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# asexual REPRODUCTION n

# ASEXUAL REPRODUCTION

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□ Asexual reproduction is the production of offspring from a single parent by simple division.

# ***PROPERTIES OF ASEXUAL REPRODUCTION***

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**1. There is the less variation  
among of offspring.**

**2. It is rapid and many offspring  
are formed.**

# ***PROPERTIES OF ASEXUAL REPRODUCTION***

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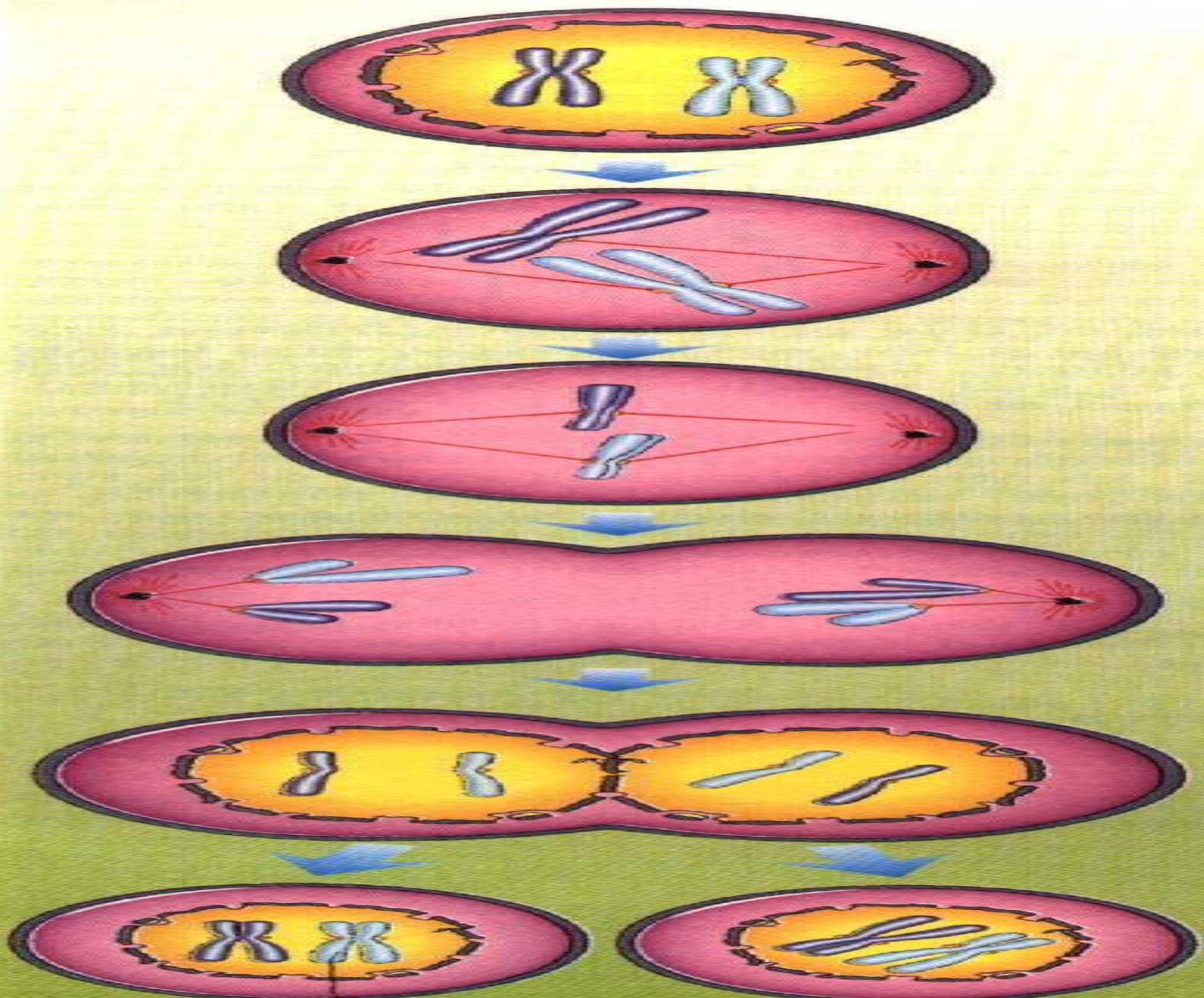
**3. All cells contain same hereditary information as the parent cell.**


**4. Asexual reproduction occurs by means of mitotic cell division.**

**5. There is only one parent organism.**







A silver metal spiral binding is visible on the left side of the page, with the wire looping through a series of holes.

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**Asexual reproduction is  
seen in unicellular  
organisms, some plants and  
simple animals.**

