

Systematic Botany. Lecture 5

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Outline

Questions and answers

Plant names

Boraginaceae—borage family

Oleaceae, olive family

Apocynaceae, dogbane family

Rubiaceae, madder family

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Previous final question: the answer

What are “s.l.” and “s.str.”?

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What are “s.l.” and “s.str.”?

- ▶ “S.l.” = “sensu lato”, in wide sense
- ▶ “S.str.” = “sensu stricto”, in strict sense

Agalinis, Gerardia, or Stenandrium?



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You searched on: Genus = Gerardia and Ranks = gen and Hybrids only = false, searching all records

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- Scrophulariaceae [Gerardia Benth.](#) -- Prodr. (DC.) 10: 514. 1846 [8 Apr 1846] ; nom. illeg.

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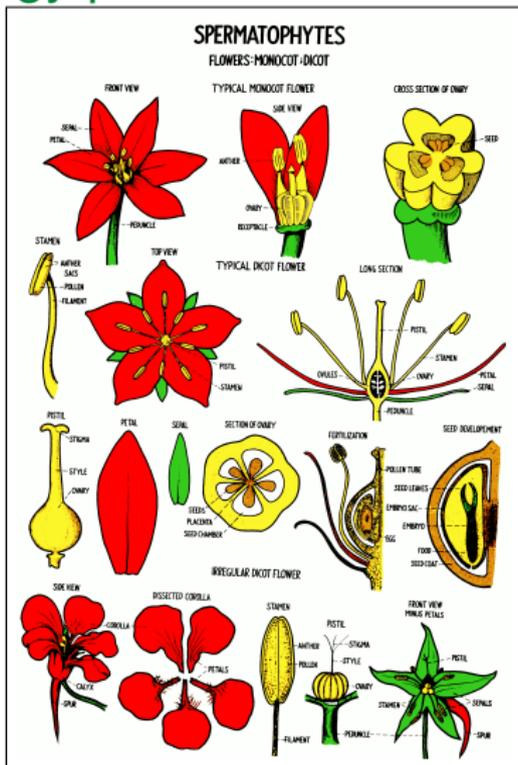
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(1) typification; (2) priority with the exception of conservation

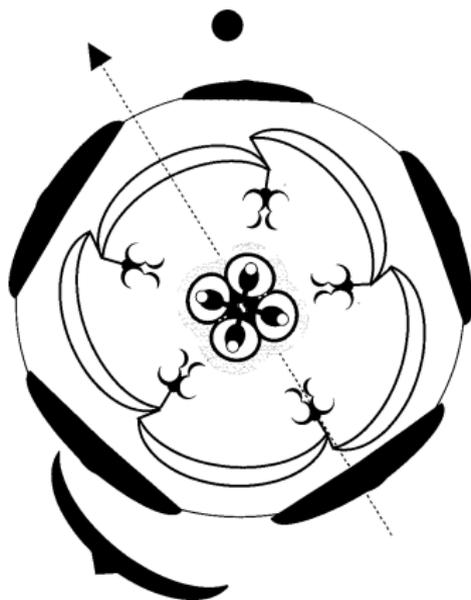
Flower morphology poster



Description of Boraginaceae

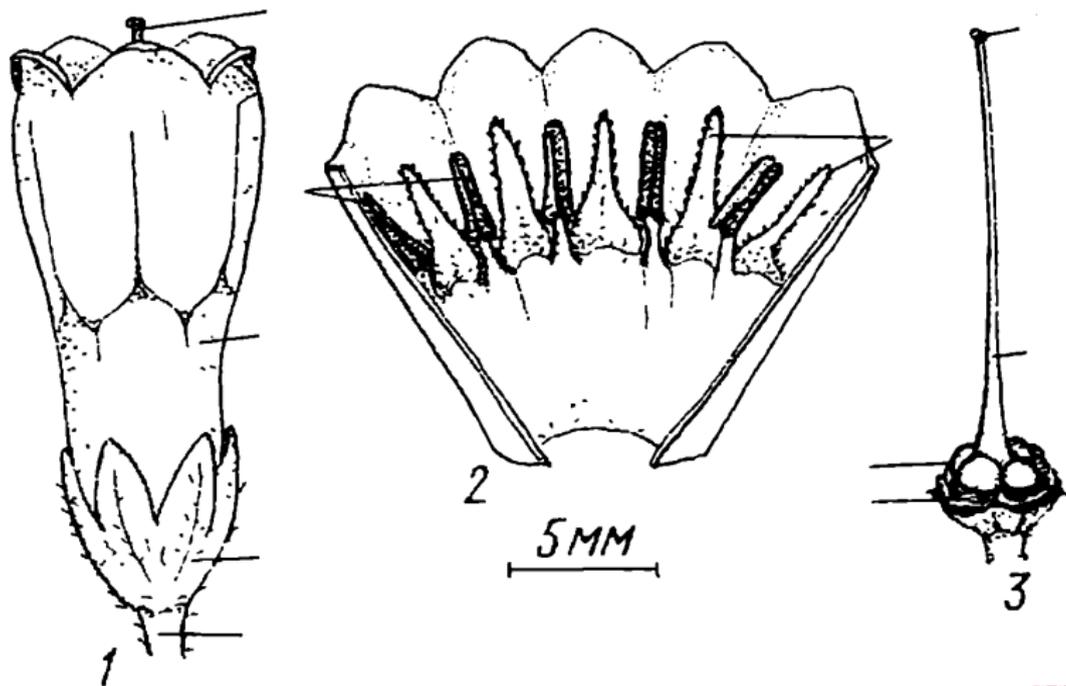
- ▶ \approx 2,000 species, cosmopolitan
- ▶ Smell and large herbs, with rough hairy alternate leaves
- ▶ Flowers in cymes; bell or funnel-shaped, symmetric, 5-merous
- ▶ Pistil with two carpels which are secondary divided (similarity to Labiatae)
- ▶ Fruit schizocarp with 4 nutlets

