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Course: **BIOLOGY 102.**

College: **MEDICINE AND HEALTH SCIENCES**

Department: **NURSING.** Matric Number: **19/MHS02/013**

BIOLOGY 102 ASSIGNMENT

1. Fungi are important to man for the reasons below
 - i. They are responsible for breaking down organic matter and releasing carbon, oxygen, nitrogen and phosphorus into the soil and the atmosphere.
 - ii. Yeast is important in food industries like bakeries for making bread and also to make cheese, alcoholic beverages and other foods.
 - iii. Mushrooms are eaten by man.
 - iv. Fungi naturally produce antibiotics to kill or inhibit the growth of bacteria, limiting their competition in the natural environment. Important antibiotics such as penicillin and the cephalosporins can be isolated from fungi.

- 2.

CELL STRUCTURE OF A UNICELLULAR FUNGUS

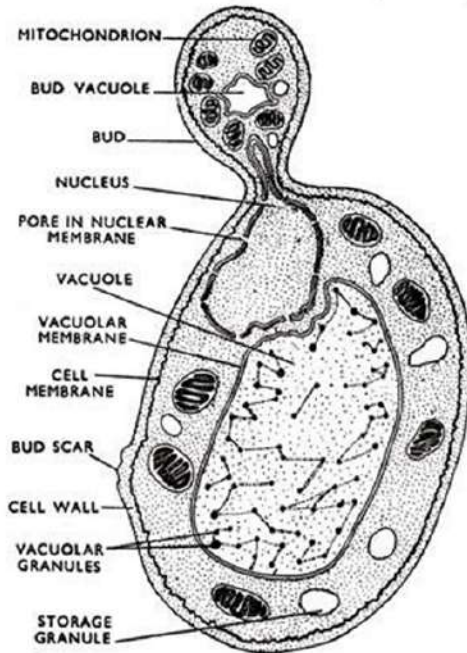


Fig. 215. *Saccharomyces cerevisiae*. Sectional view of a budding cell.

3. Sexual reproduction in a filamentous fungi like *Rhizopus stolonifer* undergoes the following steps;

sexual reproduction in fungi consists of three sequential stages; plasmogamy, karyogamy and meiosis.

- i. First, two mating types of hyphae grow in the same medium.
- ii. A chemical interaction between them causes growth perpendicular to the hyphae in opposite directions, so they can meet with one another.
- iii. The growths are delimited by a wall just so the nuclei are isolated in differentiated sex organs called gametangia (plural).
- iv. The gametangia fuse in a process called plasmogamy and together they form a zygote which may undergo dormancy for a period.
- v. The nuclei in the zygote fuse in twos and undergo meiosis independently, it then moves on to germinating under favorable conditions so as to liberate haploid spores at maturity through the production of a fruiting.

4. Bryophytes are able to survive in their habitat via they following;

- i. They possess definite structures for water and nutrient absorption from the soil.

- ii. They also possess a waxy cuticle that keeps them from drying out through the process of desiccation
 - iii. They possess gametangia that keep the plants gametes from drying out.
5. A. Eusteles; a type of stele in which the vascular tissue in the stem forms a central ring of bundles around a pith. The vascular bundles are discrete, concentric collateral bundles of xylem and phloem.
- B. Atactostele; a type of stele found in monocots, in which the vascular tissue in the stem exists as scattered bundles.
- C. Siphonostele:

A stele with central pith surrounded by vascular tissue is called siphonostele or a medullated protostele is called siphonostele.

Siphonostele is of two types:

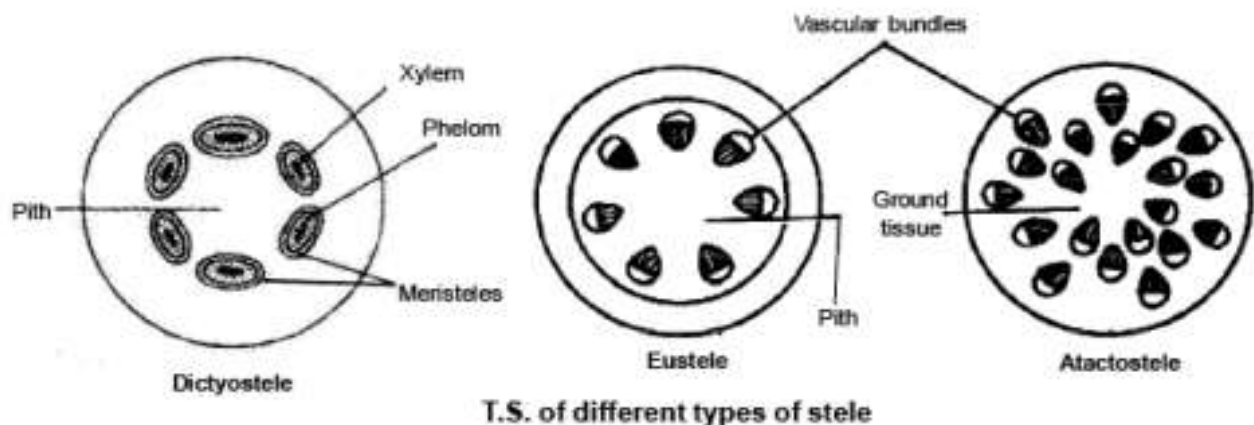
- (a) Ectophloic siphonostele, and
- (b) Amphiphloic siphonostele.

(a) Ectophloic siphonostele:

Phloem is present only external to the xylem e.g., *Osmunda*, *Schizae*

D. Dictyostele; a type of stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around a pith.

Diagrammatic illustrations of the different steles



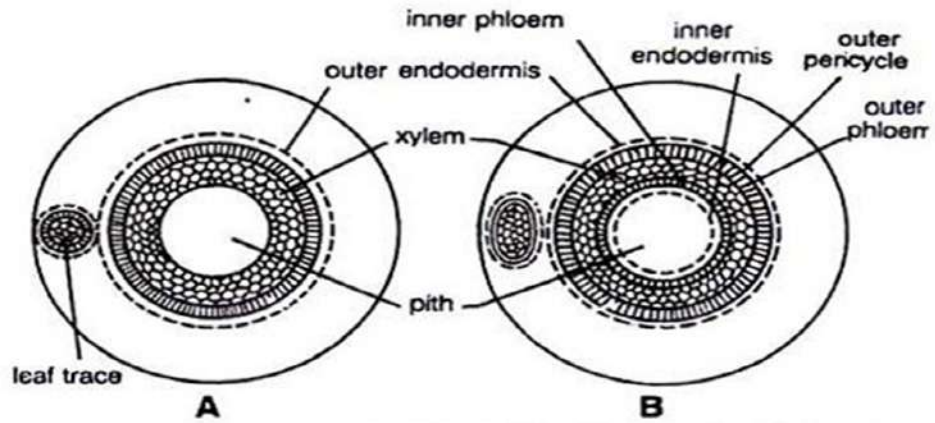


Fig. 3 (A–B). Stele System : A. Ectophloic siphonostele, B. Amphiphloic siphonostele

6.

Life cycle of a primitive vascular plant (psilotum)

