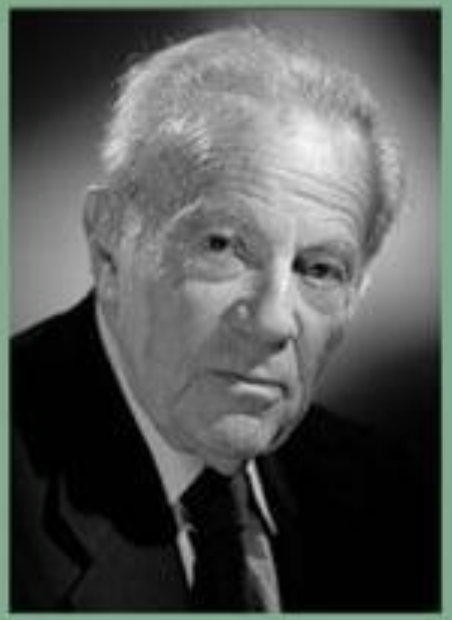
- In 1937, E-Chatton suggested the terms of, "**Procariotique**" to describe bacteria and "**Eucariotique**" to describe animal and plant cells.

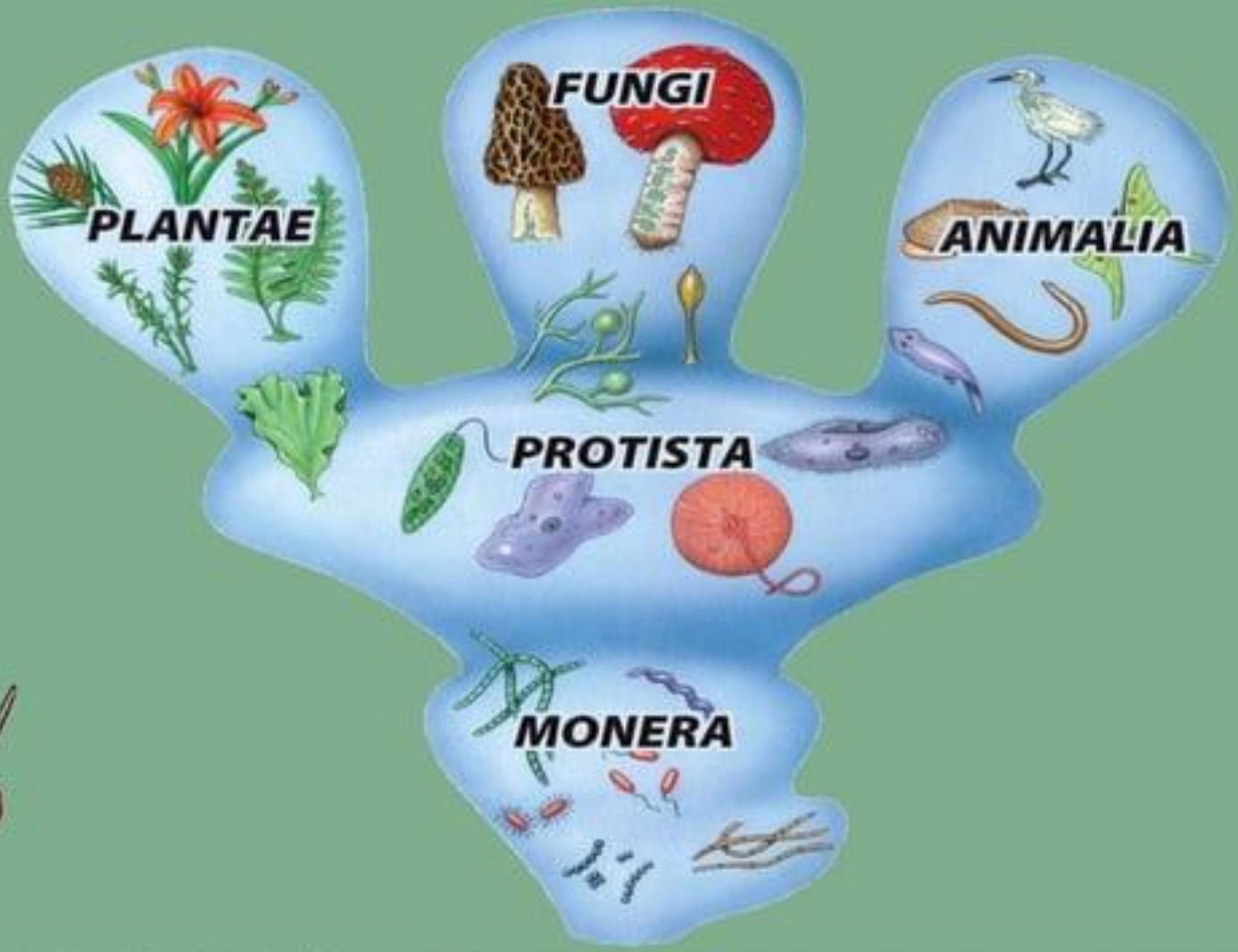


- 1967, Robert Whittaker introduced the five-kingdom classification system.

