

8. Discuss the origin and evolution of sex in Algae.

INTRODUCTION → The evolution of plant body have been accompanied with progressive development of reproductive methods. In most primitive forms, reproduction was by cell division or by zoospore formation. Then sexual reproduction develops which is effected by special cells known as gametes. The resulted zygote develops into a new plant. The sexual reproduction develops first through isogamy then anisogamy and finally oogamy.

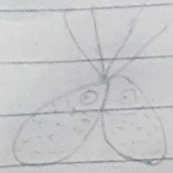
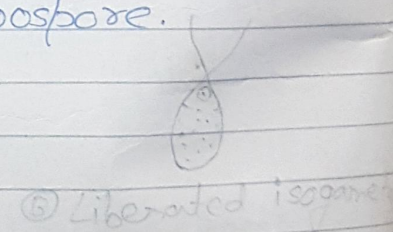
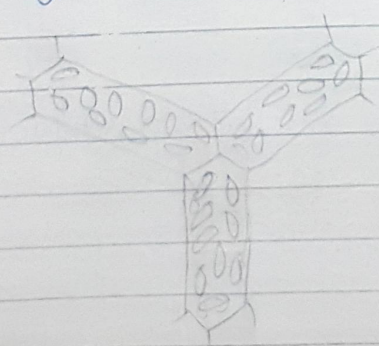
ORIGIN OF SEX IN ALGAE → Sex is considered as generally linked with reproduction. In sexual process two cells or gametes fuse. The phenomenon is brought about or intensified by favourable climates and conditions. It intercounts stress condition on the principle that two are better than one.

It is most accepted fact that the algae reproduce asexually when the condition is favourable and sexually under unfavourable condition. This may be taken as supplementary. the asexual reproduction.

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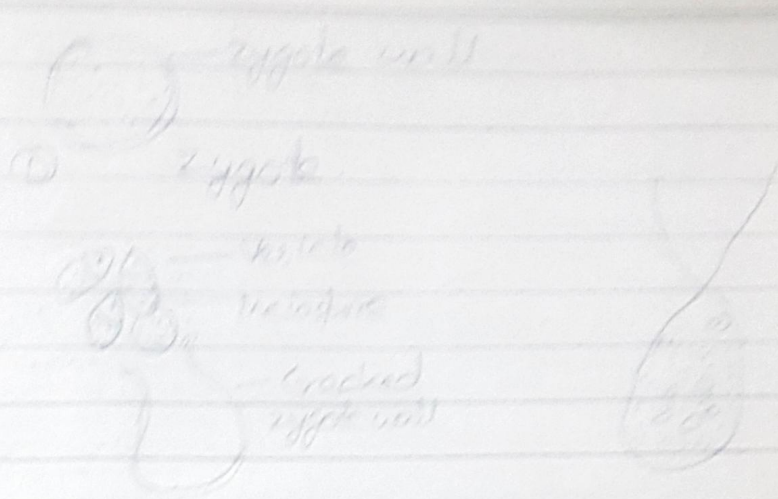
It is held that gametes are derived from motile zoospore. In adverse condition zoospore become too small to form a new plant alone and two such structure fused. This accidental pairing probably took place in response to certain unfavourable environmental condition. It proved of advantage to the plant in increasing vitality and vigour. This presumption is supported by the following facts -

1. There is marked similarities in zoospore and gamete in similar forms.
2. These two structures resembles in the mode of formation and liberation. This is clearly seen in *Chlamydomonas*, *Ulothrix*, *Hydrodictyon* etc.
3. Cholnosky (1913) has reported that gametes in *Ulothrix* species develops from potential zoospore.
4. The conversion of gametes into zoospore support the identical nature of gametes and zoospore.

