



**Botany in a Day: The Patterns of Plant Identification**  
(6<sup>th</sup> Ed.)  
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**CLASS: G415**

**Part I**

- The problem with common names:
  - They vary from place to place
  - They vary from person to person
  - They would have different names in different languages
  - Unrelated plants might share the same common name
  - All of the above
- Botanical names are primarily formed from Latin and classical Greek roots, as well as Latinized names and phrases from other languages. The first name is the:
  - Genus
  - Species
  - Family
  - Sepal
- The second part is the species name, and it is always \_\_\_\_\_. Both are always italicized.
  - cursive
  - uppercased
  - lowercased
  - bold
- When you want to talk about a whole group at once then you just write out "*Vaccinium* spp.," This abbreviation means species \_\_\_\_\_.
  - botanical
  - plural
  - general
  - name
- Today, 90 percent of all plants associate with \_\_\_\_\_ in the soil, and 80 percent could not survive without their fungal partners.
  - microbes
  - worms
  - minerals
  - fungus

6. The fungi help extend the reach of the plant \_\_\_\_\_ to obtain water and nutrients that might not be available otherwise. In return the plants manufacture sugars through photosynthesis to feed the fungi.
- A. stems  
B. roots  
C. leaves  
D. flower
7. The algae are a layer of single-celled plants near the surface, just below a \_\_\_\_\_ layer of fungal hyphae. Algae absorb nutrients through the surface and provide energy through photosynthesis, while the fungi absorbs moisture and provides a protective structure for the algae.
- A. gelatinized  
B. slimy  
C. tangled  
D. Both B & C
8. Sphagnum moss has been used to dress wounds, with better results than ordinary \_\_\_\_\_.
- A. Band Aids  
B. collagen dressings  
C. foam dressings  
D. sterilized pads
9. (True or False) Primitive plants like clubmosses, horsetails, and ferns reproduce with seeds.
- A. True  
B. False
10. (True or False) The flower pattern matters more than the vegetation.
- A. True  
B. False
11. (True or False) If a plant has both parallel veins in the leaves and floral parts in multiples of three then it is definitely a monocot. vegetation.
- A. True  
B. False
12. Most families of plants have floral parts in a similar order: a ring of sepals on the outside, then a ring of petals, a ring of \_\_\_\_\_, and the pistil or pistils in the middle. Some parts may be missing, but the basic order is always the same.
- A. stamens  
B. flowers  
C. pollen  
D. diamond

## Learning Plants by Families

Match the description to the correct plant family.

### Plant Families

### Descriptions

- |                                |   |
|--------------------------------|---|
| 13. _____ Mint Family          | A. Hollow flower stems with knee-like nodes or joints                 |
| 14. _____ Parsley Family       | B. Distinctive banner, wings, and keel petals                         |
| 15. _____ Mustard Family       | C. Five petals and numerous stamens, often with oval, serrated leaves |
| 16. _____ Pea Family           | D. Unique composite flowerheads                                       |
| 17. _____ Lily Family & allies | E. Square stalks, opposite leaves, & usually aromatic                 |
| 18. _____ Grass Family         | F. Compound umbels  |
| 19. _____ Rose Family          | G. 3 sepals and 3 petals, usually identical in size and color         |
| 20. _____ Aster Family         | H. 4 petals with 6 stamens – 4 tall and two short                     |

### **Stop Here!**

### **Learn about the members of the Aster Family and the similar-looking Teasel Family.**

Turn to Pages 163-175 (Aster & Teasel Families) to answer the following questions.