# TYPES OF ASEXUAL REPRODUCTION

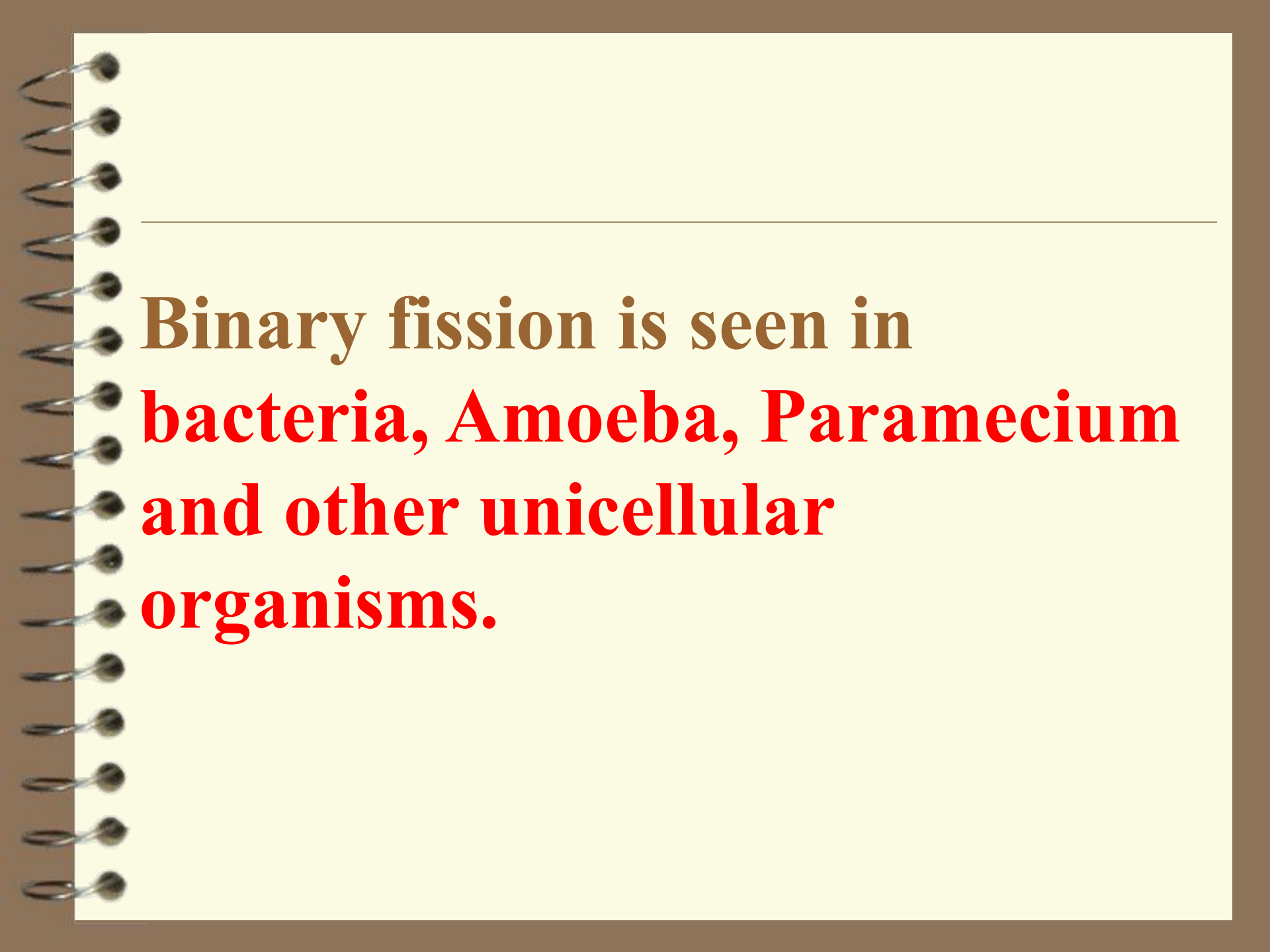
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- ☐ **Binary fission.**
- ☐ **Budding**
- ☐ **Sporulation**
- ☐ **Vegetative propagation**
- ☐ **Regeneration.**
- ☐ **Tissue culture.**



# *BINARY FISSION*

□ The cell divides by amitosis or mitosis. The nucleus divides first, then the cytoplasm of the cell is separated.

A spiral-bound notebook with a cream-colored page and a brown cover. The spiral binding is on the left side. A horizontal line is drawn across the page, about one-third of the way down. The text is written on the page, with the first part in brown and the rest in red.

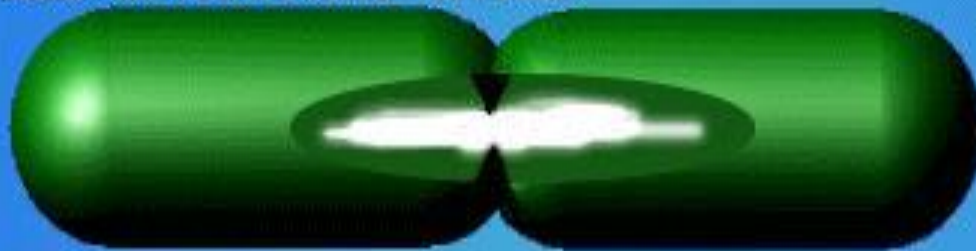
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**Binary fission is seen in  
bacteria, Amoeba, Paramecium  
and other unicellular  
organisms.**

