

Meadow-grasses (*Poa* spp.) & Bent grasses (*Agrostis* spp.)

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Photos: Fionnuala O'Neill/Rachel Merne

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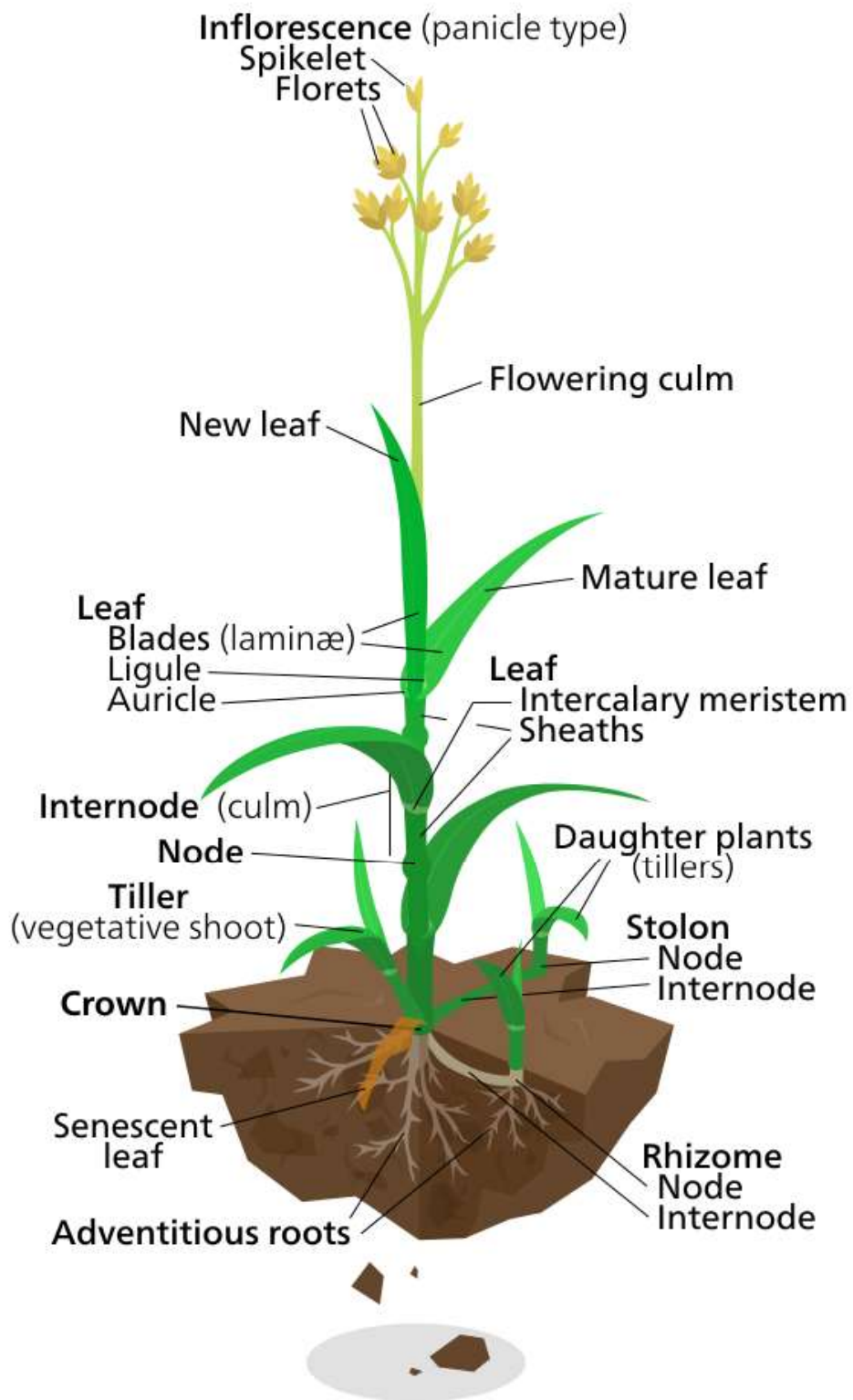
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Today's Webinar

- Quick recap on structure of grasses
- Meadow-grasses – *Poa* spp.
 - Characteristics of the genus
 - What are the main species?
 - How do you distinguish them from each other?
- Bent grasses – *Agrostis* spp.
 - Characteristics of the genus
 - What are the main species?
 - How do you distinguish them from each other?



