

# THE GERANIUM FAMILY, GERANIACEAE, AND THE MALLOW FAMILY, MALVACEAE

TWO SOMETIMES CONFUSED FAMILIES  
PROMINENT IN SOME MEDITERRANEAN  
CLIMATE AREAS

The Geraniaceae is a family of herbaceous plants or small shrubs, sometimes with succulent stems

- The family is noted for its often palmately veined and lobed leaves, although some also have pinnately divided leaves
- The leaves all have pairs of stipules at their base
- The flowers may be regular and symmetrical or somewhat irregular
- The floral plan is 5 separate sepals and petals, 5 or 10 stamens, and a superior ovary
- The most distinctive feature is the beak of fused styles on top of the ovary

Here you see a typical geranium flower



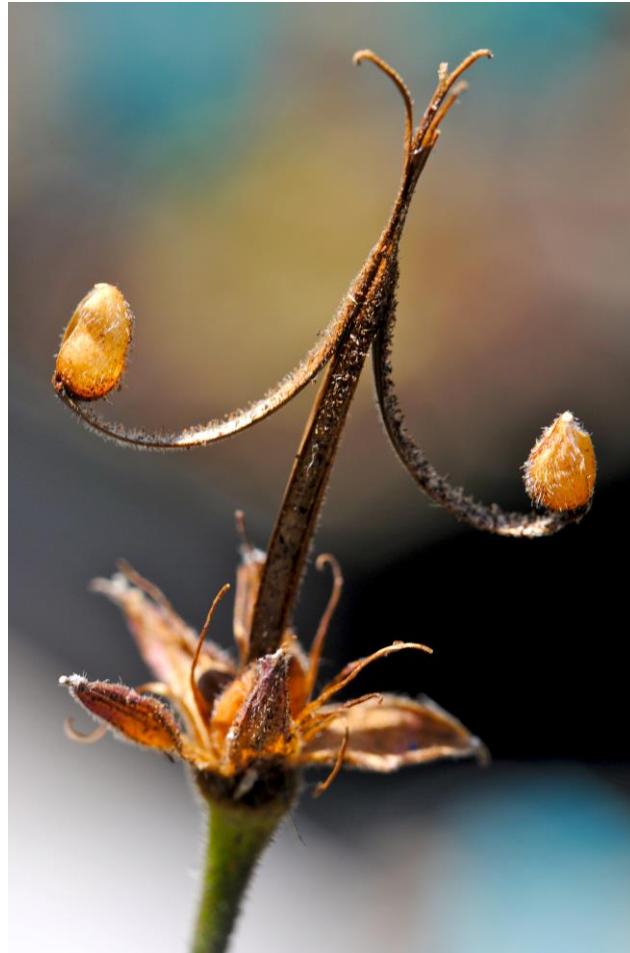
This nonnative weedy geranium shows the styles forming a beak



The geranium family is also noted for its seed dispersal

- The styles either actively eject the seeds from each compartment of the ovary or...
- They twist and embed themselves in clothing and fur to hitch a ride
- The Geraniaceae is prominent in the Mediterranean Basin and the Cape Province of South Africa
- It is also found in California but few species here are drought tolerant
- California does have several introduced weedy members

Here you see a geranium flinging the seeds from sections of the ovary when the styles curl up



Three genera typify the Geraniaceae: *Erodium*,  
*Geranium*, and *Pelargonium*

- Erodiums (common name filaree or clocks) typically have pinnately veined, sometimes dissected leaves; many species are weeds in California
- Geraniums (that is, the true geraniums) typically have palmately veined leaves and perfectly symmetrical flowers. Most are herbaceous annuals or perennials
- Pelargoniums (the so-called garden geraniums or storksills) have asymmetrical flowers and range from perennials to succulents to shrubs

The weedy filaree, *Erodium cicutarium*, produces small pink-purple flowers in California's spring grasslands



Here are the beaked unripe fruits of filaree



Many of the perennial erodiums from the Mediterranean make well-behaved ground covers for California gardens



Here are the flowers of the charming *E. x variabile*



Many of the true geraniums are invasive native annual weeds such as this *Geranium molle*.



