

FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA

DEPARTMENT OF BIOLOGICAL SCIENCES

BIO 102 (3UNITS)

COURSE CONTENT BY DR O.A OKE.

BASIC PRINCIPLES OF ZOOLOGICAL NOMENCLATURE

Taxonomy, classification or systematic, Diversity

Species or organism that have many attributes in common are placed in the same genus.

Genus that have similar attribute are placed in the same family.

Families with common characteristics constitute or form an order.

Orders in the turn are grouped into classes.

Classes that have similar features form a phylum.

The different **phylum** forms the Animal kingdom.

Sometimes we can have sub-kingdom as well as subphylum.

The full systematic position or classification of the common toad can therefore be given as:

Kingdom	-	Animalia
Sub- Kingdom	-	Metazoa
Phylum	-	Chordata

Sub-phylum	-	Craniata
Class	-	Amphibia
Order	-	Anura
Family	-	Ranidae
Species	-	Temporaria

GRADES OF ORGANIZATION OR LEVELS OF ORGANIZATION

Three grades of organization are recognized the great majority of animals, like the mammal, are on the organ level: that is their body functions are carried out for the most part by organs and organ systems e.g the alimentary system, kidney liver, pancreas, reproductive organ, sense organs, skin e.t.c

At the other end of the scale are single – celled organisms representing the unicellular level of organization in these unicells or protistis the functions, which in higher forms are carried out by organs and organ stsyems, must be performed by organelle within the single cell.

Between these two extremes of cellular and organ are primitive multicellular animals at the tissue level of organization e.g such animals includes coelenterates, like Hydra.

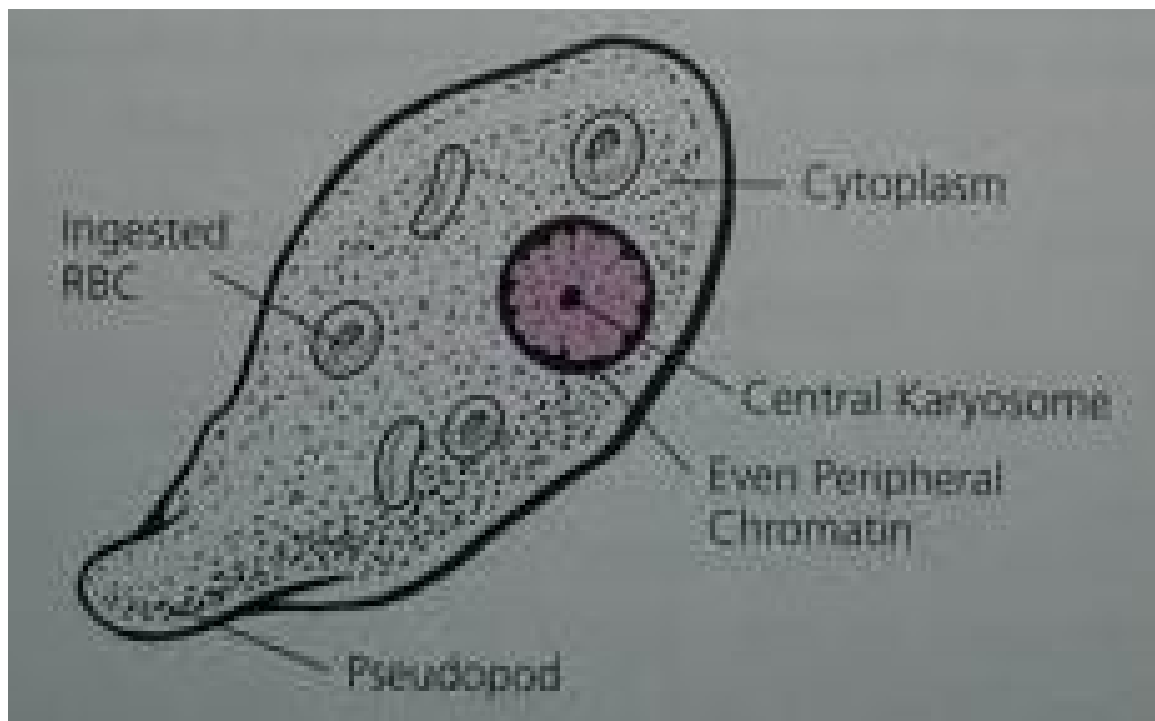
Cells \longrightarrow *Tissues* \longrightarrow *Organs* (e.g Skin)

A brief introduction of the various animal phyla.

