Ranunculaceae - buttercup family

- Herbs, sometimes woody or herbaceous climbers or low shrubs - often poisonous
- Leaves, alternate, sheathing, usually basal and cauline, often divided or compound, or palmately lobed.
- No stipules.

Ranunculaceae - buttercup family

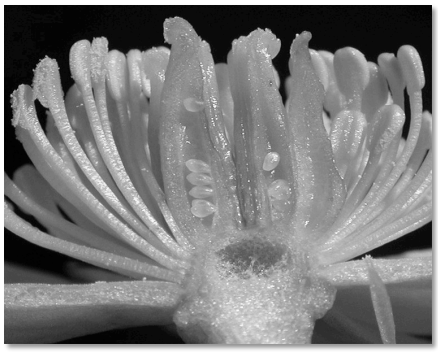
- Flowers very variable: except many stamens and many free carpels (apocarpic)
- Floral shape varies: some actinomorphic/zygomorphic and some have spurs. Mostly insect and animal pollinated group.
- Mostly bisexual flowers, but some species dioecious

CA 3+ CO (0)5+ A ∞ G 3+

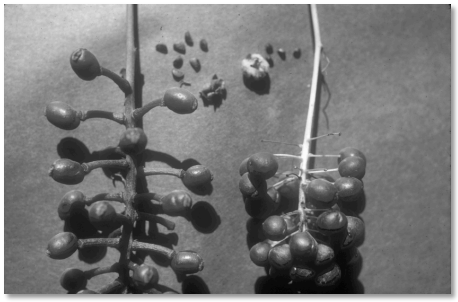
Ranunculaceae - buttercup family

Fruits:

Follicles = ∞ seeded dehiscent fruit



Caltha - marsh marigold

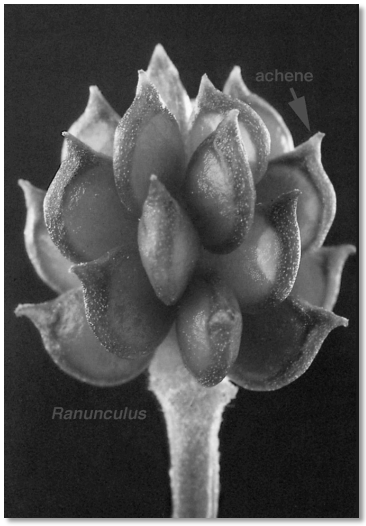


Berries = ∞ seeded fleshy fruit

Actaea - baneberry

Ranunculaceae - buttercup family

Fruits:



Achenes = 1 seeded indehiscent, dry fruit

Ranunculus - buttercup

Anemone - thimbleweed with wind dispersed achenes

Rosaceae

100 genera and almost 3000 species distributed worldwide but most common in the north temperate regions - commercial fruits

- Comprise herbs, shrubs, or trees and with alternate simple or pinnately or palmately compound leaves

Stipules well developed in compound leaves

Rosaceae

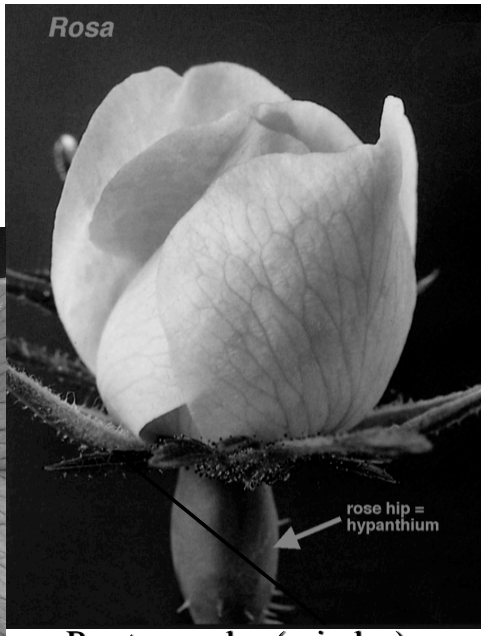
CA 5 CO 5 A ∞ G [variable!]