Boraginaceae flower



$$*K_{(5)}[C_{(5)}A_5]G_{(2 \times 2)}$$

Flower of *Symphytum* (Boraginaceae)



Representatives of Boraginaceae

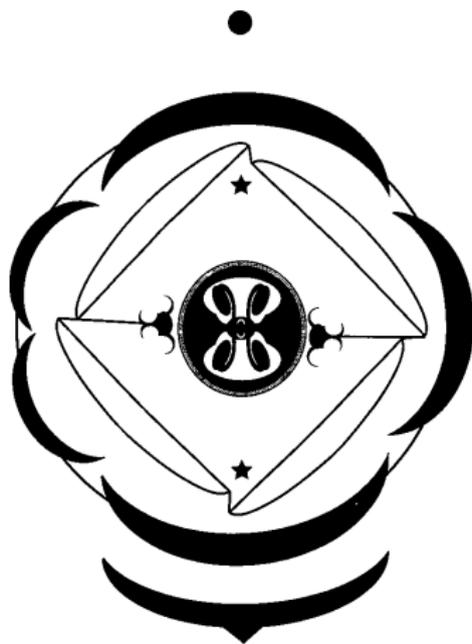
Often includes some close groups like “Hydrophyllaceae”,
waterleaf family

- ▶ *Lithospermum*—puccoon
- ▶ *Cynoglossum*—hound’s tongue
- ▶ *Cryptantha*—cryptantha
- ▶ *Hydrophyllum*—waterleaf

Description of Oleaceae

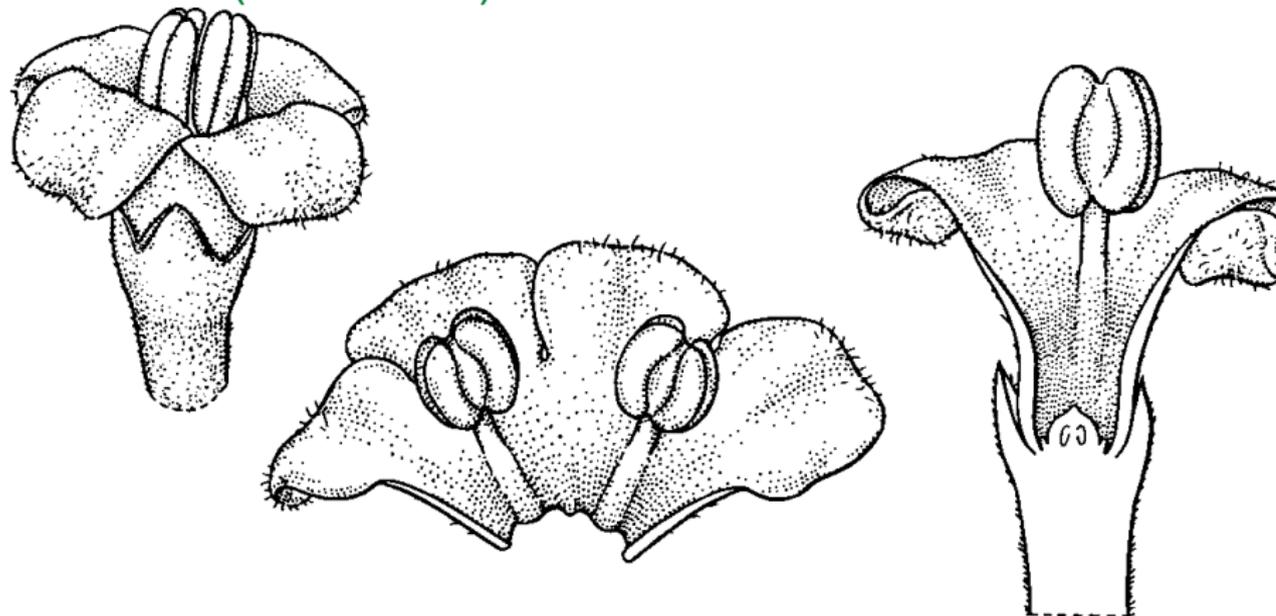
- ▶ \approx 600 species, mostly Eurasian
- ▶ Trees or shrubs, with opposite leaves without stipules
- ▶ Flowers in raceme-like inflorescences; 2-merous, symmetric; with two stamens; sometimes reduced (ashes)
- ▶ Pistil with two carpels
- ▶ Fruit capsule

