

PLANT	POISONOUS PARTS	SYMPTOMS	PLANT	POISONOUS PARTS	SYMPTOMS
APPLE CRABAPPLE	Seeds	Rapid respirations, gasping, convulsions, coma.	LANTANA	Green berries	Vomiting and diarrhea, muscular weakness, circulatory collapse.
AZALEA	All parts	Anorexia, salivation, vomiting, weakness, dyspnea, ataxia.	LUPINE	Foliage and seeds	Labored breathing, depression, trembling, convulsions.
BIRD OF PARADISE	Seeds and pods	Vomiting, diarrhea, dizziness, drowsiness.	MANGO	Fruit skin, tree sap, flower, pedicel.	Vomiting and diarrhea, skin irritation.
BUTTERCUP	Leaves	Severe vomiting, diarrhea, muscular weakness, weak pulse, respiratory paralysis, convulsions.	MISTLETOE	Berries	Vomiting and diarrhea, cardiovascular collapse.
BUCKTHORN	Leaves, berries	Severe diarrhea	MUSTARD	All parts, especially root.	Vomiting, diarrhea, kidney damage.
CASTOR BEAN	Seed	Severe vomiting and diarrhea, convulsions, kidney damage.	PEA, SWEET	Seeds	Paralysis, weak pulse, shallow breathing, convulsions.
CHERRY	Twigs, leaves, bark, seed	Stupor, vocal cord paralysis, twitching, convulsions.	PHILODENDRON	Leaves	Burning of mouth, vomiting, and diarrhea.
CROWN OF THORNS	Sap	Swelling of tongue, mouth, and throat; vomiting and diarrhea.	POINSETTIA	Leaves, sap (controversial)	Vomiting, collapse
DEADLY NIGHT-SHADE	Berries, leaves and roots	Fever, rapid heartbeat, dilation of pupils, dry mouth, flushing.	PRIVET	Leaves and berries	Vomiting and diarrhea, decreased blood pressure, kidney damage.
EGGPLANT	All parts except fruit	Fever, flushing, dry mouth, dilation of pupils.	RANUNCULUS	Leaves	Vomiting and diarrhea, muscular weakness, weak pulse, respiratory paralysis, convulsions.
FOXGLOVE	Leaves	Vomiting, diarrhea, abdominal pain, severe headache, irregular heartbeat, tremors, convulsions.	TOMATO	Leaves	Hemolysis, apathy, drowsiness, salivation, labored respiration, paralysis
HYACINTH	Bulb	Severe vomiting and diarrhea.	TULIP	Bulb	Vomiting, diarrhea, CNS depression
HYDRANGEA	Leaves and buds	Nausea, vomiting, diarrhea, gasping, rapid breathing.	WISTERIA	Pods and seeds	Severe vomiting and diarrhea, collapse.
IVY, ENGLISH	Berries	Diarrhea, labored breathing, excitement.	OLEANDER	All parts	Vomiting, abdominal pain, dizziness, slow and irregular heartbeat, dilation of pupils, bloody diarrhea, respiratory paralysis.
JIMSON WEED	All parts	Thirst, pupillary dilation, dry mouth, flushing, hallucinations, headache, nausea, high blood pressure.			

Poisonous plants

continued from page 1

lows nausea, convulsions, and coma. Other nerve poisons come from the opium poppy (*Papaver somniferum*) and certain parts of potatoes (*Solanum tuberosum*). Never eat the leaves of the potato and always cut out the green blotches on the potato tuber, as these parts are rich in poisonous alkaloids.

Internal poisons

Internal poisons affect such organs as the stomach, liver, and kidneys. The effects of some of these poisons are mild and rarely fatal, but do cause some discomfort. The worst of the internal poisons is the death angel (*Amanita phalloides*). These mushrooms are common in California and can be found at the botanical garden. The victim first suffers intense stomach cramps, vomiting, and diarrhea, followed by rapid failure of the liver and kidneys. The victim then slips into a coma and dies. Even as little as a forkful is a lethal dose.

