

ORIGIN Δ EVOLUTION OF SEX IN ALGAE

Sexual reproduction have two ~~are~~ basic features

— i) Syngamy & ii

ii) Meiosis

It is the phenomenon which give rise to new genetic combination. This give a better chance to fight/ adapt / evolve with the changing environment. It is found in almost all of the Eukaryotic organisms. In prokaryotes also there ~~is~~ may be symbiotic representation of sex in form of (+) & (-) strains. It requires the fusion of sex cells and later on followed by meiosis sooner or later. These two basis phenomenon of sexual reproduction ensures the stability of chromosome numbers in an species.

Sex is not so much evolve in lower organisms like Algae, as in the higher organisms, including plants and animals.

Origin of Sex in Algae.

→ In Cyanophyceae / Myxophyceae sexual reproduction is completely absent. They reproduce only by means of vegetative and asexual only.

There is a gradual loss of vitality of swimmers leading to formation of gametes. These gametes are always biflagellate, produced in large number, smallest in size, incapable to form a new plant.

By chance a fusion of two took place and food available was sufficient to form or lead a life. The chromosome number maintained due to meiosis. Thus a new method of reproduction i.e. sexual reproduction come in existence.

It has to be noted that it did not replace the previous ones as vegetative and asexual reproduction are still in existence, but a further new additional new method of new reproduction. It has an unique and good phenomenon i.e. new genetic combination due to meiosis and syngamy. Though it is reported mainly during or onset of unfavorable condition but preferred by nature as having greater chance to have tidings over it. and It also provide more vigour to the organism to prosper leading a new life.

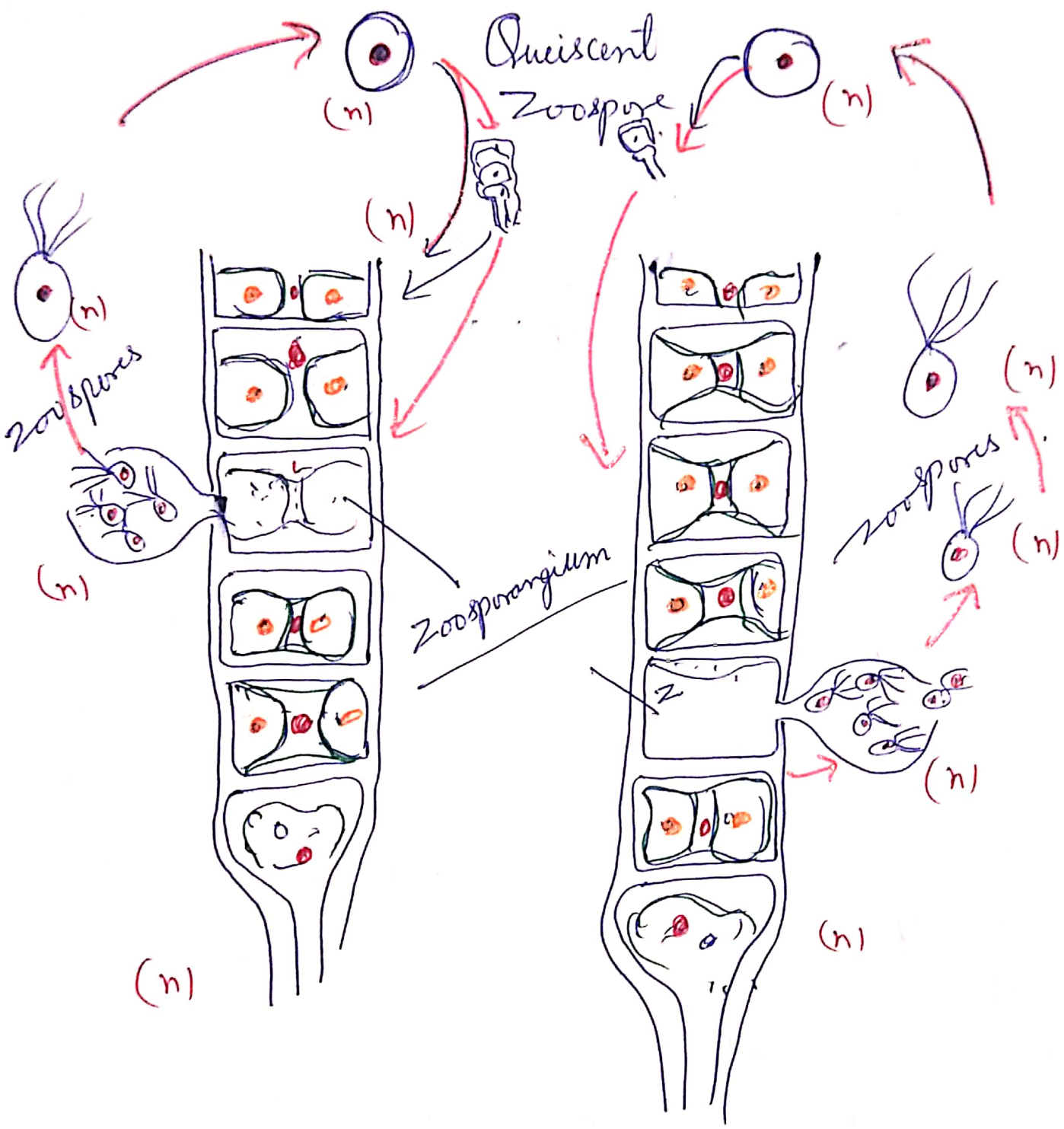
There is no doubt that the gametes have developed from zoospores as they are similar, produced from same or similar cells. The difference is only that zoospores are "produced" during favourable conditions and gametes are during unfavourable one. We say that gametes are reduced zoospores who fail to ~~to~~ in asexual reproduction. They may give rise to new plant when two of them get fused and form a zygote.