Kingdom:	-	Animalia
Sub- Kingdom	-	Protozoa
Phylum	-	Protozoa e.g Amoeba, Euglena, Paramecium, Trypanosome
Sub-phylum	-	Metazoa
Phylum	-	Coelenterata e.g Hydra, Obelia
Phylum	-	Platyhelminthes e.g Tapeworm
Phylum	-	Nematoda (Roundworm) e.g Ascaris
Phylum	-	Annelida (Ringworm) e.g Nereis, Earthworm, leeches
Phylum	-	Mollusca e.g Snail, Octopus
Phylum	-	Arthropoda e.g Mosquito, Cockroach
Phylum	-	Echinodermata e.g Starfish, sea cucumber
Phylum	-	Chordata e.g Fish, Frog, Man
Phylum	-	Protozoa
Class	-	Rhizopodia or Sarcodina
Order	-	Amoebina
Genus	-	Entamoeba
Species	-	Gingivalis (live in the buccal cavity)

Cols (live in the large intestine)

Histolytical or dysenteriale (live in the large intestine, but is a dangerous endoparasile since it feeds on the tissues and blood of its host, causing amoeba dysentery)

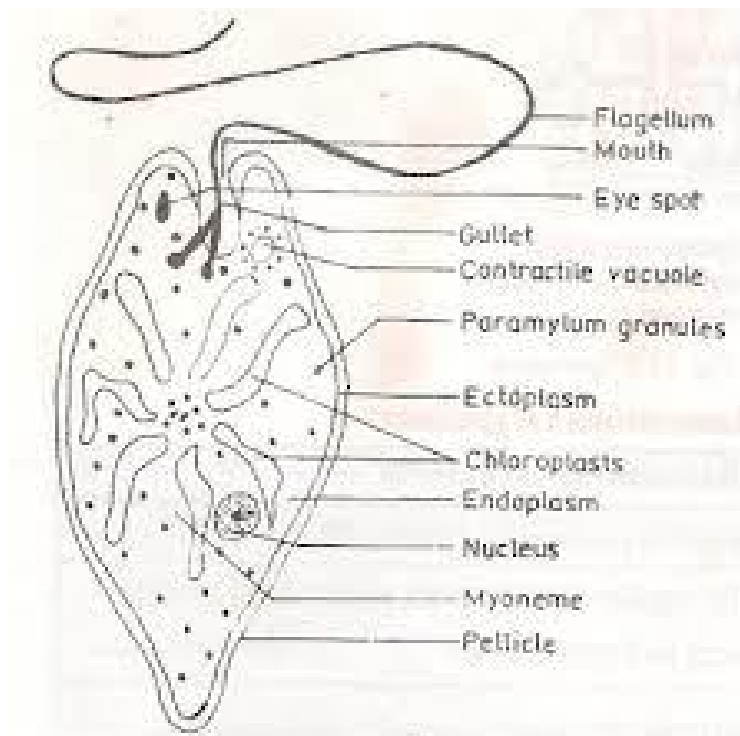


ENTAMOEBA HISTOLYTICA

Phylum - Protozoa

Class - Mastigophora

- Sub Class - Phytomastigima feed holophytically & saprophyficaly
- Order - Euglenoidina possesses chloroplaste
- Genus - Euglena it has flagellum for movement
- Species - Viridis (called euglenoid movement, it reproduced asexually by longitudinal binary fission and is able to form a cyst. It feeds and live in ponds and stagnant water in numerous numbers, producing the green chlorate of the water

