



Volume 12, Number 2 Spring 2013  
Your Nature Center in Los Alamos

## Nature Notes

### Roadrunner Strategies

By Rebecca Shankland

Behind the comic-book reputation and crazy haircut, the roadrunner hides a trickster personality, shrewdly earning a living through sneak attacks. His resilience and patience is amazing, as we've learned watching him from our dining room window.

Perhaps some of you thought of this bird as a seed- or berry-eater. Over the years his true carnivorous nature has been amply demonstrated—we've seen him eat a frog, a goldfinch (pluck the feathers before eating, thanks), and a mouse. He has a number of strategies.

**The Air Attack:** We watched the roadrunner hide in a juniper tree between the thistle and the hummingbird feeder (see photo 1). He is a master of disguise, a brown-spotted statue that occasionally springs to life in a flying assault on a feeding hummingbird. So far, we've never seen him succeed.

**The Low-lying Lurk:** Here he flattens himself along the ground below the bird feeders. He restrains himself from the usual tail- and crest-

flopping that is his signature comic activity. Eventually an inattentive bird approaches and the roadrunner grabs for it—and thus we have one less Lesser Goldfinch to admire.

**The Nonchalant Stalk:** Twice I've seen a roadrunner and a rock squirrel regarding each other curiously. They seemed to stalk each other around a cholla cactus several times before calling it a draw.

**The Prehensile Probe:** Friends who were house-sitting observed the roadrunner full of agitation. After carefully examining the spaces under a flagstone step for some time, he squeezed beak, head, neck, and shoulders under the step and emerged with a mouse (see photo 2). Before gobbling it whole, he bashed it against the stone a few times.

Rather more endearing is the roadrunner's current behavior—for two years now, we've heard him sing a spring tune from our rooftop. It's a soft, plaintive, pleading song, like a mourning dove running down a few notes of a scale. Here his strategy seems to be begging for attention, as if to say "Poor me." We hope his strategy succeeds in attracting a female to the neighborhood and producing a little family of comical carnivores.

## Monarch Butterfly Watch



By Dorothy Hoard

New Mexico's butterfly guru, Steve Cary, has initiated a program to track monarch butterfly travels in the state. Monarchs have been migrating for millennia, but the migration routes are being disrupted by habitat destruction. A few monarchs are spotted in the Los Alamos area each year, usually July through September. We can be an important data point because of our elevation. A good "record" should include the following information:

- photos, if possible,
- date, time, location (as specifically as possible),
- the number seen, weather (fair, overcast),
- gender of adults seen (if possible: see [www.monarchwatch.org/biology/sexing.htm](http://www.monarchwatch.org/biology/sexing.htm)),
- any interesting behaviors,
- name of observer.

Report to Dorothy Hoard ([dorothyh@swcp.com](mailto:dorothyh@swcp.com) or 662-2662). ☼

## Monarch Butterflies Look for Milkweed

By Dorothy Hoard

Monarch butterflies are known to be attracted to milkweed, but there are several species, so which should we plant? I suspect that butterfly weed, *Asclepias tuberosa*, is the only one sold in nurseries, although showy milkweed, *A. speciosa*, may be.

Our other native milkweeds prefer damper soil than is common. They are also weedy and tend to have a lot of alkaloids, so they are more poisonous. Naturally, monarchs prefer the latter. PEEC volunteer Natali Steinberg has a *tuberosa* in her garden and Selvi Viswanathan planted one in PEEC's butterfly garden. ☼

## A New Focus on Butterflies

A new PEEC interest group is forming, this time about butterflies. Watch for announcements in *PEEC This Week* and the web site: [www.PajaritoEEC.org](http://www.PajaritoEEC.org).

Also, Dorothy Hoard will be using the web site to help us identify butterflies. Her page is coming soon and will be called, "What's Flitting Now?"

Here's how to learn about our current interest groups:

- <http://pajaritoeec.org/outreach/birding.php> (birding),
- [http://pajaritoeec.org/outreach/wild\\_plants.php](http://pajaritoeec.org/outreach/wild_plants.php) (wildflowers),
- <http://groups.yahoo.com/group/peecfamilynature/> (nature activities for families)

## You Know It's Spring When The Flowers Bloom

By Teralene Foxx

I always have a sense of excitement when I see the first flowers of spring. Winter, with its heavy coats, fireplaces burning, and hot chocolate--is over and the freedom of walking along a trail in shirt sleeves is here. It is the start of the growing season, buds start popping, brown grass is greening. Spring is a time of discovery and *aha* moments. Two of my favorite spring flowers are the pasqueflower and the Easter daisy. They lift my spirits.

