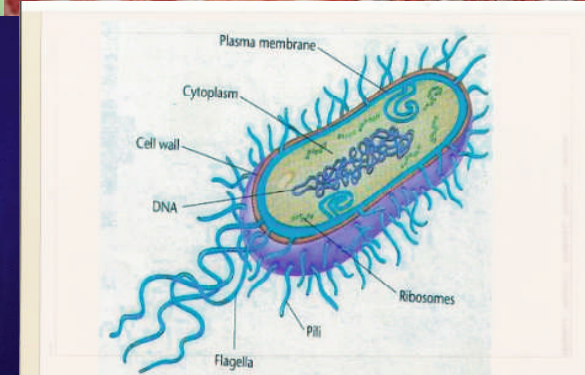


Micro-organismes

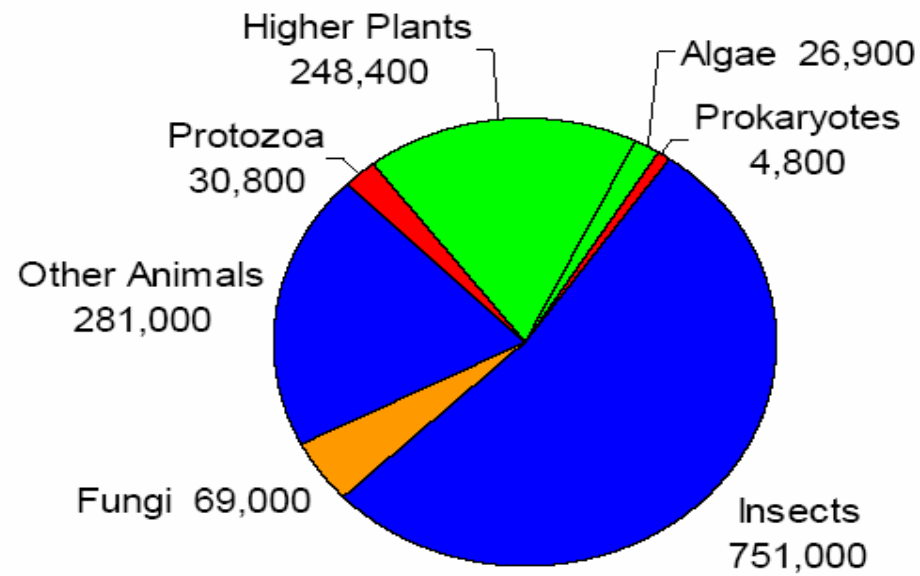


Dans l'assiette

Bio-diversité

Recognized Diversity of Life

1,413,000 Species



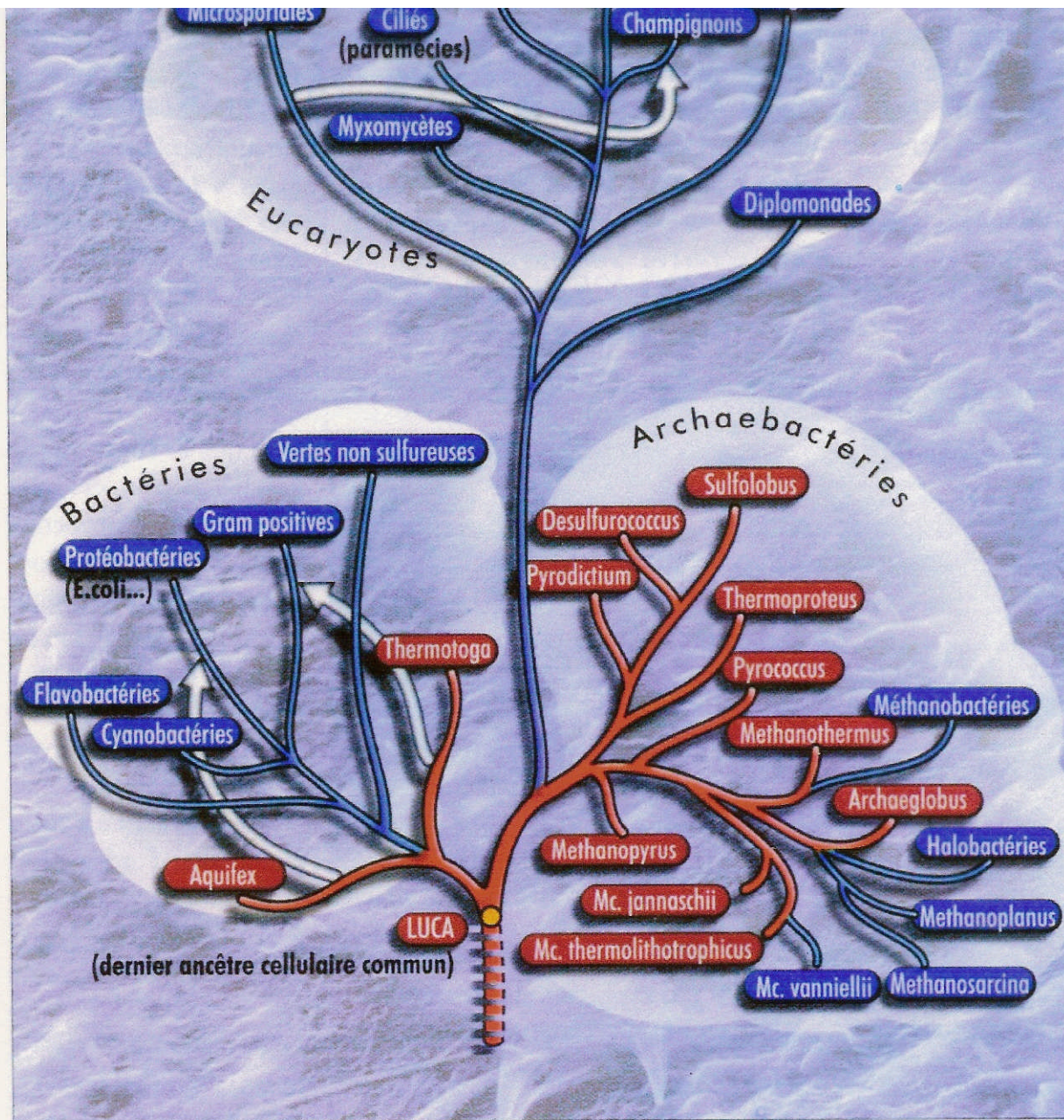


Figure 1. Tous les êtres vivants cellulaires peuvent être regroupés en deux domaines composés d'organismes procaryotes (sans noyau bien différencié), les bactéries et les archaeobactéries, et un troisième domaine composé d'organismes eucaryotes (dont les cellules possèdent un noyau entouré d'une membrane). Les limites conduisant à des organismes

Micro-organismes

- Bactéries
 - Escherichia coli
 - Staphylococcus aureus
 - Listeria monocytogenes
- Levures
 - Saccharomyces cerevisiae
- Moisissures
 - Aspergillus niger
 - Penicillium roqueforti
 - Geotricum candidum

Taille

- Micromètre : 1/1000 000 de mètre
 - Sable : 100 μ - 1mm
 - Cheveux : 30 μ - 150 μ
 - Moisissures : 3 μ -150 μ
 - Levures : 2 μ - 30 μ
 - Bactéries : 0,2 μ - 20 μ
 - Virus : 0,005 μ - 0,1 μ

