

DEUTEROMYCOTINA-FUNGI IMPERFECTII

FUNGI AND PLANT PATHOLOGY

M.SC SPECIAL PAPER

Dr. Vishnupriya Sharma

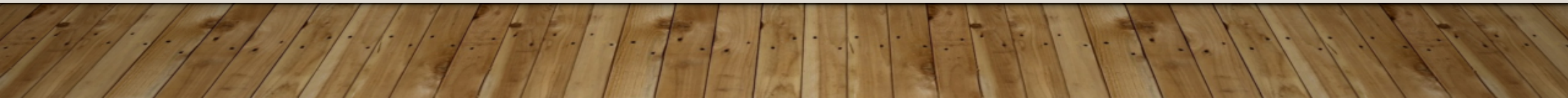
GENERAL CHARACTERISTICS

- In Deuteromycotina no perfect stage is present
- They reproduce asexually only
- Their perfect stage is either lost during course of evolution or may not have existed at all
- Such kind of all fungi are known as Deuteromyocotina or simply Fungi imperfectii
- Identification of such fungi can be made through their mycelial structure and mode of asexual reproduction
- Fungi imperfectii are known to reproduce through the process known as parasexual cycle in which plasmogamy, karyogamy and haploidization takes place but not in the specified points

PARASEXUAL CYCLE

Pontecorvo and Roper (1952) discovered parasexual cycle in *Aspergillus nidulans* (imperfect stage of *Emmericella nidulans*).

Sequence of events in a complete parasexual cycle

- ▶ Formation of heterokaryotic mycelium
 - ▶ Fusion between two nuclei i.e. like and unlike nuclei
 - ▶ Multiplication of diploid nuclei side by side with the haploid nuclei
 - ▶ Occasional mitotic crossing-over during the multiplication of the diploid nuclei
 - ▶ Sorting out of diploid nuclei
 - ▶ Occasional haploidization of the diploid nuclei
 - ▶ Sorting out of new haploid strains.
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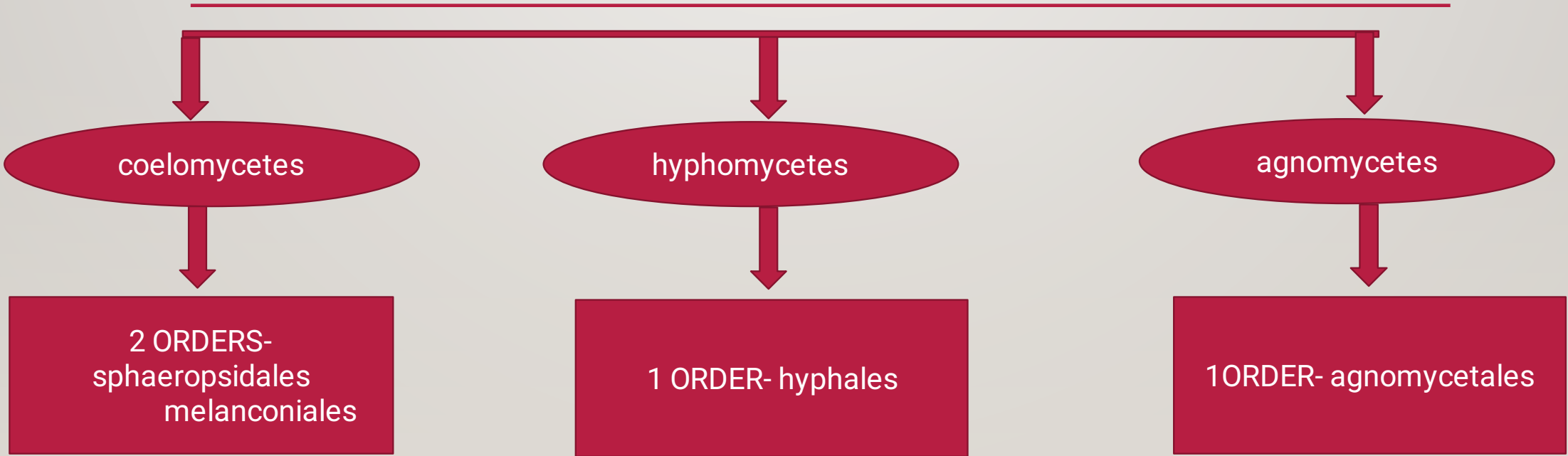
FORM GENUS OR FORM GENERA

#Schroeter used the term form genus or form genera for the members of Deuteromycotina.

