

## Phylum: Ascomycota

### Ascospores

Sexual spore-bearing structure, a single ascus will contain eight ascospores. The eight spores are produced by **meiosis** followed by a **mitotic** division. This ascus may be naked called **naked asci** or inside sexual fruit bodies called **ascocarp**, the formation of these Ascus is a major characteristic of Ascomycota. some asci be on Stalked and some asci Sessile without Stalked.

**According to the shape ascus are divided into several sections:**

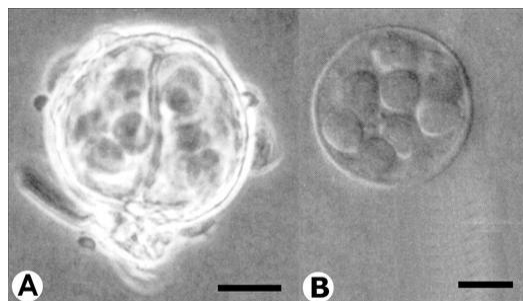
- ❖ Globular Ascus
- ❖ Ovate Broadly Ascus
- ❖ Septate Ascus
- ❖ Clavate Ascus
- ❖ Cylindric Ascus



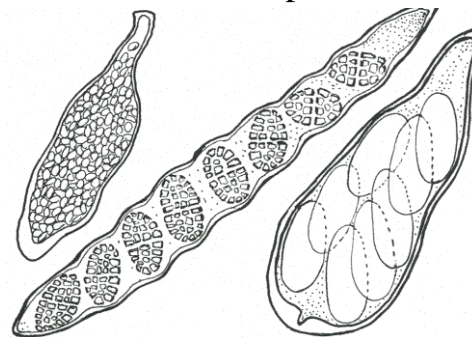
Ovate Broadly



Septal



Globular



Cylindric and Clavate

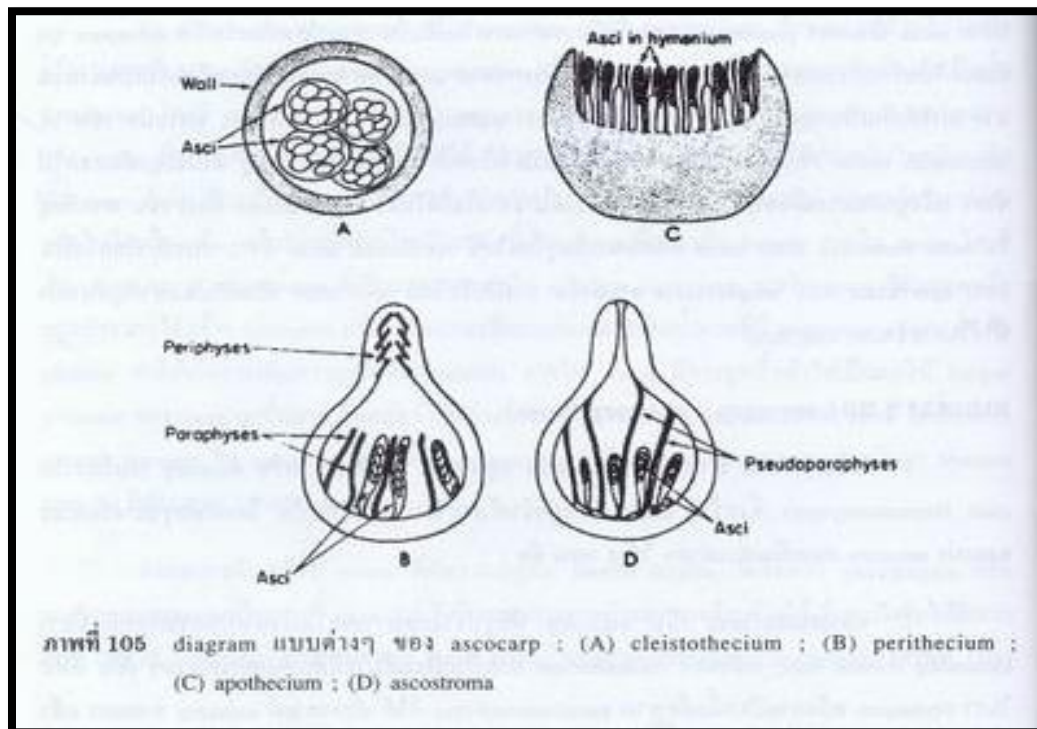
**Figure (1) Shape of ascus**

## Ascocarp:

is a fruiting body consisting of very tightly tangled hyphae and may contain millions of asci, each of which typically contains eight ascospores. In addition to some other components such as **hymenium layer** which is the tissue layer on a fungal fruiting body where the cells develop into asci, which produce spores. In some species all of the cells of the hymenium develop into asci. This layer is permeated by threads called **sterile threads**.

