The cytoplasm within such young oogonia is uniformly vacuolate and the nuclei are evenly distributed throughout. In the later stages its central portion becomes dense, round, and represents **ooplasm**. The nuclei keep on dividing in the ooplasm and migrate towards its periphery.

One of the nuclei remains in the denser ooplasm, whereas the other moves towards the outer region. Outer peripheral region of the oogonium becomes more vacuolated and represents periplasm. The ooplasm represents the egg. Many nuclei are present in the egg when it is separated first. But soon all egg nuclei, except one, disintegrate in *A. candida*. However, according to some other workers all the egg nuclei migrate to the periphery and are included in the region of the periplasm.

The antheridia are elongated, club shaped, and multinucleate bodies, each developing at the end of a male hypha lying very close to an oogonium. The swollen antheridial tip is soon cut off by a septum. Out of its many nuclei only one remains functional

Where does meiosis occur in *Albugo*?

Meiosis occurs in gametangia and not in the zygotic nucleus.

Fertilization: In *A. candida* a slender fertilization tube is formed by the antheridium at the place of its contact with that of the oogonium. This tube grows through the oogonium wall, and passing through the periplasm it penetrates deeply into the egg. Through this fertilization tube the functional male nucleus enters the egg, fuses with the functional female nucleus and results in the formation of diploid zygotic nucleus. The fertilized egg secretes a thick wall around itself and changes into an oospore.

Oospore: The oospore remains surrounded by a thick ornamented wall. The single oospore nucleus is diploid.

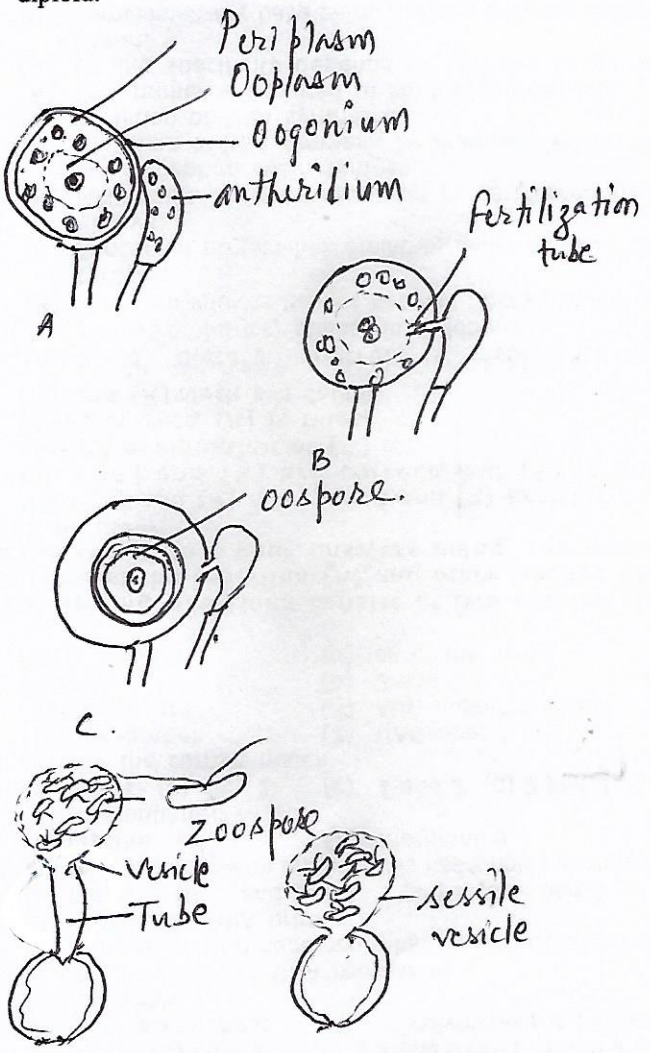
Germination of oospore

Before germination the oospore undergoes a long resting period of several months. During this period the host tissue first shows hypertrophy and then might decay, setting ultimately the oospores free. The zygotic diploid nucleus shows repeated divisions to form as many as 32 nuclei.

This zygotic diploid nucleus divides only mitotically, forming only diploid nuclei.

At the time of its germination in the following spring, the outer oospore wall bursts and the inner endospore comes out in the form of a thin spherical vesicle. Inside the vesicle hundreds of zoospores are extruded in a mass. The vesicle is soon dissolved and the zoospores swim freely in all directions.

Each of the zoospores is uninucleate, reniform and biflagellate. On reaching a suitable host, their flagella are withdrawn. They get encysted and germinate by forming germ tube. The mycelium is diploid.



Sex organs, fertilization and germination of oospore.