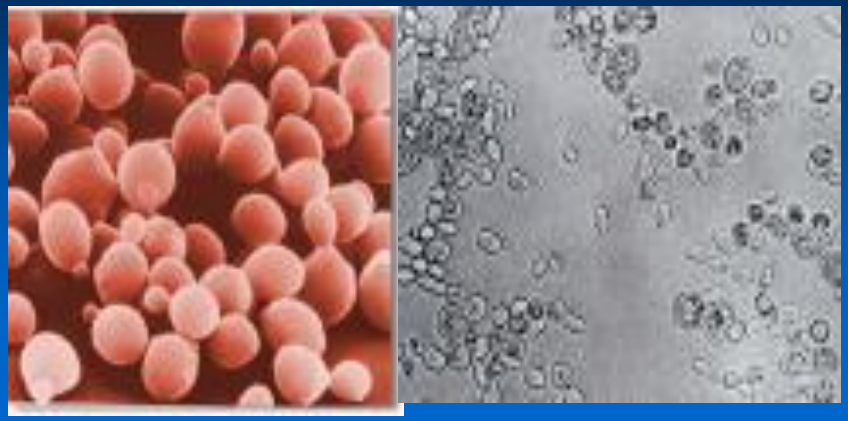
Morphological Properties of Bacteria

MICROBIOLOGY DEPARTMENT



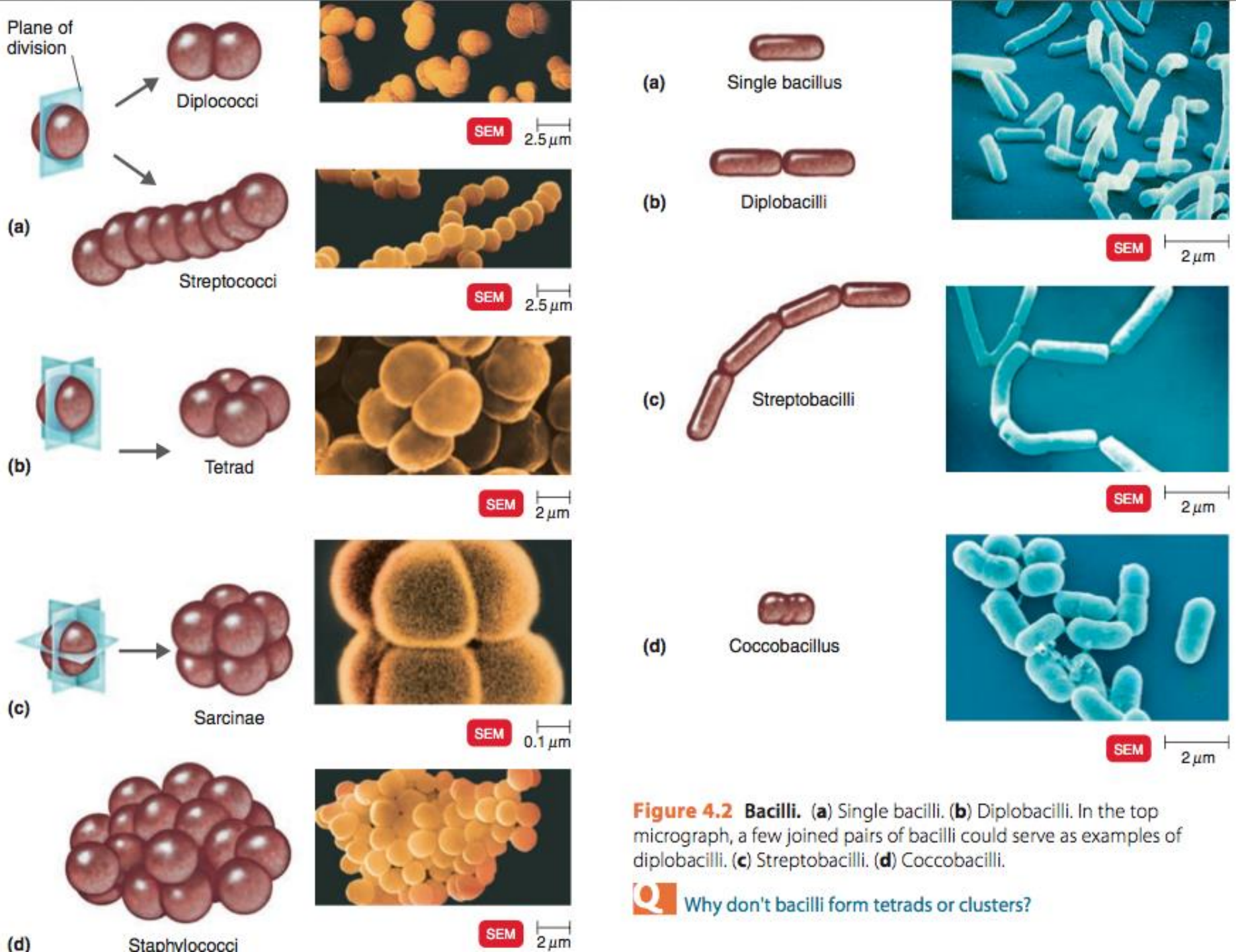
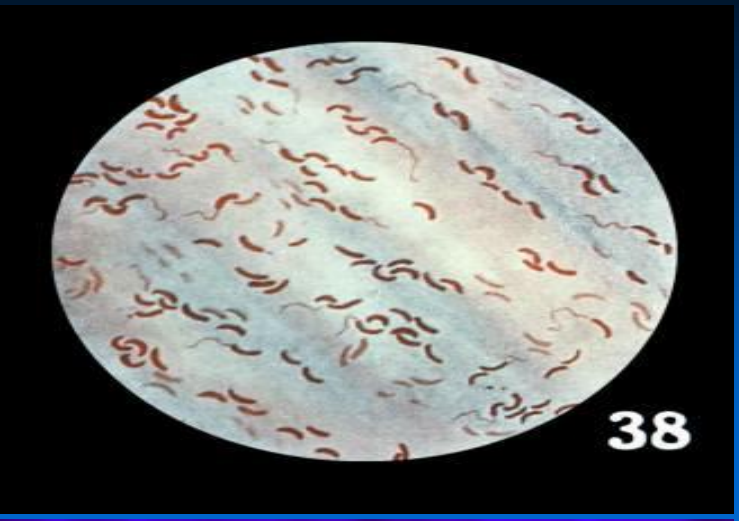
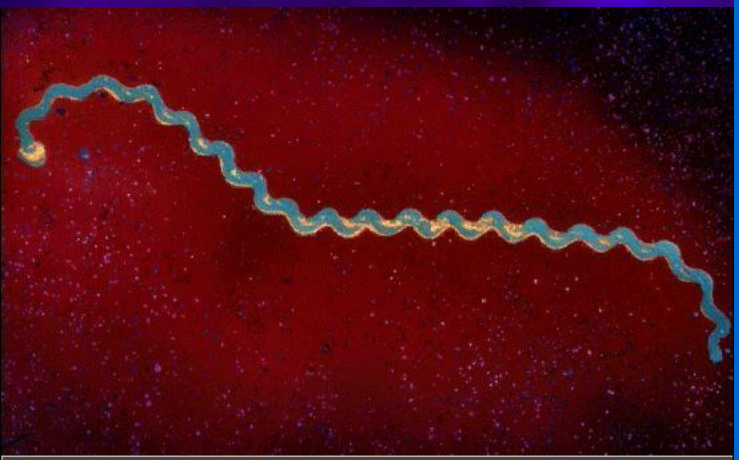


Figure 4.2 Bacilli. (**a**) Single bacilli. (**b**) Diplobacilli. In the top micrograph, a few joined pairs of bacilli could serve as examples of diplobacilli. (**c**) Streptobacilli. (**d**) Coccobacilli.

Why don't bacilli form tetrads or clusters?





