

# Pteridophyta.

Pteridophytes are the non-flowering vascular plants. It includes about 400 genera and about 10,500 species comprising both living & fossil plants.

Pteridophyta occupies a position between the division Bryophyta and the division Spermatophyta.

Pteridophytes include plants which are commonly called ferns, clubmosses, horsetail etc. which are distributed both in tropical & temperate — regions of the world.

## General Characters:

1. Plant body represents the sperophyte which is differentiated to root, stem and leaves.
2. Leaves are two types — microphyllous & megaphyllous.
3. vascular tissue, consisting of xylem & phloem, is present.
4. Secondary growth is absent (except Isoetes etc.)
5. Spore bearing structure may be sporophyll, or sporangiophore, or fertile spike or sporocarp.

6. Sporangia may be borne singly or in groups - forming sori (sing. sorus).
7. Two types of Sporangial developments i.e. eusporangiate & leptosporangiate are noticed.
8. Plants may be homosporous and heterosporous <sup>Condition</sup>. Sometimes incipient heterosporous is noted in Equisetum.
9. \* Development of gametophyte may be exosporic or endosporic.
10. Presence of multicellular sex organs i.e. Antheridium <sup>(Male sex organ)</sup> and Archegonium <sup>(Female sex organ)</sup>.
11. Water is essential for fertilisation.
12. Zygote undergoes repeated mitotic divisions to form embryo. First division of Zygote determines the polarity of the Sporophyte.
13. Presence of heteromorphic alternation of generations.

### Life cycle of Pteridophytes.

- i) Homosporous life cycle.  
(Ex. - Lycopodium)
- ii) Heterosporous life cycle.  
(Ex. - Salvinella)

Two types of life-cycle patterns are given below in line diagram.

