



LEO CARRILLO RANCH HISTORIC PARK
2019 PLANT LIST

PATRICIA LINTON AND MIKE BLANCO, PH.D.
LCR DOCENTS

2019 PLANT LIST - LEO CARRILLO RANCH HISTORIC PARK

PATRICIA LINTON AND MIKE BLANCO, PH.D.

LCR DOCENTS

INTRODUCTION

The *2019 LCR Plant List* was created as a resource for LCR Staff, Docents and Visitors with the goal of sharing information about plants as a means to connect with the natural beauty of the Ranch. When we identify plants and share their stories, we find ourselves focusing on details that we are otherwise apt to miss. Looking closely at a plant's unique characteristics often leads us to a better understanding of the giant web of plant, animal and human inter-connectivity that grounds us all. Our roots are not as separate as we might think.

Leo Carrillo loved the land and whenever he spoke about plants on the Ranch in his autobiography, his comments are noted throughout the *Plant List*.

More than just a list of plant names and their location, many botanical concepts are explored such as flower structure and ecological relationships with pollinators, mutualism, commensalism and parasitism, specialized photosynthesis and convergent evolution to name a few. For a 'conceptual approach' rather than a 'location approach' to looking at the plants at LCR, see Appendix VI Botanical Concepts and Other Themes.

We have made a sincere effort to identify these 105 plants but we do not presume to be botanical experts and welcome corrections. Please send LCR suggested revisions and feedback to this email address: carrilloranch@carlsbadca.gov.

We want to thank the LCR Docents that participated in the 'Plant Walk Arounds' that helped create this document as well as the entire LCR Staff who were always so encouraging. We thank all of you who shared your plant expertise and suggestions with us, you will see your fingerprints all over this document—it was truly an LCR Docent driven project.

Pat Linton and Mike Blanco

LCR - June 2019

HOW TO USE 'QR' CODES

The *2019 LCR Plant List* is provided in print and web formats with 'QR Codes' to view pictures of the plants on your phone or tablet/computer. [A *QR code* (Quick Response code) is the trademark for a type of optical label that links to more information.]

If you have an **Android** device and do not already have a QR Scanner application (app), you will need to download a 'QR Reader' app from Google Play Store.

1. Open the **Play Store**.
2. Search for **QR code reader**.
3. Tap **QR Code Reader**.
4. Tap **Install**.
5. Tap **Accept**.
6. Open **QR Code Reader**.
7. Line up the **QR code** in the camera.
8. Tap **OK**.

If you have an **Apple** device, **Open the camera app**. Apple's iPhones have built-in QR code scanning capabilities, so there is no need to download a separate scanning app. Since iOS 12, there is a direct QR code reader in the Control Panel.

For both **Android** and **Apple** devices, aim the camera at the QR Code. The QR code doesn't need to fill the entire screen, but all four corners should be visible. If your camera is too angled, the app may have trouble recognizing the code, so a straight-on approach is best. Once the QR code is visible in the phone camera, you may be asked to launch the scan by tapping 'OK', 'Scan' or be required to tap the notification bar to initiate the link to the picture.

ABBREVIATIONS

Throughout the *LCR Plant List*, '**PL #x**', '**Plant List #x**', is used to refer to other entries within the *Plant List*.

Cover Photo: *Cleistocactus winteri*, PL #43 - P. Linton

2019 PLANT LIST - LEO CARRILLO RANCH HISTORIC PARK

PATRICIA LINTON AND MIKE BLANCO, PH.D.

LCR DOCENTS

TABLE OF CONTENTS

Introduction.....1

How to Use *2019 LCR Plant List*.....1

Table of Contents.....2

Plant Location Map - Plant Location Codes.....4

Plant Index of Common and Scientific Names.....5

2019 LCR Plant List.....10

Endnotes.....42

Appendix I – Botanic Diagram - Parts of a Flower.....49

Appendix II – Botanic Diagram – Types of Flower Clusters50

Appendix III – Leaf Shapes and Growth Patterns.....51

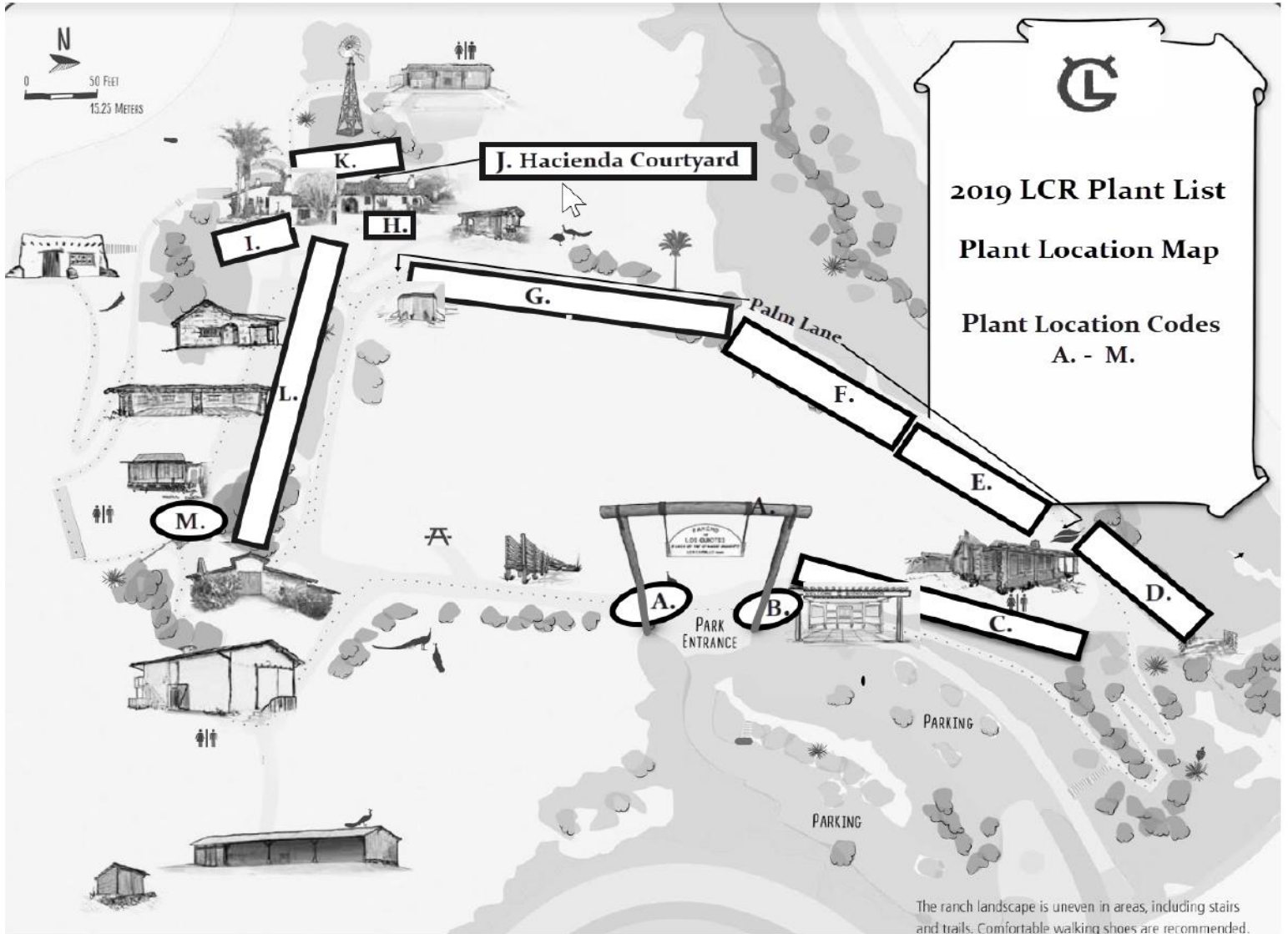
Appendix IV – Plant Index by Location52

Appendix V – Plant Index by Plant Family57

Appendix VI – Botanical Concepts and Other Themes.....62

LCR PLANT LOCATION MAP - PLANT LOCATION CODES A. – M.

PLANT INDEX BY LOCATION – APPENDIX IV



2019 LCR Plant List
INDEX - Common and Scientific Names

Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code
<i>Acanthus mollis</i>	93	K	Arrojadoa Cactus	51	G
<i>Aeonium arboreum</i> 'Zwartkop'	82	J	<i>Arrojadoa dinae</i>	51	G
<i>Aeonium</i> spp.	81	J	<i>Arrojadoa</i> spp.	51	G
Aeonium Succulent	81	J	Arroyo Willow	25	D
African Candelabra	49	G	Artichoke Agave	40	F
African Iris	33	E	<i>Asclepias curassavica</i>	24	D
African Tree Aloe	62	H	<i>Asclepias fascicularis</i>	24	D
Agave	1	A	<i>Asclepias</i> spp.	24	D
<i>Agave americana</i>	1	A	Australian Tree Fern	85	J
<i>Agave attenuata</i>	2	A	Autumn Sage	26	K
Agave Azul	45	F	Baccharis	104	M
Agave 'Blue Flame'	70	I	<i>Baccharis pilularis</i>	104	M
Agave 'Blue Glow'	69	I	Banana Yucca	9	B
<i>Agave ovatifolia</i>	96	K	Barrel Cactus	59	H
<i>Agave parryi</i>	40	F	Beaked Yucca	8	B
<i>Agave potatorum</i>	39	E	Bear's Breeches	93	K
<i>Agave shawii</i>	54	G	<i>Beaucarnea recurvata</i>	101	L
<i>Agave tequilana</i>	45	F	Big Horned Spurge	80	J
<i>Agave victoriae-reginae</i>	60	H	Billbergia Amoena Viridis	76	J
Agave, Artichoke	40	F	<i>Billbergia amoena viridis</i> var. Rubra	76	J
<i>Albizia julibrissin</i>	35	E	Bird of Paradise	21	D
<i>Albizia</i> spp.	35	E	Black Rose Aeonium	82	J
<i>Alluadia procera</i>	47	G	Black Sage	26	D
<i>Aloe arborescens</i>	10	B	Blue Agave	45	F
Aloe Common	36	E	Blue Chalksticks	83	J
<i>Aloe maculata</i>	46	G	Blue Elderberry	55	G
<i>Aloe marlothii</i>	58	G	<i>Bougainvillea</i> spp.	88	J
<i>Aloe plicatilis</i>	52	G	Brittle Bush	73	I
<i>Aloe striata</i>	3	A	<i>Bulbine</i> spp.	74	I
<i>Aloe tenuior</i>	91	J	Bunny Ear Cactus	68	I
<i>Aloe vera</i>	36	E	Burbank's Spineless Cactus	12	C
Aloe Yucca	32	E	Bush Sunflower	73	I
Aloe, Soap	46	G	Butterfly Agave	39	E
Aloe, True	36	E	Butterfly Ginger	87	J
Aloe, Zebra	46	G	Cactus Apple	50	G
<i>Aloidendron baninsii</i>	62	H	<i>Calandrinia spectabilis</i>	105	M
<i>Aloidendron barberae</i>	62	H	<i>Calandrinia</i> spp.	105	M
<i>Aloidendron barberae</i> x <i>A. dichotoma</i>	102	L	California Barrel Cactus	59	H
<i>Alpinia zerumbet</i>	87	J	California Flannel Bush	28	D
<i>Arctostaphylos</i> spp.	67	I	California Fremontia	28	D

2019 LCR Plant List
INDEX - Common and Scientific Names

Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code
California Golden Bells	28	D	<i>Cotyledon</i> spp.	79	J
California Holly	15	C	Cow's Horn Euphorbia	80	J
California Pepper Tree	11	C	Coyote Brush/Bush	104	M
California Snowberry	16	C	<i>Crassula ovata</i>	30	D
California Sycamore	31	E	Crested Euphorbia	78	J
<i>Calyophus hartwegii</i>	92	K	Crown of Thorns	94	K
<i>Camellia</i> spp.	86	J	<i>Cyanthea cooperi</i>	85	J
Canary Island Date Palm	100	K	<i>Cydonia oblonga</i>	34	E
Canary Island Pine	14	C	<i>Cylindropuntia fulgida</i>	42	F
Candelabra Aloe	10	B	<i>Cylindropuntia prolifera</i>	42	F
Candelabra Tree	49	G	<i>Dasyliirion wheeleri</i>	97	K
Candle Plant	83	J	Deer Grass	27	D
<i>Carissa macrocarpa</i>	56	G	Desert Spoon	97	K
<i>Carnegiea gigantea</i>	66	I	<i>Dietes</i> spp.	33	E
<i>Carpobrotus chilensis</i>	17	C	Dinner Plate Aeonium	81	J
<i>Carpobrotus edulis</i>	17	C	<i>Dracaena draco</i>	84	J
Carrion Plant	65	H	Dragon Tree	84	J
Century Plant	1	A	Dwarf Blue Chalksticks	83	J
<i>Cereus peruvianus</i>	50	G	Dwarf Fan Palm	64	H
<i>Cereus repandus</i>	50	G	<i>Dyopsis decaryi</i>	90	J
Chalksticks	83	J	<i>Echinocactus</i> spp.	59	H
<i>Chamaerops humilis</i>	64	H	<i>Echinopsis huascha</i>	53	G
Chaparral Broom Bush	104	M	<i>Echinopsis peruviana</i>	72	I
Chaparral Yucca	38	E	<i>Echinopsis</i> supp.		
Cherry Sage	26	K	<i>Echium fastuosum</i>	6	A
Christ Plant	94	K	Elephant Ear Kalanchoe	98	K
Christmas Berry	15	C	Elephant's Foot	101	L
<i>Cistus x purpureus</i> Hybrid	7	A	<i>Encelia californica</i>	73	I
<i>Citrus reticulata</i>	29	D	<i>Encelia farinosa</i>	73	I
<i>Citrus x sinensis</i>	29	J	Eucalypts	20	C
<i>Cleistocactus strausii</i>	75	I	<i>Eucalyptus</i> spp.	20	C
<i>Cleistocactus winteri</i>	43	F	Euphorbia	49	G
Cleveland Sage	26	D	<i>Euphorbia ammak</i>	49	G
Coast Cholla	42	F	<i>Euphorbia grandicornis</i>	80	J
Coast Live Oak	5	A	<i>Euphorbia kibwezensis cristata</i>	78	J
Coastal Agave	54	G	<i>Euphorbia milii</i>	94	K
Columnar Cactus	63	H	European Fan Palm	64	H
Common Sotol	97	K	Fan Aloe	52	G
Compass Cactus	59	H	Fang Plant	98	K
Coral Aloe	3	A	Felt Plant	98	K

2019 LCR Plant List
INDEX - Common and Scientific Names

Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code
Fence Aloe	91	J	Los Alisos	31	E
<i>Ferocactus</i> spp.	59	H	Los Perus	11	C
Finger Aloe	79	J	Los Quiotes	38	E
Fire Thorn	19	C	Madagascar Ocotillo	47	G
Flat Flowered Aloe	58	G	Mandarin Orange Tree	29	D
Foothill Yucca	38	E	Manzanita	67	I
Fortnight Lily	33	E	Mediterranean Fan Palm	64	H
Foxtail Agave	2	A	Mexican Cardinal Flower	95	K
<i>Fremontodendron californicum</i>	28	D	Mexican Elderberry	55	G
<i>Gambelia speciosa</i>	4	A	Mexican Lobelia	95	K
<i>Gardenia</i> spp.	89	J	Milkweed, Native	24	D
Giant Club Cactus	50	G	Milkweed, Tropical	24	D
Golden Barrel Cactus	59	H	Mimosa	35	E
Golden Rat Tail Cactus	43	F	Mojave Yucca	71	I
Grey Sticks	79	J	Moonshine Agave	41	F
Hanging Chain Cholla	42	F	Mother-in-Law's Tongue	48	G
Hedgehog Cactus	63	H	Mountain Aloe	58	G
Hercules Aloe	102	L	<i>Muhlenbergia rigens</i>	27	D
<i>Hesperoyucca whipplei</i>	38	E	Natal Plum	56	G
<i>Heteromeles arbutifolia</i>	15	C	Ocotillo	47	G
High Plains Yellow Sundrops	92	K	Octopus Aloe	10	B
Hotlips Sage	26	K	<i>Olea europaea</i>	103	L
Hottentot-fig	17	C	Olive Tree	103	L
<i>Hylocereus hildmannianus cactaceae</i>	50	G	<i>Opuntia erinacea ursine</i>	77	J
<i>Hylocereus peruvianus</i>	50	G	<i>Opuntia ficus-indica</i>	12	C
Ice Plant	17	C	<i>Opuntia ficus-indica x Opuntia tuna</i>	12	C
India Fig Cactus	12	C	<i>Opuntia gosseliniana</i> var. Santa Rita	61	H
Jade Plant	30	D	<i>Opuntia microdasys</i>	68	I
Japanese Iris	33	E	<i>Opuntia Santa-Rita</i>	61	H
Jumping Cactus	42	F	<i>Opuntia violacea</i> var. Santa Rita	61	H
Jumping Cholla	42	F	Orange Tree	29	J
<i>Kalanchoe baharensis</i>	98	K	Orchid Rock Rose	7	A
Lemonade Berry	18	C	Pachypodium	44	F
Lenkoran Acacia	35	E	<i>Pachypodium</i> spp.	44	F
Lion's Tail	2	A	Palo Verde	57	G
Lobelia	95	K	<i>Parkinsonia aculeata</i>	57	G
<i>Lobelia laxiflora</i>	95	K	Persian Silk Tree	35	E
Lobivia	63	H	Peruvian Apple Cactus	50	G
Lord's Candle	38	E	Peruvian Torch Cactus	72	I

2019 LCR Plant List
INDEX - Common and Scientific Names

Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code
<i>Phoenix canariensis</i>	100	K	<i>Sambucus mexicana</i>	55	G
Pink Porcelain Lily	87	J	<i>Sambucus nigra</i>	55	G
<i>Pinus canariensis</i>	14	C	<i>Sambucus</i> spp.	55	G
<i>Platanus racemosa</i>	31	E	<i>Sansevieria desertii</i>	48	G
Plum Spike	56	G	<i>Sansevieria</i> spp.	48	G
Plum Tree	23	D	Santa Rosa Plum Tree	23	D
Polka-Dot Cactus	68	I	Santa-Rita Prickly Pear	61	H
Ponytail Palm	101	L	<i>Schinus molle</i>	11	C
Powder Puff Tree	35	E	Sea Fig	17	C
Prickly Pear Cactus	12	C	<i>Senecio</i> spp.	83	J
Pride of Madeira	6	A	Sentry Plant	1	A
Primrose, Evening	92	K	Shaw's Agave	54	G
Primrose, Western	92	K	Shell Ginger	87	J
<i>Prunus</i> spp.	23	D	Showy Green Bright	4	A
Purple Rock Rose	7	A	Showy Island Snapdragon	4	A
Purple Sage	26	D	Silk Tree	35	E
<i>Pyracantha</i> spp.	19	C	Snake's Tongue	48	G
Queen Palm	37	E	Snow Pole	75	I
Queen Victoria Agave	60	H	Snow Ponytail Hairy Grizzly Bear Cactus	77	J
<i>Quercus agrifolia</i>	5	A	Soap Aloe	46	G
<i>Quercus</i> spp.	5	A	Spanish Bayonet	71	I
Quince Bush	34	E	Spanish Dagger	38	E
Rat Tail Cactus	43	F	<i>Sphaeropteris cooperi</i>	85	J
<i>Ravenala madagascariensis</i>	99	K	Spineless Cactus	12	C
Red Torch Cactus	53	G	Stalked Bulbine	74	I
<i>Rhus integrifolia</i>	18	C	<i>Stapelia grandiflora</i>	65	H
Rock Purslane	105	M	Starfish Flower	65	H
Rock Rose	105	M	<i>Strelitzia reginae</i>	21	D
<i>Rosa</i> spp.	22	D	Swan's Neck	2	A
Rosemary	13	C	<i>Syagrus romanzoffiana</i>	37	E
Roses	22	D	Sycamore	31	E
<i>Rosmarinus officinalis</i>	13	C	<i>Symphoricarpos albus</i>	16	C
Sage	26	D	Tangerine Tree	29	D
Saguaro Cactus	66	I	Tequila Agave	45	F
<i>Salix lasiolepis</i>	25	D	Torch Aloe	10	B
<i>Salvia</i> spp.	26	D	Toyon	15	C
<i>Salvia apiana</i>	26	D	Traveller's Palm	99	K
<i>Salvia clevelandii</i>	26	D	Traveller's Tree	99	K
<i>Salvia greggii</i>	26	K	Tree Aloe	102	L
<i>Salvia mellifera</i>	26	D	Triangle Palm	90	J
<i>Salvia microphylla</i> Hot Lips	26	K	Trichocereus	63	H

2019 LCR Plant List
INDEX - Common and Scientific Names

Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code
<i>Trichocereus-Lobivia</i>	63	H			
Velvet Leaf	98	K			
<i>Verschaffelt agave</i>	39	E			
Violet Prickly Pear	61	H			
Violet Prickly Pear Cactus	61	H			
Western Sycamore	31	E			
Whale's Tongue Agave	96	K			
White Sage	26	D			
Wooly Jack	75	I			
Wooly Torch	75	I			
<i>Yucca aloifolia</i>	32	E			
<i>Yucca baccata</i>	9	B			
<i>Yucca rostrata</i>	8	B			
<i>Yucca schidigera</i>	71	I			
Zebra Aloe	46	G			

Plant List Leo Carrillo Ranch Historic Park
Patricia Linton and Mike Blanco, Ph.D., LCR Docents
June 2019



- | | | |
|---|---|--------------------|
| <p>1. <u>Agave</u>
 Century Plant
 Sentry Plant</p> | <p><i>Agave americana</i>
 Plant Family: Asparagaceae</p> | <p>LOCATION: A</p> |
|---|---|--------------------|

Not native, a perennial herb/shrub, native to Mexico, New Mexico, Texas and Arizona.¹ Lanceolate leaves (~ 3 feet-5 feet long and 6-9 inches wide) are usually rigid and somewhat fleshy. They are normally bluish-grey (glaucous) to greyish-green in color. The leaf margins are coarsely toothed (serrated), with prickly teeth (a little less than a half inch long) borne at intervals of 1-3 inches. The leaves have a pointed tip (acute apex) topped with a large dark brown colored spine about a half in. long).² There is a variegated³ species of this agave (*Agave americana variegata*) along Palm Lane (Location F). Agaves, Cacti, Aloes, Euphorbias, and Bromeliads are all succulents, a group of plants with thick, fleshy stems, leaves or roots designed to hold water to survive arid climates or soil conditions. Not all adaptations to the desert climate are visible to the naked eye. Plants make their own food, a sugar called glucose, thru a chemical reaction called photosynthesis which requires chlorophyll in the plant, water, carbon dioxide (CO₂) and oxygen (O₂). O₂ and CO₂ enter the openings/pores in the leaves called 'stoma'. If desert plants had their stoma open all day as do most plants, they would lose huge amounts of water thru these stoma and die. These plants have adapted a specialized form of photosynthesis first observed in the plant family 'Crassulaceae' and so named, Crassulacean Acid Metabolism (CAM). CAM plants are more efficient users of water and CO₂ because they have adapted to 1) close their stomata during the day to further conserve water, 2) store CO₂ gas as an acid called Malate overnight and 3) utilize the Malate as the carbon source for photosynthesis at daylight⁴ Remarkable! When leaves are scraped they are fiber filled. The SoCal Native Americans used the fibers for snares, clothing, baskets and fishing nets. The tall bloom stalks were hollowed out and used for quivers. The roots, flowers and seeds provided food to the four indigenous tribes of SoCal: Luiseño (pronounced 'loo-ee-sane-yoh'), Kumeyaay (Ipai-Tipai, Diegueno)⁵ Cupeño & Cahuilla. The common name, Century Plant, is a bit of a misnomer. This plant typically blooms once every 10-30 years not every 100 years and then dies. Plants that die after blooming are called 'monocarpic'. Agave and Yucca blooms arise from a tall stem called a 'quiote'. The *A. americana* quiote is tree-like in height. Agaves reproduce sexually via blooms and most, but not all, agaves can reproduce using 'vegetative reproduction'. This means they send out 'pups' which are genetically identical offshoots or clones of the parent plant. Agave syrup is made from the Pina (heart) of several species (*A. salmiana* and *A. tequilana*) when they are 10-14 years old. The juice is filtered, then heated and concentrated to syrupy liquid. The main sugar is fructose. The alcoholic beverage Tequila comes from a different Agave species, *Agave tequilana* Weber var. Azul (PL #45). Agaves are often pollinated by bats (e.g., *Leptonycteris nivalis*). Current research into Agave medicinal uses include treatment of osteoporosis, diabetes and development of a biological skin to treat burns. The potential burn treatment uses the beaten Agave fibers to make a gel called 'agave bagasse'. Mezcal (or mescal) is a distilled alcoholic beverage made from any type of Agave or Yucca. The word Mezcal comes from Nahuatl (Aztec) 'mexcalli' which means 'oven-cooked agave'. A saying attributed to Oaxaca regarding the drink is: "Para to do mal, Mezcal, y para to do bien, también-For everything bad, Mezcal, and for everything good as well."

