



San Diego County
PLANT ATLAS
PROJECT



Flowers or Fruits — What Do I Collect? *Jeannie's Tips for Collecting Complete Specimens*

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The purpose of our instruction is to teach the art of creating museum-quality specimens upon which to base further scientific study

During your parobotanist training, we instruct you to collect plant specimens that include “flowers and fruits”. While there are some plants that do not bear fruits and flowers at the same time, we do ask that you try to collect both – but why? The Botanist normally needs reproductive parts of the plant in order to positively identify it. Including all representative parts of the plant makes the specimen complete, and enhances its scientific quality.

“Fruit” is a collective term used to describe the different types of mature ovaries that flowering plants can have. The fruit contains the seeds, and some examples are: berry (grape, tomato), nut (acorn), capsule (poppy fruit), pod (pea pod), drupe (plum, cherry), bur (cocklebur), caryopsis (grass grain), and achene (dandelion or sunflower).

If your specimen has neither fruit nor flower included, we may reject the specimen, or we may ask you to return to the plant later on to collect additional material (to which you will assign a new collection number).

Here are some tips to help you understand what you should make note of in your field book, and what you need to collect, depending on the plant family your specimen belongs to. Accurately record features like flower color that may be lost in drying and pressing. Never mix leaves or flowers from one individual plant with fruit from another plant, because the plants will be genetically different from one another.

Ferns and Conifers

Family	Some Examples	Collecting Tips for this Family & Things to Note.
Ferns (Bracken, Wood Fern, Polypody, Brake Families)		Ferns will look mostly vegetative; look for sori/indusium (yellow or brown dots) found on the back of fronds (leaves)
Conifers (Cypress, Pine Families)	Pine Cypress Juniper	Large cones are submitted separately from pressed branches. Use the same specimen number. Note height of the tree.

Eudicots (formerly Dicots)

Family	Some Examples	Collecting Tips for this Family & Things to Note.
Aceraceae (Maple Family)	Maple Box-Elder	Clip branch end (about 10") with representative leaves and with fruit or flowers
Aizoaceae (Fig-Marigold Family)	<i>Carpobrotus</i> Iceplant Sea-Fig	Collect flowers, (flower color essential). Some in this family are very fleshy and dry slowly. <i>Carpobrotus</i> - remove and slice some of the flowers/fruits and press; dry in separate sheets apart from leaves for good air circulation; chop or cross section into ¼ inch pieces one of the bulky leaves; if they are not dry when you deliver your batch of plants, please bring this to our

attention and we will finish the drying process in the museum.

Amaranthaceae (Amaranth, Chenopodium Families)	Tumbleweed Goosefoot Saltbush Pigweed	Look for fruits; some in this family are winged.
Anacardiaceae (Sumac or Cashew Family)	Sumac Lemonade Berry Pepper Tree Poison-Oak	Collect either flowers or fruits
Apiaceae (Carrot Family)	Sanicle <i>Lomatium</i> Hemlock Fennel	fruits essential, note flower color
Apocynaceae (Dogbane, incl. Asclepias or Milkweed Family)	Milkweed Oleander Periwinkle	flowers and fruits flowers
Asteraceae (Composite Family)	Daisies <i>Baccharis</i> Ragweed <i>Ambrosia</i> Thistle Goldenbush Tarplant <i>Filago</i> Matchweed Sunflower Artichoke	flowers and fruits (usually present together); radiate (daisy-like) flower heads can be pressed flat (like a sun) or large heads halved and butterflied to promote drying, then pressed flat.; Artichoke or large thistle heads – harvest when buds first open (and still green) then slice lengthwise in ¼ to ½ inch thick pieces and press separately from leaves; they will be combined later. Do not collect if dry and already dispersing seeds, instead wait until next year
Bignoniaceae (Bignonia Family)	<i>Catalpa</i> Desert Willow	flowers
Boraginaceae (Borage Family)	Fiddleneck <i>Cryptantha</i> Popcorn Flower	Specimen must have mature fruits which are found on stem below flowers; be sure to note flower color
Brassicaceae (Mustard Family)	Mustard Cress Peppergrass Wallflower Fringepod	Specimen must have mature fruits. Look for them below flowers; note flower color; be sure to include a sample of basal leaves if submitting a cutting from the top of a large specimen
Cactaceae (Cactus Family)	<i>Opuntia</i> <i>Cylindropuntia</i> <i>Ferocactus</i> <i>Echinocactus</i>	Cholla, Prickly-Pear - collect pads (stems) with flowers (must have) and fruits if present. With tongs and knife, cut off open flowers, thinly slice one or two lengthwise (vertically to show the style) and press. If there are enough blossoms slice one or more just between the apple and the flower and press open (like a sun); place pads with buds and/or fruits (do not remove) in paper sack and label with your collection number; bring to the museum within a week or so. Barrel - remove a slice of spines (about 5" in length x 1" deep) from South side (to promote faster healing) of specimen; count total ribs. Collect flowers and fruits and slice flowers (as described above)and dry in press; store the spines and uncut fruits in a paper sack and bring to the museum within a week

