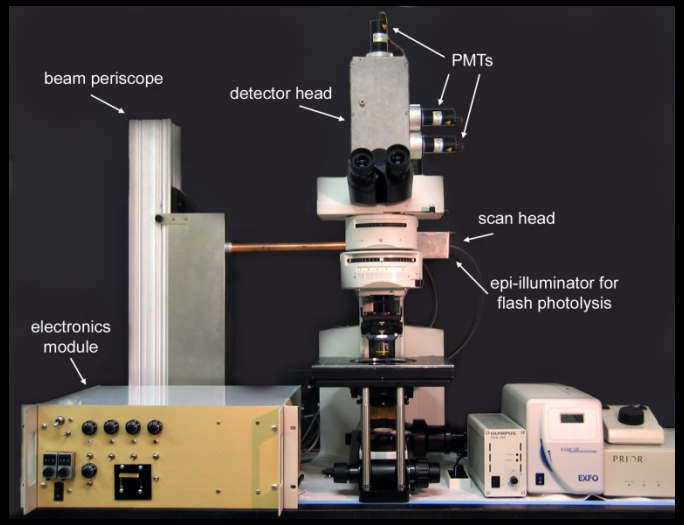
Observing Microorganisms

Ch. 3

Units of Measurement

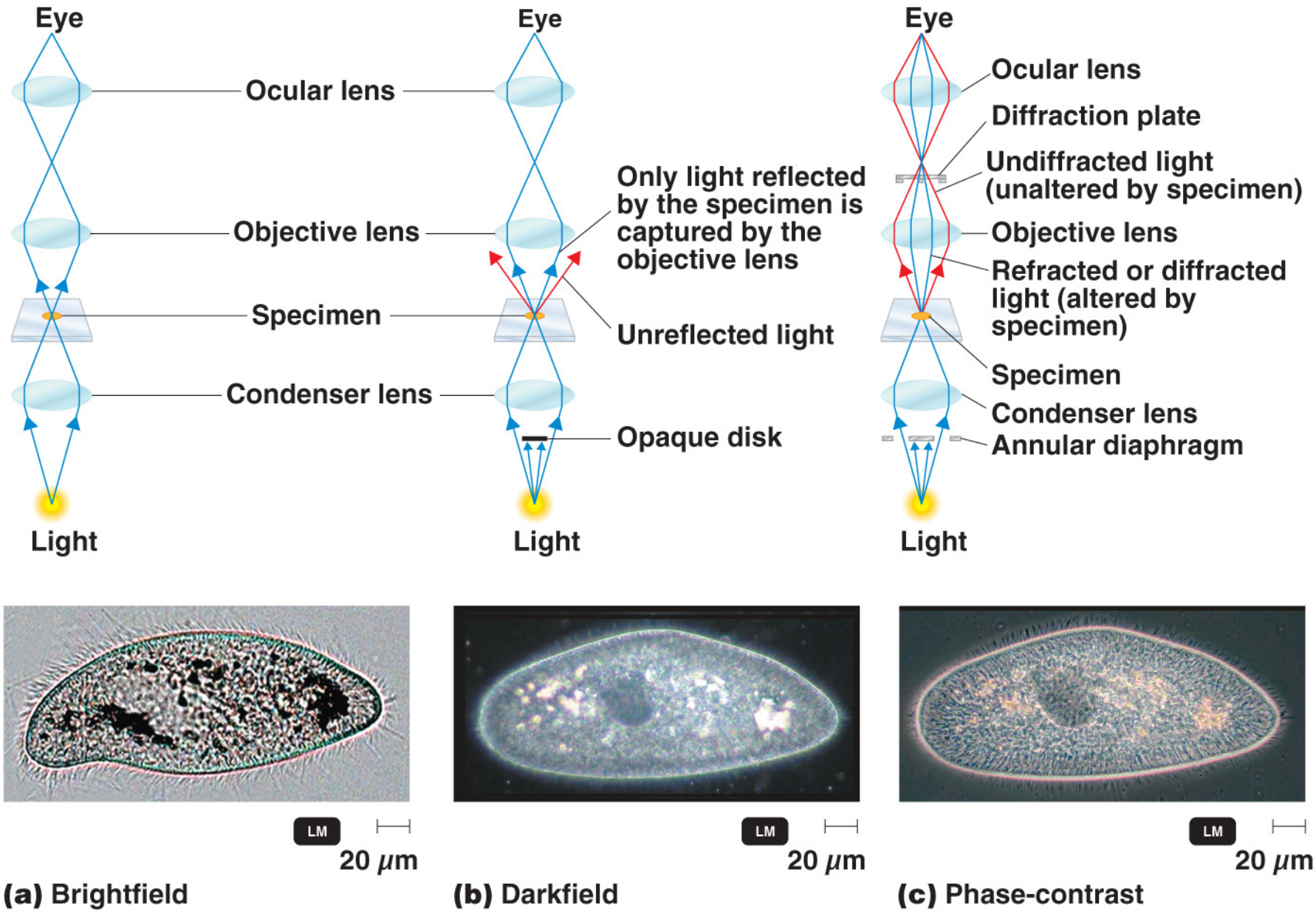
Microscope Types



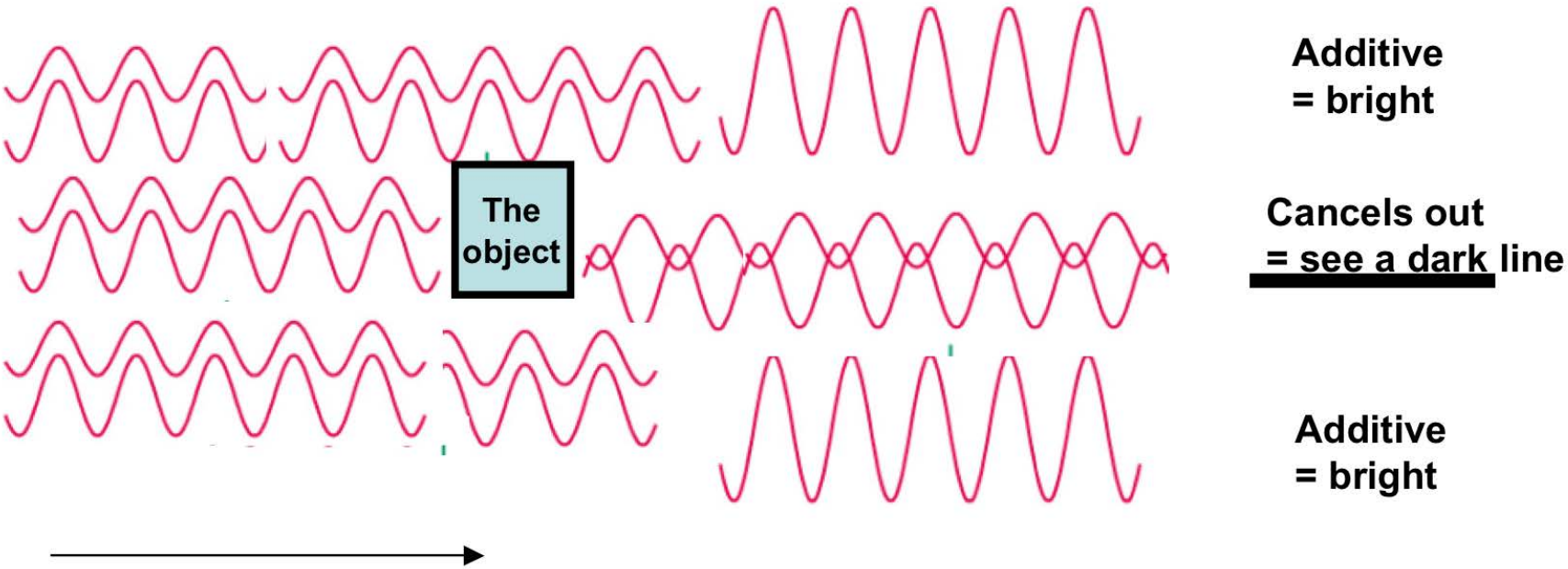