- | | | |
|--|---|--------------------|
| <p>2. <u>Foxtail Agave</u>
 Lion's Tail
 Swan's Neck</p> | <p><i>Agave attenuata</i>
 Plant Family: Asparagaceae</p> | <p>LOCATION: A</p> |
|--|---|--------------------|



Not native, a perennial herb/shrub, native to central plains of Mexico. Leaves lack the sharp boarder teeth and spine tips of *A. americana*. Called 'Foxtail Agave' because the quiote drapes toward the ground looking like a fox's tail. It is used frequently in gardens because it lacks sharp edges. There is also a variegated^{3a} species of Foxtail Agave.



3. [Coral Aloe](#) *Aloe striata* LOCATION: A
Plant Family: Aloeaceae

Not native. Native to South Africa. This is a small stemless aloe. The Coral species name, '*striata*', means 'stripes', and refers to the long lines (sometimes very faint) on its blue-green leaves. The leaves of this Aloe are not toothed, but have a smooth pink margin. There are many aloe hybrids. The Aloes under the Coast Live Oak Tree (PL #5) are thought to be Coral Aloe due to the shape of their flower cluster and faint lines on the leaves.



4. [Showy Island Snapdragon](#) *Gambelia speciosa* LOCATION: A
Showy Green Bright Formerly *Galvezia speciosa*
Plant Family: Plantaginaceae

Native to the Channel Islands of California and Guadalupe Island, Mexico. The red flowers have upper and lower lobes which attract birds, especially hummingbirds. If you gently squeeze the flower laterally, the stamens and pistil (Appendix I) become visible. It is endangered per CNPS ([California Native Plant Society](#)) Inventory of Rare and Endangered Plants of California.⁶



5. [Coast Live Oak](#) *Quercus agrifolia* LOCATION: A
Quercus spp.
Plant Family: Fagaceae

Native. Accurate Oak species identification is very difficult given there are over 600 Oak species--approximately 20 in California, with a very strong propensity within the genus to hybridize with other Oak Tree species. Some species are 'drought deciduous' meaning they shed leaves in dry summers. The oaks at LCR are likely *Q. agrifolia*, Coast Live Oaks, and/or perhaps hybrids with Scrub Oak (*Quercus berberidifolia*). Coast Live Oak (*Q. agrifolia*) is a wide spreading tree. The acorn is long and narrow compared to rounder shorter acorn of other species. The *LCR Garbini & Garbini Report*⁷ identifies Coast Live Oaks at LCR ~30 years ago. Leo Carrillo noted the oaks on the Ranch in his autobiography, "even the bark of our oaks-the encinos-after being boiled six hours in salt to remove the tannic acid is used to treat poison ivy."⁸ Flour made from the acorns was a staple for the SoCal Native American Indians. Gathering and storing acorns was the very reason for the yearly Luiseño and Kumeyaay summer migration to the foothills returning to the coast in winter. The word 'chaparral' is derived from the Spanish word for scrub oak, 'chaparro'. Ranch visitors from outside California may be surprised that these are oak trees since the White and Red Oaks in other US regions have palm-sized, deeply lobed leaves, very different from the leaves of our oaks that resemble holly leaves. On the Pechanga Reservation in Temecula, California, the Temecula Band of Luiseño Mission Indians cherish what is thought to be the oldest naturally-grown indigenous Coast Live Oak in the Western US. It is called 'The Great Oak', or 'Wi'áašal' by the Pechanga people who say it is over 1000 years old. It continues to produce acorns that sustained native Californians for thousands of years before the arrival of the Europeans.⁹



6. [Pride of Madeira](#) *Echium fastuosum* LOCATION: A
Echium candicans
Plant Family: Boraginaceae

Not native, a large perennial shrub considered invasive in California. It is native to Spain and Madeira (an island off the southwest coast of Portugal) where it is endangered due to losses from wildfires. Blooms in spring are white, blue or purple flowers with red stamens. The genus name comes from the Greek word 'ekis', meaning viper, perhaps because 1) seeds look like the head of a viper snake, 2) the forking at end of a flower looks like a viper tongue and 3) it was used to treat Adder bites. The species name, '*fastuosum*', means 'full of pride, haughtiness' and '*candicans*' means 'shining white'. It is a protandrous

6. Pride of Madeira (continued)

plant (stamens mature, release pollen before the pistil matures, a strategy to avoid self-pollination). See Appendix I for Parts of a Flower. "Many species in the borage family have high levels of GLA (gamma-linolenic acid) in their seeds; reportedly this includes Pride of Madeira. GLA is one of the omega-6 fatty acids, which in small amounts, are essential for human growth and development but which must be obtained through food. Research has indicated that omega-6 fatty acids help to fight inflammation related to a variety of ailments. GLA as 'Borage Oil' is readily available as a health supplement, but the species of borage is not usually identified, so the role of Pride of Madeira is uncertain....in herbal medicine [an] infusion of leaves has been described as a treatment for headaches, fevers and coughs. According to the California Poison Control System, all parts of the plant are considered poisonous and ingestion may cause serious effects to heart, liver, kidneys or brain....the stiff hairs on the foliage may cause itching."¹⁰ **For your safety at LCR, please do not touch or eat plants.**



7. Purple Rock Rose

Orchid Rock Rose

Cistus x purpureus Hybrid

Plant Family: Cistaceae

LOCATION: A

Not native, a perennial shrub native to dry or rocky soils throughout the Mediterranean region, from Morocco and Portugal through to the Middle East, and also on the Canary Islands. A hybrid of two Mediterranean species, this plant's beautiful flower was hybridized for fragrant oil production. This hybrid was first formally described in 1786 by Jean-Baptiste Lamarck.



8. Beaked Yucca

Yucca rostrata

Plant Family: Asparagaceae

LOCATION: B

Not native. Native to Texas, Chihuahua and Coahuila. The trunk can grow up to ~15 feet, with a crown of leaves at the top. Leaves are thin, stiff, ~2 feet long but rarely more than ½ inch wide, tapering to a sharp point at the tip. Unlike Agaves, most (but not all) Yuccas are perennial. Like Agaves, the large stalk that supports the large white bloom is called a 'quiote'. Typically Yucca quiotes are shorter than those of Agaves. Zuni and SoCal Native American Indians boiled seed pods for food, used leaves for paint brushes, spines for tattoos, knotted soaked leaves together to make rope, wove mats with leaves, used the fibers to make water carrying head pads, snares, fishnets, clothing and shoes. They peeled and pounded the roots to make suds for washing themselves, wool garments and blankets. Currently Yuccas are found in some designer dog foods purportedly to deodorize dog stools. The land Leo purchased in 1937 is contained within the geographic boundaries of Matthew Kelly's historic homestead established in 1868 called 'Rancho de los Quiotes'. Leo changed the Kelly family's spelling of 'Quiotes' to 'Quiotes'. Historians suggest that he did this to correct the earlier phonetic spelling error. Leo wrote, "The plumes of Los Quiotes glisten in the morning light...They are the Spanish dagger plants that give the ranch its name and the roots of which we like so much when roasted."¹¹ Common plant names can lead to confusion. Several Agaves and Yuccas are known by the common name 'Spanish Daggers' and 'quiote' is the name used for the bloom stalk of the Agave in Mexico.¹² Wilken-Robertson notes 'quiote' as the Spanish word for the stalk of a specific Yucca, *Hesperoyucca whipplei*.¹³ Regardless of the confusion brought about by the use of these terms, Leo's LCR stationery letterhead shows a picture of the Yucca *H. whipplei* dispelling any confusion regarding the namesake of the Ranch.¹⁴ *H. whipplei* currently grow along Palm Lane (PL #38).



9. Banana Yucca

Yucca baccata

Plant Family: Asparagaceae

LOCATION: B

Native. Banana Yucca is closely related to the Mojave Yucca, *Yucca schidigera* (PL #71). It has blue-green colored, lance-like leaves and a short or non-existent trunk. It flowers April to July with white to cream colored petals with purple shades. The quiote is not especially tall, typically 40-60 inches. The fruit is black and curved like a banana. The common name comes from its banana-shaped fruit. The specific epithet 'baccata' means 'with berries'.

10. [Candelabra Aloe](#)

Torch Aloe
Octopus Aloe

Aloe arborescens

Plant Family: Aloeaceae

LOCATION: B



Not native. Native to South Africa. Sap is said to be an anti-inflammatory and decreases bacterial growth. A plant/fungus mutualism exists where the tendrils (hyphae) of fungi called **A**rbuscular **M**ycorrhiza **F**ungi (**AMF**), enter the aloe's root cells to feed on plant nutrients. Simultaneously, the aloe is receiving nutrients collected by the AMF from a widespread area that the Aloe would not otherwise be able to access. AMF mutualism with plants is recognized as key to the health of many plants. Preserving any exiting AMF tendrils in soil prior to planting is recognized today as key to plant growth. *A. arborescens*, has green leaves with orange tubular flowers. Aloes, from the Old World (Africa, Europe), and Agaves from the New World (North and South America) are examples of 'convergent evolution' where unrelated plants found in similar habitats located at great distances from each other develop, or converge, on similar survival adaptations.¹⁵ As shared habitat adaptations, both Aloes and Agaves are succulents, use CAM photosynthesis^{4a} and usually have spines to ward off herbivores.

11. [California Pepper Tree](#)

Los Perus

Schinus molle

Plant Family: Anacardiaceae

LOCATION: C



Not native. Native to Peruvian Andes. It is an evergreen tree. In the early 1900's, California Pepper Trees were a favorite ornamental in SoCal but it stopped being widely planted due to harboring 'black scale' insects that damaged citrus groves. In 16th century, the Spanish brought seeds to have a fast growing source of wood for saddles and fire wood. Traditional medicinal uses included treatment of wounds and infections due to its antibacterial and antiseptic properties. It has also been used as an antidepressant and diuretic, and for toothache, rheumatism and menstrual disorders. Recent studies in mice suggest possible support for its antidepressant effects. It has also been speculated that *S. molle*'s insecticidal properties make it a good candidate for use as an alternative to synthetic chemicals in pest control. Fresh green leaves in bunches were used in Mesoamerican traditional ceremonies for cleansings and blessings. Leaves were used for dyeing textiles and by the Incas for mummification and embalming. Incas used the sweet outer fruit of peppercorn to make an fermented alcohol beverage that was mixed with maize and called 'chicha'.¹⁶ The gourmet pepper ground from the pink fruits, Pink Pepper, is milder spice than black pepper which is made from the fruit of the unrelated plant, *Piper nigrum*. *S. molle* is a 'dioecious' tree meaning male and female flowers occur on completely separate trees. Only the female tree bears the pink peppercorn fruit. Leo described a Pepper Tree near the Hacienda, "it's a very picturesque house--flagstone patios, weeping willows at one side and weeping pepper trees which were called 'Los Perus' in Peru where they came from originally. Incidentally, the first one was brought by my great-great-grandfather to the Mission of San Luis Rey....There is one enormous [Pepper] tree that stands by my kitchen. I guess it is 100 yrs. old...and spreads over the whole patio."^{8a} The California Pepper Tree currently near the Wash House was planted around 2004.¹⁷ The California Pepper Tree in the San Luis Rey Mission is said to be the oldest California Pepper Tree in California. The plaque on the California Pepper Tree at the San Luis Rey Mission says it was "planted by Fr. Antonis Peyri in the middle of the Mission garden. The seeds were brought to San Luis Rey in 1830 by a sailor from Peru and the tree still stands today."¹⁸ The *Garbini and Garbini Report* notes that mature Pepper Trees are documented in drawings and photos of the Ranch in 1891 and 1906.^{7a}

12. [Burbank's Spineless Cactus](#)

Spineless Cactus

Opuntia ficus-indica x Opuntia tuna

LOCATION: C



Prickly Pear Cactus

Indian Fig Cactus

Opuntia ficus-indica

Plant Family: Cactaceae

Not native. "The wild origin of *O. ficus-indica* is likely to have been in Central Mexico.¹⁹ The most widespread of the long-domesticated cacti, it is today as economically important as maize [corn] and blue agave in Mexico"²⁰ The stem evolved over time to become a water retaining paddle, called 'nopale', the Spanish word for 'paddle'. Over centuries leaves of this plant evolved into

12. Burbank’s Spineless Cactus (continued)

spines. Prickly Pear Cactus was an important food source of SoCal Native Americans. Nopales have a squash like taste and today are often served with eggs at breakfast. The fruit is called a 'tuna'. It turns deep red when ripe and is high in Vitamin C. The fruits are used for candies and jellies. Leo mentions another use for Prickly Pear, "over yonder are Las Tunas, the plain old cactus, from which the juice was extracted to be used as a kind of 'filler' or glue when mixed with slack lime to protect the adobes from rain and wind."^{8b} In the Southwest US in the 1800's, Prickly Pear Cactus was used as cattle fencing and after the spines were burned off, as animal fodder. In an effort to increase both the production of more easily available animal fodder and to increase fruit production for market, the Prickly Pear became a focus of Luther Burbank (1849-1926), a legendary American botanist, horticulturist and pioneer in agricultural science non pareil. His botanical lab was located in Santa Rosa California. Over his 55 yr. career he developed more than 800 strains and varieties of plants including the well-known Burbank Potato and Santa Rosa Plum Tree (PL #23). With seeds provided by the USDA, Burbank made crosses of Indian Fig Cactus with *Opuntia tuna* to derive the spineless form.²¹ Over 60 varieties of spineless cacti were developed by Burbank. Spineless cactus is still used as fodder for farm animals in arid regions today.^{22, 23} As part of the intelligentsia of his day, Leo knew of the incredible contributions of Burbank. "When we look out the window, the edge of the approach of my driveways is one great planting of hybrid cactus that Luther Burbank invented."^{7b} Look closely on the cactus pads to see if there are white specks. These white specks are Cochineal, a scale, parasitic insect called *Dactylopius coccus* which feeds on the prickly pear and spineless cacti nopales. The insect bodies contain carminic acid, a red dye used for dyeing fabric and making oil paints. 140,000 dried insects are needed to make ~2 lbs. for dye production. In 1700's, the Cochineal price was so important to the world economy that it was quoted on London & Amsterdam Commodity Exchanges, the equivalent of the New York Stock Exchange today. The export revenue Mexico received from Cochineal was second only to silver in the 1700's. The British Red Coats of Revolutionary War had red coats because of the Cochineal imported from Mexico to dye the wool red. Cochineal was a central component of the red oil paint used by Caravaggio and Van Gogh (see the bedspreads in Van Gogh's, *Bedroom At Arles* series).²⁴ Cochineal is still used for make-up and food colorings. Anytime ingredients list 'natural red dye' or 'carminic dye', Cochineal is the additive to which these terms refer. Vegans protested in the 1990's that Starbucks was using 'natural red dye' from insects, to color yogurts and smoothies. In response to the protest, Starbucks agreed to consider other natural alternatives.²⁵



13. Rosemary

Rosmarinus officinalis

LOCATION: C

Plant Family: Lamiaceae

Not native. Native to the Mediterranean. Aromatic perennial evergreen herb/shrub with leaves similar to hemlock needles. Flowers are blue, white, pink or purple in spring or early summer. Note stems are square, a characteristic of the Lamiaceae plant family. Leaves are used as culinary spice. The essential oil is used in aromatherapy to enhance mental focus and as a topical oil applied to the skin to treat arthritis pain. In ancient Greece, students wore head wreaths of Rosemary to enhance memory while studying. Herbalists use it as an antiseptic, topical antioxidant and anti-bacterial. However, a large intake can be toxic to the liver and heart so ingestion should be with the knowledge of Primary Care Provider.



14. Canary Island Pine

Pinus canariensis

LOCATION: C

Plant Family: Pinaceae

Not native. Native to the Canary Islands. It is a large drought tolerant evergreen. The leaves are needle-like, in bundles of three, ~7.5-11.5 inches long with finely toothed margins. Only the newest growth has erect needles. This is a popular street tree in California. Look for the shoots growing from the trunk. These are called 'epicormic shoots', a characteristic of the species. The long needles facilitate condensation providing water for growth. It is thought to be one of the most fire resistant conifers. A conifer is a type of 'gymnosperm', a vascular plant that has no flowers. Gymnosperms have seeds in cones instead of seeds that are covered by fruit or seed pods which we see in plants that have flowers, the 'angiosperms'. This pine is 'monoecious' meaning that the male and female cones occur on the same plant. The female cones are a chestnut brown, ~ 4–7 inches long, and ~2 inches wide.²⁶ The cones are called 'serotinous cones' because they are covered with a resin that must be melted by fire

14. **Canary Island Pine** (continued)

before the cone will open. Serotiny is an adaptation where the seed release occurs in response to an environmental trigger rather than the full maturation of a seed. Female cones on this tree have been observed to open without fire which may be related to the age of the cone in the absence of fire. In many conifers, pollination occurs a *full year* before fertilization because it takes a year for the pollen grain that landed on the stigma (Appendix I) to grow a tube down the style into the ovule to enable fertilization.

15. **Toyon**

Christmas Berry
California Holly

Heteromeles arbutifolia

Plant Family: Rosaceae

LOCATION: C



Native. Toyon is the only California native plant that continues to be commonly known by a Native American name according to Carol Bernstein, the Director of the Nature Gardens at the Natural History Museum of LA County in ***California Native Plants for the Garden*** (Cachuma Press, 2005). Toyon was the name given by the Ohlone tribes in the San Francisco Bay region whose languages were in the Penutian language family. Flowers are a small cream panicle (Appendix II) that blooms July through August. Fruits are red pomes (berries) that appear in fall and winter. The berries are favorites with birds, coyotes and bears. Seed germination is potentiated by passing thru the gut of bird or mammal. Berries are poisonous to humans if not prepared correctly. Traditional uses: 1) after cooking, the berries were made into a jelly, 2) a tea from the leaves was used as a stomach remedy, 3) berries were dried and stored, then later cooked into porridge/pancakes and 4) later California settlers added sugar to make custard and wine. It was an important food for indigenous peoples when properly prepared. Legend: The hills near LA were covered in Toyon with red berries and leaves that resemble holly. Hence the name of the city built there, Hollywood.

16. **California Snowberry**

Symphoricarpos albus

Plant Family: Caprifoliaceae

LOCATION: C



Native. An erect, deciduous shrub, producing a stiff, branching main stem and often several smaller shoots from a rhizome. White flowers bloom in June and July. It has white fruits at the tip of the stem and blue-green foliage making it a popular ornamental plant. It can spread and colonize an area to form a dense thicket as it has done here behind the Toyon. In the wild, this shrub is an important food source for bighorn sheep, white tailed deer and grizzly bears. Cattle and sheep readily browse its leaves and fruits. Many birds and small mammals use it for food and cover. The fruit and leaves are poisonous to humans. Native Americans made a poultice of the crushed leaves, fruit and bark to treat burns, sores cuts and injured skin. An infusion of the roots was used to treat fevers, stomach aches and colds. The wood was used to make arrow shafts.

17. **Ice Plant**

Hottentot-fig
Sea Fig

Carpobrotus edulis

Carpobrotus chilensis

Plant Family: Aizoaceae

LOCATION: C



Not native, invasive. Native to Africa (*C. edulis*) and Chile (*C. chilensis*). Both species are succulent herb ground covers that form mono-specific zones decreasing biodiversity by pushing out native species. Although first brought to California in the 1600's, both species were used from ~1900 to 1970 as 'dune stabilizers' and highway ornamental plants. Unfortunately, both species actually contribute to erosion rather than preventing it. They have a shallow root structure and leaves that retain water making the plant an extremely heavy mat, prone to landslide and cliff erosion. When the leaves are cut, the triangular shape of the leaves becomes more apparent. *C. edulis* has large, yellow or light pink flowers. It was named Hottentot-fig for a South African tribe that used it for anti-inflammatory properties. *C. edulis* has smaller magenta flowers.



18. [Lemonade Berry](#)

Rhus integrifolia

LOCATION: C

Plant Family: Anacardiaceae

Native. Leaves are dark green, leathery with a serrated edge. Blooms are white or pink panicles (*Appendix II*). The fruits have an irregular shape, some are similar to the shape of a kernel of corn. They are waxy to the touch, dark red when ripe with a lemon scent. The fruit was used by the SoCal Native Americans to make a lemon drink. Sexual reproduction occurs via flowering in the spring and vegetative propagation²⁷ occurs via root runners. It is purported to be favorite of many birds but local birders do not frequently see local birds attracted to the berries. Native peoples used the oil from fruits to make tallow for candles and the leaves were used in the fall to create brown dye or mordant (a color fixative). Delfina Cuero (1900-1972), a Native American writer of the Kumeyaay, explained the plant's uses. "The berries were eaten fresh or soaked to flavor water; the seed (keha) was ground and used with fruit for tea. We also ground the seeds to drink when sick and feverish. The bark was also made into a tea to use after a baby was born."²⁸



19. [Fire Thorn](#)

Pyracantha spp.

LOCATION: C

Plant Family: Rosaceae

Not native. Native to South Western Europe east to South East Asia. There are ~ 7 species, all have thorny branches, red berries and serrated leaves. Flowers are either red, orange, or yellow. The flowers are produced during late spring and early summer. The berries mature in late autumn. The species on the Ranch is either *P. augustifolia*, *P. coccinea* or a *Cotoneaster* spp. x *Pyracantha* spp. hybrid. Fire Thorn is closely related to the Cotoneaster and they have similar looking berries and serrated leaves but the Cotoneaster does not have thorns. Here in SoCal, *Pyracantha* spp. may be confused with Toyon. Like Toyon (PL # 15), Fire Thorn has red berries and serrated leaf margins but even with these similarities, Toyon can be distinguished from *Pyracantha* because Toyon is thornless.



20. [Eucalypts](#)

Eucalyptus spp.

LOCATION: C

Plant Family: Myrtaceae

Not native, invasive. Most species of this large evergreen tree are native to Australia. They are also known as gum trees or gum bushes. The petals and sepals (*Appendix I*) are fused to form a cap over the seed called an 'operculum' (*Appendix III*). The seed and operculum are referred to as a 'gum-nut' which is characteristic of the genus. The name comes from the Greek, 'eu calyptos' meaning well covered, referring to the operculum that covers the seed.²⁹ The *Garbini and Garbini Report* notes the Eucalypts on the Ranch were 75-100 feet tall and used as screening along the property line. In 1990, the age of the Eucalypts on the Ranch were judged to be recent, approximately when the property line was set.^{7c} Eucalypts vary in their type of bark. "All eucalypts add a layer of bark every year and the outermost layer dies. In about half of the species, the dead bark is shed exposing a new layer of fresh, living bark. The dead bark may be shed in large slabs, in ribbons or in small flakes. Different commonly recognized types of bark include:

- Stringybark- consists of long fibers and can be pulled off in long pieces. It is usually thick with a spongy texture.
- Ironbark — is hard, rough, and deeply furrowed. It is impregnated with dried kino (a sap exuded by the tree) which gives a dark red or even black color.
- Tessellated — bark is broken up into many distinct flakes. They are cork-like and can flake off.
- Box — has short fibers. Some also show tessellation.
- Ribbon — has the bark coming off in long, thin pieces, but is still loosely attached in some places. They can be long ribbons, firmer strips, or twisted curls."^{29a}

The leaves are lanceolate (*Appendix III*) and hang downward so that even when completely covered with leaves, the shade provided is dappled with sunlight. Characteristic of trees in this plant family, the leaves are covered with oil glands. In traditional medicine, Eucalyptus oil included treatment for coughs, asthma and bronchitis as well as an anti-inflammatory having bacteriostatic and anti-fungal properties. Similar to Ice Plant (PL #17), Eucalypts crowd out native plants. The understory of a Eucalyptus typically appears quite barren of other species for two reasons: volume of leaf drop and allelopathy. The leaf

20. Eucalypts (continued)

drop volume is very large. The volume of leaf litter blocks out the sun that might otherwise encourage growth of other species. Secondly, some Eucalypts are ‘allelopathic’. This means that these trees produce biochemicals that inhibit the growth of certain soil microbes and plant species even when there is sufficient water and sunlight to support growth.³⁰ Allelopathic species of Eucalypts may have evolved this bio-chemical weapon as an anti-herbivore adaptation. Regardless of the possible benefit to the Eucalyptus itself, allelopathy contributes to inhibit the growth of native species. The flowers in this genus are characterized by bushy stamens (Appendix I) hanging from the operculum (Appendix III). Eucalyptus are known to have ‘summer limb drop’. LCR experienced ‘summer limb drop’ in the summer of 2018 when the big Eucalypt near the Caretaker’s Residence dropped a large branch damaging the fence that lines the path leading to the Parking Lot. Ironically, the tree itself has fire prevention adaptations to promote *its own survival*, but eucalyptus oil is highly flammable. Trees have been known to explode in wildfires and should not be planted next to homes for this reason. In the 1850’s, Eucalypts were brought to California as a new source of quick growing timber for firewood and construction. It seemed the answer to so many problems, even malaria. An article in a 1910 issue of San Francisco magazine states: ‘By the possession of a few acres of this timber all fear of the future may be stricken from a man’s life.’³¹ Trees were planted in Santa Fe for railroad ties but the wood cracked and split. It was not good for shipbuilding or furniture making for the same reason. In the early 1900’s, Eucalypts were called the ‘fever tree’ because they were thought to cure Malaria before the cause of Malaria was known to be a mosquito borne illness. The tree is such a water hog that when planted, it drained areas that would otherwise remain perfect for mosquito growth. This explains why cases of malaria did decrease where Eucalypts were grown but it was due to decreased mosquito habitat rather than properties of the tree itself. In 1910 as a work relief effort, 300,000 eucalyptus trees, mostly Sugar Gums (*Eucalyptus cladocalyx*) were planted around Torrey Pines where the UCSD Campus stands today. Citizens had hoped that the timber could reduce taxes. A San Diego Union headline on New Year’s Day, 1912, read, ‘Trees to Defray Taxes in Future’. A national magazine called *Technical World* was equally optimistic: San Diego is one of the first American cities to inaugurate a great forest enterprise in the expectation of speedily lessening the burden of taxation borne by its citizens.^{31a} The high hopes for tax relief were never realized. The line of Eucalypts on the path from the Parking Lot toward the Visitor Center are particularly stately, and regardless of their drawbacks, provide much needed shade and some green on a hot, dusty day on the Ranch.



