

B.Sc. (Bio) Sem.III ,Paper-IV

FAMILY POACEAE

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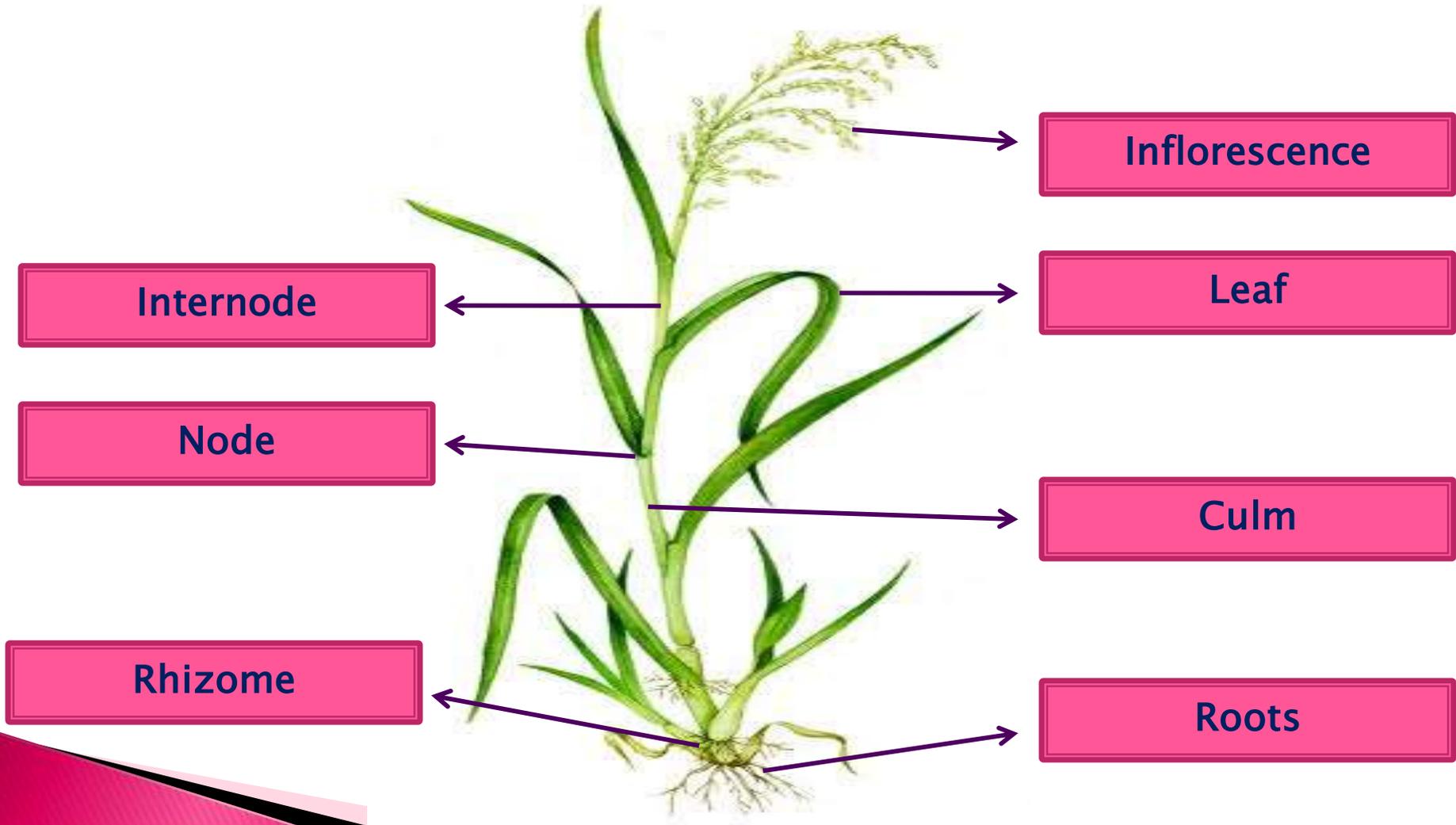
Isabella Thoburn College, Lucknow.

IMPORTANT FEATURES

- ▶ **Largest** and most important family of angiosperms (**economic** point of view)
- ▶ 620 genera and over 10000 species
- ▶ Distributed worldwide
- ▶ 240 genera and over 1200 species are found in India.

- ▶ **Habit**– Annual or perennial herbs, rarely Woody shrubs or tree like
- ▶ **Roots**– Fibrous and adventitious, primary roots are short lived.
- ▶ **Stem**– known as **culm**.
Erect, ascending, prostrate, or creeping, simple or only branched at the base, rounded, jointed, Hollow internodes, solid and swollen nodes.
- ▶ **Inflorescence** terminal
- ▶ creeping **rhizome or stolon** formed by the lower internode.

