FLOWERS AND THEIR PARTS

FLOWERS ARE SHAPED AND DESIGNED TO ATTRACT POLLINATORS. ALL THE COLORS, THE NECTAR REWARDS, THE ARRANGEMENTS, AND NUMBER OF PARTS RELATE TO THIS ALL-IMPORTANT PURPOSE

The typical flower consists of four parts, as follows:

- Sepals are the outermost layer and protect the flower in bud
- Petals are the next row in and are colorful to attract pollinators
- Stamens come next; they are the male part of the flower and produce pollen for pollination
- The pistil or female part is in the center of the flower. The pistil receives pollen and also contains the future seeds

This cut-away view of the field mustard (*Brassica rapa*) shows green sepals and yellow petals.

Sepals are usually green. Collectively, they're known as the calyx. Here you see the sepals of a trillium. Notice the white petals just inside

Another example of green sepals is shown here in this polemonium flower; inside are the purple petals

In poppy flowers like this *Eschscholzia californica*, the sepals form a cap that pops off when the flower opens as you see in the next image

In a flower like the *Muilla maritima*, the sepals and petals have the same color and are only told apart by position. In this case, they're referred to as tepals

The Washington lily (*Lilium washingtonianum*) is another example of a flower with tepals. This phenomenon is common in the lilies and their relatives

Some flowers like those of the anemones have lost their petals altogether and the sepals substitute in their place by being brightly colored.

The petals normally provide color and shape to the flower. Collectively, they're called the corolla. In this columbine flower, the petals are spurred.

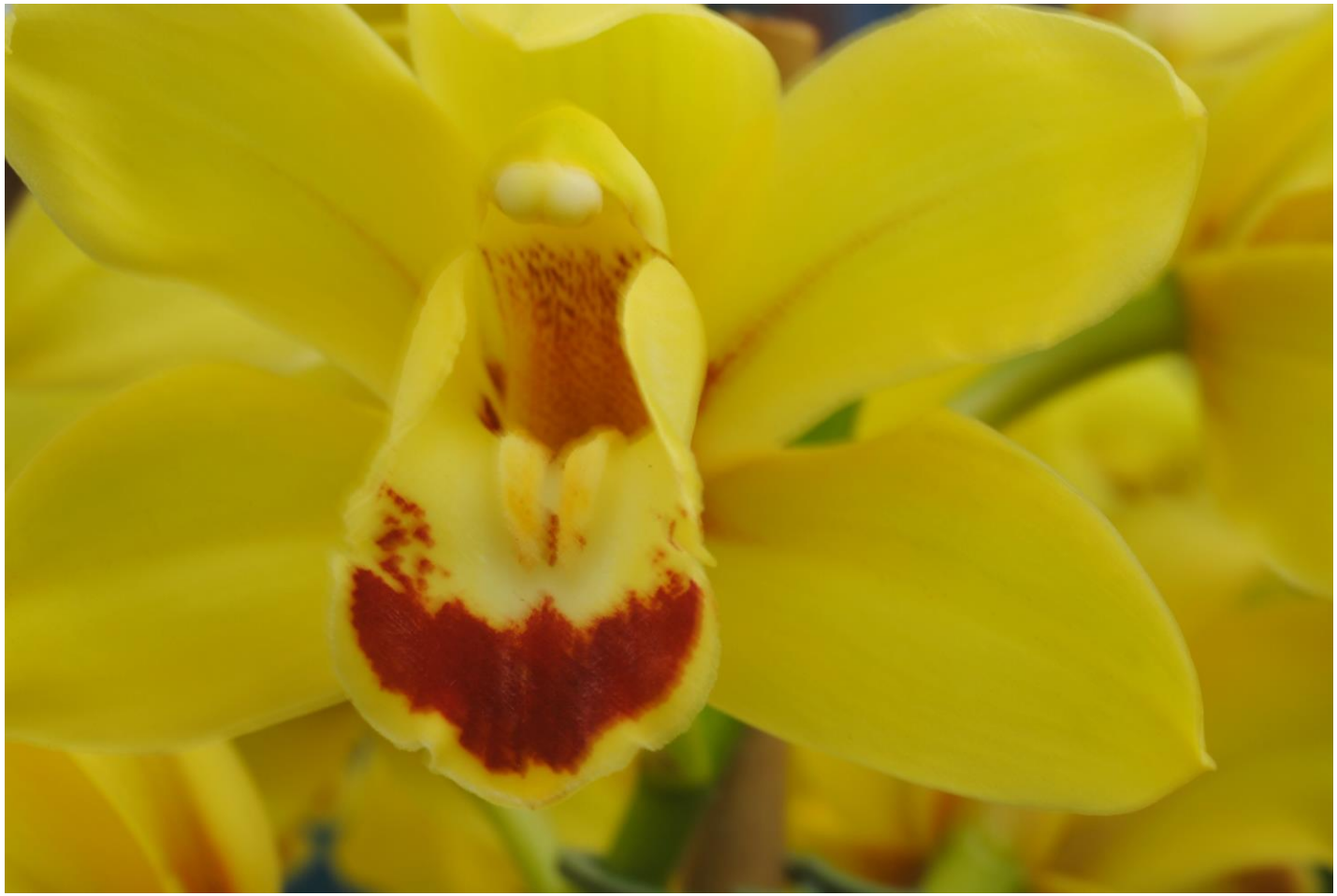
In these manzanita flowers, the petals are partly fused and urn shaped.

