ACER CIRCINATUM. VINE MAPLE. SAPINDACEAE, THE SOAPBERRY FAMILY. Not a vine but a small deciduous tree found on the edge of conifer forests in northwestern California and the extreme northern Sierra (not a Bay Area species). Slow growing to perhaps 20 feet high with pairs of palmately lobed leaves that turn scarlet in fall, the lobes arranged like an expanded fan. Tiny maroon flowers in early spring followed by pairs of winged samaras that start pink and turn brown in late summer, the fruits carried on strong winds. A beautiful species very similar to the Japanese maple (*A. palmatum*) needing summer water and part-day shade, best in coastal gardens. A beautiful sight along the northern Redwood Highway in fall.

ACER MACROPHYLLUM. BIGLEAF MAPLE. A large, fast-growing deciduous tree of riparian corridors and the edge of conifer forests. Vertically furrowed gray-brown bark, pairs of very large, palmately lobed leaves that turn golden in the fall (with chilly conditions), hanging trusses of pale yellow bee-pollinated flowers in early spring just as the new leaves are unfurling, and hanging chains of doubly winged samaras in late summer and fall. Can be tapped in spring for the sap which, boiled down, can make a maple syrup (long process). Common throughout the foothills and widespread in Bay Area forests near creeks.

AESCULUS CALIFORNICA. CALIFORNIA BUCKEYE. SAPINDACEAE, THE SOAPBERRY FAMILY. Medium-sized deciduous multitrunked seasonal tree especially common with oaks and gray pine in the inner foothills but also growing near the coast as well. Smooth pale gray bark, opposite palmately compound leaves that drop early in a dry summer, spikes of fragrant white to pale pink flowers in late spring and early summer, and large hanging leathery seed pods containing a single shiny brown seed in fall that may roll down hills. Seeds are toxic unless leached and mainly contain starch. Easy to propagate from seed and good choice for smaller gardens. Abundant in the Bay Area ason Mt. Diablo.

ALNUS SPP. ALDERS. BETULACEAE, THE BIRCH FAMILY. Fast-growing deciduous monoecious trees (one species a shrub) found along riparian corridors. Bark gray and in coastal fog belt often covered with a pattern of lichens, mosses, and leafy liverworts. Roots bright red and used as dye, also containing nodules that fix nitrogen, allowing the trees to easily revegetate areas that have been burned or logged. Large broadly elliptical to ovate doubly toothed leaves that seldom turn color in fall. Petal-less slender drooping male catkins open at winter's end, followed by shorter upright female catkins, the pollen carried on the wind from tree to tree. Small woody catkins carry dozens of tiny, wind-dispersed winged samaras in fall, each catkin like a small redwood seed cone. Red alder (*A. rubra*) lives in coastal canyons; white alder (*A. rhombifolia*).

ARALIA CALIFORNICA. ELK-CLOVER, SPIKENARD, OR CALIFORNIA ARALIA. ARALIACEAE, THE GINSENG FAMILY. A giant herbaceous perennial from 8 to 10 feet high from massive roots, dying back in winter and growing rapidly from midspring to summer. The only close native relative to ginseng, widely known as an adaptogen with similar purported properties. Huge bipinnately compound leaves have many elliptical toothed leaflets, and the tiny greenish flowers (resembling English ivy in bloom) are arranged in panicles of umbels. Red-purple berries follow in the fall before the plants dry up, fall over, and go dormant. Abundant on wooded seeps and creek sides especially near the coast as well as at middle elevations in the Sierra. Local populations include Mt. Tamalpais, Huckleberry Preserve, and Jewel Lake in Tilden Park.
MORELLA (MYRICA) CALIFORNICA. CALIFORNIA WAX-MYRTLE OR BAYBERRY. MYRICACEAE, THE SWEET GALE FAMILY. Fast-growing monoecious evergreen tree to around 20 feet high with narrow, lightly toothed glossy and fragrant leaves, the fragrance not as overpowering as the California bay and useful in flavoring stews. Tiny clusters of petal-less male and female flowers are borne in leaf axils in spring, seldom noticed. The "berries" that follow in summer are dark purple, fragrant, and bumpy, containing small amounts of wax. The fruits of the related wax-myrtle from the Eastern U.S. is boiled to remove the wax and make the famous bayberry candles. Wax-myrtle leaves along the margins of coastal forests in the fog belt and sometimes on the margins of swamps, ranging mainly from south-central California to Oregon. Locally it occurs at Huckleberry Preserve and in many parts of Marin County including Point Reyes National Seashore.