- What does it mean when a microscope has a resolution of 0.2 nm?

Variations on light microscopy

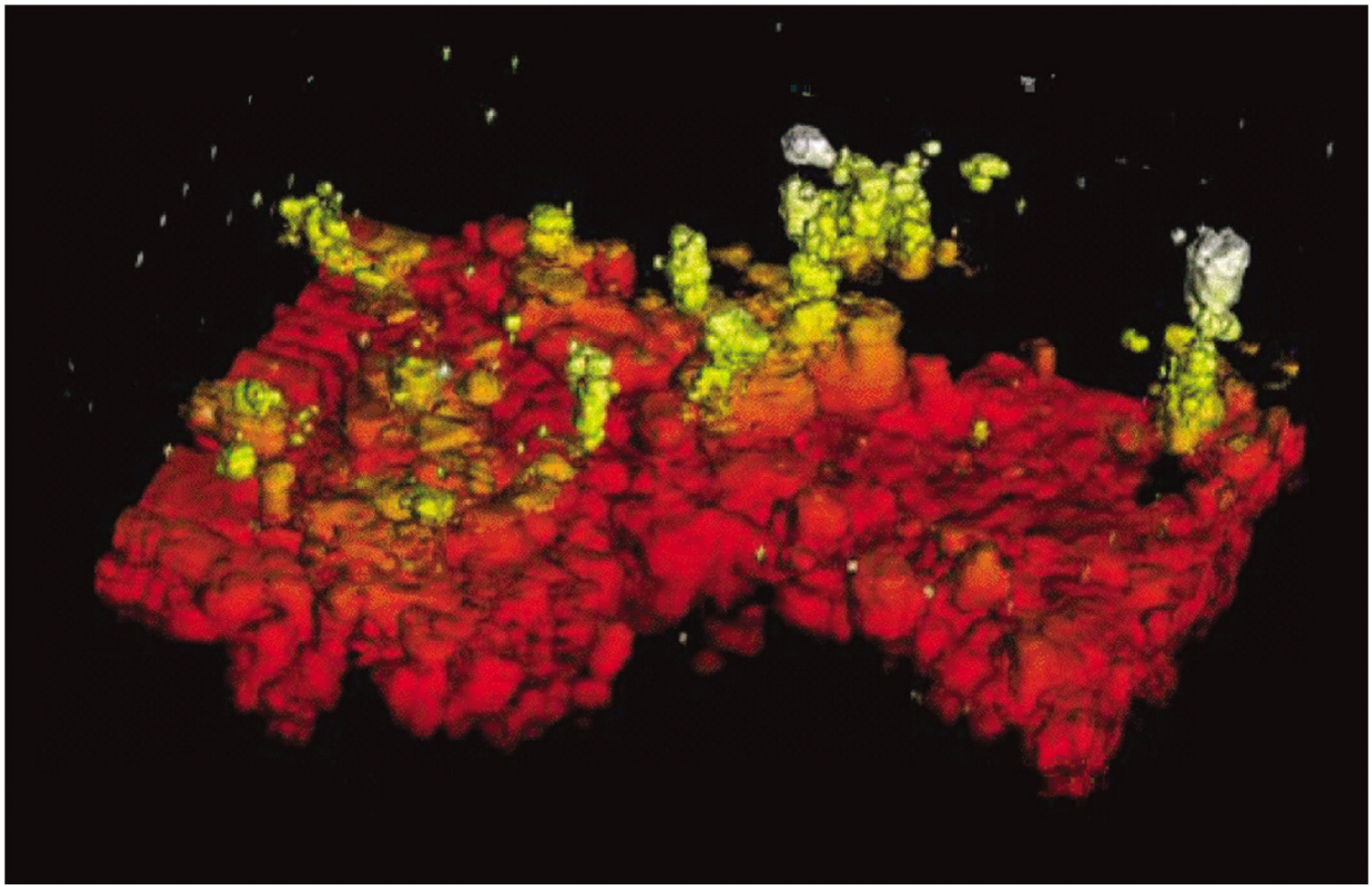
- Dark field
- Phase-contrast
- Fluorescence