Formes

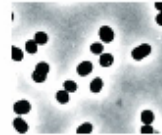
Cell Morphologies

In general,

Limited number of shapes
Limited morphology
Small size



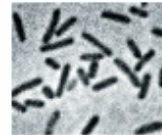
Coccus



~ 0.5 – 1 μm



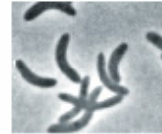
Rod



~ 0.5 X 1 – 3 μm



Spirillum



~ 0.5 X 1 – 5 μm

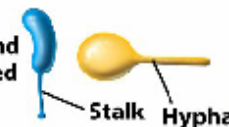


Spirochete

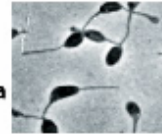


~ 0.2 - >1 X 5 – 10 μm

Budding and
appendaged
bacteria



Stalk Hypha



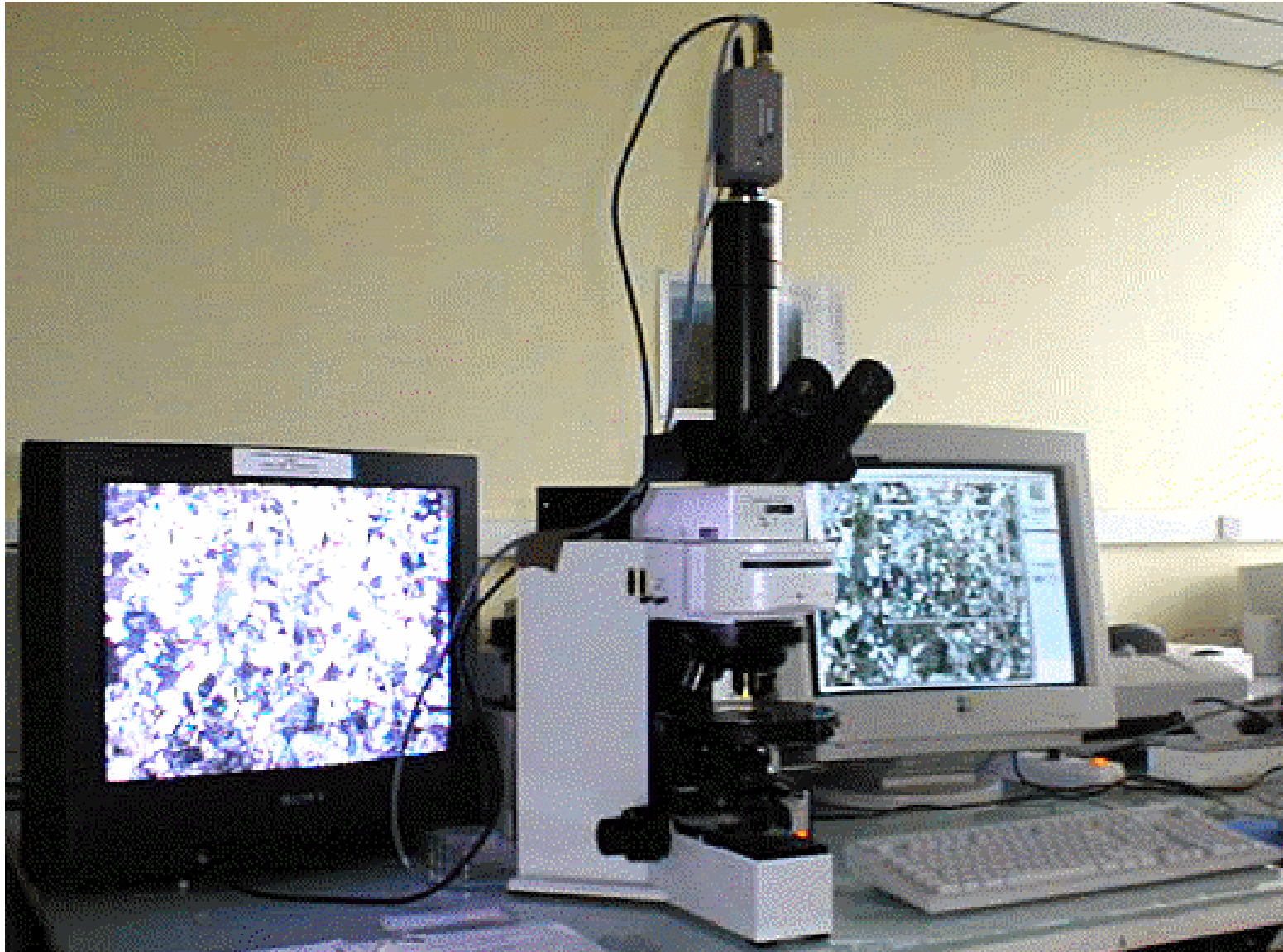
~ < 1 μm (stalk variable)

