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

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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.

The calyx is reduced to a pappus of scales, awns, bristles, or absent. Corolla has 5 petals but variously fused or zygomorphic.

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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

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)

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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)

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Tribe Lactuceae (Cichorieae)

Only have ligulate heads, milky latex in vegetative parts

Dandelion, goat’s-beard, chickory, hawkweed

Taraxacum - dandelion
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Cichorium intybus - chicory
Eurasian weed - totally naturalized

Hieracium caespitosum - yellow hawkweed

Krigia biflora - false dandelion

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

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

Tribe Cardueae (Cynareae)
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- *Centaurea maculosa* - Spotted knapweed
- *Arctium* - burdock

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- *Vernonia fasciculata* - ironweed
  - Alternate leaves
  - Purple flowers
  - Resembles joe-pye weeds

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- *Ratibida pinnata* - coneflower
- *Helianthus annuus* - sunflower

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- *Biden cernua* - bur marigold
- *Echinacea pallida* - purple coneflower

Tribe Vernonieae

Tribe Heliantheae
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**Ambrosia artemisiifolia**
ragweed

- Tribe Heliantheae
- Subtribe Ambrosiinae
- Unisexual and wind pollinated, rays absent, stamens not fused
- Ragweed, cocklebur

**Eupatorium maculatum**
Joe-pye weed

- Opposite or whorled leaves
- Discoid heads
- Corolla never yellow
- Joe-pye weed, boneset, snakeroot, blazing star

**Solidago rigida**
- stiff goldenrod

**Aster novae-angliae**
- New England aster

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

**Leucanthemum vulgare**
Ox-eye daisy, chrysanthemum

- Tribe Anthemideae
- Aromatic plants, with dissected, alternate leaves; pappus of awns or scales or missing
- Ox-eye daisy, yarrow, wormwood, tansy, dog fennel

**Tanacetum huronense**
- Lake Huron tansy
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Achillea millefolium - yarrow

Matricaria discoidea - pineapple weed

Tribe Gnaphalieae (Inuleae)
Plants usually covered with white hairs, pappus of bristles or hairs
Passy toes, cudweed, pearly everlasting

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

Anaphalis margaritacea - pearly everlasting

Packera aurea - golden ragwort