Phase-contrast

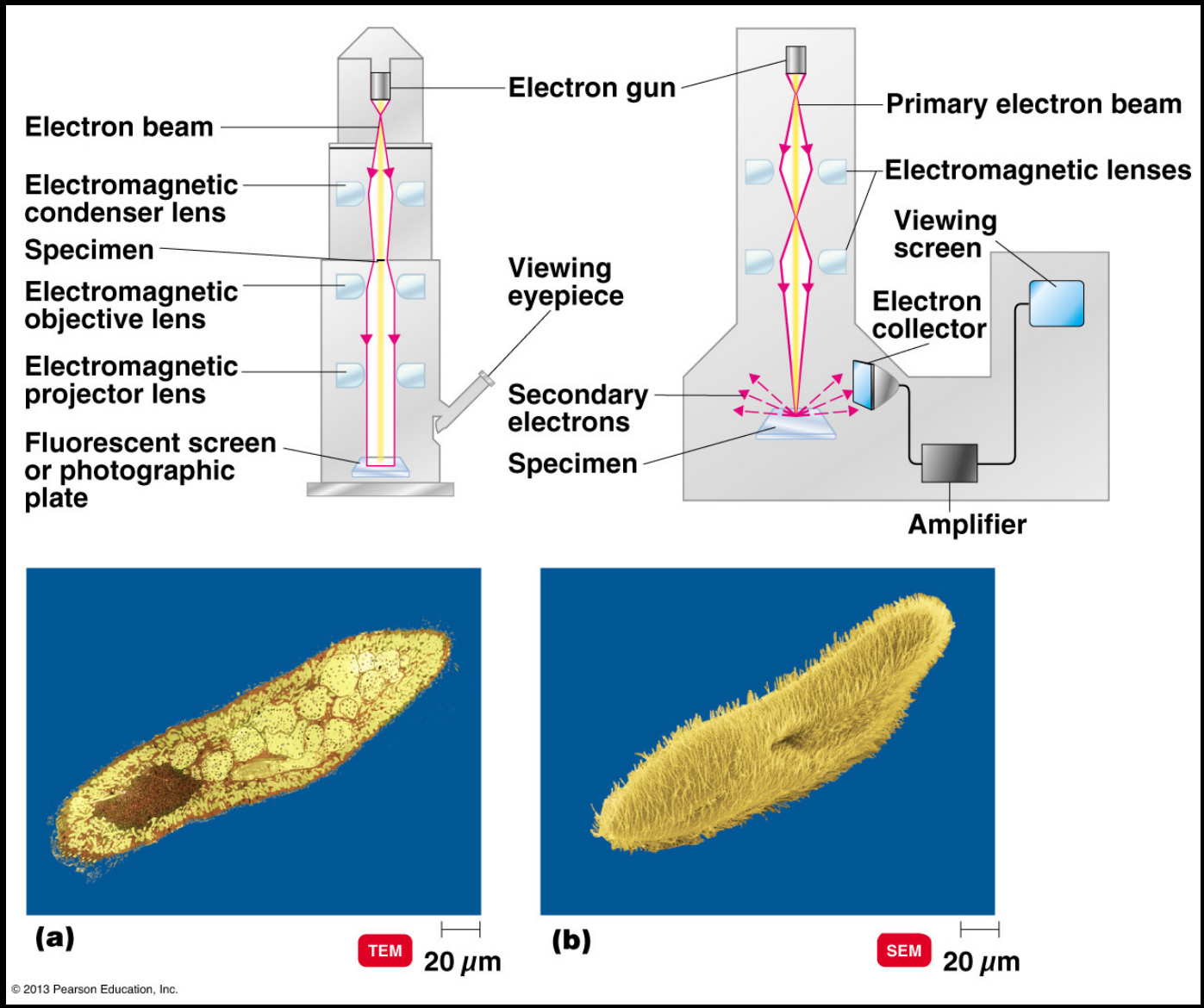


Scanning acoustic microscopy

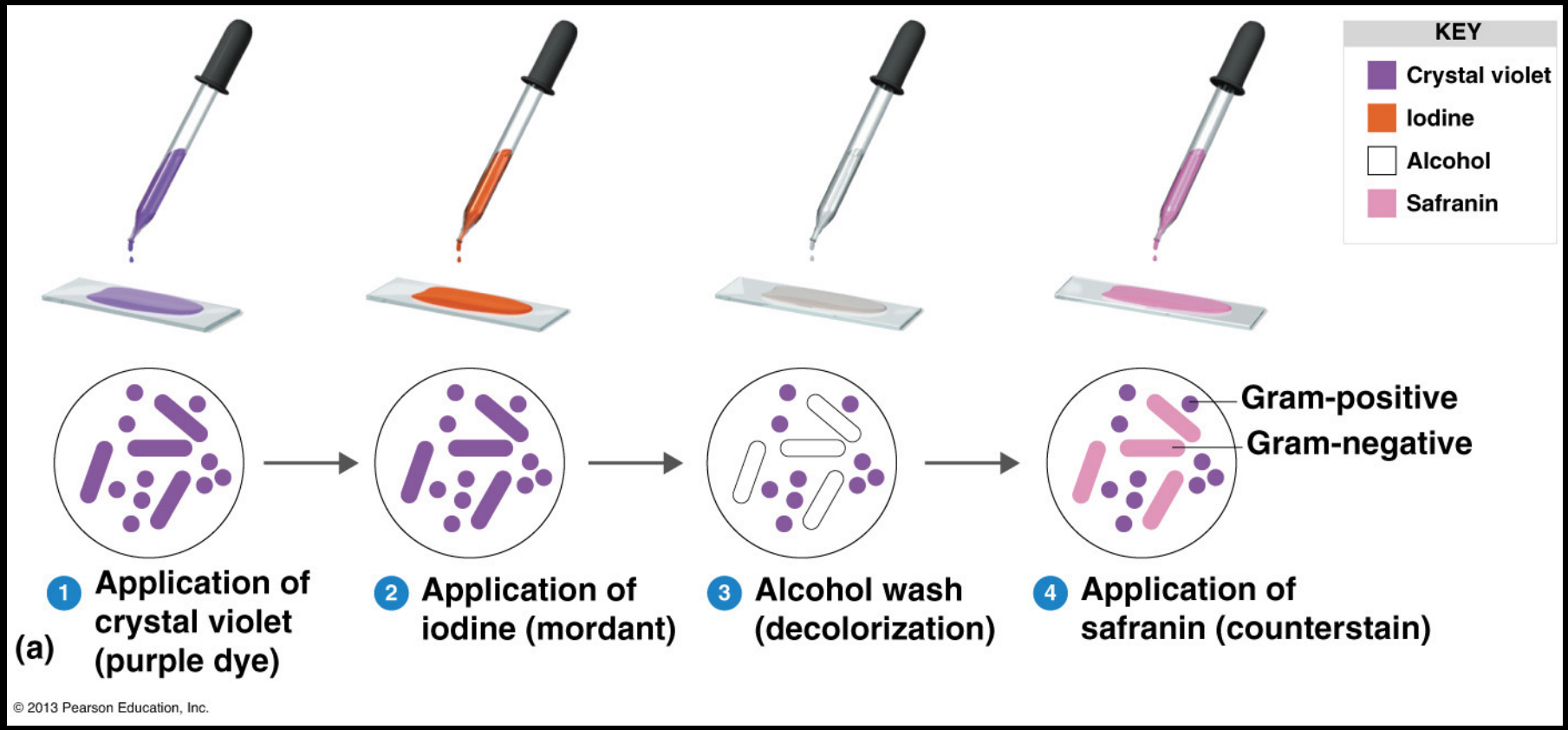


Electron microscopy

Electron microscopy



Stains


KEY
Crystal violet