California has a handfull of native geraniums that grow in mountain meadows. Here you see the easy-to-grow  
*G. richardsonii*



Perhaps the most striking of the European geraniums, and one that is drought tolerant, is *G. maderense* from the island of Madeira



The pelargoniums are major players in the Cape Province of South Africa, although some species also occur in Australia and South America. Here you see the common *P. x hortensis*



Besides the old-fashioned garden pelargoniums, including the large-flowered ‘Martha Washingtons’, there are many fine species from South Africa such as this ivy geranium, *P. peltatum*



Other pelargoniums include the violet pelargonium *P. ionidiflorum*, which forms a close ground cover



Note the nectar guides on the close view of *P. ionidiflorum* flowers



The bushy *P. sidoides* has attractive year-round gray-green leaves and...



...deep red flowers



The “sad” geranium, *P. triste*, has dissected, fernlike leaves and...



..and drab pink-striped flowers in spring



Some pelargoniums are summer-deciduous stem succulents such as the fleshy geranium, *P. carnosum*



The seasonal leaves of fleshy geranium are deeply dissected and fern like



Curious and unusual, fleshy geranium flowers are tiny and not very showy



The shrubby, heart-leaved geranium (*P. cordatum*), has bright green heart-shaped leaves and...



...showy pink-purple, highly irregular flowers



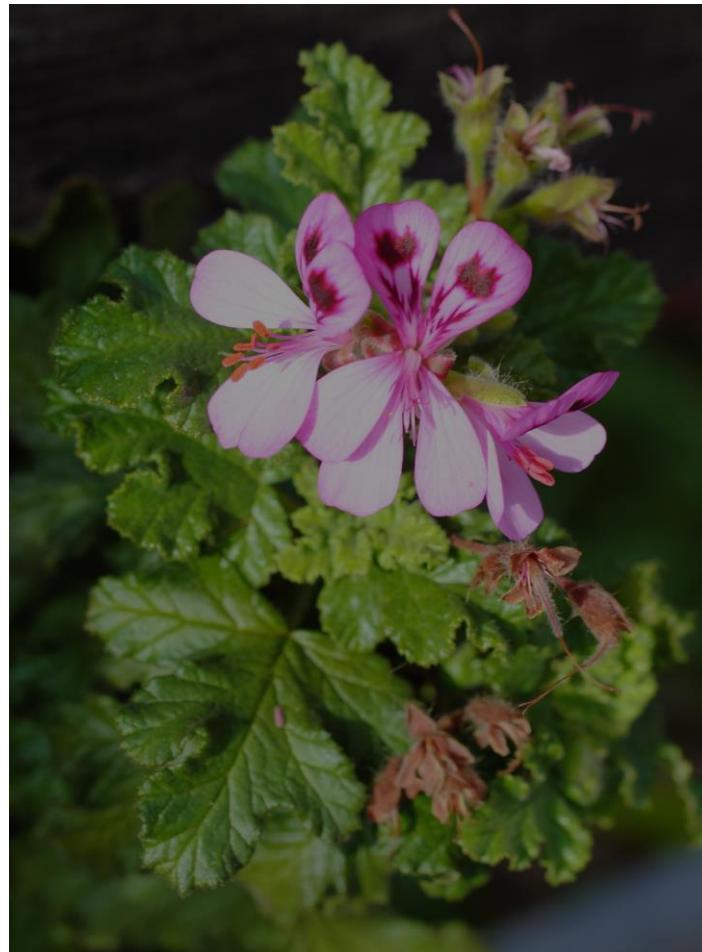
Some pelargoniums are grown more for their zoned or variegated foliage...



...while others, known as the scented geraniums, feature highly fragrant leaves. Here you see the peppermint geranium, *P. tomentosum*



And here is the rose geranium



The Malvaceae or mallow family is considerably larger than the geranium family and is identified by...

- Often broad, palmately-veined leaves with stipules (hence the resemblance to geraniums)
- Often stellate or starlike hairs on leaves and stems
- Usually wide-open flowers with 5 lightly joined sepals, 5 separate petals, and stamens usually fused together by their filaments to form a hollow tube
- Usually a schizocarp type ovary segmented like the sections of a cheese wheel that separate at maturity into compartments with one to several seeds

The family is found throughout the world, with many species in the tropics, and others in Mediterranean climates

- The plants range from annual weeds to small trees with many fast-growing shrubby species
- The flowers come in a variety of colors, are usually showy, but there are few with true blue flowers
- Members of the family have an easily stripped bark that peels off in layers
- Many mallows grow rapidly to maturity

The family has been considerably enlarged by including the formerly separate families such as

- Sterculiaceae (cacao family), usually distinguished by 5 stamens rather than numerous ones
- Bombacaceae (bombaria family), tropical trees and shrubs often with numerous but separate stamens, and
- Tiliaceae (linden family), trees and shrubs with a fixed number of separate stamens and often inconspicuous flowers