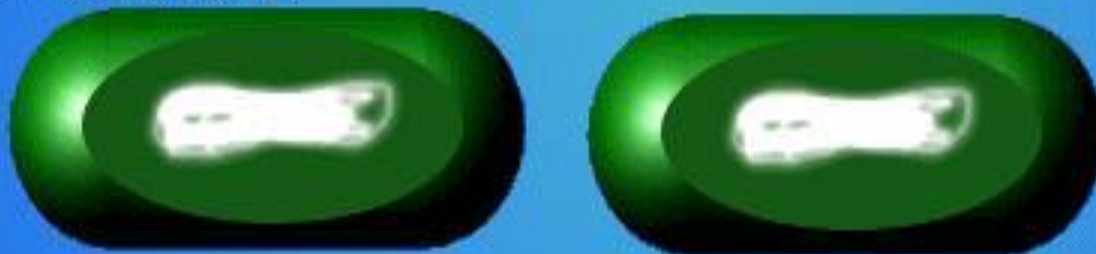
**DNA replicates**



**cell wall and membrane divide**

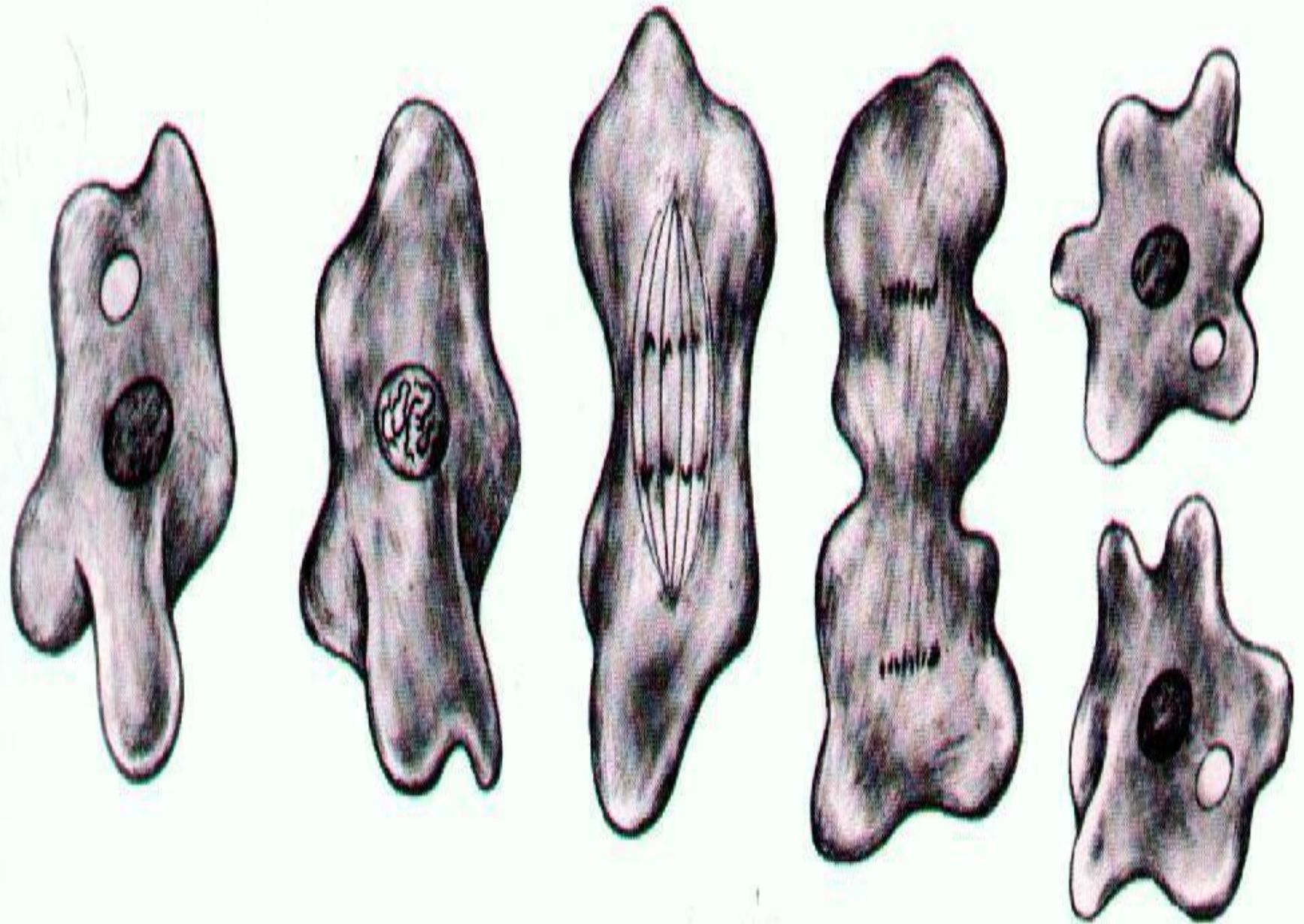


**cross wall forms**

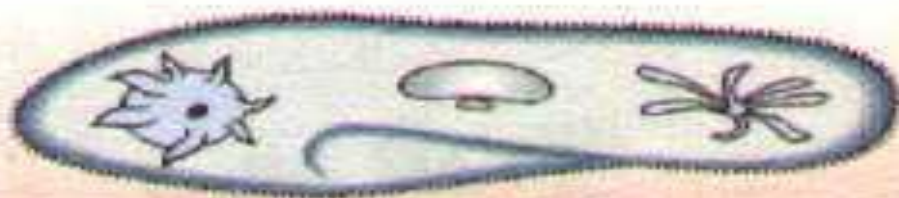


**cells break**











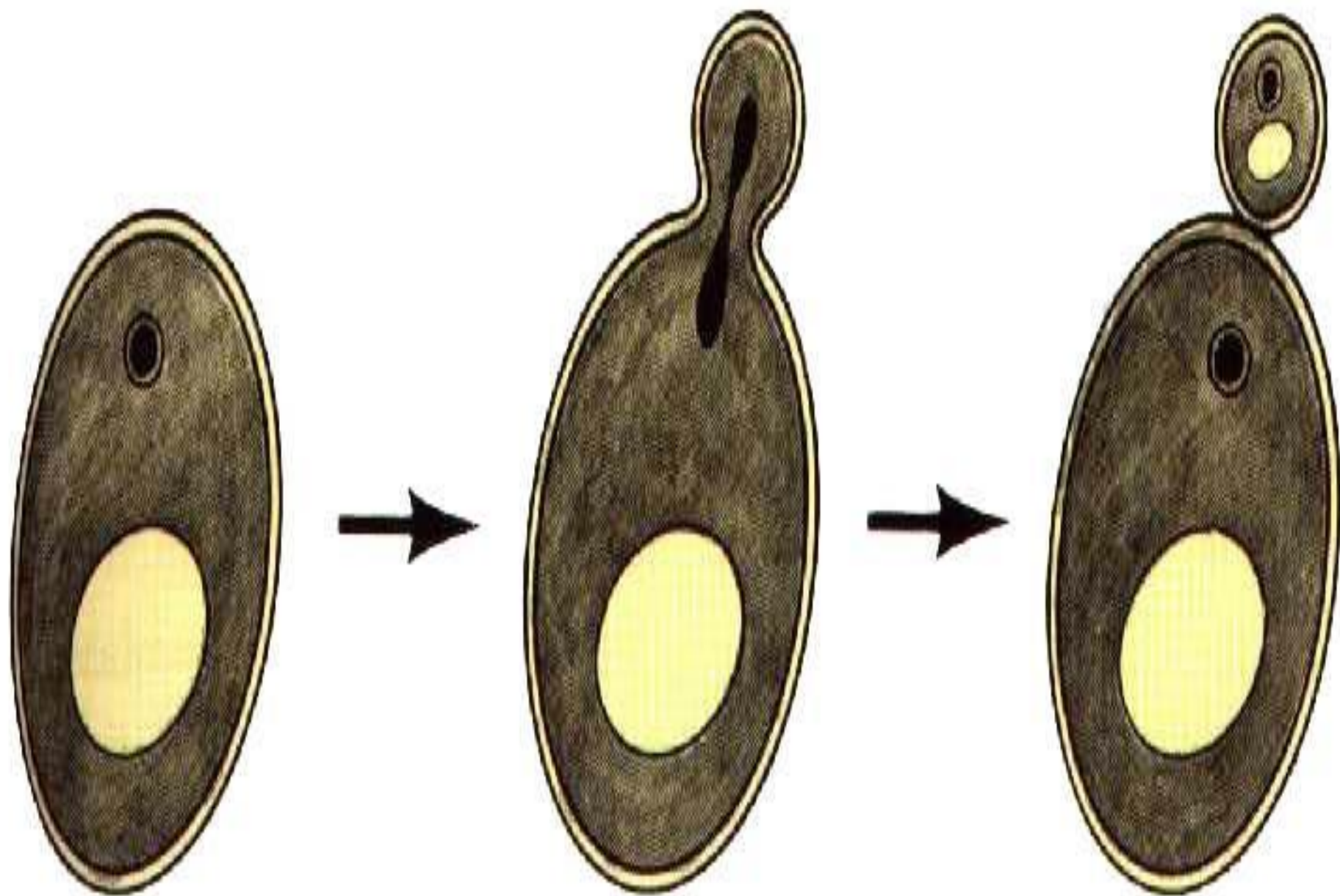
# ***BUDDING***

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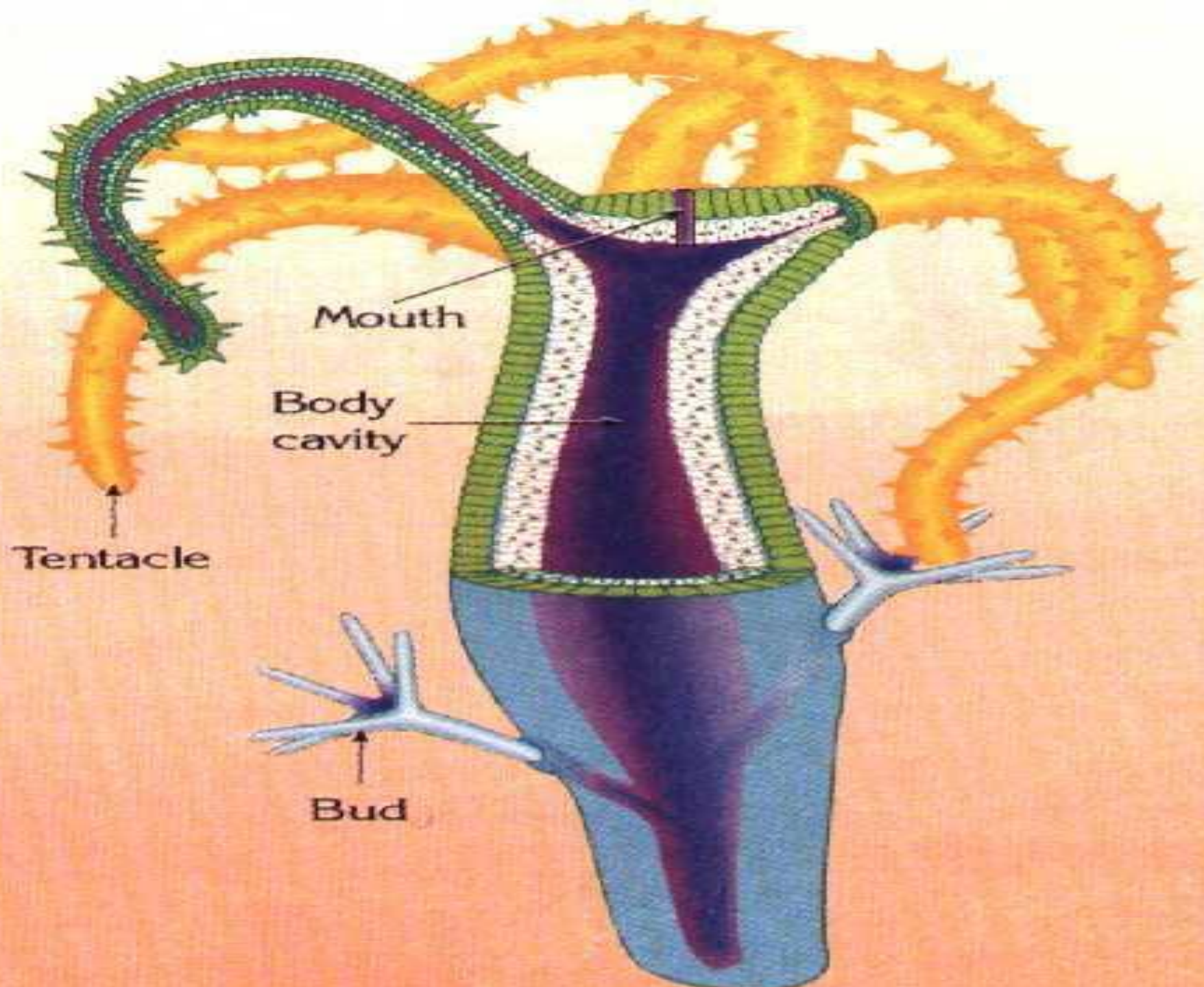
☐ **The cell or cells divide mitotically forming a bud on the parent organisms. And then bud separates from parents.**

A spiral-bound notebook with a cream-colored page and a brown cover. The spiral binding is on the left side. A horizontal line is drawn across the page, and text is written below it.

**Budding is seen in hydra,  
jellyfish, sponges and  
yeasts.**











# SPORULATION

☐ Many plants produce specialized cells called spores. Each spore can produce a new organism. Spore is surrounded by special thick, hard cell wall.

A spiral-bound notebook with a cream-colored page and a brown cover. The spiral binding is on the left side. A horizontal line is drawn across the page, about one-third of the way down. The text is written in a bold, serif font. The words "some", "fungi", and "protozoa" are in red, while the rest is in black.

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**Spore formation is seen in some  
fungi, algae and protozoa.**

# VEGETATIVE PROPOGATION

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□ Root, stem and leaves are called vegetative organs in plants. When they give rise to new plants this process is called vegetative reproduction.

