


Asteraceae - aster family




One of the most successful of all flowering plant families with over 1500 genera and 23,000 species.

Family has 3 specialized features important in this radiation:

1. Special inflorescence "head"
2. Pollen presentation
3. Diverse secondary chemistry


Asteraceae - aster family



The **head** or **capitulum** is a cluster of 1 or 2 distinct flower types. The family is also called "Compositae" referring to this clustering.


The head is surrounded by special bracts called the **involucre** or **phyllaries**.

The involucre is important in the classification and identification within the family.

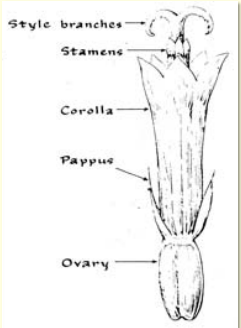


Helianthus

Asteraceae - aster family



CAX CO (5) A (5) \bar{G} (2)



Calyx is reduced to a **pappus** of scales, awns, bristles, or absent

Corolla has 5 petals but variously fused or zygomorphic

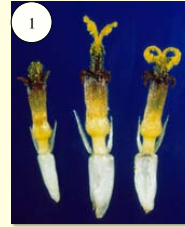
Asteraceae - aster family



Main floret types:

1. **Disk** or **tubular** florets are actinomorphic

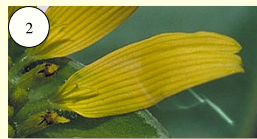
Asteraceae - aster family



Main floret types:

1. **Disk** or **tubular** florets are actinomorphic
2. **Ray** florets are usually 3 long fused petals + 2 short petals

Asteraceae - aster family

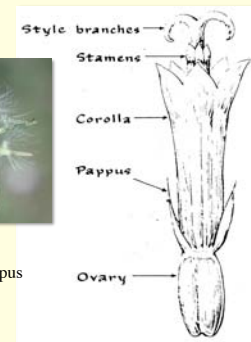


Main floret types:

1. **Disk** or **tubular** florets are actinomorphic
2. **Ray** florets are usually 3 long fused petals + 2 short petals
3. **Ligulate** florets are 5 fused petals but split open

Asteraceae - aster family

CAX CO (5) A (5) \bar{G} (2)



The fruit is a one-seeded **achene** with the pappus serving as the fruit disperser (e.g., barbs for animal dispersal, hairs for wind dispersal)

Asteraceae - aster family

These various types of florets come together to form a number of different looking heads. The 3 most important ones are:

Radiate head: disk or tubular florets in the center, ray florets along the edge (these usually pistillate only)

Discoid head: only disk or tubular florets comprise the entire head

Ligulate head: only ligulate florets comprise the entire head (note 5 lobed florets)



Aster - aster

Asteraceae - aster family

These various types of florets come together to form a number of different looking heads. The 3 most important ones are:

Radiate head: disk or tubular florets in the center, ray florets along the edge (these usually pistillate only)

Discoid head: only disk or tubular florets comprise the entire head

Ligulate head: only ligulate florets comprise the entire head (note 5 lobed florets)



Liatris - blazing star

Asteraceae - aster family

These various types of florets come together to form a number of different looking heads. The 3 most important ones are:

Radiate head: disk or tubular florets in the center, ray florets along the edge (these usually pistillate only)

Discoid head: only disk or tubular florets comprise the entire head

Ligulate head: only ligulate florets comprise the entire head (note 5 lobed florets)



Taraxacum - dandelion

Asteraceae - aster family

Tribe Lactuceae (Cichorieae)

Only have ligulate heads, milky latex in vegetative parts

Dandelion, goat's-beard, chickory, hawkweed



Taraxacum - dandelion

Asteraceae - aster family



Cichorium intybus - chickory
Eurasian weed - totally naturalized



Asteraceae - aster family



Krigia biflora - false dandelion



Hieracium caespitosum - yellow hawkweed

Asteraceae - aster family



Prenanthes alba - lion's foot
Leaves come up early in spring; note the various spring ephemerals below (common names?)



Asteraceae - aster family

Tribe Cardueae (Cynareae)



Cirsium vulgare
Bull thistle

Plants with spiny phyllaries and often leaves and stems

Flowers never radiate

Petals white or cyanic colors (blues, purples)

Thistle, knapweed, burdock



Cirsium pitcheri
Dune thistle

Asteraceae - aster family



Centaurea maculosa - Spotted knapweed



Arctium - burdock

Asteraceae - aster family

Tribe Vernoniae



Vernonia fasciculata
ironweed

Alternate leaves
Purple flowers

Resembles joe-pye weeds



Asteraceae - aster family

Tribe Heliantheae



Ratibida pinnata - coneflower

Large tribe with radiate (sometimes discoid heads), multi-layered phyllaries, rays mostly yellow, tendency for opposite leaves

Coneflower, sunflower, rosinweed, ox-eye, black-eyed Susan, prairie dock, coreopsis, Peruvian daisy



Helianthus annuus - sunflower

Asteraceae - aster family




Biden cernuus - bur marigold




Echinacea pallida - purple coneflower

Asteraceae - aster family

Ambrosia artemisiifolia
ragweed





Male florets


Female florets

Tribe Heliantheae
Subtribe Ambrosiinae


Unisexual and wind pollinated, rays absent, stamens not fused

Ragweed, cocklebur

Asteraceae - aster family



Eupatorium maculatum
Joe-pye weed



Eupatorium perfoliatum
Boneset

Tribe Heliantheae
Subtribe Eupatoriinae

Opposite or whorled leaves

Discoid heads

Corolla never yellow

Joe-pye weed, boneset, snakeroot, blazing star

Asteraceae - aster family



Solidago rigida - stiff goldenrod

Tribe Astereae

Conspicuous rays in radiate head, pappus of plumose bristles; asters, goldenrods, fleabanes



Aster novae-angliae - New England aster

Asteraceae - aster family

Tribe Anthemideae

Aromatic plants, with dissected, alternate leaves; pappus of awns or scales or missing

Ox-eye daisy, yarrow, wormwood, tansy, dog fennel



Leucanthemum vulgare
Ox-eye daisy, chrysanthemum



Tanacetum huronense - Lake Huron tansy

Asteraceae - aster family



Achillea millefolium - yarrow



Matricaria discoidea - pineapple weed

Asteraceae - aster family

Tribe Gnaphalieae (Inuleae)

Plants usually covered with white hairs, pappus of bristles or hairs

Pussy toes, cudweed, pearly everlasting



Antennaria plantaginifolia - pussy toes

Asteraceae - aster family



Anaphalis margaritacea - pearly everlasting

Asteraceae - aster family

Tribe Senecioneae

Alternate or basal leaved, phyllaries in 1 row, capillary pappus; ragwort, Indian plantain



Packera aurea - golden ragwort