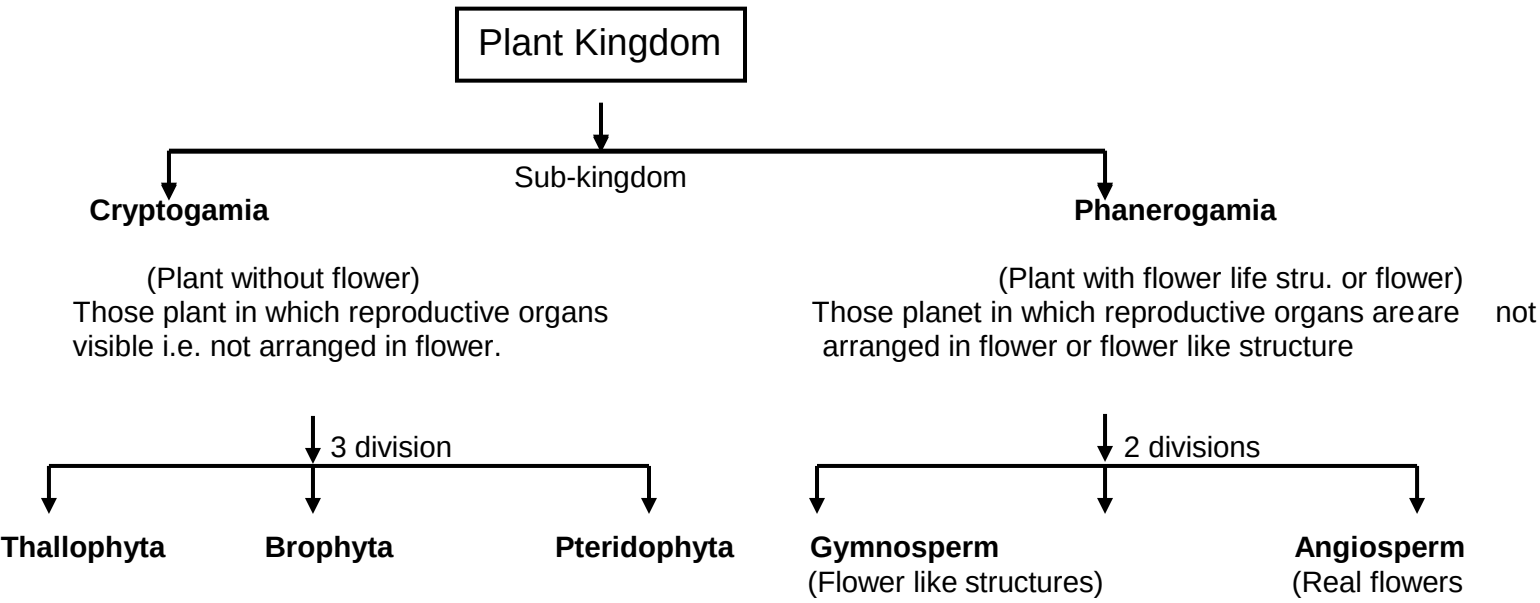


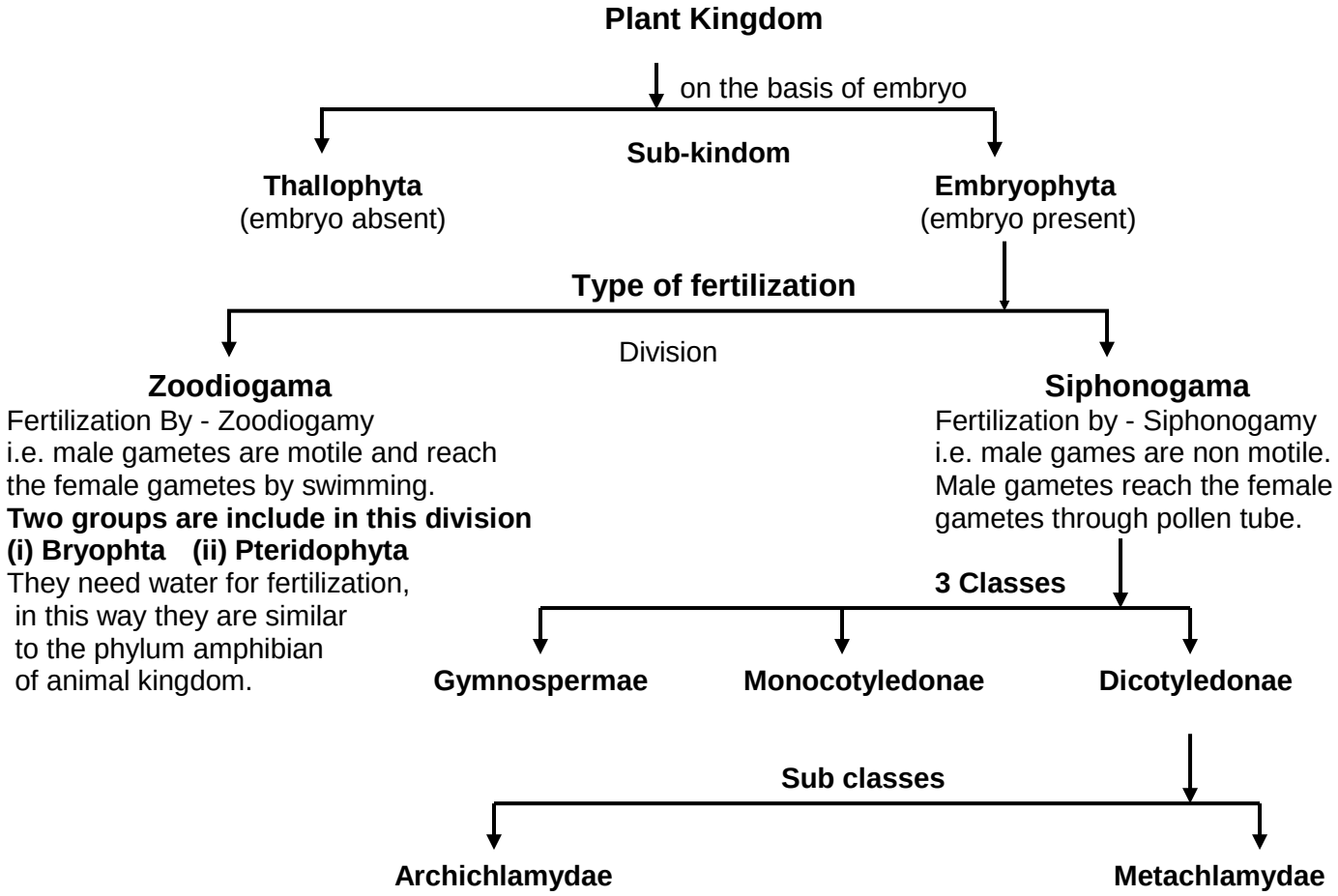
In this way Eichler classified plant kingdom in **five division** and arranged them in the order of evolution (Phylogeny)

Thallophyta → **Bryophyta** → **Pteridophyta** → **Gymnosperm** → **Angiosperm**

(7) Engler (1844-1930) & Pratl (1849 - 1893):

Book - "Die Nturlichen Pflanzen Familien"

He gave the phlogenetic classification of plant kingdom. This classification was more phylogenetic as compared to Eichler's classification

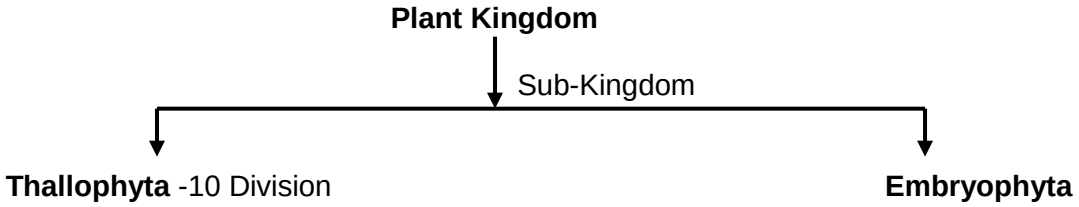


(Free petalous and nonpetalous condition) Polypetalae & Monochlamydae of Bentham & Hooker

(United petalous condition) Gampoetalae of Bentham & Hooker

(8) Oswal Tippo :

