Lecture 13:

Division 2: Eumycota

Class 6: Basidiomycetes

Subclass 2: Holobasidiomycetidae

This subclass involves edible mushroom and other saprophytic fungi. The main characteristic of these fungi is the club-shaped basidium which bears four basidiospores on sterigmata.

Holobasidiomycetidae was classified into two series:-

Series 1: Hymenomycetes: The basidium in this series was bearing in hymenial layer which open before spore maturation.

Series 2: Gasteromycetes: The spore remains inside fruiting body and do not release before maturation.

Series 1: Hymenomycetes:

This series involves two orders:-

Order 1: Agaricales

The fruiting bodies are fleshy; the hymenial layers are bearing on gills (Mushroom).

Order 2: Polyporales:

The fruiting bodies are not fleshy; the spores are bearing in different ways.

Order 1: Agaricales: This order involves mushroom which is saprophyte, such as *Agaricus bisporus*. Its basidium bears only two basidiospores. The other examples of edible mushroom are: *Agaricus campestris* which is growing well on animal wastes and it is brown in color. This order also involves poisoning mushroom which we can distinguished it by:

1- Presence of scales on the cap.

- 2- Presence of annulus.
- 3- And presence of volva Figure 43.



Figure 43: Poisoning mushroom

There are many examples of poisoning mushroom as follows:

Agaricus xanthodermus (Yellow staining fungus).

Inocybe (Red staining fungus)

Coprinus: Some species are edible mushroom, others are poisoning (Black liquid like ink).

Amanita which produces amanita toxins such as?

Amanita phalloides: Produces α -amanitine, β -amanitin and phalloid which are high toxic materials. *A. muscaria* which contains muscarine, causes nerve system damage. Its scales are red in color and called fly fungus.

Order 2: Polyporales:

This order is classified into three families:

Family 1: Polyporaceae (Pore fungi): The fruiting bodies contain pores which coated with hymenial layer Figure 44. ex: *Polyporus*.



Figure 44: Hymenium of polypore

Family 2: Clavariaceae(Coral fungi) Figure 45: This family involvescolor fungi, white or yellow such as *Clavaria*.





Family 3: Telephoraceae (Shelf fungi) Figure 46: They are growing on the trees like shelf, and causes wood degradation such as *Sterum*.



Figure 46: Basidiocarps of two shelf or bracket fungi

Series 2: Gasteromycetes:

Gasteromycetes including organisms which are commonly known as puff balls, earthstars, stinkhorns, and bird's nest. The fruiting bodies are characterized by a distinct outer wall (peridium) that may open in various ways after the spores are mature or may remain closed permanently, with the spores liberated only after the disintegration of the peridium through the action of external agents. The peridium consists of one, two, or three layers: exoperidium, mesoperidium and endoperidium. The peridium contains ostiole which the spores are liberated through it.

This series is classified into three orders:

Order 1: Lycoperdales	(Puff ball)	ex: Lycoperdon
Order 2: Nidulariales	(Bird's nest)	ex; Cyathus (Figure 47)



Figure 47:- Cyathus striatus



Figure 48: Scleroderma