

PLUGGED IN

FUN FOR KIDS

A COOPERATIVE PROJECT OF THE SANTA BARBARA NEWS-PRESS AND THE EDUCATORS' ROUNDTABLE, PUBLISHED MONTHLY TO PROMOTE LEARNING AMONG YOUNG READERS IN NATURAL SCIENCE, HISTORY, TECHNOLOGY AND ART

GET *connected* *connected*

GET CONNECTED WITH THE MEMBERS OF THE EDUCATORS' ROUNDTABLE:

 **Channel Islands National Marine Sanctuary**
805-966-7107; www.channelislands.noaa.gov

 **Santa Barbara Mission Museum**
805-682-4149

 **Santa Barbara Trust for Historic Preservation**
805-965-0093; www.sblhp.org

 **Ganna Walska Lotusland**
805-969-3767; www.lotusland.org

 **Santa Barbara Botanic Garden**
805-682-4726; www.sbbg.org

 **Channel Islands National Park**
805-658-5730; www.nps.gov/chis

 **Santa Barbara Maritime Museum**
805-962-8404
www.sbmm.org

 **Santa Barbara Museum of Art**
805-963-4364
www.sbmuseum.org

 **Santa Barbara Historical Society**
805-966-1601

 **Goleta Valley Historical Society**
805-964-4407; www.goletahistory.org

 **Karpel's Manuscript Library Museum**
805-962-5322; www.karpeles.com

 **Carriage and Western Art Museum of Santa Barbara**
805-962-2353; www.carriagemuseum.org

 **University Art Museum, UCSB**
805-893-2951
www.uam.ucsb.edu

 **Santa Barbara Museum of Natural History**
www.sbnature.org; 805-682-4711;

 **Santa Barbara Zoological Gardens**
805-962-5339
www.santabarbarazoo.org

 **Santa Barbara Contemporary Arts Forum**
805-966-5373; www.sbcaf.org

 **Art From Scrap**
805-884-0459
www.artfromscrap.org

 **South Coast Railroad Museum**
805-964-3540; www.goletadepot.org

This Month's Theme: Trees, Glorious Trees!

Prehistoric Trees

By Connie Buxton, Ganna Walska Lotusland

Ginkgos and Dawn Redwoods are fascinating plants because they are little altered from their prehistoric ancestors, which paleobotanists (scientists who study ancient plants) have traced back millions of years through the fossil record.



The Ginkgo or Maidenhair tree has existed for more than 200 million years. Its origin can be traced to the age of the dinosaurs, well before the first appearance of the flowering plants and trees that we know today. This tree is highly resistant to pollution, insects and infection. Nearly extinct in the wild, the tree would have disappeared off the face of the earth had it not been for the fascination of the Asian people with its healing properties. The Ginkgo

Dawn redwoods are deciduous, meaning they lose their leaves annually. Most redwoods are evergreen; they keep their leaves year round.

was often grown in Chinese temple gardens as a medicinal plant. Ginkgo extract has long been used to improve memory and blood circulation.

Native to Asia, the name "ginkgo" means "silver fruit" in Chinese. The fruit is considered a delicacy in China where they make jams and pastries from it. Ginkgos are dioecious which means that there are separate male and female trees. The fruit, only produced by the female tree, has a strong odor when it starts to decay. The male tree is widely planted throughout the United States.

With only a 100-million-year history, the dawn redwood is a mere sapling compared with a ginkgo. A "living fossil" that has changed little from its ancestors that were on earth 100 million years ago, this tree species was rescued from near extinction in 1941. Like the evergreen redwoods of western North America, the dawn redwoods are large trees that grow to at least 100 feet tall and 25 feet in diameter. The name "dawn" redwood refers to its ancient time on earth . . . since the "dawn" of time. It is one of the most beautiful and interesting trees at Lotusland.