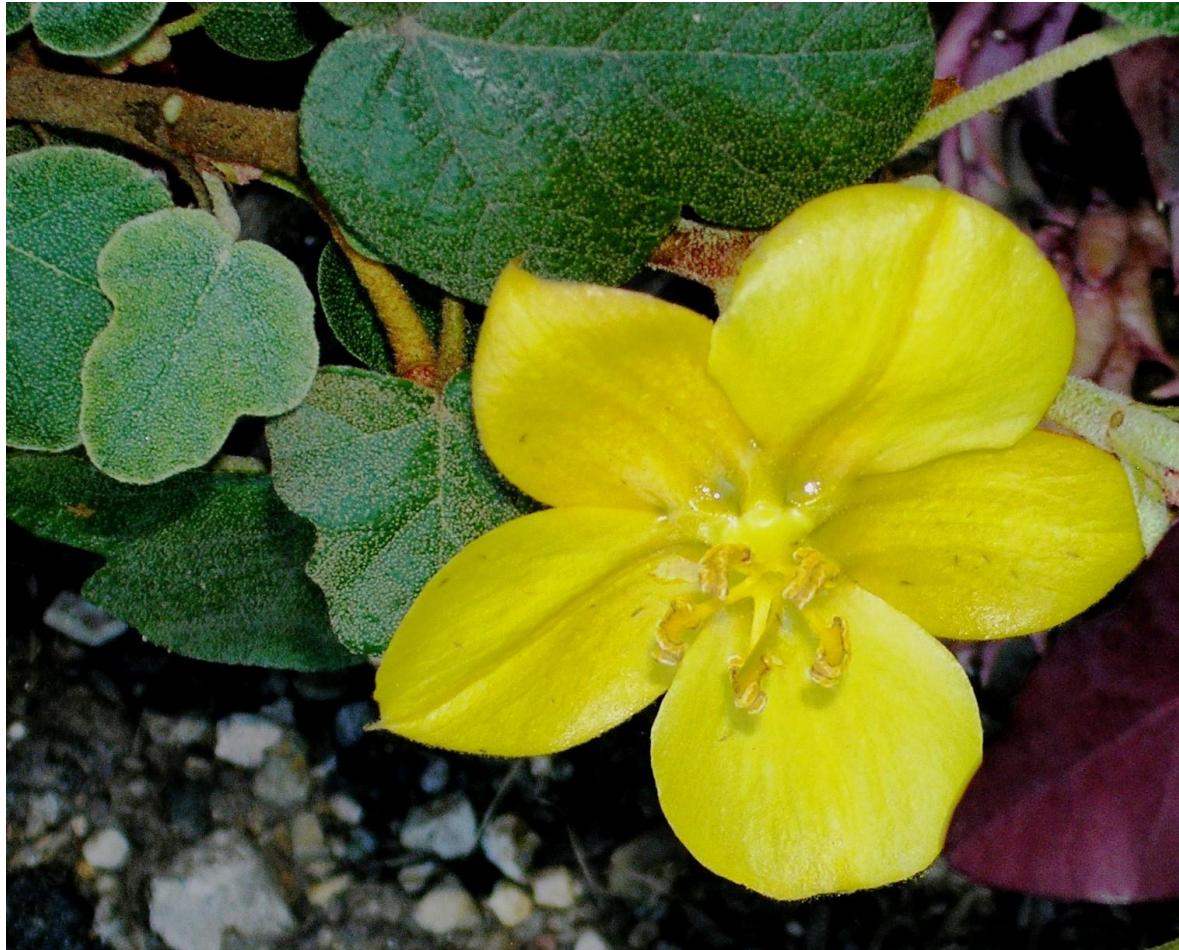
Pertinent to our discussion is the genus *Fremontodendron* (fremontia or flannel bush) once in the Sterculiaceae,, California natives that are drought tolerant



Although usually tall and rangy, *F. decumbens* forms a low woody ground cover



A close view of a fremontia flower shows the five stamens. In this flower, the sepals replace the petals



Fremontia leaves show the characteristic stellate hairs throughout this group.



