

## Palm House continued

### Kava Kava (*Piper methysticum*)



Controversy surrounds the use of this Philippine plant due to reports that it can cause severe liver damage. It is even banned in several European countries and Canada. However, in countries where the plant is legal, the roots are used medicinally in teas and tinctures to relieve stress, anxiety, and muscle pain. When consumed in large quantities, kava kava can induce euphoric states, intoxication, and sleep. Kava kava can be purchased in many grocery stores and health food stores in the United States.

### Cacao (*Theobroma cacao*)

Native to Mexico and Central and South America, cacao has been used by indigenous peoples since before 1,000 B.C.E. It is best known as the main ingredient in chocolate, one of the most popular foods in the world. Up to half of each cacao bean is made of fat, called theobroma oil or cocoa butter, which is used topically to treat chapped skin and stretch marks. Cacao seeds contain theobromine, a chemical that stimulates the heart and dilates blood vessels, lowering blood pressure and risk of heart attack. The darker the chocolate, the higher the cacao content; dark chocolate therefore has more potent medicinal properties than milk chocolate.



## Palm House continued

### Quinine (*Cinchona pubescens*)

Magazines and journals, including *Nature News* and *National Geographic*, estimate that half of all humans who have ever lived died of malaria, a deadly mosquito-borne disease. For hundreds of years, indigenous peoples of Peru used the bark of quinine to cure malaria. Jesuit missionaries brought the knowledge of quinine to Europe, and since then, other antimalarials have been developed.



## Cool Temperate House

### Tea (*Camellia sinensis*)

This Asian plant is best known for making one of the most popular beverages in the world. Green and black teas have been manufactured for thousands of years by drying, and in the case of black tea, fermenting, the youngest leaves of this evergreen shrub. The leaves are steeped in water to produce a beverage with anti-inflammatory, antioxidant, and stimulating effects. These effects have preventive properties against cardiovascular diseases and cancer.



## Warm Temperate House

### Cayenne (*Capsicum annuum*)

One of the many cultivars of *Capsicum annuum*, cayenne was brought from tropical America to Europe in the 16th century. It contains the chemical compound capsaicin, which diminishes nerve pain by desensitizing nerve endings. It is therefore used in topical oil rubs to treat rheumatism, arthritis, and shingles. A gargle made from a pinch of cayenne in warm water can relieve a sore throat. Capsaicin also stimulates blood flow, and is taken in tincture or pill form to treat cold hands and feet caused by poor circulation.



### Madagascar periwinkle (*Catharanthus roseus*)

Originally from Madagascar, this plant was used traditionally to treat a range of ailments including sore throats, eye infections, diabetes, and tumors. Research has revealed an abundance of alkaloids, including vincristine and vinblastine, which are used to treat a number of cancers. Since the 1950s, the use of vincristine has increased the survival rate in patients of childhood leukemia by over 90%.



### Further Reading

*PDR for Herbal Medicines*, Thompson Publishers (2007)  
*The Encyclopedia of Medicinal Plants*, Andrew Chevallier (1996)

### Photograph Credits

*Rosemary* by D.R.D. Luria  
*Curare* courtesy of the National Tropical Botanical Garden  
*Ginger* by Nataraja at Wikimedia.com  
*Turmeric* by Simon Eugster  
*Kava Kava* by Forest & Kim Starr  
*Cinchona* by H. Zell  
*Cayenne* by Pierre Selim  
*Madagascar Periwinkle* by Arria Belli

## Some Medicinal Plants of the Lyman Conservatory

By Irene Soulos

Smith College Botanic Garden Summer Intern 2015



Many of our medicines come from plants. Some medicines, like herbal teas, obviously come from plants. It is less apparent that others, like aspirin, or the chemotherapy drug vincristine, are derived from plants. However, from teas and tinctures to ointments and pills, plants are omnipresent in our traditional and modern medicines.

Often, the only factor that differentiates medicine from poison is dosage. We use the seemingly harmless herb rosemary to flavor our foods and treats ailments like headaches, but extreme doses of rosemary can cause seizures, comas, and even death. This is why even herbal medicines should only be used under the instruction of medical professionals.

The medicinal plants that we use today come from all over the world. Our cough drops are made from Australian eucalyptus. Native to central and southern Asia, medicinal marijuana is used to treat nausea, pain, and anxiety. Humans worldwide rely on each other to share medicinal plants and knowledge. The use of plants as medicine is a practice that unites all people on Earth.

## Succulent House

### Aloe (*Aloe vera*)

Widely used, aloe has a 13 billion dollar market value in the medical and cosmetic industries. A slippery, clear gel in the leaves protects and heals burns and scrapes when applied topically. The yellow liquid from the base of the leaves, called bitter aloes, stimulates contractions of the colon when ingested, and is used as a laxative.



### Mexican Yam (*Dioscorea mexicana*)

The natural habitat of the Mexican yam ranges from Southern Mexico to Panama. A steroidal substance extracted from the root can be used to synthesize the human hormone progesterone, which helps prevent pregnancy by thinning the uterine lining and thickening cervical mucus. After the synthesis process was discovered, scientists made the first oral contraceptive, which was a huge leap forward in the movement for women's reproductive rights.