Filamentous
bacteria



variable – up to 100s of μm

Microscope optique

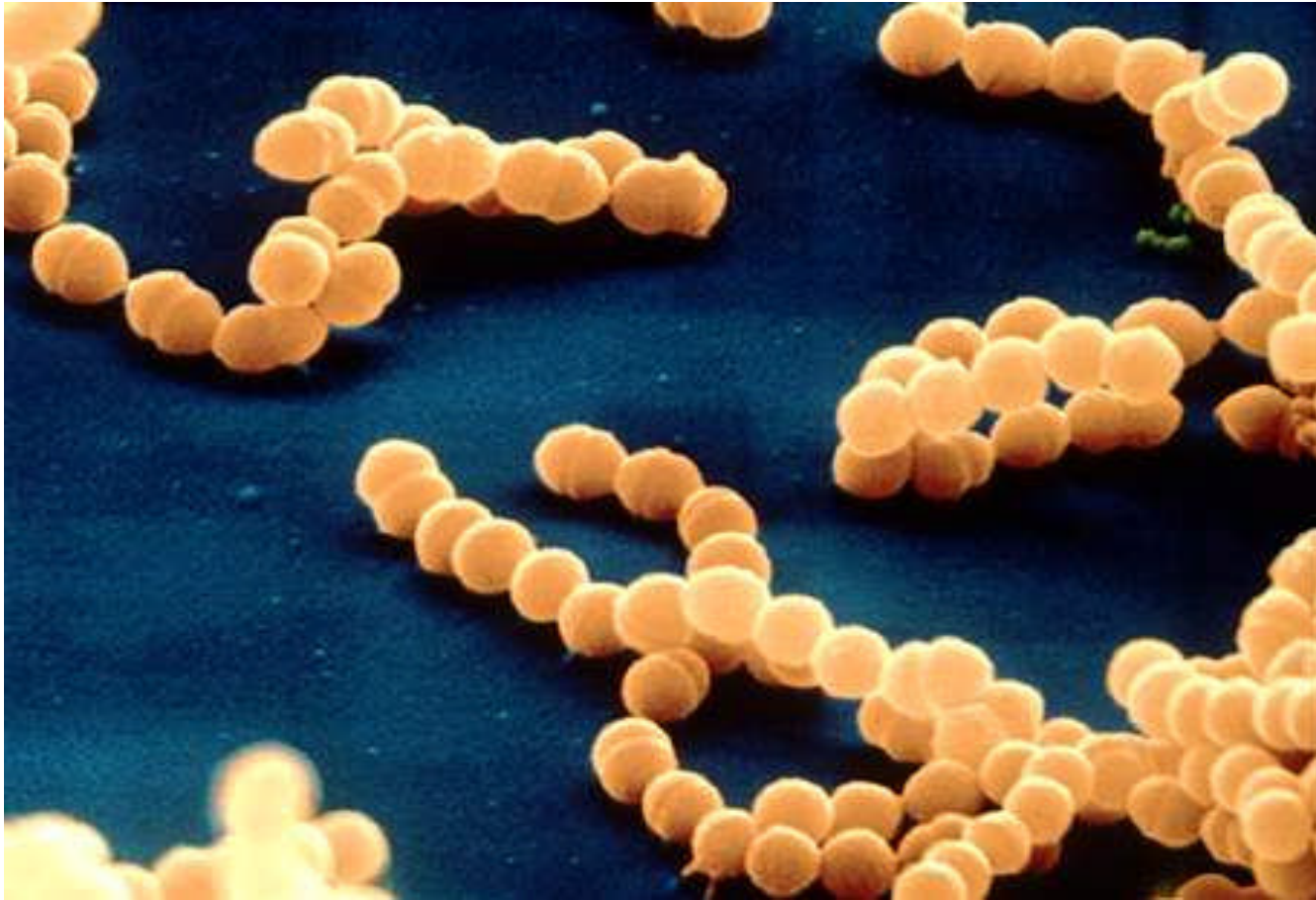


