

Reproduction

- Reproduction is the biological process by which new individual organisms "offspring" are produced from their "parents".
- Reproduction is a fundamental feature of all known life; each individual organism exists as the result of reproduction.
- There are three forms of reproduction.

Types of Reproduction

➤ There are three common methods of reproduction found in algae.

1. Vegetative reproduction
2. Asexual reproduction
3. Sexual reproduction

1. Vegetative reproduction

- The vegetative reproduction in algae includes those methods of propagation in which portion of the plant body become separated off to give rise to individuals.
- Vegetative reproduction take place by different methods.

❖ (i) **By cell division:**

- The mother cells divide and the daughter cells are produced, which become new plants.
- It is sometime known as Binary Fission.
- This type of reproduction is found in
Diatoms , Euglena .

cell division



❖ (ii) **Fragmentation:**

- The plant body breaks into several parts or fragments and each such fragment develops into an individual.
- This type of vegetative reproduction is commonly met within filamentous forms, e.g., Ulothrix, Spirogyra, etc.
- The fragmentation of colonies also takes place in several blue green algae, e.g. Aphanothece, Nostoc, etc.

Fragmentation

Nucleus

Septa

Spiral
chloroplast




❖ (iii) **Hormogone formation:**

- When the trichome's break in small pieces of two or more cells, such pieces are called 'hormogones'
- In some Blue green algae the fragments undergoes a gliding movement which are called '**Hormogones**'.
- Each hormogone develops into a new plant, e.g., Oscillatoria, Nostoc, etc

Hormogone

30 μ m

A light micrograph showing several chains of green, spherical cells. The cells are arranged in parallel, slightly curved lines. One cell in the center is highlighted with a red circle. A white scale bar is located in the bottom left corner. The background is a light blueish-grey color.

❖ (iv) **Hormospores or hormocysts:**

- Such multicellular spore-like structure function as perennating bodies called “hormospores” or “hormocysts”.
- They are thick-walled hormogones, and produced in some drier conditions.

❖ (v) **By adventitious thalli:**

- Certain special structures of thalli are formed which help in vegetative reproduction.
- The well known propagula of Bryopsis, Sphacelaria are good examples.

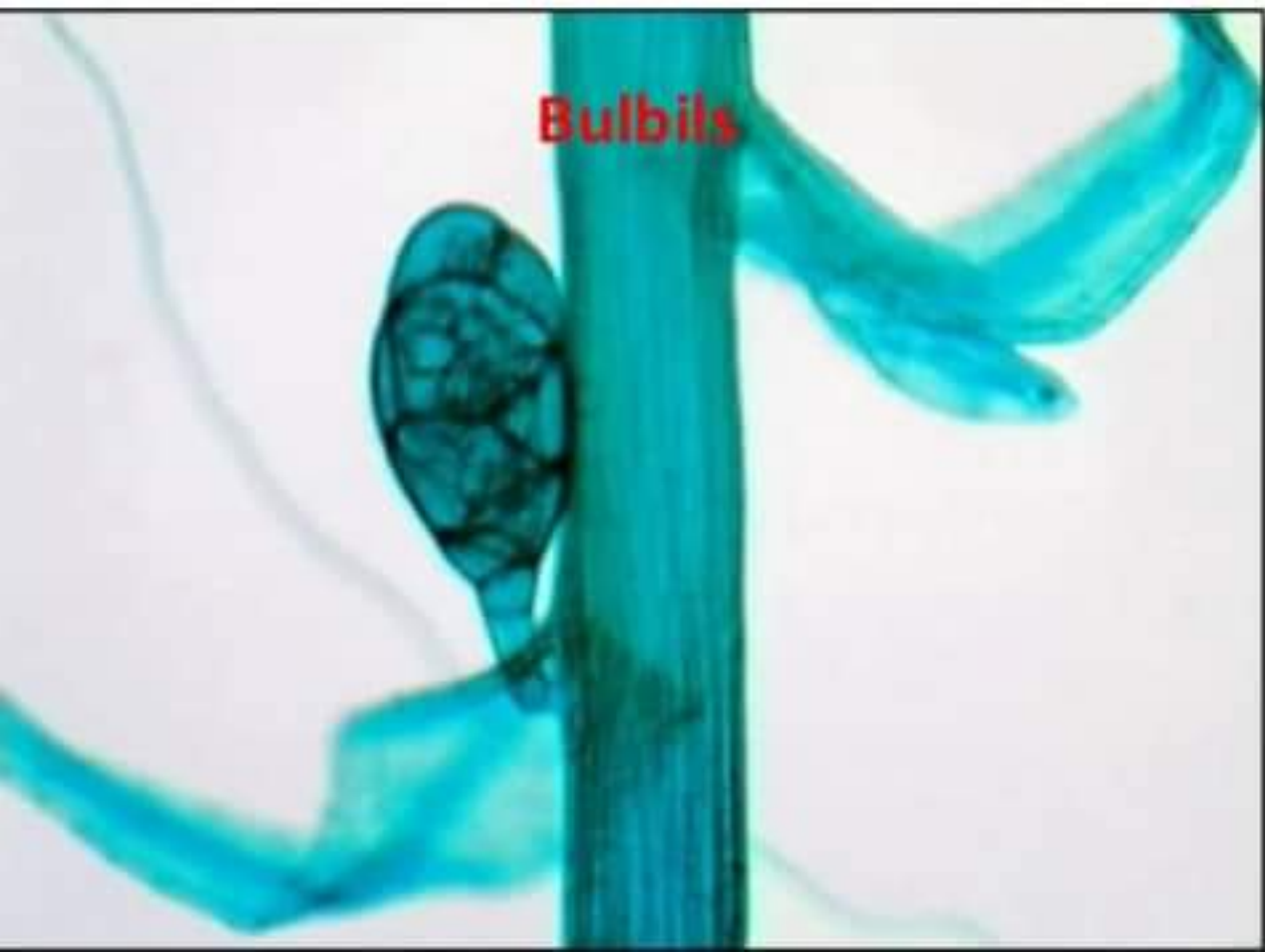
❖ (vi) **Tubers:**

- Usually these bodies are rounded and filled up with abundance of starch.
- Each body may give rise to a new plant, e.g., Chara.

❖ (vii) **Bulbils:**

- Small bud-like structures. Usually develop on the rhizoids of Chara are called bulbils.
- Each such bulbil may develop into a new plant.

Bulbils



❖ (viii) **Akinetes:**

- It is the types of reproduction very common in the blue green as well as green algae.
- These akinetes are a type vegetative cell which is thick walled and will overcome the unfavourable condition.
- Sometimes they are formed in chain.

Akinetes



Akinetes



- Each akinete may develop into a new plant.
- This type of reproduction is found in Oedogonium, Ulothrix, etc.

❖ (ix) **Adventitious Branches**

- Adventitious Branches are formed in some large thalloid forms of algae.
- These branch when get detached from the parent thallus develops into new plant .
- Adventitious branch like protonema formed on the internodes of chara .
- E.g Dictyota , Fucus .