Structure of a typical grass plant

- Non-flowering shoot “Tiller” – *roots, stem, leaves*
- Leaves attach to stem at *node* (bulge)
- Flowering shoot “Culm” – Flowering head “*Inflorescence*” – arises from top of shoot

Grass leaf

- Two main parts:

– Blade (also called “Lamina”)

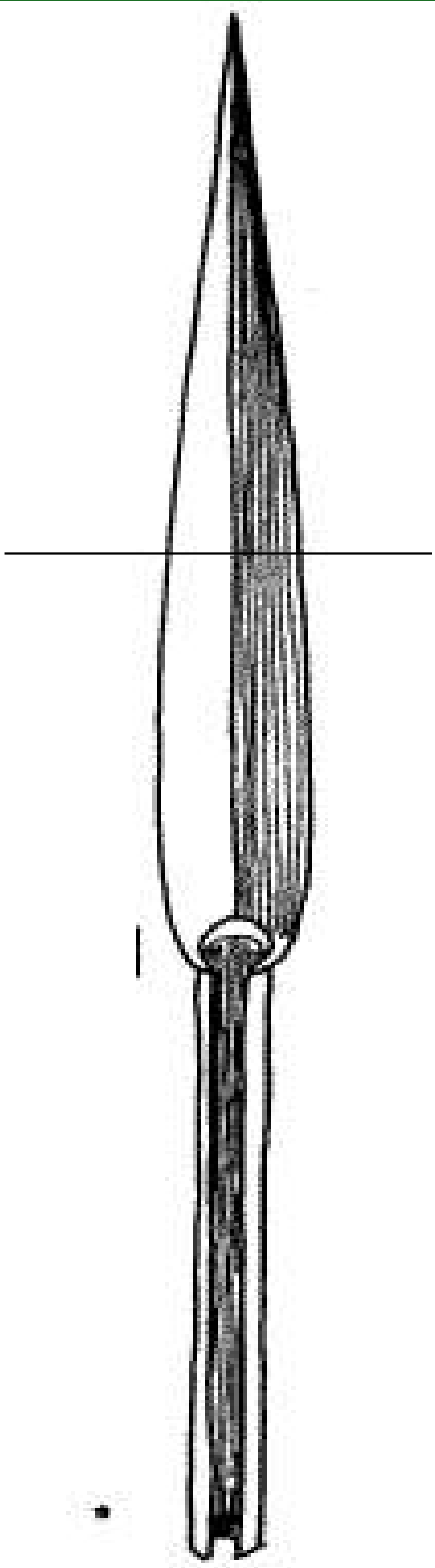
(further developments at junction between blade and sheath)