### **Patterns of the Aster or Sunflower Family**

21. To identify flower parts, one normally starts on the outside of a flower and works inward: *(Select the answer with the correct order below.)*
- A. stamens, pistil(s), sepals, petals
  - B. petals, sepals, stamens, pistil(s)
  - C. sepals, petals, stamens, pistil(s)
  - D. pistil(s), stamens, petals, sepals
22. But that doesn't work with the Asters. The "sepals" are actually \_\_\_\_\_ (modified leaves), which often appear in multiple layers. The petals" make it appear that there is just one big flower, but look closely inside and you will discover many smaller flowers – dozens or even hundreds of them!
- A. sepals
  - B. flowers
  - C. leaves
  - D. bract

23. (True or False) Members of the Aster family can have disk flowers, ray flowers, or both.
- A. True
  - B. False
24. Which of the following are clues to identifying Aster family flowers?
- A. The flowerhead has a 'pitted'; disk
  - B. There are frequently two or more layers of bracts surrounding the flowerhead, but not always
  - C. There are individual flowers inside the flowerheads, often quite small
  - D. A, B, & C
25. (True or False) Many Asters, such as sagebrush (*Artemisia*), lack an obvious outer ring of ray flowers.
- A. True
  - B. False

### **Aster Family – Chicory/Dandelion Subfamily**

26. The distinguishing feature in the Chicory subfamily is \_\_\_\_\_-shaped petals. The ray flowers have mostly parallel edges like a strap, instead of tapered edges like the petals of other flowers.
- A. strap
  - B. tapered
  - C. jagged
  - D. roundish
27. Another pattern of this subfamily is the \_\_\_\_\_ juice in the stems.
- A. yellow
  - B. milky
  - C. creamy
  - D. sticky
28. Note that many unrelated plants also have milky juice and some are \_\_\_\_\_, so check the flower to make sure it is a member of the Chicory subfamily before you eat it!
- A. awesome musicians
  - B. cute little buggers
  - C. really stinky
  - D. poisonous

## Thistle Subfamily

29. If you find an Aster with his head protected inside a tight wrapping of bracts like an artichoke, then it belongs to the Thistle or \_\_\_\_\_ subfamily of the Aster family.
- A. Artichoke
  - B. Burdock
  - C. Cornflower
  - D. Milk Thistle
30. (True or False) Burdock root is a very unpopular medicinal plant, especially for facilitating liver function. It is bitter and diuretic in effect.
- A. True
  - B. False
31. (True or False) Medicinally, milk thistle is used as a bitter to stimulate liver function. It also contains the flavonoid silymarin, which has been shown to protect the liver from toxins.
- A. True
  - B. False

## Mutisia Subfamily

32. Disk flowers are \_\_\_\_\_ in the Mutisia subfamily of the Aster family. Look closely and you will see a two-lipped flower with 2 petal lobes up and 3 petal lobes down. Also, blossoms have no outer ring of petals (ray flowers).
- A. tiny
  - B. pointy
  - C. prickly
  - D. irregular

## Aster Subfamily – Boneset Tribe

33. Members of the Boneset tribe are distinguished from other composites by the shape of their \_\_\_\_\_, which are thickened at the ends like a baseball bat.
- A. petals
  - B. stigmas
  - C. leaves
  - D. stamens
34. Otherwise, the flowers lack an \_\_\_\_\_ - \_\_\_\_\_ of petals (the ray flowers) and none of the flowers are pure yellow.
- A. inner-ring
  - B. wedding-ring
  - C. outer-ring
  - D. suffer-ring

### **Aster Subfamily – Ironweed Tribe**

35. Members of the Ironweed tribe can be distinguished from the Bonesets and other composites by the shape of their stigmas, which are long, thread-like and \_\_\_\_\_, with no ray flowers and virtually none of the blossoms are pure yellow.

- A. hairy
- B. smooth
- C. purple
- D. sticky

### **Aster Subfamily – Everlasting Tribe**

36. If you find a member of the Aster family with grayish vegetation and papery, often colored bracts surrounding a flower with disk flowers, but no ray flowers then it is probably a member of the Everlasting tribe. Chamomiles are \_\_\_\_\_, while Everlastings are not.

- A. cute
- B. aromatic
- C. volatile
- D. annuals

### **Aster Subfamily – Elecampane Tribe**

37. The Elecampane tribe includes Old World plants, only a few of which have been introduced to \_\_\_\_\_ America.

- A. East
- B. South
- C. West
- D. North

### **Aster Subfamily – Chamomile Tribe**

38. If your specimen has \_\_\_\_\_ the odor and the translucent bracts then it belongs with the Chamomiles.

- A. none of
- B. either
- C. both
- D. all

### **Aster Subfamily – Groundsel Tribe**

39. The Groundsel are distinguished from other Asters by the soft, silky quality of the pappus hair. The hair is usually pure \_\_\_\_\_ and very abundant.

