

RHODOPHYCEAE

REPRODUCTION AND LIFE-CYCLE

VEGETATIVE REPRODUCTION

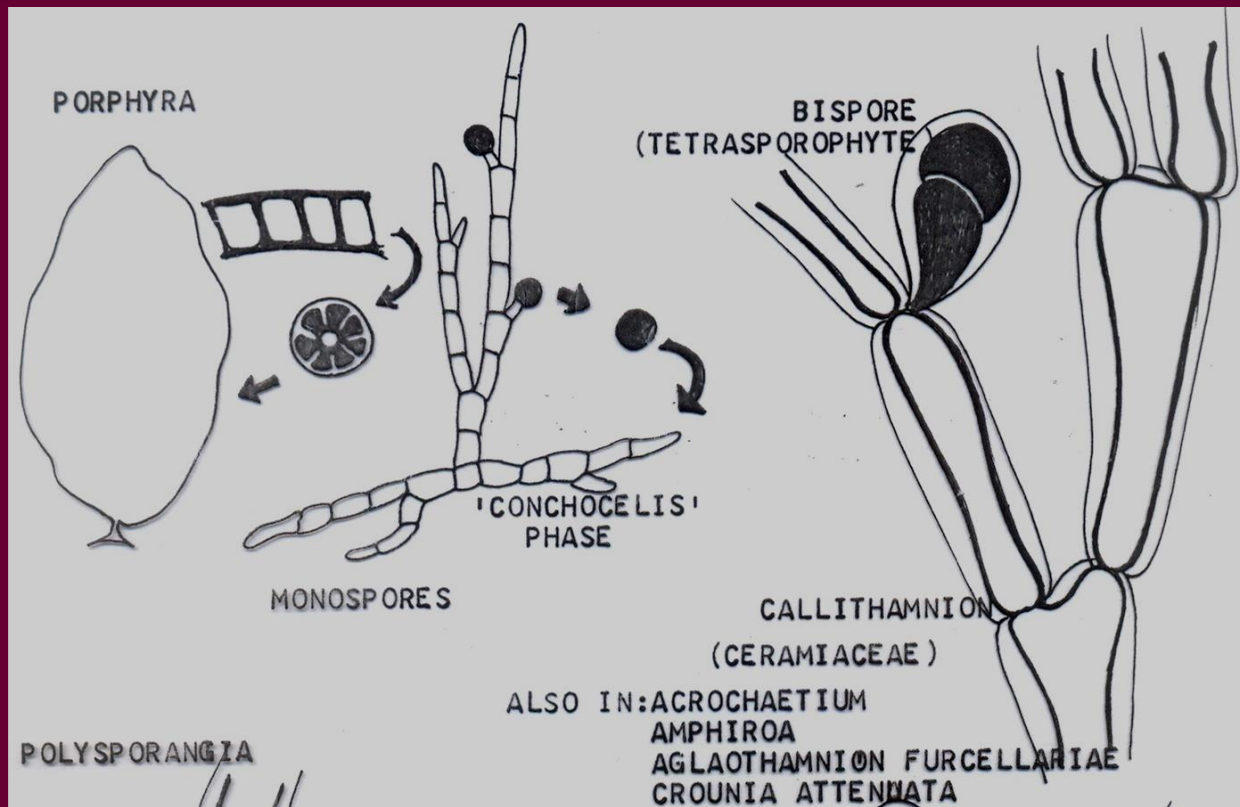
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Multicellular asexual structures termed gemmae are described from the freshwater rhodophyte *Hildenbrandia rivularis*.

Propagules resembling spermatangial branches occur on male, female and tetrasporangial branches of *Polysiphonia ferulacea*. Hook like propagules (tendrils) and stellate propagules are produced by *Hypnea muciformis* and *H. valentiae* respectively.

Binary cell division in unicellular coccoid forms Such as *Porphyridium*, fragmentation in filamentous forms, adventitious branches in forms like *Grateloupia*, etc. are other methods of vegetative reproduction in these members.

ASEXUAL REPRODUCTION

EFFECTED BY THE FORMATION OF MONOSPORES (NEUTRAL SPORES), BISPORES, PARASPORES AND POLYSPORES



ASEXUAL REPRODUCTION

EFFECTED BY THE FORMATION OF MONOSPORES (NEUTRAL SPORES), BISPORES, PARASPORES AND POLYSPORES

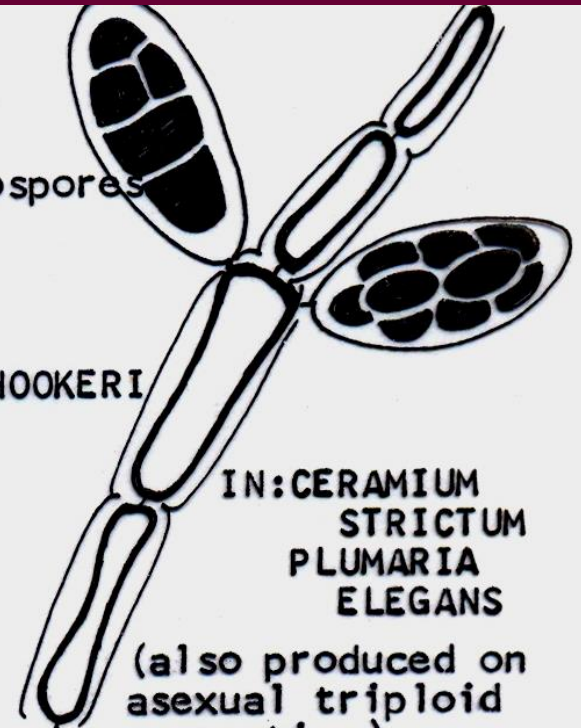


HOMOLOGOUS WITH TETRASPORANGIA
FORMED AFTER R/D

IN: CERAMIACEAE
CHAMPIACEAE
DELESSERIACEAE

PARASPORES >>
masses of monospores
(accessory diploid
sporangia)