	<i>Mammillaria</i>	Fish-Hook - collect whole specimen with flowers and/or fruits; bring uncut to museum within 2 weeks. Slice flowers and fruits and press.
	<i>Echinocactus</i> <i>Bergerocactus</i>	Hedgehog, Mound - collect one stem from plant; slice and press opened flowers (as above); bring uncut stem (with buds and fruits still attached) to the museum within 2 weeks
Campanulaceae (Bellflower Family)	Bluecup Threadplant <i>Lobelia</i>	flowers and fruits
Caprifoliaceae (Honeysuckle Family)	Honeysuckle	flowers or fruits
Caryophyllaceae (Pink Family)	Chickweed Catchfly Sand-Spurry	flowers
Cistaceae (Rock-Rose Family)	Rush-Rose Rock-Rose	flowers or fruits
Convolvulaceae (Morning-Glory, Dodder Family)	Morning-Glory Bindweed <i>Cuscuta</i> (Dodder)	flowers essential orange colored parasite, collect with flowers (tiny & white); also collect the branch of the host plant; Note in the plant description the name of the host plant
Crassulaceae (Stonecrop Family)	whole family Live Forever/ Chalk Dudleya	flowers. Leaves are fleshy and dry slowly Collect whole plant if smaller than 7" diameter (preferred). If larger, collect 3 - 4 leaves and 1 flower stalk and press; count leaves in whole rosette; measure diameter and note in plant description
Cucurbitaceae (Gourd Family)	Coyote Melon Wild Cucumber Marah	flowers or green to semi-green fruits; slice fruits and dry in separate sheets to be combined later
Ericaceae (Heath Family)	Manzanita <i>Arctostaphylos</i>	Collect fruits. Make note if there is a burl (woody outgrowth at base of the shrub/ tree). This is important.
Euphorbiaceae (Spurge Family)	Doveweed <i>Croton</i> Castor Bean	fruits and flowers required
Fabaceae (Legume Family)	Clover Vetch Locoweed Broom Pea Lupine <i>Acacia</i> <i>Lotus</i> Vicia	flowers flower and fruits flower and fruits, note flower color fruits fruits flowers fruits fruits flower and fruits
Fagaceae (Oak Family)	Oak	fruits (acorns) essential, if still green press with leaves; if dry remove with cups and dry in a paper bag (with the same specimen number) to keep from shattering when

pressed. Acorns and other specimen parts will be combined later.

Fouquieriaceae (Ocotillo Family)	Ocotillo	8-10 inch branch with flowers
Garryaceae (Silk Tassel Family)	Silk Tassel	flowers or fruits; leaves essential (leaves have determining hairs on underside)
Gentianaceae (Gentian Family)	Canchalagua Centaury	flower stalks with some typical basal leaves if present
Geraniaceae (Geranium Family)	Storksbill <i>Geranium</i>	fruits and flowers
Grossulariaceae (Gooseberry Family)	Currant	flowers (especially note flower color)
Hydrophyllaceae (Waterleaf Family)	<i>Phacelia</i> <i>Eucrypta</i> Baby Blue Eyes	flowers and fruits
	Yerba Santa	flowers
Lamiaceae (Mint Family)	Sage <i>Monardella</i> Woolly Bluecurls	flowers or fruits. Plants are usually fragrant.
Loasaceae (Loasa Family)	Stick-Leaf Blazing Star	fruits with mature seeds
Lythraceae (Loosestrife Family)	<i>Lythrum</i>	flowers
Malvaceae (Mallow Family)	Hollyhock Mallow Checkerbloom Cheeseweed	flowers and mature fruits (usually flattened, round, and segmented)
Myrtaceae (Myrtle Family)	Bottlebrush	flowers and fruits
	<i>Eucalyptus</i>	Need leaves, flower buds with caps attached and some mature fruits.
Nyctaginaceae (Four O'Clock Family)	Wishbone Plant Ringstem Sand Verbena	flowers
	<i>Abronia</i> (Sand Verbena)	fruits
Oleaceae (Olive Family)	Ash Privet	fruits