Iodine
Alcohol
Safranin
Gram-positive
Gram-negative
(a)
1 Application of crystal violet (purple dye)
2 Application of iodine (mordant)
3 Alcohol wash (decolorization)
4 Application of safranin (counterstain)
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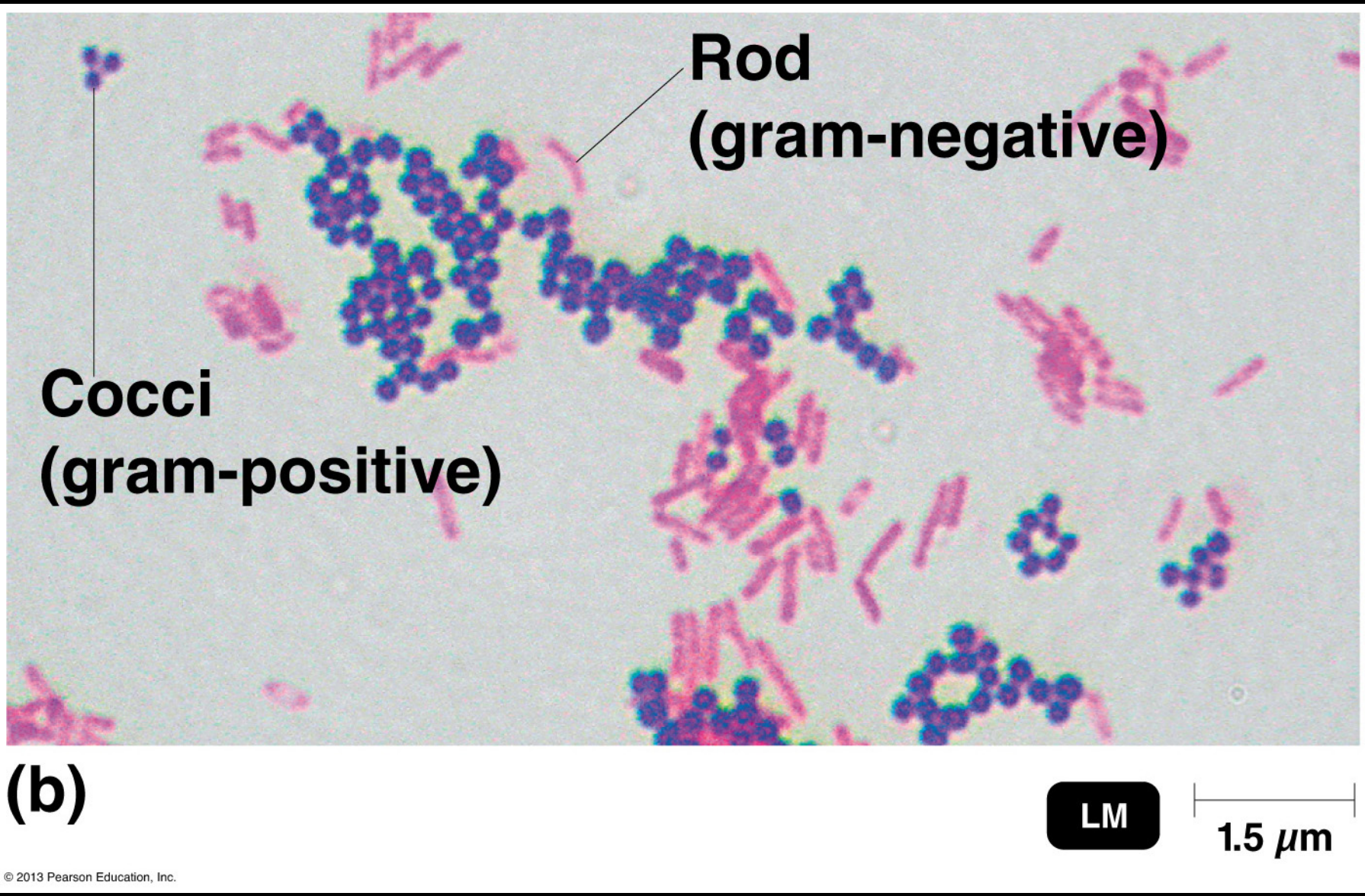
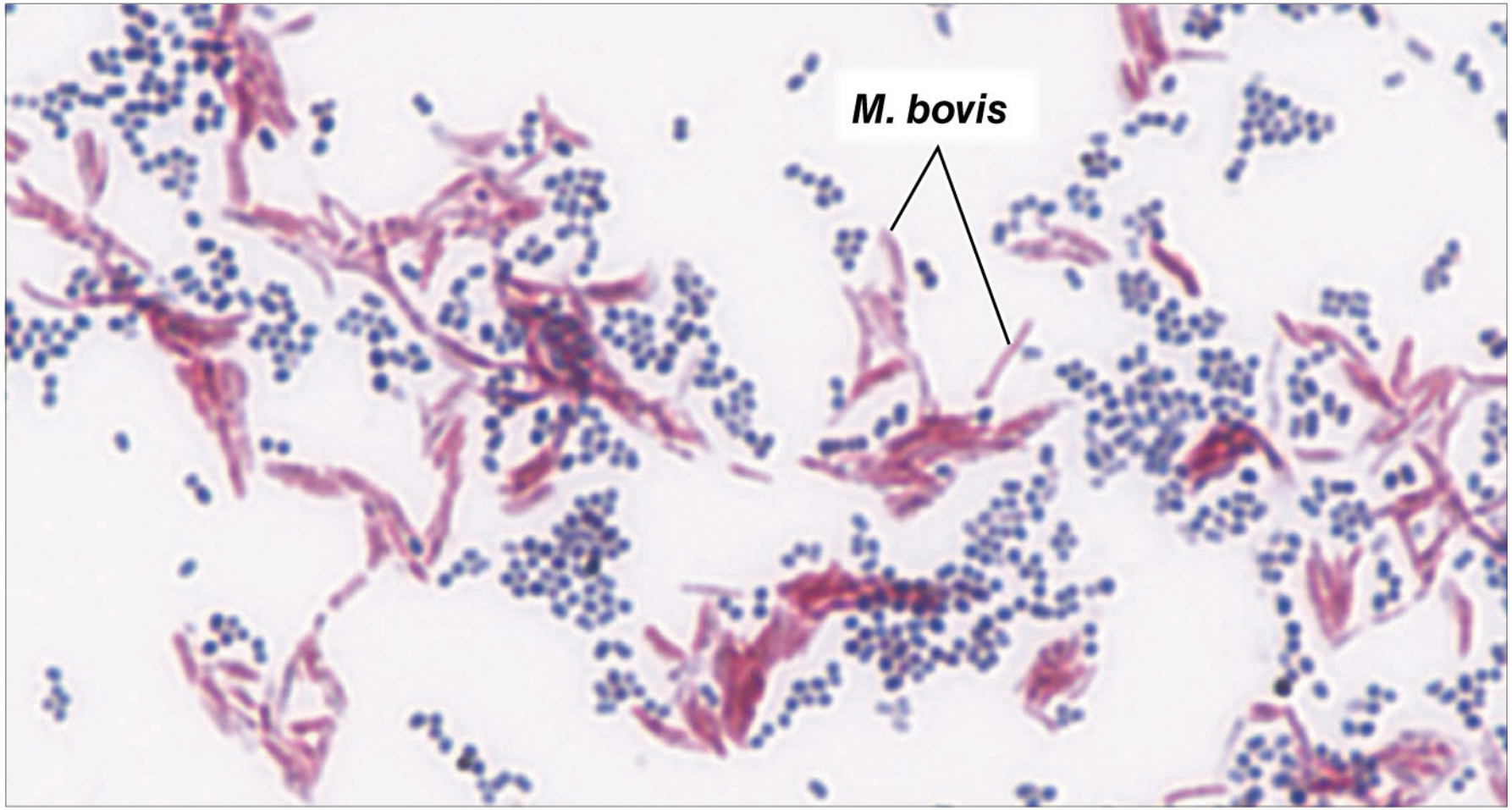
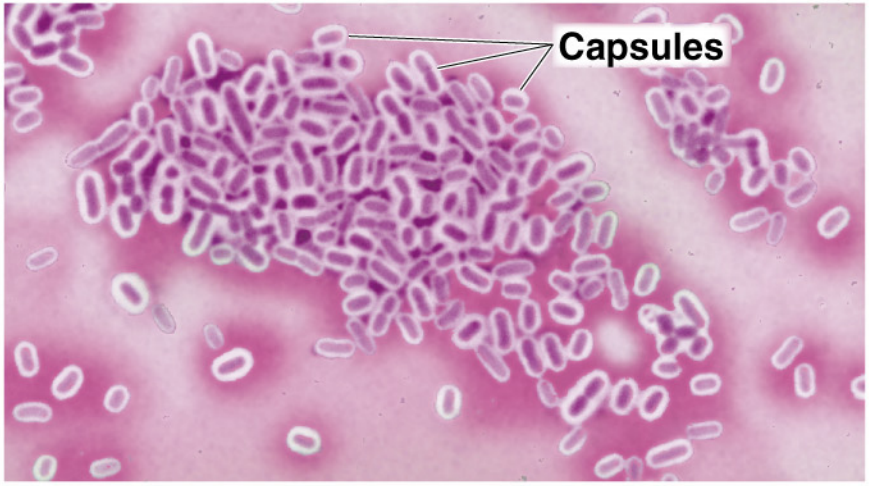
Stains