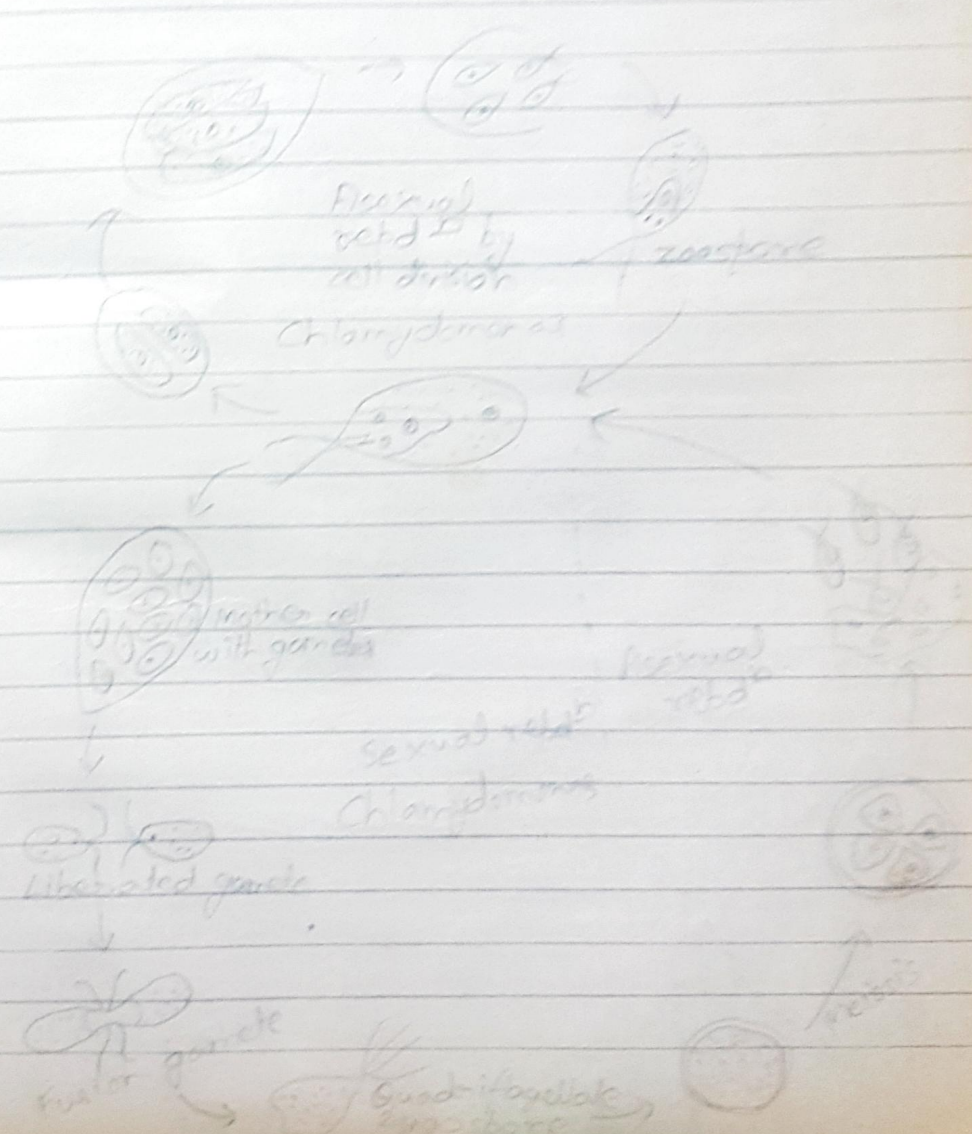


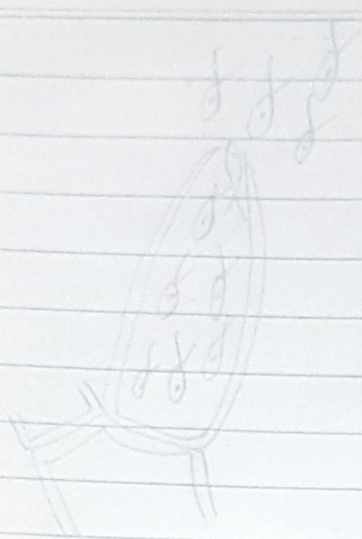
(A) cells containing gametes. *Hydrodictyon*

(C) Fusion of isogametes.