21. Bird of Paradise

Strelitzia reginae

LOCATION: D

Plant Family: Strelitziaceae

Not native. Native to South Africa. It is the official flower of Carlsbad and LA. It is a perennial with striking orange and red streaked blooms that resemble a bird’s head and beak. The flowers appear in the winter and early spring. In SoCal the plant spreads via vegetative reproduction. Sexual reproduction is limited to locations where pollinators access the pollen that is found within the blue stick-like part of the flower called a ‘spathe’. To expose the pollen for transfer, gentle pressure must be applied to the blue spathe which then splits open a seam that runs the length of the spathe to reveal the pollen grains. If the spathe remains closed, the pollen is not accessible. In South Africa, the pollen transfer necessary for sexual reproduction is done by hummingbird-look-a-likes called Sunbirds. Like Hummingbirds in North and South America, Sunbirds have long beaks and tongues to obtain the nectar deep in the flower. However, unlike Hummingbirds that typically hover when drinking nectar, Sunbirds typically perch when drinking nectar. The weight of the Sunbird as it perches on the blue spathe, opens the seam on the blue spathe and the Sunbird comes in direct contact with the pollen grains. Wherever Sunbirds and Birds of Paradise co-exist, Sunbirds are an important pollinator. Sunbirds from the Old World (South Africa) and Hummingbirds from the New World (North and South America) are another example of ‘convergent evolution’.^{15a} The genus name commemorates the British Queen Charlotte of Mecklenburg-Strelitz, wife of King George III (1760-1820).



22. [Roses](#) *Rosa* spp. LOCATION: D
Plant Family: Rosaceae

Not native. Most species native to Asia. There are about 300 species and thousands of cultivars. The fragrance comes from microscopic perfume glands on the petals. Rose 'thorns' are not true thorns because they do not contain vascular tissue, they are outgrowths of the epidermis.³² The fruit of the rose is berry-like and called a 'rose hip'. Rose hips are used to make jellies and jams. The rose hip is very rich in Vitamin C. There is current research investigating if rose hip extracts reduces arthritic pain. During the 'Age of Sail' (1500-1800), it was estimated that scurvy, a syndrome known since Egyptian times, killed at least 2 million sailors! In 1753, one of the first ever clinical trials was undertaken by a Scottish surgeon in the Royal Navy, James Lind. He concluded that scurvy could be treated and prevented with Vitamin C supplements from lemons, rose hips or oranges. His clinical trial consisted of a comparison between how sailors with scurvy responded to the following: 1) hard cider, 2) vitriol (drops of hydrochloric acid and water), 3) vinegar, 4) seawater, 5) oranges, 6) lemons and 7) a 'Balsam of Peru' (a drink with garlic + myrrh + mustard seed + radish root). His discovery was life saving for all sailors going forward as they explored the globe. Actually implementing Dr. Lind's discovery that citrus prevented scurvy began about 40 years after his 'clinical trial'. In the late 19th century, British sailors and British immigrants to the US were called 'Limeys' because of the practice in the British Navy to give a dose of lime juice in the daily ration of grog to prevent scurvy.³³ In 1986, President Ronald Reagan signed legislation to make the rose the floral emblem of USA.



23. [Santa Rosa Plum Tree](#) *Prunus* spp. LOCATION: D
Plant Family: Rosaceae

Not native. Native to Eastern Europe and Asia. Flowers in spring, with fragrant pink or white flowers. Plums may have been one of the first fruits domesticated by humans. Three of the most abundant plum tree hybrids are not found in the wild, they are only found around human settlements. Named for its birthplace, this plum variety was bred in 1906 by the famed California horticulturist Luther Burbank in his Santa Rosa California plant research center. (See PL #12 for more information on Luther Burbank.) The Santa Rosa plum is considered the jewel in Burbank's crown.^{21a} The Plum Tree outside the Caretaker's Residence was planted in 2016. The flowers appear similar to Cherry Blossoms from a distance but plum tree flowers do not have a notch on the petal as do Cherry Blossoms. Leaves on Plum Tree are purple and appear to unroll while Cherry Blossom leaves are green. The bark on a Plum Tree is dark and does not have a lined appearance like the bark of the Cherry Tree.



24. [Native Milkweed](#) *Asclepias fascicularis* LOCATION: D
[Tropical Milkweed](#) *Asclepias curassavica*
Plant Family: Apocynaceae

The **native** species is *A. fascicularis*. The tropical Milkweed species is *A. curassavica*, which is native to Mexico, Central America and northern countries in South America. Leaves contain cardenolides, cardiac glycosides that are poisonous to birds. Monarch butterflies and caterpillars are 'aposematic' (warn predators with coloring that they taste badly and are likely poisonous). The larvae eat Milkweed so both caterpillar & butterfly are infused with cardenolides. The Viceroy Butterfly mimics the coloring of the Monarch to discourage predators but does not itself eat milkweed! The flower is one of the most complex flowers in the plant kingdom, comparable to orchids in flower complexity. The petals have slits. The feet or mouths of pollinator slip thru slits and pick up waxy baskets of pollen (called 'Pollinarium') rather than being dusted by grains of pollen which is the more common method of pollen transfer. The pollinator must then break free from petal with the on-board Pollinarium. Some don't make it and perish. The genus is named for the Greek God of Medicine, Asclepius. The Native species has pale pink flowers and more narrow leaves than Tropical species. The Tropical species has red and yellow flowers and blooms long into the summer season. With the food supply from the Tropical species, butterflies may skip or delay their migration and reproduce locally which

24. Native Milkweed (continued)

exposes the butterfly to a deadly protozoan parasite known as 'OE' (*Ophrocystis elektroscirrha*). When migration is delayed, OE spores from butterflies infected with OE build up on the plant and may transfer the disease to other caterpillars, chrysalises and/or butterflies resulting in death. OE experts suggest cutting the Tropical Milkweed to the ground over the fall and winter—so the OE spores can't build up.³⁴

25. Arroyo Willow

Salix lasiolepis

LOCATION: D

Plant Family: Salicaceae



Native. This plant is commonly found growing in marshes and wetland areas. At the Ranch, it grows along the Bridge area prior to the Caretaker's Residence and near the stream below Deedie's House. It is a deciduous large shrub or small multi-trunked tree growing up to 33 feet tall. The shoots are yellowish brown and densely hairy when young. The leaves are 1.5-5 inches long and broadly lanceolate in shape (Appendix III). The leaves are green on top and grey-green below. The flowers are yellow 2-3 inch long catkins³⁵ blooming in the spring, February to May. It is an 'indicator species' for fresh water marsh. SoCal Indian tribes used infusions of the leaves, bark, or flowers for treatment of headaches, muscle aches and fever. The inner bark was used to make rope. Shoots were used in coiled and twined basketry, and branches were used to make acorn storage baskets and bows.^{13a} Kumeyaay and Luiseño constructed their granaries and shelters ['ewaas' in Kumeyaay, 'kiicha' (keé-cha) in Luiseño] out of willow tree branches in part because willow contains salicin, a natural insect repellent — that meant whenever people, food and supplies were housed or stored, the contents remained relatively bug free.^{5a} The Luiseño women made willow bark skirts and fish traps from willow branches.³⁶ Willow bark has been used since Egyptian times to treat aches and pains. In 1899, acetylsalicylic acid (ASA) was named 'Aspirin' by the Bayer Corporation. The letter 'A' stands for acetyl, 'spir' is derived from the plant known as *Spiraea ulmaria* (Meadowsweet), which yields salicin, and 'in' was a common suffix used for drugs at the time. Arroyo Willows "lose their leaves in response to the shorter days of winter not to summer drought. Willow catkins appear before leaves emerge with male and female flowers on different plants (a dioecious plant). The pollen-releasing male catkins are yellow ('yellow = fellow'), while the seed-producing catkins are green ('green = girl')."³⁷

26. Sage

Salvia spp.

LOCATION: D

White Sage	<i>S. apiana</i>
Black Sage	<i>S. mellifera</i>
Autumn/Cherry Sage	<i>S. greggii</i>
Hot Lips Sage	<i>S. microphylla</i>
Purple Sage	<i>S. leucophylla</i>
Cleveland Sage	<i>S. clevelandii</i>

Plant Family: Lamiaceae



Native to SoCal & Northern Baja. Some species are native to Mexico. The genus name *Salvia* derives from the Latin 'to feel well and healthy'. There are over 1000 species of *Salvia*! Square stems and opposite leaves are characteristics of the plants in the Mint plant family. Sages hybridize among species in the wild. When a sage bush has blue flowers, it is difficult to determine if a plant is Black Sage, Purple Sage or Cleveland Sage because these three species have blue flowers. Many sages have a unique pollination process called the 'staminal lever mechanism' that scientists believe plays an important role in the success of the genus. It is easier to see³⁸ than to describe.³⁹ The flower has two stamens with pollen filled tips called anthers (Appendix I). The stamens are hidden, retracted inside the neck of the flower until a pollinator comes along. When the pollinator, typically a bee, probes deep into the neck of the flower, it hits connective tissue attached to the base of the stamen that rocks the stamens out of the flower so that the pollen filled anthers touch the body of the bee, dusting the hairs on the bee with pollen. When the bee leaves the flower, the stamens snap back into their original position, pulled back *into the neck of the flower*. It is this rocking of the stamens in and out of the flower that is lever-like, giving rise to its name, Staminal Lever Mechanism. An easy *Salvia* identification tip is to look for flowers that appear as 'heads' along a square stem (Appendix II). Many *Salvia* species have hairs on the stems, leaves and flowers which are called 'trichomes'. Trichomes are thought to reduce water loss. SoCal Native Americans had many uses for Sage: 1) they rubbed leaves on their skin prior to hunting to mask human scent to get closer to prey without being detected; 2) they used the leaves and flowers to treat sore throats, coughs and colds; 3) they pounded fresh leaves and placed them on bug bites and stings and 4) the Luiseño,^{36a} Chumash and Cahuilla tribes burned White Sage in

26. **Sage** (continued)

purifying rituals to enhance a healing state or reflect upon spiritual dilemmas similar to the burning of incense. This sacred/religious use of this herb is called 'smudging'. *Salvia officinalis* is the Sage species used as a culinary spice on chicken or turkey. Don't confuse these *Salvia* plants with 'California Sagebrush', *Artemisia californica*. Like the true Sage plants, California Sagebrush also has a pungent odor but is from a different plant family so it does not have square stems, opposite leaves or flowers that appear as heads along the stem. California Sagebrush (*Artemisia californica*) should not be used as a culinary herb, it will ruin the taste of a turkey dinner!



27. **Deer Grass**

Muhlenbergia rigens

LOCATION: D

Plant Family: Poaceae

Native. A perennial grass also found outside of California, but is confined to western North America. Equally likely to occur in wetlands and non-wetlands. LCR location is near the stream next to 'First People, Native Plants' sign. *Muhlenbergia rigens* is a cover for mule deer during fawning periods. Studies have equated reduced deer populations with overgrazed deer grass stands in and near cattle pasture. Young shoots and leaves are grazed by deer, horses, and cattle. The tall grass is an overwintering host for many species of Lepidoptera and ladybug. Deer Grass seed provides food for many different bird species. Deer Grass was important to many Native American tribes who used its long seed stalks as the principal material in coiled baskets. Deer grass underwent an early form of cultivation by many California tribes who regularly burned areas to maintain and encourage stands of deer grass, and induce the production of long straight stalks for use in basketry. Each basket required over 3000 stalks (!), driving the need for cultivation. It is believed that the distribution of Deer Grass is due to selective propagation by Native Americans. Although the SoCal Native American tribes are often described as 'hunter-gatherers' this term misses the unique relationship that existed between the land, plant utilization and cultivation as reflected in the propagation of Deer Grass for basketry. Their time frame for cultivation was not one or two seasons but generations long to create a plant that met the needs of their culture.



28. **California Flannel Bush**

California Fremontia
California Golden Bells

Fremontodendron californicum

Plant Family: Malvaceae

LOCATION: D

Native. This yellow flowering shrub blooms in May and June. Leaves are fuzzy. Leaf hairs can be an eye irritant. Traditional use among California indigenous people included the use of the inner bark and sap as a purgative while the bark itself was used to make cordage and rabbit nets.⁴⁰ It is named for John Charles Fremont, leader of five expeditions to explore western North America in the 1840's.

29. **Mandarin Orange Tree**

Tangerine Tree

Citrus reticulata

Plant Family: Rutaceae

LOCATION: D

Orange Tree

Citrus x sinensis

Plant Family: Rutaceae

Location: J



Not native, thought to have evolved in a region including Vietnam, South China, and Japan. Tree locations: Mandarin Orange Trees are found in front of Care Taker's Residence (Location D). An Orange Tree is found in Front Courtyard of Hacienda (Location J). In his autobiography Leo describes, "...the oranges, grapefruit, lemons, all combine to scent the air with a clean fresh odor".^{8c} ~30 years ago, citrus trees were growing in the Front Courtyard and at the Caretaker's Residence. The Kellys owned the land that became the LCR from 1868-1937. "Citrus were originally planted around the old Kelly adobe. The Kelly orange trees were planted prior to 1906 as supported by a 1906 photo of 'Matthew Kelly's Adobe and Citrus Trees' picture that shows mature orange trees. Leo began watering and caring for one old orange tree located adjacent to his house. Nelson E. Westrie, a tree expert, obtained buds from the old Orange Trees and grafted them on new trees. Westrie successfully planted seeds and raised root stock for future budding."^{7d} Unfortunately, these hybridized trees have not survived in spite of multiple

29. Mandarin Orange (continued)

efforts by the Ranch Staff. The Orange Tree in the front Courtyard of the Hacienda was planted circa 2005 by Ranch Staff to keep that ‘clean fresh scent’ on the Ranch that Leo described. The original LCR Caretakers hired by Leo were Edna and Wallace Handley. The Handleys planted and nurtured the two Mandarin Orange Trees across from the Caretaker’s Residence.⁴¹ Today’s LCR Staff continue that tradition.

30. [Jade Plant](#)

Crassula ovata

LOCATION: D

Plant Family: Crassulaceae



Not native. Native to South Africa and Mozambique. Small pink or white star shaped flowers bloom in winter. It has thick, shiny, oblong, smooth, rich jade green leaves that grow in opposing pairs along the branches. It may have a red tinge around its leaves when grown with bright sunlight. In more extreme cases, the green color of the plant is lost and can be replaced by yellow. This is caused by the jade plant making pigments such as carotenoids as a defense against harsh sunlight and ultraviolet rays.

31. [California Sycamore](#)

Western Sycamore
Los Alisos

Platanus racemosa

Plant Family: Platanaceae

LOCATION: E



Native. Large tree, thick trunk, with distinctive cherry-sized seed clusters that hang in tandem covered completely with small, soft, fuzzy spines. The species name, *racemosa*, means 'cluster' a reference to the distinctive seed pods. The bark is patchy cream, light green and brown. Native Americans used the wood for dugout canoes. In traditional medicine, sycamore tea was made from the bark to treat asthma. The tea will turn red after the sycamore bark is added to it. Mistletoe, a parasite, is often found in Sycamore trees. Local birders look for Mistletoe in Sycamores hoping to spot a *Phainopepla nitens* feasting on Mistletoe berries. ‘Los Alisos’, a common name for the Sycamore tree, was the name of Leo’s home in Santa Monica which he built in 1932. When Leo described the home he wanted to build before he purchased LCR, sycamores were part of his vision, "I would like to have rolling hills, some cattle, twisting sycamores, doves, owls, coyotes, quail, a few deer and, of course, horses."^{8d}

32. [Aloe Yucca](#)

Yucca aloifolia

LOCATION: E

Plant Family: Asparagaceae



Not native. Native to the Atlantic and Gulf Coasts from southern Virginia south to Florida and west to the Texas Gulf Coast, to Mexico along the Yucatán coast and to parts of the Caribbean. *Yucca aloifolia* has an erect trunk, 3–5 inches in diameter, reaching up to 5–20 feet tall before it becomes top heavy and topples over. When this occurs, the tip turns upward and keeps on growing. The trunk is armed with sharp pointed lance like leaves each about 2 feet long. The young leaves near the growing tip stand erect; older ones are reflexed downward. The oldest leaves wither and turn brown, hanging around the lower trunk like an Hawaiian skirt. Flowers are white and showy, sometimes tinged purplish. It is a popular ornamental along the coast from Virginia to Florida.

33. [Fortnight Lily](#)

African Iris
Japanese Iris

Dietes spp.

Dietes iridioides

Plant Family: Iridaceae

LOCATION: E



Not native. Native to Southern and Central Africa. It has 6 free petals-like structures that botanists describe as a combination of petals and sepals (Appendix I). It has a long blooming season, spring to fall. Bloom-bursts occur at 2 week intervals. A two week interval is called a 'fortnight' hence its common name.

34. [Quince Bush](#)

Cydonia oblonga

Plant Family: Rosaceae

LOCATION: E



Not Native. Native to rocky slopes and woodland margins in Western Asia, Armenia, Turkey, Georgia and northern Iran to Afghanistan. It is a thorny, deciduous bush with masses of showy white, red, pink blooms in late winter. The apple size fruit is yellow. It is ripe in the fall and turns red when cooked. Quince are used for jam, jelly and pies. Luther Burbank's quince varieties 'Pineapple' and 'Van Dema' are still used today.^{21b} (See PL #12 for more information on Luther Burbank.) In Greek mythology, the 'Golden Apple' that Paris determined should be given to Aphrodite to indicate she was the "fairest of them all", is believed to have been a quince. This decision by Paris set events in motion that led to the Trojan War. In a lost poem by Callimachus, Acontius carves a written message on a quince and rolls it to his love in Garden of Aphrodite. She reads the inscription on the quince aloud, "I swear by Aphrodite I will marry Acontius".⁴² Once something is spoken in Garden of Aphrodite, it cannot be withdrawn (!) and so they marry. In children's literature, the quince is party food in the poem 'The Owl and the Pussy-Cat' by E. Lear: "They dined on mince and slices of quince, /Which they ate with a runcible spoon; /And hand in hand on the edge of the sand/They danced by the light of the moon".

35. [Silk Tree](#)

Persian Silk Tree
Mimosa
Lenkoran Acacia
Powder Puff Tree

Albizia spp.

Albizia julibrissin

Plant Family: Fabaceae

LOCATION: E



Not native. Native to Iran, Republic of Azerbaijan, China and Korea. Small deciduous tree, 16--52 feet. The leaf arrangement is called 'bipinnate', with 6-12 pairs of leaves on a leaflet stem.⁴³ The bark is dark greenish grey and striped vertically as it ages. Flowers are in dense groupings with a small base and a tight cluster of stamens that look like silky threads. Flower color varies--white, red, cream or pale yellow flowers as we see here. It is a good nectar source for honey bees and butterflies. The fruit is a flat, brown pod, ~4-8 inches and ~ 1 inch wide containing several seeds. Species name '*julibrissin*' is corrupted Persian word meaning 'silk flower'. Leaves slowly close during the night and during rain with leaflets bowing downward, thus its modern Persian name 'shabkhosb' or 'night sleeper'.

36. [Aloe vera](#)

Common Aloe
True Aloe

Aloe vera

Plant Family: Aloeaceae

LOCATION: E



Not native. Native to Arabian Peninsula. There are over 500 species of Aloe. In ancient Egypt plant extract was used as part of the embalming process. Legend has it that *Aloe vera* was Cleopatra's face wash. Alexander the Great is said to have acquired Scotoria Island off the coast of the Arabian Peninsula just to obtain this plant to treat the wounds of his soldiers. The flowers are yellow and it blooms in spring. The leaves are fleshy with serrate edges. Leaves may grow two feet long. Each leaf has three layers: 1) an inner layer contains a clear gel, a topical anti-inflammatory, 2) the middle layer contains Anthraquinones (a type of complex carbon molecule) in a bitter yellow sap that has been used in traditional medicine as a laxative and 3) a fibrous

36. Aloe vera (continued)

protective outer layer. Many biologic active compounds from Aloes have been isolated and studied to treat viruses, measles, and sarcomas. Aloes (native to Old World) and Agaves (native to New World) are an example of ‘convergent evolution’ ^{15b} sharing spines, succulent leaves, and CAM photosynthesis^{4b} as habitat adaptations. Many Aloes along Palm Lane were grown from seed by a LCR Parks Maintenance Worker 2001-2017.⁴⁴

37. [Queen Palm](#)

Syagrus romanzoffiana

LOCATION: E

Plant Family: Arecaceae



Not native. Native to South America. Named after Nikolay Rumyantsev (1754–1826), a Russia's Foreign Minister who sponsored the first Russian circumnavigation of the globe. Palm Lane at LCR is named for the Queen Palms that line this road from the Caretaker’s Residence to the Hacienda. Fronds die slowly, hanging to the ground, taking months to fall off so they are usually pruned. Palms were brought to SoCal 1) as an ornamental tree by Spanish missionaries, 2) in 1914 at completion of the Panama Canal to make SoCal seem more tropical to attract trade and 3) in 1932 for Olympics in LA when 40,000 palms were planted in the LA area as part of an unemployment relief program. The only native palm to California is the California Fan Palm (*Washingtonia filifera*) native to the Sonoran Desert, Arizona and Palm Springs, Palm Desert, Twentynine Palms and Anza-Borrego Desert State Park, California. The very tall, very skinny-trunked palms that develop 'beards' are Mexican Fan Palms (*Washingtonia robusta*) native to North West Mexico. The 'King Palm' (*Archontophoenix cunninghamia*), has a 'crown shaft' a smooth green section on the trunk just prior to where leaves emerge. It is native to Australia. The King Palm is considered a 'self-pruning' palm. Its fronds do not hang down like the Queen Palm nor does it produce a beard like the Mexican Fan Palm. The King Palm 'crown-shaft' acts to crop the leaves as they die so it does not require branch pruning.

38. [Spanish Dagger](#)

Hesperoyucca whipplei

LOCATION: E

Plant Family: Asparagaceae

Los Quiotes
Lord's Candle,
Chaparral yucca
Foothill Yucca



Native. As discussed in PL#8, LCR is named for the *Hesperoyucca whipplei* yuccas that grew on the hillsides. ‘Quiote’ is the Spanish word for the stalk of the *H. whipplei*.^{13b} In 1937, Leo kept the Kelly’s name for the Ranch 'Rancho de Los Quiotes', 'Ranch of the Spanish Daggers’. The Kelly's chose a name for the Ranch that celebrated the beauty of the land and Leo continued the tradition, very much in keeping with his love of the essence of California, 'pais, agua, sol'.^{7e} Most Yucca's are perennials. This Yucca dies after blooming, a 'monocarpic' plant. This is the only Yucca that is monocarpic. Because this Yucca deviated from the norm for Yuccas in terms of 1) being monocarpic, 2) possessing a differing flower morphology and 3) DNA analysis, the *H. whipplei* was designated a unique Yucca species. There is an obligate mutualism⁴⁵ between a specific moth, the *Tegiticula maculata*, and *H. whipplei*. The moths emerge from the larval stage on a *H. whipplei*. The moths mate and the female gathers pollen with antennae unique to the female moth. The female moth then flies to another *H. whipplei* thereby assuring cross pollination. She injects her fertilized eggs into the style that holds the ovary of the new plant (Appendix I). She then deposits the previously gathered pollen onto the top portion of the pistil called the stigma, in a ‘slam-dunk’ with her specialized antennae. The pollen grains move down the style (stalk of the pistil) toward the ovary. As the moth eggs deposited in the stalk hatch, the larvae eat the high protein, mother- provided pollen. There is sufficient pollen to feed the developing larvae and still fertilize the ovary in the new plant to form a seed. The well fed larvae eventually develop into moths and the cycle continues. The SoCal Native Americans used the fibers of this plant to make rope, sandals, snares, fishnets and garments. Seeds were ground into flour and flowers and fruits were eaten. The roots were used to make soap and used as a treatment for dandruff and hair loss. The bloom stalk is called a quiote like that of the Agave but is shorter than most Agave quiotes. Like Agave quiotes, the quiote of this yucca was hollowed out to make a quiver for arrows.^{13c} Blooms occur in April-June as large cream colored flowers. It was given the common name the 'Lord's Candle' because from a distance the white blooms on a hillside look like a candle flame. This Yucca was named for Amiel W. Whipple, Civil War Officer, topographical engineer and explorer of the West along 35th

38. Spanish Dagger (continued)

Parallel for Railway expansion. This route later became Route 66. To honor Amiel Whipple’s service to his country, President Abraham Lincoln named a military base in Arlington Virginia Fort Whipple. Fort Whipple was later renamed Fort Meyer which became famous for the test flights of Orville & Wilber Wright that sold the US Army on the idea of an AIR FORCE.