A rare, bigeneric cross between fremontia and Mexico's monkey-hand tree (*Chiranthodendron pentadactylon*) has produced x *Chiranthofremontia lenzii*)



Here are the cup-shaped deep red flowers of the other parent, known as monkey hand tree, *Chiranthodendron pentadactylon*



*Thomasia*, a genus from Western Australia was also one of the Sterculiaceae. Here you see the characteristic leaves of these drought-tolerant shrubs



*Thomasia* can grow into a large drought-tolerant shrub



The red flowers of *Thomasia grandiflora* show the starlike pattern seen in our own fremontia flowers



*Thomasia grandiflora*

Photos: B.A. Fuhrer & A. Ireland

Here is another color form of *T. grandiflora*



*Lasiopetalum involucratum* is another drought-tolerant Australian shrub similar to *Thomasia*



The former bombax family includes the bottle trees in the genus *Brachychiton* from Australia. This one displays maplelike leaves



Brachychitons are often known as bottle trees because their swollen, water-storing trunk resembles a bottle.



The decorative furry capsules of *Brachychiton*. The outside is covered with irritating hairs similar to those of fremontia



The bottle tree trunk sometimes are guarded by stout spines as are the trunk of the kapok tree, *Ceiba pentandra* from the tropics



The genus *Bombax* displays flowers very akin to the former regulation Malvaceae



Related to the bottle trees, *Adansonia digitata* or baobab tree from drylands of Africa and Australia also feature swollen trunks to store water.



The baobab puts its flowers and fruits on long stalks away from the leaf crown so bats—the pollinators—can find them by their sonar system



Before lumping the other families with Malvaceae, typical Malvaceae featured numerous stamens as seen here in this hibiscus flower



Although most hibiscuses are sub- to fully tropical, two species are native Californians. This spectacular species, *H. lasiocarpus*, grows in the Delta region



Little known outside its native habitat, *H. denudatus* (desert hibiscus) is a woody perennial found in our southern deserts.



The genus *Hibiscus* has dozens of species, mostly tropical. The most famous in gardens is the hybrid known as *H. rosa-sinensis*, literally meaning rose of China, although its origins are not there.



One of the most unusual species is the tropical African *H. schizopetalus*



Photo copyright Henriette Kress  
<http://www.henriettesherbal.com>

Found on many tropical shores, and used for its bast fibers is *H. tiliaceus*. The flowers turn from yellow to orange within a day, as they fade



Perhaps the most often eaten hibiscus is *H. esculentus*, aka okra. Here you see the young seed pods. If left to ripen, the seed pods become hard, woody, and inedible.



Closely related to hibiscus is the Western Australian  
*Alyogyne*, often known as blue hibiscus



A close up of *A. huegellii* flowers



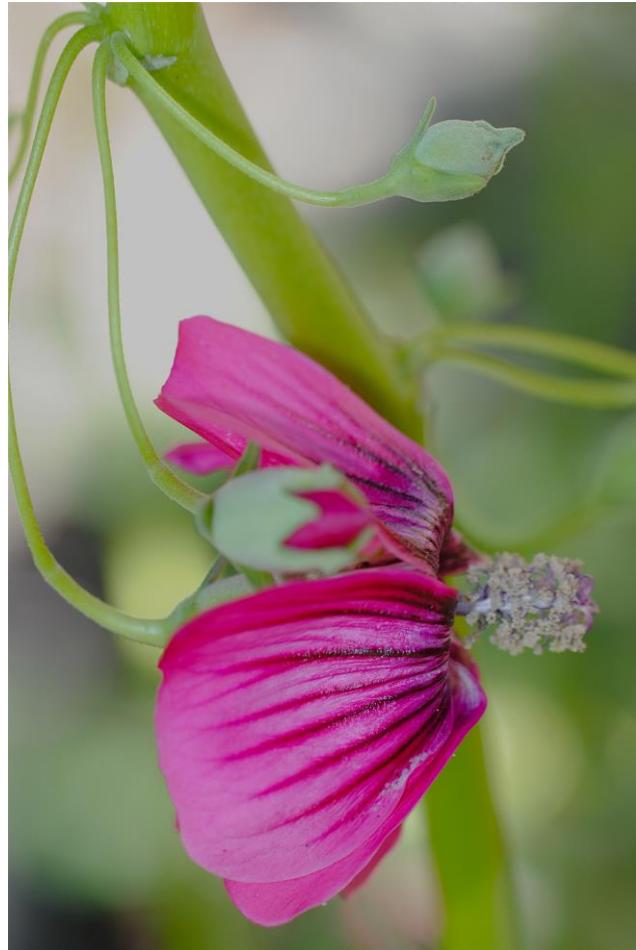
The common species is *A. huegellii*, although occasionally others are available. This species also has a white cultivar