- 5 merous, with numerous stamens
- gynoecium is variable and used to define subfamilies

Rosaceae

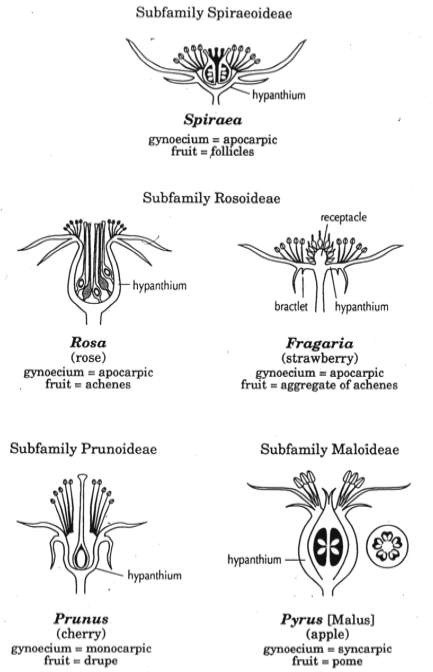
CA 5 CO 5 A ∞ G [variable!]

- hypanthium present in all species



Bracts on calyx (epicalyx) often present

Rosaceae

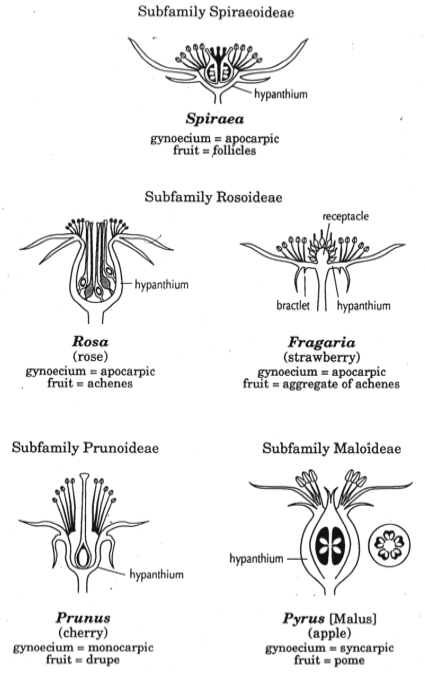


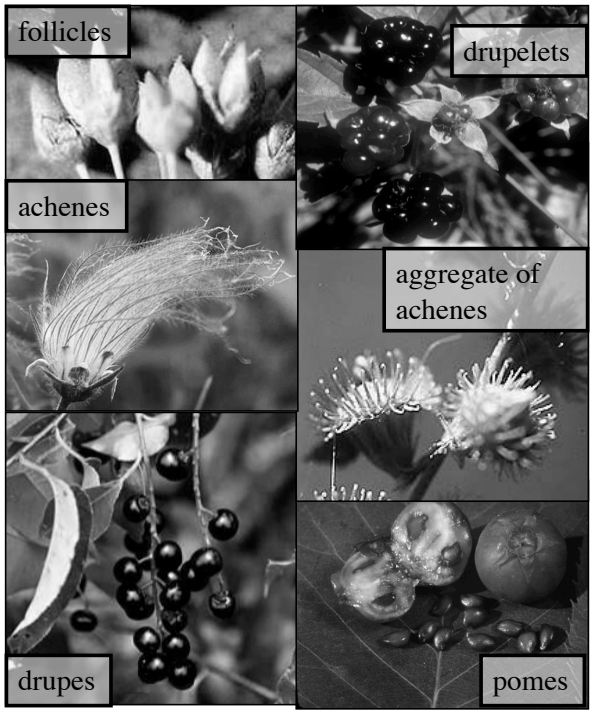
The gynoecium is variable - used to define 4 subfamilies

1. Spiraeoideae
2. Rosoideae
3. Prunoideae (or Amygladoideae)
4. Pomoideae (or Maloideae)

Gynoecium variability encompasses size of receptacle, position of ovary, size of hypanthium, and the resulting fruit types:

Rosaceae



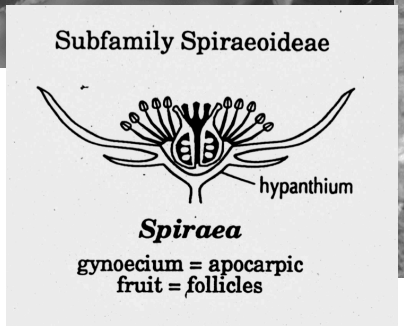


Rosaceae-Spiraeoideae

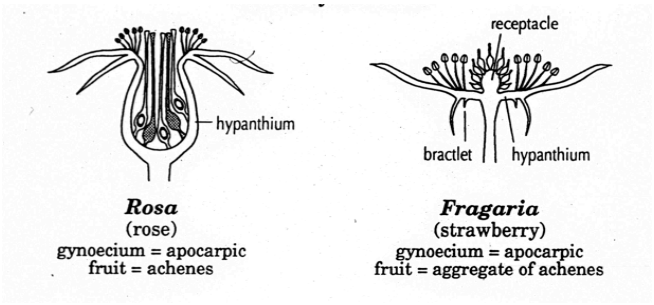
Physocarpus opulifolius - ninebark

CA 5 CO 5 A ∞ G 2-8

apocarpic, superior pistils
short hypanthium - perigynous
follicle fruits



Rosaceae-Rosoideae



Rosa
(rose)
gynoecium = apocarpic
fruit = achenes

Fragaria
(strawberry)
gynoecium = apocarpic
fruit = aggregate of achenes

CA 5 CO 5 A ∞ G ∞

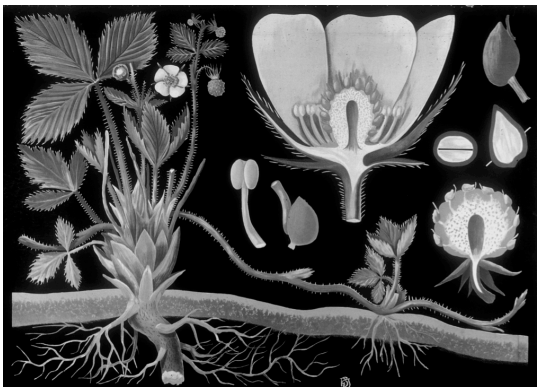
Herbs with compound leaves

Plants with stolons (running stems above ground) or running rhizomes

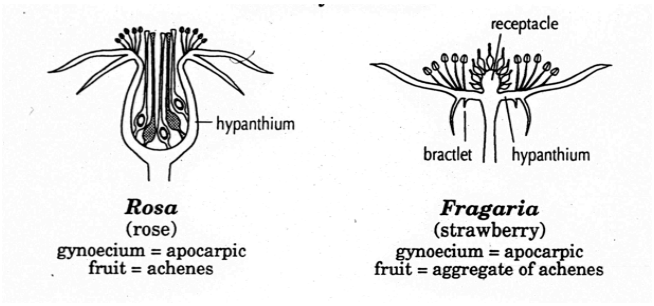
Flowers apocarpic with many carpels

Hypanthium well-developed or receptacle elongated - perigynous

One-seeded achenes



Rosaceae-Rosoideae



Rosa
(rose)
gynoecium = apocarpic
fruit = achenes

Fragaria
(strawberry)
gynoecium = apocarpic
fruit = aggregate of achenes

CA 5 CO 5 A ∞ G ∞

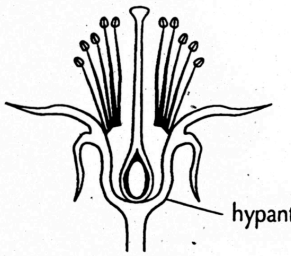
Achenes often modified into aggregate of achenes (from one flower) as in the strawberry or fleshy drupelets as in raspberry, dewberry

Rubus sp. - American raspb

Fragaria sp. - strawb

Rosaceae-Prunoideae

Subfamily Prunoideae



Prunus
(cherry)
gynoecium = monocarpic
fruit = drupe

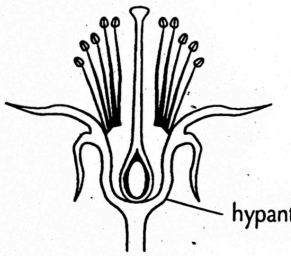
CA 5 CO 5 A ∞ G 1

Shrubs and trees with simple leaves, often with glands along petiole (cherries, plums, peaches, almonds)