Onagraceae (Evening-Primrose Family)	Sun-Cup <i>Clarkia</i> California Fuschia Willow-Herb Evening Primrose	flowers and fruits essential
Orobanchaceae (Broom-Rape Family)	Paintbrush Bird's Beak	flowers. Note nearby plants. Many in this family are parasitic.
Papaveraceae (Poppy Family)	Matilija Poppy Cream Cups Golden Ear-Drops	flowers and fruits
Phrymaceae (Hopseed Family)	Monkey Flower	flowers (important to note color)
Plantaginaceae (Plantain Family)	Snapdragon Chinese Houses Toadflax Plantain Speedwell <i>Penstemon</i>	flowers and fruits flowers
Platanaceae (Sycamore Family)	Sycamore	fruits
Plumbaginaceae (Leadwort Family)	Marsh Rosemary Statice	flowers and basal leaves
Polemoniaceae (Phlox Family)	<i>Gilia</i> Woolly-Star <i>Navarretia</i>	flowers
Polygonaceae (Buckwheat Family)	Spineflower Buckwheat Willow Weed Dock	flowers and basal leaves from annual plants; branch cuttings with flowers from shrubs
Portulacaceae (Purslane Family)	Red Maids Miner's-Lettuce <i>Montia</i>	whole plant with flowers & fruits
Primulaceae (Primrose Family)	Shooting Star Pimpernel	flowers
Ranunculaceae (Buttercup Family)	Columbine Larkspur Meadow Rue	flowers and fruits
Rhamnaceae (Buckthorn Family)	Redberry Coffeeberry <i>Ceanothus</i> (Wild Lilac)	flowers and/or fruits must have fruits
Rosaceae (Rose Family)	Chamise Mountain-Mahogany	flowers and/or fruits

	<i>Cotoneaster</i> Toyon Cinquefoil	
	Cherry Berry Plum	fruits
	<i>Rosa</i> <i>Horkelia</i>	flowers essential
Rubiaceae (Coffee Family)	<i>Galium</i> Bedstraw	fruits essential
Salicaceae (Willow Family)	Cottonwood Willow Poplar	flowers and fruits
Saxifragaceae (Saxifrage Family)	<i>Heuchera</i> Woodland Star Alumroot	flowers
	<i>Jepsonia</i>	bulb, and leaves or flowers
Scrophulariaceae (Figwort Family)	Bee Plant Mullein	flowers
Solanaceae (Nightshade Family)	Jimson Weed Desert Thorn Tomato Tobacco Nightshade	flowers and fruits
Tamaricaceae (Tamarisk Family)	Tamarisk Salt-Cedar	flowers
Urticaceae (Nettle Family)	Nettle Pellitory <i>Urtica</i>	fruits
Verbenaceae (Vervain Family)	<i>Lantana</i> Vervain <i>Phyla</i>	flowers
	<i>Verbena</i>	flowers and fruits
Viscaceae (Mistletoe Family)	Mistletoe	parasite; needs flowers or fruits and a piece of host; Note in the description the host plant
Vitaceae (Grape Family)	Wild Grape	flowers; maybe a liter or two of the wine.
Zygophyllaceae (Caltrop Family)	<i>Fagonia</i> Creosote Bush	flowers and/or fruits

Monocots

Family	Some Examples	Collecting Tips for this Family & Things to Note.
Agavaceae (Agave Family)	<i>Hesperoyucca</i> <i>Yucca</i>	Collect and press blossoms or fruits (split with knife if more than ¼ inch thick); remove (cut or pull) leaf getting as much of the attaching base as possible and fold and press separately from flowers, these will be combined later
	<i>Agave</i>	press flowers; remove (cut or pull) leaf getting as much of the attaching base as possible and put in a paper bag, submit within 2 weeks; we will process the fleshy leaves in the museum.
Alliaceae (Onion Family)	Onion	leaves will have the odor of onion; collect the bulb and skins (the dry outer skins are diagnostic); slice bulb into ¼ inch slices and press with flowers
Arecaceae (Palm Family)	Palm	Collect 1 frond and fruits or flowers, bring in and we will process it for you in the herbarium.
Asparagaceae (Asparagus Family)	<i>Asparagus</i>	fruits
Cyperaceae (Sedge Family)	Sedge <i>Carex</i> Bulrush	roots of smaller specimens, leaves, and fruits
Iridaceae (Iris Family)	<i>Iris</i> Blue Flag Blue-Eyed-Grass	leaves and flowers
Juncaceae (Rush Family)	Rush <i>Juncus</i>	mature fruits essential
Liliaceae (Lily Family)	<i>Calochortus</i> Mariposa Lily <i>Fritillaria</i> Chocolate Lily	No bulbs necessary, collect only stems with leaves and flowers; but if leaves smell like an onion follow the procedure for Alliaceae
Melanthiaceae (Camas Family)	<i>Zigadenus</i> Camas	leaves and flower, no bulbs
Nolinaceae (Nolina Family)	<i>Nolina</i> Bear-Grass	Collect and press blossoms or fruits (split with knife if more than ¼ inch thick); remove leaf (cut or pull) getting as much of the attaching base as possible and fold and press separately from flowers, these will be combined later
Orchidaceae (Orchid Family)	Orchid Coralroot Rein Orchid	flowers (note color)
Poaceae (Grass Family)	Grass	roots, leaves, and fruits
Themidaceae (Brodiaea Family)	Goldenstar Blue Dicks	leaves and flowers, if it smells like an onion, follow the procedure for Alliaceae

Wild Hyacinth

Brodiaea

Cut 1 or 2 flowers and press open to stamens and staminodes

Typhaceae
(Cattail Family)

Cattail
Typha

Harvest leaves, stems with mature heads just before seed dispersal
