

EXPERIMENT - 3

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OBJECTIVE:-

To study (a) Binary fission in Amoeba
(b) Budding in Yeast and Hydra with the help of prepared slides.

MATERIALS REQUIRED:-

1. Compound microscope
2. Permanent slides of Budding in Yeast & Hydra and Binary fission in Amoeba.

THEORY:-

Budding and binary fission are types of asexual reproduction observed in lower organisms such as bacteria, unicellular protozoans and some other entities.

Binary Fission: In this type of reproduction, the parent cell divides or is split into two daughter cells through mitosis where in each daughter cell develops into an adult.

Budding: It is a kind of asexual reproduction where in a new organism develops from a bud on an outgrowth due to the process of cell division at a particular site.

PROCEDURE :

1. The permanent slides of (a) Binary fission in Amoeba, (b) Budding in Yeast and

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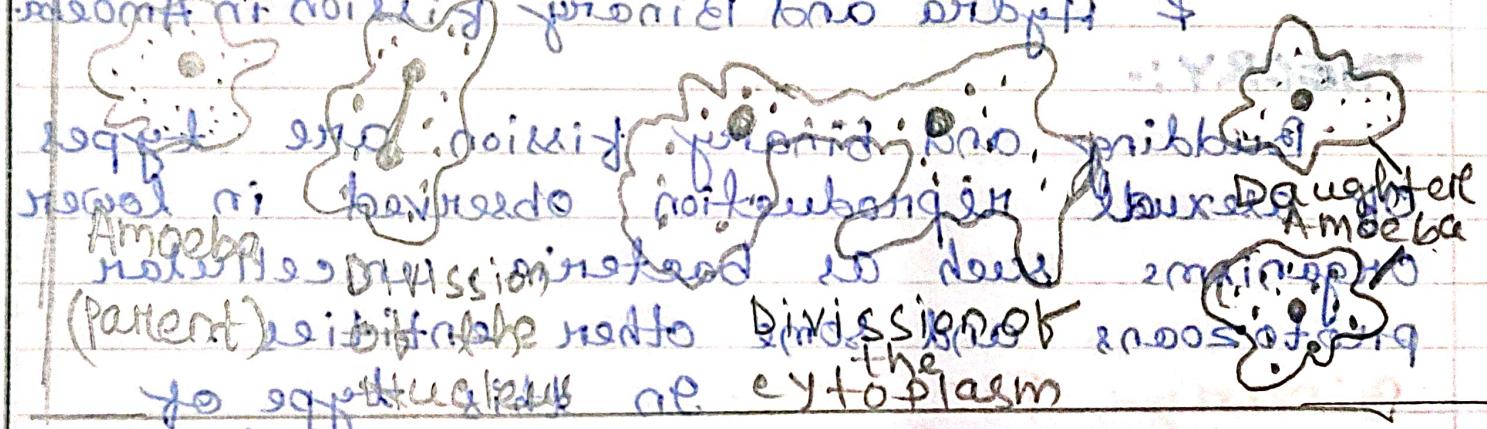
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OBJECTIVE:

Ameba ni amoeboid protista to
plerast atti wala bharo kee ni phibber
• zebila bernding k.

AIM OF THE LABORATORY:

1. Growth in amoeba
2. Reproduction in amoeba



(Patient) ke isti nato division noto amoeba
to segerakalas ne cytoplasm

rebitib illa frero ett roteborget
allia net Bioblogat Fission tilpa Amoeba

rebitib illa ni merw aikdim pwecht
thabo no ofni & gelene' illa

merw fo kira li tE

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Hydra were placed on the stage of the microscope.

2. The mirror of the microscope was adjusted in such a way, that maximum light was reflected from the mirror to the slide. The eye-piece of the microscope was adjusted to focus the slide clearly. Firstly, the slide was observed under low power microscope by using its coarse adjustment and was then observed under high power using fine adjustment.

OBSERVATIONS:

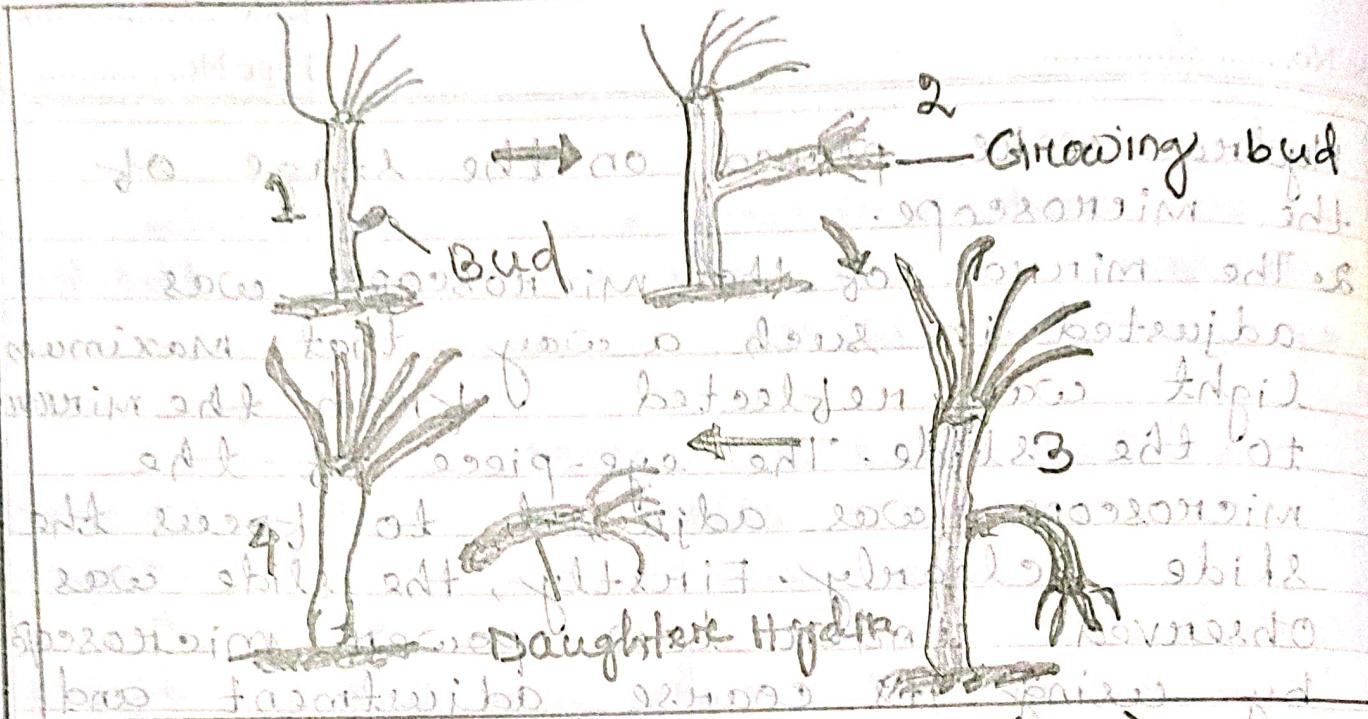
(a) Binary Fission in Amoeba

1. Amoeba are usually irregular in shape. Some of them may be in a state of binary fission. In some stages, karyokinesis may be seen.
2. Others may show the division of cell body, i.e., cytokinesis. So that an Amoeba may divide into two parts, i.e., daughter cells.

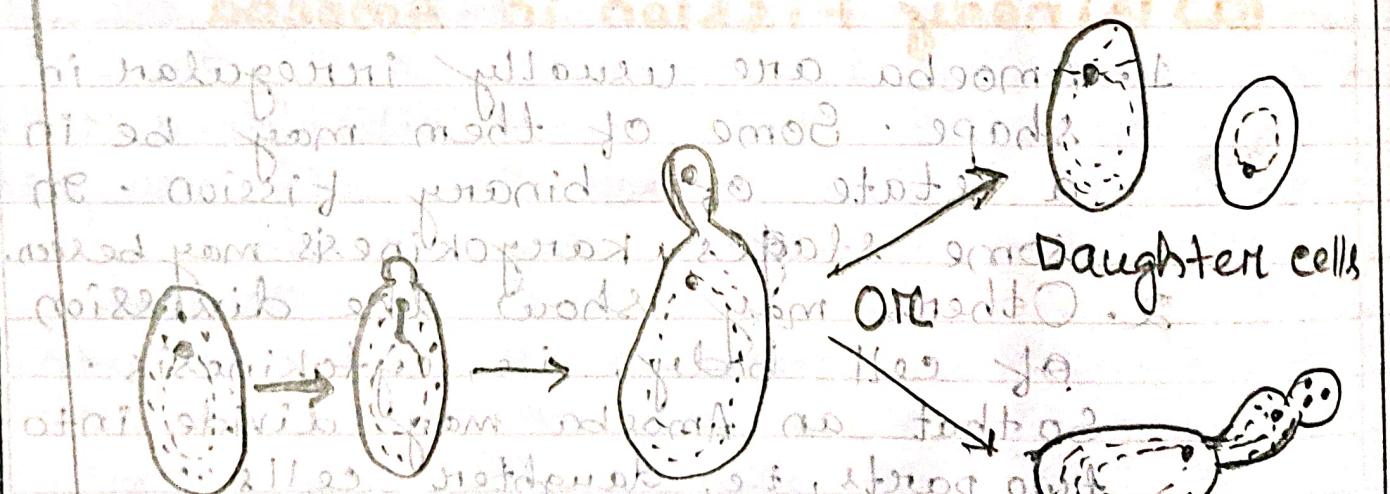
(b) Budding in Yeast

1. Yeast cells are usually spherical or oval in shape.
2. Yeast cells show protuberances on them.

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Budding (Budding in Hydra)



chain of buds

(Budding in Yeast)

called 'buds'. These buds upon reaching maturity separate from the parent cell. This process of reproduction is known as budding.

3. Sometimes a chain of buds is seen on the parent cell.

In Hydra

1. Hydra is multicellular organism that contains regenerative cells. A bulging, lateral outgrowth appears on it. This outgrowth is a developing bud.
2. The bud enlarges in size and attains the shape of the parent body.
3. Now the fully mature bud detaches from the parent body and becomes a new individual (Hydra).

CONCLUSIONS:

1. Given slide shows the elongated body of Amoeba with a constriction in the middle. Hence the given slide shows binary fission in Amoeba.
2. In the given slide, some yeast cells show protuberances, while some other cells are present as a chain of buds, hence the given slide shows budding in Yeast.

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3. In the given slide of Hydra, the process of bud-development, and then development of a mature Hydra after detaching from the parent body has been shown.

PRECAUTION:

1. Slides need to be aligned and focused accurately.
2. The slides first need to be examined under a low-power magnification of the compound microscope and, then under high-power magnification.

3. A note on biological division of the hydras will be made in the notes and observation record.

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