UNIVERSITY of CALIFORNIA BOTANICAL GARDEN at BERKELEY

WINTER SELF-GUIDED TOUR 2011-12

WELCOME to this winter tour of the UC Botanical Garden. The tour, which highlights a range of plants from around the world, is a circuit and takes about one hour. It starts at the entrance to the California Area and ends at the Arid House. Look for the BLUE numbered markers to guide you to the featured plants.

*From the **Garden Entrance**, take the lower paved road to your right, and then take the first path on the right into the **California Area**.*

*The **California Area** of the Garden illustrates the amazing floristic diversity in our state, and is arranged in a framework of plant-community displays, e.g. alpine fell-field, vernal pool, pygmy forest, coastal prairie, chaparral, serpentine, oak knoll, etc. [Across Centennial Drive is the **Mather Redwood Grove**, an extension of the main **California Area**, with five acres of coast redwoods (*Sequoia sempervirens*) and associated understory plants. The entrance is located on the lower level of the parking lot. Ask the admissions attendant for the gate's number code.]*

*Directly in front of you, as you enter the **California Area**, look in Bed 12A. You will see an example of a blue-flowered ceanothus:*

1. CEANOTHUS *(Ceanothus spp.)*. *Ceanothus cv.* Berkeley Skies is a garden cultivar. *Ceanothus*, also known as "California lilac," is native to shrub and chaparral communities, and makes a fine garden subject so long as summer watering is limited after plants are established. Look elsewhere in the Garden, and on the edges of the Mather Redwood Grove, for other examples of the more than forty native species of *Ceanothus*. They range in size from low spreading mats to small trees, with blossoms in shades of white to palest blue to bright blue and violet.

Continue along the left side of this bed, turning at the first left just below the fresh-water marsh pools. On your right notice:

2. SAND MESA MANZANITA *(Arctostaphylos rudis)*. The manzanita is one of California's most attractive winter-flowering shrubs. It produces an abundance of white to pink bell-shaped flowers borne amid leaves that range from white-gray to bright green. Notice this one has peeling, shaggy bark, whereas other species exfoliate more quickly and thus have smoother stems. The manzanitas are a diverse group (over 50 native species), ranging in habit from ground covers to small trees. The common name comes from the Spanish word for "little apple" and refers to the shape and color of the fruits. Native people collect these fruits and eat them fresh or dry.

Continue along this path, past Bed 6A, and down to the wooden seat in the shade of the:

3. TANBARK OAK *(Lithocarpus densiflorus)*. This attractive evergreen tree is not a true oak *(Quercus)*. Unlike the true oaks which are wind pollinated, the tanbark oak is pollinated by insects. It produces masses of musky-scented flowers in the summer, followed by large crops of acorns, much used by native people as a food source. Pioneers used the bark for tanning leather, hence the common name. The Scottish explorer and botanist David Douglas (1799-1834) collected specimens of the tree in central California. Employed by the Horticultural Society of London, Douglas was the earliest professional plant collector to set foot in California.

Turn left at the seat and return to the paved road. On your left, just before the Terrace, in Bed 250C, locate the:

4. BURRAWANG *(Macrozamia communis)*. About 150 million years ago, cycads such as this were widespread and represented an important part of the world's vegetation. Today only about 250 species remain, and many of them are rare

or endangered. Some species in South Africa are so strictly protected that in addition to the usual prohibitions on seed and plant export, landowners are required to declare and map every specimen on their property. The seeds of the burrawang are borne in large cones, which you may see in the center of this plant. As they ripen they will turn a dramatic orange color. Although the seeds of the burrawang are considered poisonous to both livestock and humans, aboriginal people in Australia prepare them for eating by cooking, pounding and soaking them in running water to remove the toxins.