# ***TYPES OF VEGETATIVE PROPOGATION***

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**1-Tuber**

**2-Stolons and runners**

**3-Rhizome**

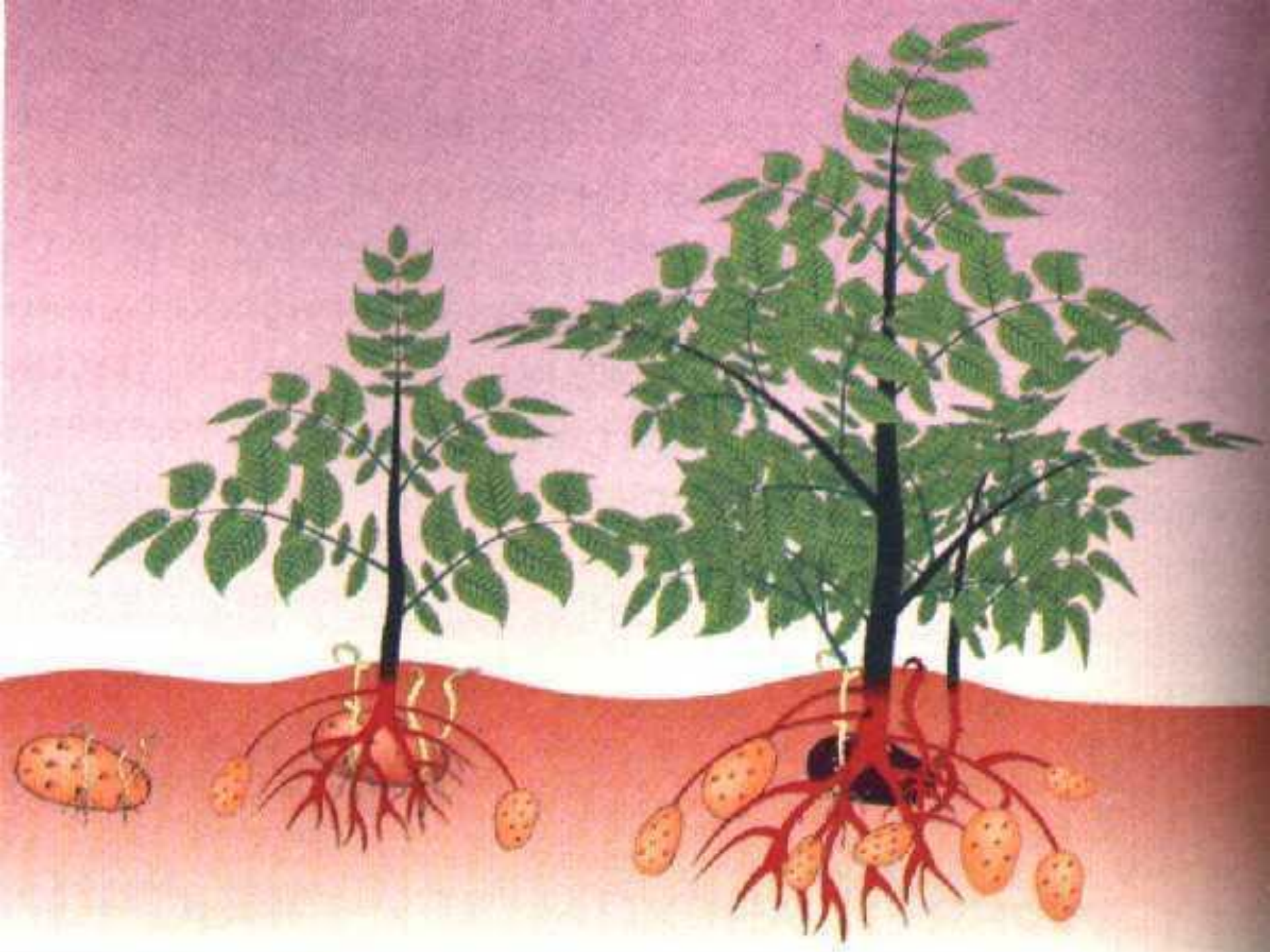
**4-Cutting**

**5-Stem grafting.**

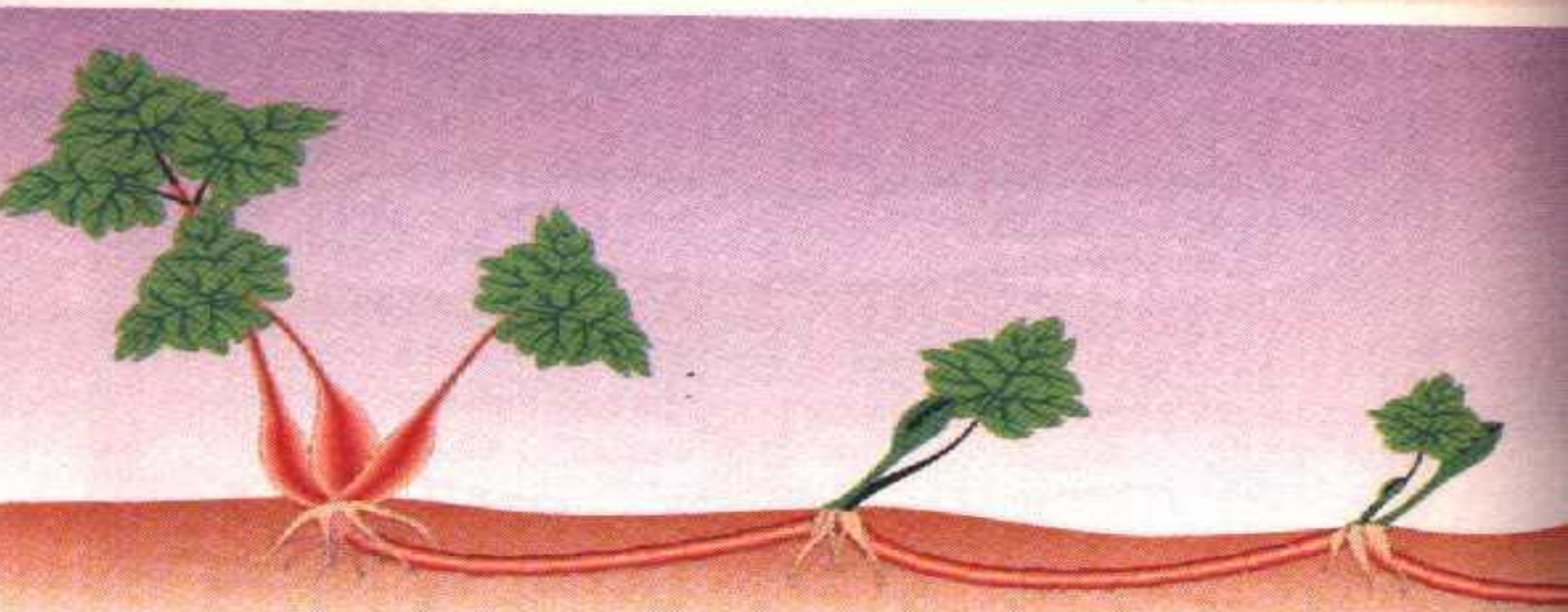
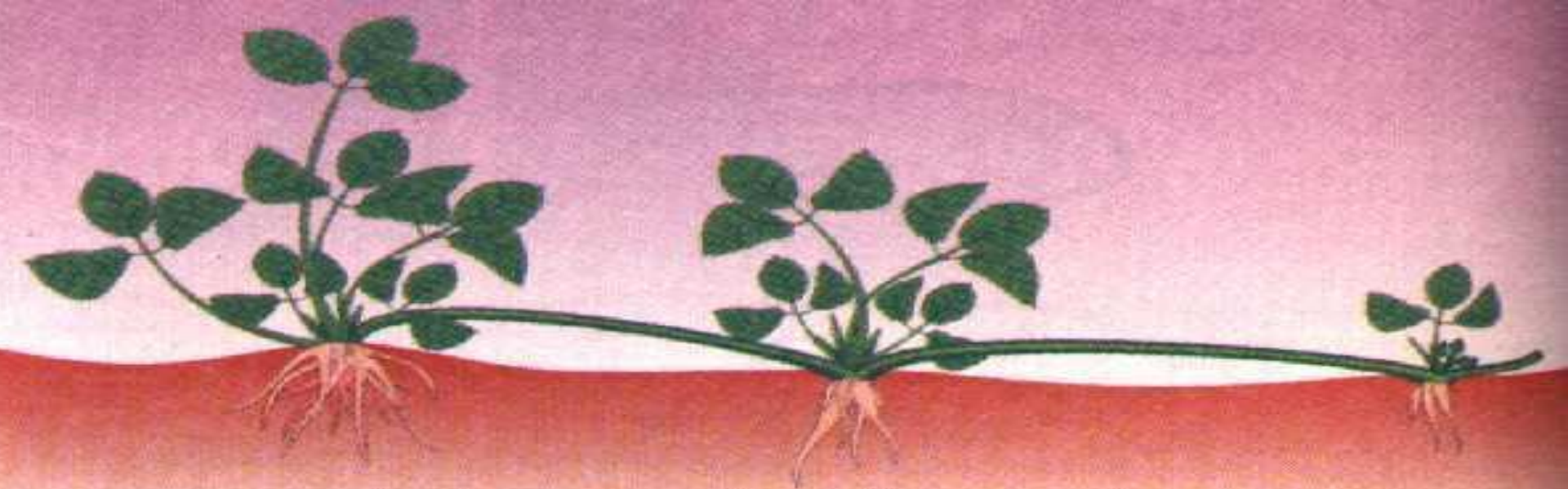




