Piñon nuts: Tiny treasures

Wandering through the highlands of New Mexico on the brink of starvation, the early Spanish explorers of the 16th century discovered "gold" in the New World. This newfound treasure was not contained in the mythical Seven Cities of Gold, but in the small brown nuts of the piñon tree.

Like the Rio Grande, the piñon tree has served as a lifeline for New Mexico's wildlife and ancient inhabitants. In earlier times, it was used as a food source, fire fuel and folk remedy.

Today, vendors throughout New Mexico sell the prized nuts, or *piñones*, from their truck beds. Piñon pickers dot the mountainous terrain along northern Interstate 25, painstakingly harvesting the sweet, aromatic nuts from the scales of the cones.

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Plentiful *piñones:* Piñon tree nuts, called *piñones*, are a treat to eat and a cultural mainstay. Merlinda Melendrez of Mesilla found this piñon needle basket at an art show in Ruidoso.

The piñon *(Pinus edulis)*, adopted as the state tree in 1949, is a slow-growing, two-needle species found in Arizona, Colorado, New Mexico and Utah, says John Mexal, tree physiologist with NMSU's Agricultural Experiment Station.

In New Mexico, piñon-juniper woodlands cover nearly 9 million acres, more than 12 percent of the state. The piñon trees are often shrublike, but commonly measure 15 to 30 feet tall. North of Santa Fe, they can grow to more than 50 feet tall, creating a bona fide forest. Crowded piñons can be a curse (see page 20).

Historically, Native Americans of the Southwest made use of nearly every part of the piñon tree. Michael Yazzie, program manager for the Navajo Nation Forest Service, says piñon covers 29 percent of the Navajo Reservation.

"Navajos used the wood to build their hogans and for ceremonial burning," Yazzie says. "The piñon was also a part of a healing ceremony, along with fire."

Rob Yaksich, interpretive ranger for the New Mexico State Parks Division, says archeologists have found piñon charcoal in ancient dwellings dating back 6,000 years.

"The Tewa people of the Santa Clara Pueblo call piñon nuts 'the oldest food of the people of past days,'" Yaksich says. "Piñon timber was used to build the pit houses of Mesa Verde in A.D. 400 to 900"

The nuts were a major source of food for native peoples in New Mexico, often serving as the only food supply during the winter. The Navajo, who call the piñon "cá ´ol," used the wood to build roofs and structural beams for their hogans and boiled the tree pitch with sheep and goat hooves to make glue to cement turquoise onto silver jewelry. The Hopi used piñon as a dye for wool blankets and pottery and melted the pitch to waterproof baskets and glaze pottery.

The tree also serves medicinal and cosmetic purposes. The pollen is used in Native American ceremonies to bless important personal belongings. The pitch is applied to insect bites or cuts as an antiseptic and used as a diuretic. Piñon needles are chewed to relieve stomach cramps and hunger pangs.

The first European to discover the uses of the piñon was Nuñez Cabeza de Vaca in 1535, when he and three shipwrecked crewmates survived by eating nuts. As the decendant of a Spanish general who arrived in New Mexico in 1680, Concesa Bachicha, of Albuquerque, says she harvests *piñones* along the Sandia foothills, continuing her family's 322-year tradition.

"We would gather the *piñones* and break the shells open on the *metate* (grinding stone) and then grind them into a paste in a *molcajete* (mortar and pestle)," she says. "At Christmas time, we would use them in empanadas and other goodies, or just sit around and snack on them and tell stories in the evening."

Many wildlife species in New Mexico have a symbiotic relationship with the piñon. The trees depend on animals, such as squirrels, the piñon jay and the piñon mouse, to spread their tasty seeds.

"These animals store abundant supplies in their caches to eat in the winter," Yaksich says. "Because the seeds are buried in the forest soil, they have a better chance of germination."

People who love piñon nuts must create a stash of their own, since the trees only produce seed once every four to seven years, depending on rainfall and winter moisture. From mid-September to late October, the nuts are harvested by shaking branches with open cones over a sheet or by twisting off the cones. The nuts can then be soaked and roasted with salt or eaten raw. They must be refrigerated or frozen to prevent spoilage.

To properly enjoy piñon nuts, New Mexicans must possess a strong set of teeth and friends to share the wealth of this truly New Mexican treasure.

Melanie Dabovich

101 ways to kill a tree

John Mexal walks into the classroom with a fierce look in his eyes, wearing a shirt proclaiming him "Dr. Death." He tells the horticulture students that he is a professor of tree necrology and that he takes a professional approach to killing trees.

"Tree necrology is getting so popular, it's no longer just a New Mexico tradition," he says. "Now it's a Southwestern tradition." He proceeds to prove it by showing the students a tongue-in-cheek slide show he's compiled of dead trees shot in several Southwestern states.

