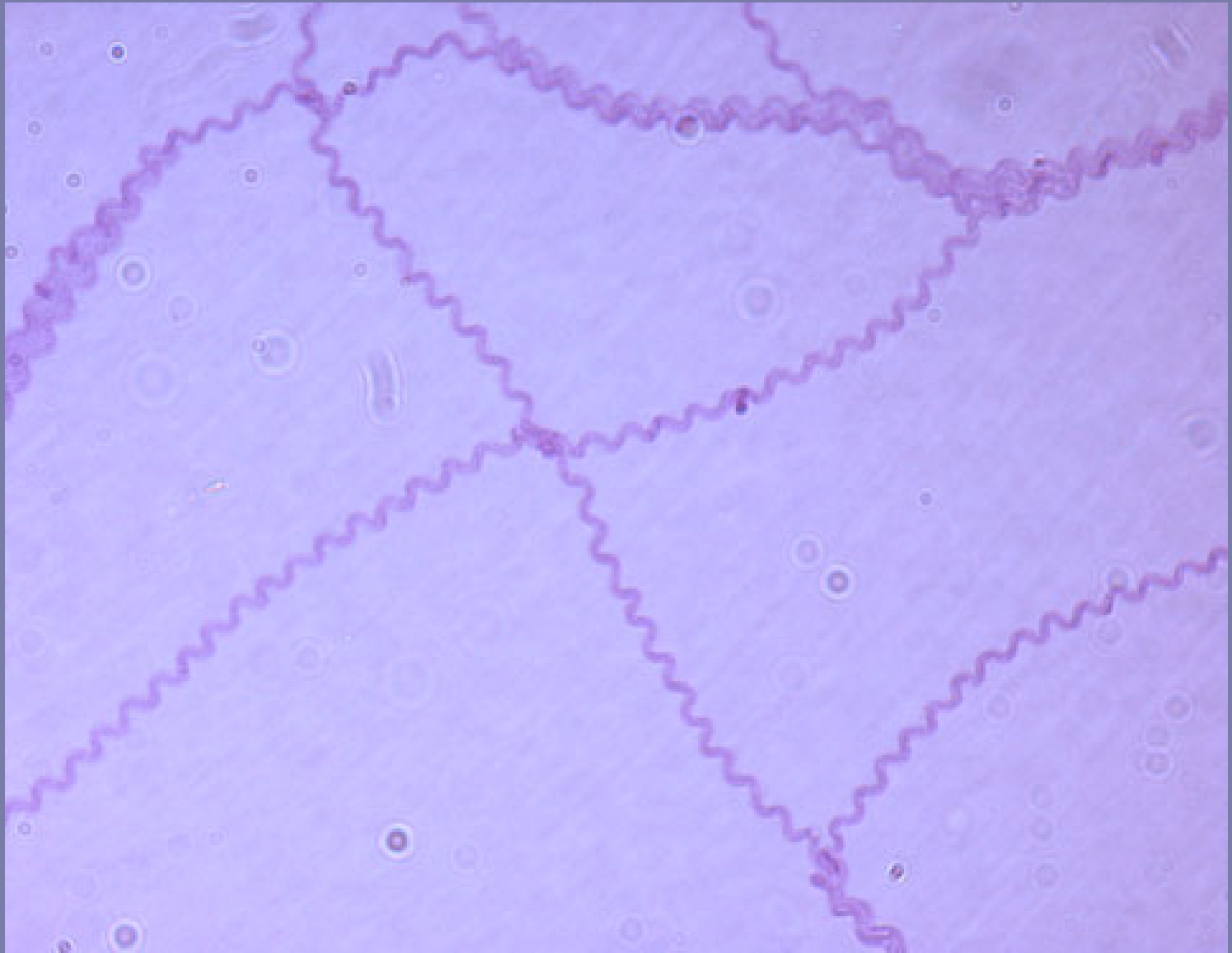
# *Anabaena flos-aquae*



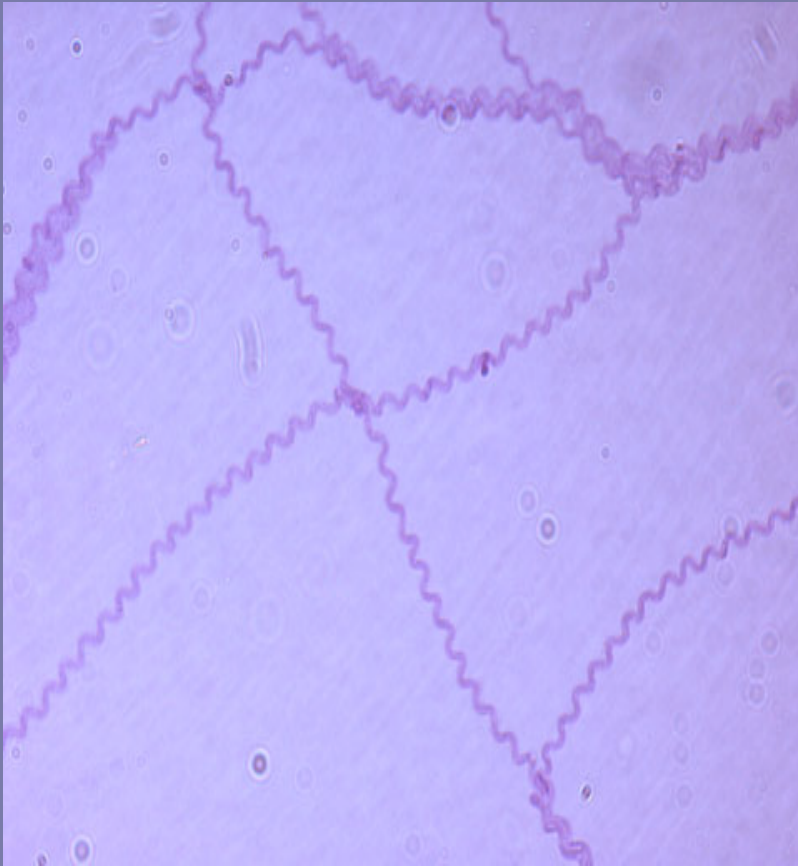
- D. Bacteria
- K. None
- Ph. Cyanobacteria
- Magnified 400x
- Cells are spherical and are arranged in chains called trichomes. Heterocysts contain enzymes for nitrogen fixation. Akinetes are resistant cells.







# *Spirulina*



- D. Bacteria
- K. None
- Ph. Cyanobacteria
- Magnified 1000x
- The ends of some individual cells are visible at junctions where two or more cells are intertwined.



# *Albugo bliti* or white rust



- D. Eukarya
- K. Fungi
- Ph. Oomycota
- Cl. Oomycetes
- Magnified 100x
- Leaf xs showing sexual oospores appear as clusters of brownish or sometimes red-colored granular sphears.