All parts of the iris can cause internal poisoning with the victim suffering from vomiting and diarrhea. Death is not common, though. The leaves of oleanders (*Nerium oleander*) will also cause vomiting and stomach pain, and may lead to death. All parts of rhododendrons will cause vomiting and diarrhea if consumed, and the berries of the yew will cause immediate vomiting. Daffodil bulbs are quite

poisonous and when eaten cause severe stomach cramps.

Irritants

A number of plants contain irritating chemicals that produce a burning sensation on contact with the skin or eyes. All members of the genus *Euphorbia*, a conspicuous group in the succulent house and on African Hill, contain an irritating milky sap which can even cause blindness if it gets into one's eyes.

Calla lilies contain irritating chemicals in their underground portions which if eaten may produce a severe burning sensation in the mouth and throat. Rhubarb leaves are loaded with crystals of oxalic acid. Eating uncooked rhubarb leaves may result in a painful burning sensation in the mouth and throat, and the irritating crystals may even cause ulcers.

Allergens

The most familiar poisonous plants are such allergy-producers as poison oak (*Rhus diversiloba*) and poison ivy (*Rhus radicans*). All parts of these plants produce blistering oils which react immediately with the skin to produce intense swelling that takes weeks to heal. Reactions to these plants vary from individual to individual, with some people being completely immune to the effects of these plants.

Other allergy-producing plants are those that produce pollens which

plague hayfever victims each spring. Any plant which produces copious amounts of pollen is a likely source of hayfever, but such plants as ragweed (*Ambrosia* spp.), goldenrod (*Solidago* spp.), acacias, and most grasses are particularly irritating. Not everyone is sensitive to pollen, but those who are will attest to the misery this form of poisoning can cause.

Avoiding poisonous plants

Although plant poisoning is very common, most cases are not fatal. If you become familiar with the most common poisonous plants, you can reduce your chances of self-poisoning. Over 12,000 cases of human poisoning were reported to the National Poison Center in 1977 and many more probably went unreported. Pass up the temptation to eat the leaves, roots, or fruit of an unfamiliar plant until you are sure it is edible. Make sure that any plant you are about to eat is in fact an edible variety and not a poisonous look-alike. Remember that poisonous hemlock looks like the wild carrot. If you need to know about antidotes, or want to find out more about plant poisoning, you can call the "poisoning accidents" number at 415-431-2800. If you find a plant and wish to know whether or not it is a poisonous species, why not bring it to the UC Herbarium (Life Sciences Building, UC Berkeley) and let us identify it for you.

Fascinating herbs

By Marvin Schmid, Docent

Herbs, those fragrant delights which have captivated people through the ages, are among the most pleasing and versatile groups of plants utilized by man. Given well-drained soil, they will thrive nearly anywhere. Even on my heavy clay soil, and tended by a purple-thumb gardener, they thrive.

What exactly is an herb? A botanist would describe an herb as a seed plant (usually annual or biennial) that does not develop woody tissue. Most herbs are fairly small plants which die back to the ground at the end of their growing season. However, in common usage, the term "herb" has come to refer to any plant used as a flavoring, fragrance, or medicine.

The botanical garden's herb display (near the lawn) is divided into plots according to the uses of the herbs, which include the following categories: culinary herbs, fragrances, medicinal herbs, flavorings for liqueurs and beers, teas, dye plants, and pot (edible) herbs.

Chamomiles

A favorite herb group, the chamomiles, can be found in four separate plots (fragrance, medicinal herbs, flavorings for liqueurs, and teas). Two of the most well known are Roman chamomile, *Anthemis nobilis*, and German chamomile, *Matricaria chamomilla*. Both are low-growing, ranging in height from 4 inches to 2 feet, and have fine, lacy foliage. The dried daisy-flower heads are steeped to produce an aromatic tea which is a popular folk remedy for various ills ranging from earache to indigestion. Also, Roman chamomile is used as a flavoring in some French liqueurs.