Stains

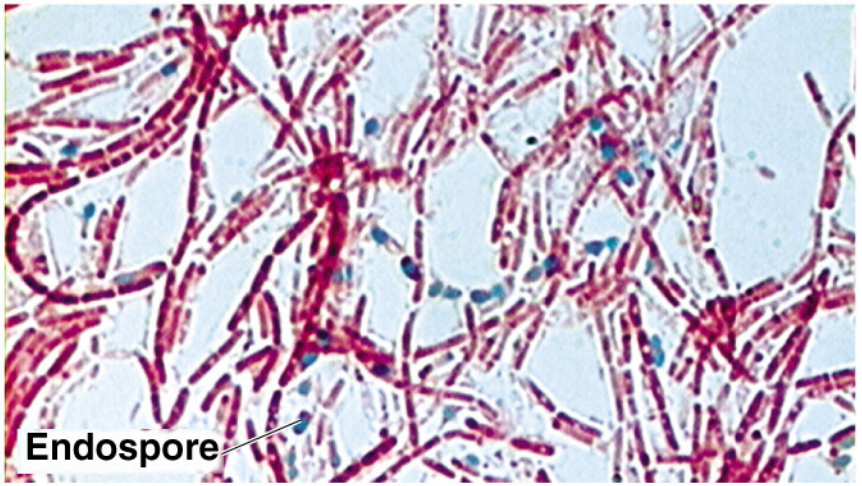


Stains



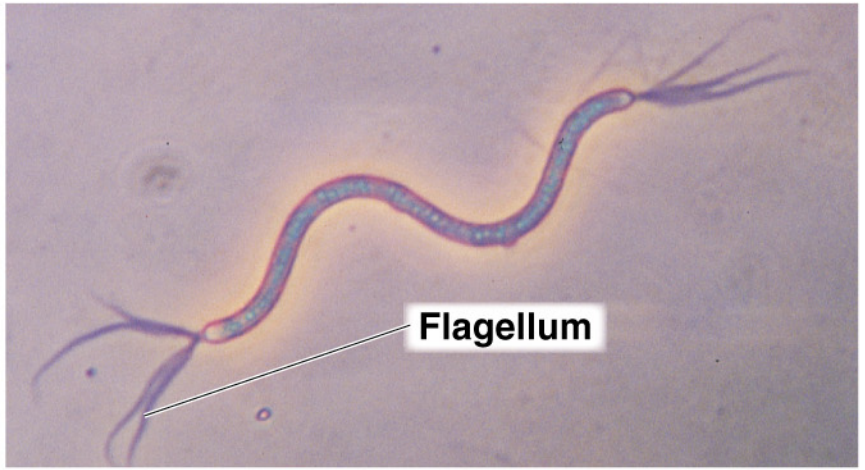
(a) Negative staining

LM 10 μm



(b) Endospore staining

