Alternation of generation

And

Classification

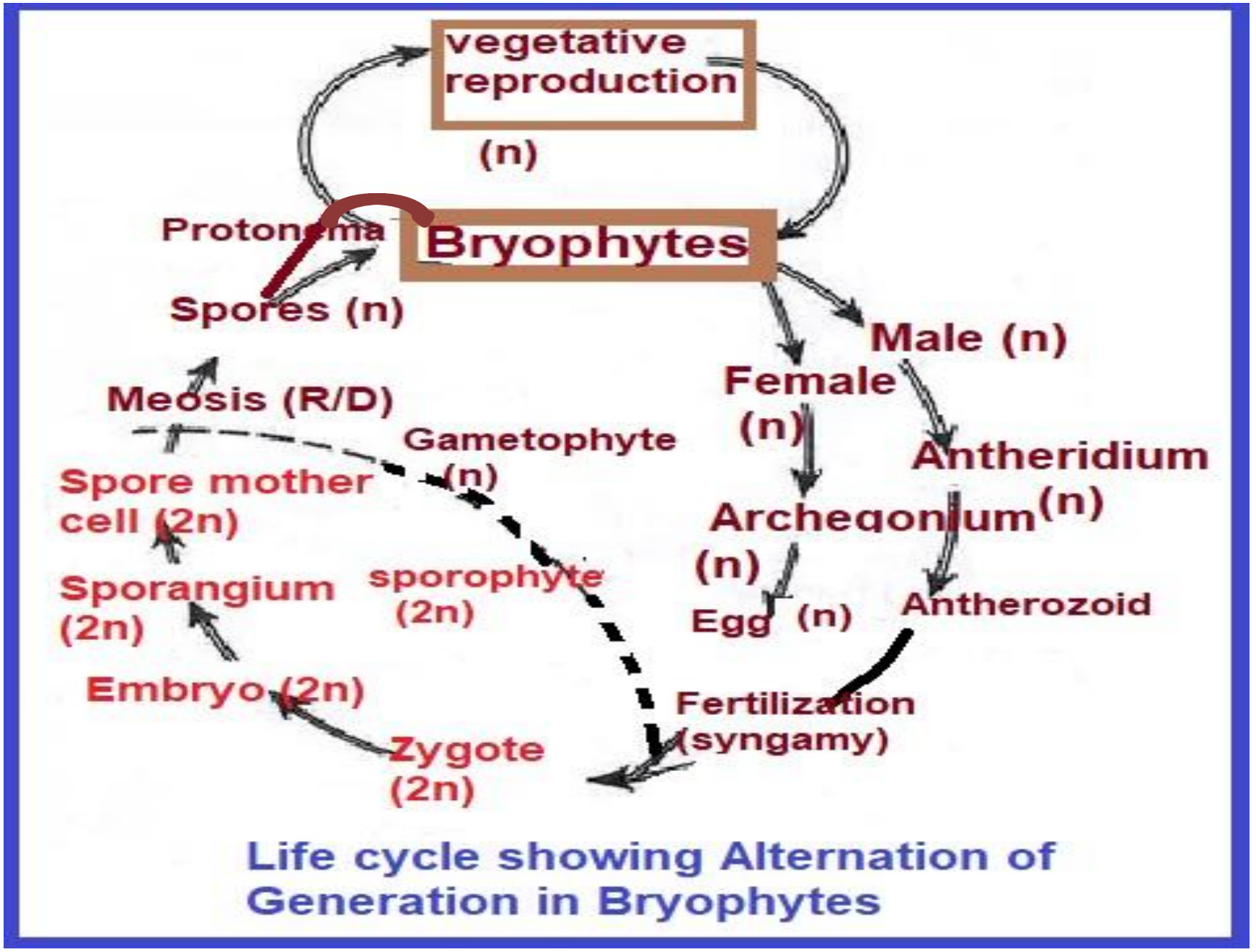
Alternation of generation in Bryophytes:

Alternation of generations is a life-cycle involving two phases of life, which regularly alternate with each other.

In bryophytes, the first phase is the gametophytic phase, in which gametes are produced, that contain half the number of chromosomes. This is the dominant phase in the life of bryophytes and reproduces sexually by egg and antherozoid. Once the egg and antherozoid fuse to produce a zygote, starts the second phase.

The zygote germinates to produce the sporophyte, whose cells possess the complete number of chromosomes. This second phase, the sporophytic phase, is the spore producing phase. The sporophyte cannot exist independently. It is composed of a capsule, a stalk, and a foot that attaches the sporophyte body to the gametophyte. The sporophyte reproduces asexually by means of spores, which are produced by meiosis and are haploid.

Each spore germinates to produce a gametophyte, which is the independent phase. This way, the life-cycle is completed.



Life cycle showing Alternation of Generation in Bryophytes

Classification:

Smith (1955), based on earlier system of classification devised a system of classification which is given below:

Division: Bryophyta

Class I – Hepaticae

Order: 1. Sphaerocarpales

2. Marchantiales

3. Jungermaniales

4. Calobryales

Class II - Anthocerotae

Order- Anthocerotales

Class III – Musci

Sub- Class 1. Sphagnobrya

Order- Sphagnales

2. Andreaeobrya

Order- Andreaeales

3. Eubrya – 14 orders

THANKS.....