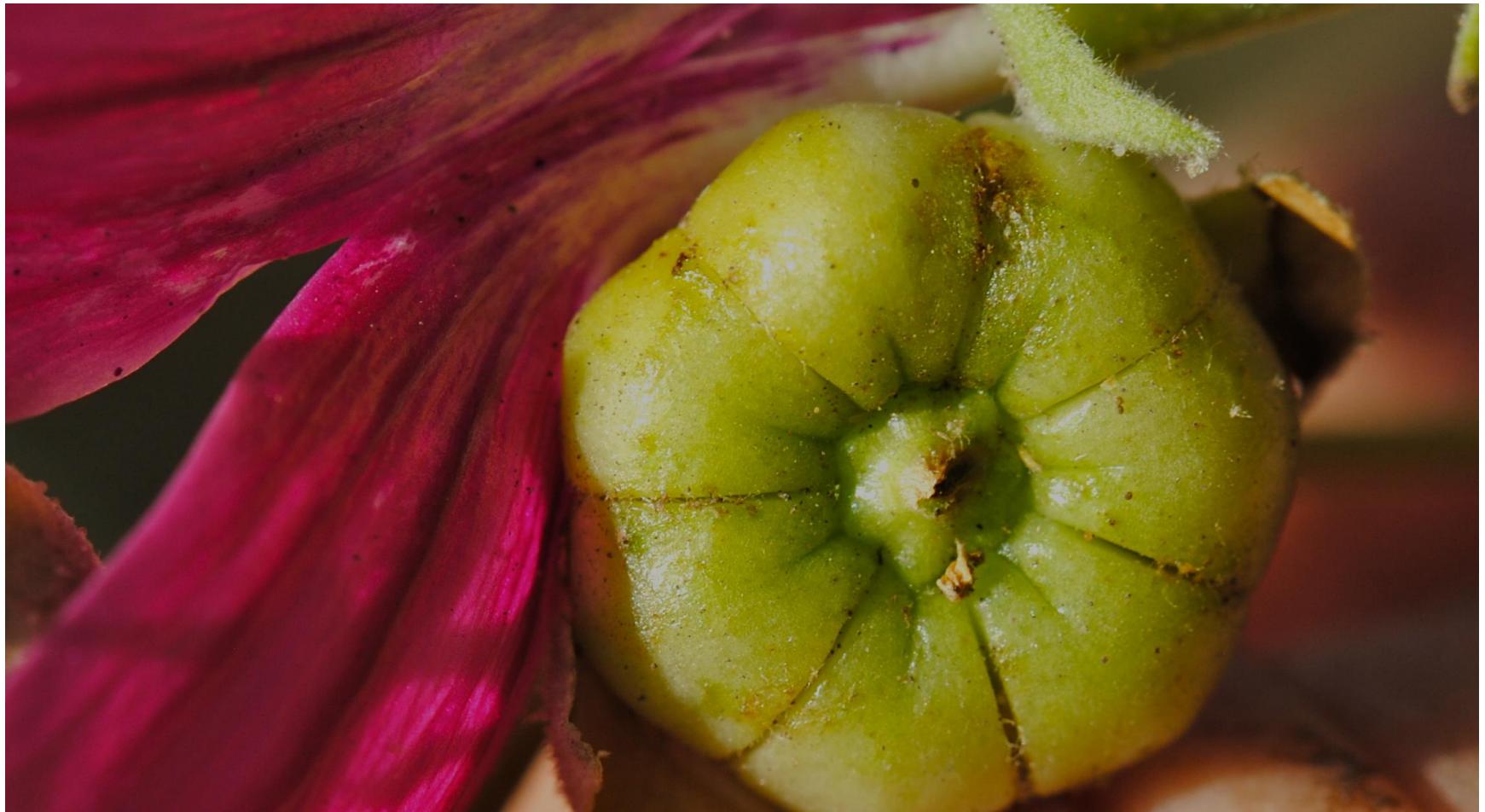
The genus *Lavatera* is a good example of a Mediterranean climate-adapted group. This popular, fast-growing shrub, *L. maritima*, is from the Mediterranean Basin



California's rose mallow, *Lavatera assurgentiflora*, is an ever-blooming shrub from Catalina Island



The ovary of *Lavatera* shows the characteristic cheese wheel-like design



*Lavatera* leaves show the typical mallow “plan”



The European genus *Malva* has given us several vigorous weeds with taproots. So similar are the flowers in this genus, that the lavateras have been lumped with *Malva*



Malva fruits show the family design and give rise to the common name “cheeses”



The genus *Abutilon* or flowering maple gives us fast-growing, long-blooming shrubs from North and South America. Most like this one are hybrids



