

MALVACEAE, THE MALLOW FAMILY

A FAMILY CURRENTLY EMBRACING
SEVERAL SEPARATE FAMILIES

The Malvaceae was once one of several closely related families, which have now all been lumped into this single family

- The formerly separate families include:
- Sterculiaceae, the cacao family, a mainly tropical woody family with only 5 stamens per flower and sometimes lacking a corolla
- Bombacaceae, the bombax family, a tropical woody family with sometimes separate stamens and massive fruits, and
- Tiliaceae, the linden family, a woody family of shrubs and trees with mostly separate stamens and sometimes unusual fruits
- Of these families, only the Sterculiaceae, was found in California but before proceeding, I'll show a few examples of those "other" families

In the Bombacaceae, the famed baobab tree, *Adansonia*, from Africa features a swollen trunk that stores water during the dry season



...and *Bombax* large deciduous trees with beautiful red flowers.
Note the multiple separate stamens.



For the Tiliaceae, the best known are the linden or “lime” trees in the type genus *Tilia*. Here you see the leaves.



Linden flowers are tiny with multiple stamens and...



...winged petioles that provide sails for the tiny fruits that follow



Most famous in the former Sterculiaceae is *Theobroma* (=food of the gods) *cacao*, small trees from tropical America whose seeds are processed into chocolate. Here you see the tiny flowers hanging from the trunk that later develop into...



...large seed pods that contain the cacao seeds.



Two outliers from the tropics are the genera *Ayenia* (ncn) and *Fremontodendron* (fremontia) native to California. Here you see the inconspicuous woody perennial, *Ayenia compacta* found in the southern deserts.



The most conspicuous feature of *Ayenia* is the strange looking seed pod.



By contrast, *Fremontodendron* is a highly showy evergreen shrub to small tree mostly from the mountains of Southern California. Here you see a hillside north of L.A. with *F. californicum*.



Fremontias feature saucer-shaped yellow to orange flowers with petal-like sepals, no petals, and 5 stamens fused by their filaments into a hollow tube.



The palmately lobed fremontia leaves are covered with tiny clusters of starburst-like (*stellate*) hairs like most members of the original mallow family.



Most fremontias grown in gardens are hybrids between *F. californicum* and the rare southern *F. mexicanum*, whose larger flowers make the hybrids showier than straight *F. californicum*.



Besides these two species, a third rare species, *F. decumbens*, restricted to gabbro soils on Pine Hill east of Sacramento, grows as a prostrate sprawling shrub with orange flowers.



A flower of Pinehill fremontia.



The several species of the annual *Malva* are robust, tap-rooted weeds in California with rounded leaves and small pink to purple flowers



The original Malvaceae often features broad leaves with the primary veins forming a palmate pattern. Here is the leaf of a weedy species of *Malva*, a European and the type genus of the family.



The malvas are often called cheeses because of the cheese-wheel-like schizocarps that separate at maturity. Most Malvaceae feature schizocarps in a similar pattern.



Formerly, the genus *Lavatera* contained shrubs and subshrubs often grown ornamentally. Currently, they've been lumped with *Malva*. This species, *M. assurgentiflora* aka mission mallow, is a fast-growing evergreen shrub from Catalina Island.



Mission mallow grows rapidly to over 12 feet high and blooms most of the year. It is now widely naturalized in coastal California, and is our only native species.



Here you see the immature schizocarp of mission mallow.



Mission mallow also has broad leaves featuring palmate veins, but the leaves are lobed unlike the weedy species of *Malva*



The genus *Malvella* (=little mallow) is represented in California by *M. leprosa* or alkali mallow, named for its habitat of salty to alkaline soils near marshes. As seen here, it grows close to the ground.



Alkali mallow features deeply hair-felted leaves and white flowers.



One of the largest genera in Malvaceae is *Hibiscus*, a genus of hundreds of species mostly from subtropical habitats. Here you see the okra plant, *H. esculentus* (currently moved to *Abelmoschus*), whose young seeds pods are eaten before they become woody.



Best known to gardeners in mild climates is *Hibiscus rosa-sinensis* (=rose of China), a hybrid of uncertain origin with numerous cultivars. Note the numerous stamens fused to form a long tube.



California is home to two very different hibiscuses. Here you see *H. denudatus*, a small woody perennial from the southern deserts with handsome flowers marked by a red spot at the base.



By contrast, *H. lasiocarpus*, is a large woody perennial restricted to the Delta, where it is currently rare.