**Pasqueflower:** In late March or early April, the purple blooms of a pasqueflower emerge in sunny spots in the ponderosa pine forest and provide an *aha* moment when they come into view along a trail. The plants are generally found in small colonies that brighten the landscape.

The pasqueflower (*Pulsatilla ludoviciana*) has a wide distribution throughout the northern latitudes. In the Los Alamos area, it is commonly found in the ponderosa pine forest. It is sometimes called a "crocus." This is a misnomer applied by early settlers because the flowers emerged in the spring and

reminded them of true crocuses. A true crocus is in the lily family (Liliaceae), but the pasqueflower is in the buttercup family (Ranunculaceae).

The hairy flower bud emerges from the ground before the fuzzy leaves appear. The purple sepals open to reveal bright yellow stamens inside and the blossoms are a striking contrast to the dry landscape. The flowers open in the sunshine and close in the evening or cloudy weather.



*Pasqueflower*

These plants are long-lived perennials with thick woody taproots that can't grow among dense vegetation. Studies have found that pasqueflowers can be stimulated by forest fires or slight disturbances that reduce the surrounding vegetation, thus enhancing the germination and growth of the plant.

**Easter daisy**, sometimes called the “stemless Townsend daisy,” (*Townsendia exscapa*) is found at the lower elevations of the Pajarito Plateau. This little white flower hugs the ground closely and is a wonderful surprise in the early spring of the pinon-juniper zone.

Easter daisy has no stem, and whole plants are less than two inches tall. Leaves are all at the base of the plant, narrow with short hairs giving the foliage a gray appearance. Flower heads are large relative to the overall size of the plant. The flower is white (ray flowers) with golden centers (disc flowers).

The generic name is dedicated to David Townsend, a Pennsylvania botanist. There are about 20 species in this western North American genus. The specific

name *exscapa* means “without a stem” in botanical Latin.

*Photos by Teralene Foxx*

*Easter daisy*



Note: remember to see *Nature Notes* in color on the PEEC web site: [www.PajaritoEEC.org](http://www.PajaritoEEC.org), in “Publications.” ☼

## A Memory of a Tree Swing

By Michele Altherr

A tree swing can be a very impromptu thing. A knot on the end of a long rope will do just fine to skim across the top of a pond. An old tire from your grandfather's truck will spin you round and round. A cast-off board and a couple of ropes will equip you with a perch in the shade. On a swing you can feel the lightness of flight, see the colors of nature in a blur, and hear the calmness inside you. This summer enjoy the simple pleasures of a tree swing.

## The Swing

By Robert Louis Stevenson

Up in the air and over the wall,  
Till I can see so wide,  
Rivers and trees and cattle and all  
Over the countryside-  
Till I look down on the garden green,  
Down on the roof so brown-  
Up in the air I go flying again,  
Up in the air and down!

☼

## The Best Swing in a Tree

*Note: information in this article is from arborist Laural Hardin. Watch for her classes at PEEC.*

*Additional source: [www.ncforestry.org](http://www.ncforestry.org)*

A swing in a tree is a treasure. Not only is it a special experience to swing under a living thing and see the sky between branches and leaves, it is often hard to find a suitable branch in our local trees. The branch should be level, probably on a deciduous tree, and it should be at a right angle to the trunk of the tree. For a small child it needs to have a diameter of 12 inches, with 14 or more inches for a fourth or fifth grader. Older folks probably need to look at playground equipment.

Be aware that tying anything around a tree branch or trunk is bad for the tree. It can be unsafe for humans, too, so there are methods for making a swing perhaps safe for the tree and definitely safe for the swinger. A search on the web can find much advice that isn't good at all if we want the tree to live. Arborist Laural Hardin has these instructions.

Cut lengths of an ordinary old garden hose. String the swing's rope through the pieces of hose. Under



*A split log made a bench at PEEC's Earth Day and the layers of the trunk were easy to see.*

*Photo by Esta Lee Albright*

the branch, tie the rope back on itself. Now there is the cushion of the hose where the rope touches the branch. With a level branch, slack at the tied point is fine, and it's good if the rope is not flush under the branch. Then examine the swing and branch at least every season; more often is better. Avoid the hose/rope making a groove in the branch. It's important to check the bare rope, too, and take care of any worn spots. For the good of trees and people, remember this: anytime you tie anything onto a tree, set it but don't forget it.

Why do things hanging or tied around trees make arborists shudder? Consider the structure of the trunk and branches of a tree. The outer layer is bark, a protector. Next are the important layers of cells that carry nutrients to the whole tree and are particularly vulnerable to damage from cutting and tying: the phloem, cambium and xylem. The heartwood, at the center, is dead wood. It supports but carries no nutrients.

