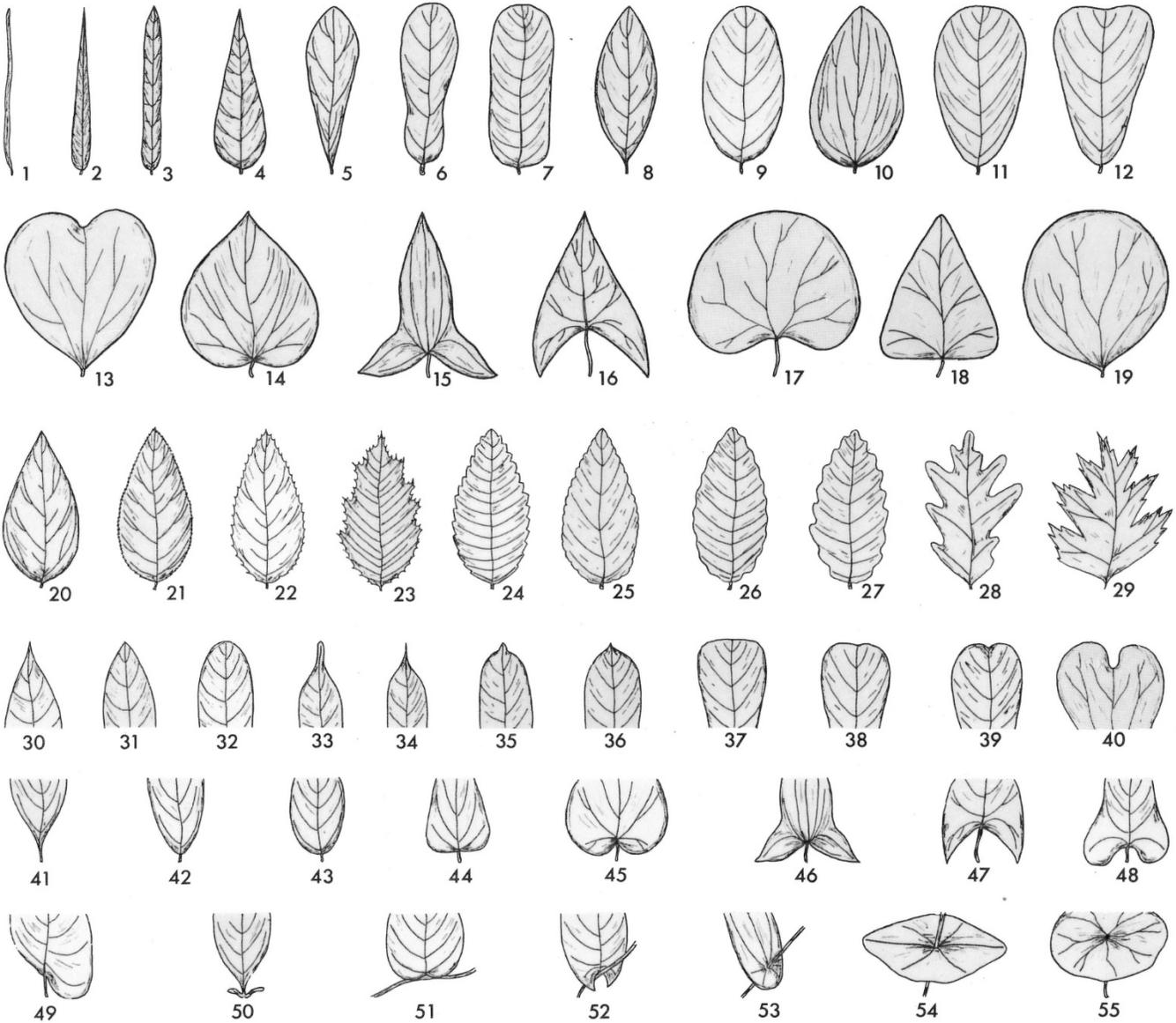


BPSC 031 “Spring Wildflowers”
Lab 2. Vegetative morphology

1. Vegetative morphology (continued from Lab 1)

- a. In the lab, observe the basic parts of the plant leaf: petiole, lamina, stipules (if present).
- b. Look at the leaf venation: Is it parallel or branching? If branching, is the network of veins reticular, palmate, or pinnate?
- c. Draw a leaf from the lab vases and interpret the form, using the attached guides, describe the leaf arrangement, the shape, and any other characteristic of interest that may identify this plant.
- d. Observe the leaves of plants with compound leaves compared to those of a plant with simple leaves: How can you tell apart the leaf from the leaflets in plants with compound leaves?
- e. Take a leaf of a monocotyledon plant and compare it with that of a dicotyledon species.