PICEA SITCHENSIS. SITKA SPRUCE. PINACEAE, THE PINE FAMILY. Among the tallest conifers of the Pacific Northwest extending from Jughandle Creek in Mendocino County northwards to Sitka, Alaska. Evergreen tree with stiff branches that swoop up, covered with sharp dark green needles attached all around the twigs and leaving behind a "peg" when they fall. Pollen cones underneath the branches and between the needles; seed cones cylinder shaped with numerous light-weight papery, fluted or toothed scales which hang from branch tips. Wood widely used for its strength; bark scaly. The only coastal spruce in California and often dominating north coastal conifer forests in Humboldt and Del Norte counties.

POLYSTICHUM MUNITUM. WESTERN SWORD FERN. DRYOPTERIDACEAE, THE WOOD FERN FAMILY. A medium sized to large evergreen shade-loving fern, especially abundant in the understory of coastal mixed-evergreen and redwood forests, sometimes also on coastal bluffs where fog protects them from sun exposure. Massive filamentous roots anchor the plants, whose clusters of basal fronds that are once divided help identify it. Further scrutiny reveals sword-shaped leaf segments (pinnae) with a hilt at the base of each one. Typical of all ferns, the frond undersides have brown sori that produce hundreds of microscopic spores, each round sous a cluster of spore sacs protected with an umbrella-like membrane or indusium. (Shape and position of sari are important identifying features in ferns.) Spores settle down on moist soil, grow into tiny heart-shaped prothalli that produce sperms and eggs fertilized when it's wet, the fertilized eggs then growing into new baby fern plants. (All ferns share this basic life cycle.) Sword fern is common in Tilden and other regional Bay Area parks.

PSEUDOTSUGA MENZIESII. DOUGLAS-FIR. PINACEAE, THE PINE FAMILY. Very tall, robust evergreen conifer with irregularly fissured dark brown bark and highly fragrant bright to dark green needles arranged around twigs, the new growth often used in herbal teas. Tiny pollen cones on the underside of branches in spring, and seed cones borne near the ends of branches ripening in fall, each cone with broad rounded scales and three-pronged (mousetail) bracts between, the cones falling intact. Not a true fir but the common name firmly established. Excellent and valued source of wood in the West. Broad distribution through the Pacific Northwest, Rocky Mountains south to California, where it grows in mixed-evergreen and middle-elevation conifer forests south to Yosemite in the Sierra and south to the Santa Lucia Mountains in the Coast Ranges. Missing from the East Bay, and preferring the fog belt. May shade out shorter broadleaf trees over time.

NOTHOLITHOCARPUS DENIFLORUS. TANBARK OR TAN OAK. FAGACEAE, THE OAK OR BEECH FAMILY. A very large robust evergreen tree with fissured whitish bark rich in tannins (once used for tanning hides), large tough leaves lined with coarse teeth, an imprinted
featherlike vein pattern, and furry with tiny hairs underneath. Large rounded acorns borne in a bristly (not scaly or warty) acorn cup, the acorns a favored food of the Indians. Sensitive to SODS, with many dead trees in coastal counties of central California. A dominant tree from the Santa Cruz Mountains north often growing near Douglas-fir, madrone, and coast redwood, but missing from the East Bay. Also found in the northern Sierra and Klamath Mountains. Replaced by a shrub variety, *e chinoides*, on hot, dry mountain slopes in California's northwest.

**RHODODENDRON OCCIDENTALE. WESTERN AZALEA. ERICACEAE, THE HEATHER FAMILY.** Medium sized deciduous shrub with whorls of branchlets on the ends of the main stems, narrowly elliptical sometimes skunk-scented leaves, and clusters of highly showy and fragrant white to pink flowers in late spring, the upper petals usually with a golden blotch, the stamens extending out from the petals. Narrow capsules follow with hundreds of dustlike seeds and leaves often turn shades of orange and bronze in the fall. Rare in the East Bay, western azalea is common along forested creeks in the fog zone of the Coast Ranges, sometimes trending inland where reliable summer water is available. It is also abundant in the Klamath Mountains and at middle elevations in the Sierra like Yosemite Valley. Look for it on Mt. Tamalpais and other parts of Marin County.