Chamomiles also make attractive aromatic ground covers. It is delightful to walk along a chamomile-covered path since the plants give off a pleasant scent when crushed. Even a small garden can provide scented steps. Space plants about 12 inches apart, and they will cover the path within about two months if kept fairly moist. Another two months and the path will need its first trim. After that, chamomile does not require either as much mowing or as much water as grass does.

Feverfew

Another attractive herb which bears a superficial resemblance to the chamomiles is the medicinal feverfew, *Chrysanthemum parthenium*. Although feverfew is in the genus *Chrysanthemum*, its foliage is delicately fragrant in contrast to the sharp pungent odor of its more widely cultivated relatives. The plant can grow up to 2½ feet, and has 1-inch daisy-like flower-heads. Plants spread readily from basal roots and freely self-sow.

A tea made from the flowers is purported to cure headaches, nervousness,

and painful menstruation. In medieval times feverfew was mixed with wine and honey to cure persons suffering from depression or "them such as be melancholike." The plant is said to contain active principles which have a healing effect on wounds and sores.

Lavender

Lavender (*Lavandula* spp.) has been used as a fragrance, and a medicine for centuries. Romans scented their bath with it, and the botanical name is thought to come from the Latin *lavare*, to wash. The botanical garden has specimens of English lavender (*L. officinalis*), French lavender (*L. stoechas*), and broadleaf lavender (*L. latifolia*).

The flowers of English and French lavender are popular sources of an aromatic oil used in perfumery. In the Middle Ages, linens were spread over lavender bushes to be perfumed as they dried. And the oil from broadleaf lavender is purported to alleviate "faintness" and "giddiness" when taken in milk, but it can be poisonous in large doses.

In the home garden, lavender shrubs can form an attractive grey-leaved hedge (3 or 4 feet high) with showy purple flowers which grow in clusters on erect stems. Gently brushing the hedge will release a pleasing camphorous fragrance.

mints

The genus *Mentha* contains so many species, subspecies, and varieties (which tend to interbreed freely) that it is often difficult to distinguish among them. Peppermint (*Mentha piperita*) is thought to be a hybrid between water mint (*M. aquatica*) and garden mint (*M. viridis*) or spearmint (*M. spicata*). Many different kinds of mint can be seen in the herb garden, in the sections labeled culinary, medicinal, flavorings for liqueurs, and teas. All members of the genus *Mentha* abound in a volatile oil which is contained in resinous dots in the leaves and stems.