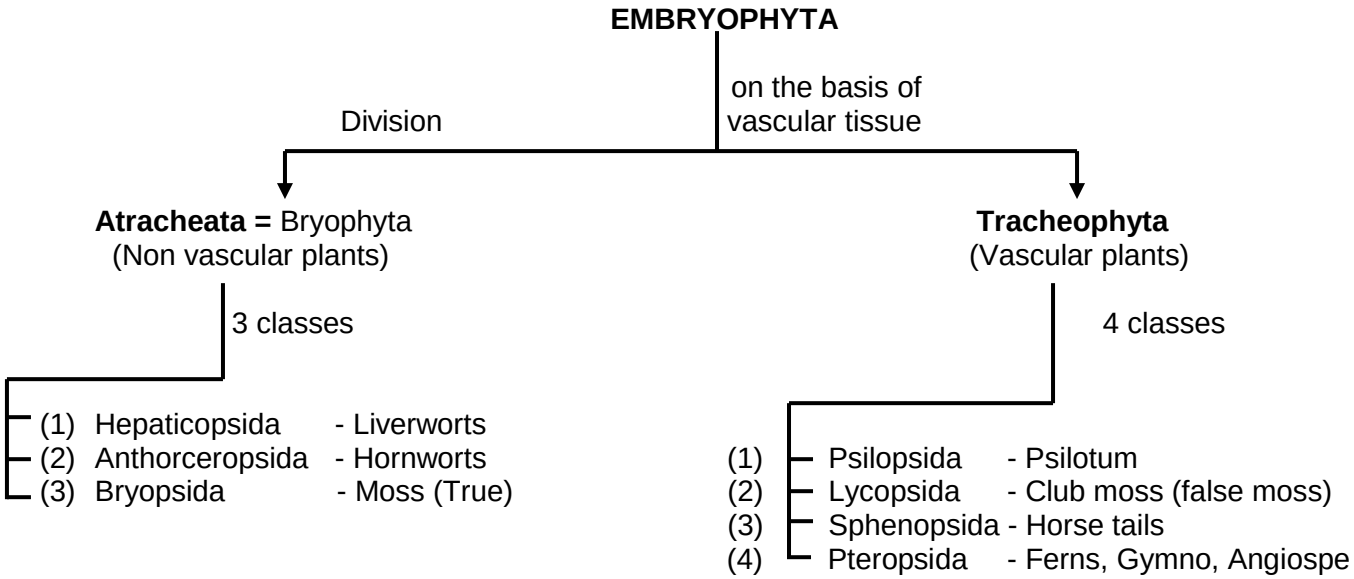
(A) Proposed the **biggest phylogenetic classification** of plant kingdom.
(B) This classification is the complete classification of plant kingdom.
(C) This is the **most acceptable** classification for books and study.



(1) Cynophyta	-	B.G. Algae
(2) Euglenophyta	-	Euglenoids
(3) Chlorophyta	-	Green algae
(4) Chryophta	-	yellow - Green - algae
(5) Pyrrophyta	-	Brown algae
(6) Pheophyta	-	Brown algae
(7) Rhodophyta	-	Red algae
(8) Schizomycophy	-	Bacteria
(9) Myxomycophta	-	Slime molds (false fungi)
(10) Eumycophyta	-	True fungi

These ten division include three types of organisms

(1) Algae (7 - division) (2) Bacteria (1 - division) (3) Fungi (2 - division)



Note : Tipoo does not use the word pteridophyta

(9) Karl Menz :

(A) he show the importance of **secrelogy** in taxonomy.
(B) Similarities and dissimilarities in stru. of proteins help to know the phylogenetic relationship of living beings. Living organisms which are phylogenetically close relatives have more similarities in their proteins. Organisms which are distantly related have different proteins.

Note: Phylogenetic relationship of plants and animals can be established by animal serum. Serology indicates that chimpanzee is closest relative of man.

(10) Haeckel :

(A) Haeckel gave the **three kingdom (Protista, Planae, Animalia) system** of classification.

(B) Haeckel established the kingdom Protista.

(C) The term 'Protista' was given by C. Cuvier.

(D) Haeckel grouped those living organisms in Protista which did not have tissues.

Kingdom Protista $\rightarrow$ Prokaryotes, Protozoa, Porifera, Algae & fungi

- First tissue was originated in animal kingdom in $\rightarrow$ Coelentera
- First tissues was originated in plant kingdom in $\rightarrow$ Bryophyta

(11) Copeland :

He gave the Four kingdom system of classification.

(i) **Mychota :** Dougherty & Aleen gave the name "Monera' to Mychota of Copeland. All the prokaryote are grouped in Monera

(ii) **Protista or prototista :** Copleland grouped those eukaryotes in protista, which are visually different that normal plants and animals.

eg. Brown algaem Red algae, Fungi Protozoa

(iii) **Plantae or metaphyta :** Remaining all eukaryotic plants are grouped.

(iv) **Animalia or Metazoa :** Remaining all eukaryotic animals re grouped.

(12) R.H. Whittaker (1969) :

(A) He gave the **Five kingdom** system of classification.

(B) This classification was believed to be modern

The five kingdom classification of Whittaker was based on 3 main characters

(a) **Complexity of cell :**
Cell is prokaryote or Eukaryote, on this basis, kingdom Monera is formed. And all the proykaryotes are grouped in to it.

(b) **Complexity of organism :**
Organism in unicellular or multicellular, on this basis kingdom Protista was formed and all the unicellular eukaryotes are grouped into it.

(c) **Nutrition :**
Organism in autotrophic or heterotrophic, on this basis kingdom Myctota.
Planatae and Animalaia was formed. Except fungi (heterotrophic) all the plants are autotrophs. Therefore fungi is separated from plants and placed in kingdom mycota. And remaining all the autotrophic plants are placed in kingdom - Plantae.
Since all the animals are heterotrophs, therefore they are placed in fifth kingdom i.e. kingdom

Animalia.