39. [Butterfly Agave](#)

Verschaffelt agave
AKA *Agave potatorum*
 Plant Family: Asparagaceae

LOCATION: E



Not native. Native to Mexico. The leaves grow in a rosette with spatulate leaves meaning they are broadly rounded at the apex and gradually turn down. The leaves end in long chestnut brown spine about one and a half inches long. The bloom stalk (quote) can be up to 20 feet (!) with pale green-yellow flowers tinged with red.

40. [Artichoke Agave](#)

Agave parryi
 Plant Family: Asparagaceae

LOCATION: F



Not native. Native to Arizona, Texas and New Mexico. The leaf growth resembles an artichoke, more compact and without the cupped leaves of Whale’s Tongue Agave (PL #96). It is a slow growing, clumping agave with short blue-grey leaves that grows ~ 3 feet by 3 feet. It has dark reddish-brown teeth along margins and a terminal spine. The flower spike is 15-20 feet with pink flowers that fade to golden yellow. Artichoke Agaves send out many pups unlike Whale’s Tongue Agave that does not typically produce pups.

41. [Moonshine Agave](#)

Agave Hybrid
 Plant Family: Asparagaceae

LOCATION: F



Not native. A hybrid from Waterwise Botanicals, Bonsall, California. It has soft blue-green color, smooth leaves and clumping rosettes. It grows to 18 inches tall by approximately 30 inches round. There are no sharp tips or spines on leaves. Moonshine Agaves were planted on the Ranch by LCR Park Maintenance Workers 2001-2017.^{44a}

42. [Coast Cholla](#)
Jumping Cholla
 Jumping Cactus
 Hanging Chain Cholla

Cylindropuntia prolifera
Cylindropuntia fulgida
 Plant Family: Cactaceae

LOCATION: F



Native. Pronounced ‘Choi-ya’. *C. prolifera* is native to SoCal, a maritime succulent growing at elevation less than 1500 ft. It is typically a spreading thicket less than 6 feet high. Segments are short with a surface of fleshy tubercle growths. Flowers are magenta. The other possibility is that the species on Palm Lane is *C. fulgida* (Jumping Cholla, Hanging Chain Cholla) which is native to the Sonoran Desert, Arizona. It grows at elevations ranging from 980 to 3,280 feet mostly erect, a treelike cactus which can approach ten feet in max height. The gray-green segments are narrow and cylindrical, surfaced in fleshy tubercles bearing many brown or reddish spines up to about an inch long. The flowers of this species are reddish purple and often borne on the fruits of previous seasons. Fruits grow in chains of up to 5 and are green in color. While the name "Jumping Cholla" is applied specifically to *C. fulgida*, ‘Jumping Cactus’ is also used as a common name for all Chollas even though it is a bit of a misnomer. The cactus does not really jump. Cholla cacti have very loose joint attachments between their segments. With the slightest brush of the cactus, it will attach to any helpless passersby be they human or animal. Getting skewered by a Cholla seems so unprovoked, people will say that they have been ‘stung by a cholla’. The minimal pressure needed to break off a portion of the plant is the reason why many people think that the cactus jumps. Cholla spines have microscopic backward pointing barbs which make removal extremely painful. In experiments, one cholla spine held a half pound piece of pork

42. Coast Cholla (continued)

shoulder suspended and had to be removed with tweezers.⁴⁶ (Pork was selected because of pork's resemblance to the consistency of human tissue.) The porcupine also has backward pointing barbs on its quills. The backward pointing barbs on porcupine quills and cholla cactus spines are an example of *cross-kingdom* convergent evolution.^{15c}

43. [Golden Rat Tail Cactus](#)

Cleistocactus winteri

LOCATION: F

Plant Family: Cactaceae



Not native. Native to mountainous areas of South America (Peru, Uruguay, Bolivia and Argentina). It has many short bristly golden spines that cover the surface of the stems. The stems can grow into tangled clumps. The flowers in this genus begin as tubular projections. The genus name is from the Greek 'kleistos' meaning 'closed' because in many of the flowers of this species the flowers never completely open. However, this species bloomed in April 2019 with a showy, fully open salmon colored flower with purple tipped stamens and bright yellow stigma (Appendix I). See *LCR Plant List* cover page photo.

44. [Pachypodium](#)

Pachypodium spp.

LOCATION: F

Plant Family: Apocynaceae



Not native. Native to Madagascar and Africa. Pachypodiums are spine bearing succulent trees or shrubs. The genus is characterized by 'pachycaul trunks' covered with spines. The term 'pachycaul' comes from the Greek *pachy-* meaning thick or stout, and the Latin *caulis* meaning the stem. A Pachycaul trunk is disproportionately thick for the plant's height, with few if any branches. A Pachypodium may or may not have leaves. The trunk stores water and gives rise to the odd shape of the stem. In times of drought, the stem may grow an underground extension called a 'caudex' to store water. This subterranean caudex should not be confused with roots. The Pachypodiums along Palm Lane have not produced leaves in the past three years. The spines are clustered in either pairs or triplets with these clusters often arranged in rings or whorls around the trunk. Spines grow for a short period before stopping growth and hardening. Weathering and abrasion can wear away all but the youngest spines from older specimens - leaving smooth trunks and branches because the spines do not regenerate.⁴⁷

45. [Blue Agave](#)

Tequila Agave

Agave Azul

Agave tequilana Weber var. Azul

Plant Family: Asparagaceae

LOCATION: F



Not native. Native to Mexico. Tequila may only be sold under the name Tequila if it is made from the specific cultivar *A. tequilana* Weber Azul per the Official Mexican Standard. Tequila is an important crop to the Mexican economy. In 2015, 248.3 million liters of tequila were produced and 74% was exported. ~859 thousand tons of agave pina were required to obtain this production. The *A. tequilana* takes from six to eight years to mature for processing.⁴⁸ The flower stalk (quiote) sprouts after about five yrs. In Tequila production, the quiote and leaves are trimmed to increase the size of the Pina (heart) prior to harvesting. The Pina can weigh 80-200 lbs. This species is pollinated by a bat (*Leptonycteris nivalis*), insects and hummingbirds. 'Fusarium Agave wilt' is the most important disease that effects the Blue Agave before it is ready for processing. Agave wilt is caused by the fungus *Fusarium oxysporum* species complex (FOSC).^{48a} This is an example of parasitic symbiosis.^{45a} FOSC causes 'vascular wilt' disease in food crops throughout the world. When a crop is limited to one cultivar or variety within a species, it is called a 'monoculture'. The economic impact of disease or pests on any mono-culture crop is greatly magnified. In the 1990's, FOSC significantly reduced tequila production and its economic return for Mexico. Agaves are not the only monoculture crop under the threat of FOSC. The Cavendish Banana (a \$12.4 billion global business), is a monoculture crop currently under the threat of FOSC.⁴⁹ Researchers are working on developing fusarium-resistant strains of Agave and Cavendish Bananas but economic reliance on a monoculture crops is always very risky. Genetic diversity within crops provide a greater chance of adapting to new stresses—pests, killer fungi or climate change, which can wipe out a monoculture. The leaves of the Blue Agave are narrower than the leaves of the *A. americana* (PL #1). Agave's react dynamically to their environment. They will

45. Blue Agave (continued)

pucker up to reduce surface area in the dry season and change the angle of their leaves to either get more sun or reduce its effects so that the tilt of the leaf is not a reliable identifier. In his book, *Agaves*, Gregg Star talks about the difficulty of differentiating Agave species.⁵⁰ The experts even have difficulty agreeing on the number of species! “Some estimate there are more than 300 species while another source says there are 274 recognized species in three sub-genera, seven sections and 18 series. There are over 130 species of agave that grow in Mexico alone.”⁵¹ In addition to this species variation, there is enormous variation in Agave *even within the same species*. The intra-species variation of *Agave americana* can be observed all along Palm Lane. In what are believed to be a series of *A. americanas*, the leaf color and shape of these Agaves vary dramatically. Some of the *A. americanas* have dark green and wavy leaves while others have leaves that are quite blue and straight. These differences could represent different Agave species but are believed to be variations *within the same species*, *A. americana*. Although it is perplexing to be unable to pin down an alternate Agave species versus intra-species variation, we are in good company. The famous friend of Darwin and renowned botanist, Sir Joseph Dalton Hooker said, ‘Of all cultivated plants, none are more difficult to name accurately than species of Agave.’^{50a}

46. Soap Aloe

Zebra Aloe

Aloe maculata

Plant Family: Aloeaceae

LOCATION: G



Not native. Native to South Africa. The leaves have spots giving rise to its species name, ‘*maculata*’ which means ‘speckled’ in Latin. The pin-wheel like flowers emerge on top of stalk as a flat top raceme (Appendix II). The sap makes soapy lather in water. The spots on the leaves seem a bit faded. This may be due to environmental stresses or it is possible that those along Palm Lane are a hybrid with a relative of *Aloe maculata*.

47. Madagascar Ocotillo

Alluadia procera

Plant Family: Didiereaceae

LOCATION: G



Not-Native. Native to Madagascar where they are pollinated by Lemurs. Young plants have tangle of stems then develop strong central stem. Small leaves emerge from short shoots similar to areoles in cacti. The branch has conical spines. The Ocotillo native to the Sonoran Desert is *Fouquieria splendens* that looks very similar to the Madagascar Ocotillo but it is not related. The flower on the Madagascar Ocotillo is yellow. (The Sonoran native, *Fouquieria splendens*, has a magenta flower.) The *A. procera* along Palm Lane were planted by a former LCR Parks Maintenance Worker 2001-2017.^{44d}

48. Snake's Tongue

Mother-in-Law's Tongue

***Sansevieria* spp.**

S. desertii

Plant Family: Asparagaceae

LOCATION: G



Not native. Native to Africa, Madagascar and southern Asia. There are about 70 *Sansevieria* species. Some species have rosette leaf patterns, others display 'distichous phyllotaxis' (the leaves on a stem are arranged in two vertical columns on opposite sides of the stem). The species at LCR along Palm Lane and in front of the Hacienda is believed to be *S. desertii*. Leaves emerge from an underground rhizome. Note there is no visible stem above the ground. The leaves are smooth with narrow grooves running much of the length of the leaf which is lightly banded with dark green and terminates with a sharp point. *S. desertii* has elongate, smooth, greenish-gray leaves. They are up to 1 inch diameter and grow up to 7 feet above the soil. *Sansevieria* species are often used as a housewarming gift because they are believed to help purify the air. The genus is named for an Italian scientist in 1700's, Raimondo di Sangro, Prince of Sansevero in southern Italy.⁵² The leaves were pounded and used as bandages for wounds by SoCal Native Americans due to the bacteriostatic properties of the sap.



49. [Candelabra Tree](#) *Euphorbia ammak* LOCATION: G
 African Candelabra Euphorbia Plant Family: Euphorbiaceae

Not native. Native to Southern Africa and Madagascar. Often confused as a member of the Cactus family because it is a spiny succulent. Identifying characteristic of Euphorbias include 1) white, milky, irritating secretions that contain latex, 2) small non-descript flowers without sepals or petals (Appendix I) that arise at the top of the plant 3) no areolar (nipple like) tissue from which spines and flowers emerge as seen in cacti and 4) Euphorbias typically grow more quickly than cacti. Many Euphorbias also have thorns,^{32a} not spines, on the margins of the stems. The sap of one species of Euphorbia can be used to make an oil that can be turned into gasoline but currently the production cost is prohibitive.

50. [Cactus Apple](#) *Hylocereus peruvianus* LOCATION: G
 Peruvian Apple Cactus *Hylocereus hildmannianus cactaceae*
 Giant Club Cactus *Cereus repandus or Cereus peruvianus*
 Plant Family: Cactaceae



Not native. Native to South America. Cereus is Latin for 'waxy'. 'Repandus', is a species name applied early-on, French for 'scattered'--perhaps as in scattered spines along a waxy column? It is a tree like cactus that grows quickly and can get >100 feet tall. When supported by scaffolding it holds the record for the tallest Cactus. Note the areola tissue at the base of each spine, a classic Cactus family identifier. Many species are one night bloomers with large flowers that open at dusk with a scent to attract pollinators (bats and moths). The large creamy white flowers on this cactus have been observed open during the day when bees take over as pollinators. The flower is large and can be roasted and eaten. The yellow, apple-shaped fruit is called 'Pitahaya'. The fruit turns red as it ripens. The inside of the fruit is white flesh with tiny black/brown seeds. The pulp has a crunchy texture, with a citrusy sweetness similar to kiwi fruit or some say with a taste similar to orange sherbet ice cream. Apple Cactus (New World) & Euphorbias (Old World) are another example of convergent evolution.^{15d} Why so many scientific names? It is confusing. The naming of plants is called taxonomy. It is an entire field of research as plants are continuously reclassified by botanists based on DNA research by a regulating body called the ICBN (International Code of Botanical Nomenclature). The 'basonym' is the first name ever given to a taxon, a group with unifying characteristics. Further studies and revisions may reject the basonym, but it is still useful as a reference point for the understanding of a plant. Also, according to ICBN rules, after a taxonomic revision that results in a species being reclassified in another genus, the first plant name must remain mentioned in the new name. This naming convention can lead to rather long complex sounding scientific names whose only value lies in the name reflecting the series of reclassifications to date. This naming convention enables scientists and hobbyists to build on previous knowledge but it is certainly confusing to those new to plant identification. The Cactus Apple is in the same genus as Dragon Fruit, *Hylocereus undatus*. The fruit of the Dragon Fruit also called a 'pitahaya'. The *Garbini and Garbini Report* notes that these cacti were located along the entrance drive [Palm Lane], in the median planting in the Main Operations area [across from Garage] and next to the gate at Deedie's House about 30 years ago.^{2f}

51. [Arrojadoa Cactus](#) *Arrojadoa spp.* LOCATION: G
A. dinae
 Plant Family: Cactaceae



Not native. Native to Brazil. It is a small, thin (~1 inch diameter) columnar cactus with densely spaced spines. In March and April the red flower appears at the very tip of the column. Its natural habitat is a dry savanna. It is threatened by habitat loss. It was named in honor of the Brazilian botanist, Dr. Miguel Arrojado Lisboa, the Superintendent of the Brazilian Railways at the time that Britton and Rose, described the genus in 1922. (Britton and Rose were American botanists who wrote *The Cactaceae* published between 1919-1923 that re-organized cactus taxonomy and became the foundation of cactus identification.)

52. [Fan Aloe](#)

Aloe plicatilis

LOCATION: G

Plant Family: Aloeaceae



Not native. Native to the Fynbos, the habitat of the southern tip of South Africa. The leaf growth pattern is called 'distichous phyllotaxis' where leaves are arranged in two vertical columns on opposite sides of the stem.

53. [Red Torch Cactus](#)

Echinopsis huascha

LOCATION: G

Plant Family: Cactaceae



Not native. Native to Argentina. *Echinopsis huascha* is a “columnar cactus up to 3 feet tall with bright red flowers... The stem is globose to short-cylindrical and up to 4 inches (10 cm) in diameter. The flowers are diurnal, funnel-form, up to 4 inches long and are produced near the end of the stems.”⁵³ Its red flower is exceptionally beautiful!

54. [Shaw's Agave](#)

Agave shawii

LOCATION: G

Coastal Agave

Plant Family: Asparagaceae



Native to southwestern California and Baja California. It is very rare and critically endangered in wild due urban development. Named for founder of Missouri Botanical Garden, Henry Shaw. This is a very slow-growing, small-to-medium sized Agave, with green ovate leaves about 8 to twenty inches long and about 3 to 8 inches wide, with a variable pattern of marginal teeth. When it blooms at the end of its life, the large, clubby inflorescence forms a panicle (Appendix II), about twelve feet high. The flower has 8–14 lateral umbels (Appendix II) supported by large purple bracts. Each umbel consists of a mass of yellowish or reddish flowers. Originally pollinated by bats but now pollinated by many species-- hummingbirds, bees and rodents.

55. [Blue Elderberry](#)

Sambucus nigra

LOCATION: G

Mexican Elderberry

Sambucus mexicana

Plant Family: Adoxaceae



Native. Per *Calfora*¹ this plant is poisonous but 'ripe berries are non-toxic'. Since it is difficult to know when berries are 'fully ripe' (!), at LCR, for your safety, please do not eat any part of the plants. Seeds, stems and leaves contain a cyanide-inducing glycoside. Eating a sufficient quantity can cause a toxic buildup of cyanide in the body which can be fatal. It often grows in drainages (stream side of Palm Lane and the stream bank below Deedie's House). Elderberry can be a tree or multi-trunk shrub. The wood is weak and malodorous. It is semi-deciduous.⁵⁴ The leaves are large, ovate and serrated arranged on either side of the stem. This leaf pattern is called a 'pinnately compound leaf' (Appendix III). Elderberry blooms March thru May with showy large yellow panicles (Appendix II). Berries were an important food for indigenous California peoples after they were carefully cooked first! Traditional medicine has used black elderberry for hundreds of years, including as wine intended for treating flu symptoms, rheumatism and pain from traumatic injury. The Luiseño and Kumeyaay used the branches of the Elderberry to make flutes and a percussion instrument called a 'Clapper Sticks'. The center of the Elderberry stem is soft pith that can be removed creating a solid piece of wood with a hollow core running its length. A traditional Luiseño 'Rim Blown Flute' would then have four holes carved from the outside of the branch into hollow area where pith had been removed. To create a sound, the flautist, would blow *across* the hole at the top of the stem/flute so that air would travel down the hollow center. Different notes were created by covering the holes with fingertips. Four holes were all that were needed because by changing the embouchure, the flautist can produce *three different registers* (similar to octaves) which greatly increases the number of notes that can be produced. Clapper sticks are made from split and hollowed-out stalks of an elderberry bush. The sticks are bound on one end, then held with one hand and struck against the open palm of the other hand to create a rhythmic clapping sound to accompany chanting, singing and dancing.^{36b} Elderberries are rich in anthocyanin and gives elderberry juice an intense blue-purple coloration that turns reddish on dilution with water. These pigments are used as colorants in various products. "In some

55. Blue Elderberry (continued)

myths, the elder tree is thought to ward off evil and give protection from witches, while other beliefs say that witches often congregate under the plant, especially when it is full of fruit. If an elder tree was cut down, a spirit known as the ‘Elder Mother’ would be released and take her revenge. The tree could only safely be cut while chanting a rhyme to the Elder Mother. Made from the branch of an elder tree, an Elder Wand plays a pivotal role in the final book of the Harry Potter series, which was nearly named *Harry Potter and the Elder Wand* before author J. K. Rowling decided on *Harry Potter and the Deathly Hallows*.⁵⁵ *The Garbini and Garbini Report* documents this plant was found on the Ranch ~30 years ago but in a different location, "Mexican Elderberry [grows] along the roadway in front of the Front Courtyard."^{7g}

56. Plum Spike

Natal Plum

Carissa macrocarpa

Plant Family: Apocynaceae

LOCATION: G



Not native. Native to South Africa. It is an evergreen shrub with shiny leaves. The flowers are a snowy white five petal flower with a scent that intensifies at night to attract pollinators. In coastal climates, fruits can appear all year as a plump, round red fruit. Fruit can be made into pies, jams and jellies. UC Davis College of Agriculture rates plant as mildly toxic. It was previously believed the entire plant other than fruit was toxic due to the milky latex containing sap. It is a traditional food plant in Africa.

57. Palo Verde

Mexican Palo Verde
Jerusalem Thorn

Parkinsonia aculeata

Plant Family: Fabaceae

LOCATION: G



Not native.^{1a} *Parkinsonia aculeata* was naturalized in the wild having been introduced to California from the Sonoran Desert, Chihuahuan Desert and Argentina. The Palo Verdes were previously classified in the genus *Cercidium*, and some sources may still refer to it by that name. Palo Verde means 'Green pole or stick' in Spanish. The trunk and branches are green-tinged on some species. The bark has chlorophyll, which enables it to conduct much of the plant's photosynthesis. Photosynthesis is conducted in leaves when they are present, however during drought, they fall off to avoid water loss from the leaves, a drought evasion adaptation known as a plant being 'drought-deciduous'. The Palo Verde has thorns on its branches and yellow, five petal flowers that bloom in April to October. Seed pods are flat, less than five inches long. The dried seeds of the Palo Verde were used by Native Americans as food and the extracts of bark, leaves, flowers and fruits have been used in herbal medicines to treat arthritis and to stimulate nerves. The major Palo Verde pollinator in the southwest US is the Digger Bee (*Centris pallida*). Females make 'bee bread' from Palo Verde pollen and bury a 'brood pot' to feed their larva. Digger Bee body temperature regulation is truly impressive with its abdominal temperature reaching 118°-120° F.--within 3° of death!⁵⁶ In the Sonoran Desert, immature Saguaro Cacti are sheltered by Palo Verdes. For this reason the Palo Verde is sometimes referred to as the 'nurse-maid' tree. The genus *Parkinsonia* is named after one of the first great English botanists, John Parkinson (1567–1650).

58. Flat Flowered Aloe

Mountain Aloe

Aloe marlothii

Plant Family: Aloeaceae

LOCATION: G



Not native. Native to South Africa and Zimbabwe. A large, single-stemmed Southern African aloe of rocky places and open flat country, occasionally growing up to 22 feet tall. Named after Rudolf Marloth, a South African botanist. This Aloe has a large head of stiff, grey-green leaves. These leaves can be up to 4.5 feet in length and usually densely covered in short spines on both sides of the leaves. Like many other arborescent aloe species, this Aloe has more spines when it is young to help ward off herbivores. Leaves become less spiny as it becomes taller and less vulnerable to grazing. In the wild, the trunk would be covered by the withered old leaves. The bloom in winter is distinctive, a much branched panicle with up to 30-50 racemes (Appendix II). Flower color varies a great deal, and ranges from yellow through orange (most common) to bright red. The Flat Flowered Aloe at the foot of the Pepper Tree, at the end of Palm Lane across from the ‘Welcome Amigos’ sign, had pink/salmon colored flowers in 2018. The Hercules Aloe (PL #102) and another Aloe species, *Aloe ferox*, were present ~30 years ago in the Main Courtyard.^{7h} This plant appears to be growing out of the base of a Pepper Tree because it was originally in a pot under the

58. Flat Flowered Aloe (continued)

Pepper Tree. The Aloe fell over and the pot broke open. The *Aloe marlothii* rooted in situ.^{44b} This plant is estimated to be 35-40 years old based on its size.

59. [California Barrel Cactus](#)

Ferocactus spp.

LOCATION: H



Golden Barrel Cactus

Compass Cactus

Echinocactus spp.

Plant Family: Cactaceae

Native. The Golden Barrel Cactus is rare and endangered in the wild. These cacti are spherical globes with as many as 35 ribs in a mature plant with dense hooked spines. Its yellow flowers bloom in April and fruits appear in April and May. These 2 genera (*Echinocactus* and *Ferocactus*) are referred to as ‘Barrel Cacti’. Many species have a symbiotic relationship with ants. Plants with ant-plant mutualism are called ‘myrmecophytes’. Ants are attracted by secretions of EFN, **Extra Floral Nectar**. Nectar is secreted on the surface of the cactus rather than inside a flower where it is typically located. In exchange for nectar, ants protect the plants from herbivores. Some species of barrel cacti can detach from the ground in extreme drought and roll around for years. Then, with rain it can root and grow. Barrel Cacti use CAM^{4c} photosynthesis. The folded rib-like structure increases the surface area of the cactus by ~54%. Studies that simulate removing the spines and ribs from the cactus have shown the ribs and spines keep the surface tissue temperature about ~ 7° Fahrenheit *cooler* than if the surface were flat.⁵⁷ Barrel Cacti lean to the south so that the top of the plant can catch the most sun to promote flower and fruit growth giving rise to the common name ‘Compass Cactus’. Don't drink barrel secretions! It is called the 'Barrel that Kills' by the Seri Indians of Sonora Mexico. The fruit is spineless and has some moisture and sugar. If desperate for water in the desert, try the fruit rather than the secretions from within the cactus itself.

60. [Queen Victoria Agave](#)

Agave victoriae-reginae

LOCATION: H



Plant Family: Asparagaceae

Not native. Native to Chihuahuan Desert, Mexico. Endangered in the wild. It grows slowly and remains small, short and compact. Its rigid, thick, toothless green leaves have a distinctive pattern: white markings along the leaf margins. Leaves may end in 1-3 inch short spines. Flowers are cream-colored on erect racemes (Appendix II) that can grow up to 13 feet high. Named for Queen Victoria. It is a monocarpic plant and one of the Agaves that does not produce ‘pups’.⁵⁸

61. [Violet Prickly Pear](#)

Santa-Rita Prickly Pear

Opuntia gosseliniana var. **Santa Rita** (*Opuntia Santa Rita*)

LOCATION: H

AKA *Opuntia violacea* var. Santa Rita

Plant Family: Cactaceae



Not native to California per *Calfora*. “*O. gosseliniana* var. Santa Rita is native to Pima County, Arizona in the United States and Baja California, Chihuahua and Sonora in Mexico. Botanists disagree on the division of plants into 1) *Opuntia chlorotica*, 2) *Opuntia violacea*, 3) *Opuntia gosseliniana*, and 4) *Opuntia macrocentra*. To complicate the issue, there are numerous natural hybrids between species.”⁵⁹ One of these closely related plants, the *Opuntia chlorotica* is endemic to California per *Calfora*. However, the appearance of the plant on the Ranch suggests it is *O. gosseliniana* or perhaps a hybrid of a non-native (*O. gosseliniana*) with a California native (*O. chlorotica*) rather than the species *O. chlorotica*. *O. gosseliniana* var. Santa-Rita has flat, round, reddish-purple pads that grow to ~ 8 inches tall with yellow flowers in late spring. During summer the pads are a blue-grey color. Pads will not always have spines. The fruit is oblong and purple. Cold and drought increase the purple color of the pads. Javelina, rabbits and pack rats eat the pads in its desert habitat.