CALLITHAMNION HOOKERI

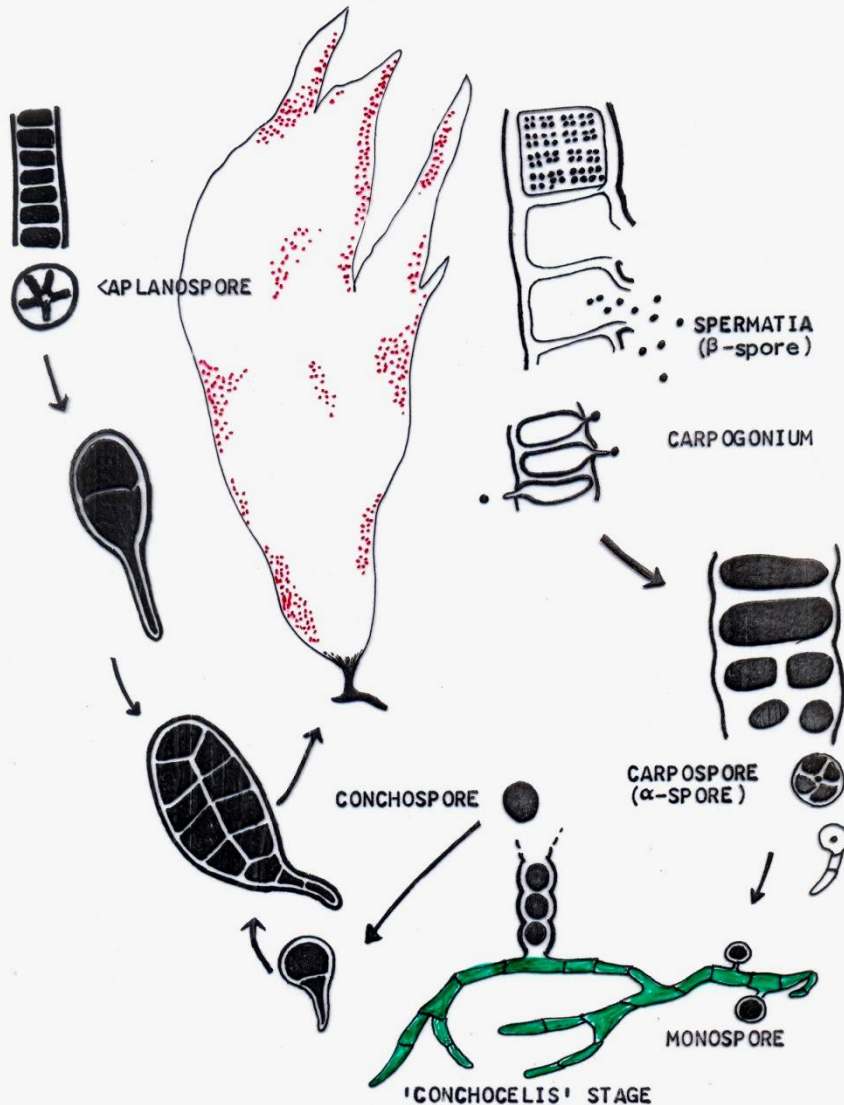


IN: CERAMIUM
STRICTUM
PLUMARIA
ELEGANS

(also produced on
asexual triploid
generation)