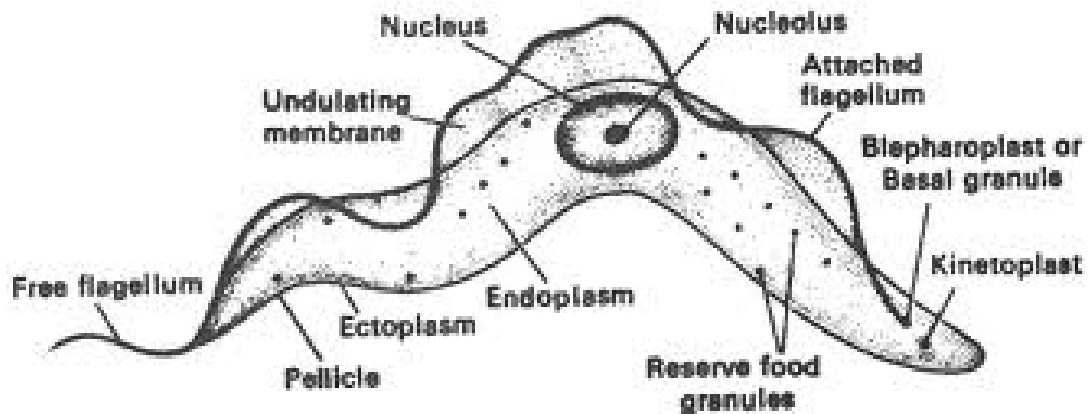


EUGLENA VIRIDIS

- Phylum - Protozoa
- Class - Mastigophora

- Sub Class - Zoomastigophora (Animal nature)
- Order - Protomonadina
- Genus - Trypanosoma
- Species - rhodesiense

They usually live in two hosts, an invertebrate host either insect or leech (annelida) and a vertebrate one in the former (insect or leech) they usually infest the alimentary canal while in the latter (man) they live in the blood. Man is infected by *T. gambiense* and *T. rhodesiense* which are transmitted from one person to another by the tsetse fly, causing the dangerous sleeping sickness.



TRYPANOSOME

PARAMECIUM

- Phylum - Protozoa
- Class - Ciliophora

Order - Holotricha
Genus - Paramecium
Species - Candatum; bursaria

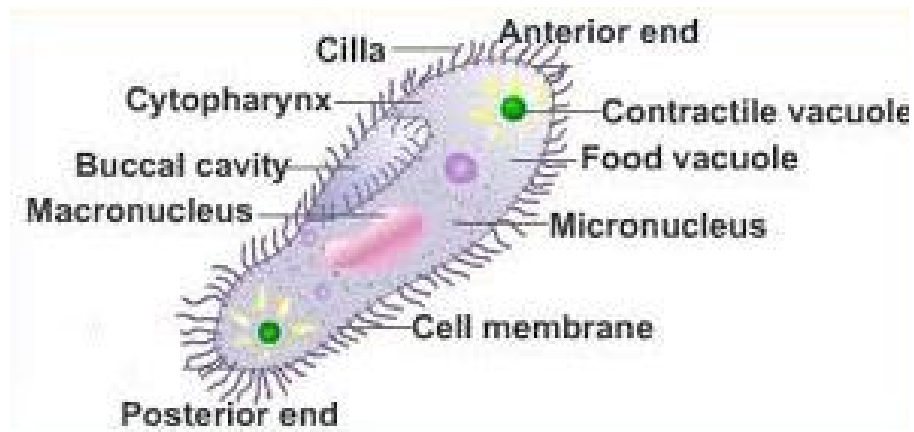
Several species of paramecium occur in great abundance in freshwater ponds where decaying organic matter is found and feed on bacteria.

They possess cilia

They possess mega and micro nucleus

They reproduce by binary fission and by conjugation.

Order Holotricha - have uniform cilia all over the body whereas in (other) order the cilia are restricted to certain parts of the body.



POINTED POSTERIOR OF PARAMECIUM

Cilia	locomotion and nutrition (around the oral groove) (undulating membrane, oral groove, gullet) Feeding purpose
Trichocyst	for anchoring and attacking
Meganeucleus	Somatic activities (Protein synthesis)
Micronucleus	for reproduction
Food vacuole	for digestion
Pellicle	for covering to give a permeant sharp
Myonemes	for contractile squeeze through narrow passage
Cytostome	point of ingestion
Anal spot	point of defacaetion

Classification	Plasmodium
Phylum	Protozoa
Class	sporozoa
Sub Class	Telosporidia
Order	_____
Genus	Plasmodium
Species	Vivax
Species	falciparum
Species	Malariae

Plasmodium vivax is a malaria parasite

Characteristics

1. Parasitic
2. No external organelle of locomotion
3. No meganucleus
 - It causes malaria fever
 - It has two hosts
 - Female anopheles mosquito (Vector)
 - Man

The female mosquito sucks blood and takes in malaria from one person and transfer it to another person by biting this is how malaria is spread.