– Sheath

collar region |

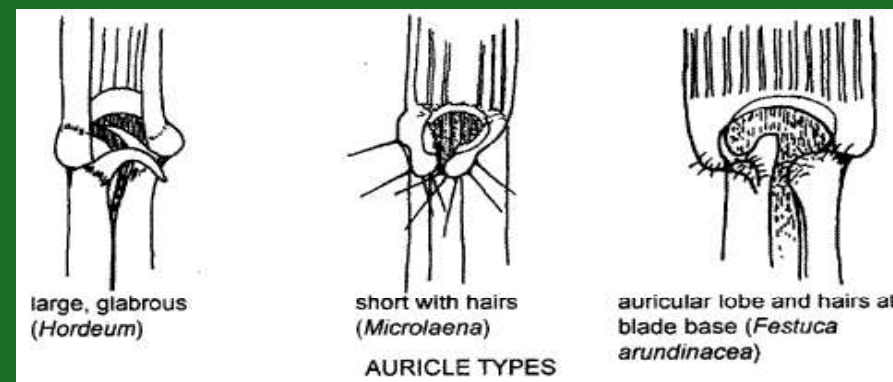
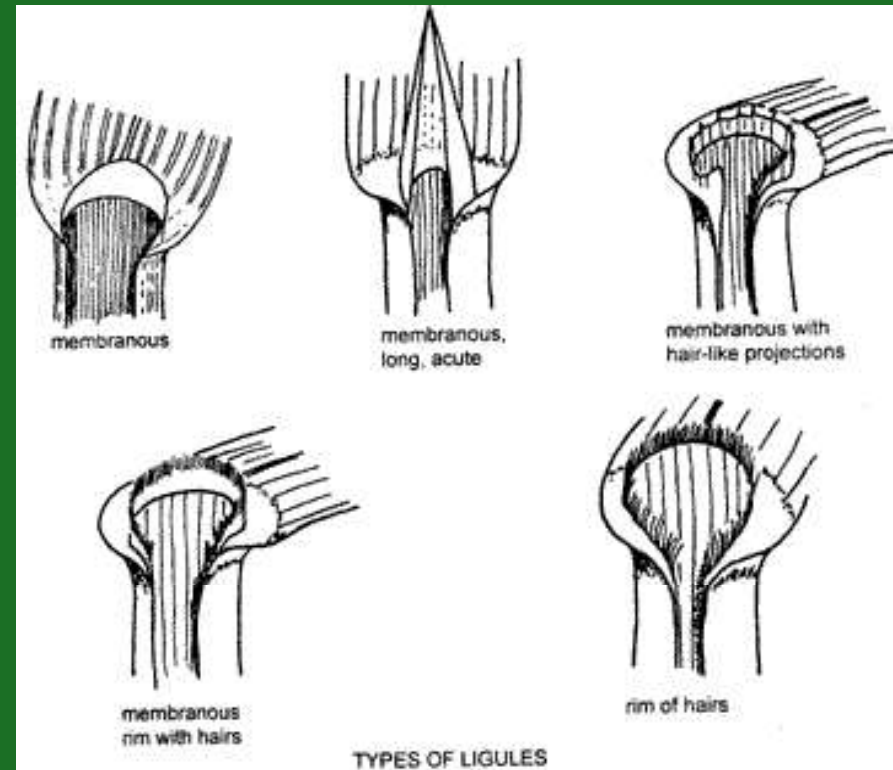
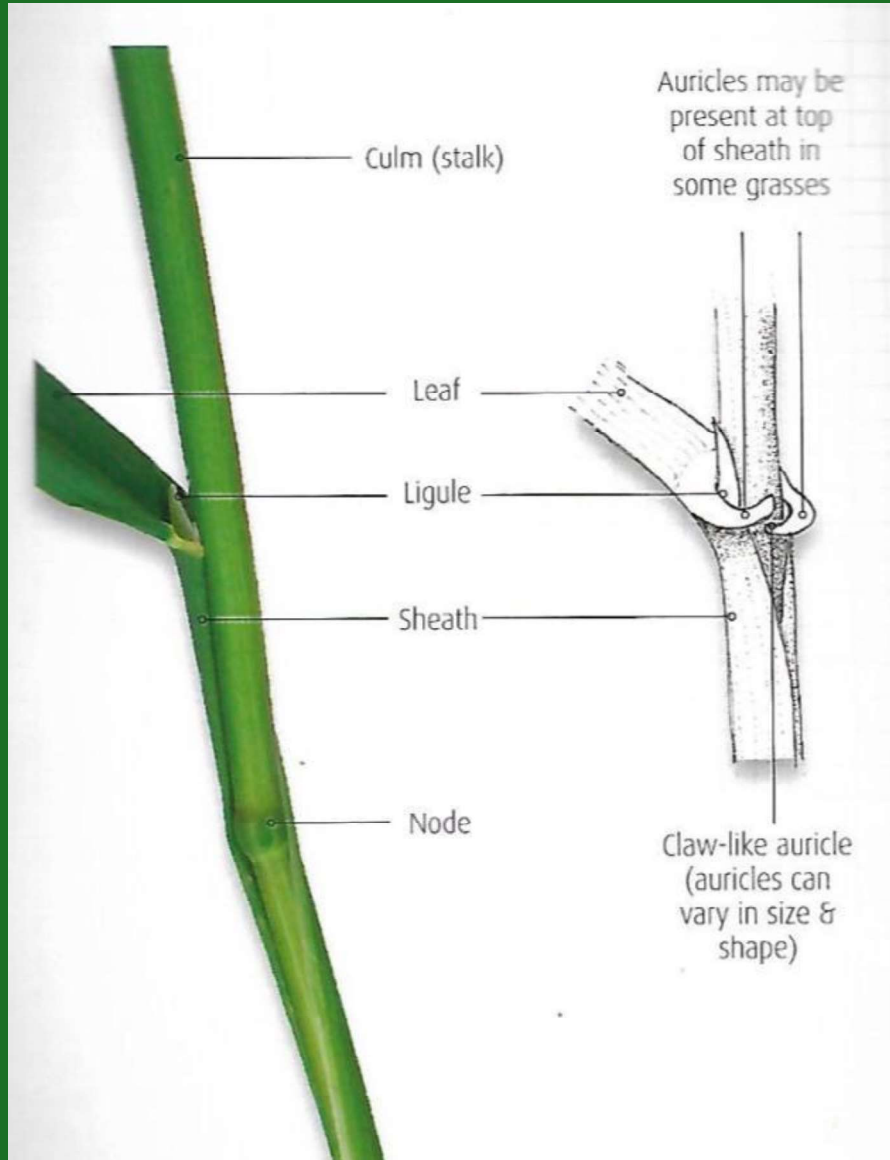