LEAF TYPES



SHAPES

1. Acicular
2. Subulate
3. Linear
4. Lanceolate
5. Oblanceolate
6. Spatulate
7. Oblong
8. Elliptical
9. Oval
10. Ovate
11. Obovate
12. Cuneate
13. Obcordate
14. Cordate
15. Hastate

16. Sagittate
17. Reniform
18. Deltoid
19. Orbiculate

MARGINS

20. Entire
21. Serrulate
22. Serrate
23. Doubly serrate
24. Dentate
25. Crenate
26. Undulate
27. Sinuate
28. Lobed
29. Incised

TIPS

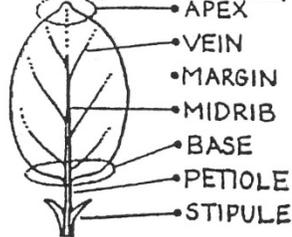
30. Acuminate
31. Acute
32. Obtuse
33. Caudate
34. Aristate
35. Cuspidate
36. Mucronate
37. Truncate
38. Retuse
39. Emarginate
40. Obcordate

BASES

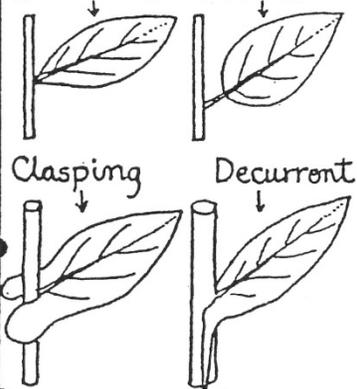
41. Acuminate
42. Acute
43. Rounded
44. Truncate
45. Cordate
46. Hastate
47. Sagittate
48. Auriculate
49. Oblique
50. Stipulate
51. Sessile
52. Clasping
53. Perfoliate
54. Connate
55. Peltate

