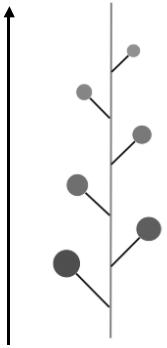
Inflorescences - Floral Displays

The vast majority of flowering plants possess flowers in clusters called an inflorescence.

These clusters facilitate pollination via a prominent visual display and more efficient pollen uptake and deposition.



Raceme

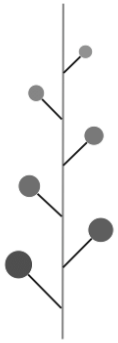
(*Prunus* or cherry)

A shift from widely spaced single flowers to an inflorescence required condensation of shoots and the loss of the intervening leaves.

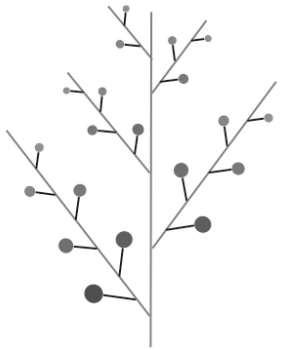
The simplest inflorescence type would thus be indeterminate with the oldest flowers at the base and the younger flowers progressively closer to the apical meristem of the shoot.

= a raceme

One modification of the basic raceme is to make it compound

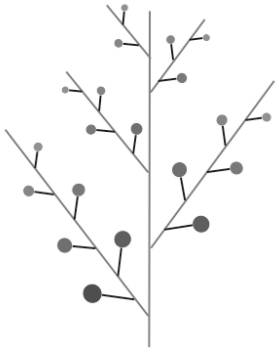


compound



Raceme

Panicle

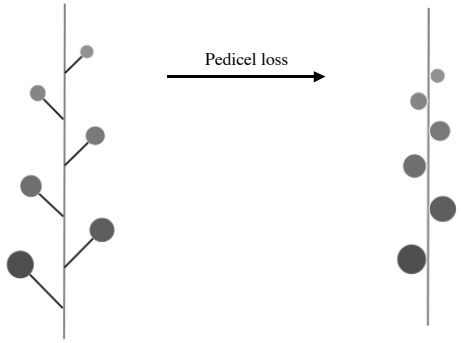


Panicle

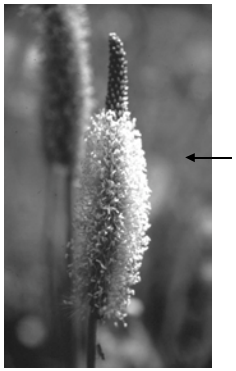
(*Zigadenus* or white camass)

The panicle is essentially a series of attached racemes with the oldest racemes at the base and the youngest at the apex of the inflorescence.

A second modification of the basic raceme is to lose its pedicels



Raceme Spike



The spike is usually associated with congested reduced flowers and often, but not always, with wind pollination.

wind pollinated

Spike (*Plantago* or plantain)

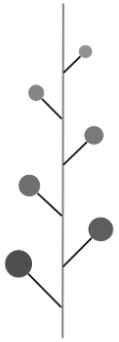
Spike

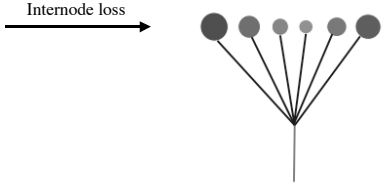
The spike is usually associated with congested reduced flowers and often, but not always, with wind pollination.

animal pollinated

(*Combretum* - Brent's plants)

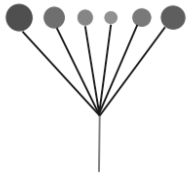
A third modification of the basic raceme is to lose its internodes





Raceme

Umbel



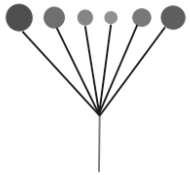
Umbel

The umbel characterizes specific families (carrot and ginseng families for example).

These families typically show a compound umbel - smaller umbellets on a larger umbel.

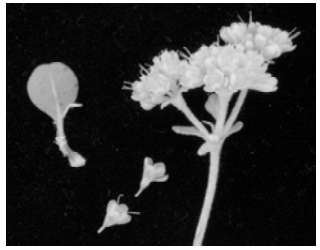
(*Cicuta* or water hemlock)

(*Zizia* or golden alexander)



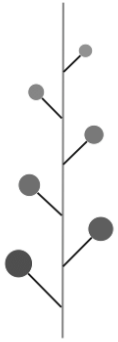
Umbel

The umbel is found scattered in many other families as well.