Does the leaf taper gradually?



- If you're not sure, fold the leaf over in half to see if the upper third of the leaf is the same width as the lower

Ligules and Auricles

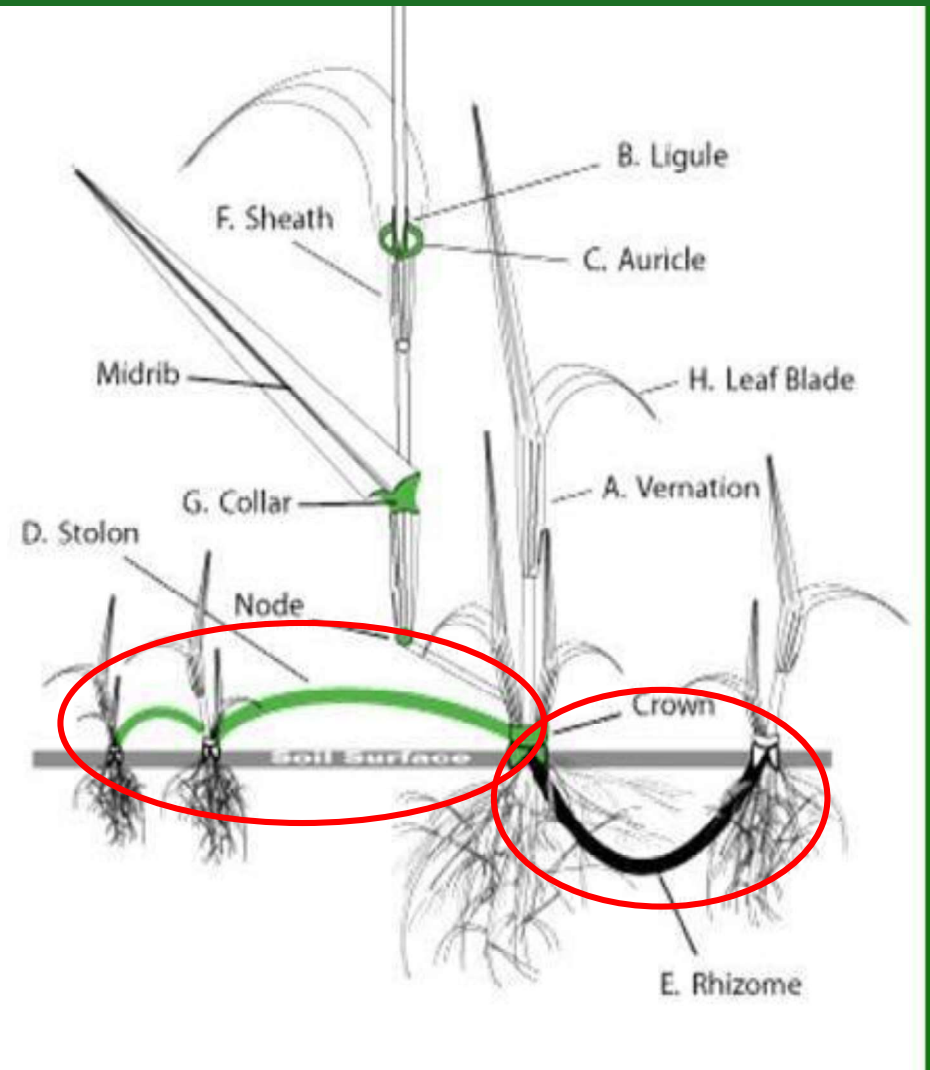


Ligules – A warning

- Ligules on flowering shoots are usually longer than those on vegetative shoots
- Make sure you know which type your key is referring to!
 - e.g. if using a vegetative key, only look at ligules on non-flowering shoots
 - if using a key to flowering grasses, check the 2nd or 3rd ligule from the top of the flowering shoot