*Cross the **Terrace** and go down the steps at the far end to the **Tropical House**. A temperature of around 80 degrees F with 70% humidity provides a satisfactory environment for these plants. Here you will find familiar houseplants, vines, and bromeliads, as well as a range of important economic crop plants, such as banana, coffee, cinnamon, black pepper, vanilla, chocolate and taro.*

Inside the Tropical House on your left, look for the bright red furry tassels of:

5. CHENILLE PLANT *(Acalypha hispida).* No wonder this plant is nicknamed "red-hot cat's tail"! The velvety catkins of this showy tropical shrub light up the forest understory, with each fluffy "tail" bearing hundreds of tiny, petalless flowers. This Malaysian native will bloom freely throughout the year if there is enough light. Like other members of the euphorbia family, the chenille plant produces a milky sap from leaves and stem, which is poisonous and extremely irritating to the skin and eyes.

*Leave the **Tropical House** and turn right up the wooden steps through the palms to the main road. Turn right and then left up the steps into the **Herb Garden.** On your left, presiding royally over the low-growing collections of fragrant herbs, find the tall:*

6. LAUREL *(Laurus nobilis).* The leaves of this attractively shaped evergreen tree formed the original crown of laurels in ancient Greece, from which we get the terms "baccalaureate" and "poet laureate". Its leathery, dark green aromatic leaves are prized in cooking and aromatherapy.

Turn left before the ornamental bridge. Continue along the lower edge of the lawn until you reach the shelter of:

7. JAPANESE PLUME CEDAR or **SUGI** *(Cryptomeria japonica cv.* Elegans*).* This is a cultivar of the Japanese counterpart of our *Sequoia sempervirens*, the coast redwood. As is true for the sequoia, the wood of this tree is used in construction and also in fine cabinet work. Further on in the tour, at the **Japanese Pool**, you will see a gate constructed from sugi, coast redwood and Port Orford cedar *(Chamaecyparis lawsoniana).* The plume cedar's soft foliage with its winter cast of rich purple bronze is spectacular at this time of year. Conifers have both juvenile and mature foliage. This cultivar was selected for its persistent juvenile foliage.

As you walk past the tree, pause at the garden seat to enjoy the view of the magnolias in bloom across the lawn.

8. MAGNOLIA *(Magnolia stellata* and *Magnolia x soulangiana).* Magnolias are appreciated for their beautiful white, pink, purple flowers, which are often scented. These you see here have deciduous leaves, revealing their graceful branches. Magnolias are botanically primitive plants, and are characterized by large, simple flowers and fruits. Although they are mostly native to the northern hemisphere, some species extend into the tropics. They are named in honor of Pierre Magnol, an 18th century French botanist who was one of the first to divide plant groups into families.

Further along this path, on your right, opposite and slightly beyond the Garden seat:

9. SWEET BOX *(Sarcococca ruscifolia).* Also known in Britain as Christmas box, this shrubby, winter-blooming evergreen would be undistinguished were it not for the strong, spicy fragrance of its small creamy white flowers. Its berries give its scientific name: in the Greek language 'sarcos' means flesh and 'kokkos' means berry.

Continue along this path. On the corner on your right:

10. ***RHODODENDRON PROTISTUM x GRANDE.*** Without the tell-tale trusses of 30 pale pink florets, this tree with its enormous leaves would be mistaken by many for a magnolia. Rhododendron protistum is native to the steep, moist gorge of the Mekong/Salween River divide (dividing China and Myanmar). In 1918, George Forrest was the first to identify and introduce this species *protistum* into cultivation. This particular tree is actually an accidental hybrid, which occurred when Garden staff tried to hand-pollinate the true species (a Forrest collection dating from 1932), which is located in Bed 230. It appears to be a cross with *Rhododendron grande*, located next to the Japanese Pool.

Turn right up the hill, then left (towards the creek). At the 3-way intersection of staired paths look to the left at this magnificent tree towering above you:

11. ***STRANSVAESIA DAVIDIANA***. Also known as *Photinia davidiana*, this tree is in the Rose family. It was named for Pere Armand David, a French missionary and plant collector in China (1826-1900). More suitable for gardening on a small scale might be the species *undulata* with wavy-edged leaves, which grows to about 6ft (2m). New foliage appears in attractive shades of pink and red while bright orange berries follow white flowers.