62. [African Tree Aloe](#)

Aloidendron barberae
Formerly *Aloidendron baninsii*
Plant Family: Aloeaceae

LOCATION: H



Not native. Native to South Africa. The Tree Aloe in Location H had stress induced orange tinged leaves in April 2019. This is Africa's largest aloe-like plant. It typically has green leaves. It blooms in winter with rose-pink, green tipped tubular flowers. It is pollinated by Sunbirds in South Africa. It has slower growth than the hybrid, Hercules Aloe (PL #102). The spines on the leaves can't be used as definitive species identification because in some species immature leaves retain spines and then become smooth as the tree ages. The bark, leaves and fruit have been used in traditional medicine for GI disorders and as anti-inflammatory. Some research supports use for bacteriostatic and anti-fungal properties of its gel.⁶⁰ It is named in honor of Mary Elizabeth Barber, a self-taught naturalist in South Africa in mid-1800s. She corresponded with C. Darwin and J. Hooker, sent specimens to Kew Gardens, and had papers published by the Linnaean Society at a time when being a woman restricted this high level of scientific participation. She was also a renowned ornithologist, archeologist, and geologist.

63. [Columnar Cactus](#)

Hedgehog Cactus
Sea Urchin Cactus

***Echinopsis* spp.**
(Formerly *Echinopsis*, *Lobivia*,
Pseudolobivia, *Soehrensia*
and *Trichocereus*)
Plant Family: Cactaceae

LOCATION: H



Not native. Native to South American. The *Echinopsis* genus of cacti are noted for their great size and length of their tube like growths. "This large genus range in shape from small and globular to tall and columnar with flowers and spines that differ greatly in size and hue. This diversity is due to the recent amalgamation into one genus of the former genera *Echinopsis*, *Lobivia*, *Pseudolobivia*, *Soehrensia*, and *Trichocereus*."⁶¹ This genus now includes columnar cacti that have large, bat pollinated white flowers and also small globular plants with small bright day flowering blossoms that were formerly named 'Lobivia'.

64. [European Fan Palm](#)

Mediterranean Fan Palm
Dwarf Palm

Chamaerops humilis
Plant Family: Arecaceae

LOCATION: H



Not native. A species of fan palm thought to be native to the Mediterranean or South Africa. It is a shrub-like clumping palm, with several stems growing from a single base. It has an underground rhizome which produces shoots with palmate, rigid leaves. The stems grow slowly and often tightly together, eventually reaching 10–20 feet tall. The petiole (Appendix III) terminates in 10–20 leaflets in the shape of a fan. Each leaf is up to 5 feet long, with leaflets 20–30 in long. The leaf stalks are armed with numerous sharp, needle-like spines; these may protect the stem from browsing animals when it is young and closer to the ground.

65. [Carrion Plant](#)

Starfish Flower

Stapelia grandiflora
Plant Family: Apocynaceae

LOCATION: H



Not native. Native to South Africa. Pollinated by flies who are attracted to the deep red/brown meat-like star shaped flowers that emit a rotting meat scent to attract them. It flowers late summer-fall.

66. [Saguaro Cactus](#)

Carnegiea gigantea

LOCATION: I

Plant Family: Cactaceae



Not native. Native to Sonoran Desert in Arizona. The Saguaro Cactus is the defining plant of the Sonoran Desert. It is the largest cactus in the US. It can grow to over 40 feet tall. These plants are tree-like columnar cacti that develop branches (or arms) as they age, although some Saguaros never grow arms. These arms generally bend upward and can number over twenty five. Saguaros are covered with protective spines. They have white flowers with pale yellow centers that bloom in May and June, with red edible fruit in summer. The cactus is called a 'spear' if it is too young to have 'arms'. The first arm grows when the cactus is ~ 75-100 years old. The Palo Verde (PL #57) is nurse tree of Saguaro adding some protection from the sun and some warmth at night when the Saguaro Cactus is young. The outer pulp can expand to hold water. A Saguaro can increase its weight by a ton retaining water in this manner. Most of the Saguaros roots are only 4-6 inches deep and radiate out as far from the plant as it is tall. There is one deep root, or tap root that extends down into the ground more than 2 feet. The genus *Carnegiea* was named for Andrew Carnegie a Scottish-American steel magnet and philanthropist who made his fortune in the US steel industry. Carnegie encouraged the rich to use their wealth to improve society and did so himself.

67. [Manzanita](#)

Arctostaphylos ssp.

Plant Family: Ericaceae



Native. A common evergreen shrub or small tree with over 40 species that are widespread in North Country chaparral habitats. Manzanita means 'little apple' in Spanish. It is known for its smooth orange or red bark and stiff, twisting branches. It is typically less than 8 feet tall. Its white/pink small flowers are urn-shaped and bloom in late winter. It produces small red seeds (nutlets). Native Americans in Northern California made a 'tisane' from Manzanita leaves to treat poison oak rash. The leaves contain chemicals that are mildly disinfectant and in the past have been used as a tea to treat urinary tract infections. Once stored and dried, the berries can be ground into a coarse meal. The berries can be eaten ripe (when red) or green for a slightly sour taste. They are eaten alone, or used as a thickener or sweetener in other dishes. Fresh berries and branch tips can be soaked in water to make a cider. For your safety at LCR, please do not eat any plants.

68. [Bunny Ear Cactus](#)

Opuntia microdasys

LOCATION: I

Polka-Dot Cactus

Plant Family: Cactaceae



Not Native. Native to central and northern Mexico. Instead of spines it has numerous very short white or yellow glochids in dense clusters. They are barbed and thinner than the finest human hairs, detaching in large numbers upon the slightest touch. If glochids get into human skin and they are not removed, they will cause considerable skin irritation so the plants must be treated with caution. The Latin specific epithet 'microdasys' means 'small and hairy'. The yellow flowers appear only rarely.

69. [Agave 'Blue Glow'](#)

Hybrid

LOCATION: I

Agave attenuata x Agave ocahui

Plant Family: Asparagaceae



Not native, a hybrid. *A. ocahui* is native to northeastern Sonoran Desert and Sonora, Mexico and *A. attenuata* is native to Mexico. This is a slow growing succulent with chalky blue-green leaves with a finely toothed margin characterized by a golden and red ribbon on the leaf margin. It takes ~ 10 years to flower and then will die. It does produce pups. Agave Blue Glow is a smaller plant with stiff leaves as compared to Agave Blue Flame (PL #70) that is a larger, clumping plant with flexible leaves.⁶² Most of the Agaves with gold and red ribbon color at the leaf margin have stiff leaves and are therefore thought to be Agave Blue Glow.

70. [Agave ‘Blue Flame’](#)

Hybrid

LOCATION: I



Agave shawii x *Agave attenuata*

Plant Family: Asparagaceae

Not native, a hybrid. *A. shawii* is a native but *A. attenuata* is native to Mexico. It is a succulent that forms clumps of rosettes about 2.5 feet tall. It has [flexible](#) blue-green *in-curved* leaf tips with spineless margins or finely serrated margins and a terminal spine. There is a blue cast to the leaves formed from a pale yellow-green (glaucous) waxy cuticle that covers the leaf surface. [62a](#) The leaves have red/brown margins and a thin yellow green ribbon which glows when backlit by the sun, giving rise to its common name. It is often planted with Agave ‘Blue Glow’. Look for flexible in-curved leaves to distinguish Agave ‘Blue Flame’ from Agave ‘Blue Glow’ which has straight leaf tips, more rigid spear shaped leaves and pups. Location: If you exit the Wash House patio into the Front Courtyard, there is an Agave ‘Blue Flame’ on your left as you enter the Front Courtyard.

71. [Spanish Bayonet](#)

Mojave yucca

Yucca schidigera

Plant Family: Asparagaceae

LOCATION: I



Native. A common SoCal succulent with CAM photosynthesis. [4d](#) This species is native to southeast California, Mojave Desert, Chihuahuan Desert, Sonoran Desert, Baja, New Mexico and Arizona. It has bayonet-like blue green leaves that sit on basal trunk. Often fibers separate at leaf edges which is found in several yucca species. SoCal Native American Indians had many uses for this plant which are the same as for other Yuccas (see PL #8 *Yucca rostrata*). It is related to the *Yucca buccata* (PL # 9). We are not sure if this is *Yucca schidigera* but it is the closest match we can determine.

72. [Peruvian Torch Cactus](#)

Echinopsis peruviana

Plant Family: Cactaceae

LOCATION: I



Not native. Native to Andes in Peru. A columnar cactus. Contains psychoactive Mescaline, a hallucinogen. Flesh is blue-green with frosted stems and 6-9 broadly rounded ribs. Large white, night blooming flower. ~ 30 years ago, The Garbini *and Garbini Report* noted these cacti on the Ranch but the date of their planting was unknown. [7i](#) The plant is bluish-green in color, with frosted stems, and 6-9 broadly rounded ribs; it has large, white flowers. It can grow up to 10-19 feet tall, with stems about 3 –7 inches in diameter. Groups of 6-8 honey-colored to brown rigid spines, up to one and a half inches in length, with most about a little less than half an inch are located at the nodes, which are evenly spaced along the ribs, up to approximately an inch apart. [63](#)

73. [Brittle Bush](#)

Bush Sunflower

Encelia farinose

Encelia californica

Plant Family: Asteraceae

LOCATION: I



Native. Brittle Bush is a common desert shrub now used by Caltrans to prevent erosion due to its deep roots. The name comes from the stiffness of the stems. In the late winter and early spring small yellow flowers with yellow centers form on long stalks well above the leafy stems. There is a long history of uses by indigenous and pioneer peoples: **Glue**- The resin collected from the base of the plant, yellowish to brown, can be heated and used as a glue. The O’odham and Seri people used it for hafting, to hold points on arrows and harpoons. **Sealer**- A different sort of resin collected from the upper stems is more gummy and generally a clear yellow. The Seri used this to seal pottery vessels. **Incense**-Early Spanish friars learned that the resin made a highly fragrant incense, akin to frankincense in odor. **Gum**-The Tohono O’odham children use upper stem resin as a passable chewing gum. **Toothbrush**- Old time cowboys used brittlebush stem as a fine toothbrush. **Medicinal**- Seri and Cahuilla use brittlebush to treat toothache; the bark is removed, the branch heated in ashes, and then placed in the mouth to "harden" a

73. Brittle Bush (continued)

loose tooth. It was also used as a chest pain reliever by heating the gum and applying it to the chest. **Waterproofing**- It has been used to waterproof containers. **Varnish**- the resin melted then used as a varnish.⁶⁴ Bush Sunflower is another California native in the *Encelia* genus. It blooms Feb-June with large daisy-like yellow petals and a dark center. It is one of the dominate species in the coastal sage scrub vegetation. The Gabrielino Indians of the Los Angeles Basin boiled all parts of the plant to make a thick paste to relieve aching joints and toothaches. The stems were chewed as a breath freshener. The Kumeyaay name for the Bush Sunflower was '*Nhekwi*' which means 'it watches the sun'.⁶⁵

74. [Stalked Bulbine](#)

Bulbine

***Bulbine* spp.**

Bulbine frutescens

Plant Family: Aloeaceae

LOCATION: I



Not native. Native to South Africa. It is a succulent ground cover. The yellow flowers have 6 petals and frilly yellow stamens that grow on long stalks that rise above the base foliage of the plant in the spring through the summer. Fresh leaves have a slimy leaf gel that has been used in traditional medicine for skin irritations like insect bites, cold sores, sunburns and rashes. Active chemical compounds in the gel are Anthraquinones and glycoproteins.

75. [Wooly Jack](#)

Wooly Torch
Snow Pole

Cleistocactus strausii

Plant Family: Cactaceae

LOCATION: I



Not native. Native to high mountain regions of Bolivia and Argentina. Hummingbirds are the exclusive pollinators. Red tubular flowers in spring are striking because they sprout perpendicular to the stem. The white spines on the stem make the cactus look like it is covered in fuzzy wool giving rise to the common names Wooly Jack or Wooly Torch.

76. [Billbergia Amoena Viridis](#)

Billbergia amoena viridis* var. *Rubra

Plant Family: Bromeliaceae

LOCATION: J



Non-native. This species is native to Brazil. Location: flower pot between Horsemen's bedroom and Tony's bedroom. Bromeliads are in the same plant family as pineapples. The genus is named for the Swedish botanist, zoologist, and anatomist Gustaf Johan Billberg. Many genera store water in tightly-overlapping leaf bases. Foliage varies widely in this family. Here it is growing in tightly wrapped rosette with a cup like center to catch rain. This arrangement is called 'phytotelmata'. The tightly wrapped rosette of leaves becomes host to diverse array of invertebrates, especially aquatic larvae which in turn supply nitrogen to the plant. There are many Bromeliads known for 'tank habit' in which leaves are so tightly bound to capture water that there is an absence of a well-developed root system. This plant family is successful in a vast array of environmental conditions. Bromeliads use CAM photosynthesis.⁴⁶ This plant family can be successful in both tropics and desert environments. Some species in this plant family can be epiphytic,⁶⁶ for example, Spanish Moss (*Tillandsia usneoides*).

77. [Snow Ponytail Hairy Grizzly Bear Cactus](#)

Hybrid *Opuntia erinacea ursine*

Plant Family: Cactaceae

LOCATION: J



Not native. This unusual cactus in the Hacienda Koi Pond is thought to be a hybrid with one relative *Opuntia erinacea ursine*. The characteristic flat rounded pads (cladodes) of the *Opuntia* genus are covered with areoles from which emerge soft tufts of white filaments. Unlike glochids that are hair-like barbed spines found emerging from the areoles of many *Opuntia* cacti, these filaments are soft, smooth to the touch and do not lodge painfully into skin. This plant was selected for this heavily trafficked

77. **Snow Ponytail Hairy Grizzly Bear Cactus** (continued)

location precisely because it was safer than other cacti should a visitor inadvertently brush against it according to the former LCR Parks Maintenance Worker who planted it.^{44c}

78. **Crested Euphorbia**

Euphorbia kibwezensis cristata

LOCATION: J



Plant Family: Euphorbiaceae

Not native. Native to Madagascar. The 'crested' form occurs when the original plant sustains some damage at its growth point on the stem causing it to make multiple growing points which push up against each other to cause a wavy, fan shape. This could also be *E. enopia cristata*. It is definitely a crested form of a Euphorbia. *E. Kibwezensis cristata* is the closest match we could determine. Location: Hacienda Courtyard Koi Pond.

79. **Finger Aloe**

Grey Sticks

Cotyledon spp.

LOCATION: J



Plant Family: Crassulaceae

Not native. Native to South Africa. It is likely *C. orbiculata* var. *oblonga* 'Flavida' (Finger Aloe). In traditional medicine, it was used to treat warts, corns or as a poultice for boils. From the Greek 'Kotyledon' meaning cup shaped, hollow + round. This plant does have a curved finger shape. Poisonous to livestock and the meat from animals having eaten *Cotyledon* spp. may also be poisonous to humans. Location: Hacienda Courtyard Koi Pond.

80. **Cow's Horn Euphorbia**

Big Horned Spurge

Euphorbia grandicornis

LOCATION: J



Plant Family: Euphorbiaceae

Not native. Native to South Africa, Swaziland, Mozambique and Kenya. Pattern of spines look similar to cow horns. Like all Euphorbias, it has a poisonous, skin irritating latex sap. The flowers are reduced in size (no petals or sepals) and aggregated into a cluster of flowers called a 'cyathium' (plural cyathia). This feature is present in every species of the genus Euphorbia and is unique to this genus.⁶⁷ Location: Hacienda Courtyard Koi Pond.

81. **Aeonium**

Dinner Plate Aeonium
House Leek

Aeonium spp.

Aeonium. tabuliforme
Aeonium undulatum

LOCATION: J



Plant Family: Crassulaceae

Not native. Many Aeoniums are native to Canary Islands while some are native to Madeira, Morocco, and in East Africa. The name comes from the ancient Greek 'aionos', meaning ageless. Aeoniums use CAM photosynthesis.^{4f} It is a perennial succulent forming a compact, flat rosette of overlapping leaves. Location: Hacienda Courtyard Koi Pond.

82. **Black Rose Aeonium**

Aeonium arboreum 'Zwartkop' LOCATION: J

Plant Family: Crassulaceae



Not native. Mostly native to Canary Islands, some are found in Madeira, Morocco, and in East Africa. The beautiful yellow flowers contrast with dark leaves. The leaves drop off stem as plant ages. It may take several years to bloom. It is a monocarpic plant (dies after a winter blooming). Zwartkop is suburb of Pretoria, South Africa. The plant is named for one of original families who owned the land in suburbs of Pretoria, South Africa in the 1840s. Location: Hacienda Courtyard Koi Pond.

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

83. [Blue Chalksticks](#)
Dwarf Blue Chalksticks
Candle Plant

Senecio spp.
Plant Family: Asteraceae

LOCATION: J



Not native. Native to South Africa. It is a dwarf shrub, often used as a ground cover with cylindrical blue-green leaves about the diameter of a chalk stick that emerge from prostrate stems. It is a succulent. Location: Hacienda Courtyard Koi Pond.

84. [Dragon Tree](#)

Dracaena draco
Plant Family: Asparagaceae

LOCATION: J



Not native. Native to Canary Islands. When the bark or leaves are cut they secrete a reddish resin, called dragon's blood. Red resins from this tree contain many mono and dimeric flavans that contribute to the red color. The Dragon Tree in the Hacienda Courtyard was planted by Leo Carrillo in ~ 1937 when tree was twenty years old so this tree is now ~ 100 yrs. old. The sap is said to have been used for embalming by the Guanche people of the Canary Islands and purportedly for the stain of the Stradivarius violin. However, recent research suggests cochineal dye was part of the varnish rather than dye from Dragon Tree genus.⁶⁸ The Dragon Tree plays a central role in the Greek myth, 'The 11th Labor of Hercules'. In this myth, Hercules had to complete 12 tasks or 'labors' before Zeus and Hera would make him a God on Mount Olympus. There are many variations of this myth!⁶⁹ Briefly, Hercules was told by Zeus and Hera to travel to the Garden of the Hesperides to obtain a Golden Apple that conveyed immortality. Upon arriving at the Garden, Hercules found Ladon the Dragon, a 100 headed, fire breathing dragon wrapped around the tree that held the Golden Apple. Hercules slays the 100-headed Ladon and as the dragon's blood seeps into the ground, it is taken up by the roots of the Dragon Tree and from then on, the sap of the Dragon Tree has been blood red. Readers are encouraged to investigate the myth because it is a wonderfully complex set of events and characters not done justice by this brief synopsis.

85. [Australian Tree Fern](#)

Sphaeropteris cooperi
AKA *Cyanthea cooperi*
Plant Family: Cyantheaceae

LOCATION: J



Not native. Native to Australia. The crown of this fern is widely spread. It has long silky fronds. The straw colored scales on underside of frond are called 'sorus'. Sori (plural of sorus) contain many sporangium each of which contains 64 spores. Ferns do not have true roots. They have 'root-like structures' called rhizomes which lack the vascular tissue required to be a 'true root'.

86. [Camellia](#)

Camellia spp.
Plant Family: Theaceae

LOCATION: J



Not native. Native to eastern and southern Asia, from the Himalayas east to Japan and Indonesia. ~300 species, 3000 hybrids! Leaves are used for tea and seeds are used for oil. The oil is used to protect blades of cutting instruments. It is an evergreen shrub. Flowers are characterized by a dense cluster of conspicuous yellow stamens often contrasting with the petal color. In the Hacienda Courtyard Koi Pond, under the Dragon Tree (PL #84), the Camellia petals are bright red. The fruit is often a dry capsule sub-divided into compartments containing up to 8 seeds. It was bred in 1800's for tea production. It is the symbol in New Zealand of a woman's right to vote, pictured on the \$10 note. Camellia buds are iconic symbol for the Chanel fashion house's haute contour, a tradition started by Coco Chanel herself. Linnaeus classified the Tea Plant as *Thea sinensis*. Some decades later, another botanist noticed that the genus *Thea* wasn't really different from the genus *Camellia*, and renamed all the *Theas* as *Camellias*. *Thea sinensis* became *Camellia sinensis*, because botanical naming conventions dictate that the original name (basonym) must be retained in the new name.

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

87. [Shell Ginger](#)
Butterfly Ginger
Pink Porcelain Lily

Alpinia zerumbet
Plant Family: Zingiberaceae

LOCATION: J



Not native. Native to East Asia. This plant produces beautiful shell-shaped pink flowers in spring. Leaves are used to make zongzi (a Chinese dish), tea and to flavor noodles. Eating these dishes is associated with longevity and has purported hypotensive effect. The plant that we use as culinary Ginger is the root of a different species, *Zingiber officinale*. Herbalists prescribe *Z. officinale* to treat or prevent motion sickness and treat nausea and vomiting associated with chemotherapy and morning sickness during pregnancy. Ginger tea is used to treat colds, flu headaches and abdominal cramps. The genus name, *Zingier*, is derived from Greek 'zingiberis' meaning 'horn shaped' that likely refers to the shape of the root.

88. [Bougainvillea](#)

Bougainvillea spp.
Plant Family: Nyctaginaceae

LOCATION: J



Not native. Native to South America. Genus of thorny ornamental vines, bushes, or trees. The bloom consists of large colorful red 'bracts' which surround three simple waxy flowers. 'Bracts' are modified leaves associated with a bloom of flower which are most often different from foliage leaves on the plant. In the Bougainvillea, the bracts are larger, a different color, shape and texture as compared with the foliage leaves. The sap can be serious skin irritant similar to Poison Ivy. The first European to describe Bougainvillea was Philibert Commerçon, a botanist accompanying French Navy admiral Louis Antoine de Bougainville during his voyage to circumnavigate the globe in 1789. The plant was named for the Admiral but it is possible that the first European to observe Bougainvilleas was Jeanne Baré who was Commerçon's lover, assistant and botanic expert. Baré disguised herself as a man in order to make the journey because no women were allowed on the ship. In this disguise, Baré became the first woman to circumnavigate the globe.

89. [Gardenia](#)

Gardenia spp.
Plant Family: Rubiaceae

LOCATION: J



Not native. Native to South Africa. Leaves grow in opposite whorls. It has large white flowers that are fragrant at night to attract moth pollinators. Gardenias bloom in May and June, some species bloom later in summer. Called 'Nanu' in Hawaii.

90. [Triangle Palm](#)

Dypsis decaryi
Plant Family: Arecaceae

LOCATION: J



Not native. Native to Madagascar. It is a fern leaf palm. The leaf bases are arranged in three vertical columns set about 120° apart on the main stem, forming a triangular shape in cross section giving rise to the palm's common name. The leaves emerge almost upright from the trunk. It can bloom all year round if soil and water conditions are favorable. The yellow and green flowers branch out from the leaf axils (Appendix III) and produce round black fruit about one inch in diameter. Although widely cultivated, the species is threatened in its native habitat with only about 1,000 trees left in southern Madagascar rainforests. In 2013, the tree Triangle Palm in the Hacienda Courtyard had to be trimmed back because its roots were crumbling the Hacienda wall. When new leaves emerge, "you will occasionally observe long, narrow strips of green tissue hanging down like long shoe strings from the leaves. These appendages are called 'reins', and they were originally connective tissue attached along the edges of the leaflets when they were folded in the unopened spear leaf. As the spear opens, this strip of extraneous tissue usually falls off, but occasionally remains attached to one of the leaflets on young leaves <https://edis.ifas.ufl.edu/ep344>

91. [Fence Aloe](#)

Aloe tenuior
AKA *Aloiampelos tenuior*

LOCATION: J



Plant Family: Aloeaceae

Not native. “Native to Eastern Cape and southern KwaZulu-Nata, South Africa. A shrub forming plant rising from a near tuberous base to 3 feet tall, or taller with support, by 5-6 feet wide with irregularly-branched, semi-woody long stems tipped with open rosettes of narrow pale blue-green four to six inches long by 1/2 to 3/4 inch wide leaves with tiny white teeth along the margins. It blooms fall to late winter, but seemingly nearly any time of year except mid-summer. The lemon yellow flowers appear at the tip in typically unbranched spikes.⁷⁰In the ever evolving world of botanic taxonomy, in 2013 the genus Aloe was reclassified with two new genera: the rambling aloes, *Aloiampelos* and tree aloes, *Aloidendron*. The new genus name ‘Aloiampelos’ is from the Greek work ‘ampelos’ meaning ‘climbing plant’. As the plant matures, the semi-woody stems grow about three feet long but as they grow longer, they need support from a surrounding structure to remain erect, hence the common name ‘Fence Aloe’. The name ‘*tenuior*’ from the Latin *tenuis* meaning ‘thin’, ‘fine’ or ‘slender’. The name was given because it is more slender than it closest and most similar relatives *A. ciliaris* and *A. striatula*. “The roots and leaves are used in traditional medicine as a purgative and tapeworm remedy. A bath taken in the foam of the leaves is believed to be a powerful charm to ensure good luck. Leaf infusions are also used as protective sprinkling charm.”⁷¹

92. [Yellow Sundrops](#)

Evening Primrose
Western Primrose
High Plains Yellow Sundrops

Calyophus hartwegii

Onagraceae

LOCATION: K



Not native. Native to Arizona. A perennial bush with yellow flowers that bloom April to July. These bushes line the railing along the staircase closest to Leo and Deedie’s bedroom that leads from the Hacienda Courtyard to the lower patio.