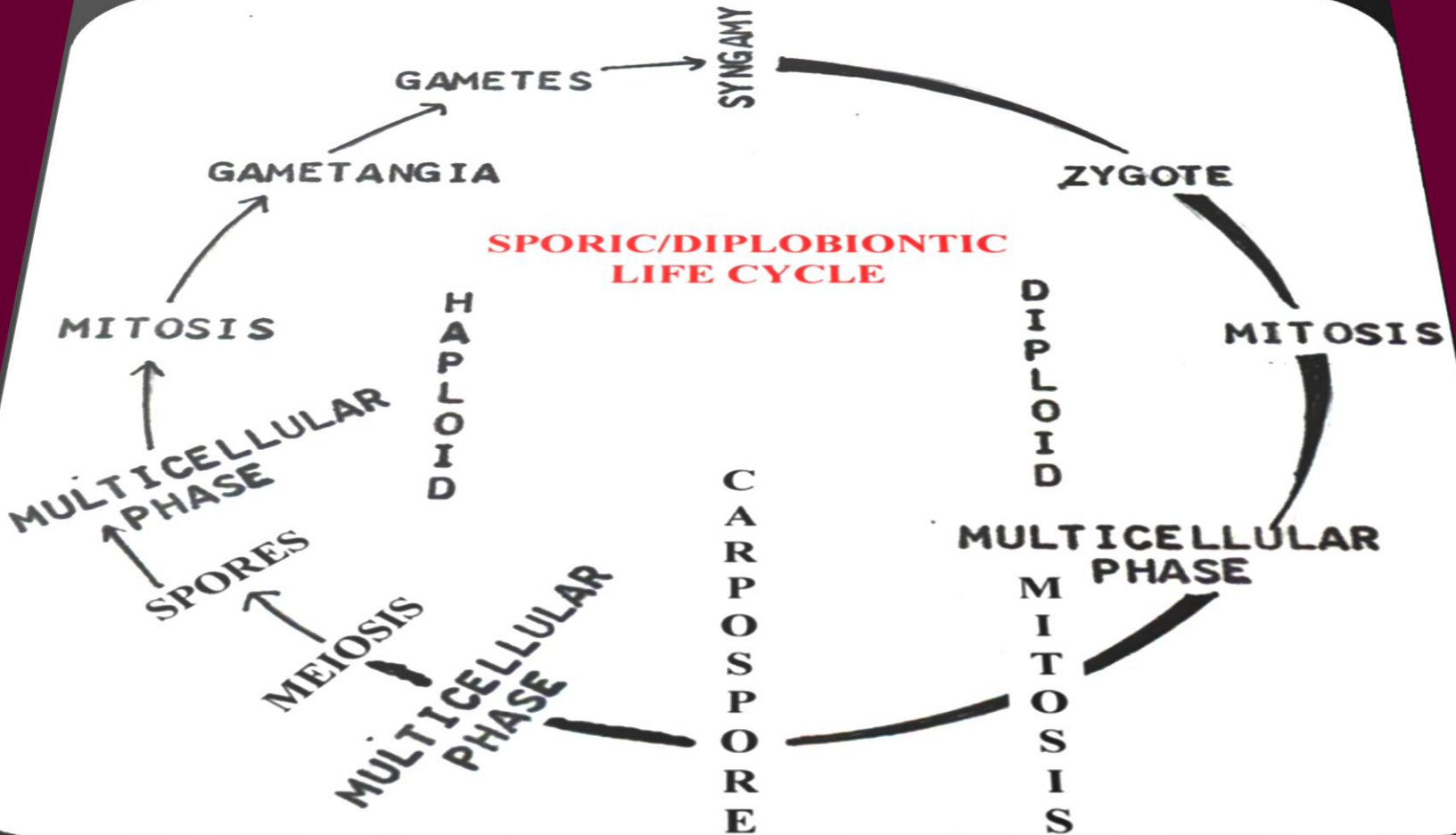
SEXUAL REPRODUCTION

PORPHYRA (BANGIALES, BANGIOPHYCIDEAE)



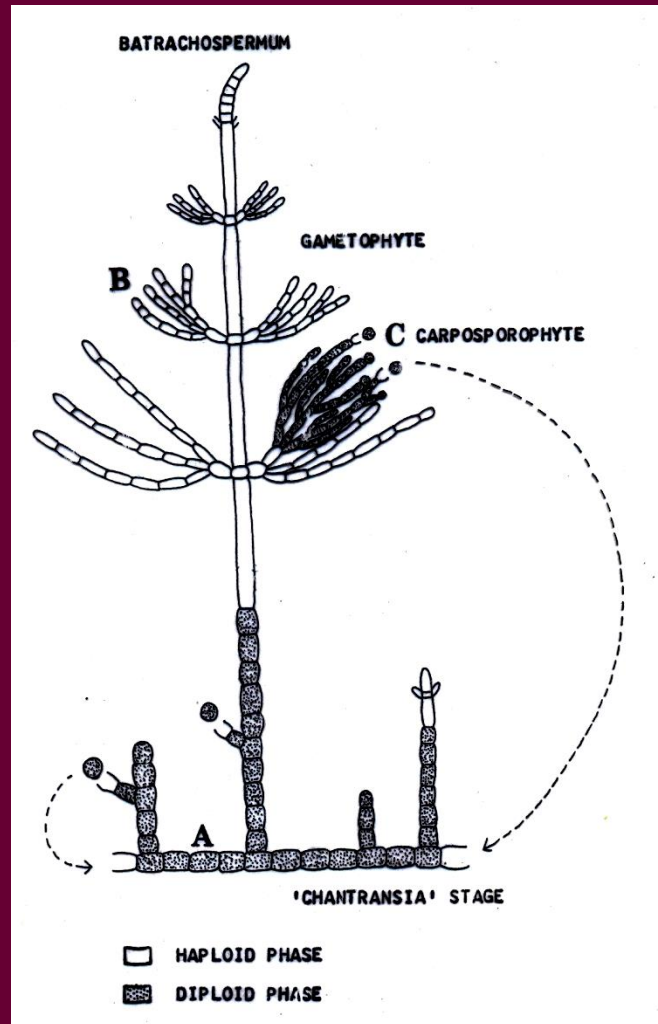