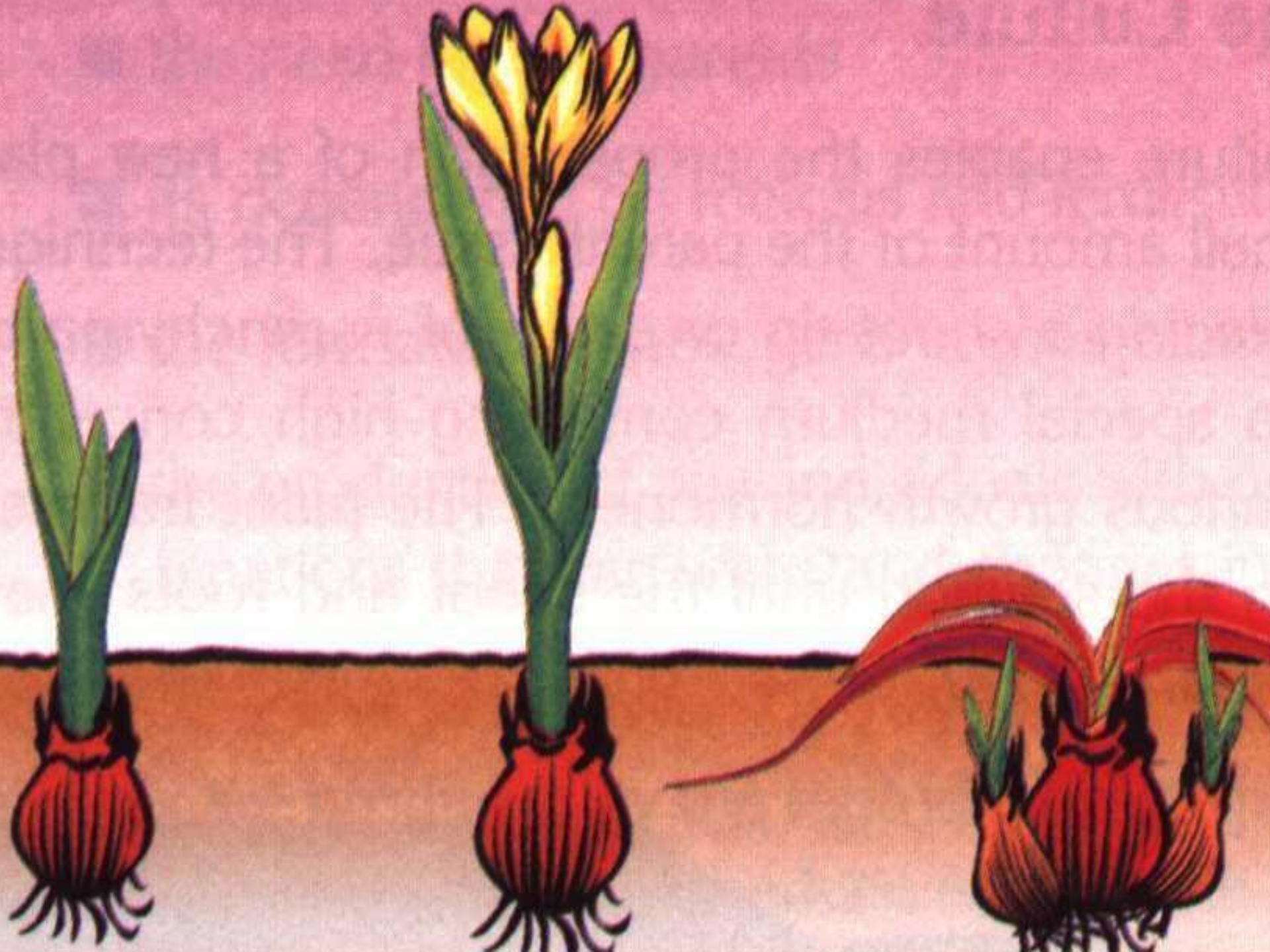






















# REGENERATION

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□ Regeneration is the ability to regenerate a missing part is possible to varying extents in all organisms. Some organisms regenerate lost body part.

