

\* Divided \* (phyta)

①

Thallophyta

- nonvascular
- semi aut

Bryophyta

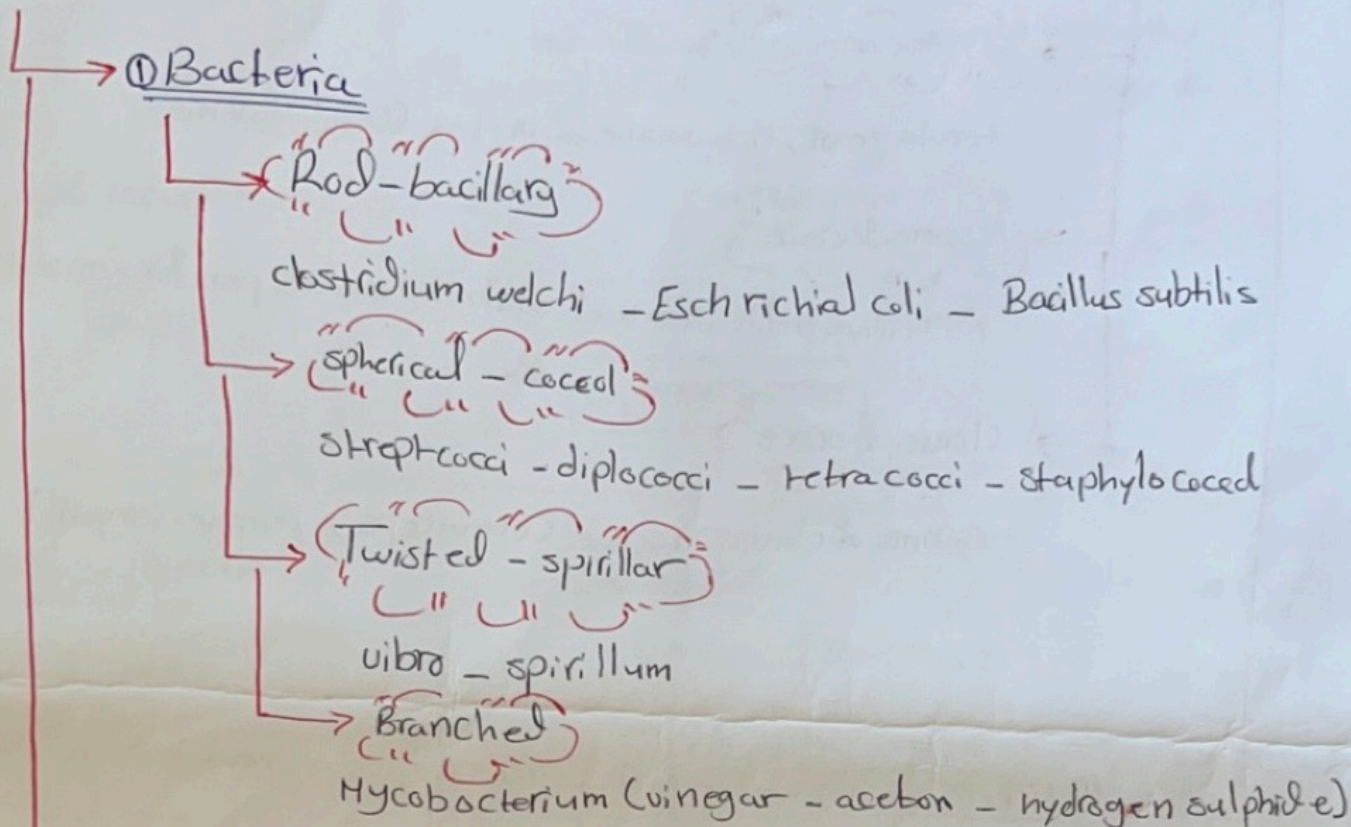
- nonvascular
- semi root

pteridophyta

- have vascular
- true all

spermatophyta

- formel - male



② Algae

Diatom

unicellular - silica skeleton - variety shape - sculpturing cell wall

Brown - Red

chondrus crispus (yields carrageen - Irish moss)

Comp →



### ③ Fungi

Saccharomycetaceae

Dried yeast (*Saccharomyces cerevisiae*)

Cryptococcaceae

torula yeast, rich source of protein (candida utitis)

Aspergillaceae

penicillium yields important antibiotic such as penicillin, griseofulvin

Clavicipitaceae

Genera of clavicipitaceae (*Claviceps*, *puffball* (ergot) )  
alkaloid

### ④ Lichens (Alga - Fungal) (arctic region as food)

(Island mass) *Cetraria islandica* (septangina) ← ڪوٺو

Disguising the taste of nauseous medicines  
treatment cough. Antibiotic properties.

