Phylum: Basidiomycota

Basidiospores:

Is the unit of sexual reproduction in Basidiomycota which is formed after passing through the stages of sexual reproduction Plasmogamy and Karyogamy and then the Meiosis ، the last two stages occur in the basidium and eventually consists of four **basidiospores** on each basidium (Figure 1).

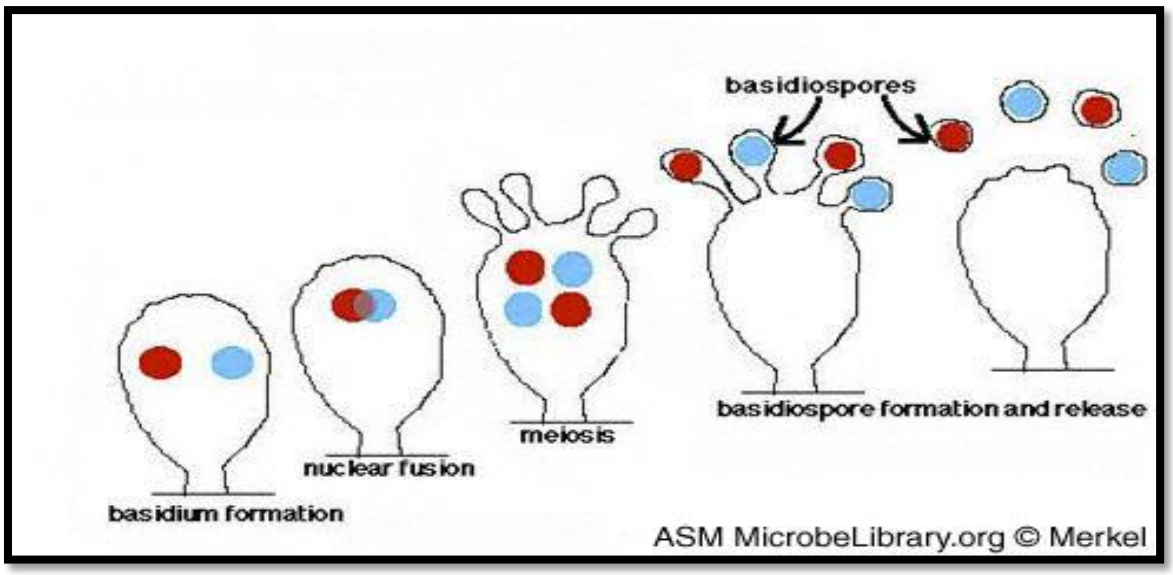


Figure (1) Phases of formation of the basidiospores

Asexual reproduction:

Asexual reproduction of Basidiomycota fungi by budding or Fragmentation the mycelium or by the formation of conidia or by Urediospores.

Basidiocarp:

Sexual vegetable structures contain sexual spores that vary depending on the fungi such as:

- ❖ Jelly fungi
- ❖ Birds nest
- ❖ Bracket fungi
- ❖ Toadstool
- ❖ Mushroom

Basidiocarp is an undifferentiated fruiting structure with a hymenium on the surface; such a structure is characteristic of many simple jelly and club fungi. In more complex basidiocarps, there is differentiation into a stipe, a pileus, and/or various types of hymenophores (mushrooms)

A perfect Basidiocarp of mushroom consisting of the following structures (Figure 2):

a- Cap or Pileus b- Gills c- Ring or Annulus
d- Stape or Stem e- Volva

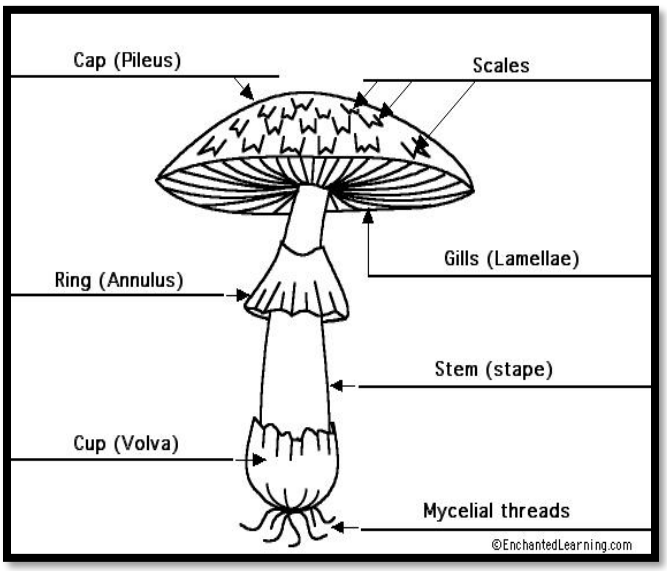


figure (2) Basidiocarp Structures

Basidium:

A reproductive structure in Basidiomycota fungi carried four strigma (perfect number) each strigma carry one Basidiospores.