H. lasiocarpus has large white flowers with a deep red center, the flowers almost as showy as the *H. rosa-sinensis*.



Here you see the woody seed pod of *H. lasiocarpus*, which unlike most Malvaceae, is a capsule not a schizocarp.



Another familiar garden ornamental is *Abutilon*, often called flowering maple because of the maplelike leaves. This genus and its hybrids originates from South America north to the mountains of Mexico with (usually) hanging flowers.



Most abutilons are pink, red, orange, or yellow. Here you see the signature stamens identifying it as in Malvaceae.



Surprisingly, California has one native species, *A. palmeri*, a small shrub from our southern desert with yellow-orange, upright flowers and woolly leaves.



While most abutilons have green leaves, our native has gray leaves covered with dense hairs as befit a desert plant.



All abutilons are identified by their multiple subwoody schizocarps as seen here. Often the nature of the schizocarps is helpful in recognizing genera.



Little known in California is a group of confusing-to-sort-out species of bush mallow, *Malacothamnus*. These fast-growing shrubs mostly appear after fire, growing rapidly and blooming profusely.



Locally, *Malacothamnus hallii*, proliferates on Mt. Diablo after fire, as is the case after the 2014 fire. Most species have showy pink to purple flowers like this.



Bush mallow leaves follow the usual mallow “mold” with primary palmate veins and stellate hairs, which under magnification look like tiny starbursts.



Here is the attractive Fremont bush mallow, *M. fremontii*, also found on Mt. Diablo and to the south.



A third bush mallow, *M. palmeri*, is locally abundant in coastal central California with dense headlike clusters of pink-purple flowers.



In this high desert scene just north of Mt. Shasta, the rare *Iliamna bakeri* (another bush mallow) forms green semiwoody clumps in this photo.



Iliamna leaves look very much like mission mallow.



The handsome hollyhock-like flowers of *Iliamna* appear mostly in summer. This genus is rare in the northernmost part of California because it too is strictly a fire follower, later crowded out by larger shrubs.



Another desert woody perennial to subshrub is characterized mostly by orange to red-orange flowers of great beauty. This species is *Sphaeralcea ambigua* or apricot mallow, widespread across our deserts.



Apricot mallow has the same basic shape to its flowers and leaves as other Malvaceae in California. The epithet *ambigua* most likely refers to the color variation.



A close view of apricot mallow flowers showing the numerous stamens.



The five-spot mallow or globe mallow, *Eremalche rotundifolia*, is a beautiful desert annual, rare in years of poor rainfall. Note the nearly globular flowers and the five red spots on the petals.



A close view of the desert five-spot mallow.



The largest of California's malvaceous genera is *Sidalcea*, often called checkerbloom or checker mallow. Keying to species is often rather difficult. Here you see the common, widespread *S. malviflora*, a sprawling perennial of grasslands in the foothills



Checkerbloom flowers are pink, but *S. malviflora* is variable with many varieties with different sized flowers of various shades of pink or pink purple.



Here you see a basal leaf of the common checkerbloom. Note that the nearly round leaf is scalloped or very shallowly lobed. This contrasts with the upper leaves which are often deeply dissected or lobed.



Here you see the creeping *S. reptans*, a species from wet meadows in the southern Sierra. Different species are often difficult to differentiate without a close look.



Here you see the two kinds of leaves typical in the genus
Sidalcea.



One of the distinctive sidalceas from high mountain meadows is *S. oreganta spicata*, whose smaller flowers are in dense spikes.



A closer view of *S. oregana spicata*.



S. glaucescens, the mountain checkerbloom, grows on the dry side of meadows with rather pale flowers.



Some sidalceas like this *S. hickmannii anomala* are rare and very restricted in range. This one features very pale flowers and fluted leaves and is seldom abundant except after fires in San Luis Obispo and adjacent areas.



Several sidalceas are spring-flowering annuals like this *S. calycosa*, which blooms as vernal pools dry in the northern Sierra foothills.



A spike of *S. calycosa* flowers. Despite being poorly known, this species is easy to grow in gardens.



In addition to these malvaceous plants, a few rare desert genera have not been included here. Hopefully you can see overall that...

- Most Malvaceae have broad leaves with primary veins in a palmate pattern
- Often feature starburst hairs on their leaves
- Have hollyhock-shaped flowers
- Feature numerous stamens fused into a tube by their filaments, and
- Have a schizocarp type fruit
- What I haven't covered is the detail of the stigmas, which is sometimes used in separating genera. Stigmas vary from long and thread like to miniature heads.