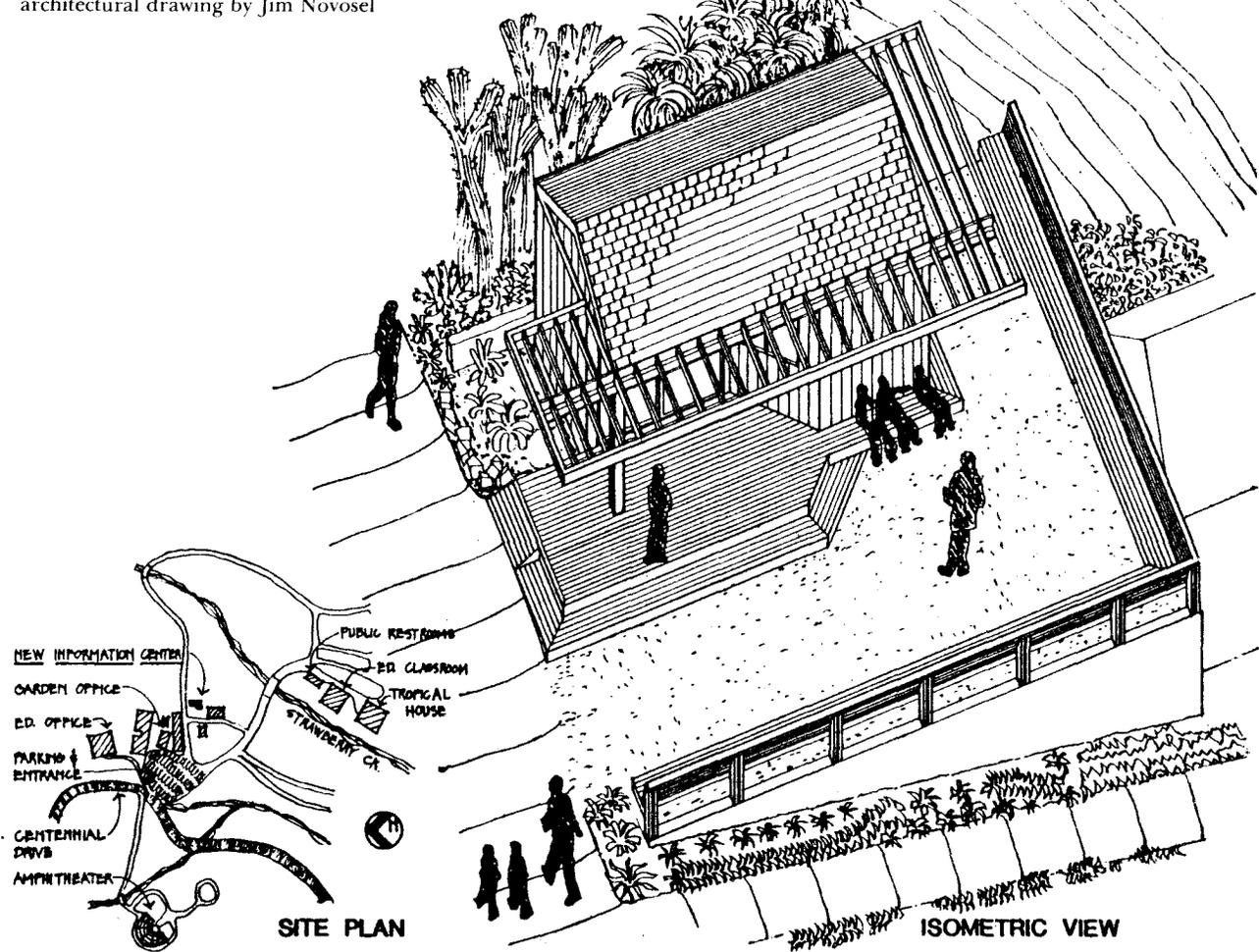
Peppermint is particularly appropriate for a cool moist spot in the home garden, since it thrives in partial shade. Unless it gets plenty of water, peppermint does not show to best advantage in full sun. In its native haunts it frequents the edges of streams and lakes.

Generally, herbs require well-drained soil, plenty of sun, and not too much water. Herbs which originated in central Europe such as thymes (*Thymus* spp.) and savories (*Satureja* spp.) need more water than most herbs. The remarkable qualities of herbs touch all of our senses in such a pleasing way that growing and using them is habit-forming. A visit to the botanical garden for the springtime show of herbs is a good way to be introduced to these delightful plants, and some herbs will be available at the plant sale on May 13 (for details, see page 1).



Lavandula species, or lavenders, are used as perfume and medicine.

illustration by Sharon Smorsten



New information center opens

Report by Margaret Mitchell, Docent Council President:

The docents are pleased to report the recent completion of the new information center in the botanical garden. When the docents started giving tours of the garden five years ago, we soon realized that a well-located and attractive building would be desirable where tours could begin, pamphlets sold and information about the garden made available to the public.

We learned that the site of the old tropical house might be used for such an information center. With that site in mind, the docents allocated \$5,000 from past plant sales for the project. Jim Novosel prepared preliminary plans for an attractive center which were presented to the University administration. The Chancellor's office apparently has been pleased with our past efforts, liked the building plans, and offered to match our \$5,000 in funds.

The information center now serves as a docent meeting place to start tours. We also have display space for books, pamphlets, plants of interest, and information on current lectures, special tours and other events for the garden.

Volunteers interested in manning the new center should contact Mrs. Laurianne Hannan, Education Coordinator, by writing or phoning the garden (642-3352).