Types of Basidium:

1- **Holobasidium**: consists of one cell different sizes undivided
2- **Phragmobasidium**: divided by septa longitudinal or transverse
3- **Teiliobasidium**: Represent Teliospore (Figure 3).

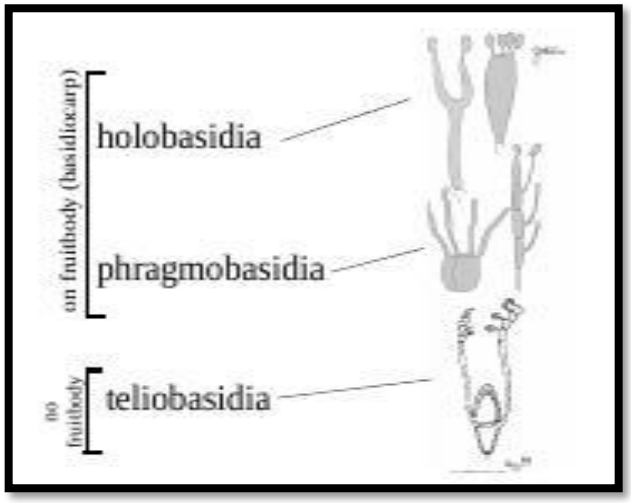


Figure (3) Types of Basidium

Class: Homobasidiomycetes

Order: Agaricales

General characteristics:

1- Called gilled mushrooms.
2- Basidiocarps of the agarics are typically fleshy.
3- This order includes about 7,000 species distributed in about 200 genera.
4- Members live in the soil rich in organic matter and the remains of dead trees, many of which enter into the relationship of Mycorrhizae with trees
5- Includes edible mushrooms and toadstool (poisonous).
6- Sporophore have Stipe Solid and strong compared with other fungi.

This order includes a group of families:

- **Family: *Agaricaceae***
  Ex: *Agaricus* sp.
  is a genus of mushrooms (white mushroom) containing both edible and poisonous species, with possibly over 300 members worldwide.

Figure (4) *Agaricus* sp. (white mushroom)

- **Family: *Amanitaceae***
  Ex: *Amanita muscaria*

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 .

Figure (5) ***Amanita muscaria***

- **Family:** ***Boletaceae***
  Ex: ***Boletus sp.***

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

Figure (6) ***Boletus edulis***

Order: Lycoperdales

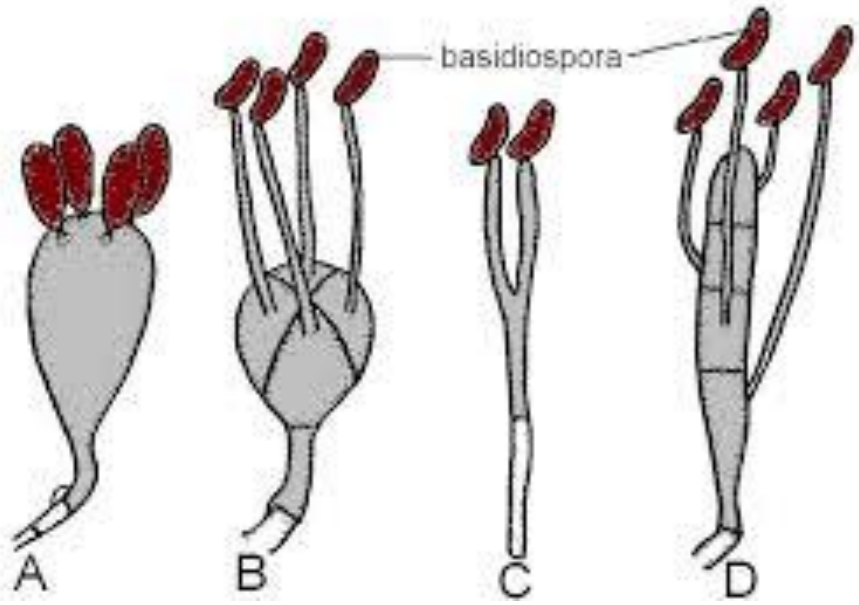
The members of this order have characterized by the formation of Basidiocarp over the soil and contains the peridium, Basidiocarp called puff ball, all are edible, contains many families:

