

# CLASSIFICATION

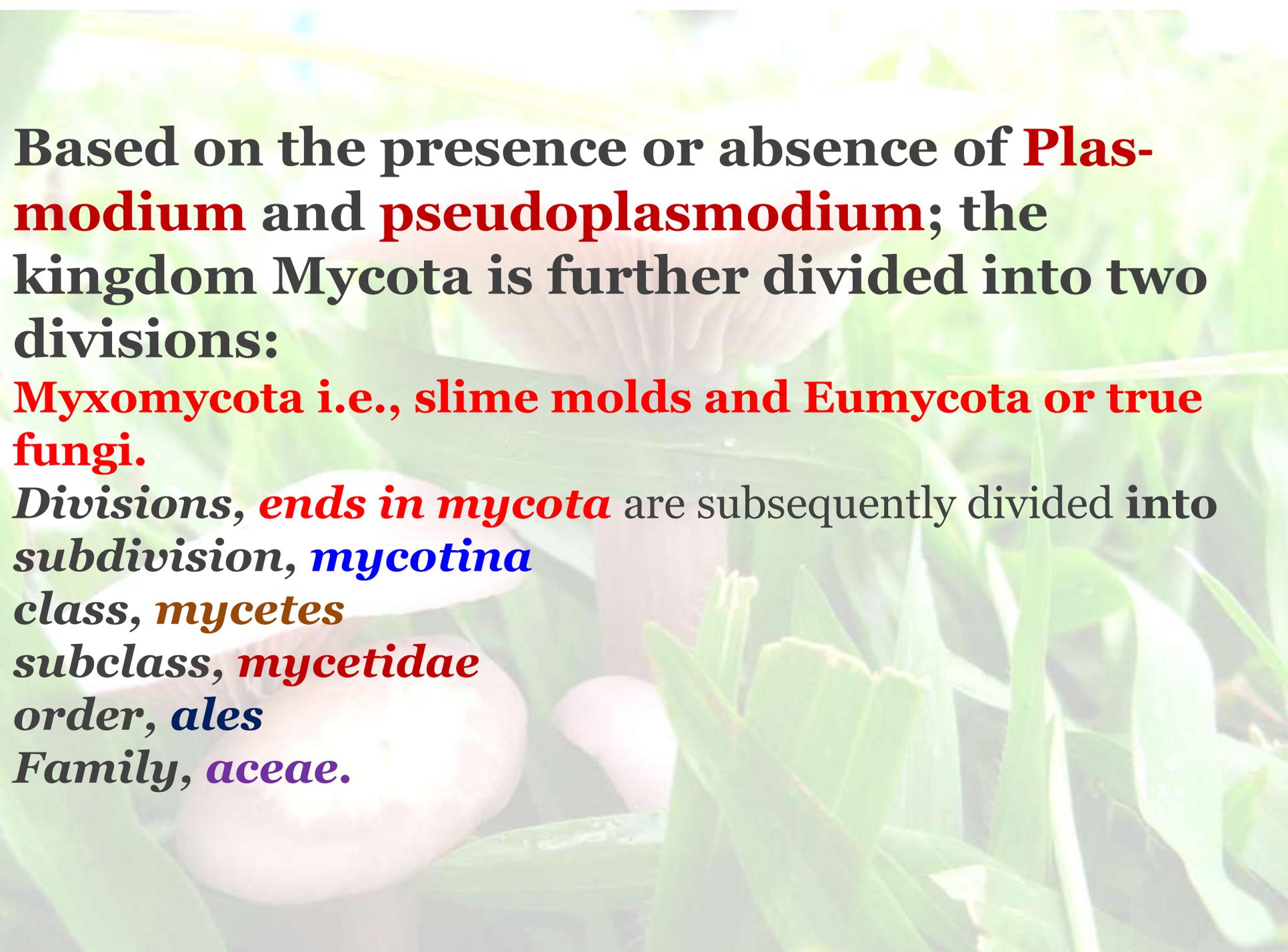
OF

FUNGI



# System proposed by GC Ainsworth (1973)

British mycologist, **GC Ainsworth (1905-1998)** was former director, Commonwealth Mycological Institute. His scheme of classification was considered as an ideal one that reflected natural relationships. In this scheme, the fungi were divided into two Divisions. Fungi with plasmodium or pseudoplasmodium were classified in the Division ***Myxomycota***, whilst the majority of fungi, which were filamentous, were classified in the Division ***Eumycota***.



Based on the presence or absence of **Plasmodium** and **pseudoplasmodium**; the kingdom Mycota is further divided into two divisions:

**Myxomycota** i.e., slime molds and **Eumycota** or true fungi.

Divisions, **ends in mycota** are subsequently divided into subdivision, **mycotina**  
class, **mycetes**  
subclass, **mycetidae**  
order, **ales**  
Family, **aceae**.

