ALTERNATION OF GENERATIONS - ARCHEGONIATE

The alternation of generations is very distinct in Archegoniate. Among Bryophytes have a persistent gametophytic generation as the dominant phase. Their gametophytes are the most elaborate known in the plant kingdom and form the visible phase of their life cycle. The gametophyte possess rhizoids and scales on their abaxial surface to facilitate anchoring and absorption. The sporophytes of bryophytes are dependent on the gametophyte for sustenance.

In pteridophytes and gymnosperms the sporophyte forms the independent dominant phase. In pteridophytes in early stages of development, the sporophyte is attached to the gametophyte but soon becomes independent of the gametophyte and attains much larger size.

In gymnosperms the gametophytic phase is highly reduced and is dependent on the sporophyte. In gymnosperms the archegonia are much reduced and are embedded in the megagametophyte (present inside the orule). The archegonia are not found in the members of

Gnetales of gymnosperms and in angiosperms
In the members of these groups the mega gametophyte is represented by only few cells and one of them functions as egg (female gamete).

The above mentioned description shows description shows reduction in the gametophytic phase of the archegoniate as they spread to colonize land. Maximum reduction of gametophytes is observed in the flowering plants in which the gametophyte is represented only by few well defined cell with virtually no vegetative characters. A just reverse condition is seen in the evolution of sporophyte. It is very small ephemeral and inconspicuous in bryophytes, in this group it is dependent upon the gametophyte and produces a limited quantity of spores. In pteridophytes and gymnosperms the sporophyte is the dominant generation i.e. it bears well developed roots, stem and leaves.