The phloem, or inner bark, is a food supply line, carrying sap (sugar and nutrients dissolved in water) from the leaves to the rest of the tree. Depending on the species, the phloem may be only one-fourth of an inch thick. The cambium layer is next, only one cell thick. It creates the other two layers of cells under the bark, the phloem and the xylem. The xylem, or sapwood, is a layer of thick-walled cells that brings water and nutrients up from the roots to the rest of the tree. All three layers just under the bark are vulnerable to wounds from cutting or tying. The health of the narrow outer layers of the trunk spells life or death to the tree. As with most living things in nature, a tree is a complex system causing wonder and pleasure, and warrants respect. ✨

## A Few Earth Day Experiences

By Sue Watts

For me, one word describes PEEC's Earth Day celebration...JOY!

The softly joyous sounds of the Camino de Paz

School marimbas, punctuated by the soft bleating of the baby goats filled the air at the muddy end of the celebration with magic and life. The Hill Stompers had us dancing in place and stomping on our own hill. Clan Tynker's wry wit and juggling brought us laughter. A blissfully content seven-year-old carried a bunny he introduced as Mr. Flufferpockets.



*A child walks like a wolf, blindfolded, depending on her senses to travel along the wooded path marked by the rope. She senses sound, heat, cold, and the proximity of people and objects, all enhanced by her lack of sight. Her feet adjust to the uneven ground and tell her about the earth.*

*Photo by Esta Lee Albright*

At the mud kitchen, a mud-smearred little one of 18 months kept trying to creep up the hill of dirt toward the big kids, while another methodically stuffed adobe mud into a form shaped like an adobe brick. They had the cheerful encouragement and careful attention provided by the folks of Cornerstones Community Partnerships. At one point, a pair of pink glittery slippers sat abandoned in a patch of mud. For a time, a small paper flag flew from the top of the dirt hill while two six-year-olds excavated a crevasse in the side.

Parents stood or watched from the bench while they swapped stories of time spent in the creeks, woods, and swamps of their childhood. One told me he hadn't realized childhood could be that much fun.

More adults tried to “walk like a wolf” this year, while a four-year-old followed the rope both ways.

And that was just from my limited view in “the back forty” at the far west area. From afar, I could see the cheerful interactions happening all over the place.



## PEEC Advisory Board Student Wins Science Contest

Amanda Mercer is a high school student and member of the PEEC's Student Advisory Board. We're proud to learn that this spring she won the New Mexico Academy of Science Paper Competition. Next she will present her paper at the American Junior Academy of Sciences (AJAS) meeting next February in Chicago. One student from each state is invited to represent the state's Academy of Sciences. Her abstract will be in the journal of the American Association for the Advancement of Sciences.

With regard to PEEC's mission, Amanda writes, “My interest in nature is finding out why and how natural things occur the way they do. I am fascinated by the marvelous works of nature. You can learn so much about the world around us by simply going outside and taking a hike. I prefer to learn about nature through experience and interaction with the environment.”

Below is the abstract of Amanda's prize-winning paper, *Tautochrone Time*.

**Problem:** The tautochrone problem is one of the earliest to be solved using calculus. The problem is to find a curve down which a point placed anywhere will slide to the bottom in the same amount of time. Christian Huygens, a clockmaker, first solved this problem in 1673, and the curve he discovered is a cycloid. I want to confirm this discovery using modern calculus, numerical methods, and physical measurements of a cycloid-path pendulum. **Hypothesis:** The period of a cycloid pendulum is independent of amplitude, so it is a tautochrone.

Procedure:

1. Use modern calculus methods to find the period of a cycloid pendulum and demonstrate that this period is independent of amplitude.
2. Use numerical methods to find a tautochrone shape without prior assumption, then compare to a cycloid.
3. Construct a physical cycloid pendulum and test whether the period is independent of amplitude. Try the same for a simple circular pendulum.

Data/Results: Using only first-semester high school calculus, I was able to recreate the proof that a cycloid is a tautochrone. The numerical method for finding a tautochrone curve also produced a cycloid shape. My physical measurements confirmed my hypothesis: the cycloid pendulum's period varied by only  $\pm 0.045\%$  over the full range of amplitudes. The circular pendulum's period varied by  $\pm 2.8\%$  over the same range.