Oryza sativa (Paddy)–

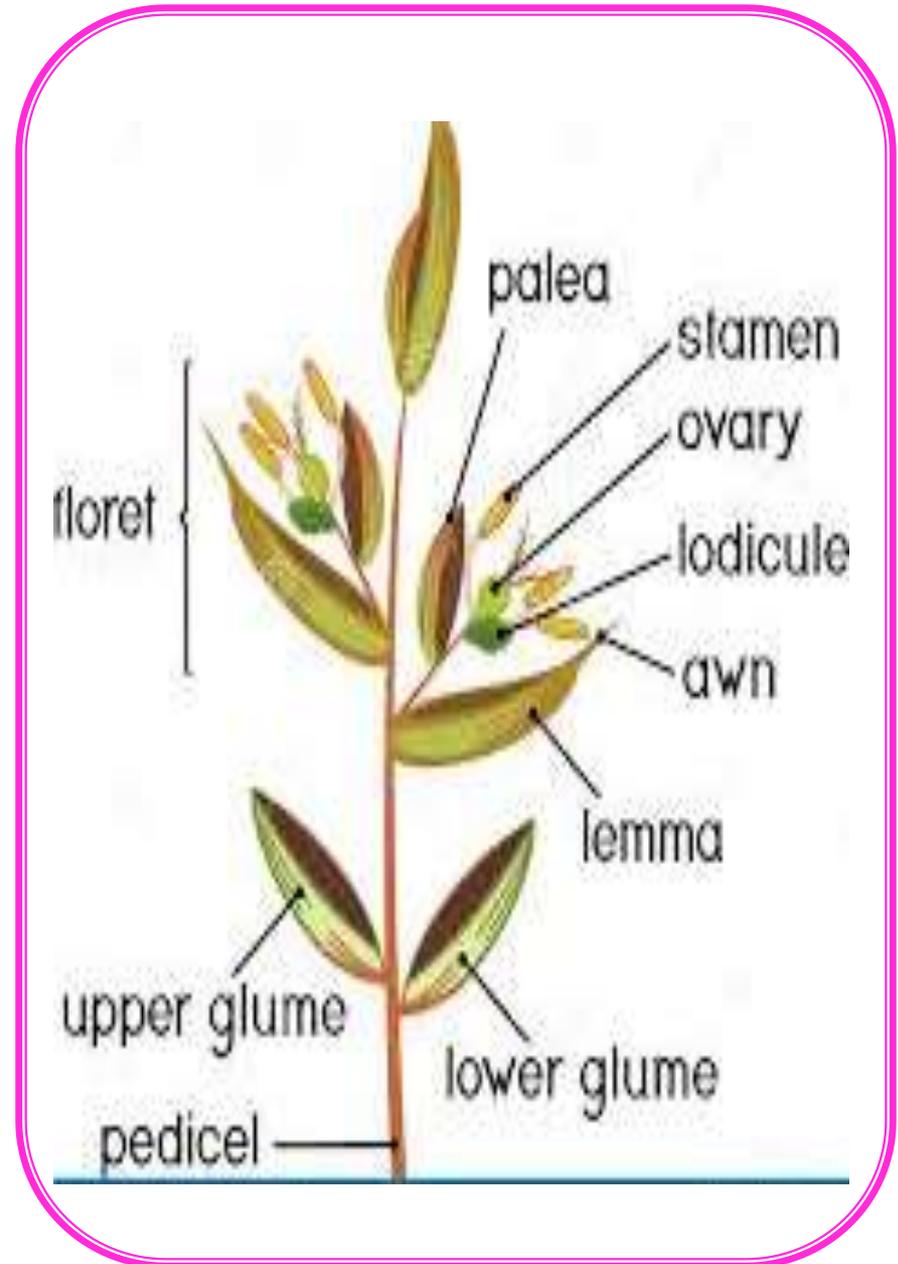


Leaf-

- ▶ Simple, alternate in two rows on opposite sides of the stem, originate at the nodes, crowded at the base
- ▶ has blade and ligule,
- ▶ Blade or lamina is long, narrow, flat, linear to Lanceolate,
- ▶ Veins parallel
- ▶ Ligule present at the junction of blade and sheath
- ▶ It is membranous, sometimes absent.

Flower or florets –

- ▶ Small, inconspicuous, bisexual or unisexual, zygomorphic, hypogynous, develop above the glumes.
- ▶ Each floret has 2 bracts –
 Lemma and Palea
- ▶ Lemma is fertile/ flowering gloom
- ▶ Palea present between Rachilla and Lemma is thin membranous, 2 nerved/ 2keeled, partially enclosed by the Lemma



▶ **Parianth**– Absent or reduced, 2 or 3 minute scales called Lodicules.