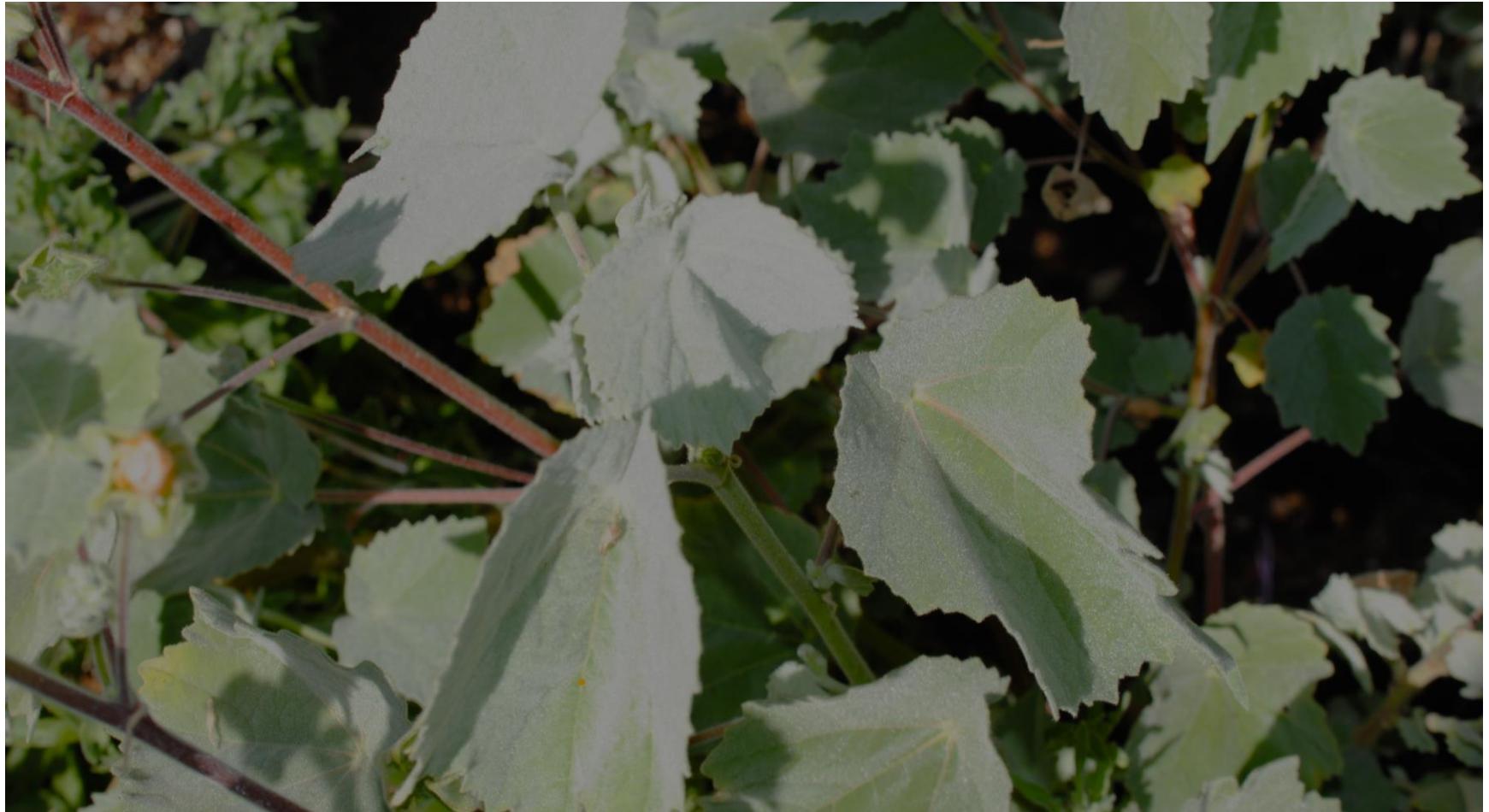
*A. mesopotanicum* is an easy-to-grow species with lanternlike flowers attractive to hummingbirds.



California's *A. palmeri* is an attractive small shrub from our deserts.