### \* Bryophyta

- active terpenoids :-
- sesquiterpenes
- Diterpenes
- aromatic compound.

① Hepaticae (liverwort)

② Musci (mosses)

\* Tiny plant produce spores.

### \* pteridophyta

① Articulatae (horsetails)

- (*Equisetum arvense*)
- Dried stems :-
- herbal medicine - BHP.
- treat inflammation mild infection

genito

urinary

② Lycopodiaceae (clubmosses)

- (*Lycopodium clavatum*)
- spores :-
- snuffs - dusting
- lubricants
- rubber gloves

③ Filices (ferns)

### \* Gymnosperm

#### \* Ginkgoales

- Ginkgoaceae

→ midenhair-tree  
Found only as fossils

→ Ginkgo biloba

- ageing process
- improve short memory

- Diterpenoid (flavonoid).

#### \* Taxales

- Taxaceae (pseudotsugae)

→ Common yew (taxus)  
valuable wood

→ All parts  
very poisonous

→ pacific yew (bravifolia)  
bark (anti cancer drug)  
nitrogenous diterpene

- Alkaloid - cyanogenic glycosid
- antitumour agent have been reported in genus

#### \* Gentales

- Ephedraceae

→ Drug ephedra

- alkaloid ephedra
- nasal congestion
- Ephedra sinensis
- ma huang (english)



# \* | Angiosperms |

## \* Salicaceae

- ↳ Salix purpurea (willow)
- phenolic glycosides (salicin)

## \* Cannabaceae

- ↳ Cannabis sativa (hemp - cannabis)
- Active (THC)
- marijuana (leaves - flower - resin)
- hashish (resin)

## \* Theaceae

- ↳ Camellia sinensis (tea)
- Alkaloids - saponins
- Tannins

## Hypericaceae

- Hypericum perforatum (john's wort)
- used for depression

## \* Paraveraceae

- ↳ paraver somniferum white poppy
- rich alkaloids
- opium: dried latex (morphine)

## \* Hippocastanaceae

- ↳ Aesculus hippocastanum (horse chestnut)
- triterpenoid saponin

## \* Aquifoliaceae

- ↳ Ilex paraguariensis (mate)
- Alkaloids

## \* Celastraceae

- ↳ Catha edulis (khat)
- Alkaloids

## \* Araliaceae

- ↳ Hedera helix (ivy)
- panax ginseng
- terpenoid saponins (ginseng)

## \* Apiaceae

- ↳ Umbelliferae
- v.o, Resins, alkaloids, coumarins, terpenes
- Foeniculum vulgare
- pimpinella anisum
- Ammi visnaga
- Carum carvi
- Coriandrum sativum
- Conium maculatum
- Ferula spp.

## \* Sabnaceae

- Datura stramonium (thornapple)
- Atropa belladonna
- Hyoscyamus niger (henbane)
- Nicotiana tabacum (tobacco)
- Solanum spp
- Capsicum spp (Buscopan)

X | Monocots

Liliaceae

- Allium sativum (garlic)
- Aloe vera (aloe)
- Colchicum autumnale (autumn crocus - meadow saffron)

Poaceae

- Oryza sativa (rice)
- Zea mays (corn)
- Triticum aestivum (wheat)

X | ARTHROPODA

① Crustaceana

- shrimps
- crabs
- lobster
- brain shrimps (toxicity)

② insecta

- Hemiptera (Bugs)
  - chickweed beetle (colourant)
  - Dried female (coccus cati)
- Coleoptera (Beetles)
  - cantharis vesicatoria (blistering beetles)
  - plaster (rubefacients)
- Hymenoptera
  - Ants - bees - Apis mellifica
  - honey, beeswax, royal jelly, propolis
- Diptera
  - Flies, gnats, midges

③ Arachnids

maggots: treatment wounds  
antibiotic staphylococcus

Lucilia sericata: sterile larvae of common green bottle