# Outline of classification proposed by GC Ainsworth (1973).

## KINGDOM-MYCOTA



### DIVISION

#### MYXOMYCOTA

#### CLASS

1. Acrasiomycetes
2. Hydromyxomycetes
3. Myxomycetes
4. Plasmodiophoromycetes



### SUBDIVISION

#### EUMYCOTA

1. Mastigomycotina
2. Zygomycotina
3. Ascomycotina
4. Basidiomycotina
5. Deuteromycotina  
(Fungi Imperfecti)



## KINGDOM: MYCOTA

### **Important features:**

- i. Free-living, parasitic or mutualistic symbionts, devoid of chlorophyll.
- ii. Cell wall composition is very variable, majority contain chitin and glucan.
- iii. Reserve food materials are oil, mannitol and glycogen.
- iv. Except some unicellular members, majority are filamentous.

## **DIVISION- MYXOMYCOTA**

Wall-less organisms possess either a Plasmodium (a mass of naked multinucleate protoplasm having amoeboid movement) or a pseudoplasmodium (an aggregation of separate amoeboid cells). Both are of slimy consistency, hence slime molds.

1. ***Class. Acrasiomycetes (cellular slime molds)***
2. ***Class. Hydromyxcetes (net slime molds)***
3. ***Class. Myxomycetes (true slime molds)***
4. ***Class. Plasmodiophoromycetes (endo- parasitic slime molds).***

## **DIVISION EUMYCOTA (TRUE FUNGI, ALL WITH WALLS)**

**SUBDIVISION  
MASTIGOMYCOTINA**

(motile cells – zoospores present, perfect state spore-oospore).

**SUBDIVISION  
ZYGOMYCOTINA**

(mycelium aseptate, perfect state spore-zygospore).

**SUBDIVISION  
ASCOMYCOTINA**

(yeasts or septate mycelium, perfect state spore- ascospores formed in ascus, usually within ascocarp).

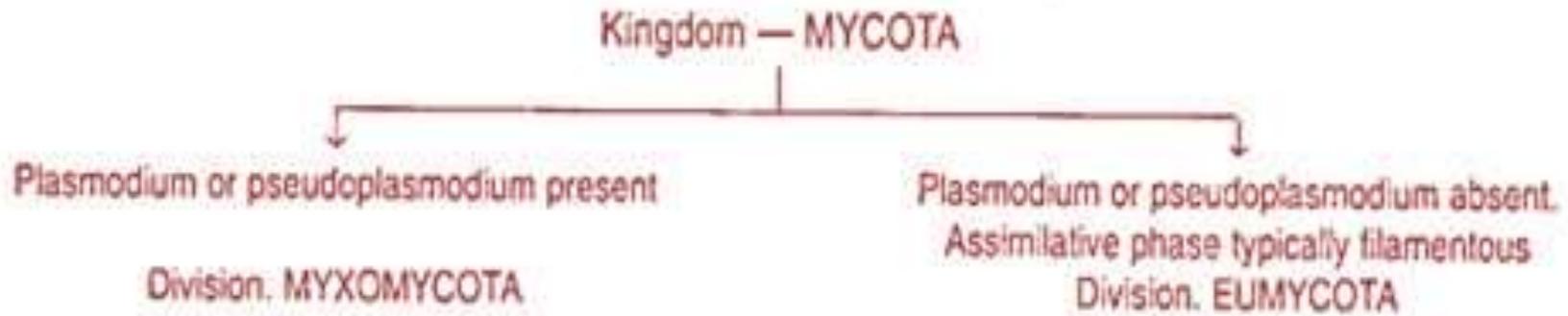
**SUBDIVISION  
BASIDIOMYCOTINA**

(yeast or septate mycelium, perfect state spore – basidiospore formed on a basidium).

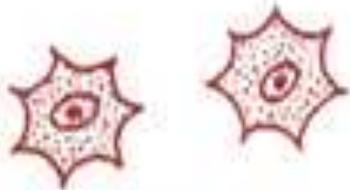
**SUBDIVISION  
DEUTEROMYCOTINA OR FUNGI IMPERFECTI.**

Yeast or septate mycelium. Perfect state unknown.