Follow the staired path on the right up towards the ***Japanese Pool****. The simple stone walls, mossy banks and bubbling pools and waterfalls combine to produce an atmosphere of calm and contemplation.*

On your right as you approach the rocky waterfall:

12. ***RHODODENDRON ARBOREUM***. At a time when temperatures could still drop into the low 20s F and the inclement weather in the Bay Area is warning other flowers to stay tucked in the bud, this rhododendron begins to light the winter skies with a deep red glow. One of the most beautiful of the Asian species, it is the national flower of Nepal, and is featured in the Garden's logo. It is also one of the first Asian species to have been identified - in 1796 in Uttar Pradesh, India. In its native habitat its red blooms are displayed against a backdrop of the snow-clad Himalayas. "Arboreum" means tree-like, and it is not uncommon for plants to reach heights of over 80ft (25m) in the wild!

A few steps up the hill bring you to the ***Japanese Pool****. The larger rocks and smaller stone snow lantern were brought from Japan for the 1939 Golden Gate Exposition on Treasure Island, and were later donated to the Garden. The Japanese-style gate, described at marker 7, was installed in 1998, the result of a generous bequest. In 1997 and early 2006, the pool was drained and repaired. This renovation was done with great care, not only for the plants, but also for our colony of California newts.*

PLEASE DO NOT HANDLE OR OTHERWISE DISTURB
THE NEWTS OR THEIR EGGS.

13. CALIFORNIA NEWTS *(Taricha torosa)*. Look for them in the shallow water as they weave their way lazily through the water lilies and other aquatic plants. These salamanders, which resemble lizards, are 12-20 centimeters (5-8 in.) long with reddish brown skin and yellowish-orange bellies. Their skin secretes a potent chemical which repels most predators – in fact newts are highly poisonous if eaten. They are carnivorous, eating insects, slugs, snails, sow bugs and earthworms. The California Newt lives a dual life as either a terrestrial, non-breeding eft or an aquatic newt. During the late summer and dry fall months, this species has a terrestrial existence, hiding under logs, in rock crevices and rodent burrows, and in moist forest litter. After the first winter rains, the terrestrial efts will migrate to the water for breeding. Once in the water, they will transform into an aquatic newt. Adults will almost always return to their place of birth to breed. This is a very strong instinct and if they are displaced, they may take several years to return to their place of origin. Here in the Garden, the newts in our Japanese Pool migrate from the Berkeley hills during the rainy season (December through May) to mate and lay their eggs. Males arrive before females, and usually remain in the water longer. Juveniles

also migrate, but do not breed. Females deposit gelatinous egg masses (which look like translucent ping-pong balls) on the underwater stems and leaves of plants. After 3-5 weeks the eggs hatch, and the small larvae live in the pool until about midsummer, when they have developed lungs and limbs, and are able to crawl out onto land and find their way back to the forest.

Turn right at the Pool and then left uphill to the main paved road. Turn right and continue until you reach the wooden South America sign. On the rocky outcropping look for mounds of this low-growing shrub:

14. ***GAULTHERIA PUMILA***. In winter, the comparatively large bright pink-purple fruits stand out against the small evergreen leaves of this plant. In spring it will produce white or pinkish flowers. Can you see the resemblance to the Californian manzanita profiled earlier in the tour at #2? Both are in the heather family (Ericaceae), as are rhododendrons, cranberries and blueberries. The leaves and stems of many plants in the genus *Gaultheria* are the source of the distinctive flavoring "wintergreen" used in the manufacture of toothpaste, gum and candy.

Take the road uphill to the left in the direction of The Garden of Old Roses. As you reach the top of the hill, look above the Garden seat at:

15. **TREE CELANDINE** (*Bocconia frutescens*). This dramatic sub-tropical plant in the Poppy family has large jagged blue-green foliage with yellow veins. The flowers are creamy beige and are followed by drooping clusters of pale translucent inedible fruits. The plant you see here is quite mature - smaller plants may be useful as striking features in a landscape plan.