Vegetative spread

- Above-ground horizontal stems (**stolons**)
- Below-ground horizontal stems (**rhizomes**)
- Very short rhizomes = tufted plants
- Long rhizomes give rise to large patches of grass, e.g. *Holcus mollis* – Creeping Soft-grass



Stolons in *Agrostis stolonifera*



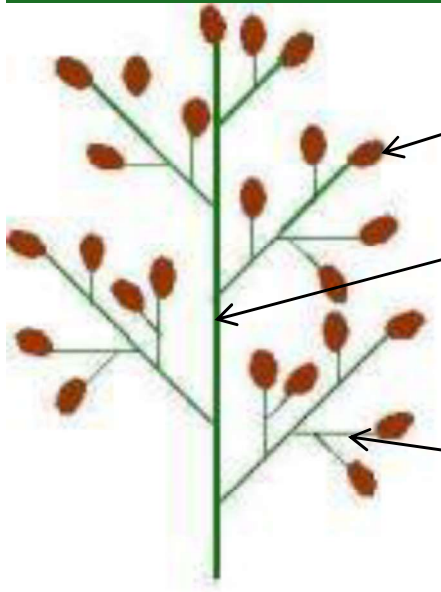
Photo: Fionnuala O'Neill

Structure of grasses:

Reproductive (i.e. flower head)

- Inflorescence: In *Poa* and *Agrostis* the flowering head is a loose **panicle** which bears many **spikelets**
- Each spikelet is held on a **pedicel** (stalk) and consists of:
 - Lower (outer) and Upper (inner) **glumes** – protect developing spikelet
 - One or many **florets** = Flower + 2 bracts
 - 2 bracts
 - **Lemma** (larger, outer: curved or keeled)
 - **Palea** (smaller, inner, 2 margins reflexed inwards, flattened on the back)
 - Flower
 - Stamens (anther + filament)
 - Pistil (Stigma + style + ovary)
 - 2 lodicules (remnants of sepals/petals)

Structure of the panicle (e.g. *Holcus lanatus*)



