

DI (S/G) Reproduction in Protozoa (contd)

Multiple fission in the different phases of the life cycle of protozoa includes:-

I. Schizogony - Asexual process not related to the sexual phenomenon. Product of schizogony grows into trophozoite.

II. Gamogony - Multiple fission yields gametes which take part in sexual reproduction.

III. Sporogony - Multiple fission occuring after sexual phenomenon giving rise to infective stage or spores.

Budding

Multiplication by budding is commonly found in suctoria and a flagellates and ciliates. It involves the formation of one or more smaller individuals from the parent organism. It is either exogenous or endogenous. In exogenous budding buds develop as outgrowths on the parent body which later pinch off as in many suctoria, Noctiluca, Chonotricha etc. In endogenous budding, the buds are produced inside the parent's body in special spaces called brood chambers as in some suctoria, Testacea etc.

APRIL 2019

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Wednesday

Plasmodotomy

The multinucleate opaline commonly multiplies by plasmodotomy. In this process cytoplasmic division occurs without division in the nuclei. Besides opaline, it occurs in *Plasmodium* and many Mycetozoa.

Repeated fissions with colony formation

Colonies among protozoa are produced when division is repeated without complete separation of daughter individuals. The members of the colony may be connected by protoplasmic bridges or they may be simply grouped within a single gelatinous envelope. Colonial protozoans include *Dinobryon*.

Many protozoa like *Amoeba*, *Chaos*, *Entamoeba* multiply by multiple fission in encysted stage liberating many daughter individuals after the cyst wall is ruptured.

Sexual Reproduction

Sexual reproduction is widespread, *Ciliata* etc. It has been reported from many foraminifera, *Heliozoa* etc.

Two forms of sexual reproduction in Protozoa are known:

1. Syngamy
2. conjugation

Syngamy in Protozoa

This type of sexual reproduction is met in many foraminifera, some mastigophora etc. It involves the complete fusion of two gametes, nucleus with nucleus and cytoplasm with cytoplasm forming a zygote with zygote nucleus or synkaryon.

conjugation in Protozoa

Sexual reproduction by conjugation is largely restricted to the Ciliophora. It takes place either as a simple mutual cleavage or nuclear material between two conjugants as in Paramecium, or the union of two nuclei of two conjugants behaving as gametes as in Vorticella.

During conjugation in Paramecium:

1. The individuals come together and adhere to their oral surface, their cytoplasm becoming continuous with one another.

II. Macronucleus in each conjugant disintegrates into the respective cytoplasm.

III. Micronucleus divides twice in each conjugant, the last is a reductional

Friday division. Out of the four nuclei produced, three are absorbed in the cytoplasm with only one nucleus remaining in each conjugant.

III. The single nucleus divides forming two pronuclei - one is motile or male pronucleus and the other is stationary or female pronucleus.

IV. The male pronucleus of the conjugant moves towards the female pronucleus reciprocally and fuses with them yielding a zygote in each conjugant.

V. The conjugant separates and becomes ex-conjugants.