

II. CLASS PLECTOMYCETES

- In members of this class, the asci are small, evanescent (short-lived), and are produced at different levels within the ascocarp.
- Most species have a completely enclosed ascocarp called a cleistothecium, but in some it is ostiolate.
- They are widespread in occurrence, but are often associated with seeds, soils, and some are animal parasites.
- An important order in this class is the plant pathogens commonly referred to as powdery mildews.

A. ORDER EUROTIALES

- The Eurotiales includes those plectomycetes which form their asci in completely enclosed ascocarps.
- The ascocarps are small, spherical, and are formed on a well-developed mycelium.
- The asci are globose to sub-globose, usually eight-spored, and are evanescent, freeing (release, liberate) the ascospores inside the ascocarp.
- The anamorph is usually phialidic.
- *Talaromyces*-The ascocarps of this genus are usually white or yellow. The asci are formed in short chains and the ascospores are hyaline. The conidial state is in the genus *Penicillium*.

B. ORDER ONYGENALES

- In this order, the ascocarp frequently consists of loose arrangement of hyphae, and a distinct peridium is lacking.
- The anamorph is arthroscopic or aleuriosporic.
- Many species are keratinophilic and are common dermatophytes.

1. FAMILY GYMNOASCACEAE

These are plectomycetes with the cleistothecial wall consisting of loose network of hyphae.

Nannizzia-The peridial hyphae of this genus lack joints at the septa and the appendages are not well-defined. The free ends of the hyphae are spine-like, with lateral branches. The ascospores are hyaline.

C. ORDER MICROASCALES

This order contains several serious plant pathogens.

1. FAMILY OPHIOSTOMATACEAE

- These species have very small ascocarps with very long ostiolar necks,
- usually immersed in the substrate.

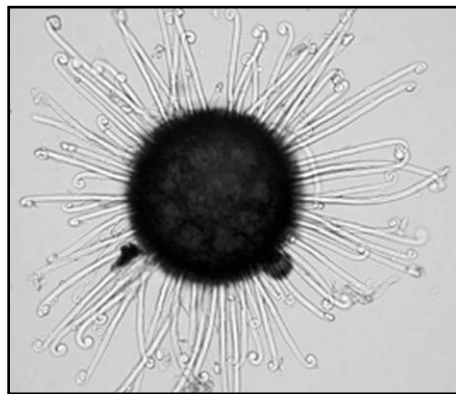
Ceratocystis-the ascocarps of this genus are dark, very small, with very long ostiolar necks. The ascospores are one-celled and hyaline.

D. ORDER ERYSIPTHALES

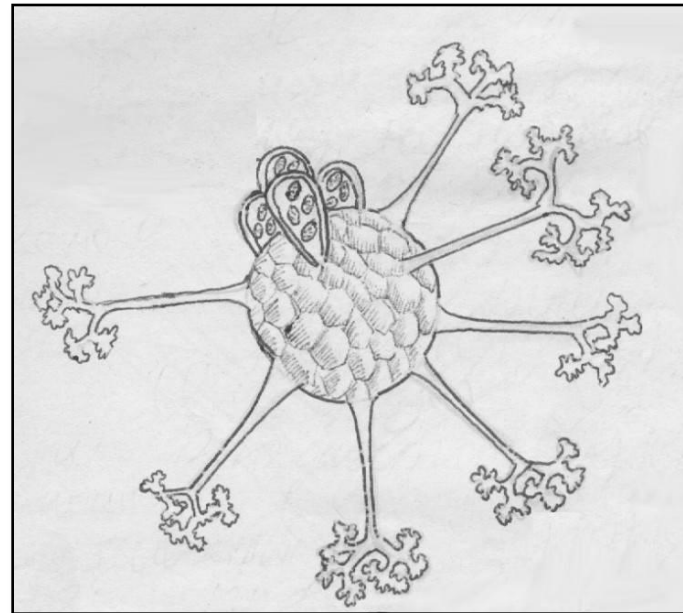
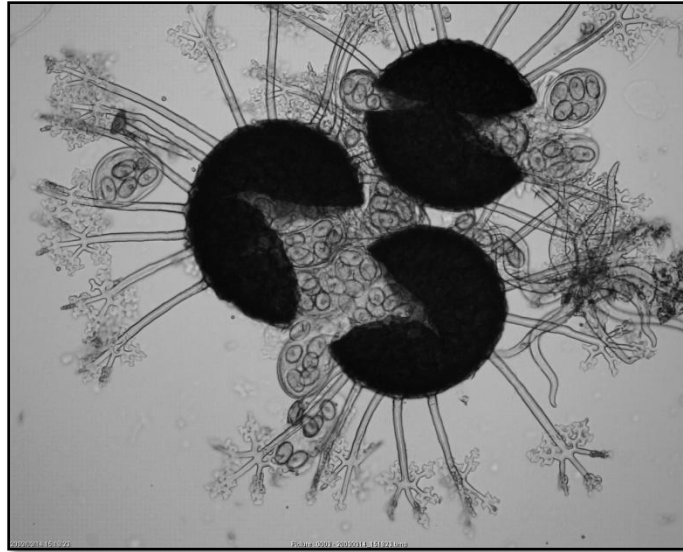
- Members of this order are also known as the powdery mildews.
- They have completely enclosed ascocarps that contain one or several asci.
- All are obligate parasites and cannot be cultivated in vitro.
- They form superficial hyaline mycelium that produces haustoria.
- There are a number of ways used to identify the genera of powdery mildews. One is by characterizing the appendages present on the cleistothecium.