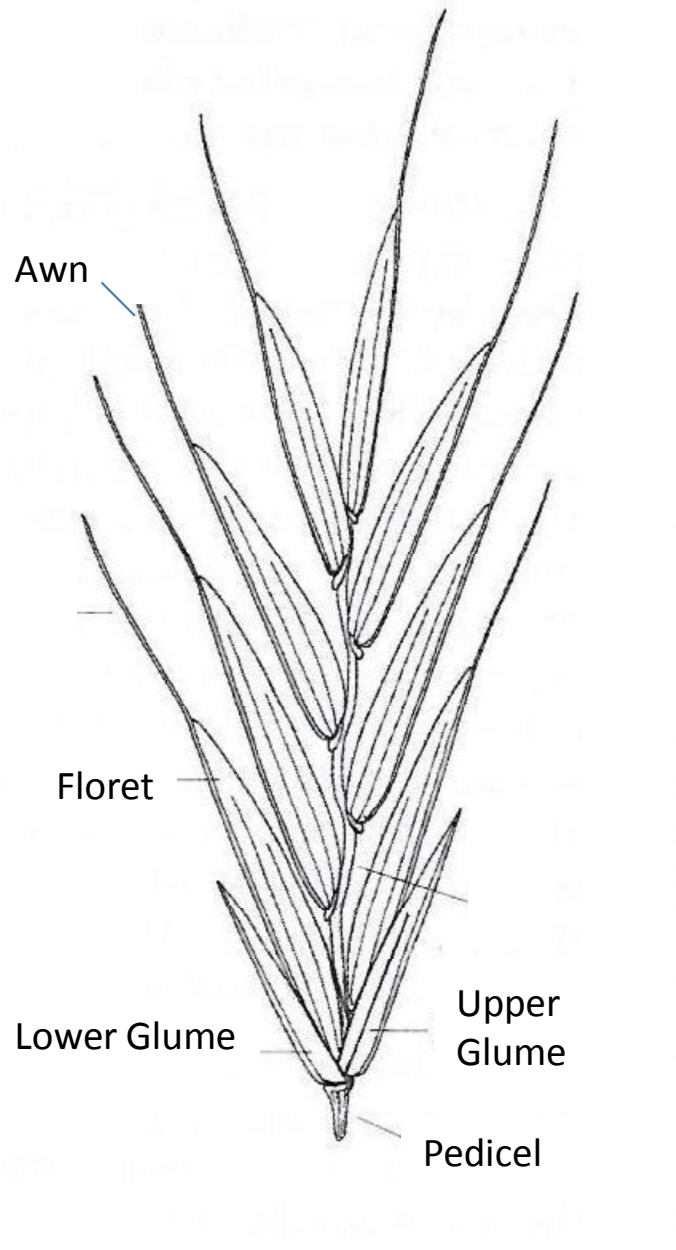
Spikelet

Rachis of inflorescence

Spikelet of *Poa* and
Agrostis spp. is attached
to rachis via tiny stalk
(pedicel)



