SCROPHULARIACEAE: THE FIGWORT OR SNAPDRAGON FAMILY

A FAMILY TORN ASUNDER BY RECENT DNA STUDIES AND SOMETIMES CONFUSED WITH OTHER FAMILIES
The snapdragon family is important horticulturally, especially for dry gardens

- The family as it was once defined, was widespread in California and the West, the Mediterranean Basin, and in South Africa
- The family has flowers resembling such relatives as the Acanthaceae (acanth family), Bignoniaceae (trumpet vine family), Myoporaceae, and several others
- Currently the family itself has been drastically realigned
Before getting into the realignment of the family, here is a brief synopsis of related, similar-looking families

- The Acanthaceae is a mostly tropical family of herbs, vines, and shrubs with a flower design similar to scrophs.
- The main difference is in the pairs of bracts enclosing the flowers, and the few seeds per ovary that are forcibly ejected when ripe.
- The following are a few examples
Acanthus or bear’s breeches is a typical Mediterranean perennial from tough rhizomes with sculpted leaves and spikes of flowers w spiny bracts.
*Dicliptera* is a woody perennial or small shrub from tropical America with red, hummingbird-pollinated flowers.
Chuparosa (*justicia californica*) is a broad desert shrub that blooms in winter and spring with a plethora of red flowers attractive to hummingbirds. Other justicias are also sometimes available.
*Thunbergia alata* and others are subtropical vines with colorful flowers, somewhat frost tender.
The Bignoniaceae or trumpetvine family is another look alike that is mostly tropical

- The family consists mostly of woody vines, shrubs, and trees, often with compound leaves
- Although the flower design is similar to scrophs, the seed pods differ by being long, two-chambered capsules with winged seeds for wind dispersal
*Chilopsis linearis*, the so called desert-willow, is a large deciduous shrub from desert washes with gorgeous, orchidlike flowers in summer.
Closely related is a cold-weather tree from eastern North America, *Catalpa bignonioides*, which has been hybridized with desert-willow to form a shrub known as *xChitalpa*.
A fast-growing, subtropical vine with red flowers is *Eccremocarpus*
Here are the colorful flowers of *Eccremocarpus*
*Jacaranda mimosifolia* is a beautiful small street tree for subtropical climates from South America.
Yellow bells (*Tecoma stans*) is a fast-growing, frost-tender small tree with trumpet-shaped yellow flowers from Baja California.
The long, bean-shaped seed pods of yellow bells show the winged seeds typical of the family
Other look-alike families include:

• The Gesneriaceae or African violet family, consisting mostly of tropical herbaceous plants, occasionally grown out of doors

• The Lentibulariaceae or bladderwort family, a family of curious, wet-growing insectivorous plants, and

• Martyniaceae, a small tropical family with horned seed pods
Let’s return to the Scrophulariaceae. Previously this important family included many bilabiate or two-lipped flowers similar in design to the mints (Lamiaceae)

- Many scrophs have opposite leaves, sometimes on square stems but without the odor of mints
- The most important difference between the families is the 2-chambered capsules containing many seeds in the scrophs versus four, one-seeded nutlets in the mints
Currently, the scrophs have been subdivided into three other families, leaving only a few in the original family, especially in California

- Currently, the true scrophs include the genus *Scrophularia* (bee plant, figwort), the type genus
- The Mediterranean/European genus mullein (*Verbascum*) and...
- The members of the formerly separate family, Myoporaceae
- The genus *Buddleia* (butterfly bush) also now belongs to the true scrophs
*Scrophularia californica* is a well known habitat plant for native gardens but has tiny, unshowy flowers.
The mulleins are a group of dramatic, mostly biennial plants with large rosettes of broad leaves and spikes of nearly symmetrical flowers. Here you see the weedy *V. thapsus*
Another weedy mullein is *V. blattaria*, the moth mullein
Most of the scrophs, especially those from the New World, have been moved to the plantain family, Plantaginaceae, a move that seems totally counterintuitive.

- Plantains (Plantago spp.) are noted for having narrow spikes of tiny, greenish, wind-pollinated flowers with parchment paperlike petals and long stamens.
- Many plantains are noxious weeds with taproots, while some native species provide food for various butterflies.
Here you see a spike of a typical plantain, *Plantago lanceolata*. The flowers look nothing like scrophs.
Here you see the native *Plantago insularis*.
The following images are of scrophhs now in the Plantaginaceae.