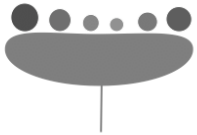
(*Eriogonum* or false buckwheat - family Polygonaceae) - Ben's plants

A fourth modification of the basic raceme is for the stem axis to form a head

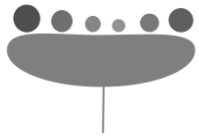


Raceme

Stem head



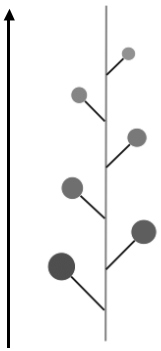
Head or capitulum



Head or capitulum

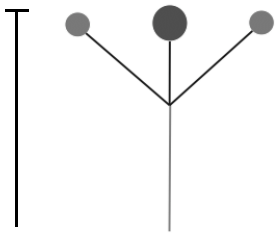
The head or capitulum characterizes specific families - most notably the Compositae or Asteraceae. Not surprisingly, this family is closely related to families possessing umbels.

(*Helianthus* or sunflower)

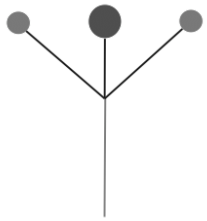


Raceme

Besides these indeterminate inflorescences based on the raceme, there is a series of inflorescence types based on determinate shoots (shoot can not grow up indefinitely). The simplest is the dichasium.

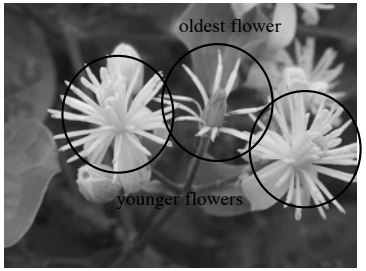


Dichasium



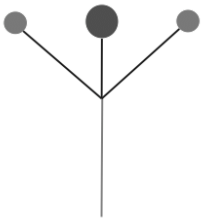
Dichasium

The dichasium inflorescence is terminated (i.e., determinate) by the oldest flower and flanked by two lateral younger flowers.



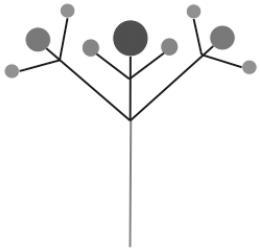
(*Clematis* or virgin's-bower)

One modification of the basic dichasium is to make it compound

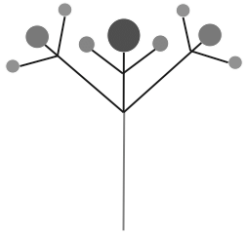


Dichasium

compound



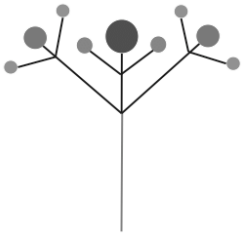
Cyme



Cyme

The cyme characterizes specific families - most notably the Caryophyllaceae - the pink or carnation family . . .

(*Silene* or campion)

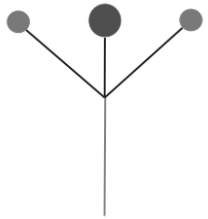


Cyme

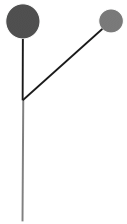
or the Gentianaceae - the gentian family.

(*Lisianthius*)

A second modification of the basic dichasium is to reduce it

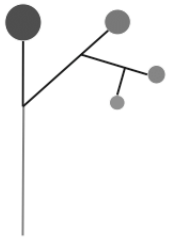


reduction



Dichasium

Monochasium



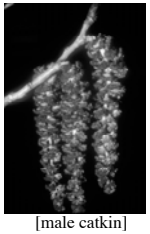
Scirpoid

The monochasium is most often seen in compound form as a scirpoid inflorescence. The Boraginaceae (Virginia bluebell family) is characterized by this distinctive inflorescence.

(*Mertensia* or bluebell)

Another specialized inflorescence is the catkin or ament

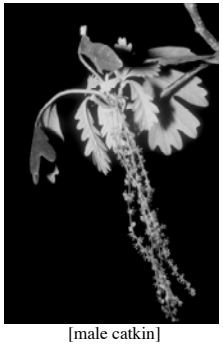
- unisexual cluster of small flowers
- apetalous (without petals)
- hard bracts around the flowers
- wind pollinated
- falls as a unit



[male catkin]

[female catkin]

(*Populus* or cottonwood)



[male catkin]

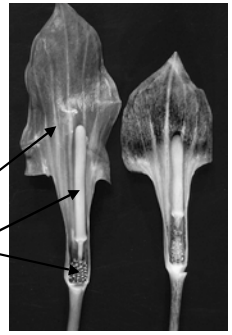
(*Quercus* or white oak)

A final specialized inflorescence is the spadix

- thickened, fleshy spike
- associated with spathe bract
- frequently flowers unisexual
- best developed in the aroid family (Araceae)

spathe

spadix



(*Symplocarpus* or skunk cabbage)

(*Arisaema* or Jack-in-the-pulpit)