**SEQUOIA SEMPERVIRENS. COAST REDWOOD. CUPRESSACEAE, THE CYPRESS FAMILY.** This, the world's tallest tree at over 350 feet high, is a fast-growing, long-lived evergreen conifer with furrowed pitch-free fibrous red-brown bark and short dark green needles arranged in two rows on the lower branches, and spiraled and prickly on the upper crown. Tiny pollen cones open in winter, and the seed cones, small barrel-shaped cones with wrinkled diamond-shaped scales ripen in fall. Most of the seeds fail to germinate in the mature forest because of shade and fungal pathogens so that either fire or silt from flooding favors seedling germination and establishment. The trees range from deep canyons in the coastal Santa Lucia Mountains northwards into southernmost coastal Oregon, always in the fog belt, where temperatures are mild in winter and summer. The best stands are on silty soils near river bottoms, although smaller trees grow on slopes. The best development and distribution is north of Eureka, where forest understories are jungle like because of abundant winter rain and heavy summer fogs. Two excellent places to experience the best of the redwoods is at Prairie Creek State Park and Jedediah Smith State Park. In the Bay Area, my favorite stand is at Armstrong Redwoods State Park just north of the Russian River.

**SEQUOIADENDRON GIGANTEUM. GIANT SEQUOIA, BIG TREE, OR SIERRA REDWOOD. CUPRESSACEAE, THE CYPRESS FAMILY.** This is the world's largest living organism with more board feet of wood than any other tree and among the greatest in girth. Although the coast redwood is heavily logged for its rot-resistant wood, the giant sequoia has very brittle wood making it difficult to use for similar purposes: This evergreen conifer can grow over 200 feet high with a nearly straight trunk for the first dozens of feet. The cinnamon colored fibrous, pitch-free bark is thick and resistant to fire. The prickly dark green needles are spirally arranged and resemble the needles at the top of the coast redwood. The tiny pollen cones open in late winter and the seed cones, similar in shape to coast redwoods, are three to four times the volume but with diamond-shaped wrinkled scales. These cones remain tightly closed even when ripe and will remain on the trees for many years unless opened by fire or gathered by squirrels. Like the coast redwood the seeds seldom grow except after fire so controlled burns are being trialed to help regenerate the species. Giant sequoia seldom forms exclusive stands the way the coast redwood does, instead mixing with other middle-elevation conifers such as ponderosa pine, sugar pine, incense-cedar, and white fir. The groves occur from just west of Lake Tahoe (very
small population) south to beyond Sequoia National Park, the largest stands from Yosemite southwards in middle elevations, where the trees receive some winter snow and runoff from snow melt in summer.

**THUJA P LICATA. WESTERN RED-CEDAR. CUPRESSACEAE, THE CYPRESS FAMILY.** A very tall evergreen conifer whose fragrant and strong wood is the most common source of cedar for decks, fences, etc. Not a true cedar at all, this tree is a member of the cypress family Cupressaceae, while the true cedars belong to the genus Cedrus in the Pinaceae. Bark similar to Port Orford cedar although perhaps a bit redder, branches also similar but with white "butterfly wings or bow ties" underneath. Tiny bell-shaped upright seed cones also differ from Chamaecyparis. A much valued source of wood. Most impressive specimens on the Peninsula in Washington, western red-cedar is occasional in California's north coastal coniferous forest from Aracata northwards. Most accessible place to see it is in Prairie Creek State Park.

**TORREYA CALIFORNICA. CALIFORNIA NUTMEG OR STINKING YEW. Taxaceae or yew family.** Medium-sized evergreen conifer, seldom over 50 feet high with one to few trunks with vertically stripped bark and dense clusters of shiny, dark green, highly fragrant needles that end in a spinelike tip, used for tattooing by the Indians. Trees are dioecious, males bearing small cream-colored pollen cones in leaf axils in spring, females developing clusters of pale green to purple, plum-shaped "cones", each with a fleshy wrapping and a single large, nutmeg-shaped but poisonous seed. Trees stump sprout when injured. Occurs in family-like populations amongst other evergreen trees, the groves often separated from each other by many miles. Scattered from the Santa Cruz Mountains northwards in the Coast Ranges, and also in canyons of the central and northern Sierra. Stands in the Bay Area include Samuel Taylor State Park, Mt. Tamalpais, and Mt. St. Helena.

**VACCINIUM OVATUM. ERICACEAE. THE HEATHER FAMILY.** Evergreen huckleberry. A slow-growing evergreen shrub to 10 feet high common on the margins of coastal conifer forests from central California northwards, evergreen huckleberry displays nodding clusters of white to pink, bell-shaped flowers in winter and early spring under leafy branches, covered with thick, narrow, toothed leaves, sometimes used for Christmas greens. The delicious berries ripen in late summer and early fall and are among the best of all native edibles, often surpassing commercial blueberries in flavor. Found localized in the East Bay in sites like Huckleberry Preserve, the best stands that bear heavily are at Pt. Reyes, especially on Mt. Vision. The berries can be used in any application where blueberries are called for.