- A. white
- B. yellow
- C. blue
- D. translucent

### **Aster Subfamily – Marigold Tribe**

40. Most genera of the \_\_\_\_\_ tribe are native to the highlands of Mexico, with only a few genera found as far north as our southwestern states. Some are fragrant and pungent.

- A. Marigold
- B. Chamomile
- C. Tomato
- D. Potato

### **Aster Subfamily – Sunflower Tribe**

41. Pull apart a flowerhead from your sample plant and look for a small bract \_\_\_\_\_ at the base of each disk flower. The sunflower and Tickseed tribes often have them, while other tribes usually don't.

- A. dangling
- B. adhered
- C. attached
- D. stuck

### **Aster Subfamily – Ragweeds of the Sunflower Tribe**

42. Ragweed flowers are usually unisexual, with male and female flowers appearing \_\_\_\_\_ on one plant, an oddity within the Aster family.

- A. separately
- B. individually
- C. together
- D. distinctly

### **Aster Subfamily – Tickseed Tribe**

43. Members of the tickseed tribe are not \_\_\_\_\_ like those of the sunflower family.

- A. Asters
- B. tall
- C. yellow
- D. resinous

### **Aster Subfamily – Sneezeweed Tribe**

44. Most Sneezeweeds have only one row of bracts \_\_\_\_\_ the flowerhead, and none have more than three rows. Also, the Sneezeweeds often have glands or dots of resin on the leaves.

- A. inside
- B. beneath
- C. above
- D. on

### **Aster Subfamily – Aster Tribe**

45. Plants of the Aster tribe typically have very \_\_\_\_\_ ray flowers, which are often very numerous. Members of the Aster tribe often have multiple layers of bracts of unequal length. Aside from gumweed (*Grindelia*) most members of the tribe are nonresinous.

- A. wide
- B. slender
- C. tall
- D. chubby

### **Teasel Family – often confused with the Aster Family**

46. Teasel \_\_\_\_\_ could easily be mistaken for Asters. Individual flowers are bisexual and slightly irregular, clustered in a dense head, and often protected by spiky bracts (modified leaves).

- A. flowerheads
- B. prickles
- C. sepals
- D. blossoms

**Once you have verified that a flower is NOT in the Aster Family, profile the dicot flower, and then key it out.**

Return to Page 23, #1 to answer the following questions.

### **How to Use the Keys**

47. Monocot plants usually have \_\_\_\_\_ -veined leaves and flower parts mostly in threes.

- A. parallel
- B. red
- C. deep
- D. single

48. (True or False) Dicot plants mostly have net-veined leaves and parts in fours and fives.

- A. True
- B. False

### **Profile Your Flower Before Using the Keys**

49. The Aster family is the largest family of \_\_\_\_\_ plants in the northern latitudes. As a matter of probability, it makes sense to determine whether or not your sample is a member of the Aster family before checking any others.

- A. flowering
- B. green
- C. aromatic
- D. Both A & B

50. (True or False) When beginning to identify a flower, I should not copy and fill out the "Profile Your Flower Before Using the Keys" page.

- A. True
- B. False

51. (True or False) When I begin to fill out the "Profile Your Flower Before Using the Keys" page, I should start at the bottom and work my way up.

- A. True
- B. False

52. Once you have profiled a \_\_\_\_\_ flower in detail, then identify it through the following keys (see pages 25 through 33.) These keys incorporate primary patterns for each family in this book.

- A. monocot
- B. aster
- C. dicot
- D. yellow

53. After identifying the correct family:

- A. check the illustrations on the family page to look for a possible match
- B. cross-reference with other plant identification books organized by families to help narrow the identity down to the correct genus and species
- C. try looking up botanical names in a Google image search to check your work
- D. A, B, & C

54. (True or False) Many cultivated plants with numerous petals were bred from species that originally had 5 separate petals, particularly from the buttercup, Rose, Pink, Geranium, Mallow, and Miner's Lettuce families. If you have a cultivated plant with numerous separate petals, try keying it out as a five-petaled flower.