Walk into the Garden of Old Roses enjoying the spectacular views over the Bay to the Golden Gate Bridge (and beyond on a clear day!). To experience the landscape art installation "A Garden of Mouthings", take the steps uphill on your left at the Mediterranean sign. Returning, walk down through the arbor to the lower road. Turn right. Next to the garden seat look for the bright red, purple and white stems, flowers and berries of:

16. ***PHYTOLACCA ICOSANDRA***. This plant is commonly named the pokeberry and is related to the North American species used in the regional dish "poke salad". Despite this, all parts of the plant contain toxic chemicals, particularly alkaloids. Another species, *Phytolacca dodecandra*, has been used to kill snails that carry the disease bilharzias.

On the left, locate:

17. **LINGUE *(Persea lingue).*** Mainly used for timber, this tree is related to the commerically grown avocado (*Persea americana*). Look for the characteristic dark green fruits, which are small and inedible. Prior to European presence, the avocado was the primary source of oil in the Mesoamerican diet.

A little further on, in Bed 650 on your right, look for the vine scrambling on the duranta bush:

18. *BOMAREA* SP. You may see the large red and yellow inflorescences dangling like Chinese lanterns on thin wiry stems. *Bomarea* is a tuberous-rooted relative of the familiar alstroemeria (Peruvian lily).

Continue along this path, turning left down the steps at Bed 602. Turn right at the main road. On your right just before the swampy ditch:

19. *FUCHSIA BOLIVIANA*. Fuchsias remain enormously popular plants both as landscape shrubs and in containers and pots. Their dramatic, brightly colored yet delicate flowers entrance us – as well as the hummingbirds! They are native to Central and South America, with a small distribution in New Zealand and Tahiti. Around 1900, growers in Europe began to develop and produce many new varieties from plants originally carried home by sailors and explorers. Covent Garden flower market in London was one of the centers for this trade. In 1930, members of the American Fuchsia Society brought back about 50 fuchsia plants to California. Half of these were cultivated in our garden here, the rest at the Berkeley Horticultural Nursery. Some of the hybrid fuchsias you know today are the result of this endeavor.

Continue along this path; join up with the main road leading you around the top of the Japanese Pool. On the slope on your right, locate:

20. SPIRAL ALOE *(Aloe polyphylla).* This amazing succulent has been described as "a piece of living sculpture". Interestingly, its leaves are arranged according to the Fibonacci sequence, a mathematical pattern also seen in pinecones and nautilus shells. It is a rare native of Lesotho, southern Africa, and extremely hardy, tolerating temperatures as low as 14 degrees F.

*Around the corner look down to your left into the plantings of the **New World Desert**, in particular at two cacti (numbers may not be visible from main path):*

21. *ECHINOPSIS TERSCHECKII* and **22. *ECHINOPSIS THELGONOIDES***. *Echinopsis terscheckii* is an extremely tall, imposing cactus and is a major feature of this lovely Garden vista. It resembles the smaller saguaro cactus *(Carnegiea gigantea)*, which is native to northern Mexico, Arizona and our southwest deserts. However, the two are not closely related. The shorter *Echinopsis thelgonoides* is one of several cacti known by the Spanish name 'cardon' (from a word for thistle). In western Argentina and southern Bolivia it occurs on rocky slopes at altitudes of 3,000ft (900m) or more. Such cacti are the dominant features of the vegetation of these arid areas. Woody portions of trunks of mature plants are used to make fences, beams and doors. Mature specimens may exceed 30ft (9m) in height. The marked specimen you see here in Bed 157 has been damaged and is recovering.

To see many more fascinating examples of desert plants, visit the Arid House collection, located futher along this path toward the Garden Entrance.

We hope you have enjoyed this winter walk. Check the Plant Sales Area and the Garden Shop for unusual and collectible seeds, plants, books and other gift items.