**ADIANTUM ALEUTICUM. FIVE-FINGER FERN. PTERIDACEAE, BRAKE FERN FAMILY.** Usually a winter-dormant small fern of moist forests, streamsides, and seeps with a distribution similar to giant chain fern. Delicate fronds are borne on polished black stalks (stipes) used in basket designs by the Indians, each frond divided into several to many fingerlike divisions, each division with several to many crescent-shaped leaflets. Marginal sori on the underside of the fronds, protected by the frond margin curling under (false indusium). Few populations in the East Bay but abundant in the more coastal counties including Samuel Taylor State Park and Pt. Reyes National Seashore in Marin County.

**ASARUM CAUDATUM. WILD GINGER. ARISTOLOCHIACEAE, THE BIRTHWORT FAMILY.** Creeping evergreen ground cover with large, rounded, dark green, ginger-scented leaves hiding dark maroon flowers with three long tailed sepals (no petals) with an off smell. Pollinated by flies. Forming colonies in moist coastal forests, particularly redwood and other conifer forests,
rare in the East Bay but common in Marin County northwards, including the Bear Valley trail in Pt. Reyes National seashore. Not drought tolerant. Not related to the true ginger, which is a tropical monocot.

**LYSICHITON AMERICANUM.** **SKUNK-CABBAGE.** **ARACEAE, THE ARUM FAMILY.** Giant, winter-dormant perennial from fleshy roots with broad, oval, skunk-scented leaves to a few feet long and yellow "flowers" in early spring, each flower in reality a bright yellow spathe bract wrapped part way around a narrow spike of tiny petal-less flowers, the whole spike falling over in fruit and planting the seeds. The odor is seldom strong enough to be offensive. Slunk cabbage often grows with giant chain fern and other bog-loving plants. One local population (but absent from the East Bay) is Butano State Park near Pescadero in San Mateo County.

**MAIANTHEMUM SPP.** **FALSE SOLOMON'S SEALS.** **RUSCACEAE, THE BUTCHER BROOM FAMILY.** Rhizomatous winter-dormant perennials with single stems lined with ovate leaves and ending in a dense panicle or raceme of tiny white starlike flowers in spring followed by purple berries (not edible to humans). Abundant in coastal mixed-evergreen and conifer forests, the two common species also climb into moist edges of meadows in the mountains. *M. stellatum*, starry false solomon's seal, travels widely to form large patches in shade and can be found in several local East Bay forests, while *M. racemosum*, fat false solomon's seal, forms dense clumps, has branched inflorescences of fragrant flowers, and is sporadic in moist woodlands and forests, more often near the coast. Both are common throughout Marin County and easy to grow in gardens but *M. stellatum* spreads rather aggressively.

**TRILLIUM SPP.** **TRILLIUMS OR WAKE-ROBIN.** **MELANTHIACEAE.** Perennials from a deep-seated tuber sending up a single stalk a few inches high with 3 broadly ovate leaves, the veins forming a network atypical of most monocots. The leaves in some are blotched with dark purple. A single showy flower sits in the center of the leaves or is raised on a short stalk above the leaves, each flower with three colorful petals, three green sepals, and a six-angled ovary that produces seeds with an attached oil body for ant dispersal. Plants die back in late summer. Two species in the Bay Area- *T. chloropetalum*, giant trillium, has a single sessile red, pink, white, or yellow-green flower and is typical of moist mixed-evergreen forests; *T. ovatum*, wake-robin, has a single flower raised on a stalk opening white and fading deep rose purple, typical of redwood and other coastal coniferous forests. Both species occur sparingly in the East Bay. Montara Mountain near Pacifica is a good place to see both species in early spring.

**VERATRUM Fimbriatum.** **FRINGED CORN-LILY.** **MELANTHIACEAE.** This stout winter-dormant perennial is easily identified by its large, ovate, strongly pleated leaves, In late summer a panicle arises above the leaves, eventually opening flowers in late September and October, each flower a six-pointed white star with yellow center, the petals strongly fringed. Three-chambered seed pods follow before the stems flop over and go dormant to large fleshy roots. All parts of these plants and others in the genus are strongly toxic so care should be used when planting in gardens with pets and children. Rare and confined to swampy coastal conifer forest areas, fringed corn-lily occurs only in northern Sonoma and Mendocino counties. Salt Point State Park is an excellent place to seek it, within just a couple hours drive from the main Bay Area. Curiously, this species has proven easy to grow in the Garden whereas other species including the common mountain *V. californicum* have proven difficult.