One slide showing a potted tree with roots wrapped tightly around each other flashes on the screen, and he laughs with glee, saying, "Here's a wonderful example! I just want to show you some of the best methods to kill trees."

A student raises his hand and asks hesitantly, "What could have been done to prevent the roots from curling like that?"

Mexal, an NMSU horticulture professor, begins to answer the question, then remembers to stay in character. "I don't want to prevent it! I want to kill it!"

Mexal began using this reverse psychology in horticulture classes a few years ago, but it wasn't always successful. "The first time I gave this talk to one of my classes, it was a disaster because they thought that I was serious," he says.

Mexal has presented the lecture, titled "101 Ways to Kill a Tree," to Master Gardener classes, tree and forestry councils and turf grass associations as far away as Las Vegas, Nev.

"This talk came out of a lecture I did on basic root structure and function that I thought was boring," he says. "I came across an annual report from Berkeley, and an old forester there had given a talk on killing trees in forestry operations. So I thought this might be a better way of presenting the information, and I've refined the talk over the years."

Students learn what *not* to do when planting and caring for trees by watching the disastrous results presented in the slide show. Mexal shows ailing trees that may be 20 years old, but explains how they were doomed to die from the beginning, because they were planted too deeply, too shallow or too close to a building.

The students seem to appreciate Mexal's sarcastic twist to basic lessons, judging by the rush of questions and comments he gets after shedding the Dr. Death persona. After the lecture, he tells them they have earned the right to use the Dr. Death motto in their own businesses: "We want to maintain your trees in the worst possible way."

Anna María Pérez-Wright

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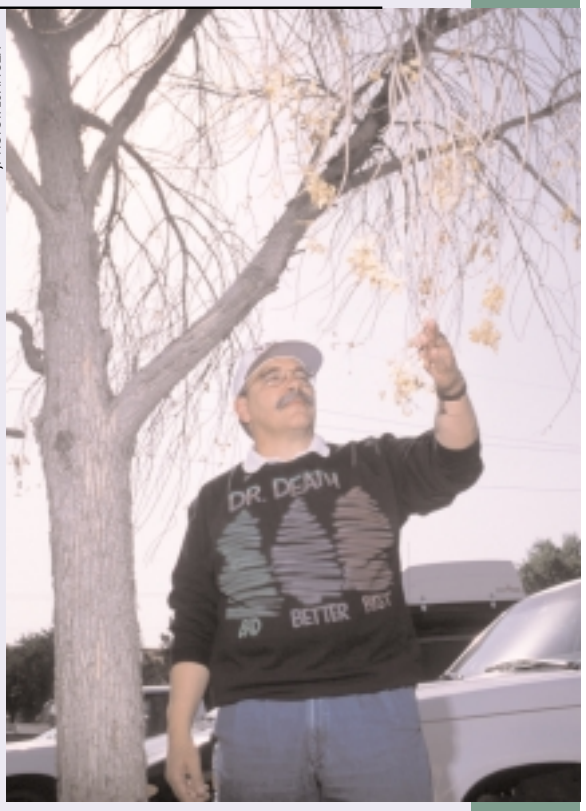

Dr. Death: NMSU horticulture professor John Mexal uses an unusual teaching technique to show students what *not* to do when it comes to growing healthy trees.

Soaring sequoias

When Tami Soto and her husband bought their home in Albuquerque's Northeast Heights 12 years ago, they had a 50-foot giant sequoia growing in their backyard. But they didn't know it.

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Skyscraper: A 50-foot giant sequoia in Albuquerque's Northeast Heights towers above Extension horticulture specialist Curtis Smith. The sequoia, growing in homeowner Tami Soto's backyard, was planted about 30 years ago.

"We thought it was a cork tree, but it was so tall that it caught people's eyes as they drove by, and a few years ago some passersby stopped to see it," Soto says. "That's how we found out it's a giant sequoia."

The huge coniferous tree was planted about 30 years ago as part of an erratic effort by homeowners and some nurseries to establish sequoias around Albuquerque, says Curtis Smith, horticulturist with NMSU's Cooperative Extension Service.

Native to the western slopes of California's Sierra Nevada, giant sequoias there are the largest living organisms in the world. Many trees in the Sequoia National Park in California stand nearly 300 feet tall and have trunks more than 30 feet in diameter.

Smith and George Duda, an urban forester with New Mexico's State Forestry Division, are now working to establish giant sequoias as part of a new project involving NMSU's Master Gardeners in Bernalillo County and some homeowners in the East Mountain area.

"The sequoias are famous for size and longevity. Many live more than 2,000 years," Smith says. "That fascinates people, which helps us get homeowners interested in planting them."