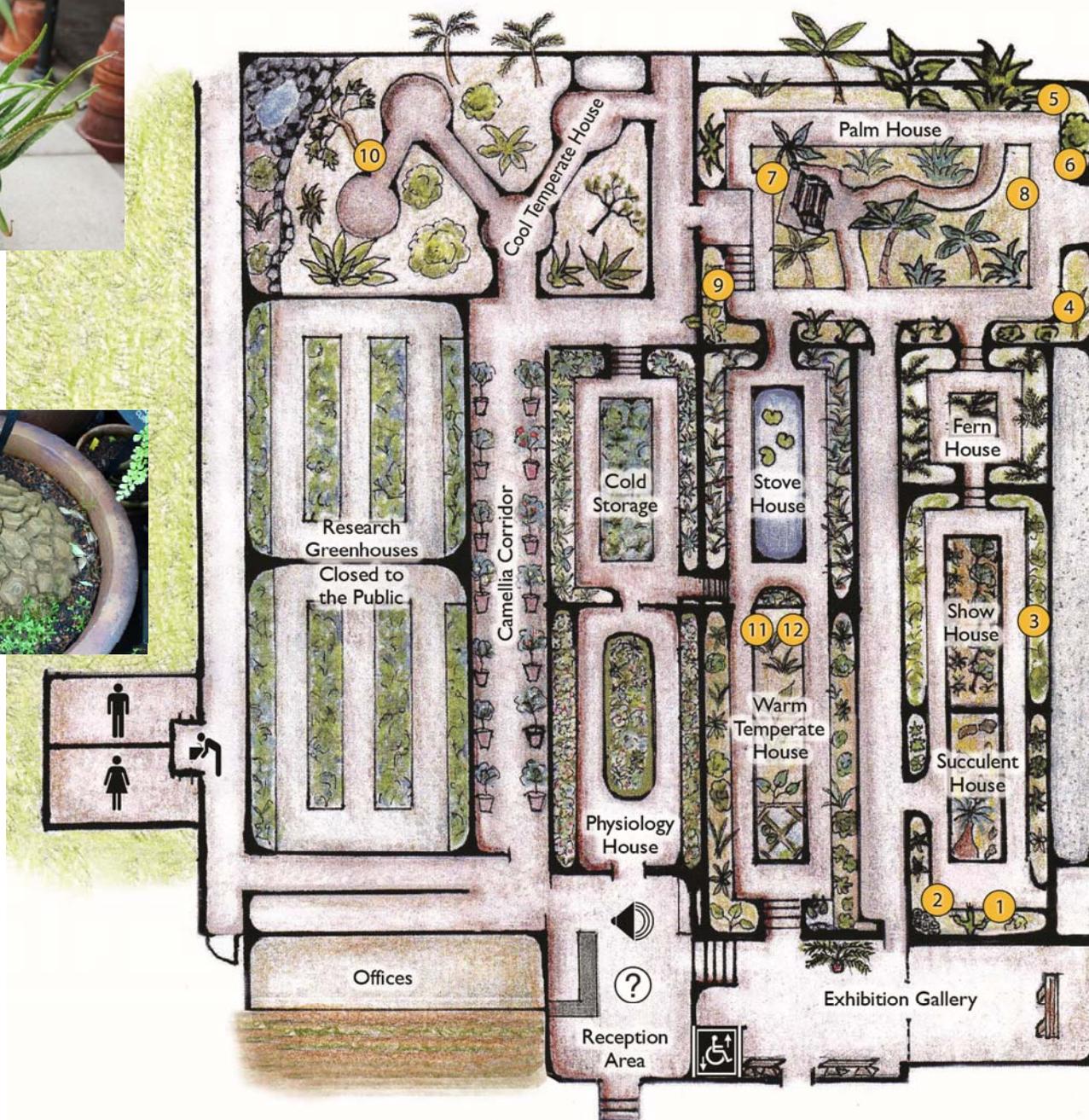
## Show House

### Rosemary (*Rosmarinus officinalis*)

Native to dry areas of the Mediterranean, this evergreen shrub contains essential oils and the compound rosmarinic acid, both of which relieve pain and stimulate the nervous system. Both Ancient Greek and modern folk medicine utilize rosemary to stimulate blood flow to the brain, improving concentration and memory. It is also used to alleviate migraines and headaches.



## Numbers on this map correspond to locations of plants



## Palm House

### Curare (*Chondrodendron tomentosum*)

A vine native to tropical South America and Panama, curare can climb as high as a ten-story building. The compound tubocurarine, which is extracted from the leaves and roots, is a powerful muscle relaxant. In South America, a dart poison made from curare is used on the tips of hunting arrows to paralyze game. Tubocurarine is also used in modern-day anesthetics.



### Ginger (*Zingiber officinale*)

Now recognized in modern medicinal practice, this tropical Asian plant, has been used for centuries in traditional medicine. Its fibrous, yellow rhizome can be utilized both fresh and dry as an antiseptic and to relieve nausea and digestive ailments. A 1990 study published in the journal *Anaesthesia* concluded that ginger reduced postoperative nausea as effectively as a nausea pharmaceutical.



### Turmeric (*Curcuma longa*)

This ginger family member has a vibrant orange rhizome that has long been used in dyes, curries, and medicines by peoples of India and southern Asia. Formal research in the 1970s confirmed the belief that turmeric has potent anti-cancer, antifungal, and antiseptic properties. Some studies show that turmeric has anti-inflammatory properties that surpass those of hydrocortisone. Turmeric is used topically to treat skin conditions such as eczema, athlete's foot, and psoriasis, and is taken orally to treat acne.