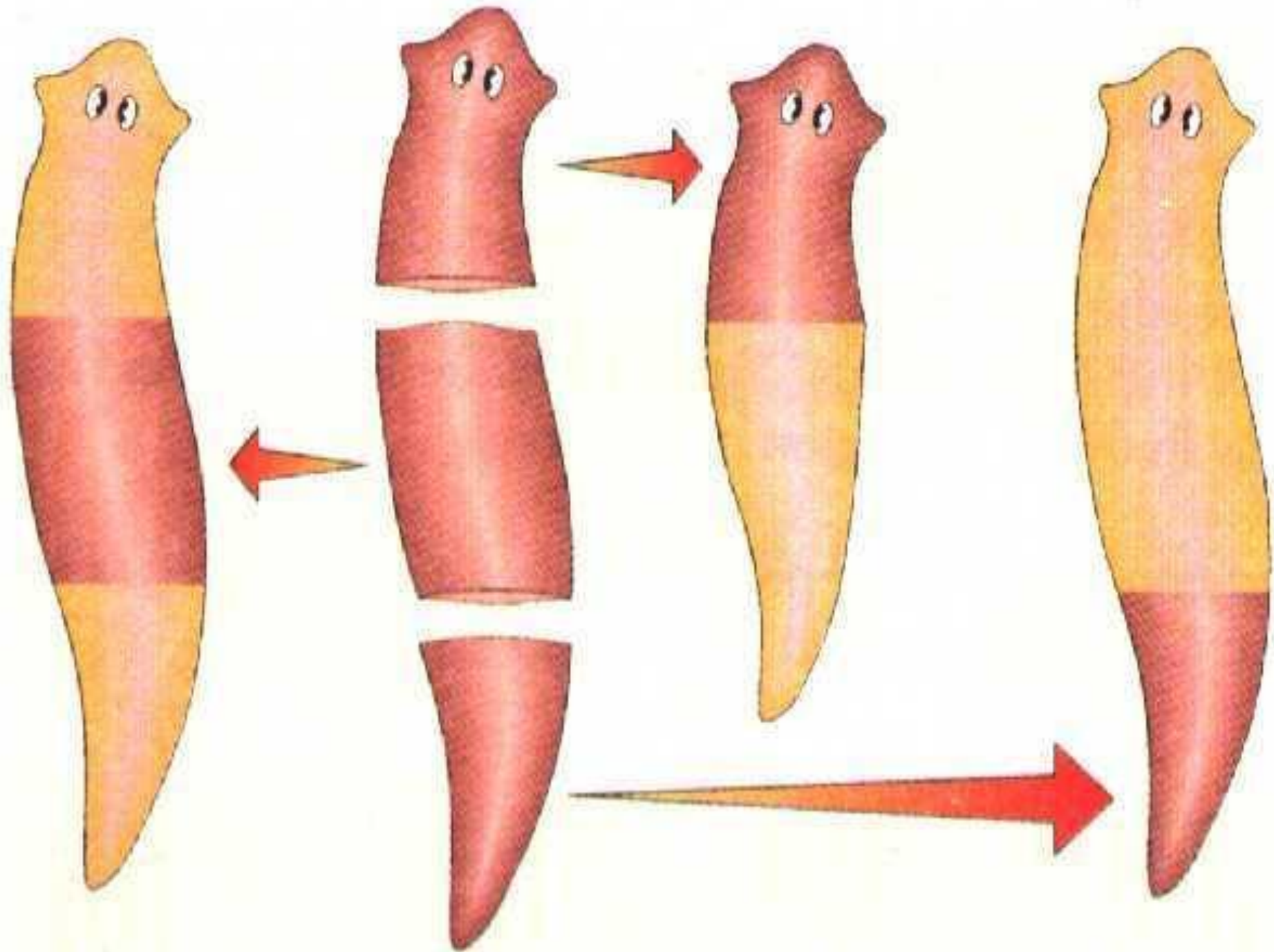
EX: Crab, lizard and earthworm.

# *EXAMPLES*

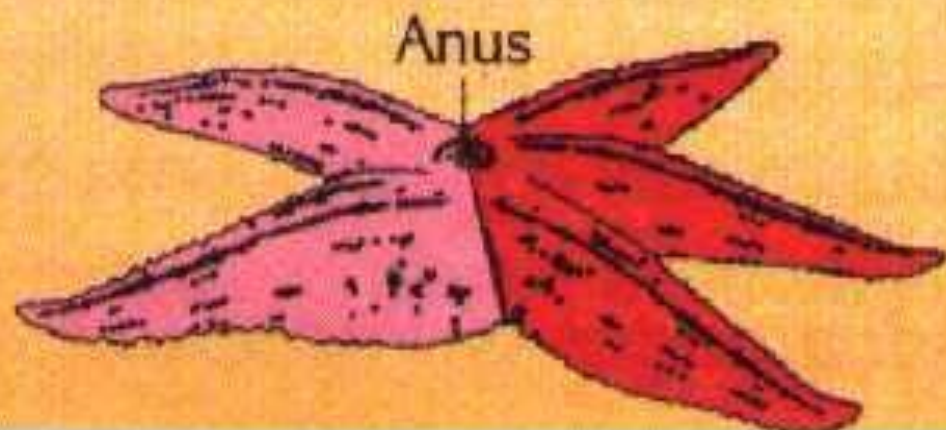
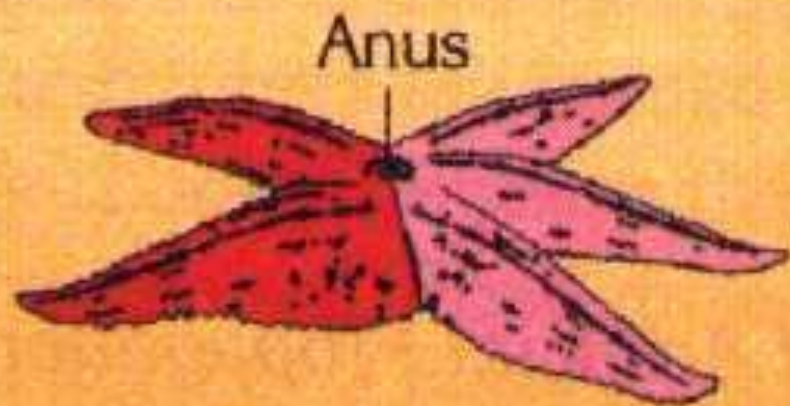
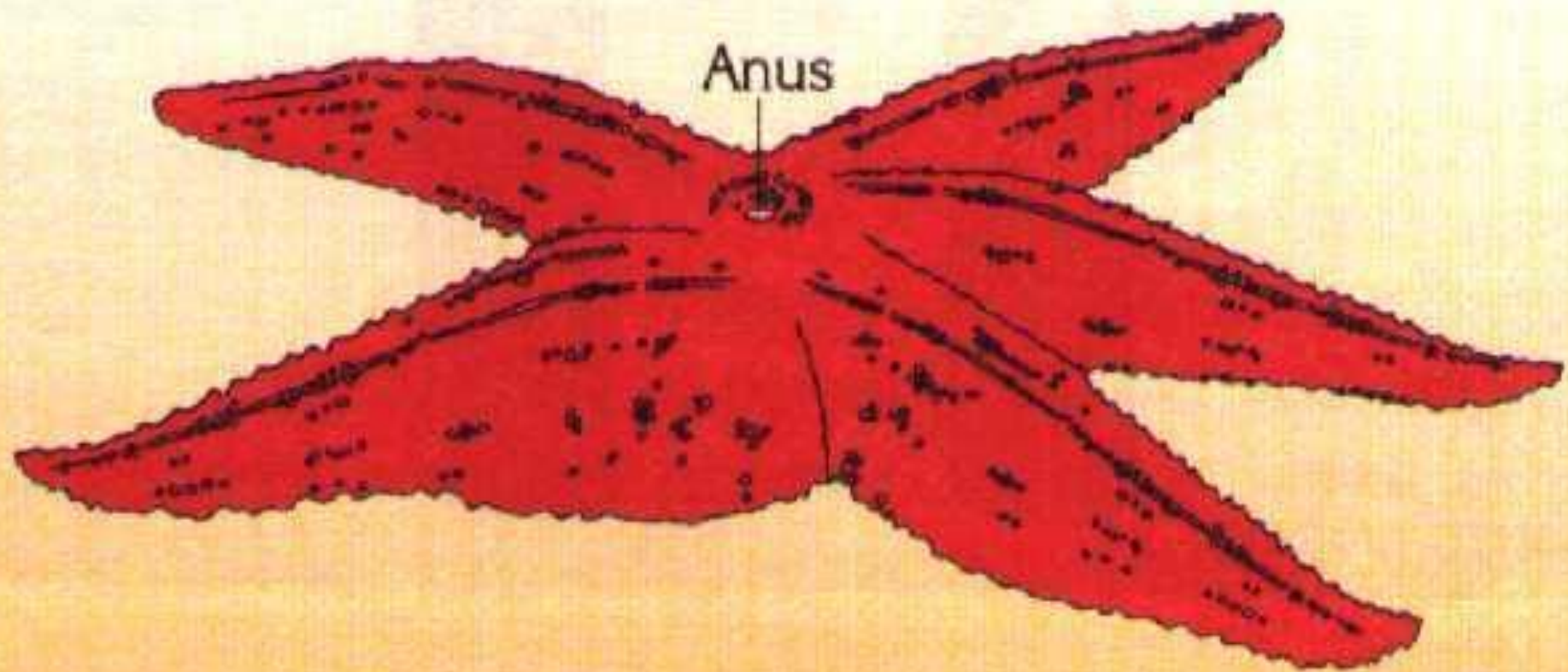
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Planaria, hydra and starfish can reproduce by regeneration.

