

Medicinal Plants

IN contrast to the profusion of colorful blooms in the Orchid House, there is a bracing simplicity to the plants in the medicinal collection. These specimens are not presented for their beauty, though many have attractive leaves, blossoms, and fruits. Each plant in this display is valued for its healing properties. The medicinal collection at the U.S. Botanic Garden, which numbers more than 200 plants, includes species and natural or cultivated varieties that are currently acknowledged to provide therapeutic value by research scientists as well as by healers from allopathic, homeopathic, herbal, ethnobotanical, and other widely accepted healing traditions.

The use of plants to treat illness is found throughout human cultures. In pre-industrial societies, the knowledge of plant medicines usually rested with the shaman or healer and was passed from generation to generation through apprentices. Among the most ancient recorded uses of medicinal plants are those found in China and India, where the holistic approach to the treatment of human disease is still practiced. Western uses of medicinal plants can be traced back to the Greeks and Romans, who formalized many of the herbal cures found today. All of these traditional uses of medicinal plants are now under scrutiny as potential life-savers. Since an estimated one-quarter to one-half of modern manufactured drugs contain or were derived from botanical ingredients, medicinal plants are important commodities.

Some of the plants on display are familiar to anyone who has a home garden, while others are legendary miracle cures. Peppermint (*Mentha x piperita*) has been used for centuries in teas to treat everything from headaches to stomachaches. The seeds of the castor bean (*Ricinus communis*) produce castor oil, a fast-drying, non-yellowing oil used primarily in industry but also in some medicines. Ma huang or Chinese ephedra (*Ephedra sinica*) is traditionally employed to treat viral and bacterial infections, and also in Western medicine for nasal congestion and asthma. Saw palmetto (*Serenoa repens*) contains an ingredient that has been effective in combating prostate cancer.



(OPPOSITE)

SAW PALMETTO
(*Serenoa repens*).

Fruits of the saw palmetto have been used as a folk remedy to treat tumors, and studies are now under way to test its effect on prostate cancer. In Europe it is widely used as a treatment for benign prostatic hyperplasia (BPH).

(ABOVE)

TURMERIC
(*Curcuma longa*).

The delicate beauty of its flower belies turmeric's power as a spice and medicine. Like its relative ginger, turmeric roots are ground to flavor food. Turmeric has anti-inflammatory qualities, and in cultures where turmeric is used regularly, rates of Alzheimer's disease are significantly lower.



(ABOVE LEFT)
GOLDEN TRUMPET VINE
(*Allamanda cathartica*).

The leaves, roots, and flowers of this vine are used to make a powerful purgative, and the milky sap has antibacterial properties.

(BELOW LEFT)
SHIHU
(*Dendrobium nobile*).

Extracts from this orchid are used as a sedative and to treat fever and dehydration.



(RIGHT)
BETEL
(*Piper betel*).

From a climbing shrub that grows in India and Southeast Asia, betel leaves are used in cooking but also chewed the way gum is. The leaves contain a volatile oil that is a stimulant. It is used to treat respiratory ailments.







(LEFT)

ASPILIA*(Aspilia mossambicensis).*

Chimpanzees in the wild chew aspilia to get rid of intestinal parasites. Animals use plants to “treat” their ailments, and scientists are beginning to study this phenomenon for clues to modern medicines.

(BOTTOM LEFT)

HIMALAYAN YEW*(Taxus wallichiana).*

Interest in medicinal plants underscores the need to conserve plants in the wild, as fewer than five percent of flowering species have been screened for their medicinal value. Also, when a valuable plant is discovered, it is essential to protect it. The Pacific yew (*Taxus brevifolia*), related to this Himalayan yew, was discovered as the source of the anti-cancer agent taxol. A rush on yew ensued in the Pacific Northwest, almost destroying the population of this slow-growing tree. Fortunately, the critical molecule was synthesized in a laboratory, allowing it to be combined with the complex core molecule that is now processed from the needles and twigs of cultivated yew species. This has diminished the demand, thereby saving yews in their native habitat.

(CENTER)

PAPAYA (*Carica papaya*).

Native to the American tropics, papaya has been used in Mexico to treat sunburn, to aid digestion, and to expunge parasites.

(ABOVE RIGHT)

**A RESEARCHER STUDIES
MEDICINAL PLANTS.**



(ABOVE)

MADAGASCAR PERIWINKLE
(*Catharanthus roseus*).

The rosy periwinkle, grown in gardens throughout the world for its profuse blossoms, is a medicinal powerhouse. Complex alkaloids extracted from its leaves are the source for drugs to treat lymphocytic leukemia, Hodgkin's disease, testicular cancer, and childhood leukemia.