## Ascocarps types:

- A. Cleistothecium
- B. Perithecium
- C. Apothecium
- D. Ascostroma



Figure(2) types of ascocarps

## Sterile threads:

Is a Extended filament between the ascus in the Hymenium layer inside the fruit bodies, not know function so called sterile But there are some theories explain the role of these filament expected that its function is to spread ascospore when release, These filament are important taxonomic characteristics.

## Types of sterile threads:

**1- Paraphyses:** are filaments cylindrical shaped sometimes branches undifferentiated arise from the base of the Ascocarp and are free between the ascus in the Hymenium layer have a protective function for ascospore **Figure (3)**

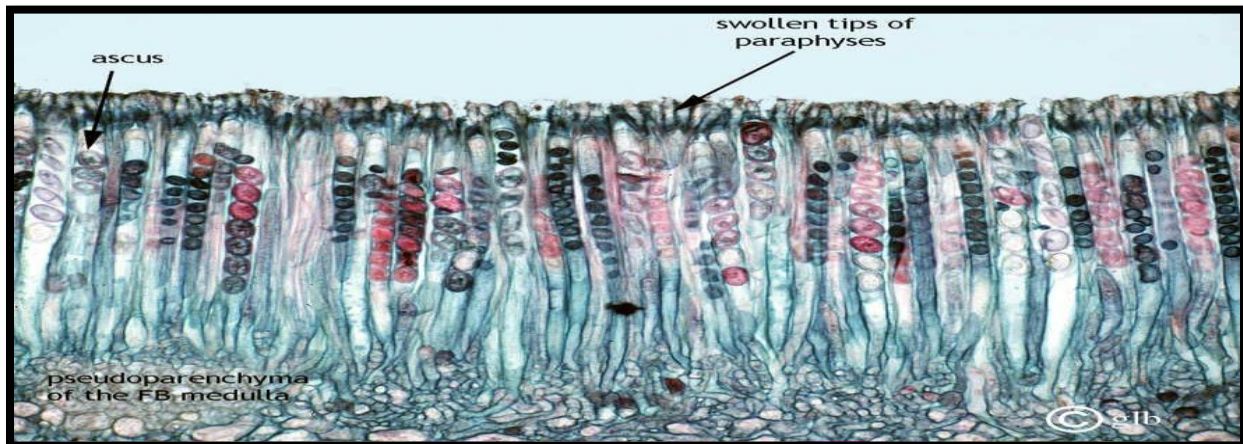


Figure (3) Paraphyses

**2- Periphysis:** Short filaments structures or in the form of cilia around the opening of the fruiting body, function on directing the ascospore into the exit slot. **Figure (4)**