*A. palmeri* leaves are covered with a dense felt of gray hairs



*Abutilon* seed pods have a characteristic shape that identifies the genus. Seed pod characteristics are important in separating genera in the family



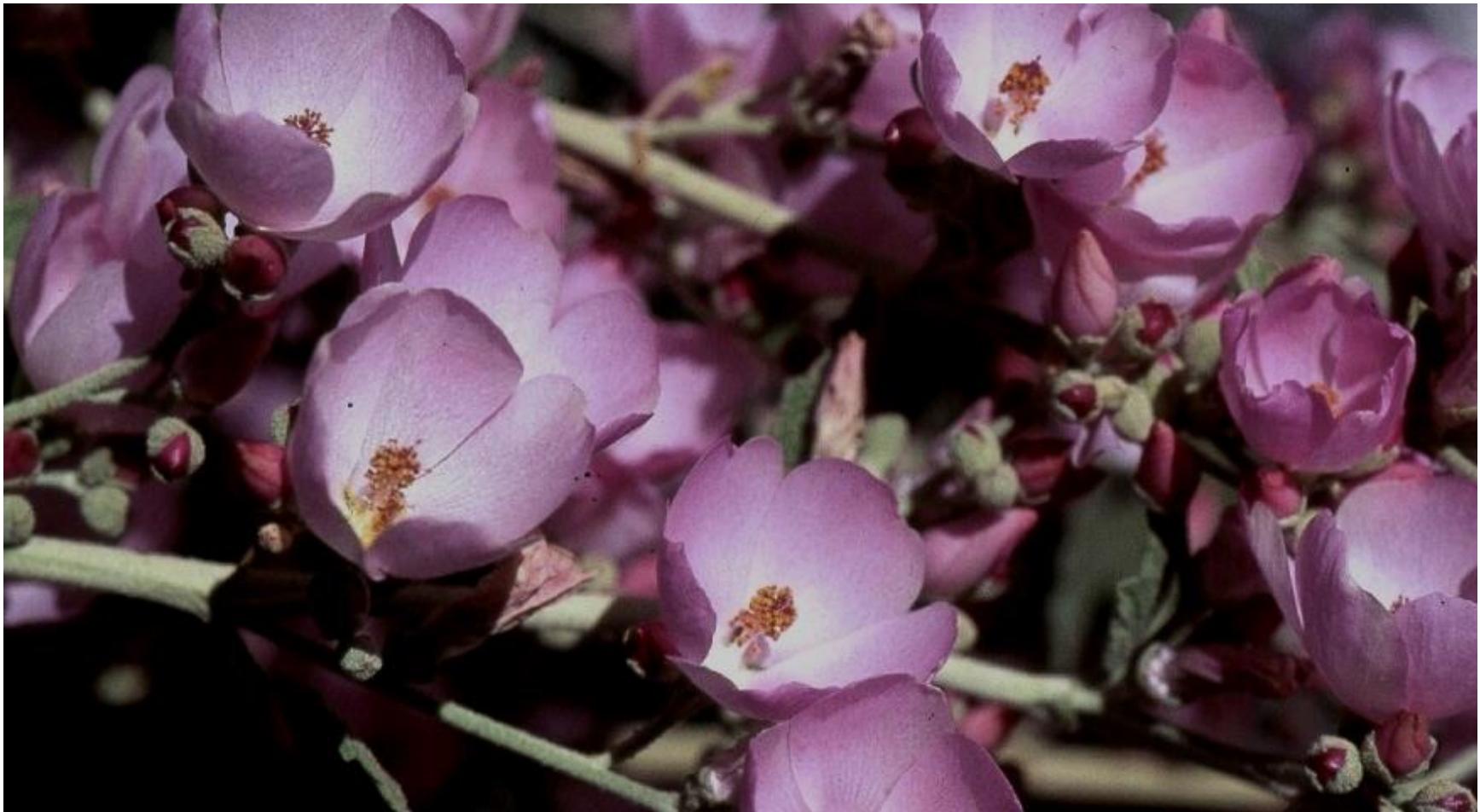
*Eremalche rotundifolia* or desert globe-mallow is a stunning annual that deserves trial in dry gardens



Another characteristic drought-tolerant native genus is *Malacothamnus* (bush mallows). Here you see the large population following a brush fire.



