

Lab-10-

**Class : Homobasidiomycetes**

**Order : Agaricales**

**General characteristics :**

- 1- Called Gill Fungi .
- 2- This order includes about 7,000 species distributed in about 200 genus .
- 3- Members live in the soil rich in organic matter and the remains of dead trees, many of which enter into the relationship of Takaful Mycorrhizae with trees
- 4- Includes Mushrooms(Edible) and Toadstool (poisonous) .
- 5- Sporophore have Stipe Solid and strong compared with other fungi .

This order includes a groups of families :

❖ **Family : Agaricaceae**      **Ex: Agaricus sp.**

is a genus of mushrooms containing both edible and poisonous species, with possibly over 300 members worldwide .

❖ **Family : Amanitaceae**

**Ex: Amanita sp.**

the most important genus of mushrooms. It is believed contains a poisonous substance called **Muscarine**. and In one Basidiocarp it is poisonous enough to kill 12 or more people .

❖ **Family : Boletaceae** .

**Ex: Boletus sp.**

The genus *Boletus* contains many members which are edible and tasty such as *Boletus edulis* and *B. aereus* .

**Order : Lycoperdales**

The members of this order have characterized by the formation of Basidiocarp over the soil and contains the peridium, Basidiocarp called puff ball , all are edible , contains many families :

**Family : Lycoperdaeaceae**

**EX: *Lycoperdron sp.*** The genus has a widespread distribution and contains about 50 species. It contains the smaller species such as the pear-shaped puffball.

### **Order :Nidulariales**

The Basidiocarp of the members of this order called the **Birds nest** include one family :

**Family: Nidulariaceae**

**EX: *Cyathus sp.***

bird's nest fungi **figure (1)** , include 45 species are widely distributed throughout the world and some are found in most countries .



**figure (1) bird's nest fungi**

### **Order : Polyporales or phylloporales**

It called pores Fungal to the presence of **pores** ,and the absence of **lamella** and most of the fungus belonging to this order are the Basidiocarp large size ,the form of colonies or coral form of dishes or shelves, mostly fungal parasites or rather an analyst as they attack the trees alive or dead and analyzed and therefore Reduce their economic value. This order includes several families, the most important :

**Family : polyporaceae**

**Ex: *Polypores* sp.**

this

genus known from Japan to grow on the ground on the living or dead roots .

**Class : Tremellomycetes**

**Order : Tremellales**

Known as the Jelly fungi because the Basidiocarps often Gelatin like yellow color, Basidium type Phragmobasidium divided into longitudinal to four cells of each cell carrying a Basidiospores on one Strigma , This order includes one family :

**Family: Tremellaceae**

**Ex: *Tremella* sp .**

All *Tremella* species are parasites of other fungi and most produce anamorphic yeast states. Basidiocarps (fruit bodies), when produced, are gelatinous . Over 100 species of *Tremella* are currently recognized worldwide. Two species, *Tremella fuciformis* and *Tremella aurantialba*, are commercially cultivated for food .

**Order : Auricularales** Basidium type Phragmobasidium divided into longitudinal to four cells of each cell carrying a Basidiospores on one Strigma. This order includes one family:

**Family : Auriculaceae**

**Ex: *Auricularia* sp.**

Called ( Ear Jelly fungi) because shape Basidiocarps is being ear-to shell-shaped or forming narrow, imbricate brackets ,Most *Auricularia* sp. are edible

**Order : Septobasidiales**

Different from the previous order that the Basidiocarps are skinning and not gelatinous, This order includes one family:

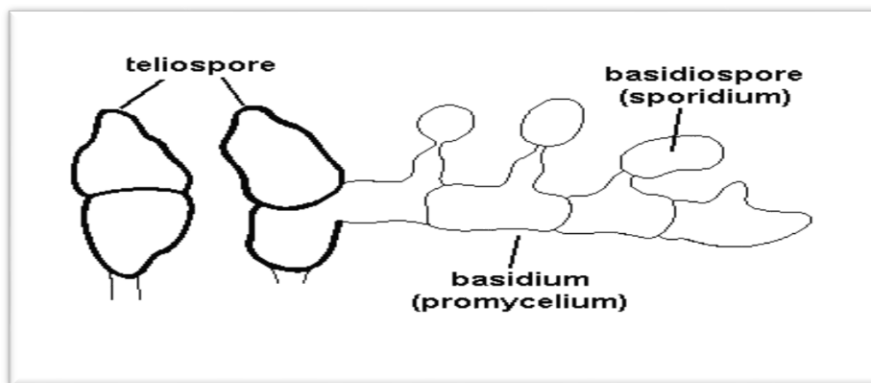
**Family : Septobasidaceae**

**EX: *Septobasidium* sp.** *Septobasidium* species are known as **Entomopathogens** a fungus that can be a parasite and pathogenic to insects .

**Class : Teliobasidiomycetes**

Most Members of this class live as specialized plant parasites on leaves, fruits and stalks of important agricultural crops, especially grains such as wheat and barley, causing major economic losses such as Rust and Smut, Also called **probasidiomycetes** due to non formation of Basidiocarps ever, the basidium in this fungus is Teliospore

**Teliospore** : Is a sexual spore ,thick-walled that represents a sexual phase resistant to environmental conditions unsuitable for these fungi, mostly two-celled, sometimes one-celled. **figure (2)**



**figure (2) Teliospore**

**Order: Ustilaginales :** called Smut Fungi includes 1100 Different species all are obligate parasitism and these are the most common types of Basidiomycota Primitive fungus. This order includes several families :

**Family : Ustilaginaceae**

*Ustilago* sp. smut fungi parasitic on grasses

**Family : Tilletiaceae**

**Tilletia sp.** Species in this genus are plant pathogens that affect various grasses. *Tilletia indica*, which causes smut wheat, and *Tilletia horrida*, responsible for rice smut .

**Order :Uredinales**

Also called **Rust fungus** an estimated 168 rust genus and approximately 7000 species, more than half of which belong to the genus *Puccinia* , Rust fungi are highly specialized parasites , the infection is limited to plant parts such as leaves, petioles, tender shoots, stem, fruits may cause deformities such as growth retardation, witch's broom, stem canker, hypertrophy of the affected tissues or formation of galls. Include many families :

**Family : Pucciniaceae**

**EX: *Puccinia graminis***

Causing black stem rust in wheat

**Life cycle**

The members of this group pass either a long or short cycle :

- 1- **Micro-cyclic life cycle:** in this life cycle the **Teliospore** is the only spore.
- 2- **Macro-cyclic life cycle:** in this life cycle there is more than one single spore .

**Phylum : Deuteromycota**

also known as **imperfect fungi**, are fungi which do not fit into the commonly established taxonomic classifications of fungi that are based on biological species concepts or morphological characteristics of sexual structures because their sexual form of reproduction has never been observed; hence the name "imperfect fungi." The phylogenetic line can be traced back to the point where these species hoard some of the rudimentary characteristics that could imply information sufficient to redirect them into the known and confirmed taxon. Only their asexual form of reproduction is known, meaning that this group of fungi produce their spores asexually, in the process called sporogenesis . There are about 25,000 species that have been classified in the deuteromycota and many are basidiomycota or ascomycota anamorphs. Fungi producing the antibiotic penicillin and those that cause athlete's foot and yeast infections are imperfect fungi. In

addition, there are a number of edible imperfect fungi, including the ones that provide the distinctive characteristics of Roquefort and Camembert cheese.

**Good luck**