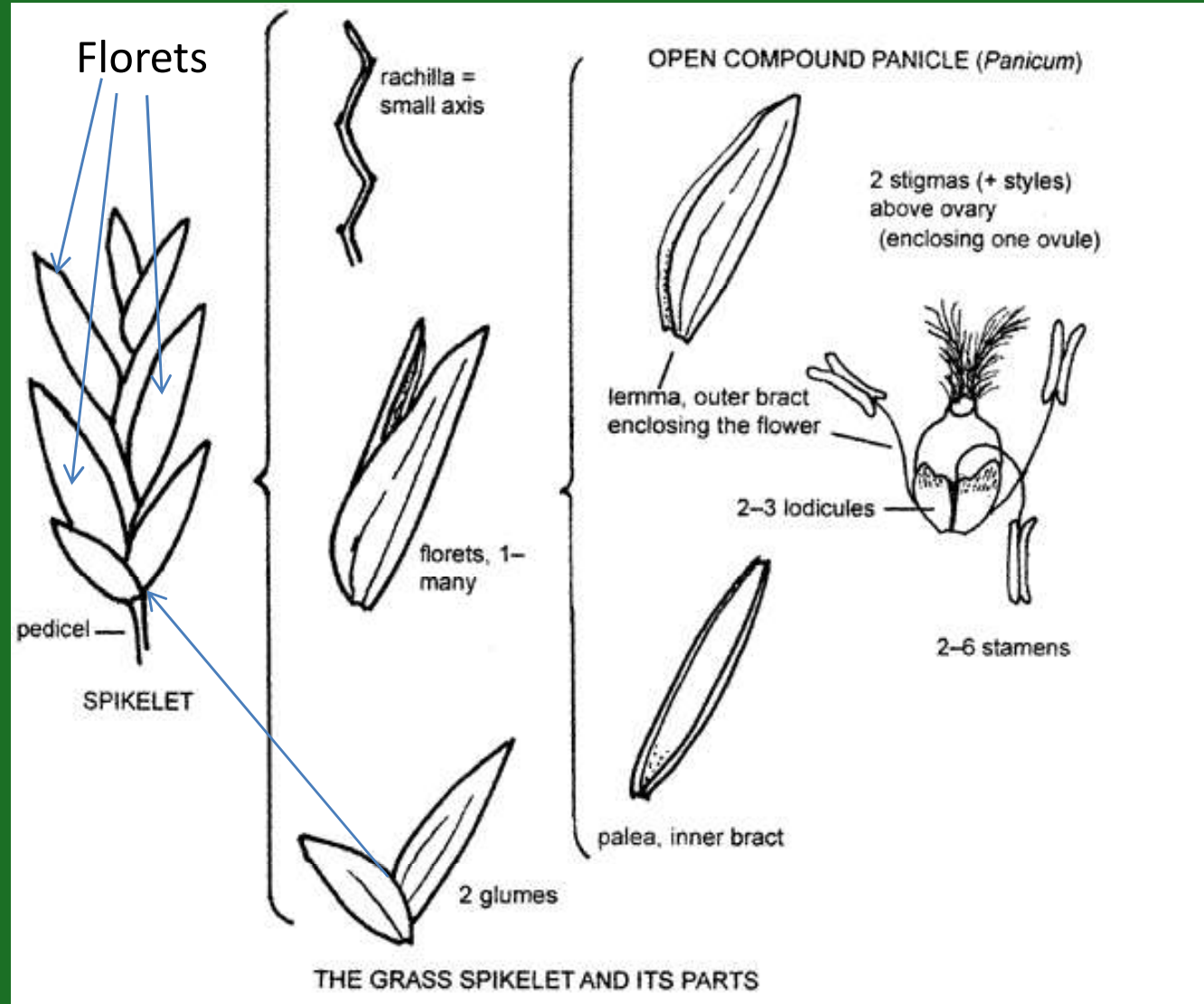
The Spikelet



The Spikelet

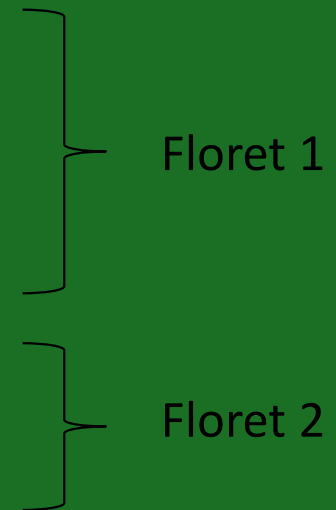
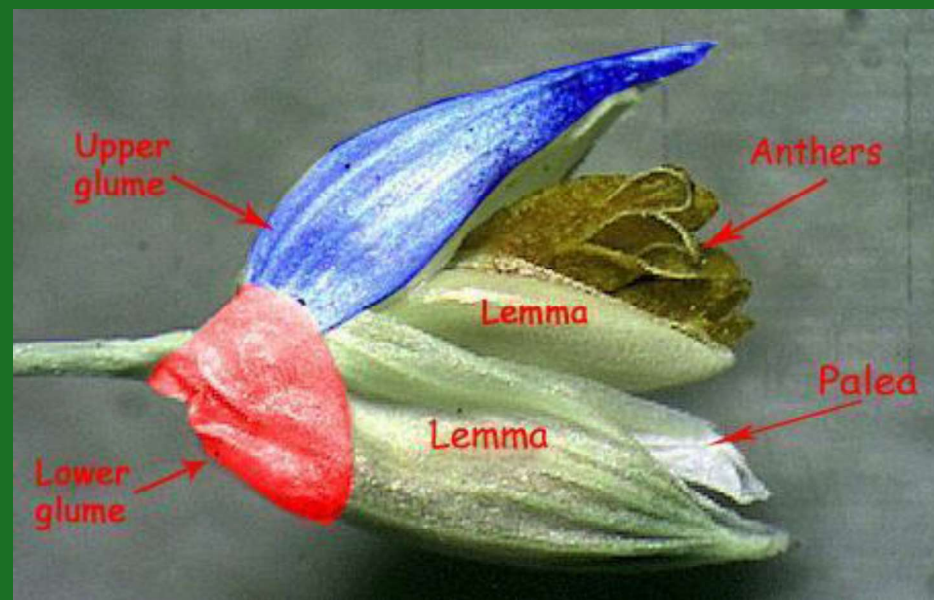


Walter Obermayer



Spikelet structure

- One or more florets in a spikelet
- Spikelet is surrounded by two leaf-like glumes



Things to check in the spikelet

- How many florets are there?
 - e.g. *Agrostis* = 1 floret per spikelet, *Poa* = 2 or more
- Glumes (base of spikelet): are they the same size, sub-equal or different sizes?
- How many veins on each of the glumes? How many veins on the lemma?
- Is there an awn? If so, where?
 - Glume or lemma?
 - Arising from the tip or from down the back?
 - Is it straight or bent?

Image acknowledgements

Line drawings from BSBI Handbook no. 13 “Grasses of the British Isles” by T. Cope & A. Gray (2009)

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Go raibh míle maith agaibh!
Thank you!



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