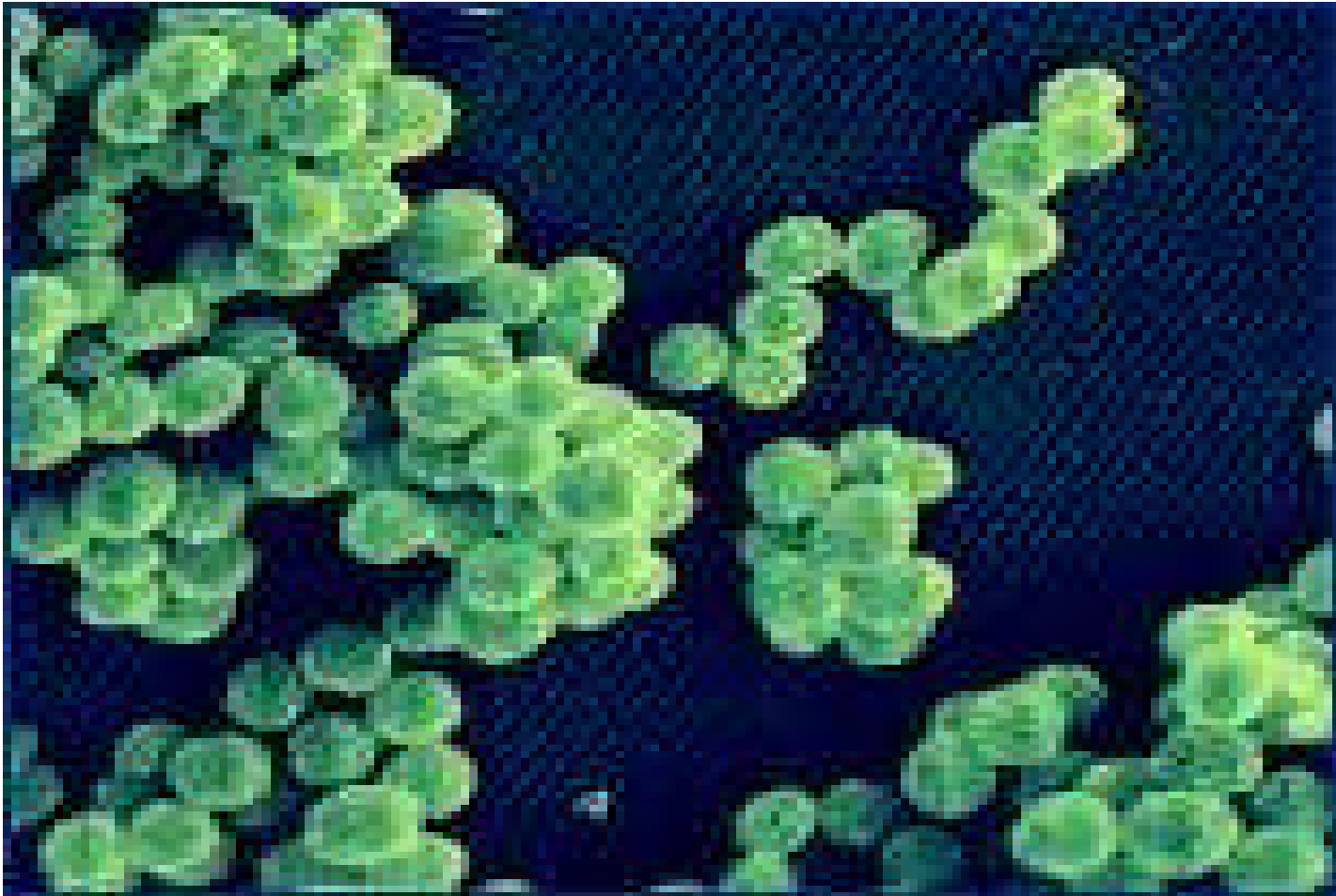
Microscope électronique à balayage

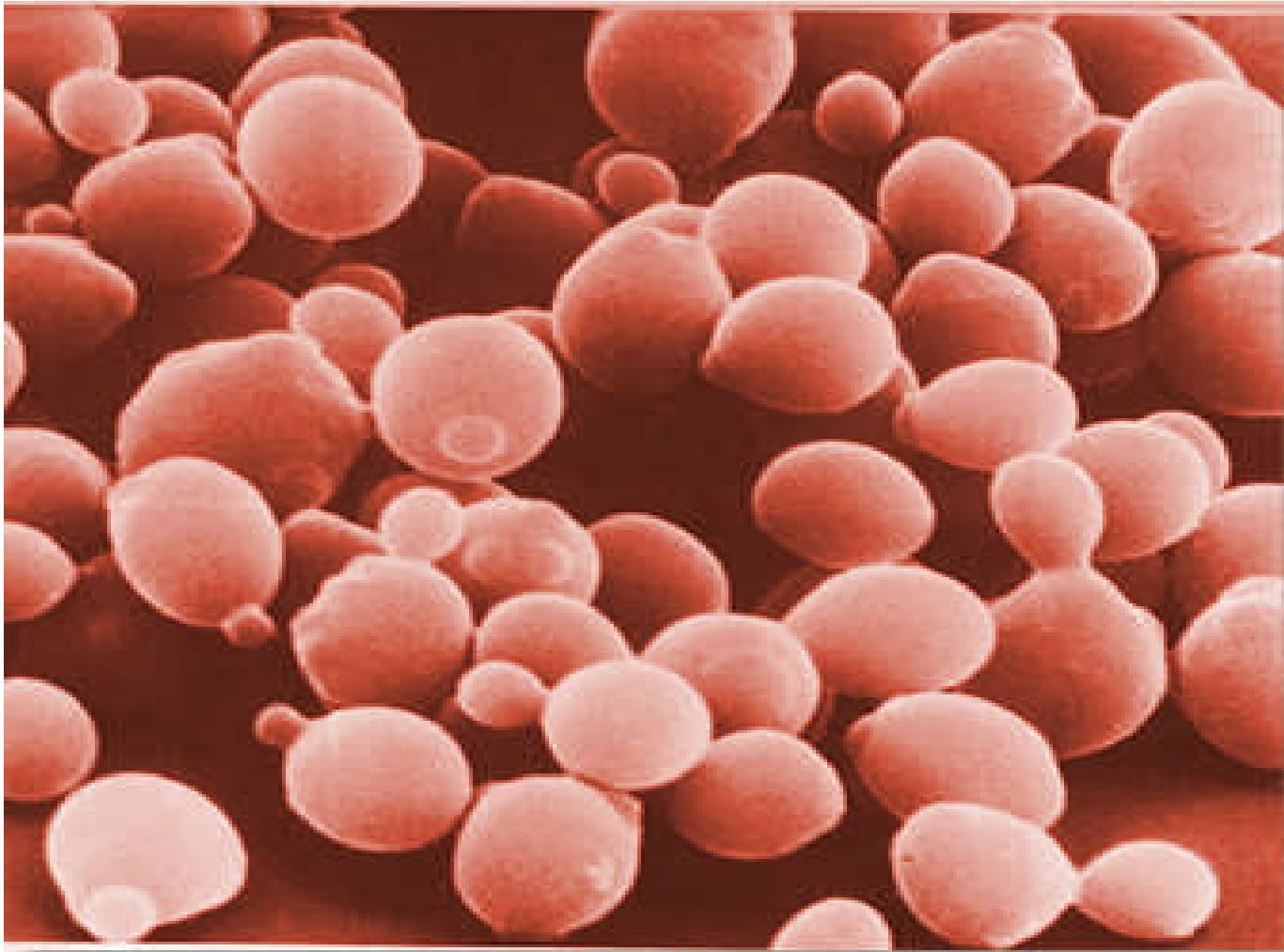