*If a hydra is cut in half, each of this will grow into a complete planaria.*







# TISSUE CULTURE

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☐ Tissue culture enables the propagation of a new tissue from a small amount of the parent tissue.



Cells are removed from sheep 1

Cell

Multiplication

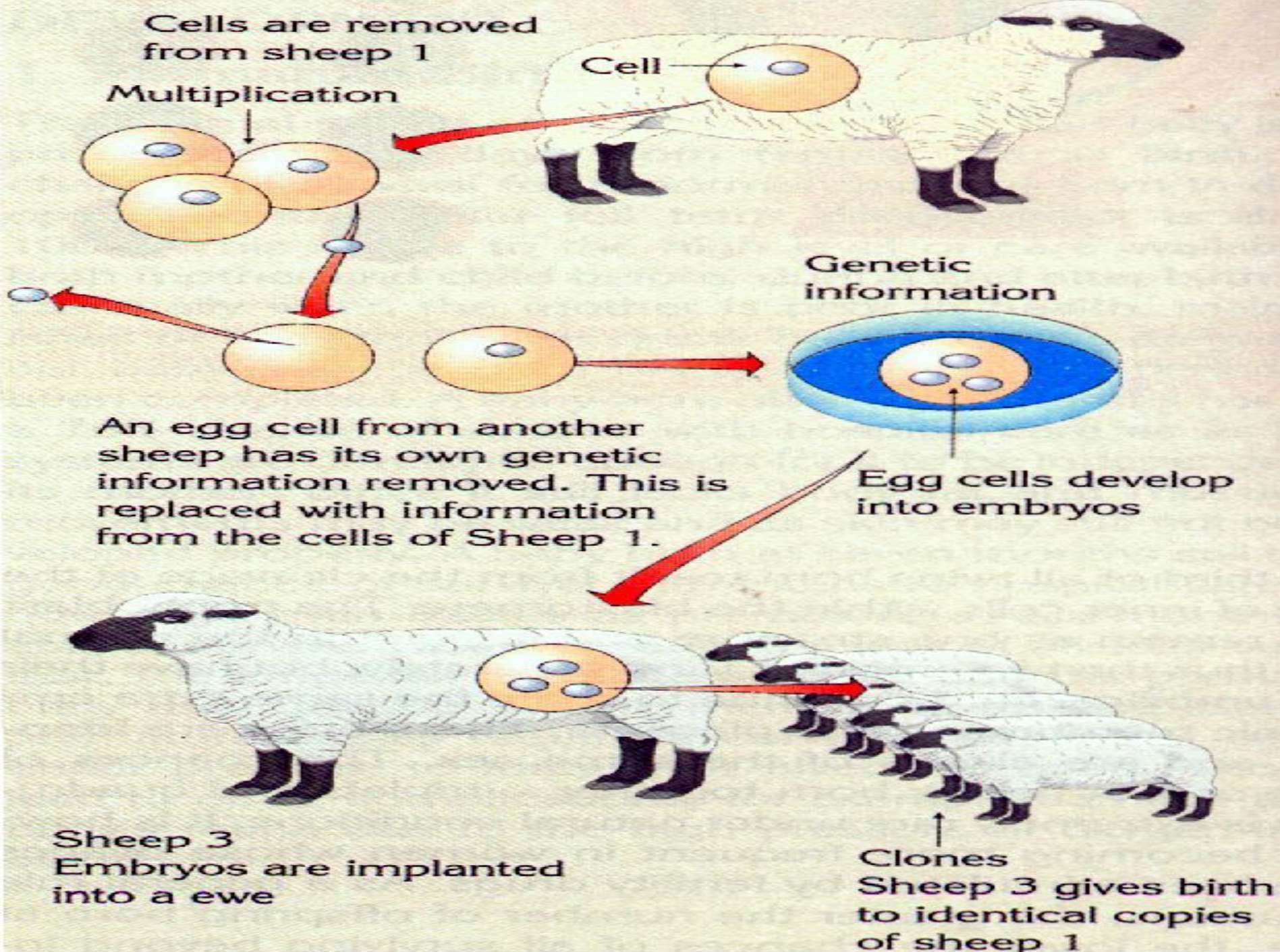
Genetic information

An egg cell from another sheep has its own genetic information removed. This is replaced with information from the cells of Sheep 1.

Egg cells develop into embryos

Sheep 3  
Embryos are implanted into a ewe

Clones  
Sheep 3 gives birth to identical copies of sheep 1





# BIOLOGY DEPARTMENT

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*Thanks your attention*