▶ Lodicules are hyaline, present antero-laterally

▶ **Androecium**–

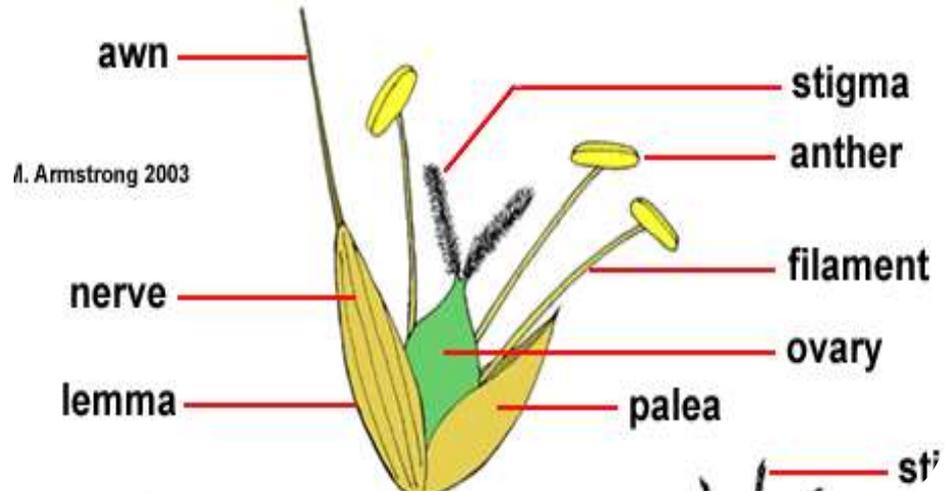
1–6 stamens, usually 3 in each floret,

odd stamen is always anterior, filaments free, anthers dithecous, Basifixed or versatile introrse.

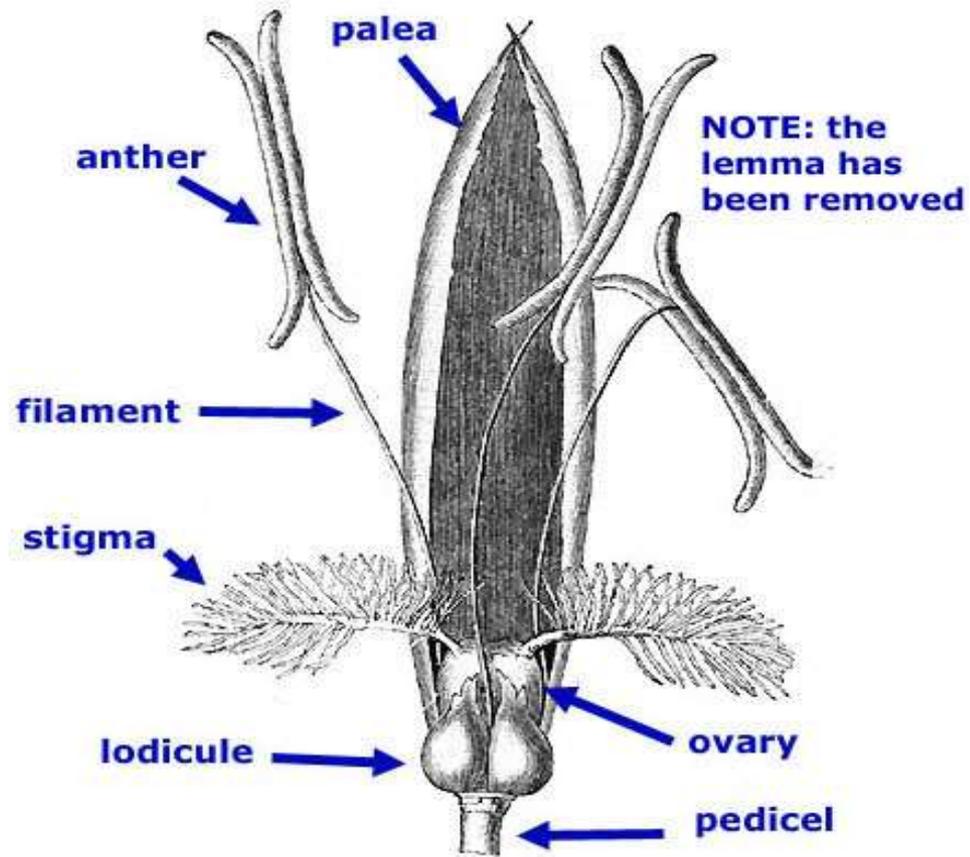
▶ **Gynoecium**–

Bi or tricarpellary, syncarpous, superior, unilocular with one anatropous ovule,

Basal placentation, style 1–3, stigma –2, feather like.