Apart from their beauty, sequoias are drought tolerant and adaptable to a wide range of soils and temperatures, allowing them to grow well in New Mexico, Smith says.

"People are always intrigued by exotic trees like giant sequoias, and that fascination is an important aspect of urban forestry," Smith says.

"Experimenting with a range of species helps diversify the trees people grow, and we want to encourage that."

Diversity also helps prevent accumulation of too many of one species. "Gardeners need to avoid monoculture, because it increases the chance of losing trees to insects, diseases and weather," Smith says. "Diversity helps assure that some trees will survive."

Promoting tree diversity is crucial in Albuquerque, where a 1995 city ordinance banned all new plantings of juniper, mulberries, cypress, elms and most poplars to cut down on pollen related to allergies, Duda says. That led to a lot more green ash trees in the city, which are now under attack by bark beetles and borers.

"Diversity makes it harder for the insects to find ash trees," Duda says.

About a dozen giant sequoias survived in Albuquerque from the early plantings decades ago, but many were cut down. "They were planted too close to power lines," Smith says. "People just didn't realize how big they would grow."

Master gardeners who have enough space in their yards have planted about 45 sequoia tree seedlings. About 200 more are on order from California.

Some of the trees already are growing rapidly, such as three that Bertha Wirtz, a master gardener in the Northeast Heights, planted five years ago. The seedlings were 22, 24 and 27 inches when she planted them, and now they are 4, 5 and 7.5 feet, respectively.

"I love unusual things, and that's part of the fun of gardening," Wirtz says. "Besides, as you get gray hair, you want fast-growing plants, like the sequoias."

Kevin Robinson-Avila

Forest fundamentals

A week in the woods at New Mexico Forestry Camp gives more than 60 teens a cross-section of adventuresome lessons about natural resources.

"It's a week to get away from society and technology and learn a new way of finding excitement," says Josh Fleming, a counselor and former camper from Albuquerque.

At Rancho del Chaparral Girl Scout Camp in the Jemez Mountains near Cuba, campers learn to identify pines, aspens and oaks on Monday's four-hour hike. On Tuesday, they take water samples from the Rio de las Vacas, listen to coyote and turkey calls, and practice foiling poachers at a mock crime scene where they make plaster casts of handprints left behind.

Wednesday's in-depth field trips allow campers to see areas damaged by the Cerro Grande Fire, visit an old logging camp or explore geologic formations. In 1999, campers helped mark trees for removal to create a protective fire buffer zone around the camp.

By Thursday, campers are ready to explore careers by delving into archeology at a dig site or practicing their first aid skills on a search and rescue assignment. Afterward, they try out the logging skills they've learned in a Forestry Conclave, competing in events such as the hatchet throw, caber (log) toss and squirrel run (obstacle course with logs).

The week concludes with Friday's knowledge bowl, which has a format similar to *Jeopardy*, allowing campers to surprise themselves and onlookers with what they know.

"They learn a lot of ecology and botany," says Bob Cain, forest entomologist with NMSU's Cooperative Extension Service, a camp organizer who teaches a session titled "Bugs, Rot and Biodiversity."

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Identifying features: Extension forest entomologist Bob Cain, right, reviews identifying characteristics of a tree species with eighth-grader Kayla Roberts of Capitan and ninth-grader Shawn Madrid of El Rito at the FFA forestry competition.

Ultimately, organizers hope that campers will remember both the fun and science-based approach of Forestry Camp as they have input into managing natural resources.

The impetus for the camp came from Betty-Jane Curry and Peggy Ohler, members of the Cuba Soil and Water Conservation District, who wanted young people to have a better understanding of how and why resource management decisions are made. Local soil and water conservation districts across the state provide scholarships for campers.

Since 1989, Forestry Camp has been an annual event, cancelled only because of extreme fire danger in 1996, 2000 and 2002. "We'll be back. Forestry Camp is one of the highlights of the year. Long days, hard work and no sleep. It's so much fun," Cain says with a laugh.

Teens who can't make it to the mountains can increase their forestry knowledge through FFA's forestry contest, one of 19 competitions during career development events in Las Cruces.

The FFA competition involves a field practicum where students measure tree height and diameter and use a compass to locate specified trees and pace off the distance between markers. In the second phase of competition, participants identify 20 different tree species and 20 pieces of forestry equipment. Winning teams have advanced to national competition in Louisville, Ky.

"We'd like to evolve to be more like the national contest, which is very difficult because it's conducted in the actual forest," says John Mexal, an NMSU horticulture professor who coordinates the state event.

But Cain, who conducts the identification test, has noticed an interesting trend in New Mexico. "The teams from eastern New Mexico, who are nowhere near a forest, had more passion for learning about mountain species and had the highest scores," he says.

That kind of enthusiasm is what educators hope to nurture through the camp and contests.

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