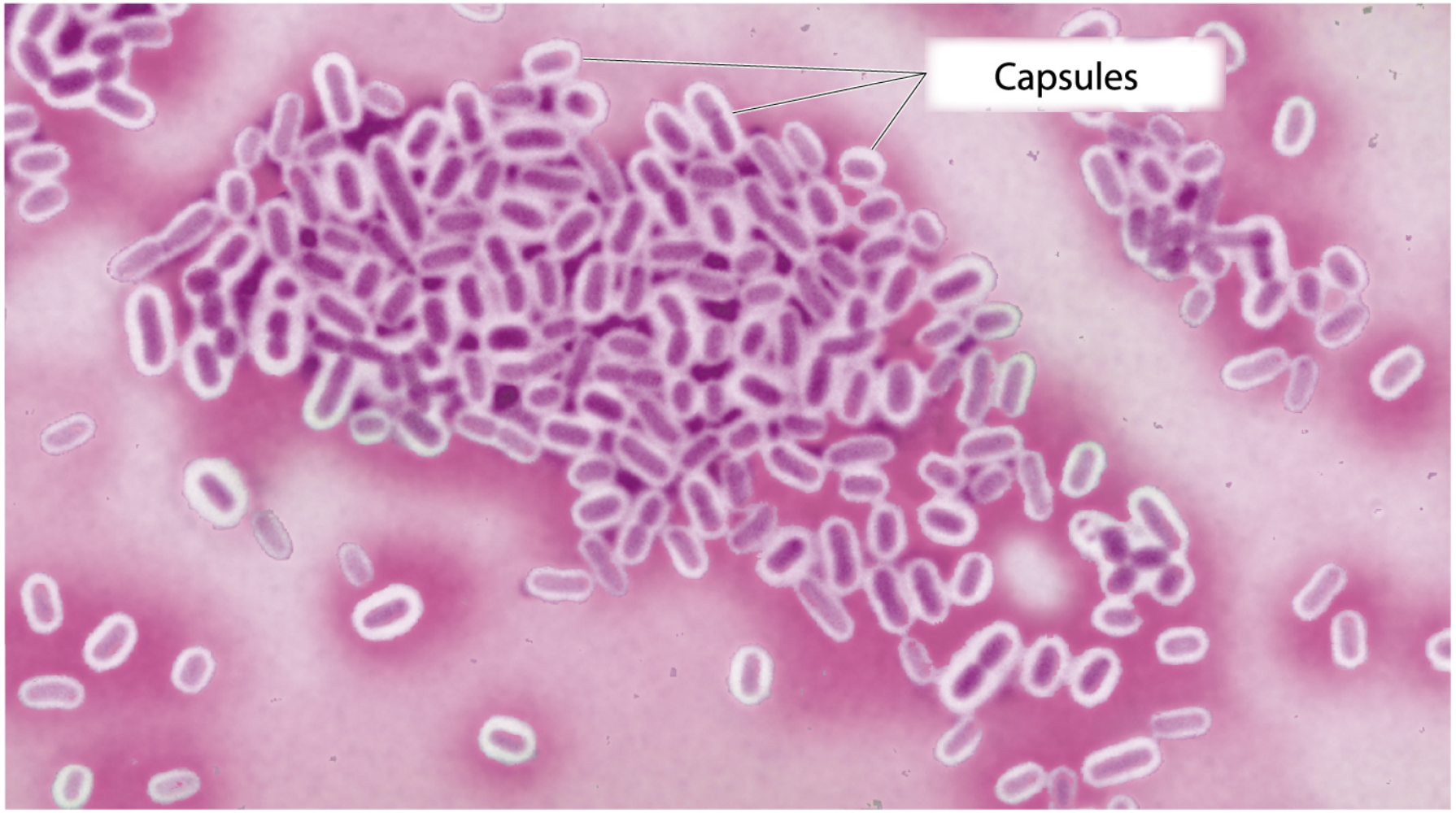
LM 12 μm



(c) Flagella staining

LM 4 μm

Stains

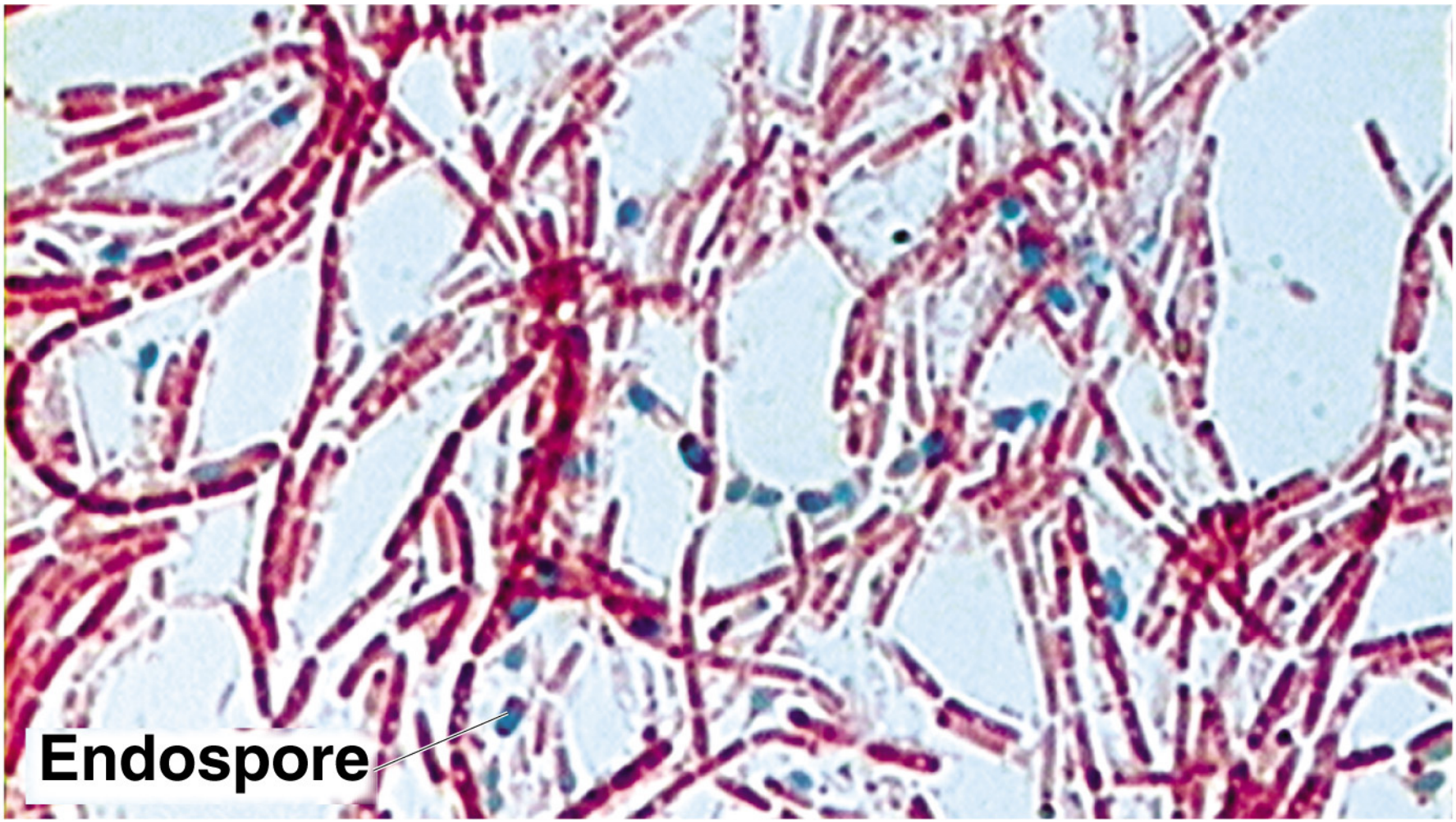


(a) Negative staining

LM