Mustard flowers have widely spreading, bright yellow petals that attract myriad pollinators

In dogwood flowers (*Cornus*) the individual flowers are small with green petals but there are modified leaves called bracts that do the attracting of pollinators

Cucurbita petals are partly fused to form an open funnel.

Orchids like this *Cymbidium* have the lower petal modified into a lip with clear-cut nectar guides for pollinators.



In the typical spurge (*Euphorbia*) flower, the white "petals" are actutally nectar glands that surround a cluster of minute flowers

In geraniums, the petals have stripes and blotches that act as nectar guides to visiting bees.

In sunflowers (*Helianthus*) and other members of the vast Asteraceae, what seem apparently like petals are actually specialized flowers called ray flowers

In the genus *Iris*, the prominent sepals have the nectar guides, while the petals stand erect between the sepals

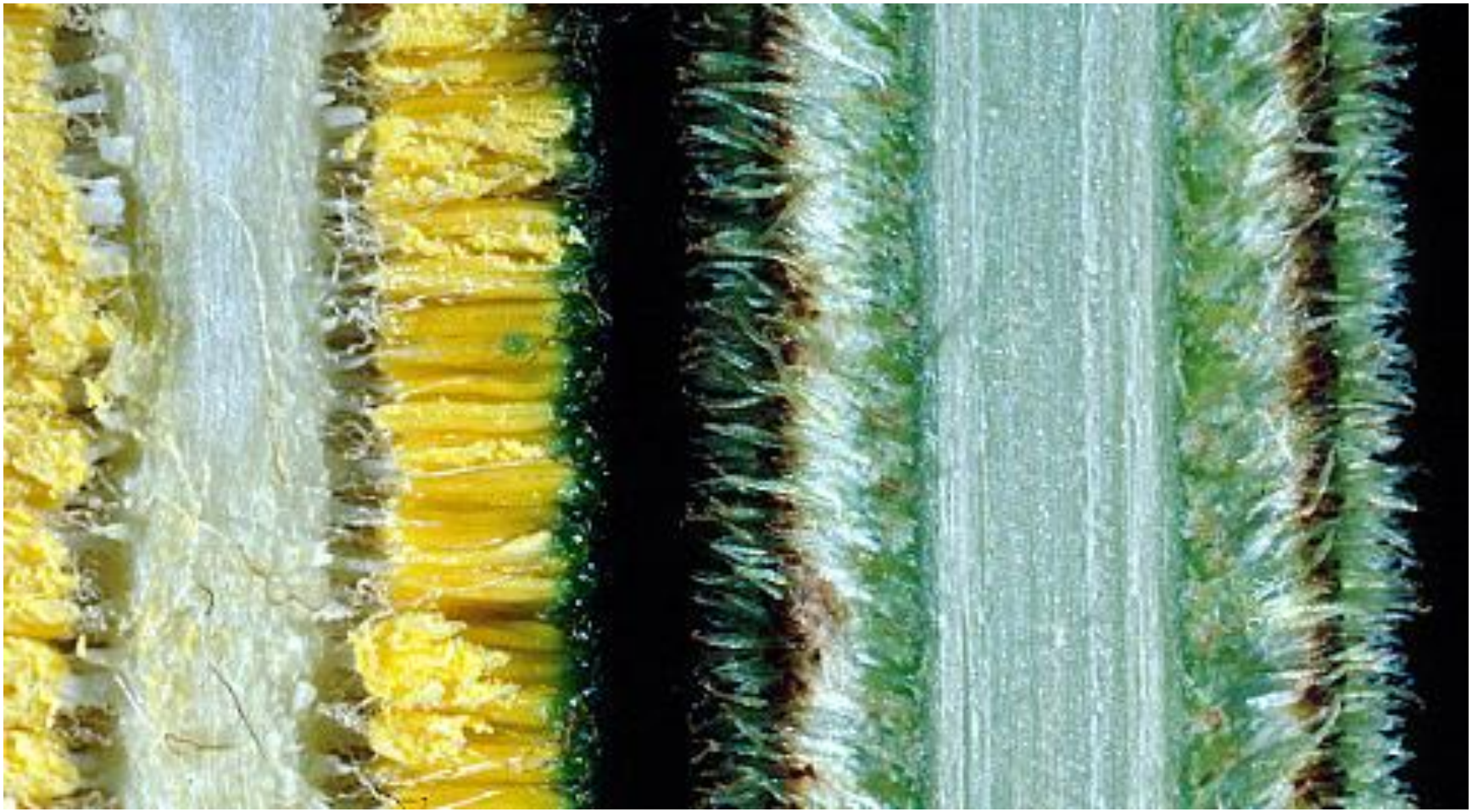
This meadowfoam flower (*Limnanthes douglasii)* has petals with a yellow bullseye that also serves as a nectar guide