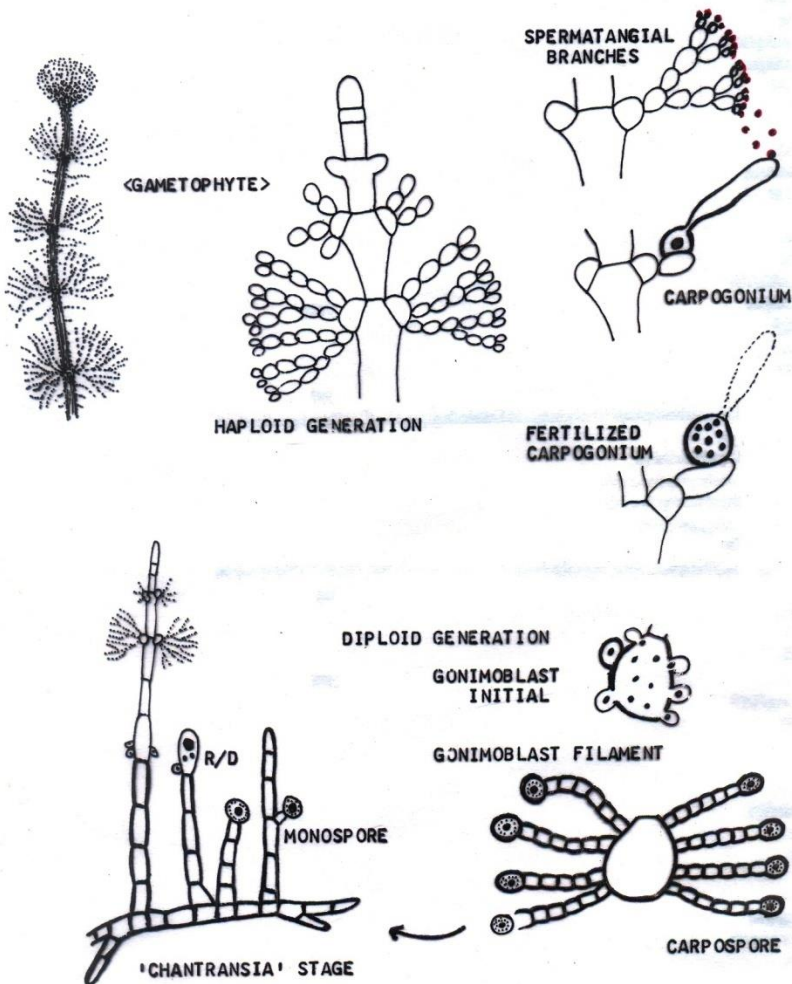
**CONCHOCELIS-HETERO-
TRICHOUS
FILAMENTOUS
INTERMEDIATE STAGE**