Spirochete
The bacteria, included within the kingdom Monera, are single-celled organisms lacking a well-defined internal cellular organization. The bacterium *Leptospirilla ichterohemorrhagiae,* pictured here, exhibits the

(a) Vibrio

SEM

2 μm

(b) Spirillum

SEM

4 μm

(c) Spirochete

SEM

1 μm

Morphology of Bacteria

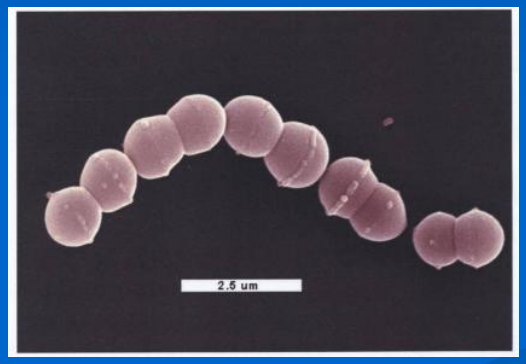
- **Individual Morphology (Microscopic)**
  - Cocci *Staphylococcus* spp.
  - Basil *Bacillus* spp.
  - Spiral *Leptospira* spp.
  - Pleomorfic: L- Forms, PPLO, Involution Forms *Mycoplasma* spp.

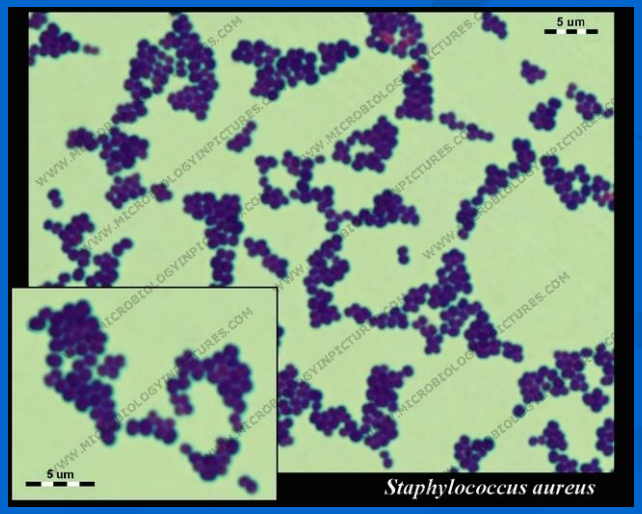
- **Colony Morphology (Macroscopic)**

  S, R, M

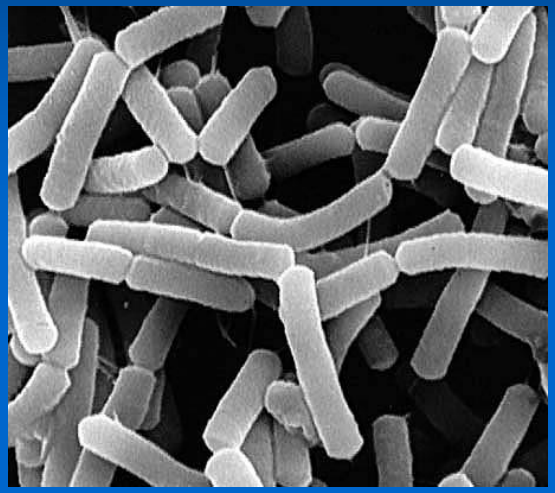
Individual Morphology (Microscopic)

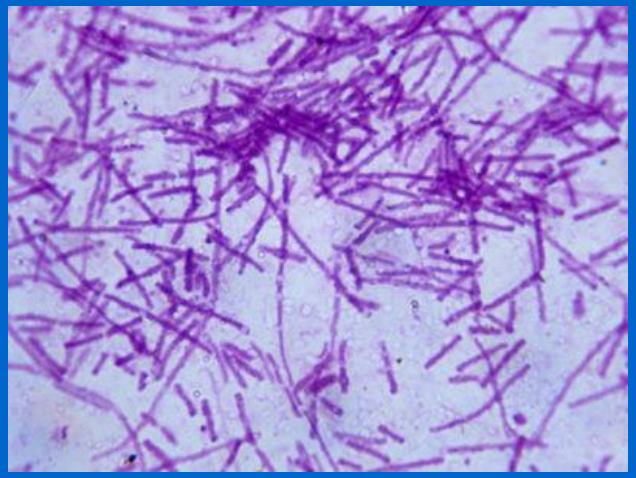
Cocci (*Staphylococcus* spp.)

