

REPRODUCTION IN PROTOZOA

Reproduction is the process by which an organism produces an exact replica of itself. It is the most important characteristic of the living organism which is essential for the continued existence of the organism.

Reproduction in protozoa is essentially a sort of cell division, variable and often complicated in different groups. Reproduction always initiated by nuclear division which is mostly mitosis but sometimes amitosis or meiosis and followed by cytokinesis or cytoplasmic division. Some semi autonomous organelles like chloroplast, kinetoplast, mitochondria etc, also divide and are distributed among the daughter individuals. In protozoa, reproduction is mainly of 3 types.

1. Asexual reproduction
2. Sexual reproduction and
3. Other types.

1. Asexual Reproduction: This is the most common method of reproduction in protozoa. Asexual reproduction takes place by the following 4 methods.

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|--------------------|----------------------|
| (a) Binary fission | (b) Multiple fission |
| (c) Budding | (d) Plasmotomy. |

II Longitudinal binary fission: In most Mastigophora and Peritricha, the plane of fission is longitudinal and progressing from anterior end of the body. In roticella one of the daughter is smaller which is called telotroch. It is free swimming and secretes a stalk.



Longitudinal binary fission

III. Transverse binary fission: In most of the ciliates (Paramecium), the plane of fission is transverse. The micronucleus divides first - mitotically and then macronucleus divides by simple constriction (Westphal 1976).

IV. Oblique binary fission: In some dinoflagellates (Ceratomyx) the plane of fission is oblique due to asymmetrical body.

(a) Binary fission: This is the most common type of asexual reproduction, during which body divides into two nearly equal parts or daughter individuals. The nucleus divides mitotically followed by cytoplasmic constriction. On the basis of plane of fission, the binary fission of 4 kinds.



Fig. Simple binary fission in Euglypha

- I. Simple binary fission
- II. Longitudinal binary fission
- III. Transverse binary fission
- IV. Oblique binary fission

1. Simple binary fission: In *Concordina*, fission is relative. Simple occurs in any plane. (*Euglypha*) one daughter individual retains the old foot while the other secretes a new one.