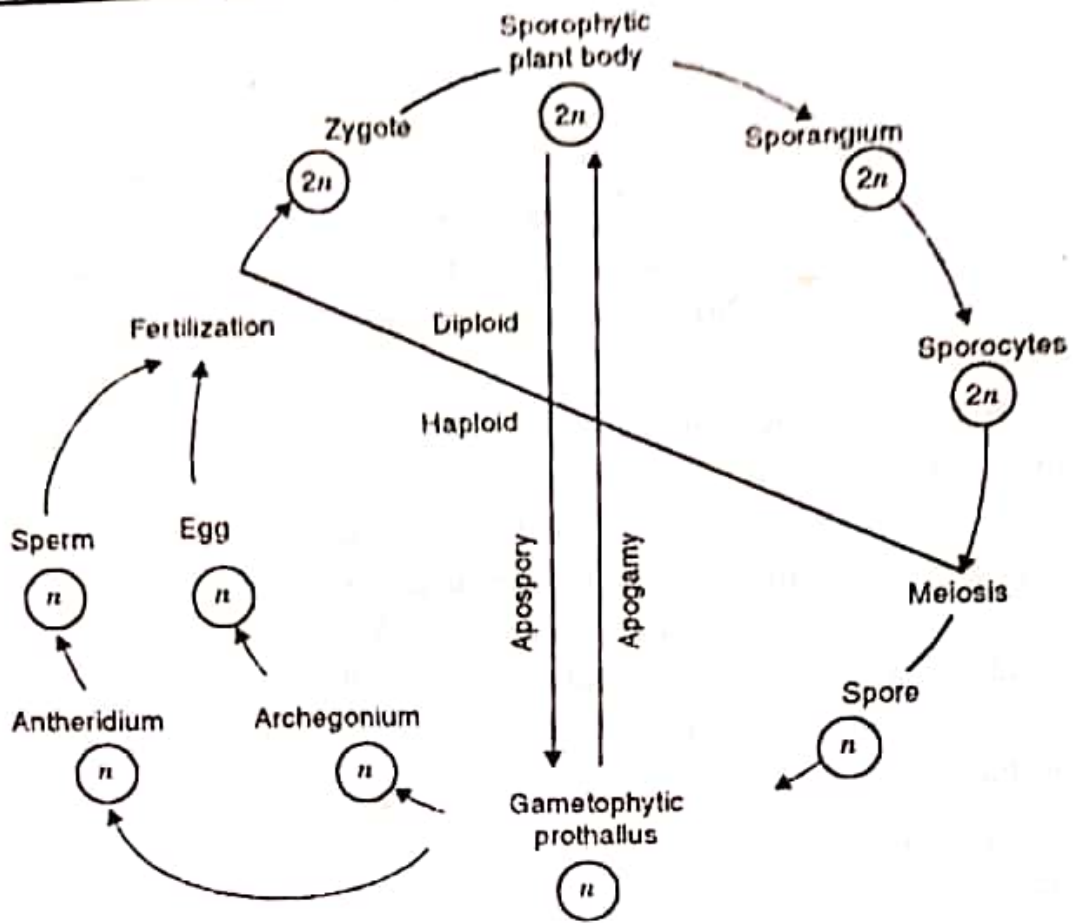


Fig. 1.2 Life cycle of homosporous pteridophytes.

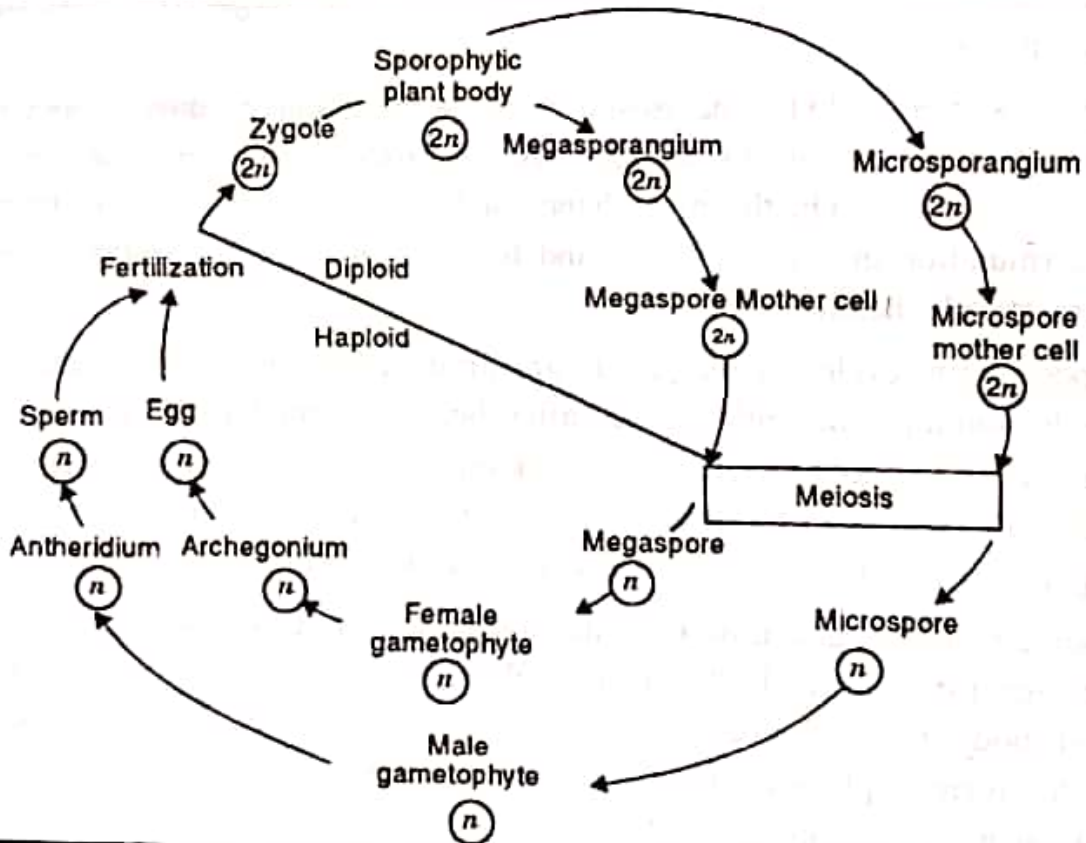


Fig. 1.3 Life cycle of heterosporous pteridophytes.