Key to Plant Labels

Family Name	year.order received (*Accession #*)
COMMON NAME	
Scientific Name	
Where Collected	
(A red dot marks rare or endangered species)	

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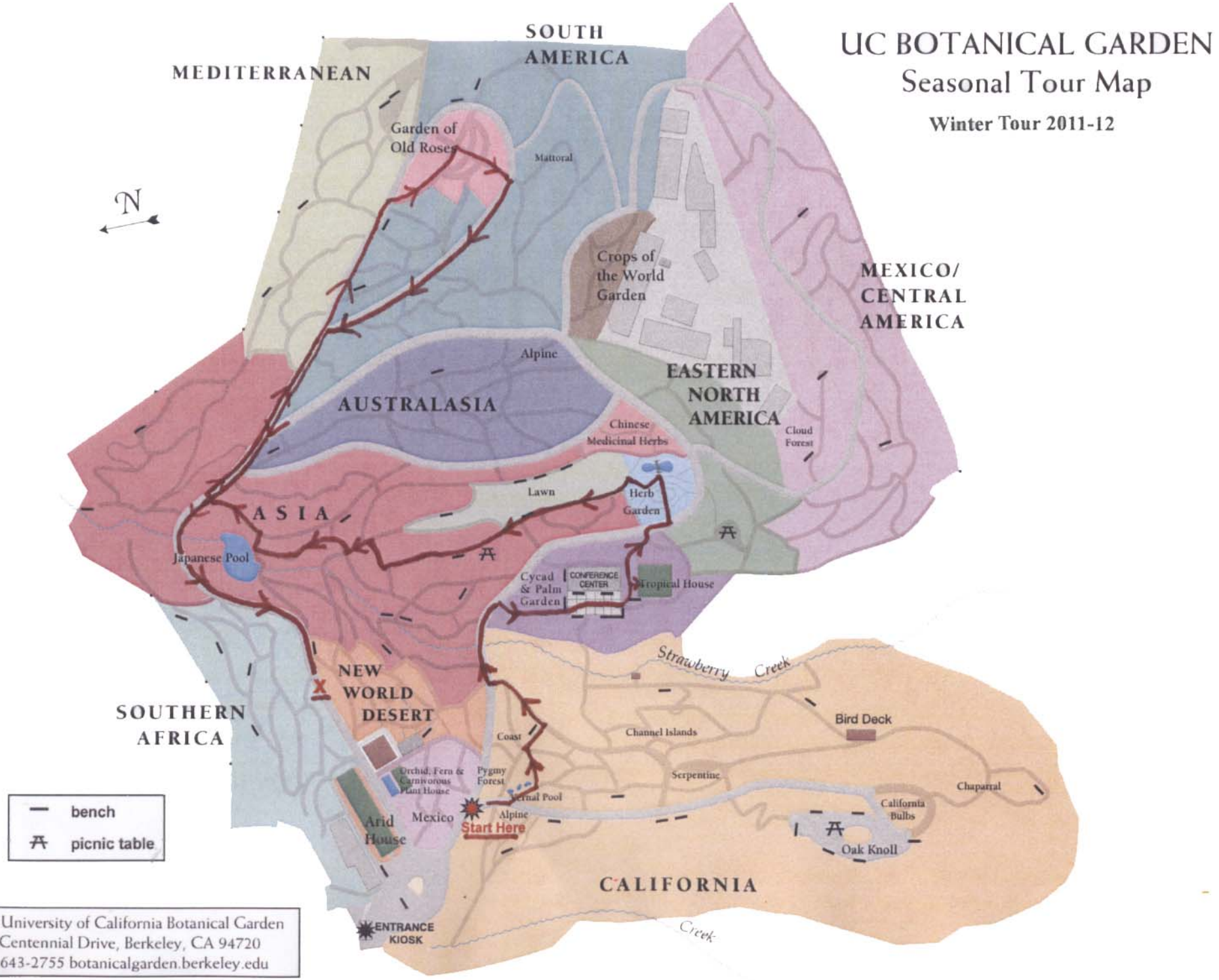
UC BOTANICAL GARDEN
Seasonal Tour Map

Winter Tour 2011-12



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