- Two similar genera useful in dry gardens are the snapdragons (*Antirrhinum* spp.) and toad-flaxes (*Linaria*) spp.
- Both genera feature lips that are tightly pressed together.
- *Antirrhinums* lack nectar-containing spurs while *linarias* have clear-cut spurs.
The common snapdragon, *A. majus*, is a garden annual bred from European stock, and not truly drought tolerant.
California’s native *A. multiflorum*, a shrubby perennial, makes a colorful garden display in summer.
A. coulteri is another native snapdragon, a small annual from disturbed habitats.
Resembling antirrhinums is California’s *Galvezia*, woody perennials with red flowers. Here is island snapdragon, *G. speciosa*
The annual European linarias come in several colors and provide good color in a semidry bed.
Occasionally naturalized in California is the butter-and-eggs, *Linaria vulgaris*, from Europe.
Another appealing genus is *Collinsia*, annuals that grow well in dry shade. The most commonly encountered is *C. heterophylla* or Chinese houses.
Another attractive species is *C. tinctoria* or tincture plant. For best effect, collinsias should be planted in masses.
Noted as a source of medicines for the heart, fox-glove (Digitalis purpurea) is widely naturalized along the north coast.
Some of the showiest scrophs belong to the large genus *Penstemon*, most diverse in the American west, including California. Scarlet bugler (*P. centranthifolius*) is a hummingbird flower.
Another good hummingbird flower is Eaton’s firecracker, *P. eatonii*
The blue or purple *P. heterophyllus* is a long-blooming species common throughout the dry foothills.
Palmer’s penstemon (*P. palmeri*) offers spectacular spikes of fragrant flowers.
Closely related to penstemons are the small woody shrubs known as *Keckiella*. Here you see the climbing *K. cordifolia*, another good hummingbird flower.
The sprawling *K. ternata* also offers up plenty of bright red flowers on stems to 4 feet high
The large genus *Mimulus* (monkeyflowers), abundant in California and found in many other places, has been separated into the little-known family, Phrymaceae

- Monkeyflowers differ by having pleated sepals and

- Two-lobed stigmas that are sensitive to touch, the two lobes closing on contact with a visiting pollinator

- The following are examples of native monkeyflowers
The bush monkeyflowers—small shrubs to 4 feet high—are widespread throughout California’s foothills in scrub and woodlands.
This is the southern *M. longiflorus*, often with pale orange to yellow flowers.
The rare *M. flemingii* from the Channel Islands is a small shrub with Christmas colors.
*M. bifidus*, the azalea-flowered monkeyflower, provides large sized flowers and is often used in hybrids.
Most herbaceous perennial monkeyflowers are not drought tolerant, rather preferring a moist corner year round. Here you see the spectacular scarlet monkeyflower, *M. cardinalis*
There are several other genera transferred to Plantaginaceae but the main remainder of the former scrophs have been transferred to the parasitic, leafless broomrape family, Orobanchaceae

- These scrophs have semiparasitic roots despite having green leaves, and
- They feature an upper lip (*galea*) that forms a hood over the stamens, style, and stigma
Here is what a fully parasitic broomrape or *Orobanche* looks like. Note the total lack of leaves.
The broomrape *O. cooperi* clearly displays the two-lipped design similar to the former scrophs.
Among the new additions to the Orobanchaceae is the genus *Castilleja*. The annual species such as this owl’s clover (*C. exserta*) grow readily with grasses.
By contrast, the perennial species, generally known as Indian paintbrushes have red, orange, or yellow flowers attractive to hummingbirds. Here you see a local species, *C. foliolosa* or woolly paintbrush.
The desert paintbrush, *C. chromosa*, shows just what vivid color these plants provide.
Another in our group of semiparasites is the genus *Pedicularis*, often known as lousewort. The beautiful Indian warrior (*P. densiflorus*) seems to need the company of madrone & manzanita.
A close view of Indian warrior flowers, another hummingbird favorite.
In this close-up of *P. densiflorus* you see the upper lip or galea typical of the plants transferred to Orobanchaceae.
The so-called elephant snouts (*P. groenlandica*) has a fanciful galea resembling the common name
Other members of the semiparasitic “scrophs” include the annual wildflowers in the genus *Triphysaria*. Here is cream sacs or *T. eriantha*
*Orthocarpus*, once a larger genus of native annuals, still applies to *O. cuspidatus*, and clearly shows the upper lip modified into a galea.
The common weed *Parentucellia viscosa* also belongs to the Orobanchaceae.
The seldom-noticed, sometimes rare pelican beaks such as this *Cordylanthus hispidus* also now belong to the Orobanchaceae.