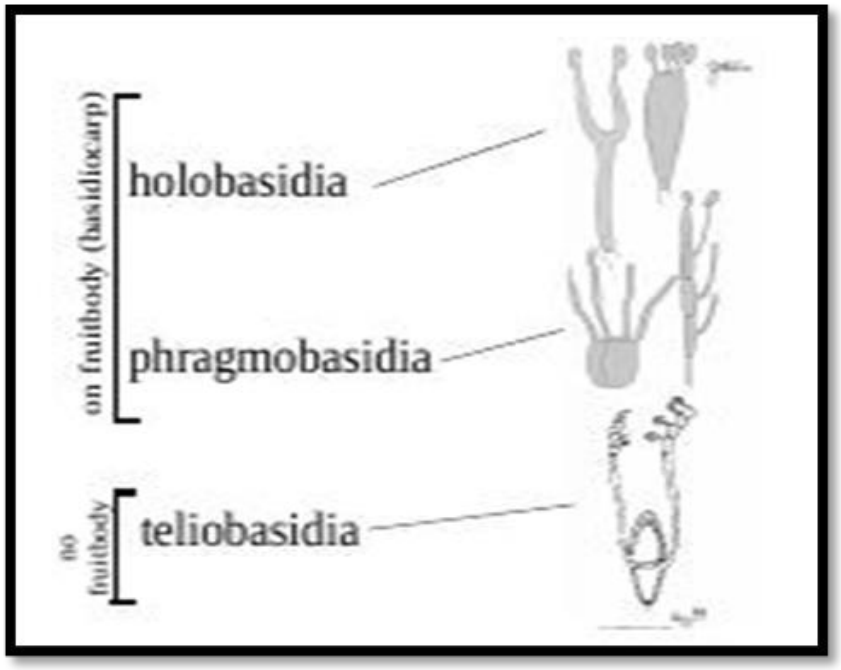
Family: Lycoperdaeaceae

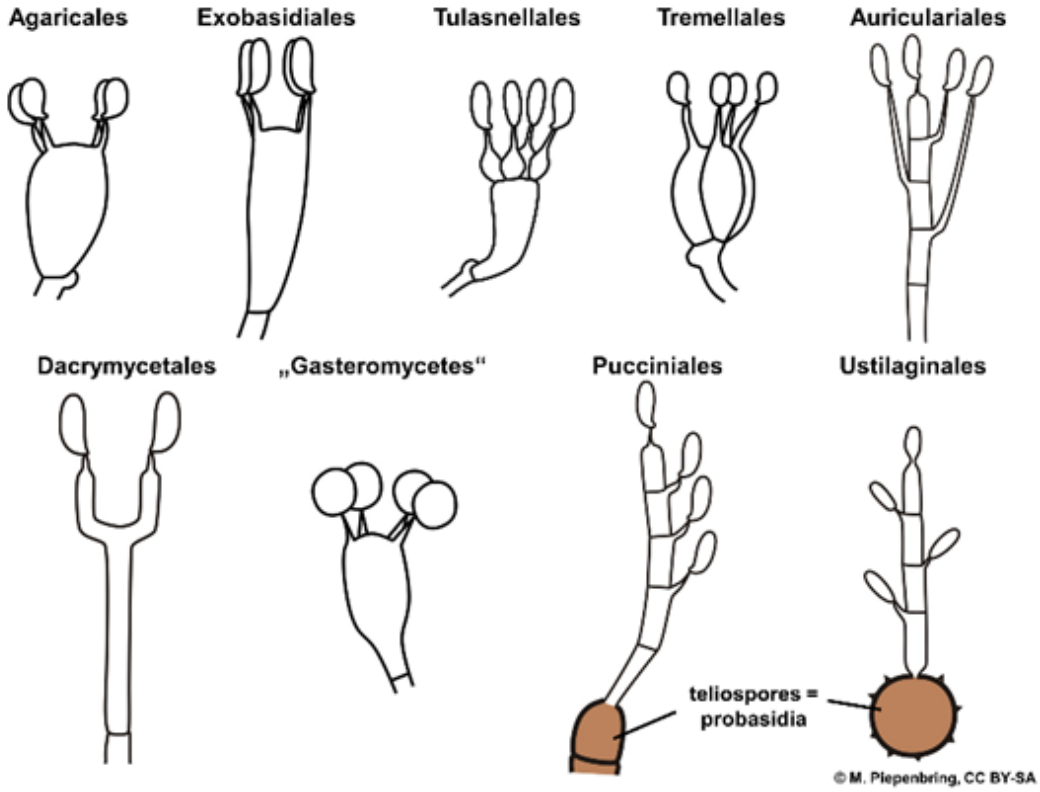
EX: ***Lycoperdron*** **sp.**

The genus has a widespread distribution and contains about 50 species. it contains the smaller species such as the pear-shaped puffball.

Figure (7) *Lycoperdron* sp.




on fruitbody (basidiocarp)
holobasidia
phragmobasidia
no fruitbody
teliobasidia


Agaricales
Exobasidiales
Tulasnellales
Tremellales
Auriculariales
Dacrymycetales
„Gasteromycetes“
Pucciniales
Ustilaginales
teliospores = probasidia
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