# VOLVOX



## systematic position :—

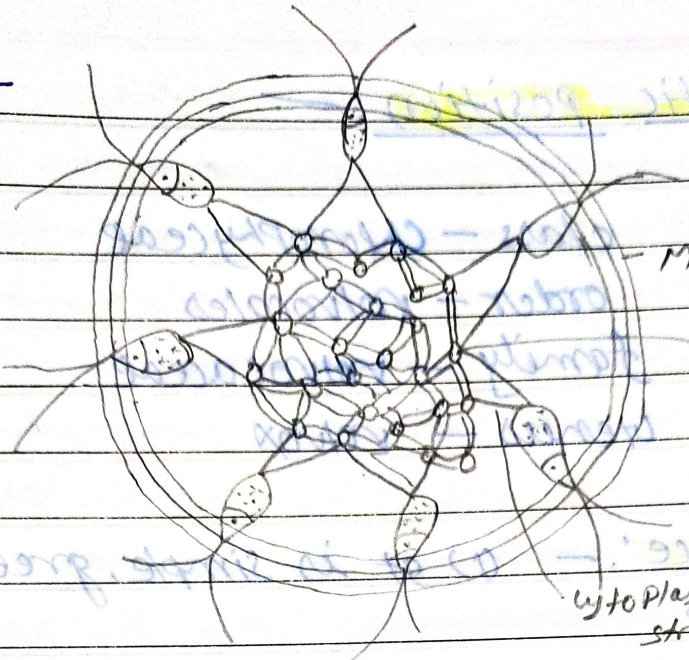
class – Chlorophyceae
order – volvocales
family – volvocaceae
Genus – volvox

**occurrence** :— (i) It is simple, green, fresh water algae
(ii) 25 species are found in pond, pools temporary ditches in rainy season.
(iii) It occurs as minute, ball like pin head, motile, coenobial form rolling in water.

## STRUCTURE

(i) The colony of volvox is known as coenobium.
(ii) Coenobia is a unicellular, hollow sphere in shape and pin head like size.
(iii) The No. of cells are varies 500 to 50,000
(iv) Numerous cells arranged in a sigle layer.
(v) Colony are filled with water covered with mucilagenous sheath connected by cytoplasmic strands.
(vi) Each cell is surrounded by a hexagonal cell.
(vii) cell is biflagellate, pyriform (up shaped chloroplast uninucleate, pyrenoid, eye spot (stigma) and contractile vacuoles are present.

Fig:—




STRUCTURE OF VOLVOX

## REPRODUCTION

* There are two types of reproduction —
(I) Asexual Reproduction
(II) Sexual Reproduction

(I) Asexual Reproduction :— (i) Reproduction or Reproductive cell is called Gonidia.
(ii) In favorable condition Gonidia are non-motile spherical and embeded into flask shaped sheath.
(iii) Each Gonidia enlarge in size and longitudinal into 8 called Plate like Plakea.
(iv) Plakea is covered with concave surface deride it is called from a hollow sphere with a small operature "Phialophore.
(v) Plate toward the centre inversion and constriction start with Phialophore enlarge in size and horizontal Plate.
(vi) The anterior ends now face outward

and protoplast, cell membrane with mucilagenous sheath become biflagellate vegetative colony is daughter colony come into water and start independent existance.

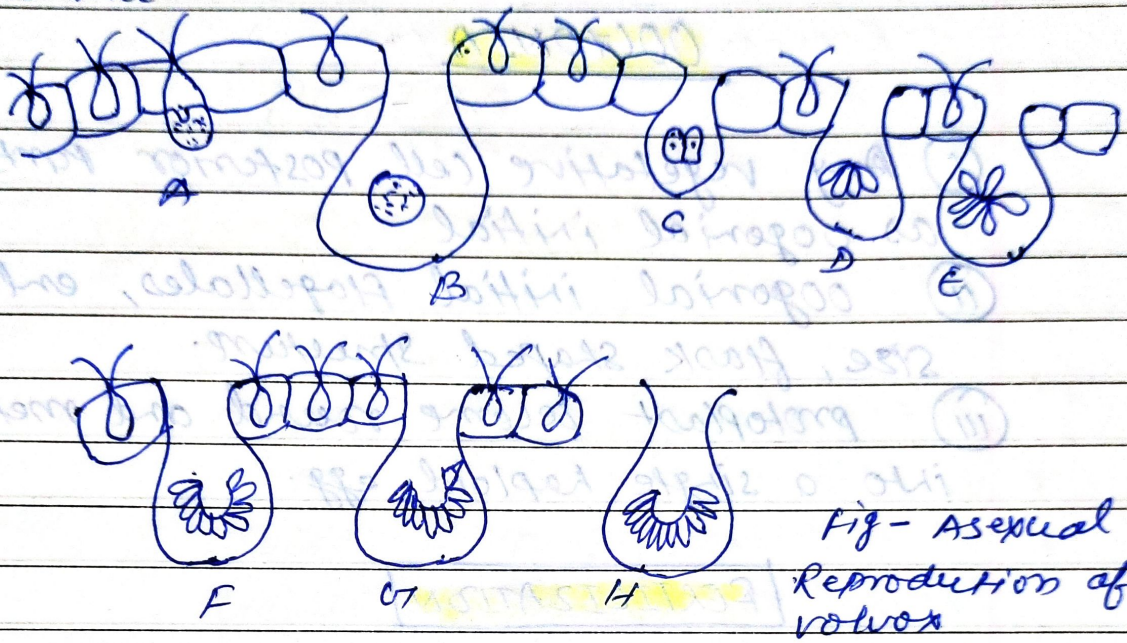



Fig - Asexual Reproduction of volvox

(2) SEXUAL REPRODUCTION :—

(i) It is oogamous type.
(ii) Male sex organ is Antheridia and female is oogonia.

ANTHERIDIA

(i) vegetative cell enlarge in posterior side function as Antheridia.
(ii) Antheridia becomes flagellaless, protoplast become spherical flask shaped.
(iii) protoplast devide into 64 - 612 Antherozoids.
(iv) All antherozoids are arranged in hollow sphere and invagination in bundle.
(v) Each antherozoids is spindle shaped biflagellate uninucleate and smaller than

parents.

(vi) Antherozoids are liberated after the rupture of antheridial wall swim in water.

## OOGONIA

(i) Any vegetative cell posterior parts function as oogonial initial

(ii) oogonial initial Flagellates, enlarge in size, flask shaped structure.

(iii) protoplast become round and metamorphosed into a single haploid egg.

## FERTILIZATION

(i) Antherozoids swims and enter into fuse with egg become zygote.

(ii) zygote is spiny secretes three wall around become diploid oospore (2x)

(iii) oospore is orange-red and undergoes resting before germination.

## GERMINATION

(i) on formation condition oospore outer wall ruptured and inner wall form a vesicle.

(ii) protoplast migrate. vesicle and devide meiotically become 500 cells of coenobium.