93. [Bear's Breeches](#)

Bear’s Foot

Acanthus mollis

Plant Family: Acanthaceae

LOCATION: K



Not native. Native to Mediterranean region from Portugal and northwest Africa east to Croatia. It is one of the earliest cultivated species. It is an herbaceous perennial plant with an underground rhizome. The leaves are dark green, shiny and deeply lobed, soft to the touch, up to 16 in long and ~10 inches wide emerging off a long petiole (Appendix III). The flowers come off a cylindrical spike about 12–16 inches long and there can be up to 120 flowers! The flowers are tubular, whitish and rose in color. Each flower is up to 2 inches long and it is surrounded by three green or purplish short shoots. These stunning flowers bloom in late spring or early summer from May through August. The genus name comes from the Greek word ‘*akantha*’ meaning ‘thorn’ referring to the thorn on the sepals (Appendix I). The species name comes from the Latin ‘*mollis*’ meaning ‘soft, smooth’, referring to the soft leaves and soft hairs on the leaves. The leaves were the inspiration for the design on Corinthian columns. There is no agreement regarding the origin of the common name Bear’s Breeches. It may refer to the large size of the leaves, big enough to dress a bear or that the leaves are the size of a bear’s foot.

94. [Crown of Thorns](#)

Christ plant

Euphorbia milii

Plant Family: Euphorbiaceae

LOCATION: K



Not native. It is native to Madagascar. It has white latex containing sap that is poisonous and irritating to skin and GI tract. In Thailand, the number of flowers on an individual plant foretells luck. This species was introduced to the Middle East in ancient times and it is believed to be associated with the Crown of Thorns worn by Christ.

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

95. [Mexican Lobelia](#) *Lobelia laxiflora* LOCATION: K
Mexican Cardinal Flower Plant Family: Campanulaceae



Not native. Native to South, Central, and North America as far north as Arizona. A perennial herb. The leaves vary in shape, size, and texture. The flower is a raceme (Appendix II) up to 15 inches long bearing leaf like short shoots and several flowers. The flowers are usually red and tubular with anthers protruding from the flower. The plant produces seeds and also spreads via underground runners.

96. [Whale's Tongue Agave](#) *Agave ovatifolia* LOCATION: K
Plant Family: Asparagaceae



Not native. It is native to the Nuevo León region in northeastern Mexico. It is difficult to distinguish between Whale's Tongue (*A. ovatifolia*) and Butterfly Agave (*A. potatorum*, PL# 39). The leaves of Whale's Tongue Agave form a rounded rosette of thick, broad, *distinctively cupped* grey to powdery-blue leaves. The broad, cup shaped leaves are suggestive of the shape of a whale's tongue, hence the common name. The flowers are yellow-green. It blooms when it is greater than 10 years old. Its qurote can reach fourteen feet tall! This is one of the Agave species that does not send out pups.⁷² Location: Lower patio Koi Pond.

97. [Desert Spoon](#) *Dasyliirion wheeleri* LOCATION: K
Common Sotol Plant Family: Asparagaceae



Not native. Native to Mexico. Often an ornamental plant. *Dasyliirion* is a compound word from the Greek, meaning 'dense' or 'shaggy' + 'lily'. The Latin specific epithet '*wheeleri*' refers to the American surveyor and plant collector George M. Wheeler (1842-1905). The leaf blade is slender, ~ 13-40 inches long, gray-green, with a toothed margin. The leaves radiate from the center of the plant's apex in all directions resulting in an overall spherical shape. The alcoholic drink Sotol (northern cousin to tequila and mescal) is made from the fermented inner cores of the plant. It is the state drink of the Mexican states of Chihuahua, Durango, and Coahuila. It was also used by the natives of the region for food and fiber to weave baskets. Location: Lower patio Koi Pond.

98. [Felt Plant](#) *Kalanchoe beharensis* LOCATION: K
Elephant Ear Kalanchoe Plant Family: Crassulaceae
Velvet Leaf
Fang Plant



Not native. Native to Madagascar. May have small protrusions on underside of leaf which look like teeth or 'fang like' giving rise to common name 'Fang plant'. It utilizes CAM photosynthesis.⁴⁸ Location: Lower patio Koi Pond.

99. [Traveller's Palm](#) *Ravenala madagascariensis* LOCATION: K
Traveller's Tree Plant Family: Strelitziaceae



Not native. Native to Madagascar. Not a true palm because it is not in Arecaceae family. It is in the same plant family as the Bird of Paradise (PL #21). It has very long petioles (Appendix III) with paddle shaped leaves in single plane that tend to grow in an East-West line. In Madagascar, the lemur is a major pollinator. If the flowers are pollinated, the seeds produced are blue. It is thought to be called the 'Traveller's Palm' either because its leaves collect water making a reservoir for desperate travelers, or because the leaves typically align on an east-west direction providing helpful orientation to travellers. Even filtered, the water collected by the leaves should be considered unsafe to drink.

100. [Canary Island Date Palm](#) *Phoenix canariensis* LOCATION: K
Plant Family: Arecaceae



Not native. Native to Canary Islands. This palm is considered an invasive in California. It is related to the true date palm, *Phoenix dactylifera*. Leaves are pinnate, 13-20 feet long with 80-100 leaflets on each side of the central stalk, called a rachis. The fruit is an oval, yellow or fruit-stone called a 'drupe'. (Pomes/berries differ from drupes in that they do not have a stone in the center of the fruit.) The drupe is a little less than one inch long and about half inch wide containing a large single stone like seed. The sap is used to make syrup in the Canary Islands. This palm is a water hog that restricts native plant growth in SoCal. The tree by the pool was noted ~30 years ago in the *Garbini & Garbini Report*, "mature (tall) Canary Island Palms are indicated on the north side of the house in a drawing of the Kelly homestead (1891) and were photographed in the Riparian area (1906)."^{zi}

101. [Ponytail Palm](#) *Beaucarnea recurvata* LOCATION: L
Elephant's Foot Palm Plant Family: Asparagaceae



Not native. Native to Mexico. Not a true palm. Terminal tufts of recurved leaves suggest ponytails. Swollen base of the trunk is a reservoir for water suggestive of an elephant's foot.

102. [Hercules Aloe](#) Hybrid LOCATION: L
Tree Aloe *Aloidendron barberae x Aloidendron dichotoma*
Plant Family: Aloeaceae



Not native. A hybrid of two South African aloes. It is the largest of all tree aloes and can grow to 8-10 feet. The flowers are salmon colored. The trunk grows yearly unlike unbranching aloes. Location: In front of the Garage.

103. [Olive Tree](#) *Olea europaea* LOCATION: L
European Olive Plant Family: Oleaceae



Not native. Native to the Mediterranean. Said to be oldest known cultivated tree in history along with figs. First introduced in California by the Spanish Missionaries. On the Ranch, the Olives Trees were both a food source and appreciated for their beauty with fine foliage of soft grey green leaves and a smooth grey trunk. In winter, flowers are tiny greenish-white. As the oil content of the fruit increases, the olives change color from green to violet to nearly black. Tea from the leaves was used to soothe sore throats and to treat high blood pressure. Ink can be made from the juice of fruit and wood is prized for furniture. Olive oil is used widely in cooking today because it is an unsaturated oil whereas butter is a saturated oil. Also, the higher 'smoke point' of extra virgin olive oil is desired when sautéing at high temperatures. The *Garbini & Garbini Report* has a photograph of small olive trees across from Garage and Cantina where they are located today. The *Report* says the Olive Trees in this location were planted prior to 1949^{zk} making these Olive Trees about 70 years old.

104. [Coyote Brush/Bush](#) *Baccharis pilularis* LOCATION: M
Chaparral Broom Bush Plant Family: Asteraceae
Baccharis



Native. A shrub that is usually smaller than ~10 feet in height. Stems are prostrate to erect. Leaves are oblong-lance shaped, about a half inch to two inches long, toothed with three principal veins. Flowers bloom in September to January. Flowers form

104. Coyote Brush/Bush (continued)

white clusters. Sometimes this plant is called 'California Snow' because when the branch is shaken, the white petals cascade to the ground looking like snow fall. It is 'dioecious' meaning that its male and female flowers are on separate plants rather than on the same plant.

105. [Rock Rose](#)

Rock Purslane

***Calandrinia* spp.**

Calandrinia spectabilis

Plant Family: Montiaceae

LOCATION: M



Not native. Native to Chile. An evergreen perennial. Flowers appear on top of long stalks. Flowers are purple, red or white:
Location: side of Hen House and in front of the Barn.

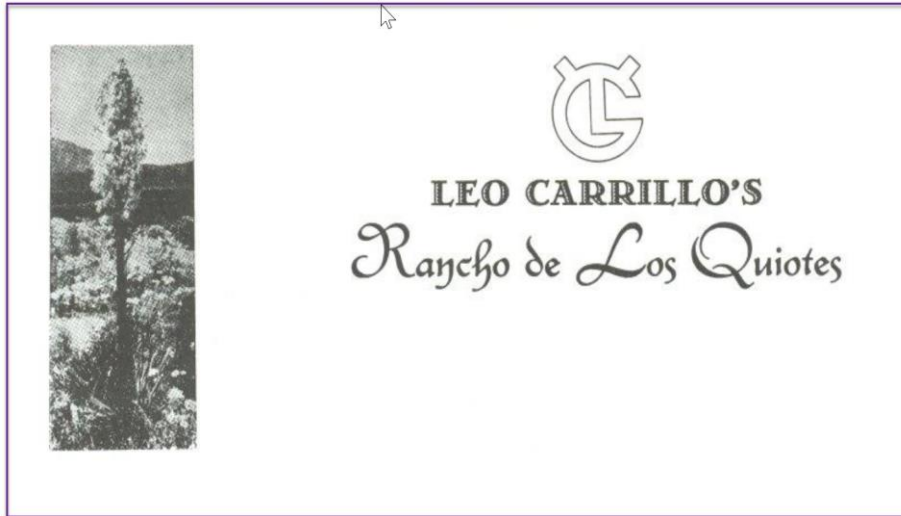
2019 LCR Plant List Endnotes

1. [1a](#) *Calflora*, <https://www.calflora.org>, is the resource used to assign the origin of the plants throughout this document. A broader definition of 'Native' is sometimes used by botanists to refer to all plants in California prior to the arrival of Europeans in the New World as 'Native' plants. This is certainly an acceptable method that is widely used. However, selecting *Calflora* to assign 'native-to-California-status', rather than multiple other references, has the added benefit of being a single reputable scientific source that is *updated by professionals* as new information becomes available. One point of reference for 'native-to-California-status' permits us to most efficiently update subsequent LCR *Plant Lists*. Other resources are used to determine a plant's origin when it is not native to California.
2. *Agave Americana* - Bionet-EAFrinet Keys & Fact Sheets - <https://tinyurl.com/yx9vf62z> accessed 2/5/19.
3. [3a](#) Variegated' is a term to describe the appearance of differently colored zones in the leaves, and sometimes the stems, of plants. The *Agave americana variegata* (Location F) has leaves with cream stripes.
4. [4a](#) [4b](#) [4c](#) [4d](#) [4e](#) [4f](#) [4g](#)
Black, C., et al. *Crassulacean acid metabolism photosynthesis: 'working the night shift'*. **Photosynthesis Research** 6: 329–341. Kluwer Academic Publishers, 2003.
 - Summary of photosynthesis - <https://tinyurl.com/y2r2sp2r> accessed 2/15/19.
5. [5a](#) "The four federally recognized indigenous tribes native to San Diego and Imperial Counties include: **Luiseño**, **Kumeyaay** also known as lipay-Tipay-Diegueño, **Cahuilla** and **Cupeño**. Kumeyaay have been in SoCal for 600 generations... that's the year 10,000 BC, ... more than 9,000 years BEFORE the Great Pyramid of Giza was built."
<http://www.kumeyaay.info/history> accessed 1/11/19.
 - There are several groups that are still fighting for federal recognition, including the San Luis Rey Band of Mission Indians (Luiseño), who most recently lived on the land that is now LCR Historic Park. Personal communication with Sara Kelly, LCR Recreation Director, 6/1/19.
 - Luiseño (pronounced 'loo-ee-sane-yoh') is the name given to the Native Americans who lived around the San Luis Rey Mission by the Spanish in the mid 1700's. The Luiseño name for the tribe is 'Payómkwichum' (People of the West) or 'Ataaxum' (The Native People).³⁶
6. California Native Plant Society - https://en.wikipedia.org/wiki/California_Native_Plant_Society - accessed 2/11/19.
7. [7a](#) [7b](#) [7c](#) [7d](#) [7e](#) [7f](#) [7g](#) [7h](#) [7i](#) [7j](#) [7k](#)
Garbini & Garbini Landscape Architecture: *Report For Leo Carrillo Ranch Botanical Collection Inventory and Stabilization and Restoration Report*. June 18, 1990. Carlsbad, CA. Leo Carrillo Ranch Historic Park.
8. [8a](#) [8b](#) [8c](#) [8d](#)
Carrillo, L. (1961). *The California I love*. Englewood Cliffs, NJ: Prentice Hall.
9. Great Oak - <https://www.pechanga-nsn.gov/index.php/history/the-great-oak> - Wikipedia accessed 4/24/19
10. Pride of Madeira - <https://www.sanelijo.org/plant-guide/pride-madeira-not-native> - accessed 2/23/19.
11. Calarco, D. (2005). *Historical Evolution of Two Ranchos and a Homestead: Agua Hedionda, Los Kiotes, and Rancho de los Quiotes*. Carlsbad, CA. Leo Carrillo Ranch Historic Park.
12. Agave - <https://en.wikipedia.org/wiki/Agave> - Wikipedia accessed 5/30/19.

[13.](#) [13a](#) [13b](#) [13c](#)

Wilken-Robertson, M. (2018). *Kumeyaay Ethnobotany*. San Diego, CA: Sunbelt Publications, Inc.

[14.](#) LCR stationery letter head: LCR Archives, Carlsbad, CA. 5/30/19.



[15.](#) [15a](#) [15b](#) [15c](#) [15d](#)

Convergent evolution: *unrelated* plants found in similar habitats at great distances from each other develop, or converge, on similar survival adaptations. The independent evolution of similar features in species of *different lineages*. Convergent Evolution-Wikipedia accessed 3/25/19.

In the *LCR Plant List*, the term Convergent Evolution (CE) is used when purportedly 'scientific sites' on the Web have described them as such. However, the scientific validity of each site and claim has not been explored independently by the authors. The reader is encouraged to explore this area of scientific controversy in this article from the US National Library of Medicine National Institutes of Health (NIH): *What does convergent evolution mean? The interpretation of convergence and its implications in the search for limits to evolution*. **Interface focus**, 5(6), 20150039. doi:10.1098/rsfs.2015.0039 <https://tinyurl.com/y6fdmpny>

Briefly, attributing the relationship between plants or animals to convergent evolution (CE) requires careful analysis of the ancestors of each plant or animal with a common definition of the term 'ancestry'. For example, plants that developed on the same continent before the continents split apart have been found to share a common ancestor. The more academically rigorous will not assign CE to these plants even if the common ancestor occurred 93 million years ago as it did with Aloes and Agaves. Others consider that ancestor so distant as to be irrelevant and describe Aloes and Agaves as an example of CE.

- For a discussion of Aloes and Agaves see *Aloes and Agaves a Case Study in Convergent Evolution* <https://tinyurl.com/y3zl5d67>
- For discussion of Sunbirds and Hummingbirds see *Convergent Evolution It's For the Birds* https://evolution.berkeley.edu/evolibrary/article/side_0_0/convergentbirds_01.
- For a discussion of Cacti and Euphorbias see *Convergent Evolution in Cacti and Euphorbia* <https://plantconvergentevolution.weebly.com/convergent-evolution.html>

[16.](#) *Schinus Molle*-Wikipedia accessed 4/3/19 https://en.wikipedia.org/wiki/Schinus_molle

[17.](#) The California Pepper Tree currently next to the Wash House was planted by LCR Staff circa 2004. Personal communication with D. Calarco, LCR Special Project/Historic Sites Manager, 5/22/19.

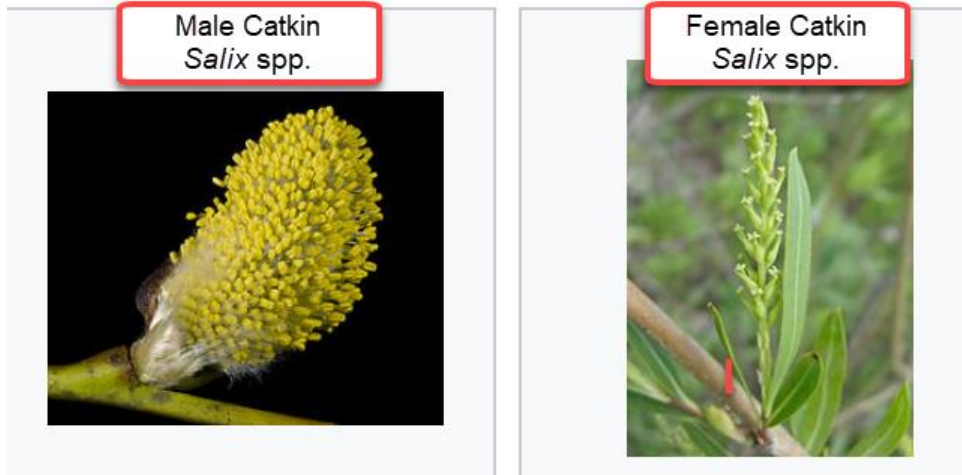
2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

- 18.** [California Pepper Tree at San Luis Rey Mission](#)
https://en.wikipedia.org/wiki/Mission_San_Luis_Rey_de_Francia
Plaque quote: <https://tinyurl.com/yym6trqq>
- 19.** Lightner, J. (2011, 3rd Ed.) *San Diego County Native Plants*. San Diego, CA: San Diego Flora.
- 20.** [Opuntia ficus-indica](#) - *Wikipedia* accessed 4/3/19.
- 21.** [21a](#) [21b](#)
Dreyer, P. (1985). [A Gardener Touched With Genius: The Life of Luther Burbank](#). Santa Rosa, CA: Luther Burbank Home & Gardens.
- 22.** Somite, M. et al. *Feeding spineless cactus to cattle for drought resilience, Kenya* - <https://tinyurl.com/vbkygqv> accessed 4/3/19.
- 23.** Walli, T.K. *Spine Less Cactus as Fodder for Livestock. Think Grain Think Feed. June 20, 2016*
<http://benisonmedia.com/spine-less-cactus-as-fodder-for-livestock/> accessed 4/3/19.
- 24.** Maldonado, D. Van Houten. *The insect that painted Europe red*. BBC Culture. Feb.2, 2018
<http://www.bbc.com/culture/story/20180202-the-insect-that-painted-europe-red> - accessed 4/20/19.
- 25.** Shute, N. *Is that a crushed bug in your frothy Starbucks drink?* **The Salt: NPR**. March 30, 2012 <https://tinyurl.com/tbsfssb> accessed 3/20/19
- 26.** [Pinus canariensis](#) - *Wikipedia* https://en.wikipedia.org/wiki/Pinus_canariensis - accessed 3/20/19
- 27.** [Vegetative production](#): genetically identical offshoots (clones) of the parent plant. Any form of asexual reproduction occurring in plants in which a new plant grows from a fragment of the parent plant or a specialized reproductive structure- [Vegetative reproduction-Wikipedia](#) -accessed 3/26/19.
- 28.** Cuero, D. and Shipek, F.C., et al. (1991). *Delfina Cuero: Her Autobiography - An Account of Her Last Years and Her Ethnobotanic Contributions*. Menlo Park, California: Ballena Press Anthropological Papers, No. 38.
- 29.** [29a](#) [Eucalyptus](#) – *Wikipedia* <https://tinyurl.com/y444o5ww> - accessed 5/13/19.
- 30.** Sasikumar, K., et al. (2001). *Allelopathic effects of four eucalyptus species on redgram (Cajanus cajan L.)* **Journal of Tropical Agriculture** 39: 134-138. <https://tinyurl.com/yyhbb4uv> - accessed 5/16/19.
- 31.** [31a](#) Henter, H. (2005). *Tree wars the secret life of eucalyptus*. **USCD Alumni**: 2(1). <https://tinyurl.com/y2kobfxy>
- 32.** [32a](#) Capon, B. (2010). *Botany for Gardeners, 3rd Ed.* Portland: Timber Press
"Spine is a modified leaf part and sharply pointed. Thorn a modified stem that is hard and sharply pointed. Cactus leaves evolved into protective spines. Roses have PRICKLES which are woody epidermal outgrowths growing randomly in internodes. Bougainvillea has recurved thorns which function as both protective structures and supportive hooks for the long branches. Marginal spines on holly leaves are extensions of major veins." pp.107-108.
- 33.** [James Lind](#) - https://en.wikipedia.org/wiki/James_Lind - accessed 4/15/19.

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

34. Maeckle, M. *Tropical milkweed OK for monarch butterflies, "just cut the dang stuff down"*. Texas Butterfly Ranch. April 30, 2015 <https://texasbutterflyranch.com/2015/04/30/tropical-milkweed-ok-for-monarch-butterflies-just-cut-the-dang-stuff-down/> - accessed 3/26/19.

35. Catkin-A Slim, cylindrical flower cluster (a spike), with inconspicuous petals or no petals, usually wind-pollinated
Picture and definition *Wikipedia* - accessed 4/18/19



36. [36a](#) [36b](#)

Luißeño Workshop at LCR 4/13/19 Native Talk Storytelling and Performing Art by Cathleen Chilcote Wallace, Luißeño Teacher, Storyteller, Writer and Bruce Wallace. www.nativetalk.org

37. *Arroyo Willow* San Elijo Lagoon Conservatory - <https://tinyurl.com/s4n2q5u> - accessed 4/14/19

38. *Salvia* Pollination and Lever Mechanism. This video clip has German narration but the staminal lever mechanism is well visualized. https://youtu.be/YZGs_s4JkEs - accessed 3/29/19.

39. 'Staminal Lever Mechanism' in *Salvia* spp.

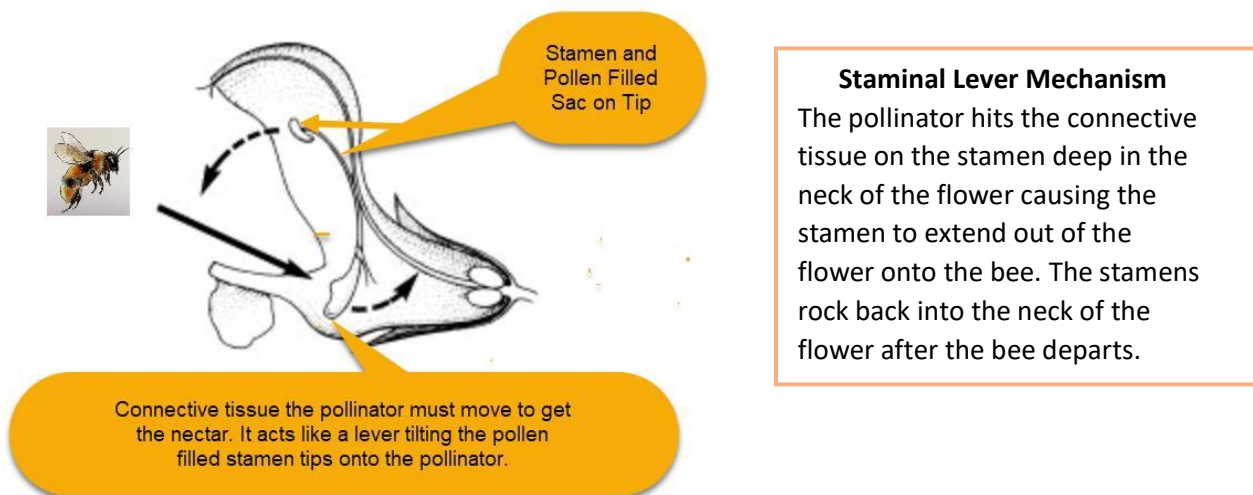


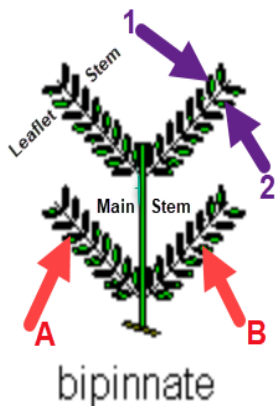
Diagram annotation P. Linton. Diagram from: Claben-Bockhoff, R., et. al. *The staminal lever mechanism in Salvia L. (Lamiaceae): a key innovation for adaptive radiation?* *Organism Diversity and Evolution*. 2004 Sept; 4(3): 189-205 Lever Mechanism' image. <https://www.sciencedirect.com/science/article/pii/S143960920400039X> - accessed 4/20/19.

40. *Fremontodendron californicum* Native American Ethnobotany Database.
<http://naeb.brit.org/uses/search/?string=fremontodendron+californicum>

41. The Orange Tree currently in front Courtyard of Hacienda outside Horseman’s Bedroom was planted circa 2005. Prior to replacing the Orange Tree in 2005, LCR Staff made multiple attempts to propagate cuttings from the Orange Tree in the Hacienda Front Courtyard that was believed to have been hybridized during Leo’s era (1937-1961) by Nelson Westrie from the Kelly era Orange Tree stock. Personal communication with D. Calarco, LCR Special Project/Historic Sites Manager, 5/22/19.