Grass floret



- ▶ **Fruit and seeds**– caryopsis or nut, one seed per fruit, abundant and starchy endosperm.
- **Pollination**– Cereals mainly self pollinated, grasses are wind pollinated.

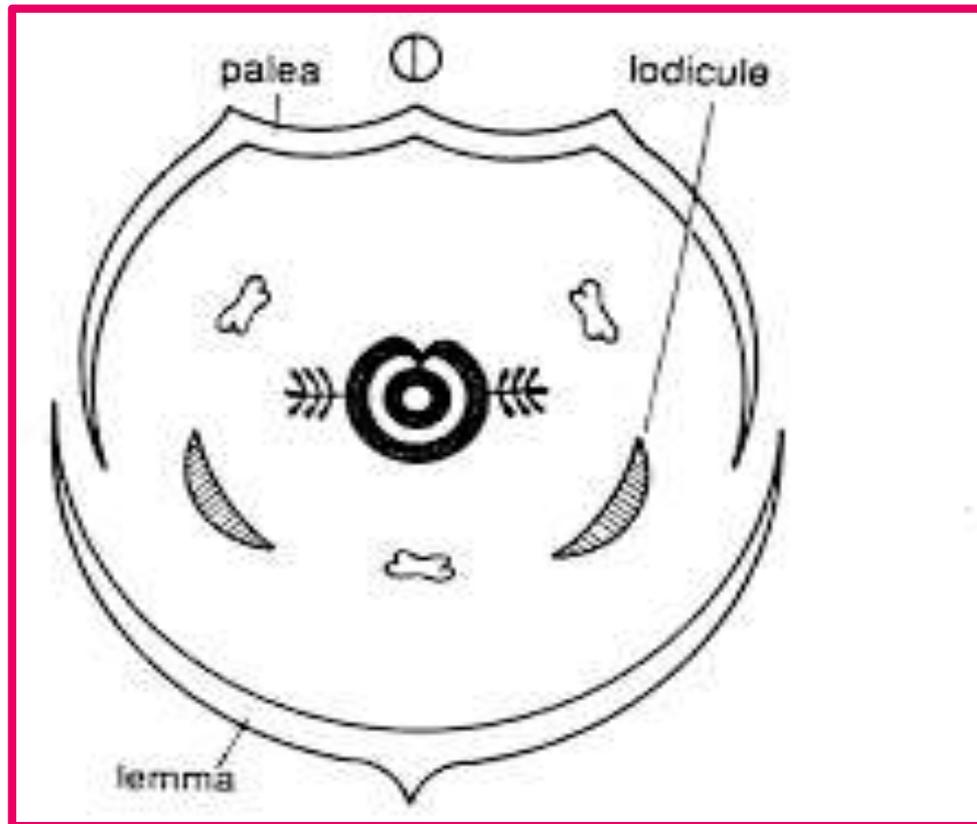
Note

- ▶ protogynous , small and inconspicuous flowers and feather like stigma promote Anemophily (Wind Pollination).

▶ General Floral Formula -

▶ \oplus or \ominus , \circ or \oplus , **P**₂ or **3** or absent, **A**₃ or 1-6, **G**₍₂₋₃₎

FLORAL DIAGRAM



ECONOMIC IMPORTANCE -

- ▶ **Cereals-** *Oryza Sativa* (Rice),
Triticum aestivum (Wheat),
Zea mays (Maize),
Hordeum vulgare (Barley),
Avena sativa (Oats) etc.
Secale cereale (Rye)

- ▶ **Millets** – *Sorghum vulgare* (Jowar)
Setaria italica (Italian Millet)
Pennisetum typhoides (Pearl Millet, Bajra)

ECONOMIC IMPORTANCE -

- **Sugar** - *Saccharum officinarum* (Sugarcane)
- **Fodder** – *Avena sativa*, *Cynodon dactylon* (Doob Grass),
Hordeum vulgare , *Pennisetum typhoides*, *Setaria italica*,
Poa annua etc.
- **Paper manufacturing**- *Bambusa* sp. , *Dendrocalamus* sp.
- ▶ **Essential Oils**- *Cymbopogon citratus*, *C.nardus*, *C.martinii*,
Vitiveria zizanooides etc.
- ▶ **Ornamentals** – *Cynodon*, *Poa*, *Festuca*, *Agrostis* etc.

Follow the link for plant
identification –

<https://youtu.be/1Ws98IIQJCg>