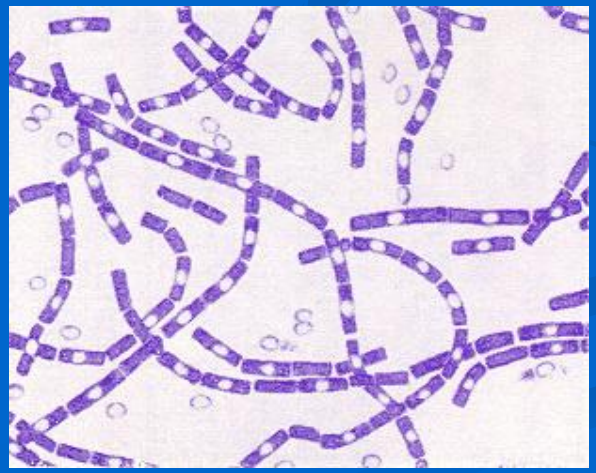




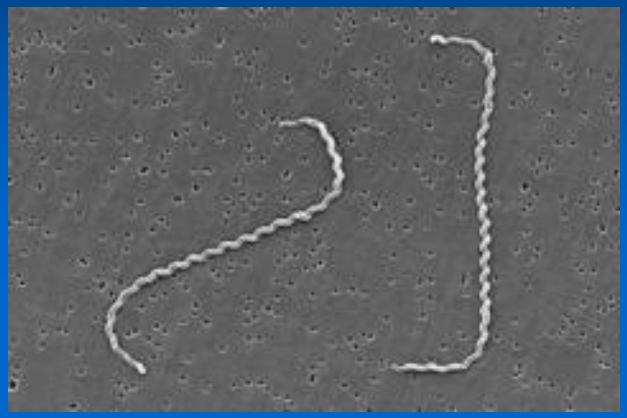
Basil (*Bacillus* spp.)

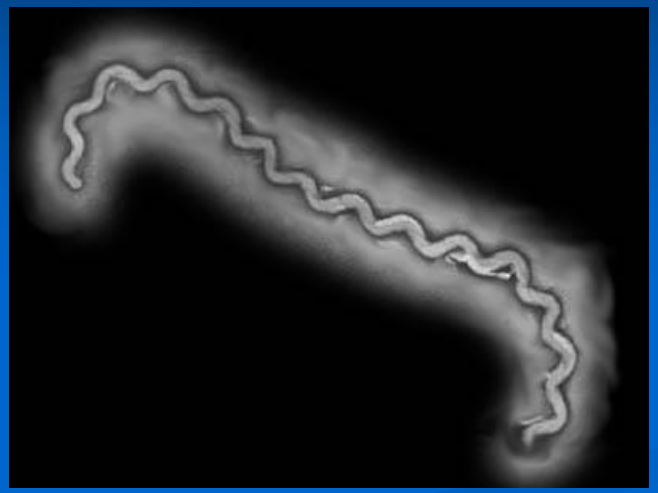


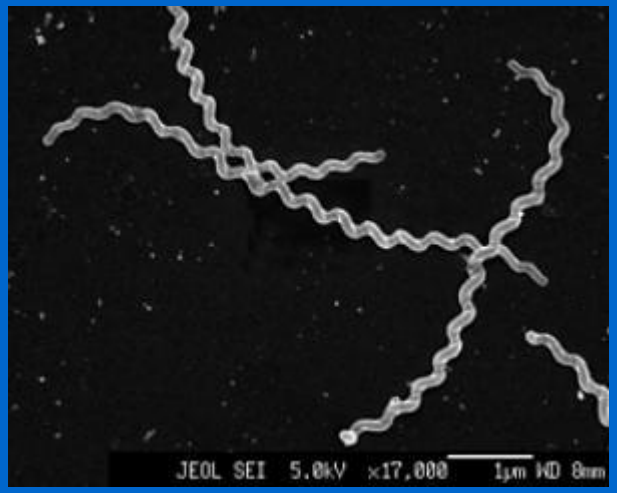


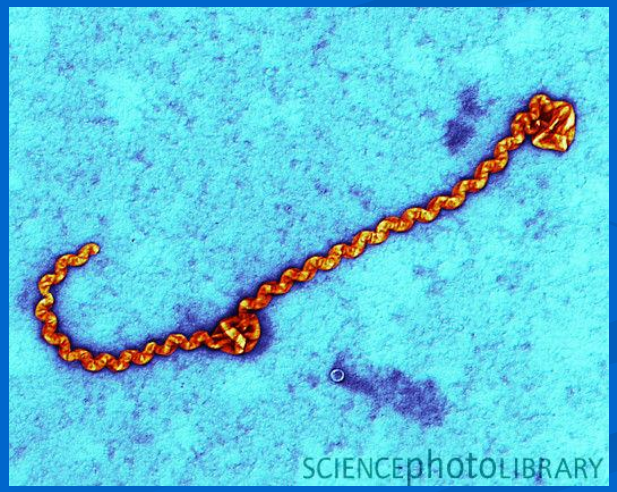


Spiral (*Leptospira* spp.)