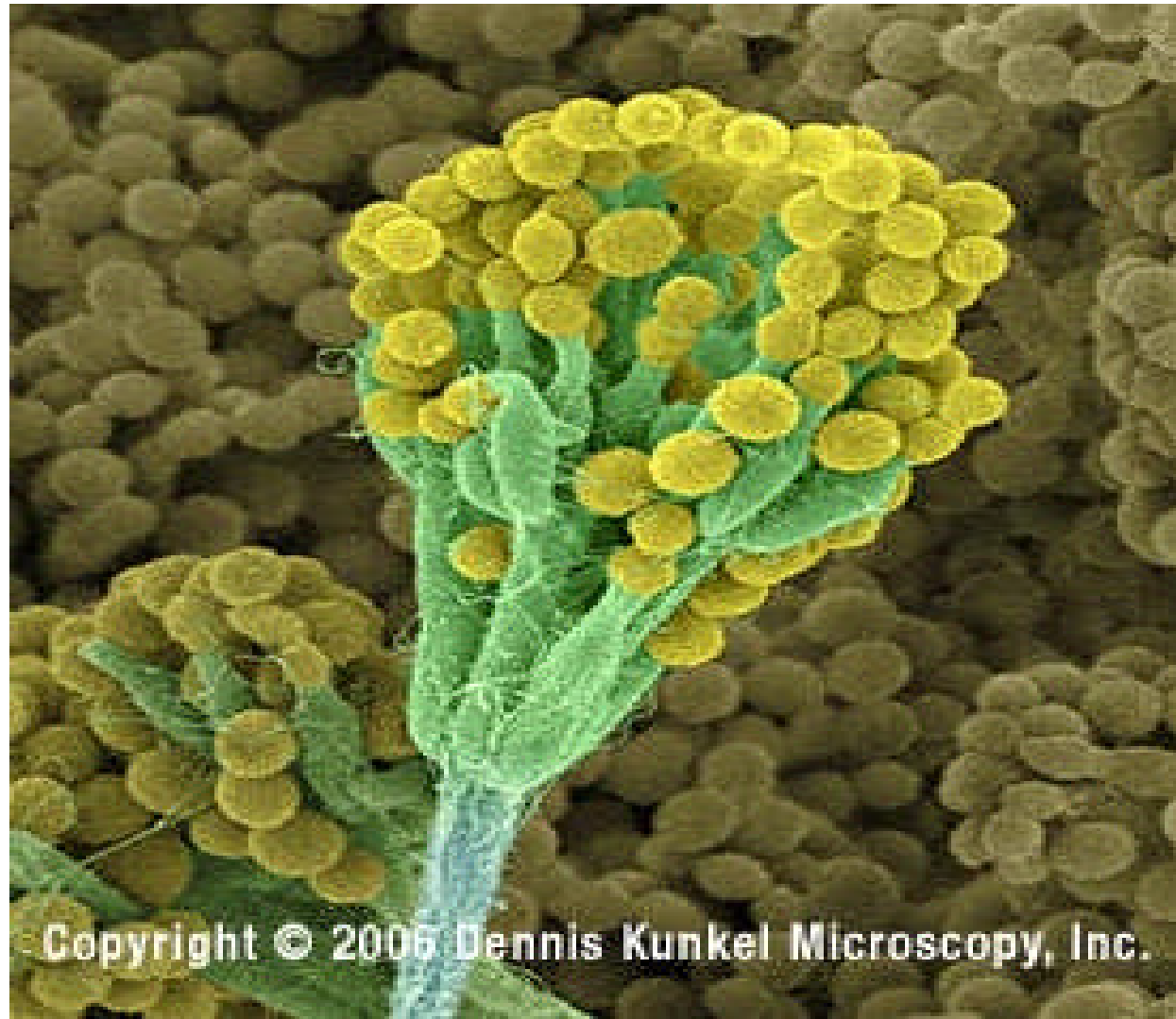
Pseudomonas aeruginosa



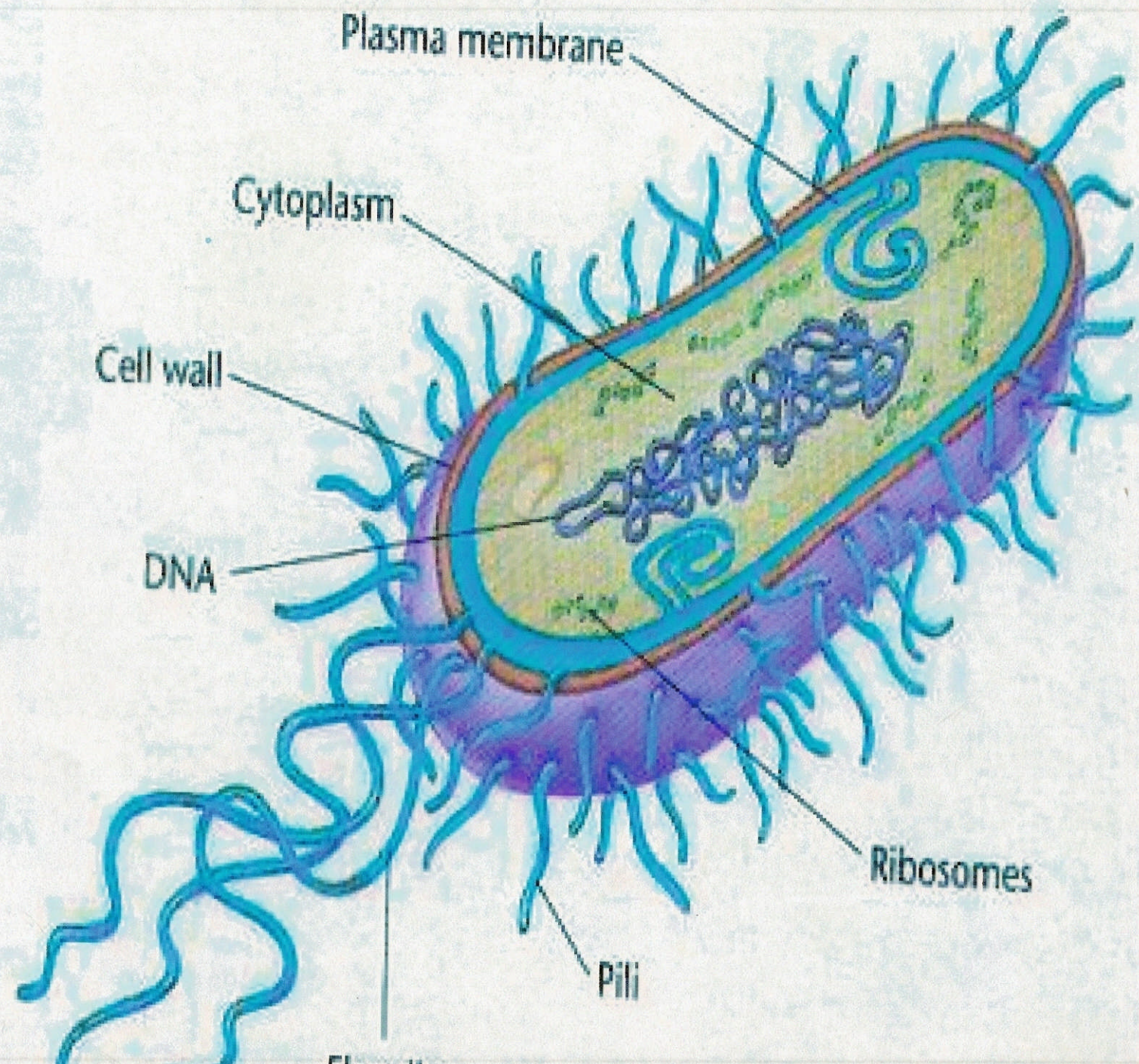








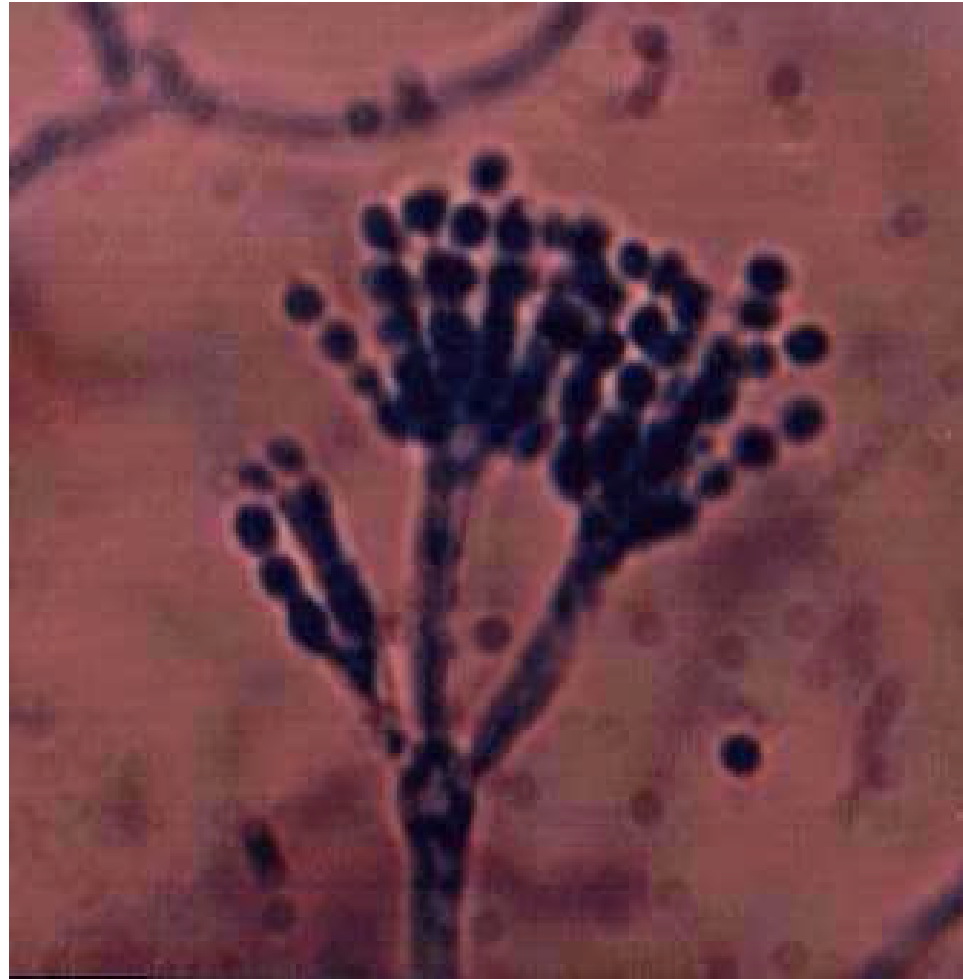
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Levures



Moississure Penicillium



Produits alimentaires

- Pain, brioche
- Yaourts, fromages
- Bières, vins, cidres, hydromel
- Alcool de bouche
- Choucroute
- Légumes
- Charcuteries