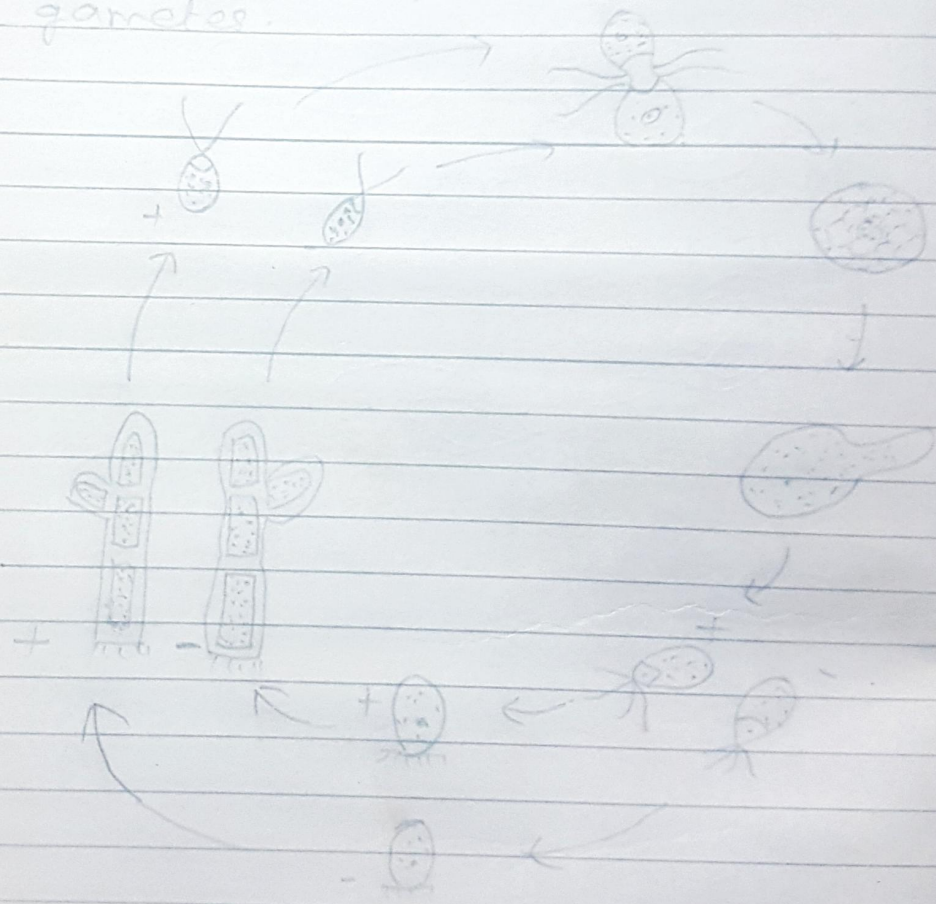
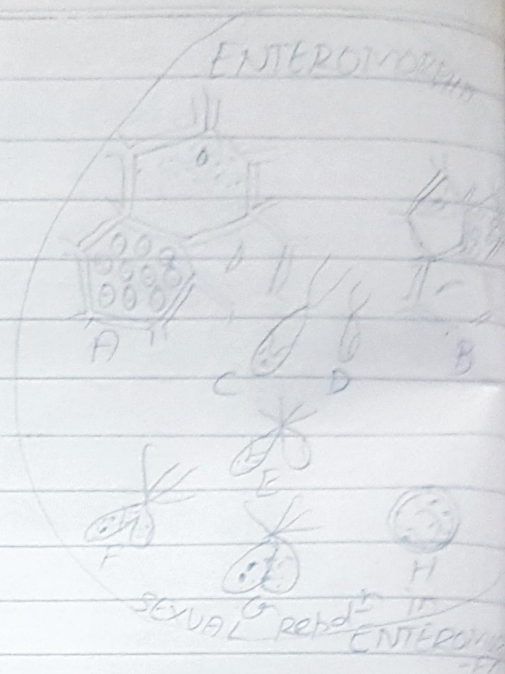


(A) Germinating zygote (B) Mobile zoospore





Cladophora formation and liberation of gametes.



Sexual cycle of Cladophora