Oleaceae flower



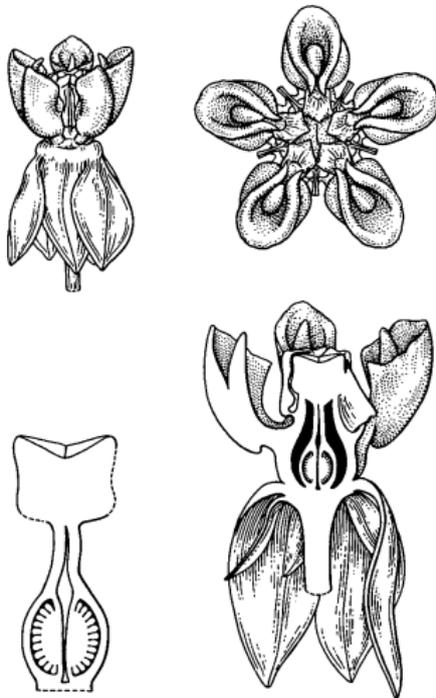
$$*K_{(4\vee 5)}[C_{(4)}A_2]\underline{G}_{(2)}$$

Osmanthus (Oleaceae) flower



Ash (*Fraxinus*) flowers develop anthers with lots of pollen, and prominent stigmas to receive pollen from a wind. All other parts of ash flowers are reduced.

Asclepias (Apocynaceae) flower



Representatives of Apocynaceae

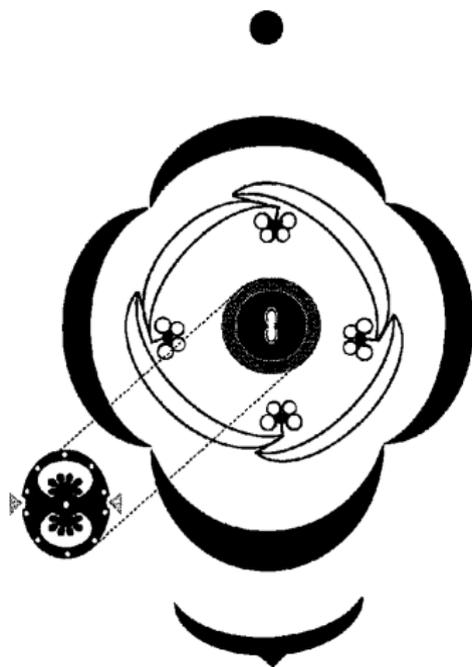
This family is now united with Asclepiadaceae (milkweed family)

- ▶ *Apocynum*—dogbane
- ▶ *Asclepias*—milkweed

Description of Rubiaceae

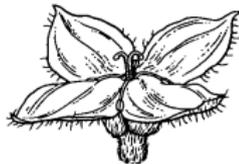
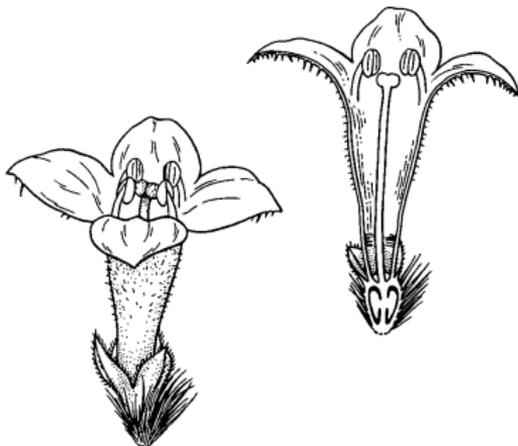
- ▶ \approx 6,500 species—one of the largest angiosperm families
- ▶ Mostly tropical
- ▶ Trees, shrubs and sometimes (in North Dakota)—herbs
- ▶ Leaves opposite (sometimes whorled), almost linear, with stipules; stems slender
- ▶ Flowers in dense inflorescences; 4-merous (our genera), with short petal tube
- ▶ Pistil with two carpels, ovary inferior
- ▶ Fruit is often a schizocarp with two nutlets

Rubiaceae flower



$$*K_4[C_4A_4]G_{(2)}$$

Diodia and *Galium* (Rubiaceae) flowers



Final question (2 points)

Write a flower formula for any family from today's lecture

For Further Reading



O. A. Stevens.

Handbook of North Dakota plants. 3rd edition.

NDSU, 1963.

Oleaceae—Rubiaceae. P. 224–261.