There are three different appendage morphologies used to identify the powdery mildews:

1. circinoid,



2. dichotomously branched,



3. and bulbous based appendages.

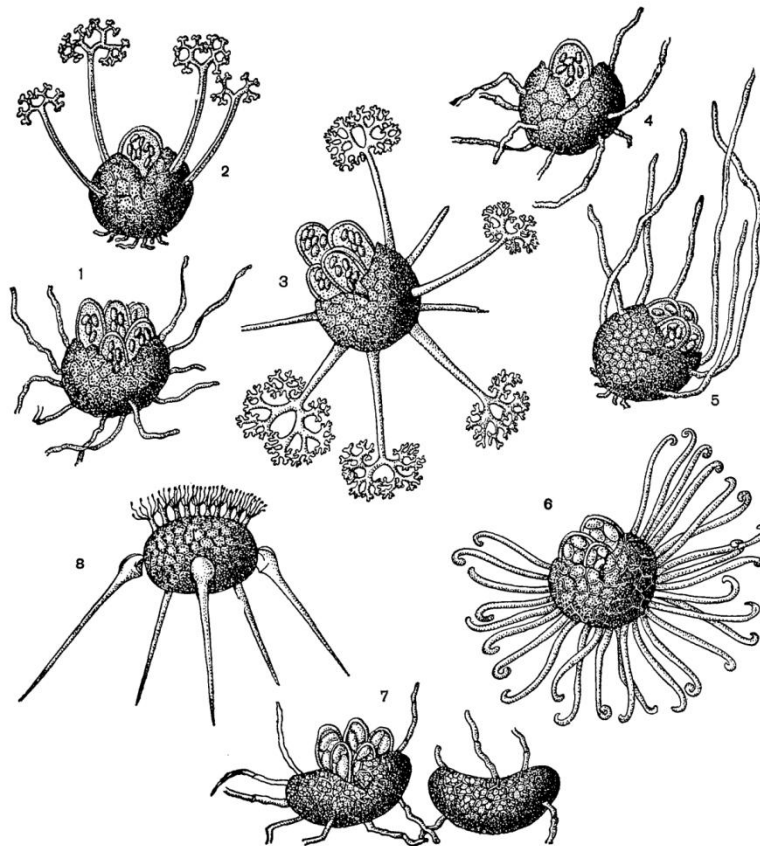
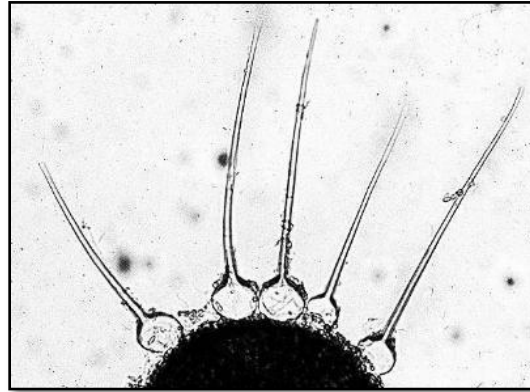


Рис. 87. Плодовые тела (клейстотеции) ржавчатых грибов:
1 — эризибе (*Eryzibe*); 2 — подосфера (*Podospaera*); 3 — микросфера (*Microspaera*); 4 — сферотека (*Sphaeroteca*); 5 — трихокладия (*Trichocladia*); 6 — унцинула (*Uncinula*); 7 — левейлаула (*Levetiula*); 8 — флалактиния (*Phylactinia*).

In addition, the species are also identified based on the number of asci in the cleistothecium and the conidial stages present on the host plant. There is a single family, Erysiphaceae.

1. *Erysiphe*-this genus has ascocarps containing many asci and mycelioid appendages.

2. *Uncinula*-the ascocarps contain many asci and the appendages are rigid with a circinate or re-curved tip.

3. *Phyllactinia*-In this genus, there are many asci and the appendages are stiff, with a bulbous base.