# Schematic representation of the outline with figure, the classification of G.C. Ainsworth (1973)



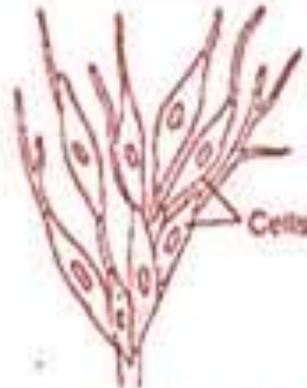
Assimilative phase free-living amoebae which unite as pseudomycelium before reproduction



*Ceratiomyxella tahitiensis*

Class : Acrasiomycetes  
e.g. *Acrasis*, *Guttulina*

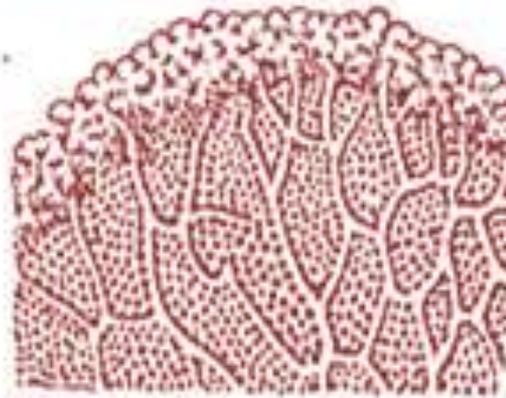
Assimilative phase a net-plasmodium



Net plasmodium of *Labyrinthula* sp.

Class : Hydromyxomycetes  
e.g. *Zostera*, *Labyrinthula*

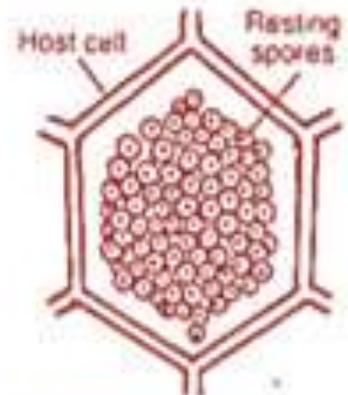
Assimilative phase is not a net-plasmodium, saprophytic



Plasmodium of *Physarum*

Class : Myxomycetes  
e.g. *Stemonites*, *Physarum*

Assimilative phase is not a net-plasmodium, parasitic



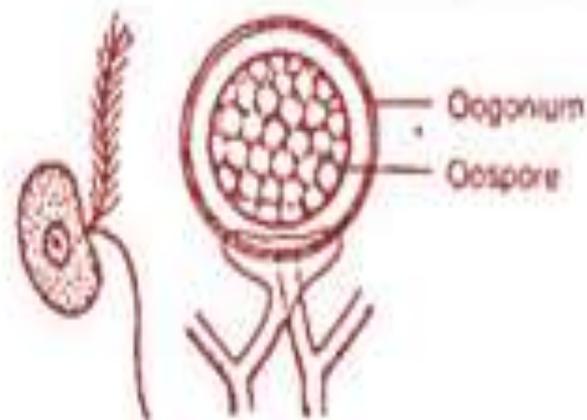
*Plasmodiophora brassicae*

Class : Plasmodiophoromycetes  
e.g. *Plasmodiophora brassicae*

Plasmodium or pseudoplasmodium absent.  
Assimilative phase typically filamentous  
Division. EUMYCOTA

Motile cells (zoospores) present  
Perfect state spores typically Oospores

Motile cells absent  
↓

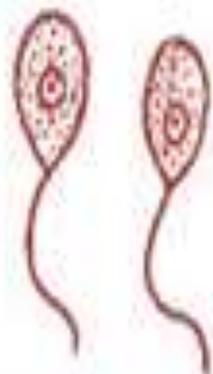


Zoospore and Oospore of *Phytophthora*  
Sub-division : MASTIGOMYCOTINA



Sub-division : MASTIGOMYCOTINA

Zoospore uniflagellate  
(whiplash type)



*Synchytrium*

Class : Chitridiomyces  
e.g. *Ospidium*, *Synchytrium*

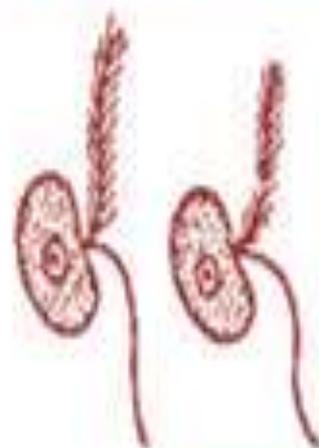
Zoospore uniflagellate  
(insel type)



*Rhizidiomyces*

Class : Hyphochytridiomyces  
e.g. *Rhizidiomyces*, *Rhizidiomycopsis*

Zoospore biflagellate  
(one whiplash and other insel type)