42. Quince - <https://en.wikipedia.org/wiki/Quince> - accessed 5/23/19.

43. Bi-pinnate leaf arrangement



Bipinnate Leaf Arrangement

On the **Main Stem**, 2 leaflets are positioned opposite each other (**A & B**). Now look at one **Leaflet Stem**. Each leaflet *also* has 2 leaflets on either side of *its* stem (**1 & 2**). This arrangement is **bi**-pinnate because **bi** means two and there are two sets of pairing: one pairing set off the **main stem** and the second pairing set off the tiny **leaflet stem**. Diagram notation P. Linton. Diagram from https://en.wikipedia.org/wiki/Glossary_of_leaf_morphology - Accessed 3/29/19.

44. [44a](#) [44b](#) [44c](#) [44d](#)

Greg Dawson, LCR Parks Maintenance Worker 2001-2017. Personal conversation with P. Linton on 4/10/19.

45. [45a](#) **Obligate mutualism:** A form of symbiosis where one organism cannot survive without the other. This term is easy to remember because both organisms are ‘obligated’, or forced, to rely on one another for survival. Example: PL #38, *Hesperoyucca whipplei* and *Tegiticula maculata*.

Commensalism is a form of symbiosis in which one organism benefits while the other is unaffected to any tangible degree. Example: PL #42, Coast Cholla and animals spreading plant segments.

Parasitism is a form of symbiosis in which one organism (the parasite) gains while the other (the host) suffers. Example: PL #45, *Agave tequilana* Webber var. Azul (host) and *Fusarium* Agave Wilt (parasite).

[3 Types of Symbiosis- Wikipedia](#) accessed 6/13/19.

<https://www.factmonster.com/math-science/biology/plants-animals/animal-partnerships>

46. Wu, K.J. *A Single Spine From This Cactus Can Lift a Half-Pound Slab of Pork*. **Nova**. 9/23/2016
<https://www.pbs.org/wgbh/nova/article/cactus-spine-can-lift-pork-shoulder/> - accessed 4/15/19.

47. *Pachypodium* - <https://en.wikipedia.org/wiki/Pachypodium> - accessed 6/12/19.

48. [48a](#) Ramírez-Ramírez, M., Mancilla-Margalli, N.A., et al. *Epidemiology of fusarium agave wilt in Agave tequilana* Weber var. azul. 53(3): 144-152. **Plant Protection Science**, 2017. https://www.agriculturejournals.cz/publicFiles/142_2016-PPS.pdf accessed 6/13/19.

49. Tullis, P. *Bananapocalypse: The race to save the world’s most popular fruit*. **Washington Post** 10/7/17
<http://wapo.st/2y1vCMj> - accessed 6/13/19.

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

- 50.** **50a** Starr, G. *Agave*. (2012). *Agaves*. Portland and London: Timber Press.
- 51.** Chadwick, Ian. *The Botany of Agave. In Search of the Blue Agave Tequila and Mexico*
<http://www.ianchadwick.com/tequila/18-19th%20centuries.htm> - accessed 6/14/19.
- 52.** *Sansevieria*– https://en.wikipedia.org/wiki/Sansevieria_cylindrica - *Wikipedia* - accessed 4/18/19.
- 53.** *World of Succulents* <https://worldofsucculents.com/echinopsis-huascha-grandiflora-red-torch-cactus/> accessed 6/14/19.
- 54.** *Semi-deciduous* refers to plants that lose their foliage for a very short period when old leaves fall off and new foliage growth is starting.–*Wikipedia* - accessed 3/25/19.
- 55.** *Elderberry* - *Wikipedia* - accessed 3/22/19.
- 56.** Dimmit, M.A. *Plant Ecology of the Sonoran Desert Region. Arizona-Sonora Desert Museum.*
https://www.desertmuseum.org/books/nhsd_plant_ecology.php - accessed 5/15/19.
- 57.** Lewis, DA and Noble, PS. (1977). *Thermal energy exchange model and water loss of a barrel cactus, Ferocactus acanthodes*. *Plant Physiol.* 60(4):609-16 <https://www.ncbi.nlm.nih.gov/pubmed/16660148> accessed 3/24/19.
- 58.** *Agave victoriae-reginae* - After flowering this species usually does not offset and so will have to be replaced.
https://www.smgrowers.com/products/plants/plantdisplay.asp?plant_id=3523 - accessed 4/19/19.
- 59.** *Violet Prickly Pear*- https://en.wikipedia.org/wiki/Opuntia_gosseliniana - *Wikipedia* - accessed 6/1/19.
- 60.** Ndhlala, AR, Amoo, SO, et al. (2009). *Antimicrobial, anti-inflammatory and mutagenic investigation of the South African tree aloe (Aloe barberae)*. *J Ethnopharmacol.* 2009. Jul 30;12(3): 404-8. Epub 2006 Jun 6.
<https://www.ncbi.nlm.nih.gov/pubmed/19505552> accessed 4/11/19.
- 61.** Hewitt, Terry. (1993). *The Complete Book of Cacti & Succulents*. New York, New York: DK Publishing, Inc.
- 62.** **62a** Moore, Jeff. (2016). *Aloes and Agaves Under Cultivation*. Solana Beach, California: Solana Succulents.
- 63.** *Echinopsis peruviana* - https://en.wikipedia.org/wiki/Echinopsis_peruviana - accessed 6/12/19.
- 64.** *Brittle Bush* – *Wikipedia* - accessed 4/18/19.
- 65.** *Bush Sunflower* - <https://thenaturecollective.org/plant-guide/details/bush-sunflower/> accessed 7/8/19
- 66.** Epiphyte, also called ‘air plant’, is any plant that grows upon another plant or object merely for physical support. Epiphytes have no attachment to the ground or other obvious nutrient source and are not parasitic on the supporting plant. Most epiphytes are found in moist tropical areas, where their ability to grow above ground level provides access to sunlight in dense shaded forests and exploits the nutrients available from leaf and other organic debris that collects high in the tree canopy. <https://www.britannica.com/plant/epiphyte> - accessed 4/10/19.
- 67.** *Cow's Horn Euphorbia* **Plant Data Base**
<https://garden.org/plants/view/114484/Cows-Horn-Euphorbia-grandicornis/> accessed 4/15/19.

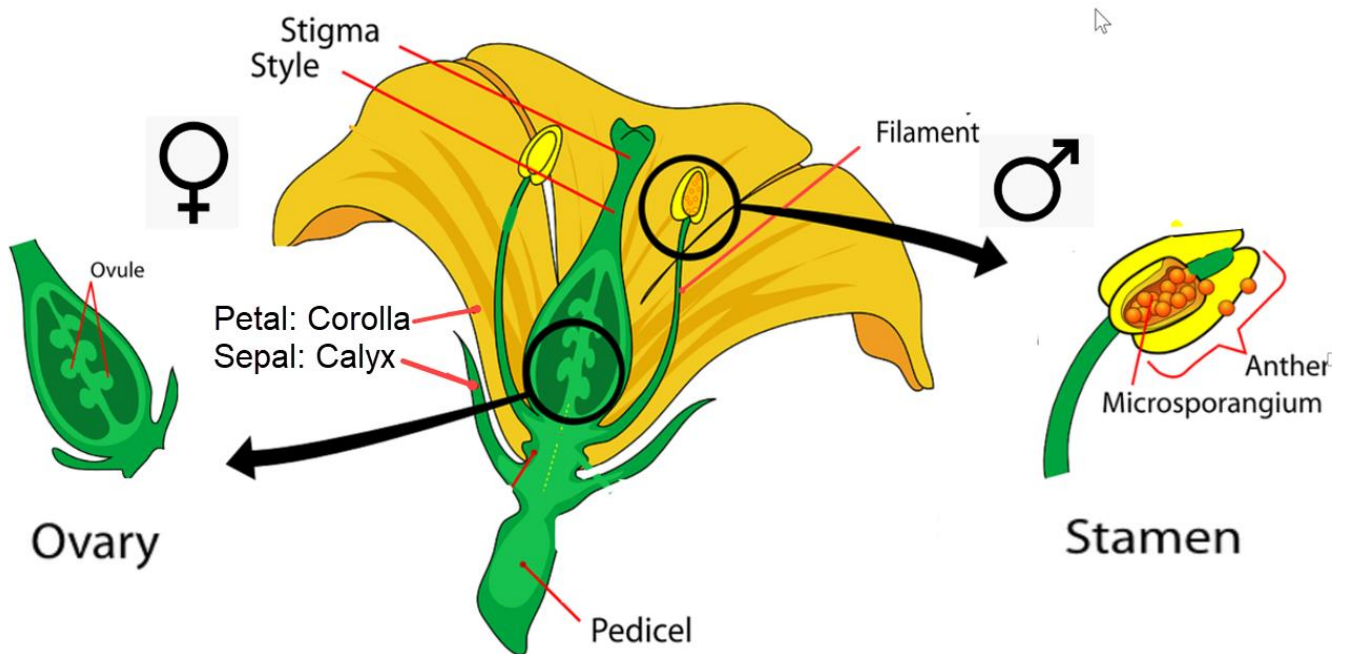
2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

- 68.** Secret behind the composition of the varnish on Stradivari violins revealed. **Spotlight Science News**. Dec.4, 2009 <https://phys.org/news/2009-12-secret-composition-varnish-stradivari-violins.html> - accessed 4/10/19.
- *What is the secret behind Stradivarius Red Violins?* <https://tinyurl.com/y3envocu> - accessed 4/10/19.
- 69.** 11th Labor of Hercules-Two versions of the myth- <http://www.perseus.tufts.edu/Herakles/apples.html> accessed 4/12/19.
- Ladon the Hundred-Headed Dragon - <https://tinyurl.com/yy5wkdp9> - accessed 4/12/19.
- 70.** *Aloe Tenuior*- Fence Aloe. **San Marcus Growers**. https://www.smgrowers.com/products/plants/plantdisplay.asp?plant_id=115 - accessed 4/20/19.
- 71.** *Aloiampelos tenuior* - PlantzAfrica.com South African National Biodiversity Institute (SANBI) <http://pza.sanbi.org/aloiampelos-tenuior>
- 72.** *Agave ovatifolia* - San **Marcos Growers** https://www.smgrowers.com/products/plants/plantdisplay.asp?plant_id=2886 -accessed 6/2/19.

2019 LCR Plant List

APPENDIX I - BOTANIC DIAGRAMS

PARTS OF A FLOWER

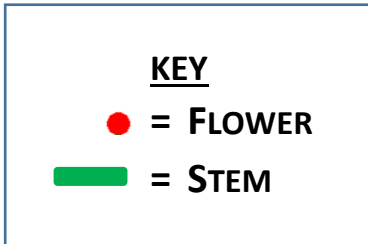


<https://tinyurl.com/y2jz3kya> Adaptations: P.Linton

2019 LCR Plant List

APPENDIX II - BOTANIC DIAGRAMS

TYPES OF FLOWER CLUSTERS – INFLORESCENCES



solitary



raceme



spike



corymb



umbel



capitulum
(head)



panicle



cyme

<https://plantfacts.osu.edu/resources/hcs300/glossary/flower.htm> Adaptations P. Linton

2019 LCR Plant List

APPENDIX III - BOTANIC DIAGRAMS

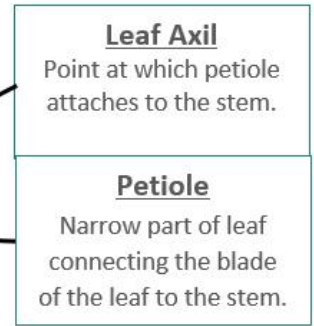
LEAF SHAPES AND GROWTH PATTERNS



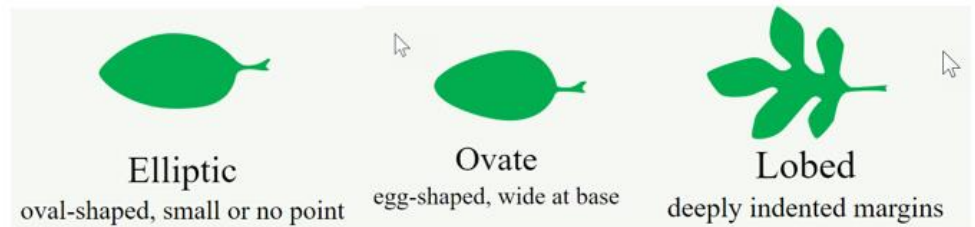
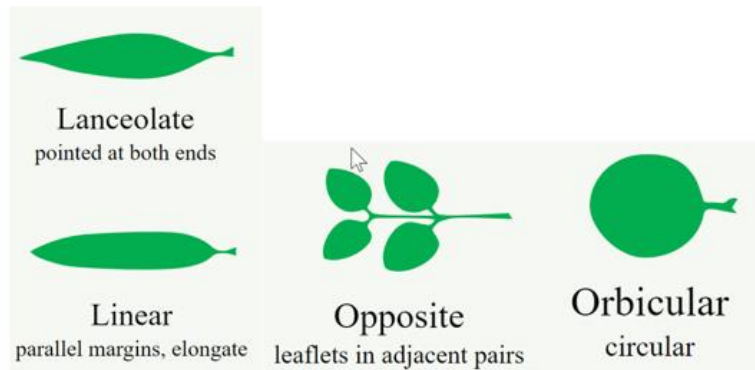
Serrated Leaf



Pinnately Compound Leaf:
Multiple leaflets per leaf.



Operculum of Eucalyptus:
Fused sepals and petals form a 'cap' over stamens when in bloom.



Serrated Leaf: <https://tinyurl.com/y25ybtbc>

Pinnately Compound Leaf: <https://www.flickr.com/photos/54366840@N05/5076303327/>

Leaf Shapes: https://upload.wikimedia.org/wikipedia/commons/e/e8/Leaf_morphology.svg

Operculum: <https://tinyurl.com/y6j59ln6>

Adaptations P. Linton

2019 LCR Plant List

APPENDIX IV - Index by Location

Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)
A	Agave	1	C	<i>Rosmarinus officinalis</i>	13
A	<i>Agave americana</i>	1	C	Canary Island Pine	14
A	Century Plant	1	C	<i>Pinus canariensis</i>	14
A	Sentry Plant	1	C	California Holly	15
A	<i>Agave attenuata</i>	2	C	Christmas Berry	15
A	Foxtail Agave	2	C	<i>Heteromeles arbutifolia</i>	15
A	Lion's Tail	2	C	Toyon	15
A	Swan's Neck	2	C	California Snowberry	16
A	<i>Aloe striata</i>	3	C	<i>Symphoricarpos albus</i>	16
A	Coral Aloe	3	C	<i>Carpobrotus chilensis</i>	17
A	<i>Gambelia speciosa</i>	4	C	<i>Carpobrotus edulis</i>	17
A	Showy Green Bright	4	C	Hottentot-fig	17
A	Showy Island Snapdragon	4	C	Ice Plant	17
A	Coast Live Oak	5	C	Sea Fig	17
A	<i>Quercus agrifolia</i>	5	C	Lemonade Berry	18
A	<i>Quercus</i> spp.	5	C	<i>Rhus integrifolia</i>	18
A	<i>Echium fastuosum</i>	6	C	Fire Thorn	19
A	Pride of Madeira	6	C	<i>Pyracantha</i> spp.	19
A	<i>Cistus x purpureus</i> Hybrid	7	C	Eucalypts	20
A	Orchid Rock Rose	7	C	<i>Eucalyptus</i> spp.	20
A	Purple Rock Rose	7			
			D	Bird of Paradise	21
B	Beaked Yucca	8	D	<i>Strelitzia reginae</i>	21
B	<i>Yucca rostrata</i>	8	D	<i>Rosa</i> spp.	22
B	Banana Yucca	9	D	Roses	22
B	<i>Yucca baccata</i>	9	D	Plum Tree	23
B	<i>Aloe arborescens</i>	10	D	<i>Prunus</i> spp.	23
B	Candelabra Aloe	10	D	Santa Rosa Plum Tree	23
B	Octopus Aloe	10	D	<i>Asclepias curassavica</i>	24
B	Torch Aloe	10	D	<i>Asclepias fascicularis</i>	24
			D	<i>Asclepias</i> spp.	24
C	California Pepper Tree	11	D	Milkweed, Native	24
C	Los Perus	11	D	Milkweed, Tropical	24
C	<i>Schinus molle</i>	11	D	Arroyo Willow	25
C	Burbank's Spineless Cactus	12	D	<i>Salix lasiolepis</i>	25
C	India Fig Cactus	12	D	Black Sage	26
C	<i>Opuntia ficus-indica</i>	12	D	Cleveland Sage	26
C	<i>Opuntia ficus-indica</i> x <i>Opuntia tuna</i>	12	D	Purple Sage	26
C	Prickly Pear Cactus	12	D	Sage	26
C	Spineless Cactus	12	D	<i>Salvia</i> spp.	26
C	Rosemary	13	D	<i>Salvia apiana</i>	26

2019 LCR Plant List

APPENDIX IV - Index by Location

Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)
D	<i>Salvia clevelandii</i>	26	E	Chaparral yucca	38
D	<i>Salvia mellifera</i>	26	E	Foothill Yucca	38
D	White Sage	26	E	<i>Hesperoyucca whipplei</i>	38
D	Deer Grass	27	E	Lord's Candle	38
D	<i>Muhlenbergia rigens</i>	27	E	Los Quiotes	38
D	California Flannel Bush	28	E	Spanish Dagger	38
D	California Fremontia	28	E	<i>Agave potatorum</i>	39
D	California Golden Bells	28	E	Butterfly Agave	39
D	<i>Fremontodendron californicum</i>	28	E	<i>Verschaffelt agave</i>	39
D	<i>Citrus reticulata</i>	29			
D	Mandarin Orange Tree	29	F	<i>Agave parryi</i>	40
D	Tangerine Tree	29	F	Agave, Artichoke	40
D	<i>Crassula ovata</i>	30	F	Artichoke Agave	40
D	Jade Plant	30	F	Moonshine Agave	41
			F	Coast Cholla	42
E	California Sycamore	31	F	<i>Cylindropuntia fulgida</i>	42
E	Los Alisos	31	F	<i>Cylindropuntia prolifera</i>	42
E	<i>Platanus racemosa</i>	31	F	Hanging Chain Cholla	42
E	Sycamore	31	F	Jumping Cactus	42
E	Western Sycamore	31	F	Jumping Cholla	42
E	Aloe Yucca	32	F	<i>Cleistocactus winteri</i>	43
E	<i>Yucca aloifolia</i>	32	F	Golden Rat Tail Cactus	43
E	African Iris	33	F	Rat Tail Cactus	43
E	<i>Dietes</i> spp..	33	F	Pachypodium	44
E	Fortnight Lily	33	F	<i>Pachypodium</i> spp.	44
E	Japanese Iris	33	F	Agave Azul	45
E	<i>Cydonia oblonga</i>	34	F	<i>Agave tequilana</i>	45
E	Quince Bush	34	F	Blue Agave	45
E	<i>Albizia julibrissin</i>	35	F	Tequila Agave	45
E	<i>Albizia</i> spp.	35			
E	Lenkoran Acacia	35	G	<i>Aloe maculata</i>	46
E	Mimosa	35	G	Aloe, Soap	46
E	Persian Silk Tree	35	G	Aloe, Zebra	46
E	Powder Puff Tree	35	G	Soap Aloe	46
E	Silk Tree	35	G	Zebra Aloe	46
E	Aloe Common	36	G	<i>Alluadia procera</i>	47
E	<i>Aloe vera</i>	36	G	Madagascar Ocotillo	47
E	Aloe, True	36	G	Ocotillo	47
E	Queen Palm	37	G	Mother-in-Law's Tongue	48
E	<i>Syagrus romanzoffiana</i>	37	G	<i>Sansevieria desertii</i>	48

2019 LCR Plant List

APPENDIX IV - Index by Location

Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)
G	<i>Sansevieria</i> spp.	48	H	<i>Agave victoriae-reginae</i>	60
G	Snake's Tongue	48	H	Queen Victoria Agave	60
G	African Candelabra	49	H	<i>Opuntia gosseliniana</i> var. Santa Rita	61
G	Candelabra Tree	49	H	<i>Opuntia Santa-Rita</i>	61
G	Euphorbia	49	H	<i>Opuntia violacea</i> var. Santa Rita	61
G	<i>Euphorbia ammak</i>	49	H	Santa-Rita Prickly Pear	61
G	Cactus Apple	50	H	Violet Prickly Pear	61
G	<i>Cereus peruvianus</i>	50	H	African Tree Aloe	62
G	<i>Cereus repandus</i>	50	H	<i>Aloidendron baninsii</i>	62
G	Giant Club Cactus	50	H	<i>Aloidendron barberae</i>	62
G	<i>Hylocereus hildmannianus cactaceae</i>	50	H	Columnar Cactus	63
G	<i>Hylocereus peruvianus</i>	50	H	Hedgehog Cactus	63
G	Peruvian Apple Cactus	50	H	Lobivia	63
G	Arrojadoa Cactus	51	H	Trichocereus	63
G	<i>Arrojadoa dinae</i>	51	H	<i>Trichocereus-Lobivia</i>	63
G	<i>Arrojadoa</i> spp.	51	H	<i>Echinopsis</i> spp.	63
G	<i>Aloe plicatilis</i>	52	H	<i>Chamaerops humilis</i>	64
G	Fan Aloe	52	H	Dwarf Fan Palm	64
G	<i>Echinopsis huascha</i>	53	H	European Fan Palm	64
G	Red Torch Cactus	53	H	Mediterranean Fan Palm	64
G	<i>Agave shawii</i>	54	H	Carrion Plant	65
G	Coastal Agave	54	H	<i>Stapelia grandiflora</i>	65
G	Shaw's Agave	54	H	Starfish Flower	65
G	Blue Elderberry	55			
G	Mexican Elderberry	55	I	<i>Carnegiea gigantea</i>	66
G	<i>Sambucus mexicana</i>	55	I	Saguaro Cactus	66
G	<i>Sambucus nigra</i>	55	I	<i>Arctostaphylos</i> spp.	67
G	<i>Sambucus</i> spp.	55	I	Manzanita	67
G	<i>Carissa macrocarpa</i>	56	I	Bunny Ear Cactus	68
G	Natal Plum	56	I	<i>Opuntia microdasys</i>	68
G	Plum Spike	56	I	Polka-Dot Cactus	68
G	Palo Verde	57	I	Agave 'Blue Glow'	69
G	<i>Parkinsonia aculeata</i>	57	I	Agave 'Blue Flame'	70
G	Jerusalem Thorn	57		Mojave Yucca	71
G	<i>Aloe marlothii</i>	58	I	Spanish Bayonet	71
G	Flat Flowered Aloe	58	I	<i>Yucca schidigera</i>	71
G	Mountain Aloe	58	I	<i>Echinopsis peruviana</i>	72
			I	Peruvian Torch Cactus	72
H	Barrel Cactus	59	I	Brittle Bush	73
H	California Barrel Cactus	59	I	Bush Sunflower	73
H	Compass Cactus	59	I	<i>Encelia californica</i>	73
H	<i>Echinocactus</i> spp.	59	I	<i>Encelia farinosa</i>	73
H	<i>Ferocactus</i> spp.	59	I	<i>Bulbine</i> spp.	74
H	Golden Barrel Cactus	59	I	Stalked Bulbine	74

2019 LCR Plant List

APPENDIX IV - Index by Location

Location Code	Plant Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Common or Scientific Name	Plant List Number (PL #)
I	<i>Cleistocactus strausii</i>	75	J	<i>Gardenia</i> spp.	89
I	Snow Pole	75	J	<i>Dypsis decaryi</i>	90
I	Wooly Jack	75	J	Triangle Palm	90
I	Wooly Torch	75	J	<i>Aloe tenuior</i>	91
J	<i>Citrus x sinensis</i>	29	J	Fence Aloe	91
J	Orange Tree	29	K	Autumn Sage	26
J	<i>Billbergia Amoena Viridis</i>	76	K	Cherry Sage	26
J	<i>Billbergia amoena viridis var. Rubra</i>	76	K	Hotlips Sage	26
J	<i>Opuntia erinacea ursine</i>	77	K	<i>Salvia greggii</i>	26
J	Snow Ponytail Hairy Grizzly Bear Cactu	77	K	<i>Salvia microphylla</i> Hot Lips	26
J	Crested Euphorbia	78	K	<i>Calyophus hartwegii</i>	92
J	<i>Euphorbia kibwezensis cristata</i>	78	K	High Plains Yellow Sundrops	92
J	<i>Cotyledon</i> spp.	79	K	Primrose, Evening	92
J	Finger Aloe	79	K	Primrose, Western	92
J	Grey Sticks	79	K	<i>Acanthus mollis</i>	93
J	Big Horned Spurge	80	K	Bear's Breeches	93
J	Cow's Horn Euphorbia	80	K	Christ Plant	94
J	<i>Euphorbia grandicornis</i>	80	K	Crown of Thorns	94
J	<i>Aeonium</i> spp.	81	K	<i>Euphorbia milii</i>	94
J	Aeonium	81	K	Lobelia	95
J	Dinner Plate Aeonium	81	K	<i>Lobelia laxiflora</i>	95
J	<i>Aeonium arboreum</i> 'Zwartkop'	82	K	Mexican Cardinal Flower	95
J	Black Rose Aeonium	82	K	Mexican Lobelia	95
J	Blue Chalksticks	83	K	<i>Agave ovatifolia</i>	96
J	Candle Plant	83	K	Whale's Tongue Agave	96
J	Chalksticks	83	K	Common Sotol	97
J	Dwarf Blue Chalksticks	83	K	<i>Dasyllirion wheeleri</i>	97
J	<i>Senecio</i> spp.	83	K	Desert Spoon	97
J	<i>Dracaena draco</i>	84	K	Elephant Ear Kalanchoe	98
J	Dragon Tree	84	K	Fang Plant	98
J	Australian Tree Fern	85	K	Felt Plant	98
J	<i>Cyanthea cooperi</i>	85	K	<i>Kalanchoe baharensis</i>	98
J	<i>Sphaeropteris cooperi</i>	85	K	Velvet Leaf	98
J	<i>Camellia</i> spp.	86	K	<i>Ravenala madagascariensis</i>	99
J	<i>Alpinia zerumbet</i>	87	K	Traveller's Palm	99
J	Butterfly Ginger	87	K	Traveller's Tree	99
J	Pink Porcelain Lily	87	K	Canary Island Date Palm	100
J	Shell Ginger	87	K	<i>Phoenix canariensis</i>	100
J	<i>Bougainvillea</i> spp.	88			