The *papillionaceous* flowers of this harlequin lupine (*Lupinus stiversii*) show petals of different colors and shapes

Although most flowers have a fixed number of petals, members of the cactus family like this *Opuntia basilaris* feature multiple petals in a spiral arrangement

The minute flowers of oaks (*Quercus* spp.) are unisexual and wind pollinated. This female flower has no petals.

The same is true for cattail (*Typha*) flowers. The left side shows numerous male flowers; the right tiny female flowers. Neither have petals



The California fuchsia (*Epilobium canum*) has its colored sepals and petals attached to a long tube called the *hypanthium*. Many flowers lack hypanthiums.

The two fertile parts of the flower are the stamens and the pistils. Stamens consist of

- A stalk called the *filament* that positions the pollen sacs at the end in the right place for the visiting pollinators
- These pollen sacs comprise the *anther*, inside of which millions of microscopic pollen grains develop
- Pollen grains are what need to be transported to another flower during polliination
- Anthers have to open before the pollen is available for transfer

The stamens of this flower consist of red filaments and yellow anthers

In this flower, the stamens form a pair with the two anthers nearly touching while the filaments are curved

Anemone flowers feature numerous stamens arranged like a wreath around the central green pistils

In snapdragon flowers, the petals are pressed tightly together and to reach a nectar reward and the stamens, a strong bumblebee has to force its way in

In this manzanita flower, a tiny pollinator has to enter at the hole in the top. The brown anthers have terminal pores from which the pollen is buzzed out

In milkweed flowers, the stamens form yellow hoods containing nectar while the anthers are hidden inside the center structure

In mustard flowers, the stamens are of two lengths to take advantage of differently sized pollinators passing by

In the hazelnut, the petal-less male flowers are in catkins. When open, the stamens protrude in order to dust pollen into the wind

In fuchsia flowers, the stamens protrude beyond the petals to touch the heads of hovering hummingbirds

The tiny disc flowers of the Asteraceae, here those of a sunflower, form cones above the petals, topped by the two curled stigmas

In most members of the Malvaceae (mallow family), numerous anthers top the tubular, fused filaments

In the Washington lily (*Lilium washingtonianum*), the anthers swivel around their attachment to the filaments

In these petal-less, wind-pollinated grass flowers, the stamens protrude to catch the wind

The female part of the flower—the pistil—sits in the center of the flower

- The pistil consists of three parts—
- The ovary at the base contains the future seeds or ovules
- The stalk above the ovary—the style—positions the tip of the pistil in the right place for pollinators
- The stigma at the end of the style, an enlarged knob or arms, traps pollen from passing pollinators

Muilla maritima features a compound pistil with a green ovary, pale purple style, and 3-lobed stigma

The pistil of a cactus flower has an inferior ovary, a single style, and a several-lobed stigma

Here you see several separate green pistils in the middle of this anemone flower. Most flowers have a single compound pistil

In the arum family Araceae, the pistils are found on petal-less female flowers. Here the several female flowers are enveloped in a large petal-like bract

In this Crassula flower, there are five separate, simple pistils in the center

On squash blossoms, the ovary part of the flower is below the other flower parts. Ovary position is important in defining families. Here, the ovary is *inferior*

In this image, you see the whole pistil of a squash with a green ovary, white style, and yellow stigmas

The pistil on this spurge flower is elevated on a stalk with a 3-lobed green ovary and branches styles

The pistils of the individual disc flowers in the Asteraceae feature an inferior white ovary, a style hidden from view inside the petals, and a two-lobed stigma at the top

In this wind poppy (*Stylomecon heterophylla*) you see numerous stamens around a single compound pistil