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becomes elongated and ~~form~~ <sup>an</sup> <sup>receptive</sup> trichogyne. The lower swollen portion of Carpogonium has nucleus, Chromatophores and the reserve food material. This globular portion is called

The carpogonium is flask-like and has pale plaskid.

\* Development of Carpogonium takes place on the terminal ends of the short laterals. The terminal cell of the lateral divides into four cells, out of which the uppermost cell develops into Carpogonium.

\* Fertilization:-

Many spermatia approach ~~to~~ <sup>the</sup> trichogyne out of which one attaches with it. The <sup>wall of the</sup> contact point dissolves and one of the two nuclei of the spermatium passes through this hole into trichogyne. Finally, reaching in the basal swollen part of Carpogonium, it fuses with the egg nucleus so that zygote is formed.

As soon as <sup>the</sup> zygote is formed, a septa/wall develops in between trichogyne and carpogonium. Later, the trichogyne shrivels down and disappears.

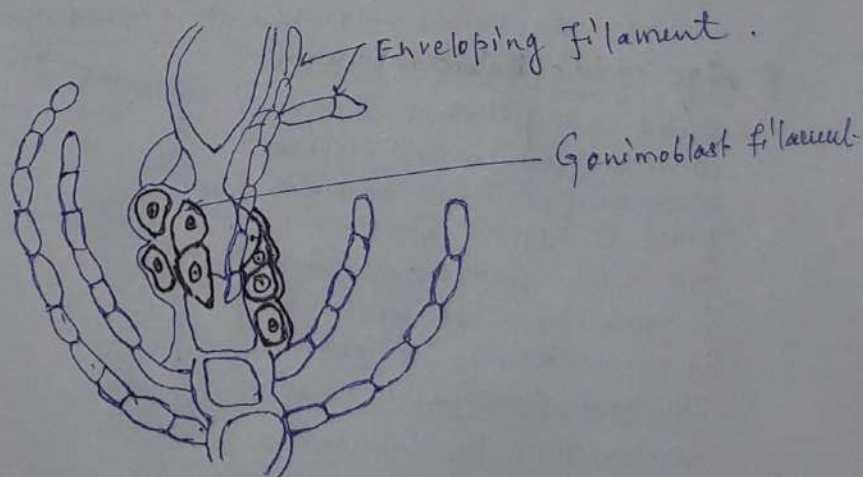


Fig. Botrydium spp. Development of Gonimoblast filament & enveloping thread.

\* Germination of Zygote:-

The diploid (2n) nucleus of <sup>(zygote)</sup> carpoconia divides meiotically into two haploid nuclei. Simultaneously, a lateral protuberance develops from carpoconia in which one daughter nuclei migrates while other remains in carpoconium. Now a wall is laid down between carpoconium and protuberance. It is now called as 'gonimoblast initial'.

Then, the carpoconial nuclei divides by mitotic division along with ~~with~~ the formation of another protuberance. In this way second gonimoblast filament is formed. Similarly several gonimoblast initials filaments are formed.

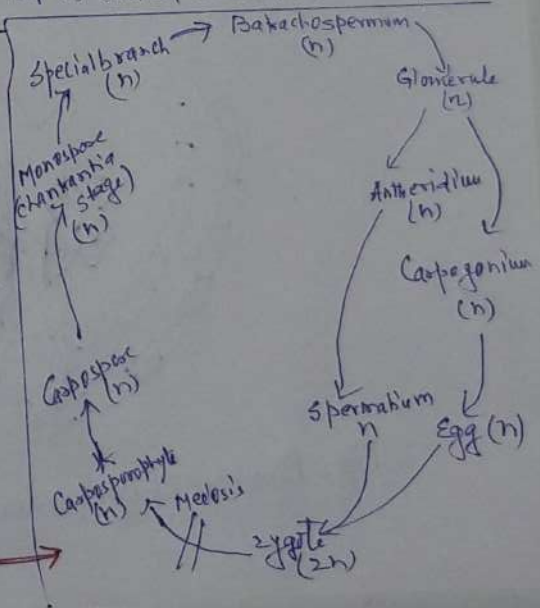
The terminal cells of the gonimoblast filaments become enlarged and develops into carposporangium. The content of carposporangium metamorphoses into a single non-motile carpospore. Along with the development of carposporangium, carpospore, several sterile threads develop the cells below the carpoconium which ultimately envelope the gonimoblast filament, carposporangium & carpospore. This structure is known as 'cystocarp'.

After liberation from the carposporangium, carpospore germinates and form heterotrichous filament resembling the algae charantracia. This is why it is called charantracia stage.

\* Life cycle of Babachospermum:-

The life cycle of Babachospermum consists of two gametophytic phases alternating with one sporophytic phase (-zygotic stage). The early gametophytic phase is charantracia stage formed by the germination of carpospore. The 2nd gametophytic phase develops from the charantracia stage.

Eg - Graphical life cycle of Babachospermum →





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ONLINE STUDY MATERIAL (e-content)

College: S.S. College, J'bad

Date: 15.09.2020

Department: Botany

Time: 11.00 - 12.00

Subject: Algae

Name of the Teacher: Dr. S. S. Sharma

Topic: Batrachospermum

Class: B.Sc BotH - PI

Medium of Teaching: T.lects App & college  
web-site.

Biotechnology: S - PI

Batrachospermum: Reproduction

Batrachospermum reproduces both by asexual and sexual methods.

i) Asexual Reproduction: -

It is brought about by means of non-flagellate and uninucleate spores known as monospores. Monospores developed singly within monosporangia which are developed on the heterotrichous filament called Chankansia stage. This stage is the product of post fertilization stage ~~after~~ of the sexual reproduction.

ii) Sexual Reproduction: -

Sexual reproduction is highly oogamous. The male sex organ is called "antheridia" or spermatangia while the female sex organ is called carpogonia.

Thallus may be monoecious or dioecious depending on species.

A) Antheridia: - These are single-celled spherical structures borne in clusters at the tip of the lateral branches of the thallus. The whole content of antheridium metamorphosed into a non-motile, spherical male gamete or spermatium. It is liberated through a narrow apical slit in the antheridial wall.

After liberation spermatium floats in water and finally come in contact with the trichogyne of the carpogonium with the help of water current.

B) Carpogonia: - <sup>At this stage the nucleus divides so that two nuclei are formed.</sup> Carpogonia develop terminally on small <sup>(short laterals)</sup> branches of the thallus. The upper end of carpogonia