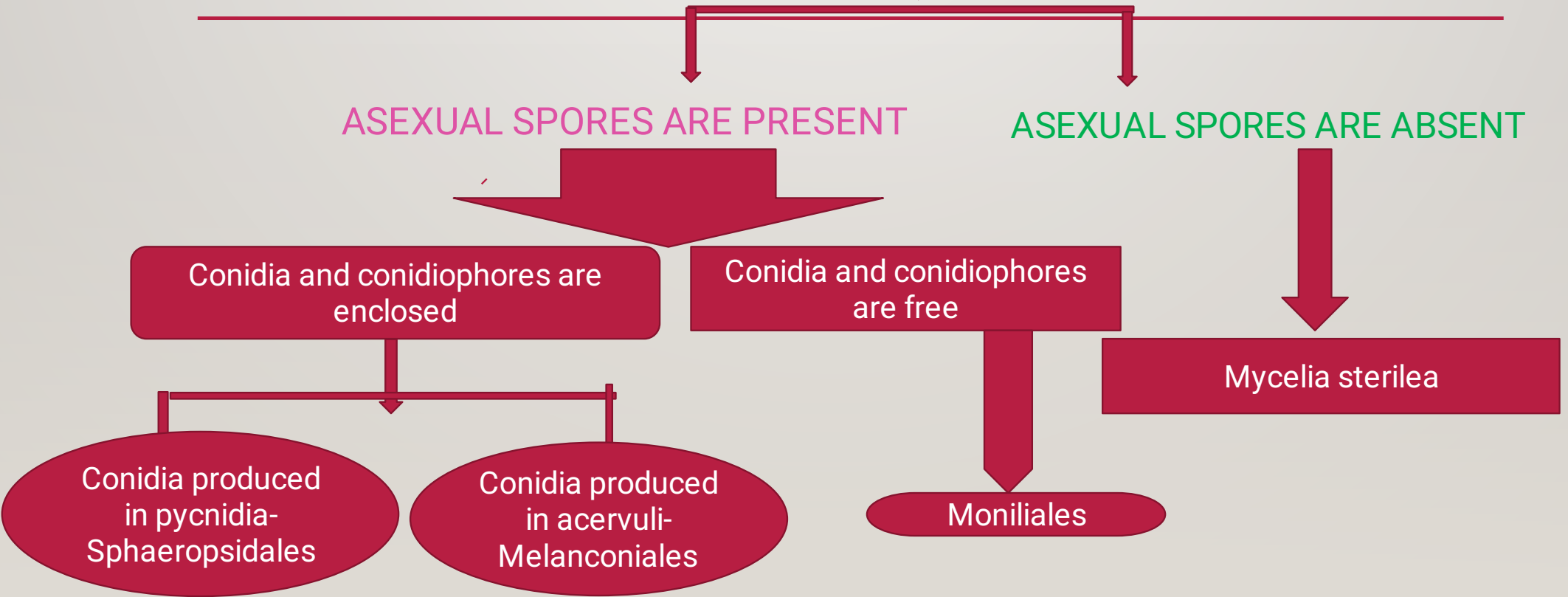
Since they are in reality not necessarily the assemblage of related species as one genus which is an imperfect genus may represent the imperfect stage of more than one perfect fungi

It is believed that members of fungi imperfectii are imperfect stages of ascomycotina or basidiomycotina

ACCORDING TO AINSWORTH & SUSSMAN SUBDIVISION DEUTEROMYCOTINA IS DIVIDED INTO 3 CLASSES



CLASSIFICATION OF DEUTEROMYCETES -SACCARDO SYSTEM ↓



1.SPHAEROPSIDALES

- Fruiting body pycnidium, flask shaped
- Basal portion of pycnidium is lined by conidiophores bearing conidia
- Conidia comes out from the ostiole as cirrus or in the form of smoke like mass of conidia
- Most species are saprophytic but few of them are parasitic
- They predominantly cause leaf spot but also grow on fruits ,stem causing blight, rot and canker disease
- Eg *Macrophomina* ,*Phyllosticta* ,*Phoma* ,*Diplodia* *Botriodiplodia*

2. MELANCONIALES

- The fruiting body is acervulus
- It is a plate like structure on the surface and on upper surface the conidiophores are present which form a palisade like layer
- Some bristles like structures known as setae are also present in between the conidiophores
- Commonly named as Anthracnose as it produces characteristic lesions
- Eg *Gloeosporium* , *Colletotrichum* , *Pestotlatia*

3. MONILIALES

- Also called as hyphales
- No fruiting bodies are formed
- Conidiophores are micronematous bear conidia
- Conidiophore may be free or show gradual aggregation
- Size , shape and colour of conidia may vary
- Eg *Monilia* , *Curvularia* , *Bipolaris* , *Cercospora*

4. MYCELIA STERELIA

- It includes those forms which lack conidia formation
- Produce sclerotia or rhizomorph
- Various other forms of mycelium without spore formation
- Eg *Rhizoctonia* , *Sclerotium*

thanks