LIFE-CYCLE IN FLORIDEOPHYCIDEAE

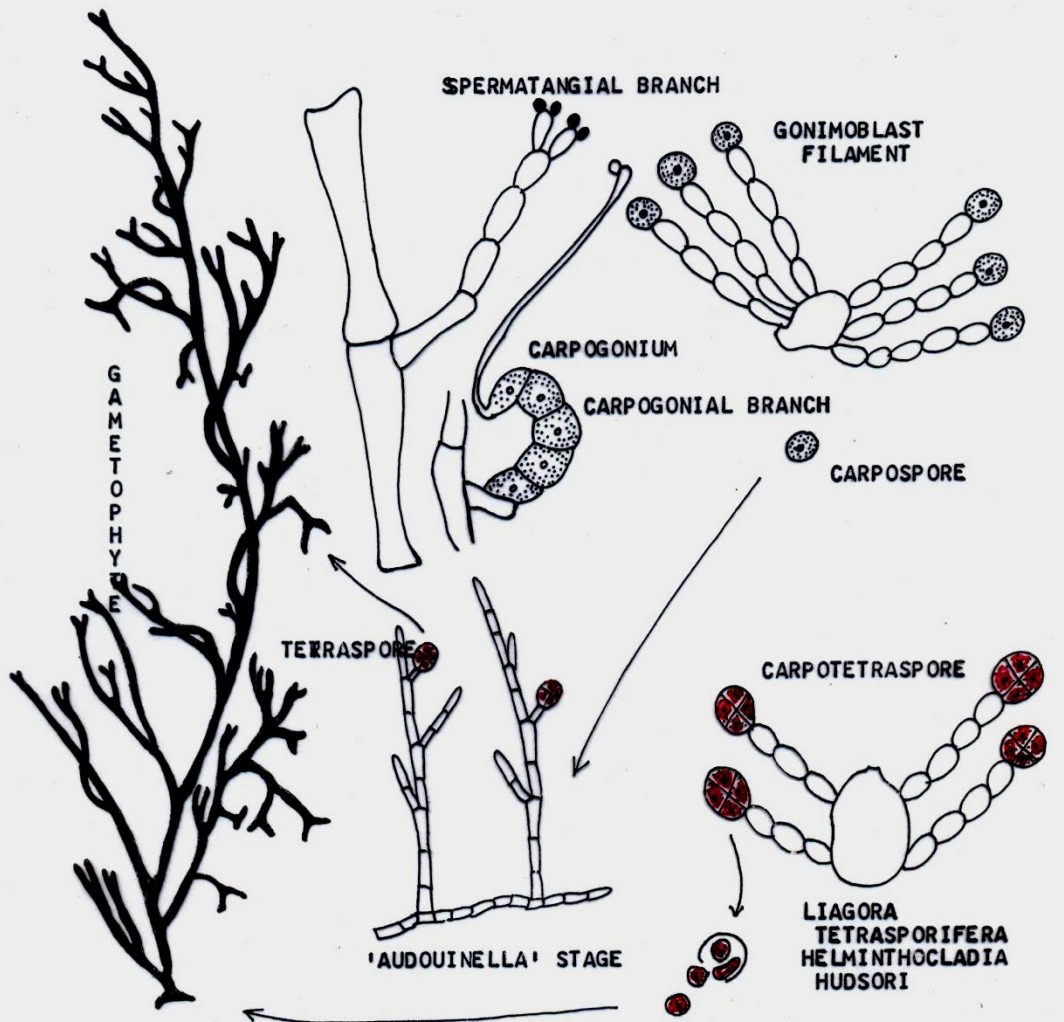


NEMALIONALES- BATRACHOSPERMUM

SEXUAL REPRODUCTION & LIFE-CYCLE-RHODOPHYCEAE
FLORIDOPHYCIDEAE-NEMALIONALES: BATRACHOSPERMUM

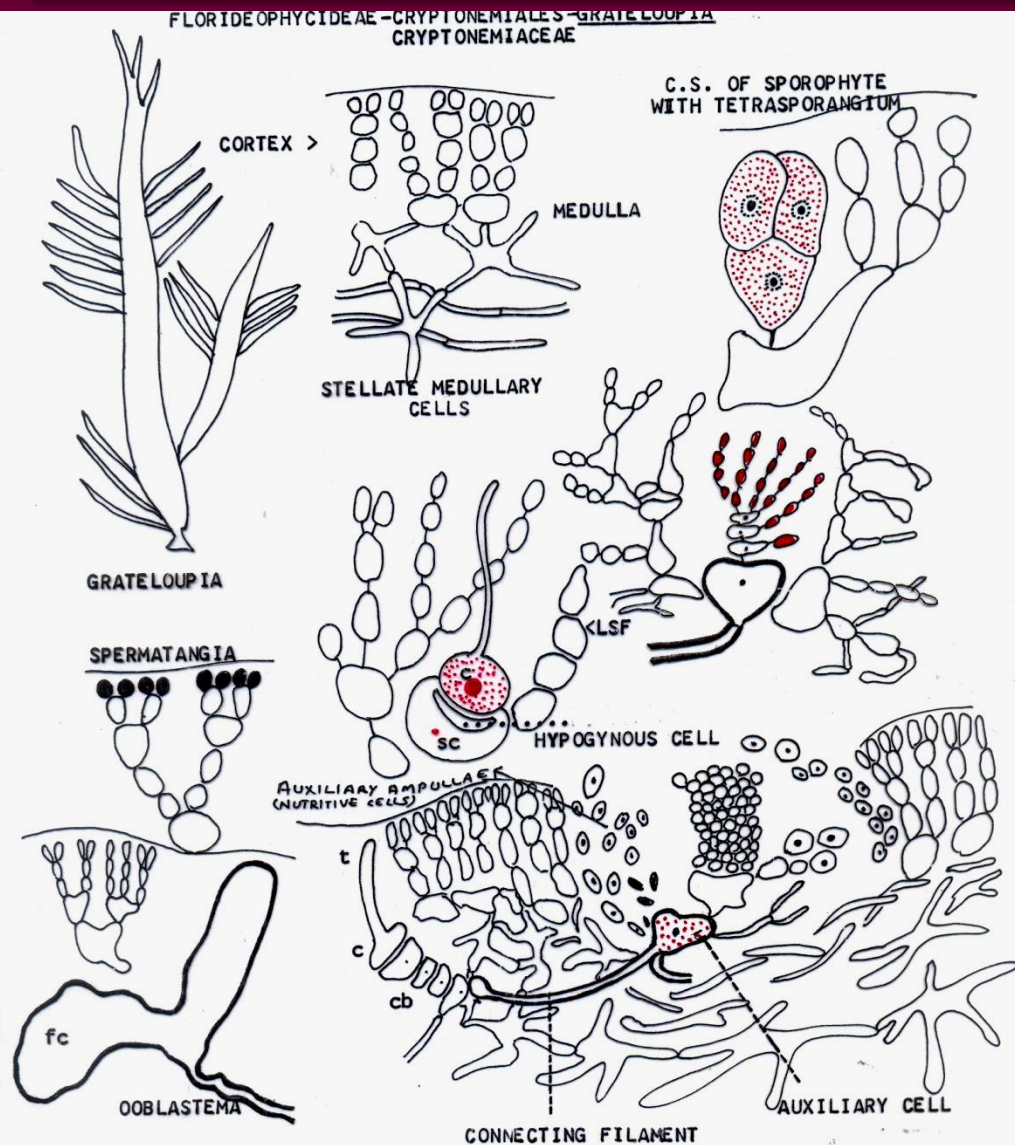


SEXUAL REPRODUCTION



**CARPOTETRASPORE:
LIAGORA TETRASPORI
-FERA
HELMINTHOCCLADIA
HUDSORI**

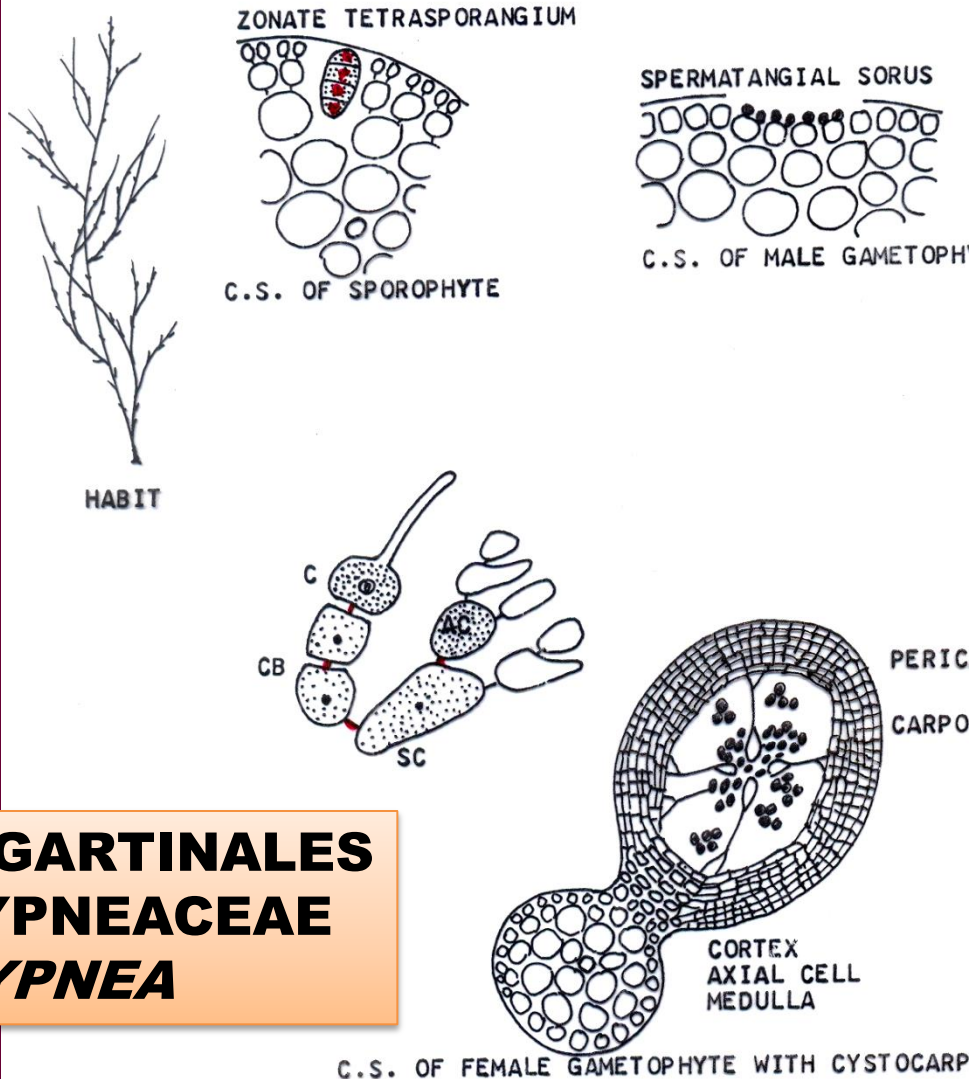
SEXUAL REPRODUCTION



CRYPTONEMIALES
CRYPTONEMIACEAE
GRATELOUPIA

Members of this order, carposporophyte is formed after the transfer of the zygote