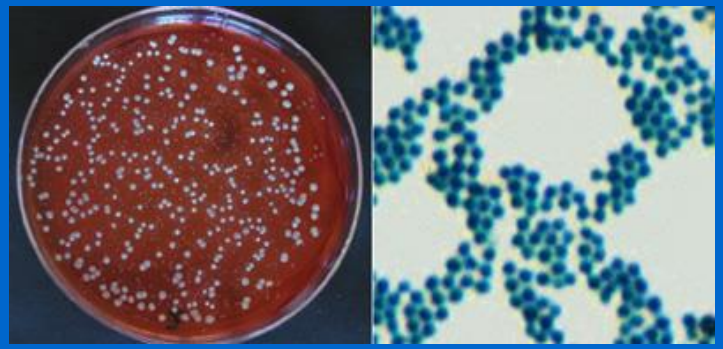




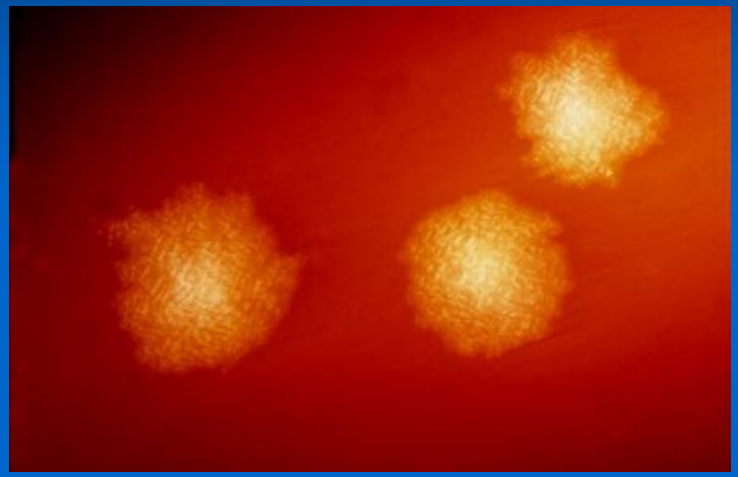


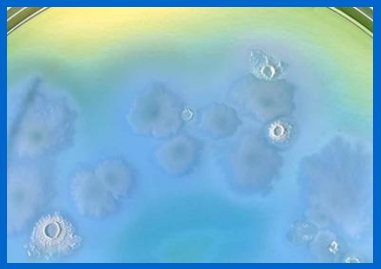
Colony Morphology (Macroscopic)

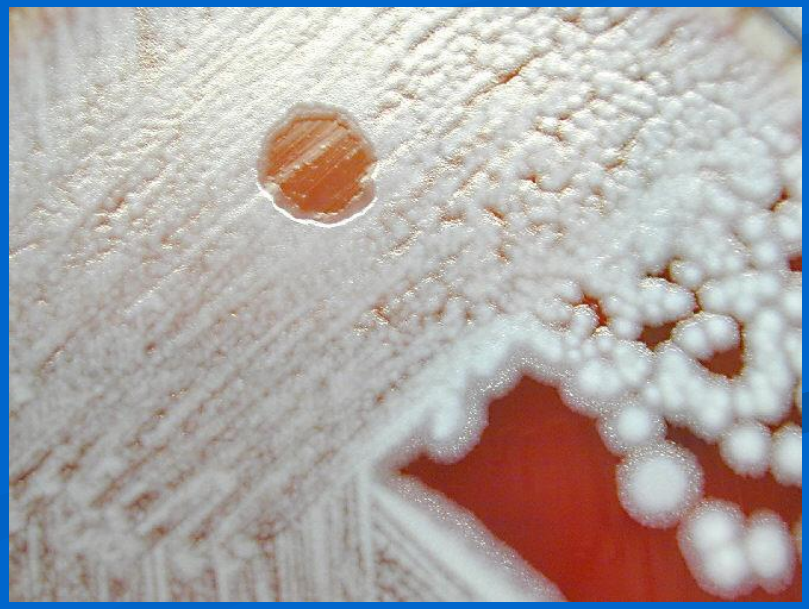
S-type colony morphology (Staphylococcus spp.)