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

APPENDIX V
2019 LCR Plant List - Index by Plant Family

Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code
Acanthaceae	<i>Acanthus mollis</i>	93	K	Anacardiaceae	Los Perus	11	C
Acanthaceae	Bear's Breeches	93	K	Anacardiaceae	<i>Schinus molle</i>	11	C
Adoxaceae	Blue Elderberry	55	G	Anacardiaceae	Lemonade Berry	18	C
Adoxaceae	Mexican Elderberry	55	G	Anacardiaceae	<i>Rhus integrifolia</i>	18	C
Adoxaceae	<i>Sambucus mexicana</i>	55	G	Apocynaceae	<i>Asclepias curassavica</i>	24	D
Adoxaceae	<i>Sambucus nigra</i>	55	G	Apocynaceae	<i>Asclepias fascicularis</i>	24	D
Adoxaceae	<i>Sambucus</i> spp.	55	G	Apocynaceae	<i>Asclepias</i> spp.	24	D
Aizoaceae	<i>Carpobrotus chilensis</i>	17	C	Apocynaceae	Milkweed, Native	24	D
Aizoaceae	<i>Carpobrotus edulis</i>	17	C	Apocynaceae	Milkweed, Tropical	24	D
Aizoaceae	Hottentot-fig	17	C	Apocynaceae	Pachypodium	44	F
Aizoaceae	Ice Plant	17	C	Apocynaceae	<i>Pachypodium</i> spp.	44	F
Aizoaceae	Sea Fig	17	C	Apocynaceae	<i>Carissa macrocarpa</i>	56	G
Aloeaceae	<i>Aloe plicatilis</i>	52	G	Apocynaceae	Natal Plum	56	G
Aloeaceae	Fan Aloe	52	G	Apocynaceae	Plum Spike	56	G
Aloeaceae	<i>Aloe striata</i>	3	A	Apocynaceae	Carrion Plant	65	H
Aloeaceae	Coral Aloe	3	A	Apocynaceae	<i>Stapelia grandiflora</i>	65	H
Aloeaceae	<i>Aloe arborescens</i>	10	B	Apocynaceae	Starfish Flower	65	H
Aloeaceae	Candelabra Aloe	10	B	Arecaceae	Queen Palm	37	E
Aloeaceae	Octopus Aloe	10	B	Arecaceae	<i>Syagrus romanzoffiana</i>	37	E
Aloeaceae	Torch Aloe	10	B	Arecaceae	<i>Chamaerops humilis</i>	64	H
Aloeaceae	Aloe Common	36	E	Arecaceae	Dwarf Fan Palm	64	H
Aloeaceae	<i>Aloe vera</i>	36	E	Arecaceae	European Fan Palm	64	H
Aloeaceae	Aloe, True	36	E	Arecaceae	Mediterranean Fan Palm	64	H
Aloeaceae	<i>Aloe maculata</i>	46	G	Arecaceae	<i>Dypsis decaryi</i>	90	J
Aloeaceae	Aloe, Soap	46	G	Arecaceae	Triangle Palm	90	J
Aloeaceae	Aloe, Zebra	46	G	Arecaceae	Canary Island Date Palm	100	K
Aloeaceae	Soap Aloe	46	G	Arecaceae	<i>Phoenix canariensis</i>	100	K
Aloeaceae	Zebra Aloe	46	G	Asparagaceae	Agave	1	A
Aloeaceae	<i>Aloe marlothii</i>	58	G	Asparagaceae	<i>Agave americana</i>	1	A
Aloeaceae	Flat Flowered Aloe	58	G	Asparagaceae	Century Plant	1	A
Aloeaceae	Mountain Aloe	58	G	Asparagaceae	Sentry Plant	1	A
Aloeaceae	African Tree Aloe	62	H	Asparagaceae	<i>Agave attenuata</i>	2	A
Aloeaceae	<i>Aloidendron baninsii</i>	62	H	Asparagaceae	Foxtail Agave	2	A
Aloeaceae	<i>Aloidendron barberae</i>	62	H	Asparagaceae	Lion's Tail	2	A
Aloeaceae	<i>Bulbine</i> spp.	74	I	Asparagaceae	Beaked Yucca	8	B
Aloeaceae	Stalked Bulbine	74	I	Asparagaceae	Desert Spoon	97	K
Aloeaceae	<i>Aloe tenuior</i>	91	J	Asparagaceae	<i>Yucca rostrata</i>	8	B
Aloeaceae	Fence Aloe	91	J	Asparagaceae	Banana Yucca	9	B
Aloeaceae	<i>Aloidendron barberae</i> x <i>A. dichomata</i>	102	L	Asparagaceae	<i>Yucca buccata</i>	9	B
Aloeaceae	Hercules Aloe	102	L	Asparagaceae	Aloe Yucca	32	E
Aloeaceae	Tree Aloe	102	L	Asparagaceae	<i>Yucca aloifolia</i>	32	E
Anacardiaceae	California Pepper Tree	11	C	Asparagaceae	Chaparral yucca	38	E
				Asparagaceae	Foothill Yucca	38	E

APPENDIX V
2019 LCR Plant List - Index by Plant Family

Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code
Asparagaceae	<i>Hesperoyucca whipplei</i>	38	E	Asteraceae	<i>Encelia californica</i>	73	I
Asparagaceae	Lord's Candle	38	E	Asteraceae	<i>Encelia farinosa</i>	73	I
Asparagaceae	Los Quiotes	38	E	Asteraceae	Blue Chalksticks	83	J
Asparagaceae	Spanish Dagger	38	E	Asteraceae	Chalksticks	83	J
Asparagaceae	<i>Agave potatorum</i>	39	E	Asteraceae	Dwarf Blue Chalksticks	83	J
Asparagaceae	Butterfly Agave	39	E	Asteraceae	<i>Senecio</i> spp.	83	J
Asparagaceae	<i>Verschaffelt agave</i>	39	E	Asteraceae	Baccharis	104	M
Asparagaceae	<i>Agave parryi</i>	40	F	Asteraceae	<i>Baccharis pilularis</i>	104	M
Asparagaceae	Agave, Artichoke	40	F	Asteraceae	Chaparral Broom Bush	104	M
Asparagaceae	Artichoke Agave	40	F	Asteraceae	Coyote Brush/Bush	104	M
Asparagaceae	Moonshine Agave	41	F				
Asparagaceae	Agave Azul	45	F	Boraginaceae	<i>Echium fastuosum</i>	6	A
Asparagaceae	<i>Agave tequilana</i>	45	F	Boraginaceae	Pride of Madeira	6	A
Asparagaceae	Blue Agave	45	F				
Asparagaceae	Tequila Agave	45	F	Bromeliaceae	<i>Billbergia Amoena Viridis</i>	76	J
Asparagaceae	Mother-in-Law's Tongue	48	G	Bromeliaceae	<i>Billbergia amoena viridis</i> var. <i>Rubra</i>	76	J
Asparagaceae	<i>Sansevieria desertii</i>	48	G				
Asparagaceae	<i>Sansevieria</i> spp.	48	G	Cactaceae	Burbank's Spineless Cactus	12	C
Asparagaceae	Snake's Tongue	48	G	Cactaceae	India Fig Cactus	12	C
Asparagaceae	<i>Agave shawii</i>	54	G	Cactaceae	<i>Opuntia ficus-indica</i>	12	C
Asparagaceae	Coastal Agave	54	G	Cactaceae	<i>Opuntia ficus-indica</i> x <i>Opuntia tuna</i>	12	C
Asparagaceae	Shaw's Agave	54	G	Cactaceae	Prickly Pear Cactus	12	C
Asparagaceae	<i>Agave victoriae-reginae</i>	60	H	Cactaceae	Spineless Cactus	12	C
Asparagaceae	Queen Victoria Agave	60	H	Cactaceae	Coast Cholla	42	F
Asparagaceae	Agave 'Blue Glow'	69	I	Cactaceae	<i>Cylindropuntia fulgida</i>	42	F
Asparagaceae	Agave 'Blue Flame'	70	I	Cactaceae	<i>Cylindropuntia prolifera</i>	42	F
Asparagaceae	Mojave Yucca	71	I	Cactaceae	Hanging Chain Cholla	42	F
Asparagaceae	Spanish Bayonet	71	I	Cactaceae	Jumping Cactus	42	F
Asparagaceae	<i>Yucca schidigera</i>	71	I	Cactaceae	Jumping Cholla	42	F
Asparagaceae	<i>Dracaena draco</i>	84	J	Cactaceae	<i>Cleistocactus winteri</i>	43	F
Asparagaceae	Dragon Tree	84	J	Cactaceae	Golden Rat Tail Cactus	43	F
Asparagaceae	<i>Agave ovatifolia</i>	96	K	Cactaceae	Rat Tail Cactus	43	F
Asparagaceae	Whale's Tongue Agave	96	K	Cactaceae	Cactus Apple	50	G
Asparagaceae	Common Sotol	97	K	Cactaceae	<i>Cereus peruvianus</i>	50	G
Asparagaceae	Swan's Neck	2	A	Cactaceae	<i>Cereus repandus</i>	50	G
Asparagaceae	<i>Dasyllirion wheeleri</i>	97	K	Cactaceae	Giant Club Cactus	50	G
Asparagaceae	<i>Beaucarnea recurvata</i>	101	L	Cactaceae	<i>Hylocereus hildmannianus cactaceae</i>	50	G
Asparagaceae	Elephant's Foot	101	L	Cactaceae	<i>Hylocereus peruvianus</i>	50	G
Asparagaceae	Ponytail Palm	101	L	Cactaceae	Peruvian Apple Cactus	50	G
				Cactaceae	Arrojadoa Cactus	51	G
Asteraceae	Brittle Bush	73	I	Cactaceae	<i>Arrojadoa dinae</i>	51	G
Asteraceae	Bush Sunflower	73	I	Cactaceae	<i>Arrojadoa</i> spp.	51	G
Asteraceae	Candle Plant	83	J	Cactaceae	<i>Echinopsis huascha</i>	53	G

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

APPENDIX V
2019 LCR Plant List - Index by Plant Family

Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code
Cactaceae	Red Torch Cactus	53	G	Cistaceae	Purple Rock Rose	7	A
Cactaceae	Barrel Cactus	59	H				
Cactaceae	California Barrel Cactus	59	H	Crassulaceae	<i>Crassula ovata</i>	30	D
Cactaceae	Compass Cactus	59	H	Crassulaceae	Jade Plant	30	D
Cactaceae	<i>Echinocactus</i> spp.	59	H	Crassulaceae	<i>Cotyledon</i> spp.	79	J
Cactaceae	<i>Ferocactus</i> spp.	59	H	Crassulaceae	Finger Aloe	79	J
Cactaceae	Golden Barrel Cactus	59	H	Crassulaceae	Grey Sticks	79	J
Cactaceae	<i>Opuntia gosseliniana</i> var. Santa Rita	61	H	Crassulaceae	Aeonium	81	J
Cactaceae	<i>Opuntia Santa-Rita</i>	61	H	Crassulaceae	Aeonium spp.	81	J
Cactaceae	<i>Opuntia violacea</i> var. Santa Rita	61	H	Crassulaceae	Dinner Plate Aeonium	81	J
Cactaceae	Santa-Rita Prickly Pear	61	H	Crassulaceae	<i>Aeonium arboreum</i> 'Zwartkop'	82	J
Cactaceae	Violet Prickly Pear	61	H	Crassulaceae	Black Rose Aeonium	82	J
Cactaceae	Violet Prickly Pear Cactus	61	H	Crassulaceae	Elephant Ear Kalanchoe	98	K
Cactaceae	Columnar Cactus	63	H	Crassulaceae	Fang Plant	98	K
Cactaceae	<i>Echinopsis</i> s pp.	63	H	Crassulaceae	Felt Plant	98	K
Cactaceae	Hedgehog Cactus	63	H	Crassulaceae	<i>Kalanchoe baharensis</i>	98	K
Cactaceae	Lobivia	63	H	Crassulaceae	Velvet Leaf	98	K
Cactaceae	Trichocereus	63	H				
Cactaceae	<i>Trichocereus-Lobivia</i>	63	H	Cyantheaceae	Australian Tree Fern	85	J
Cactaceae	<i>Carnegiea gigantea</i>	66	I	Cyantheaceae	<i>Cyanthea cooperi</i>	85	J
Cactaceae	Saguaro Cactus	66	I	Cyantheaceae	<i>Sphaeropteris cooperi</i>	85	J
Cactaceae	Bunny Ear Cactus	68	I				
Cactaceae	<i>Opuntia microdasys</i>	68	I	Didiereaceae	<i>Alluadia procera</i>	47	G
Cactaceae	Polka-Dot Cactus	68	I	Didiereaceae	Madagascar Ocotillo	47	G
Cactaceae	<i>Echinopsis peruviana</i>	72	I	Didiereaceae	Ocotillo	47	G
Cactaceae	Peruvian Torch Cactus	72	I				
Cactaceae	<i>Cleistocactus strausii</i>	75	I	Ericaceae	<i>Arctostaphylos</i> spp.	67	I
Cactaceae	Snow Pole	75	I	Ericaceae	Manzanita	67	I
Cactaceae	Wooly Jack	75	I				
Cactaceae	Wooly Torch	75	I	Euphorbiaceae	African Candelabra	49	G
Cactaceae	<i>Opuntia erinacea ursine</i>	77	J	Euphorbiaceae	Candelabra Tree	49	G
Cactaceae	Snow Ponytail Hairy Grizzly Bear Cactus	77	J	Euphorbiaceae	Euphorbia	49	G
				Euphorbiaceae	<i>Euphorbia ammak</i>	49	G
Campanulaceae	Lobelia	95	K	Euphorbiaceae	Crested Euphorbia	78	J
Campanulaceae	<i>Lobelia laxiflora</i>	95	K	Euphorbiaceae	<i>Euphorbia kibwezensis cristata</i>	78	J
Campanulaceae	Mexican Cardinal Flower	95	K	Euphorbiaceae	Big Horned Spurge	80	J
Campanulaceae	Mexican Lobelia	95	K	Euphorbiaceae	Cow's Horn Euphorbia	80	J
				Euphorbiaceae	<i>Euphorbia grandicornis</i>	80	J
Caprifoliaceae	California Snowberry	16	C	Euphorbiaceae	Christ Plant	94	K
Caprifoliaceae	<i>Symphoricarpos albus</i>	16	C	Euphorbiaceae	Crown of Thorns	94	K
				Euphorbiaceae	<i>Euphorbia milii</i>	94	K
Cistaceae	<i>Cistus x purpureus</i> Hybrid	7	A				
Cistaceae	Orchid Rock Rose	7	A	Fabaceae	<i>Albizia julibrissin</i>	35	E

2019 LCR Plant List – FOR YOUR SAFETY, PLEASE DO NOT TOUCH OR EAT PLANTS

APPENDIX V
2019 LCR Plant List - Index by Plant Family

Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code	Plant Family	Common or Scientific Name	Plant List Number (PL #)	Location Code
Fabaceae	<i>Albizia</i> spp.	35	E				
Fabaceae	Lenkoran Acacia	35	E	Nyctaginaceae	<i>Bougainvillea</i> spp.	88	J
Fabaceae	Mimosa	35	E				
Fabaceae	Persian Silk Tree	35	E	Oleaceae	<i>Olea europaea</i>	103	L
Fabaceae	Powder Puff Tree	35	E	Oleaceae	Olive Tree	103	L
Fabaceae	Silk Tree	35	E				
Fabaceae	Palo Verde	57	G	Onagraceae	<i>Calyophus hartwegii</i>	92	K
Fabaceae	<i>Parkinsonia aculeata</i>	57	G	Onagraceae	High Plains Yellow Sundrops	92	K
Fabaceae	Jerusalem Thorn	57	G	Onagraceae	Primrose, Evening	92	K
				Onagraceae	Primrose, Western	92	K
Fagaceae	Coast Live Oak	5	A				
Fagaceae	<i>Quercus agrifolia</i>	5	A	Pinaceae	Canary Island Pine	14	C
Fagaceae	<i>Quercus</i> spp.	5	A	Pinaceae	<i>Pinus canariensis</i>	14	C
Iridaceae	African Iris	33	E	Plantaginaceae	<i>Gambelia speciosa</i>	4	A
Iridaceae	<i>Dietes</i> spp.	33	E	Plantaginaceae	Showy Green Bright	4	A
Iridaceae	Fortnight Lily	33	E	Plantaginaceae	Showy Island Snapdragon	4	A
Iridaceae	Japanese Iris	33	E				
				Platanaceae	California Sycamore	31	E
Lamiaceae	Rosemary	13	C	Platanaceae	Los Alisos	31	E
Lamiaceae	<i>Rosmarinus officinalis</i>	13	C	Platanaceae	<i>Platanus racemosa</i>	31	E
Lamiaceae	Autumn Sage	26	K	Platanaceae	Sycamore	31	E
Lamiaceae	Black Sage	26	D	Platanaceae	Western Sycamore	31	E
Lamiaceae	Cherry Sage	26	K				
Lamiaceae	Cleveland Sage	26	D	Poaceae	Deer Grass	27	D
Lamiaceae	Hot Lips Sage	26	K	Poaceae	<i>Muhlenbergia rigens</i>	27	D
Lamiaceae	Purple Sage	26	D				
Lamiaceae	Sage	26	D	Rosaceae	California Holly	15	C
Lamiaceae	<i>Salvia</i> spp.	26	D	Rosaceae	Christmas Berry	15	C
Lamiaceae	<i>Salvia apiana</i>	26	D	Rosaceae	<i>Heteromeles arbutifolia</i>	15	C
Lamiaceae	<i>Salvia clevelandii</i>	26	D	Rosaceae	Toyon	15	C
Lamiaceae	<i>Salvia greggii</i>	26	K	Rosaceae	Fire Thorn	19	C
Lamiaceae	<i>Salvia mellifera</i>	26	D	Rosaceae	<i>Pyracantha</i> spp.	19	C
Lamiaceae	<i>Salvia microphylla</i> Hot Lips	26	K	Rosaceae	<i>Rosa</i> spp.	22	D
Lamiaceae	White Sage	26	D	Rosaceae	Roses	22	D
				Rosaceae	Plum Tree	23	D
Malvaceae	California Flannel Bush	28	D	Rosaceae	<i>Prunus</i> spp.	23	D
Malvaceae	California Fremontia	28	D	Rosaceae	Santa Rosa Plum Tree	23	D
Malvaceae	California Golden Bells	28	D	Rosaceae	<i>Cydonia oblonga</i>	34	E
Malvaceae	<i>Fremontodendron californicum</i>	28	D	Rosaceae	Quince Bush	34	E
Montiaceae	<i>Calandrinia spectabilis</i>	105	M	Rubiaceae	<i>Gardenia</i> spp.	89	J
Montiaceae	<i>Calandrinia</i> spp.	105	M				
Montiaceae	Rock Purslane	105	M	Rutaceae	<i>Citrus reticulata</i>	29	D
Montiaceae	Rock Rose	105	M	Rutaceae	<i>Citrus x sinensis</i>	29	J
				Rutaceae	Mandarin Orange Tree	29	D
Myrtaceae	Eucalypts	20	C	Rutaceae	Orange Tree	29	J
Myrtaceae	<i>Eucalyptus</i> spp.	20	C	Rutaceae	Tangerine Tree	29	D

2019 LCR Plant List

APPENDIX VI

Botanical Concepts and Other Themes

BOTANICAL CONCEPTS

The numbers indicate the 2019 LCR Plant List number in which the concept or theme is discussed or reference to an *Endnote* or Appendix.

▪ CONVERGENT EVOLUTION

- 10; 21; 36; 42; 50; *Endnote 15*

▪ CALIFORNIA NATIVE PLANTS

Definition of ‘native to California’ see *Endnote 1*. Each plant entry is noted as either native to California (21 plants) or not native (84 plants). Some plant entries include both native and non-native plants (e.g., Sage PL #26 and Milkweed, PL #24).

- 4; 9; 15; 16; 18; 24; 25; 26; 27; 28; 31; 38; 42; 54; 55; 59 (*Ferocactus* spp.); 59 (*Echinocactus* spp.); 67; 71; 73; 104

4. Showy Island Snapdragon	26. Sage	55. Blue Elderberry
9. Banana Yucca	27. Deer Grass	59. California Barrel Cactus
15. Toyon	28. California Flannel Bush	59. Golden Barrel Cactus
16. California Snowberry	31. California Sycamore	67. Manzanita
18. Lemonade Berry	38. Spanish Dagger	71. Mojave Yucca
24. Native Milkweed	42. Jumping Cholla	73. Bush Sunflower
25. Arroyo Willow	54. Shaw’s Agave	104. Coyote Brush

▪ ENDANGERED AND THREATENED SPECIES

- 4; 6; 45; 51; 54; 59; 60; 90

▪ MUTUALISM, COMMENSALISM AND PARASITISM

- 10; 24; 31; 38; 42; 45; 55; 59; 66; 76

▪ PHOTOSYNTHESIS AND RELATED PROCESS CRASSULACEAN ACID METABOLISM (CAM)

- 1; 10; 36; 57; 59; 71; 76; 81; *Endnote 4*

▪ PLANT BREEDING AND HYBRIDIZATION

Includes hybrids developed by a breeder (e.g., Agave ‘Blue Glow’, PL #69) and natural hybrids found in nature (e.g., Oaks, PL #5).

- 3; 5; 7; 13; 23; 26; 29; 34; 41; 45; 61; 62; 69; 70; 77; 86; 102

▪ Plant Structure and Morphological Terms

Plant structure and morphology are elements of each *LCR Plant List* entry.

- Appendices I-III; *Endnotes 3, 27, 32, 35, 38, 39, 43, 54*

▪ FLOWER STRUCTURE AND ECOLOGICAL RELATIONSHIPS WITH POLLINATORS

- 4; 14; 18; 20; 21; 24; 25; 26; 38; 47; 50; 54; 56; 57; 62; 65; 75; 85; 89; 99; Appendix I; *Endnotes 35, 38, 39*

▪ TAXONOMY

Taxonomic issues, revisions, etc.:

- 8; 45; 49; 50; 51; 61; 63; 77; 78; 86; 87; 91

Name honors a botanist, industrialist, explorer, Greek god, queen, city or dragon:

- 12; 21; 23; 24; 28; 37; 38; 48; 51; 54; 57; 58; 60; 62; 66; 82; 84; 88; 91, 97

THEMES

▪ LEO CARRILLO QUOTATIONS AND HISTORIC LCR PLANTS

- 5; 8; 11; 12; 25; 29; 31; 37; 38; 84; 103; *Endnote 8*

▪ ETHNOBOTANY

The study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses.

- Food, beverages, spices:
 - 1; 5; 11; 12; 13; 15; 18; 23; 26; 29; 34; 38; 45; 50; 55; 56; 57; 59; 66; 67; 71; 86; 87; 97; 100; 103
- Dwelling construction, fiber, furniture, canoes, varnish, other utilities:
 - 1; 8; 11; 12; 25; 27; 28; 31; 38; 49; 71; 73; 84; 93; 97; 103
- Medicinal Plants:
 - 1; 5; 6; 7; 8; 11; 13; 15; 16; 17; 18; 20; 22; 25; 26; 28; 31; 36; 38; 48; 55; 57; 62; 67; 72; 73; 74; 79; 84; 87; 91; 103
- Dyes, cosmetics, perfumes, soap:
 - 7; 12; 18; 22; 36; 38; 46; 55; 73; 84
- Musical instruments, spiritual ceremonies, mythology, religious connotations, children's literature:
 - 26; 34; 55; 73; 84; 91; 94

▪ CACTUS DIVERSITY

- 15 Species: 12; 42; 43; 50; 51; 53; 59 (*Echinocactus* spp.); 59 (*Ferocactus* spp.); 61; 63; 66; 68; 72; 75; 77
- LCR has a diverse collection of cactus species. There are at least 15 species representing 9 genera in the Cactaceae family (*Opuntia*, *Cylindropuntia*, *Echinocactus*, *Ferocactus*, *Cleistocactus*, *Hylocereus*, *Arrojadoa*, *Echinopsis*, *Carnegiea*).