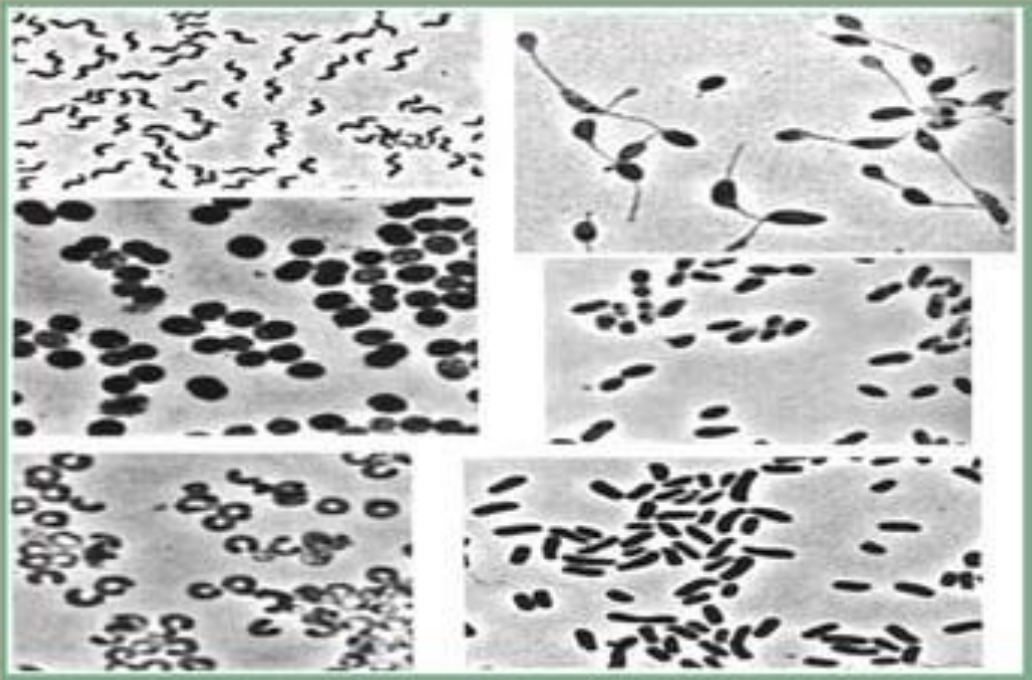
Basis of Five Kindom System

- The levels of cellular organization:
  > prokaryotic
  > unicellular eukaryotic
  > multicellular eukaryotic
- The principal modes of nutrition
  > photosynthesis
  > absorption
  >ingestion

Five Kingdoms



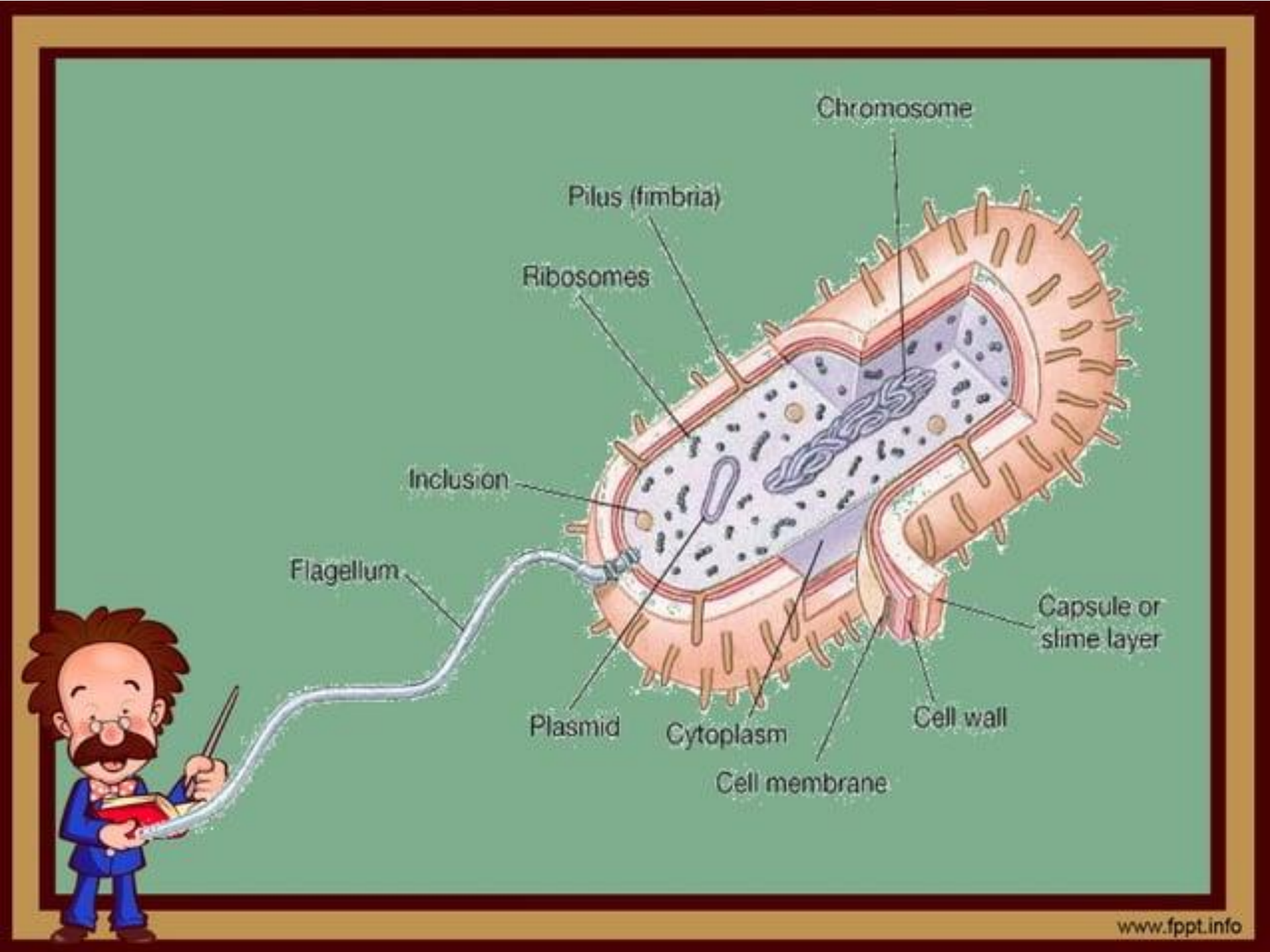
- In 1988, Margulis and Schwartz modified the five-kingdom classification of Whittaker.
- They considered genetics along with cellular organization and mode of nutrition in classification.