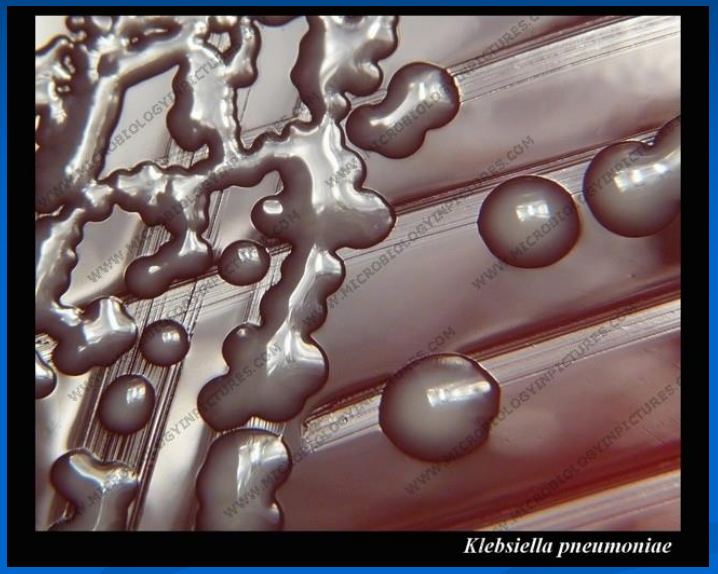
R-type colony morphology (Bacillus anthracis)