Prunus serotina - black cherry

Rosaceae-Prunoideae

Subfamily Prunoideae

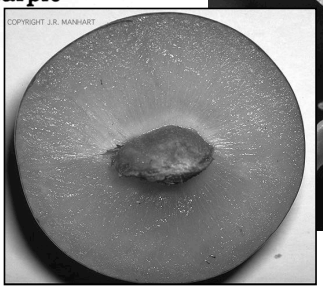


Prunus
(cherry)
gynoecium = monocarpic
fruit = drupe

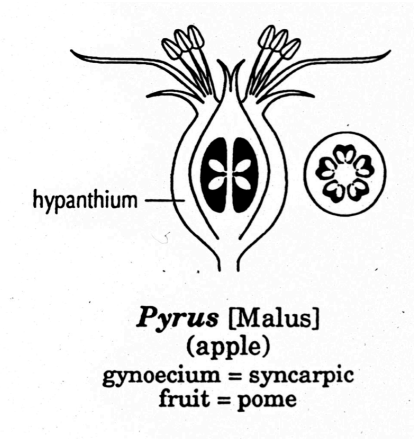
CA 5 CO 5 A ∞ G 1

Gynoecium superior with one carpel = monocarpic - perigynous

Fruit a drupe = fleshy, with one bony seed



Rosaceae-Pomoideae



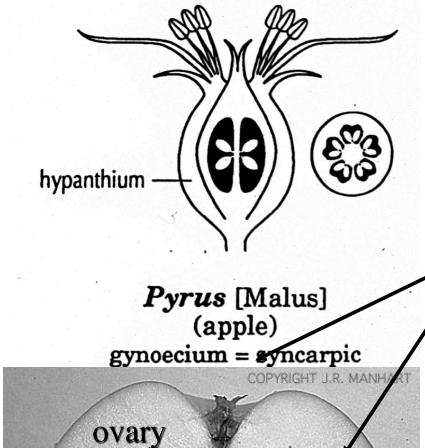
Pyrus [Malus]
(apple)
gynoecium = syncarpic
fruit = pome

CA 5 CO 5 A ∞ $\underline{\bar{G}}$ (3-5)

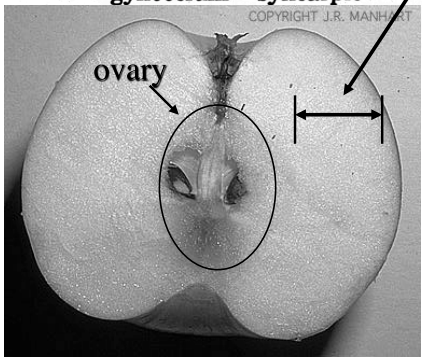
Shrubs or trees with showy 5 merous flowers

Gynoecium inferior of 3 to 5 fused carpels

Rosaceae-Pomoideae



Pyrus [Malus]
(apple)
gynoecium = syncarpic



CA 5 CO 5 A ∞ $\underline{\bar{G}}$ (3-5)

Hypanthium thickens in fruit to form pome fruit

Calyx (& CO + A) inserted at top of ovary = epigynous flower

Brassicaceae - mustard family

Cardamine concatenata - cut leaf toothwort

Wisconsin has 28 native or introduced genera - many are spring flowering

Herbs with alternate, often dissected leaves.

Cardamine pratensis - cuckoo flower

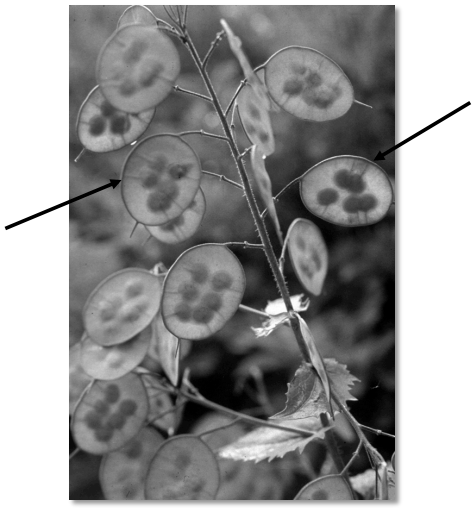
CA 4 CO 4 A 4+2 G (2)

• Flowers "cross-like" with 4 petals

"Cruciferae" or "cross-bearing"
Common name is "cress"

• 6 stamens with 2 outer ones shorter

Brassicaceae - mustard family



CA 4 CO 4 A 4+2 G (2)

• 2 fused carpels separated by thin membrane – **septum**

• Capsule that peels off the two outer carpel walls exposing the septum attached to the persistent **replum**.