nucleus to an auxiliary cell formed in a specialized filament, which may or may not be some distance from the carpogonium.

SEXUAL REPRODUCTION



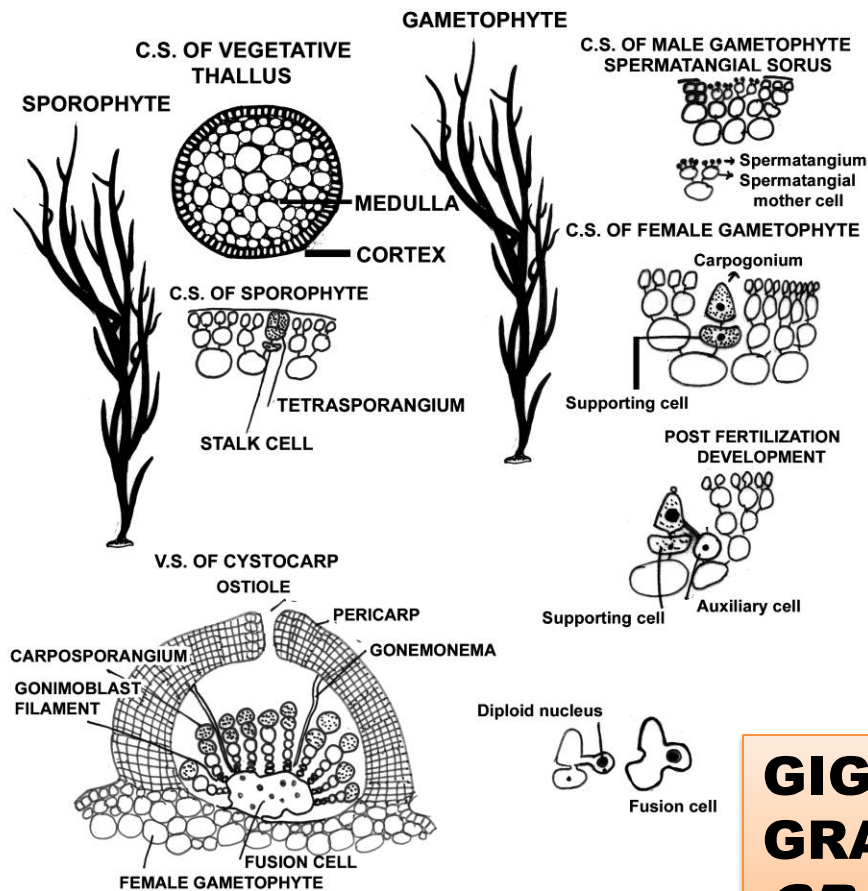
GIGARTINALES
HYPNEACEAE
HYPNEA

Carposporophyte is formed after the transfer of the zygote nucleus to an auxiliary cell which is always an unspecialized vegetative cell of the thallus.

SEXUAL REPRODUCTION

GRACILARIA-SEXUAL REPRODUCTION AND LIFE-CYCLE

DIPLOBIONTIC/SPORIC LIFE CYCLE (TRIPHASIC, ISOMORPHIC ALTERNATION OF GENERATIONS)