- A. True
- B. False

55. (True or False) Once you have profiled your flower, then you should use the keys on pages 25-33 to locate a dicot flower, tree, or shrub.

- A. True
- B. False

56. The rose family includes many plants with dry seeds or one-celled capsules, but also fleshy fruits as varied as:
- A. strawberries, apples, and cherries
  - B. figs, plums, and peaches
  - C. avocados, tomatoes, and kiwi
  - D. lions, tigers, and bears
57. (True or False) On the inside of the back cover is a Quick Guide to Leaf Terms.
- A. True
  - B. False
58. (True or False) The monocot keys are located on pages 34 and 35.
- A. True
  - B. False

## Part II

59. Fern leaves are similar to other leaves but have unique terminology. The whole leaf is often called a \_\_\_\_\_.
- A. blade
  - B. fiddlehead
  - C. frond
  - D. violin
60. Because berberine is so intensely bitter, it \_\_\_\_\_ the entire body and not just the digestive system. It opens up blood vessels (vasodilation) to lower blood pressure.
- A. irritates
  - B. puckers
  - C. stimulates
  - D. agitates
61. \_\_\_\_\_ Salix – Willow is a commonly known \_\_\_\_\_ medicine due to its aspirin-like qualities. It is used for headaches, fevers, hay fever, neuralgia, and inflammations of the joints. Some of the salicylic acid is excreted in the urine, making it useful as an analgesic to the urethra and bladder.
- A. wilderness
  - B. camping
  - C. tree
  - D. plant

62. (True or False) Poison ivy and poison oak are not part of the cashew or sumac family.

- A. True
- B. False

63. (True or False) Chenopodium – goosefoot, lamb’s quarters,... contains more calcium than any other plant ever analyzed, plus lots of riboflavin, vitamins A and C, and protein.

- A. True
- B. False

64. Pitcher Plants have tubular, vase-like leaves that hold water to drown \_\_\_\_\_.

- A. tadpoles
- B. birds
- C. insects
- D. fish

65. (True or False) Many species from the Mint family are popular kitchen spices, including: basil, rosemary, lavender, marjoram, oregano, mint, peppermint, spearmint, germander, thyme, savory, horehound, and sage.

- A. True
- B. False

**Skip Pages 163-174. You’ve already been tested on the Aster family.**  
Resume on page 175 with the Valerian Family.

66. The Parsley family includes some of the deadliest plants in North America, especially water hemlock (Cicuta) and hemlock (Conium). People have died from confusing hemlock with \_\_\_\_\_. When you see the compound umbel, let it be a warning – you must get positive identification of these plants! Also many Parsleys produce furanocoumarins, which can cause mild or severe dermatitis upon contact, especially when exposed to sunlight.

- A. lettuce
- B. wild yam
- C. pansies
- D. wild carrots

67. \_\_\_\_\_ But in reality, there are only a few basic constituents common throughout the plant kingdom and most of them are recognizable with the five senses. You can learn to determine the \_\_\_\_\_ of many plants without ever knowing their names.

- A. uses
- B. scents
- C. tastes
- D. names

## Medicinal Properties of Plants

68. \_\_\_\_\_ also contains calcium and phosphorus, bound with a strong electrical charge that attracts toxic chemicals, heavy metals, and radioactive compounds.
- A. Carbohydrates
  - B. Inulin
  - C. Pectin
  - D. Mucilage
69. Herbs with a bitter taste stimulate the body's systems and are most commonly used as digestive aids. You must \_\_\_\_\_ bitterness in your mouth for them to take effect.
- A. smell
  - B. taste
  - C. savor
  - D. feel
70. (True or False) If an herb dries the mouth and reduces saliva, then it is an astringent, not a bitter.
- A. True
  - B. False

~ END OF TEST ~