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Topic: General characteristics of Algae (contd.)

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**Reproduction in Algae:**

**1. Vegetative Reproduction:**

In this type, any vegetative part of the thallus develops into new individual. It does not involve any spore formation and there is no alternation of generations. It is the most common method of reproduction in algae.

The vegetative reproduction in algae is of the following types:

**a. Cell division or fission:**

It is the simplest method of reproduction. The unicellular forms of algae commonly reproduce by this simple process, often called binary fission as found in Chlamydomonas, Synechococcus, diatoms etc. In this method the vegetative cell divides mitotically into two daughter cells, those finally behave as new individual.

**b. Fragmentation:**

In this method, the multicellular filamentous thallus breaks into many-celled fragments, each of which gives rise to a new individual. The fragmentation may be accidental or by the formation of separation discs or by some other mechanical force or injury. It is found in Spirogyra, Ulothrix, Oedo- gonium, Zygnema, Cylindospermum etc.

**c. Hormogonia:**

This method of vegetative reproduction is found in blue-green algae. The trichomes of blue green algae break up within the sheath into many-celled segments called hormogo- nia or hormogones. They remain delimited by the formation of heterocysts, separation discs or necridia or by the death and decay of intercalary cells of the trichome. Hormogonia are commonly found in Nostoc, Oscillatoria, Cylindosporium etc.

**d. Formation of Adventitious Branches:**

Adventitious branches are formed in different large thalloid algae, which, when detached from the plant body, develop into new individuals (e.g., Fucus, Dictyota). Protonema-like adventitious branches are formed from the internodes of Chara, stolons of Cladophora glomareta etc.

**e. Bulbils:**

Tuber-like outgrowths are developed due to storage of food at the tip of rhizoids and on the lower nodes of Chara, called bulbils. After detachment from the plant body, bulbils grow into new plants.

**f. Amylum stars:**

Star-shaped aggregation of starch containing cells develops on the lower nodes of Chara. These structures are called amylum stars (Fig. 3.16D). When detached from the plant body, they grow into new plants.

**g. Budding:**

In Protosiphon bud-like structures are formed due to proliferation of vesicles delimited from the parental body by a septum, which, after detachment, grow into a new plant.