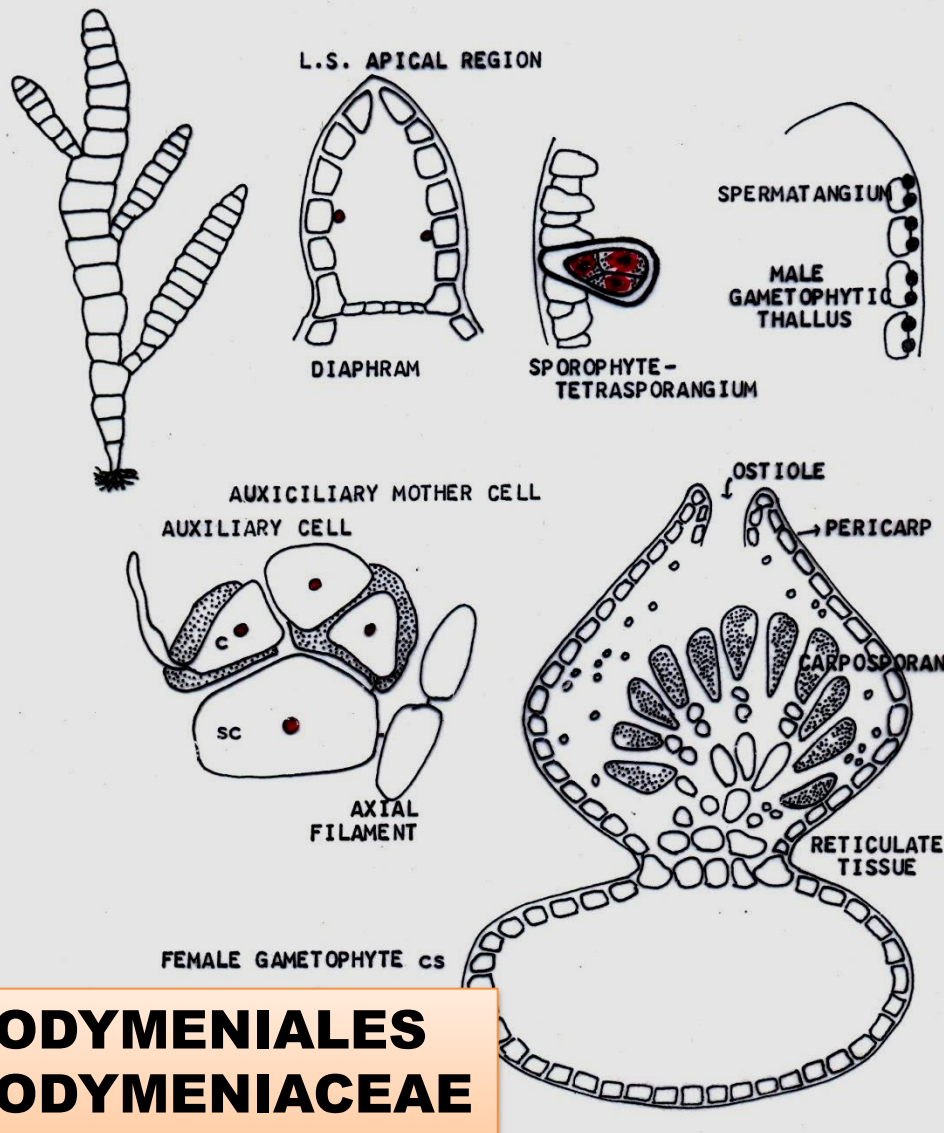


Carposporo-phyte is formed after the transfer of the zygote nucleus to an auxiliary cell which is always an unspecialized vegetative cell of the thallus.

**GIGARTINALES
GRACILARIACEAE
GRACILARIA**

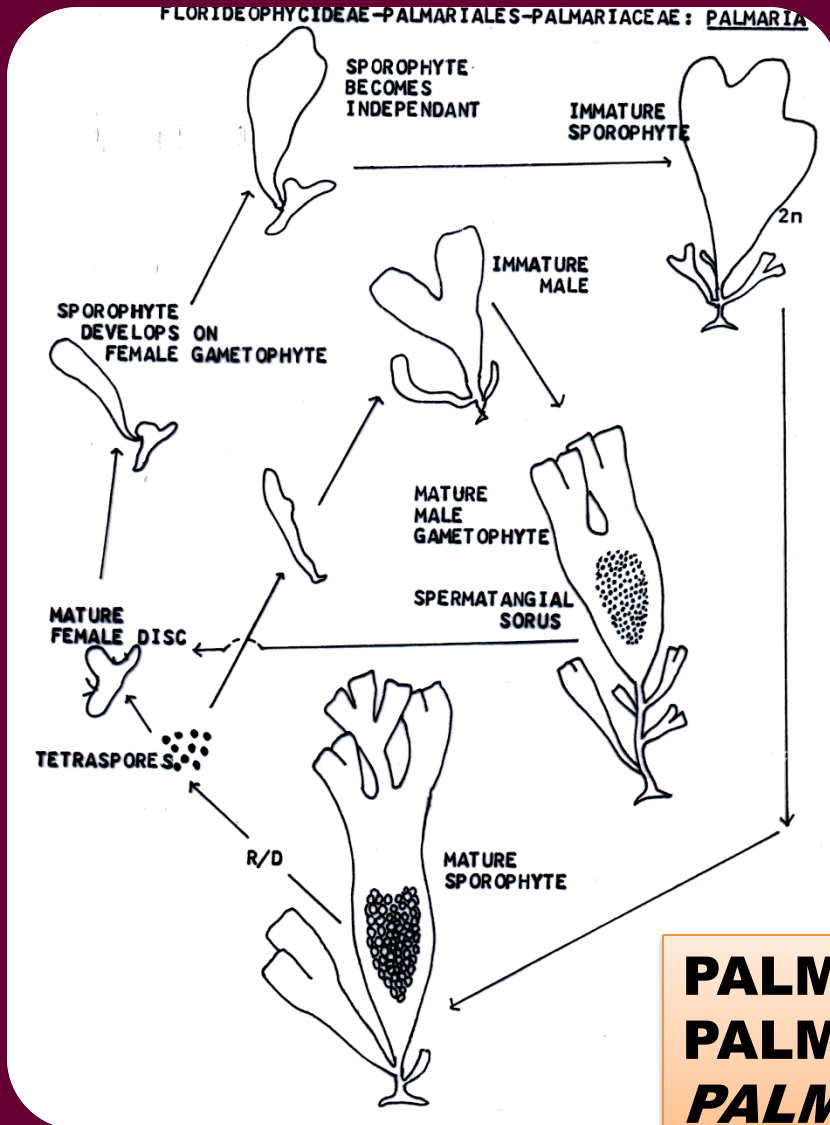
SEXUAL REPRODUCTION

Here the carposporophyte is formed after the transfer of the zygote nucleus to an auxiliary cell, which may be produced singly or in pairs from the support cell of the carpogonial branch prior to fertilization