Report by Jim Novosel, Chairman, Docent Planning Committee:

Designing the new information center for the botanical garden presented an enjoyable challenge. At an informal meeting (attended by garden staff, docents, and Friends/BG) in August, 1977, it was decided that the information center should be fairly small and inexpensive, yet serve several vital functions, and be an attractive addition to the garden.

The present site for the center was chosen for its visibility from the garden and its flat terrain. It also does not encroach on precious garden ground, and contains some of the finest views in the garden.

The building has been structured to blend in with adjacent buildings, yet still be attractive and eye-catching so visitors are naturally drawn to it. The gable roof and redwood siding match the features of the nearby staff building. A redwood lattice overhang is cantilevered out on the north side to signal the entrance.

The building has been designed to serve four basic functions. First, the center is the public's threshold for gathering maps and literature before beginning exploration of the garden. Secondly it provides a display and sales room for books, prints, and photos of a botanical nature. The building has enough room inside for comfortable

browsing, or visitors may view the display material and purchase it at the window next to the entry.

The building's third major function is to serve as a focal point for large tours. The Friends of the Botanical Garden have donated \$1,500 for constructing 6 linear feet of redwood benches around the center. Not only will the benches be the finishing touch, they are also a fitting laureate to the union of the docents and the Friends of the Botanical Garden.

And fourth, the center has been constructed to accommodate small groups of docents or Friends/BG who desire to meet, or work on special projects.

Contractor John Capurso has been especially helpful in keeping the project within its financial limits while achieving all the desired elements. The garden also appreciates the aid that the Chancellor's Office and the Architects and Engineers Office have given by contributing an extra \$2,900 to complete the project.

The new center now serves many diverse functions, including garden store, office, library and club house. Yet there is one important point to remember. This building is more than the result of any one individual's efforts; its creation laurels many years of highly successful docent tours and plant sales. Its construction is a tribute to continued strong docent involvement in the growth of the garden.

FRIENDS OF THE BOTANICAL GARDEN NOTES

BOTANISTS TO CHINA

The Botanical Society of America has arranged for an exchange of delegations with the People's Republic of China. Dr. Bartholomew, Curator of the UC Botanical Garden, has been selected as one of ten botanists who will visit China for one month this May. This delegation will be the first oriented toward basic botanical studies to visit mainland China. It is hoped that this exchange will lead to an expansion of contacts and exchange between botanical institutions in the U.S. and China. During the past few years, the University of California Botanical Garden has initiated exchange of seeds with seven botanical gardens in China, and Dr. Bartholomew's participation in this delegation will no doubt lead to even greater contact between the UC garden and botanical gardens in China.

VOLUNTEERS NEEDED

Would you care to volunteer for work at the botanical garden? We are looking for volunteers to staff our new information center, to help prepare plants for the plant sales, to work on materials for

the garden's displays, and the help with garden-sponsored events. A short training class will be given in late May to those interested in doing volunteer work in the categories listed. Please phone 642-3352, or write to Mrs. Laurianne Hannan, Botanical Garden, University of California, Berkeley, CA 94720 for an application for volunteer work. The application deadline for this training class is May 12, 1978, so please write or call for your application soon.

SELF-GUIDED TOURS

Now you can explore the seasonal plant highlights in the botanical garden through free self-guided tours. The first issue, for Spring, describes 14 interesting and noteworthy plants, and provides an enjoyable way to learn more about the major areas of the garden. Plant descriptions are accompanied by a new updated map for easy location. These tour guides, which are written on a quarterly basis, emphasize plants in bloom and plants of particular interest during the changing seasons. You can pick up a copy of the latest issue at the main office in the garden.

Edible tropical plants

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countries such as Malaysia and Guyana. These coffee species all originally came from the mountains of tropical Africa although the New World tropics (especially Brazil and Colombia) now is the most important coffee producing area.

