BIO 160 : INVERTEBRATE SYSTEMATICS/ ZOOLOGY

LESSON 1. INTRODUCTION / PROTISTA CONCEPT

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3 CREDIT COURSE; 2 LECTURE HOURS, 3 PRACTICAL HOURS PER WEEK

COURSE OUTLINE:

Prostista concept.

Systematics of selected Inverts -

- Their Classification,
- Phylogeny,

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- Biology,
- Adaptive radiation
- and Economic importance.

INVERTS: Protozoa, Porifera, Coelenterata (Cnidaria & Ctenophora), Platyhelminthes/ Nimertini and Aschelminthes/ Nematoda

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INVERTEBRATE ZOOLOGY

Organisms are classified under 5 broad Kingdoms.

Monera, Protoctista, Plantae, Fungi and Animalia

Inverts are animals without bones!

Sub-kingdom Protozoa is an animals though, could be considered as unicellular

PROTISTA CONCEPT

Before life started, and living things grouped into Kingdoms, the world was void.

Then under high pressure under water depth, simple elements (H, N, C, P, etc) combined to form monomers (Coz, PO4, NO2, etc)

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The monomers continued to combine into polymers (higher molecular compounds) till a DNA/RNAs were formed. This was around 4.5 billions year ago. This phenomenon was **chemogenesis**.

The Polymers then started pulsating.

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Then around 3 billion years, the DNAs/RNAs building food around themselves to be able to get energy from simple substances.

They then built a wall around this food store.

Resulted in Prokaryotic cell formation.

BIOGENESIS

Around 1500-1400BC, the primitive cells grouped their scathered nuclei materials together and build a wall around it for protection and easy coordination. Eukaryotic cells then, appeared.

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These cells then became complex through cell multiplications, tissue and organ formations.
The resulting organisms then adapted to water and other diverse environments through body modifications till the human species was reached.

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Early systematics put together a dendrogram for pictorial presentation.

Whittaker started in 1969, then followed by Margulis 1982 and Barnes in 1984

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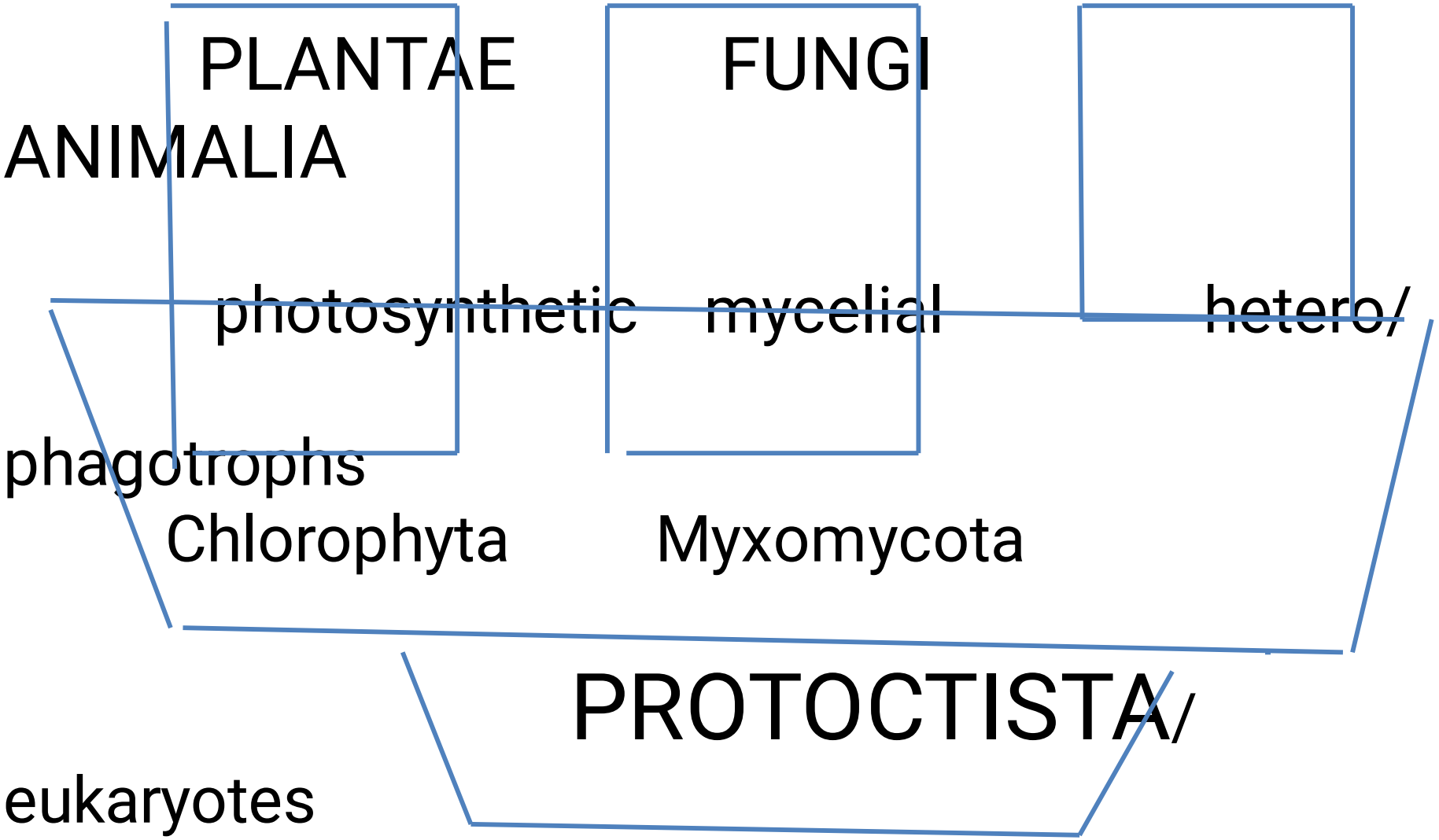
5 kingdom formation



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MONERA/

Classification of Kingdom Animalia

KINGDOM : ANIMALIA

3 SUB-KINGDOMS : PROTOZOA
MESOZOA
METAZOA

***PROTOZOA :**
SARCOMASTIGOPHORA,
CILLIOPHORA & APICOMPLEXA.

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MEZOZOA : all organisms are extinct. Falls worms.

METAZOA: PARAZOA & EUMATOZOA

-**Parazoa** – multicellular but loose and uncoordinated cells. Has only 1 phylum ; **Porifera**

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EUMATOZOA : Invertebrata & Vertebrata

***INVERTEBRATA** : Radiata & Bilateria

-**RADIATA** : Coelenterata (Cnidaria & Ctenophora)

-**BILATERIA** : Acoelomata, Pseudo-coelomata & Coelomata

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ACOELOMATA : Platyhelminthes & Nimertini

PSEUDO-COELOMATA : Nematoda & Aschelminthes

COELOMATA : Annelida, Arthropoda & Molluska

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PHYLOGENETIC TREE OF INVERTS

draw !

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Thanks

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