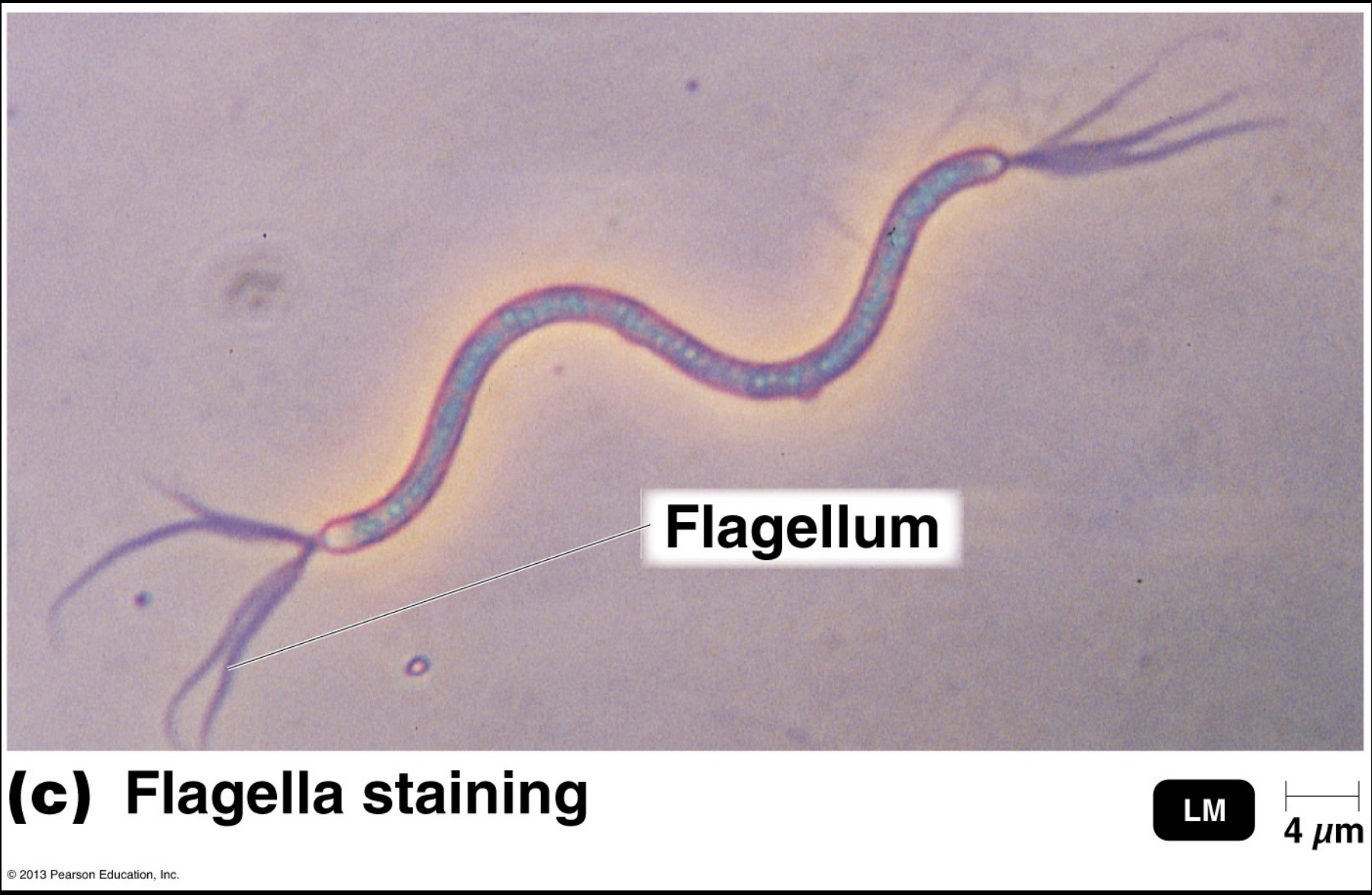
10 µm

Stains



(b) Endospore staining

Stains


Flagellum
(c) Flagella staining
LM
4 μm
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