Kingdom: Chromista (Stramenopila)

Phylum: Oomycota (Water molds)

Class: Oomycetes

- Lack chitin in their cell walls
- Often referred to as **water molds**
- Have large round Oogonia, structures containing the female gametes.
- Rarely have septa

Order: Peronosporales

Family1: Peronosporaceae

1- Obligated parasitism

2- Cause plant diseases such as **downy mildew (**Disease symptoms appear shaped yellowing spots on the upper surface of the leaves.

3- Sporangiophore are clearly and branches.

Genus: *Plasmopora viticola* Slide available

Infects grapes, The ends of the branches there is a small bump called **sterigma** carry sporangium (figure 1&2).



Figure 1: Grapes downy mildew caused by *Plasmopora viticola*

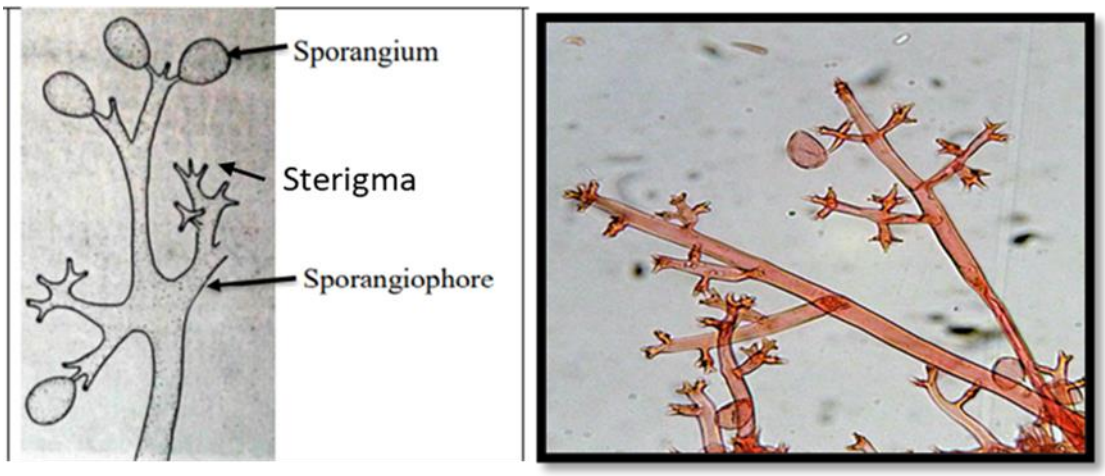

Figure 2: *Plasmopora viticola*

Family2: Pythiaceae

G1: *Pythium debaryanum* (causes damping of seedling disease)

Asexual reproduction: Forming zoospore

Sexual reproduction: Fertilization between male gametes (anthridium) and female gametes (oogonia) forming oospore which germination to a new hypha.

G 2: *Phytophthora infestans* (causes late blight of potato disease)

Sexual & asexual reproduction as in *pythium debaryanum*

	Phytophthora	***Pythium***
1-	Shape the sporangiophore are lemon	Shape the sporangiophore are circular
2-	Zoospore release from papilla	Zoospore release from vesicle
3-	Sporangiophore are clearly	Sporangiophore are Thin
4-	Anthridium arise from base oogonium	Anthridium be side-Site

Order2: Saprolegniales

1. Infecting fish, fish eggs, amphibians and crustaceans.
2. Play an important ecological role in decomposition and recycling of materials in the aquatic ecosystem.
3. Major cell wall components are cellulose, glucans, and some species also produce small amounts of chitin

Family: Saprolegniaceae

Genus: *Saprolegnia* **Slide available**

- Found most frequently in freshwater
- Filaments (hyphae) are long with rounded ends, containing the zoospores
- Targets fish through necrosis of the skin causing saprolegniasis.
- Spread across the surface of its host as a cotton-like film (figure 3)
- Spores commonly enter the fish body via damaged gills.
- Infect fish eggs.
- A Saprolegnia infection is usually fatal
- **Sexual reproduction** begins with the production of male and female gametangium, antheridia and oogonium respectively. These unite and fuse together via fertilization tubes. produced an **oospore** (figure 4).
- **Asexual reproduction** is by means of **zoospores** produced in a zoosporangium, which develops at the end of non-septate cells.



Figure 3: Fish Saprolegnia

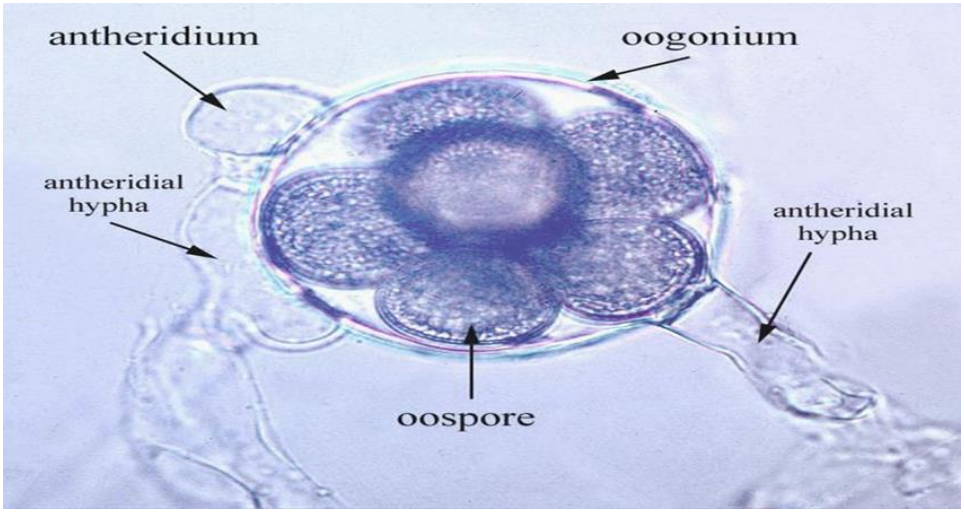

Figure 4: Sexual reproduction and produced oospore