Alc Cholnosky in Ulothrix variabilis gametes are developed from potential zoospore as they fail to escape from zoosporangium or the vegetative cell where they are being produced and undergo further division resulting in smaller size and less number of flagella.

In Oedogonium sps. gametes are similar to shape but smaller in size having equal number of flagella as zoospores.

In Chlamydomonas debaryanum the zoospores are quite similar to gametes.

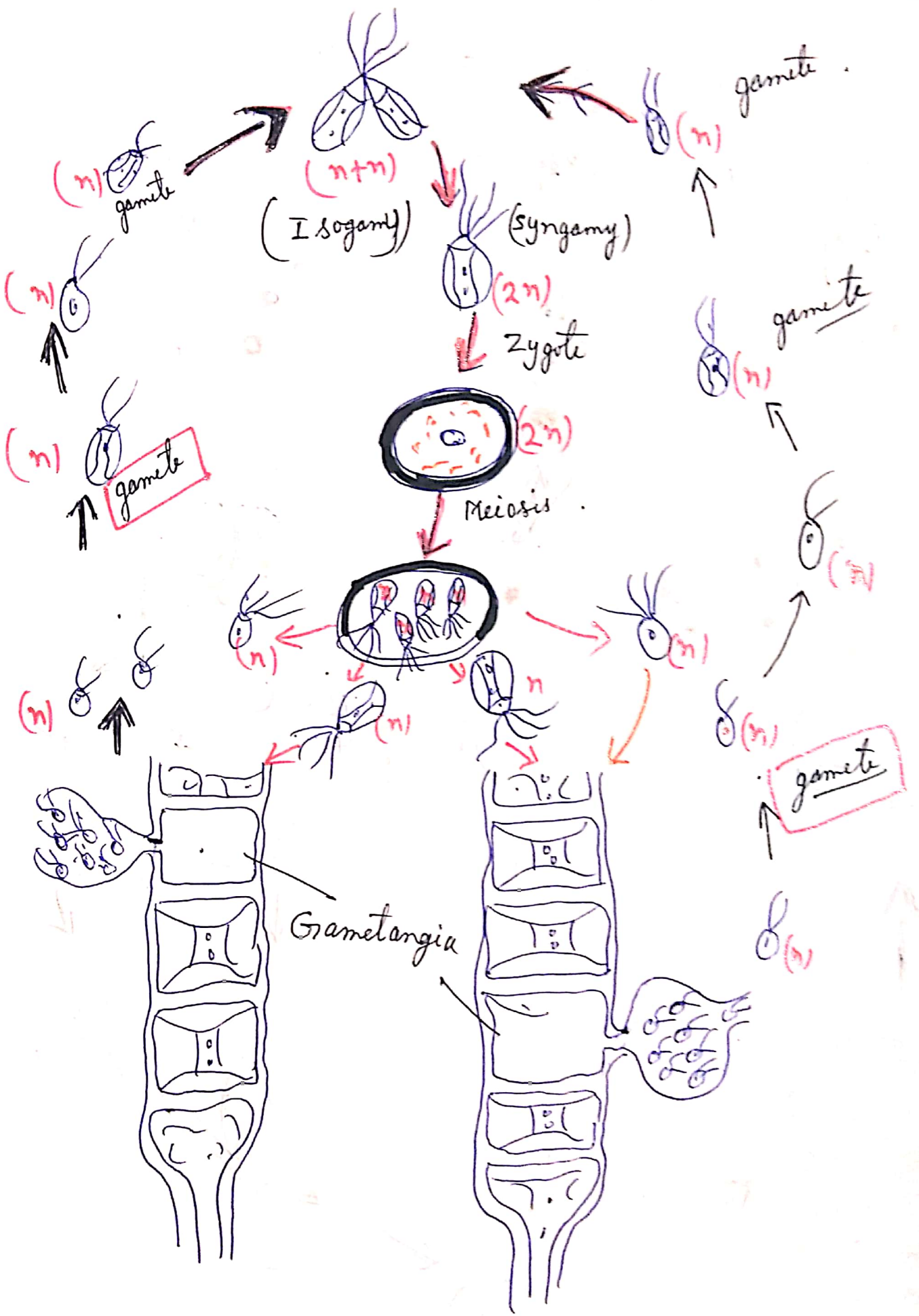
Conclusion: There are many examples in support of origin of gametes from zoospores by means of reduction.



Ulothrix sps.

Zoospores.

Asexual reproduction showing



Ulothrix spp. sexual reproduction.