Illustration of Terms Used to Describe Leaves

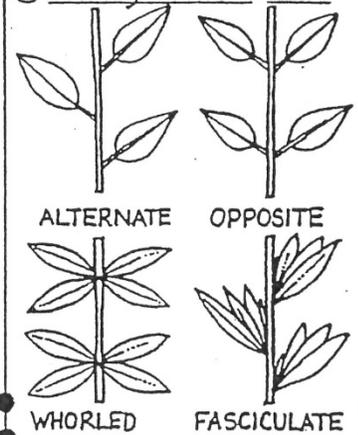
① Parts of a Simple Leaf



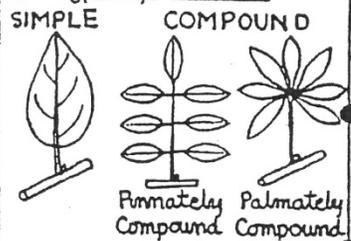
② Sessile Petioled



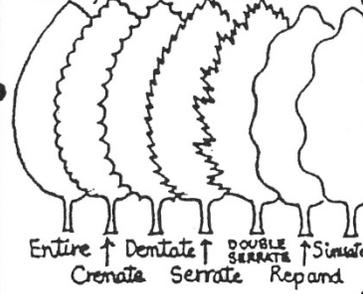
③ Arrangement on Stem



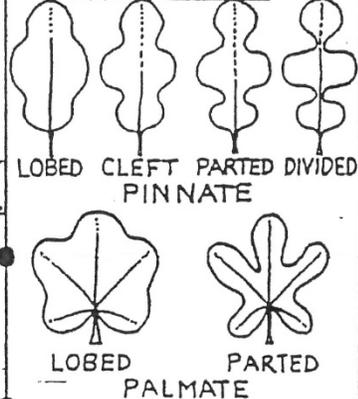
④ Type of Leaves



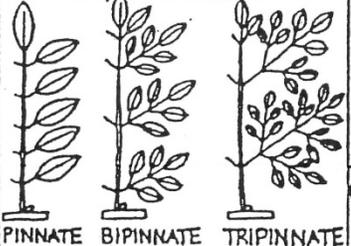
⑥ Leaf Margins



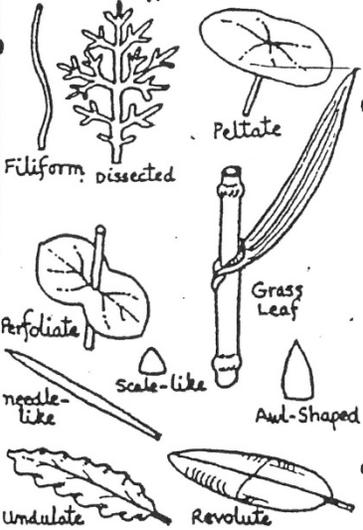
⑦ Leaf Lobation



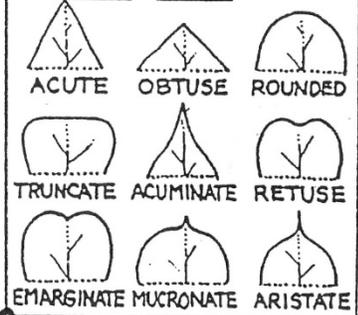
⑤ Compound Leaves



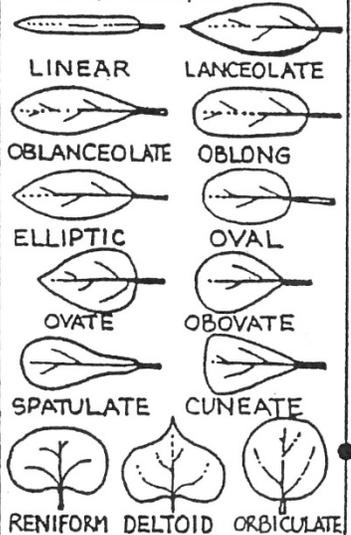
⑨ More Types of Leaves



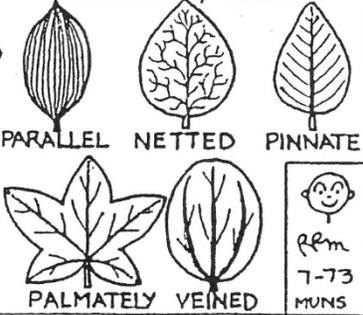
⑩ Leaf Apex



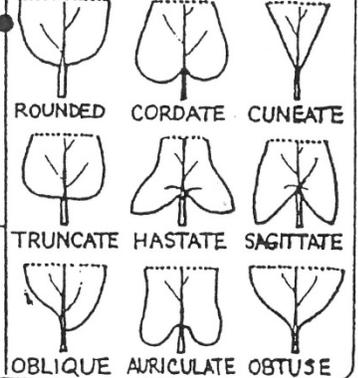
⑧ Leaf Shape



⑫ Venation of Leaves



⑪ Leaf Base



⑬ Leaf Surfaces

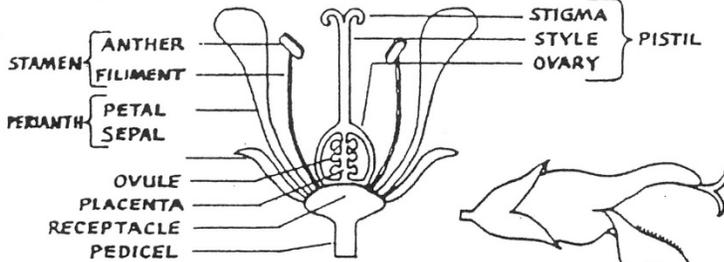
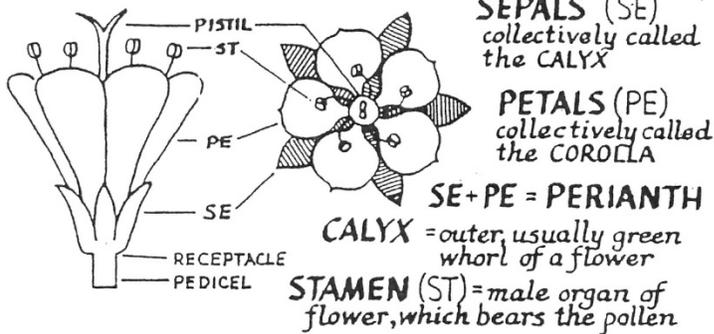
- | | |
|-----------|------------|
| Viscid | Lamate |
| Glaucous | Glandular |
| Glabrous | Strigose |
| Scabrous | Sericeous |
| Scurfy | Puberulent |
| Canescent | Pubescent |
| Floccose | Villous |
| Tomentose | Hispid |

RRM
7-73
MUNS

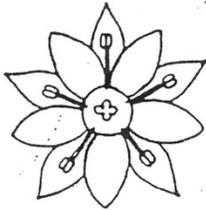
2. Reproductive morphology (flowers)