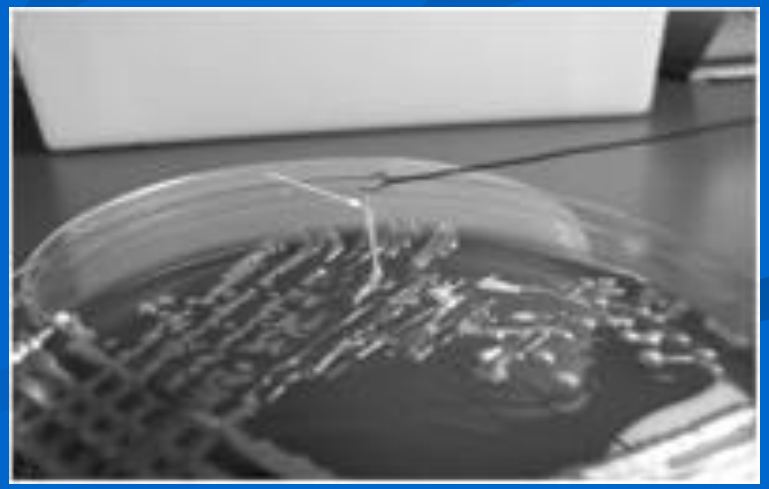


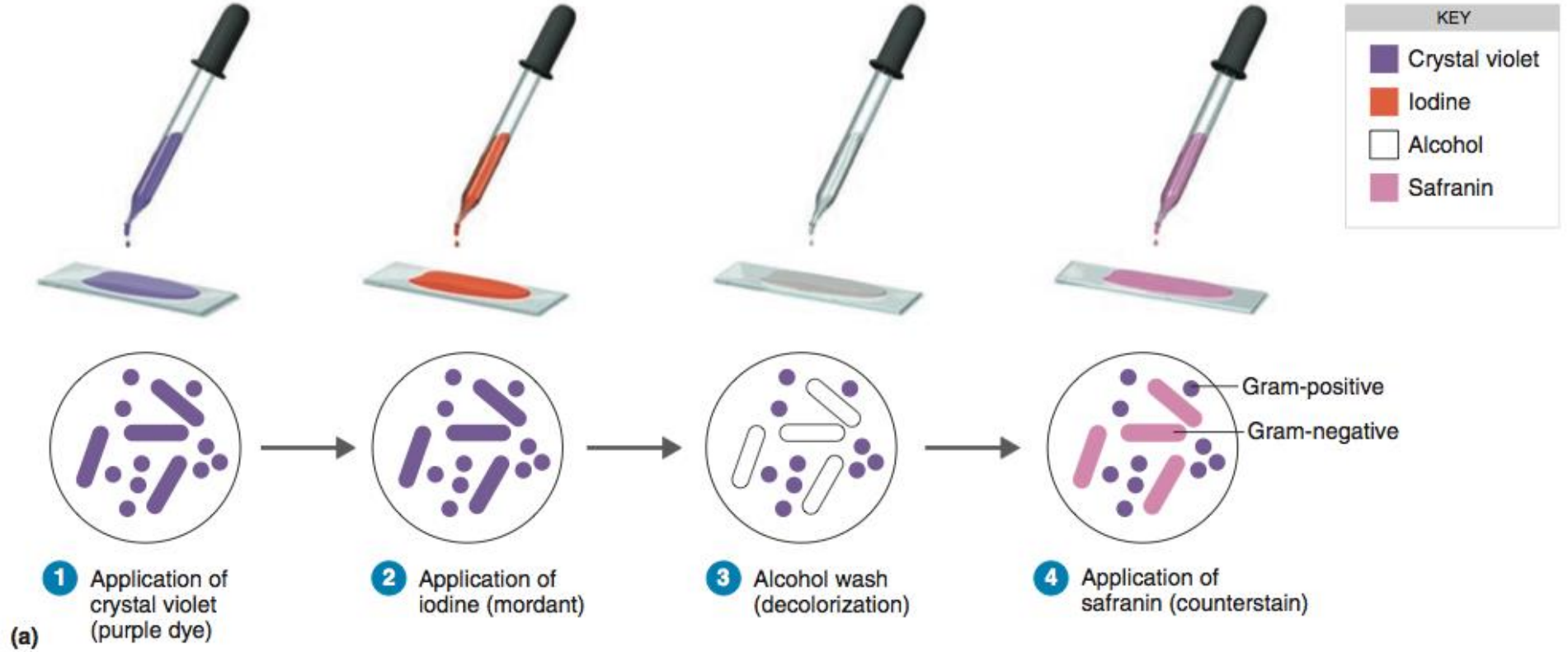


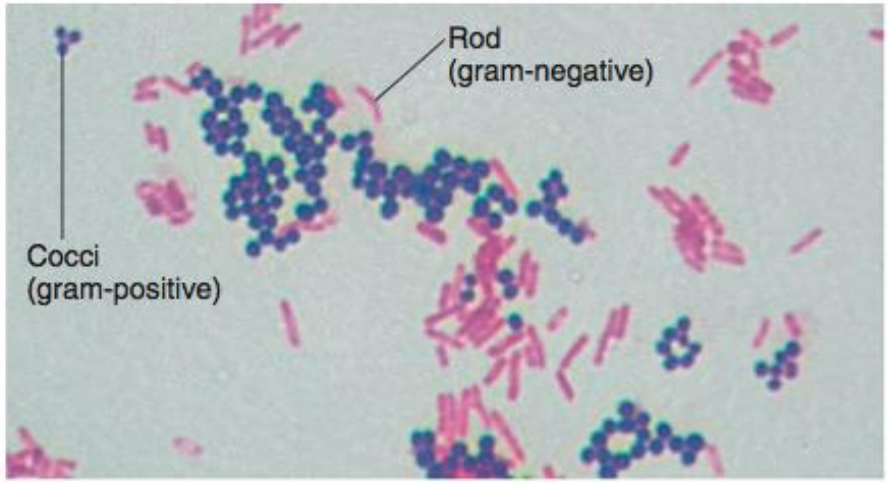


M-type colony morphology (Klebsiella spp.)






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


Rod
(gram-negative)
Cocci
(gram-positive)
(b)
LM
1.5 μm

Size of the Bacteria

10^{-6} micrometre (μm)
(Bacterias)

- 10^{-9} nanometre
(Viruses)

Exception: Nanobacters

80- 500nm

Nanobacters can pass from filter in blood and serum.