The foul-smelling durian

Just beyond the compact *Coffea arabica* is one of the most unusual fruit trees in the Tropical House. This is a small plant of durian, *Durio zibethinus*, which can eventually grow into a large tree up to 100 feet tall. The spiny green fruit is large (weighing up to 8 pounds), and inside is the edible pulp consisting of several rows of fleshy brown arils which surround the seeds. The pulp has an oily texture of ripe avocado mixed with library paste, and a fecal smell combined with the smell of garlic and turpentine. This fruit is highly esteemed in Southeast Asia although it is definitely an acquired taste.

The peculiar cashew

In the back left hand corner of the Tropical House is a cashew tree, *Anacardium occidentale*, which is a large tree native to tropical America but now extensively cultivated in the Old World tropics (particularly India and eastern Africa). The plant is in the same family as poison oak, and contact with it causes a smiliar reaction. Each cashew nut hangs in a rather peculiar manner from the bottom of a fleshy red pedicel

that looks much like an apple. In effect, the single cashew seed appears to be stuck to the bottom of the fleshy "apple." The garden's tree has flowered but it has not yet produced fruit.

The chewing gum tree

On the right hand side of the Tropical House entrance is a sapodilla tree, *Manilkara zapota* (*Achras zapota*), which is native to Central America. The milky latex, which flows when incisions are made in the bark, is the source of chicle gum used for making chewing gum. The tree is also grown for the egg sized fruit that has a translucent brown pulp with a brown sugar taste.

Cocoa trees

Behind the sapodilla tree is a cocoa tree, *Theobroma cacao*, which is the source of chocolate. The tree is native to the New World tropics, but now almost 80% of commercial chocolate comes from West Africa. Depending on the variety, the large football shaped pods turn yellow or purple when ripe. The flowers and pods are borne on the trunk and large branches, and each pod contains several rows of large seeds covered with a mucilagenous pulp. After harvesting the pods, the seeds and pulp are fermented for several days and then dried. The dried seeds are shelled and roasted. After this, the seeds are ground and pressed to produce cocoa butter and powdered cocoa.

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University of California, Berkeley
CA 94720

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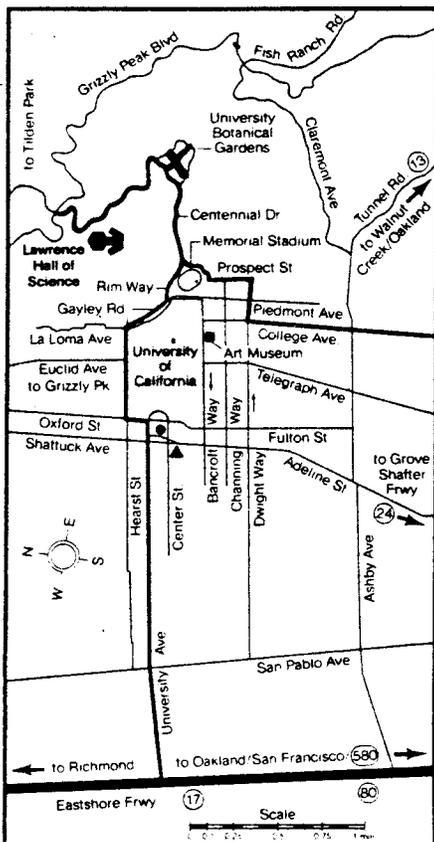
Join Friends of the Botanical Garden

You are invited to become a member of the Friends of the Botanical Garden. This organization was developed to provide assistance to the botanical garden in improving and extending the plant collection, enriching the education program, and meeting general capital requirements.

Members, in return, are offered spe-

cial programs on plants and gardening, a 25% discount on selected UC Press books (such as *California Spring Wildflowers* by Munz), preview privileges for the annual sale of unique plants from the garden, and a quarterly publication which covers topics of general interest to plant enthusiasts as well as news of the garden.

Student and Senior Citizen memberships are discounted to \$5. Standard dues are \$10 for an individual, \$15 for a family. The Friends of the Botanical Garden function as a support group under the auspices of the UC Berkeley Foundation, and dues and gifts are tax deductible.



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