The soft, green, fan-shaped leaves of the ginkgo tree turn bright gold in autumn before the tree loses its leaves. Autumn is a good time of year to see ginkgos at Lotusland.

How Old is That Tree?

By Sally Isaacson, Santa Barbara Botanic Garden

Can you really tell the age of a tree by counting the rings in its trunk? Yes! Here's why. Each year in California there are times when plants grow more quickly and times when they grow more slowly. In the spring, when there is plenty of moisture and sunlight, trees

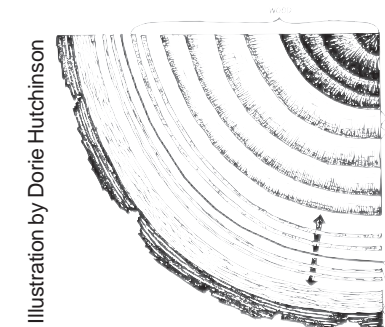


Illustration by Dorie Hutchinson

grow fast and produce big new cells for transporting water and mineral nutrients. During the dry part of the year, plants grow much more slowly and make much smaller new cells. When you look at the cross section of a tree trunk and see alternating dark and light colored rings you are actually seeing dark bands

of small, densely packed cells made during times of slow growth and light bands of large, loosely packed cells made during times when growing conditions were best. This means that each year in our climate a tree trunk adds a light ring and a dark ring. Come to the Botanic Garden and find out how old our huge coast redwood log is down by Mission Creek.

If you ever see a log cut from a palm tree it will be difficult to find out how old the palm tree was because palm trees do not form rings in their woody tissue. Instead, their trunks have many fibers. Palms are not as rigid as oak trees and so they can sway in the wind.

The Wonders of Willows

By Sally Isaacson, Santa Barbara Botanic Garden

Willows are plants that usually grow in wet places. These trees are perfectly adapted to survive flooding as when the water rises they can bend and when water level falls; their branches can spring back up again without breaking. Because they are so flexible, willow branches have been used for centuries in many countries to make baskets, to build furniture, and in the construction of houses. The Chumash house or Ap has a willow frame, the wattle and daub houses of medieval Europe were made of woven branches plastered with mud, and the thatched roofs of cottages of the British Isles were secured with willow branches.

Weaving with Willows: Sculpture from Nature

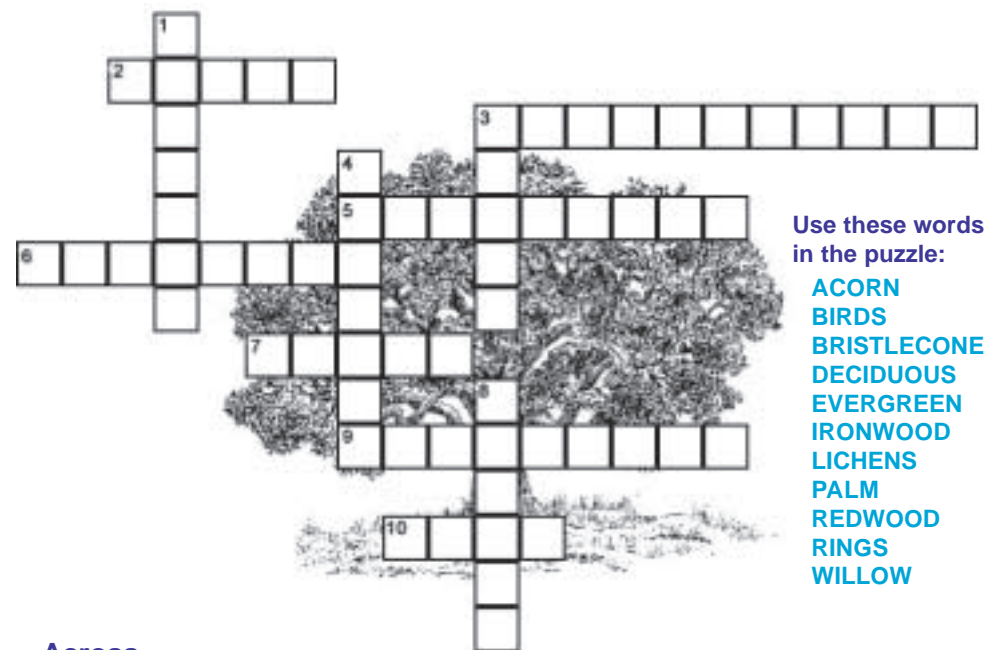
In February 2005, the Santa Barbara Botanic Garden will host a special visitor. We will have Patrick Dougherty, a well-known artist staying with us for a while. Patrick will be working at the Garden to create a wonderful sculpture from the branches of willow trees. Here is a photo of one of Patrick's sculptures called Jug or Naught. Be sure to come see Patrick at work at the Botanic Garden between February 15 and February 25, 2005.