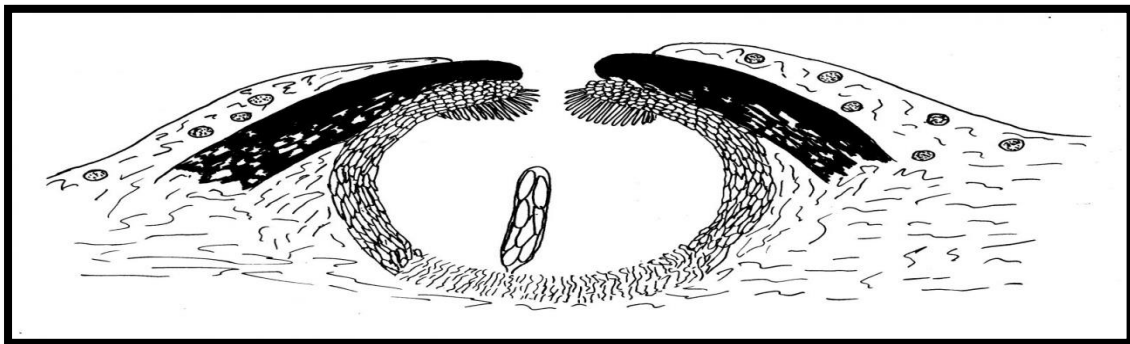
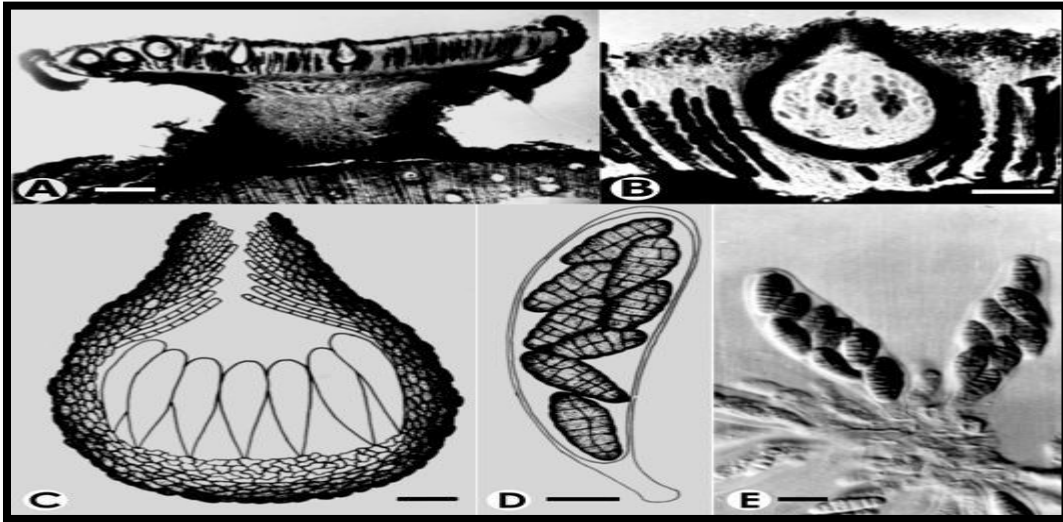


Figure (4) Periphysis

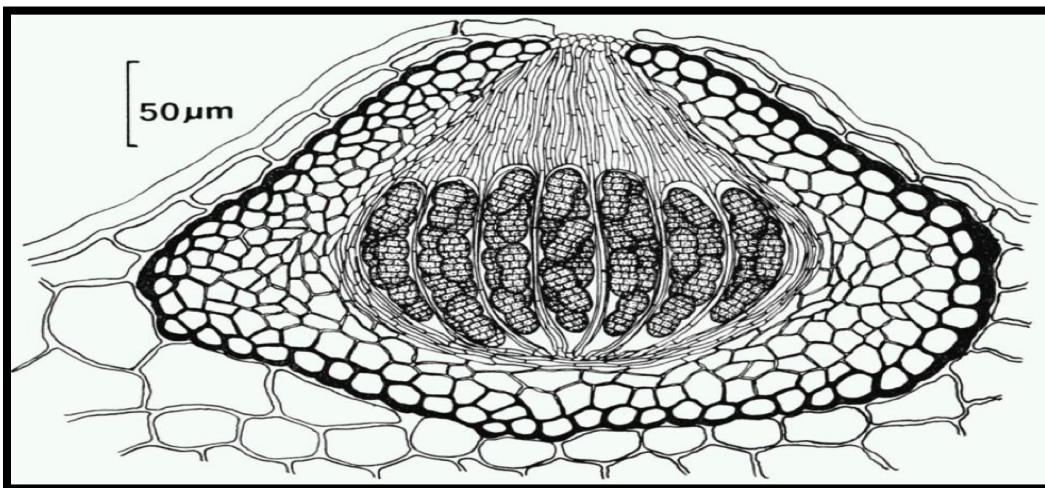
**3- Periphysoids paraphyses:** are paraphyses filaments in the side along the Internal wall to the fruiting body towards the top. **Figure (5)**



**Figure (5) Periphysoids paraphyses (C)**

**4- Apical paraphyses:** are paraphyses filaments but consist of the top and then grow down between the ascus, Keep the top free movement

**5- Pseudoparaphysis:** filaments similar to Apical paraphyses, but not remain free movement, but grow down to reach the base and then unite and form a curtain between the ascus. **Figure (6)**



**Figure (6) Pseudoparaphysis**