Kingdom Monera

Characteristics

- It includes prokaryotic organisms
- Monerans are unicellular
- Most are heterotrophic but some perform photosynthesis
- two different kinds of organisms i.e.bacteria and cyanobacteria.



There are two subkingdoms of Kingdom Monera:

- Archaebacteria-can live in the most extreme of environments.
- Eubacteria-Is also called the true bacteria

These bacteria live in very hot, acid habitats of 60-80 and pH 2-4, like the photo of a "Hot springs" below, the red stain on the rocks are the prokaryotic cells.

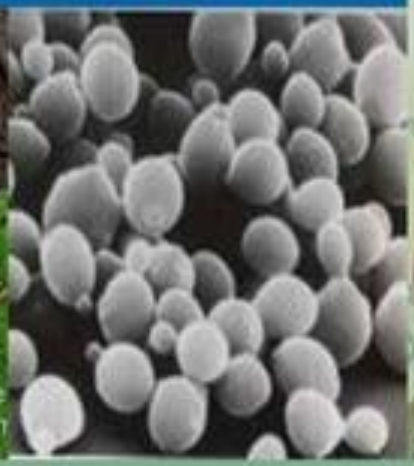
- Eubacteria are more modern bacteria.
  - Inhabit nearly every known habitat
  - Consumers, producers, and decomposers
  - Some cause disease but most are harmless

Kingdom protista

Characteristics

- It includes eukaryotic unicellular and simple multicellular organisms
- There are three main types of protists.
  1) Algae
  2) Protozoans
  3) Fungi like protists

KINGDOM FUNGI



Characteristics

- It includes eukaryotic multicellular heterotrophs which are absorptive in their nutritional mode e.g. mushrooms.
- Most fungi are decomposers.
- They live on organic material, secrete digestive enzymes and absorb small organic molecules formed by the digestion by enzymes.

Kingdom Plantae

Characteristics

- It includes eukaryotic multicellular autotrophs.
- Plants are autotrophic in nutritional mode, making their own food by photosynthesis.
- They have multicellular sex organs and form embryos during their life cycles.
- Examples: Mosses, ferns and flowering plants are included in this kingdom.

KINGDOM ANIMALIA

Characteristics

- It includes eukaryotic multicellular consumers.
- Animals live mostly by ingesting food and digesting it within specialized cavities.
- They lackcell wall and show movements.

Table 3.2: Distinguishing characteristics of the five kingdoms of life

Kingdom	Cell Type	Nuclear Envelope	Cell Wall	Mode of Nutrition	Multi-Cellularity
Monera	Prokaryotic	Absent	Non-cellulose (polysaccharide plus amino acids)	Autotroph or heterotroph	Absent
Protista	Eukaryotic	Present	Present in some forms, various types	Photosynthetic or heterotroph, or combination	Absent in most forms
Fungi	Eukaryotic	Present	Chitin	Absorptive heterotroph	Present in most forms
Plantae	Eukaryotic	Present	Cellulose and other polysaccharides	Photosynthetic	Present in all forms
Animalia	Eukaryotic	Present	Absent	Ingestive heterotroph	Present