RHODYMENIALES
RHODYMENIACEAE
CHAMPIA

SEXUAL REPRODUCTION



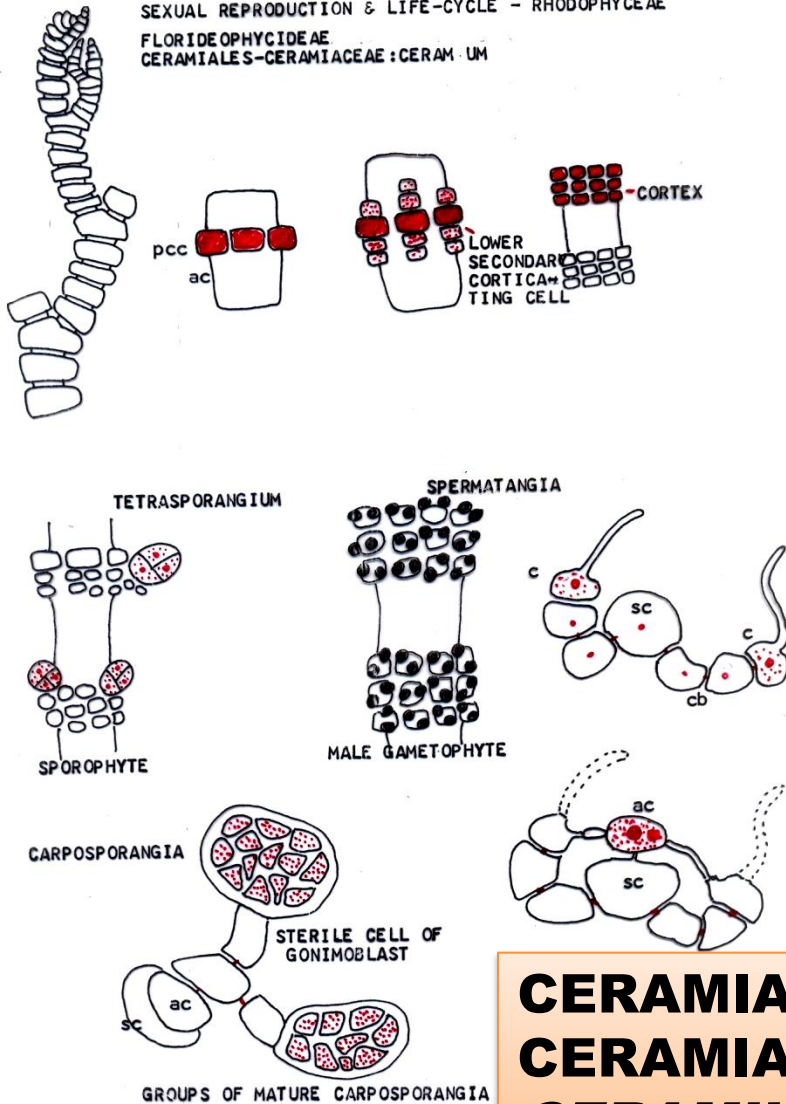
In these members tetrasporangial thalli arise **directly** on the female gametophyte.

PALMARIALES
PALMARIACEAE
PALMARIA



SEXUAL REPRODUCTION

SEXUAL REPRODUCTION & LIFE-CYCLE - RHODOPHYCEAE
FLORIDOPHYCIDAE
CERAMIALES-CERAMIACEAE : CERAMIUM



CERAMIALES CERAMIACEAE

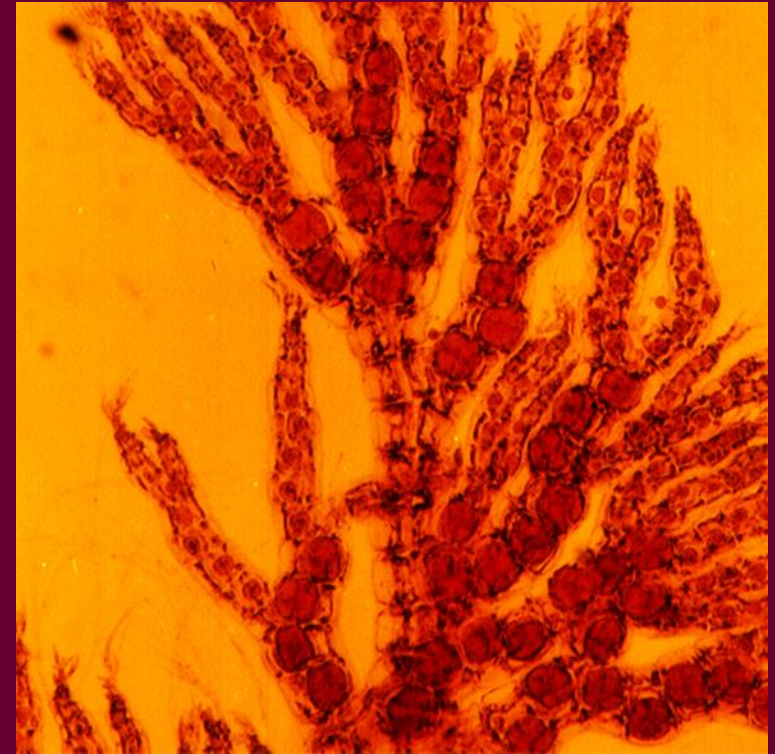
Auxiliary cell is always formed after fertilization from the basal cell of the carpogonial branch.

Sometimes the basal cell itself functions as an auxiliary cell.

CERAMIALES CERAMIACEAE *CERAMIUM*

SEXUAL REPRODUCTION

CERAMIALES
RHODOMELACEAE
POLYSIPHONIA



**TETRASPOROPHYTE WITH
TETRASPORANIGIA**

**FEMALE GAMETOPHYTE
WITH CYSTOCARPS**

**END OF REPRODUCTION
AND LIFE CYCLE IN THE
RHODOPHYCEAE**