Photo courtesy of Fredric Meijer Gardens, Grand Rapids, MI. Credit: David Ferris

Tree Teaser

By Joan Evans and Sally Isaacson, Santa Barbara Botanic Garden



Use these words in the puzzle:
ACORN
BIRDS
BRISTLECONE
DECIDUOUS
EVERGREEN
IRONWOOD
LICHENS
PALM
REDWOOD
RINGS
WILLOW

Across

2. You can tell the age of an oak tree by counting these in its trunk.
3. A type of pine that grows in the White Mountains in California, it is the oldest tree in the world.
5. A tree that has green leaves all year round.
6. A tree that grows on the Channel Islands and has very hard wood, it is the Santa Barbara County tree called the Santa Cruz Island _____.
7. The fruit of the oak, it is an important food source for squirrels, woodpeckers and jays.
9. A tree that loses its leaves at one time of the year
10. A tree that grow in oasis areas in Southern, California, it has big leaves like fans.

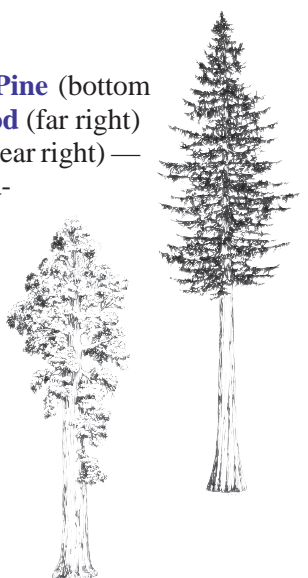
Down

1. These often hang from tree branches or grow on tree bark. They cannot grow where the air is polluted.
3. They build nests in trees.
4. The tallest tree in the world, it grows in foggy coastal canyons of Northern California
8. A tree that grows by streams whose branches are used by Chumash Indians to frame their houses (Aps)

California's Native Trees

By Sally Isaacson, Santa Barbara Botanic Garden

Included among our native trees are the **Bristlecone Pine** (bottom left) — the oldest tree in the world, the **Coast Redwood** (far right) — the tallest tree in the world, and the **Giant Sequoia** (near right) — the tree with the greatest volume in the world. A big reason that California has so many different types of plants is that within our state we have many different climates, huge differences in elevation and a variety of kinds of rock and soil. We have many types of native oak and pine trees. We also have cypress trees, firs, buckeyes, maples, sycamores, willows, cottonwoods, bays and more. Some of our native species are evergreen and some are deciduous. Some California trees have cones and others produce flowers and fruit.




Illustrations by Dorie Hutchinson

"Plugged In" is Sponsored by

SANTA BARBARA BANK & TRUST

 **USDA Forest Service, Los Padres National Forest**
805-968-6640; www.r5.fs.fed.us/lospadres

 **South Coast Watershed Resource Center**
805-682-6113
www.WatershedResourceCenter.org

 **Santa Barbara Public Library System**
805-962-7653
www.sbpilibrary.org