- a. In the lab, observe the basic parts of the plant flower: sepals, petals, stamens, and pistils. Take your time to identify and dissect the parts.
- b. Look at the flower petals: How many are there? Are they free or fused? Using the attached illustrated guide to floral morphology, describe the external shape of the corolla.
- c. Look in detail at the pistil(s): How many are there in the whole gynoecium? Can you identify the carpels forming each pistil? How many carpels are there?
- d. Using the attached illustrated guide, try to identify the position of the gynoecium: Is it superior or inferior? Make a transversal cut across a pistil, can you see the ovules and the placentation type?
- e. Draw a flower from the lab vases and label its parts. Interpret the form of the corolla, using the attached guides, describe the position of the gynoecium, the placentation type of its ovules, and any other characteristic of interest that may identify this particular flower.

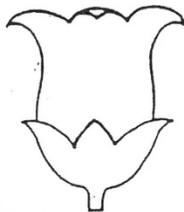
FLOWERS



Flower Symmetry:



Regular
Actinomorphic
Radially Symmetrical



Irregular
Zygomorphic
Bilateral Symmetrical

SEPAL ~ a segment of the calyx.

CALYX ~ the external, usually green, whorl of a flower.

PETAL ~ one of the segments of a corolla, usually colored.

COROLLA ~ the inner perianth of a flower, composed of colored petals which may be almost wholly united.

PERIANTH ~ the floral envelopes collectively; usually used when calyx & corolla are not clearly differentiated.

GYNOECIUM ~ the pistils collectively of a flower.

PISTIL ~ the ovule-bearing organ of a flower.

STIGMA ~ the receptive part of the pistil on which the pollen germinates.

OVULE ~ the body in the ovary which become a seed.

PLACENTA ~ the ovule-bearing surface in the ovary.

PLACENTATION ~ the arrangement or orientation of the placentas

ANDROECIUM ~ the whole set of stamens.

STAMENS ~ the male organ of the flower, which bears the pollen

ANTHER ~ the pollen-bearing part of the stamen.

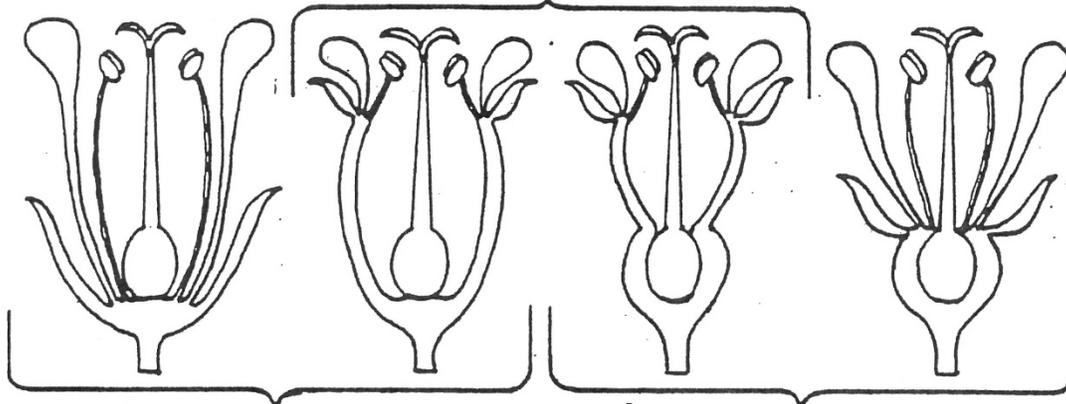
FLOWERS

POSITION of Floral Parts

HYPOGINOUS

PERIGYNOUS

EPIGYNOUS



SUPERIOR OVARY

INFERIOR OVARY

Hypogynous Fls = SE, PE, & ST inserted beneath ovary.

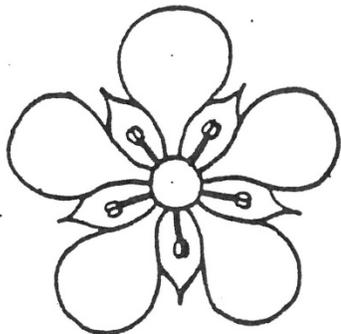
Perigynous Fls = Lower portion of SE, PE, & ST united to form an open floral cup (HYPANTHIUM) around ovary.

Epigynous Fls = SE, PE, & ST arise from top of ovary.

Superior ovary = ovary inserted above points of insertion of SE, PE, & ST.

Inferior ovary = SE, PE, & ST inserted above ovary.

COROLLA:



PETALS FREE

Choripetalous

PE Separate from others



PETALS UNITED

Sympetalous

All PE coalescent at least basally