Additifs alimentaires

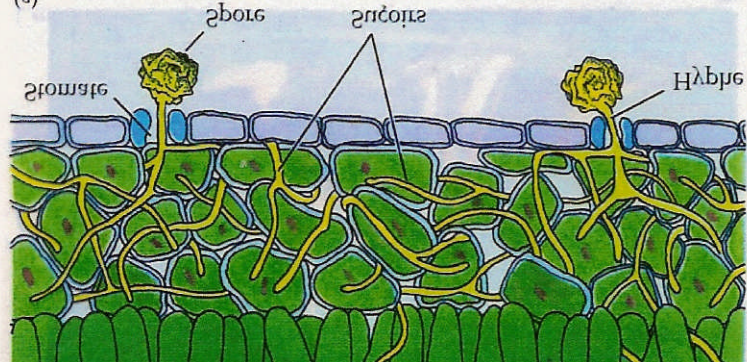
- Conservateurs: acides
 - Vinaigre: acide acétique
 - Acides : citrique, lactique, tartrique, malique...
- Acides aminés
- Vitamines
- Enzymes
- Xanthane
- Arômes



(p)



(a)

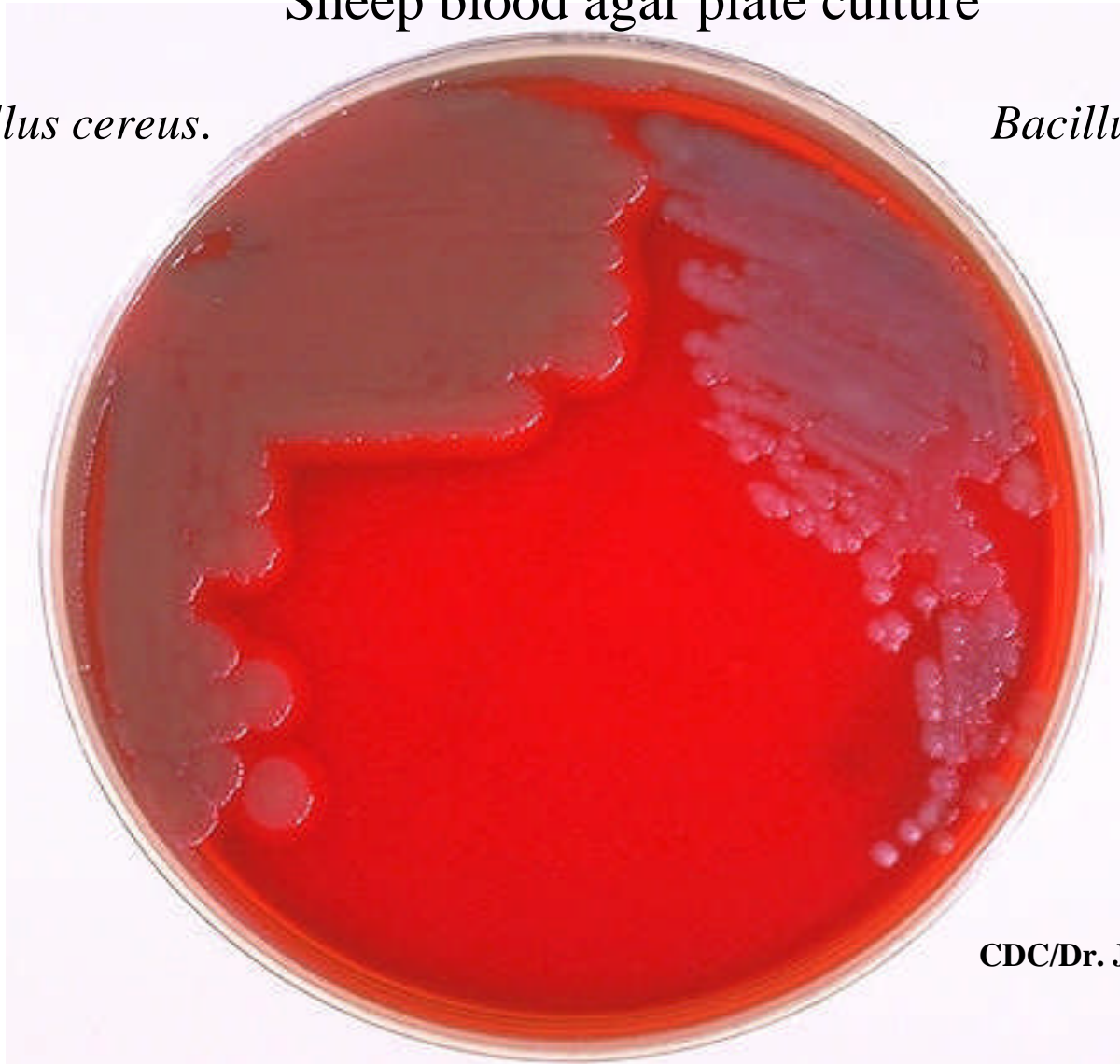


Cultures bactéries

Sheep blood agar plate culture

Bacillus cereus.

Bacillus anthracis



CDC/Dr. James Feeley

Moisissure Penicillium



Utilisation

- Alimentaire
 - Yaourts, fromages, pain , vin , bière....
- Chimie-Pharmacie
 - Alcool , médicaments, antibiotiques....
- Environnement
 - Stations d'épuration
 - Traitements de l'air
 - Bio-Gaz