The fast-growing bush mallows provide a spectacular flower show in spring. Here you see the variable *M. fasciculatus*



*M. fasciculatus* leaves and flowering stalks in bud



The Fremont bush mallow (*M. fremontii*) has fury silvery leaves and pale pink flowers



## Leaves of *M. fremontii*



A third species is Palmer's bush mallow (*M. palmeri*) whose flower buds are somewhat reminiscent of rose buds



Another drought-tolerant native mallow group is *Sphaeralcea* (desert or apricot mallow), small woody perennials with brightly colored flowers



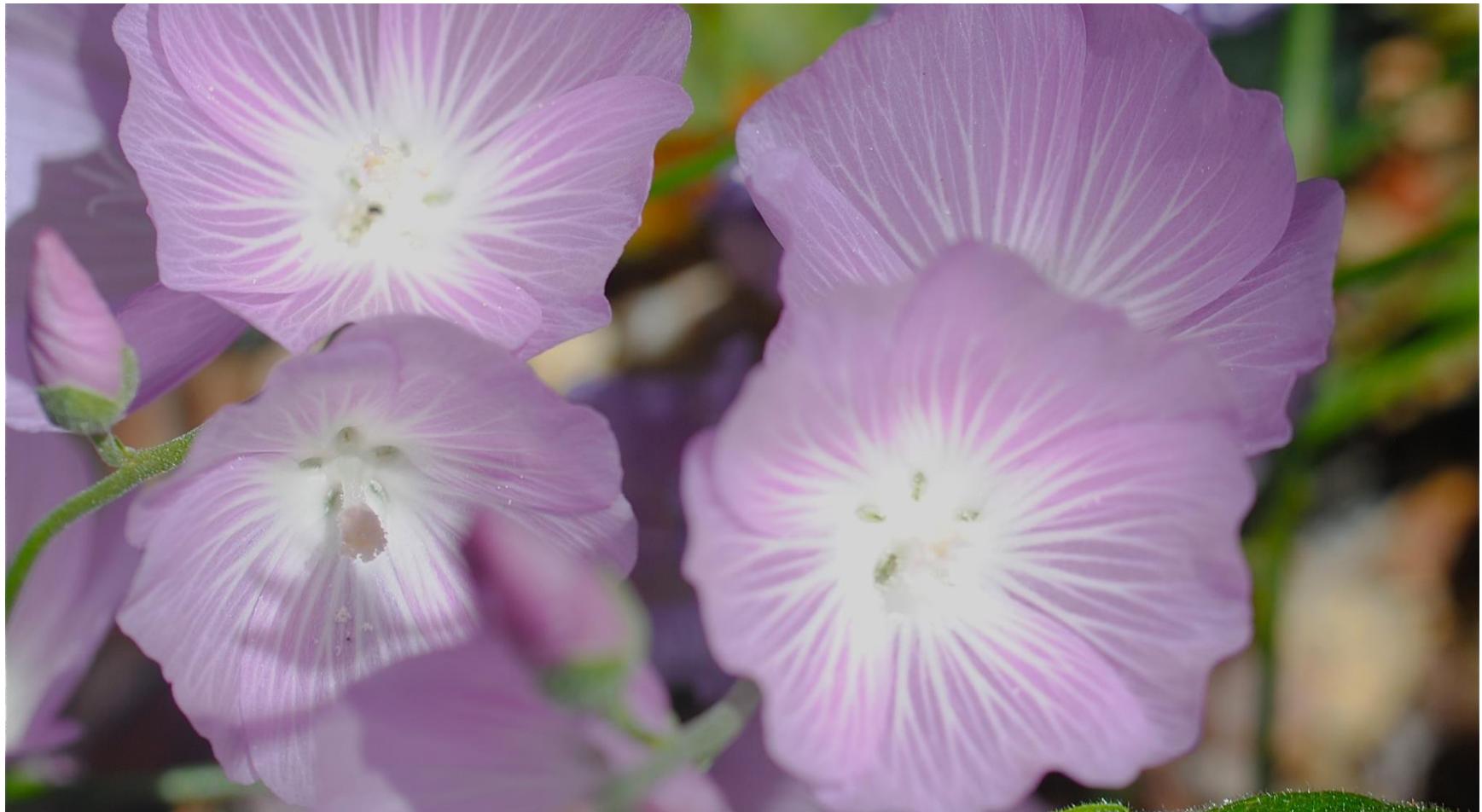
*S. ambigua* produces flowers over a long time but requires really good drainage to thrive



Finally, the checker-mallows, *Sidalcea*, are herbaceous perennials easy to grow in gardens and spreading by creeping rhizomes. This is *S. malviflora*.



*S. malviflora* varies considerably with some forms bearing pale flowers, others deep rose-red.



Despite the wide availability of *S. malviflora*, other species are equally good. Here you see the flowers of the annual *S. calycosa*, easy to grow from seed.



A rare subspecies of *S. calycosa*, ssp. *rhizomata*, is confined to wetlands on the Bay Area coast. Despite its rarity, it's easy to grow by a pond in the garden

