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Paper : III (Gymnosperms)
Topic : Gnetum : Life cycle
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• Gnetum : Mode of Reproduction or Life-cycle

• The diplo-haplobiontic life-cycle of Gnetum shows heteromorphic alternation of generations between diploid (2x) sporophyte and haploid (x) gametophyte in a cyclic order.

(A). Sporophyte :

The diploid phase is represented by the plant itself which reproduces asexually by means of dimorphic microspores, i.e., microspores and megaspores being produced inside the micro- and megasporangia respectively.

• Asexual Reproductive Structures or Fructification :

(a)
• Plants are strictly heterosporous irrespective of dioecious or monoecious.
The asexual reproductive structures or fructifications have organised in the form of complex strobiles or so-called inflorescence.
Usually the strobilus is monosporangiate but rarely it is bisporangiate (e.g., Gn. gnemon).

①. Staminate strobilus or Male Inflorescence :

The strobilus may either be axillary or terminal, and arises singly or in fascicle of three or even more.
They are seated in the axils of a pair of opposite scales or bracts that are connate at their base to form a boat-shaped structure.
The strobilus seems to be a spike or catkin inflorescence bearing several sessile male flowers.
The strobilus axis is divisible into nodes or internodes. The nodal parts have verticillate bracts that are fused to form a cupule at each node.
An individual strobilus carries altogether 10-15 collars or cupule. Each collar in its abaxial face bears 3-6 concentric rings, each ring having several staminate flowers. The flowers of one ring alternate to those of the other ring.

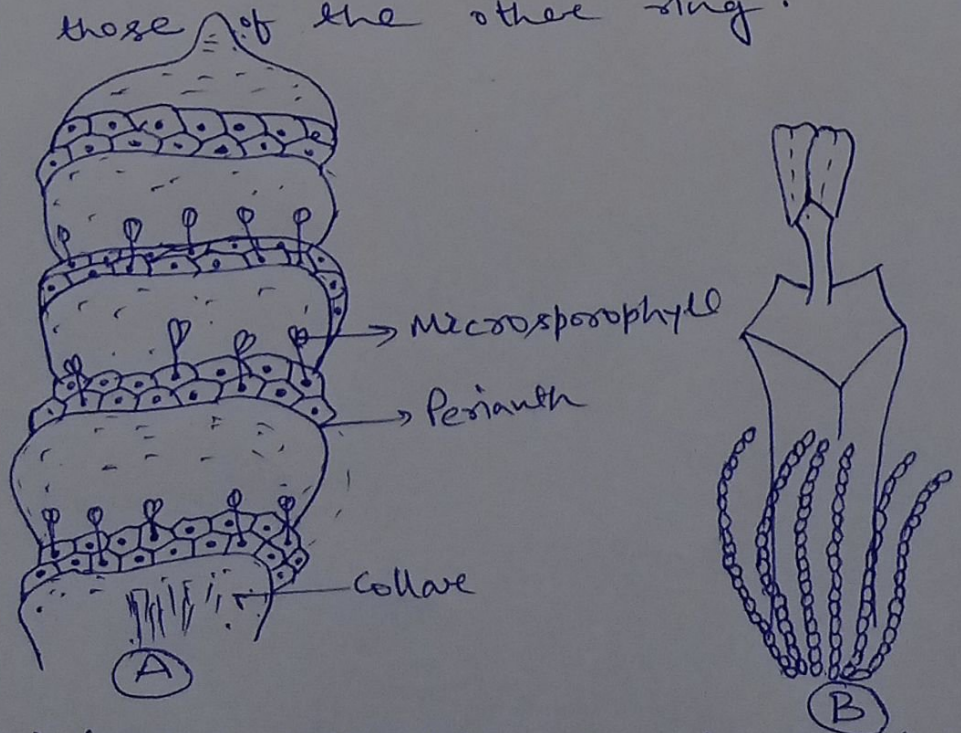

Fig: Gnetum : (A) Portion of Male strobilus
(B) Single male flower

(continued).