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. 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.

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One modification of the basic raceme is to make it compound. 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.

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

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

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

(Combretum - Brent’s plants)
The **umbel** characterizes specific families (carrot and ginseng families for example). These families typically show a compound umbel - smaller **umbellets** on a larger umbel. 

![Umbel](image)

(Cicuta or water hemlock)  (Zizia or golden alexander)

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

![Umbel](image)

(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](image)

Stem head

![Head or capitulum](image)

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. 

![Head or capitulum](image)

(Helianthus or sunflower)
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**.

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

One modification of the basic dichasium is to make it compound.

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

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

A second modification of the basic dichasium is to reduce it

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
A final specialized inflorescence is the **spadix**.

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

(Symplocarpus or skunk cabbage) (Arisaema or Jack in the pulpit)