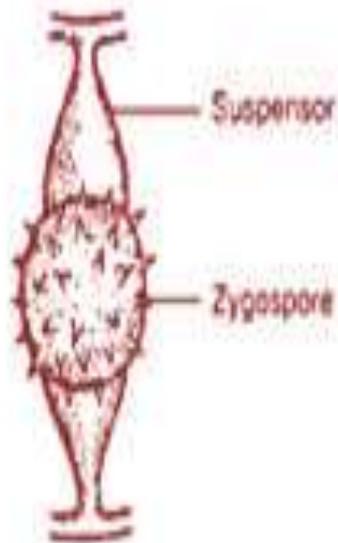


*Phytophthora*

Class : Oomycetes  
e.g. *Pythium*, *Phytophthora*

Perfect state present

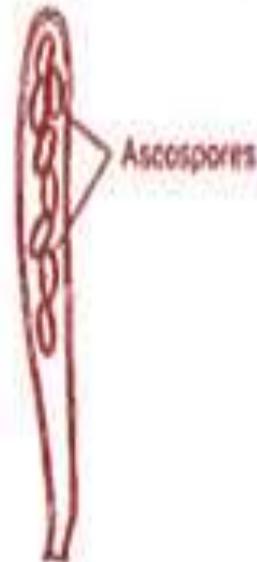
Perfect state spore-Zygospor



Single zygospor of *Mucor*  
Subdivision :  
ZYGOMYCOTINA



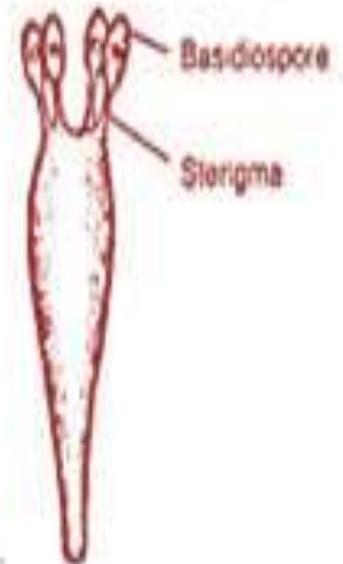
Perfect state spore-Ascospore



An ascus of *Ascobolus*  
Subdivision :  
ASCOMYCOTINA



Perfect state spore-Basidiospor

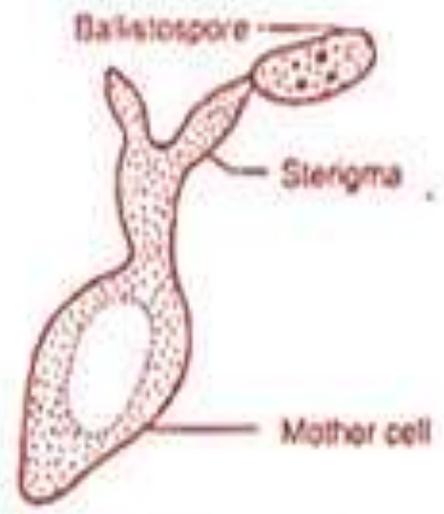


Single basidium of *Agaricus*  
Subdivision :  
BASIDIOMYCOTINA



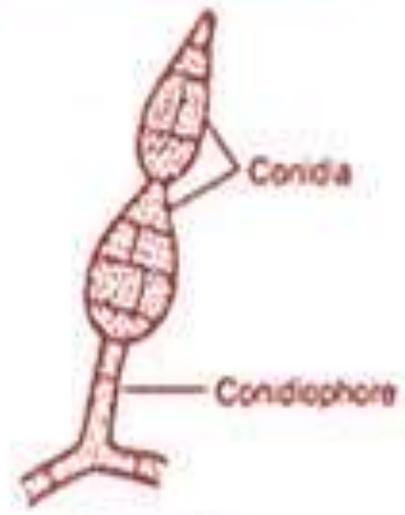
Perfect state absent  
Sub-division : DEUTEROMYCOTINA

True mycelium lacking or not well developed



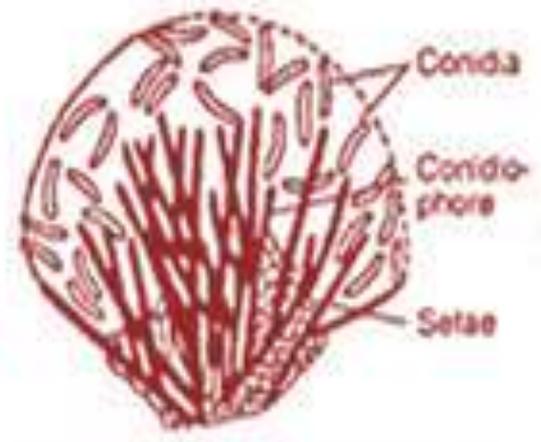
*Sporobolomyces roseus*  
Class : Blastomycetes  
e.g. *Sporobolomyces*, *Bullera*

True mycelium may be sterile or bearing spores directly or on sporophores



*Alternaria*  
Class : Hyphomycetes  
e.g. *Botrytis*, *Rhizoctonia*

True mycelium aggregated to form pycnidium or acervulus produces spores inside



Acervulus of *Coiletostrichum*  
Class : Coelomycetes  
e.g. *Coiletostrichum*, *Pestalotia*

COMPILED BY KOUSIK GHOSH  
FROM DIFFERENT SOURCES

THANK  
YOU