Conclusions: A cycloid pendulum is a tautochrone; unlike the simple circular pendulum, its period is independent of amplitude. ✧

## LEAP Gets a Makeover This Summer

By Beth Cortright

The Living Earth Adventure Program (LEAP) is getting a little makeover for this coming summer! LEAP is open to students entering 7<sup>th</sup> and 8<sup>th</sup> grades in fall of 2013. This program fits well into PEEC's mission – to go outside and learn about our special landscape.

We (Tony Hinojosa and Beth Cortright) are working together to make LEAP 2013 an unforgettable experience. Planning started by looking only at the name of the program to guide a brainstorm. Here's what we discovered:

The first word: **Living**

We want to show participants the amazing abundance of **life** on the Pajarito Plateau and teach them that living alongside that life is an uncommon privilege. We decided on a service-learning project that will lend a sense of respect for the animals and plants in the Los Alamos area. We will be helping the Wildlife Center in Española, getting a behind-the-scenes tour of the facility and the animals they rehabilitate there. In addition, we'll be living close to the earth during our overnight camping trip.

The second word: **Earth**

The **earth** is a pretty hefty subject. We decided to focus a portion of the week on earth sciences, geology, and geography. The group will spend a day exploring the geologic history of the Jemez Mountains with experts. Kids will use GPS devices to find hidden geocaches. Technology is quickly becoming a huge part of children's interactions with nature. We intend to have a good balance of utilizing technology devices and introducing more primitive skills.

The third word, and perhaps our favorite part:

**Adventure**

Tony led the Pajarito Mountain Freeride (competitive ski and snowboard) Team to multiple competition levels last winter. Beth goes rock climbing, caving, and backpacking. We both lead outings for PEEC and enjoy outdoor recreations. So naturally, we want to share our passion for responsible, enjoyable outdoor activities, especially the ones that involve **adventure**. LEAP will include a day of rock climbing, an overnight camping trip, and river rafting.

Everything we have planned is connected; we'll discuss geology while rock climbing, geocaching, and orienteering to reach our outdoor destinations. We'll

encourage the kids to live in the moment, taking in all there is to experience around us during our adventures. The schedule for LEAP 2013 really speaks to the foundations of the program and we can't wait to get started!

Note: to register for PEEC's summer adventure programs, contact the center at 3540 Orange Street, email [center@PajaritoEEC.org](mailto:center@PajaritoEEC.org), or call 662-0460.

Enrollment at press time was the following:

*Medicine Hawk's Survival Basics*, June 6-9, for adults and families with children 12 and older, a new overnight program: spaces available.

*Nature Odyssey, Wet'n Wild Along the Rio Grande*, and *Nature Odyssey. Valles Caldera*: full.

*LEAP*, June 17-21, 7th-8th grades: spaces available. ✧



## Why Are You a Member of PEEC?

By Katherine Watson, PEEC's Executive Director

People join PEEC for lots of reasons. Some like the discounts on classes and gift shop purchases, enjoy attending our "Free to Members" programs at no cost, or want to join one of our active interest groups. Some people are given a gift membership or join from afar because a loved one is involved with PEEC. And some join because they believe in our mission (*enriching people's lives by strengthening their connection to our canyons, mesas, mountains and skies*) and want to support the work we do that connects people with nature. Some join for a combination of all of these reasons.

Why did you join? And why do you continue to be a PEEC member? We value everyone who is involved with PEEC, whether you're one of those who comes to programs every week but never joins, or one who never comes to programs but pay your membership dues faithfully year after year. Of course, most PEEC supporters fall somewhere within that spectrum! We hope that you find the benefits (such as the issue of *Nature Notes* that you're reading right now) and the sense of community are valuable in your life.

We just recently launched a membership drive to invite more people to join PEEC. You can help by encouraging your friends to join you in becoming a PEEC member, or by giving gift memberships to PEEC. With Summer Family Evenings coming up in June and July (all of which are free to members), it makes a great non-commercial gift alternative for a kid (and his or her family) in your life and thoughts.

You also can help by dropping me an e-mail at [director@PajaritoEEC.org](mailto:director@PajaritoEEC.org). Why did you join PEEC, and what keeps you as a PEEC member? Is there more that we can do to make your membership even more valuable to you? I'd love to hear your ideas.

P.S. Did you know that your PEEC membership brings you reciprocal benefits (like free admission, or discounts on gift shop purchases) at nature centers around the country? See details at: (<http://www.natctr.org> –click on "ANCA Membership Reciprocal List on the right) and stop by PEEC before your next trip to pick up a printed membership card. ✨

## Family Nature Interest Group

The PEEC interest group with a focus on family nature activities resides at

<http://groups.yahoo.com/group/peecfamilynature/>

It will be the place to talk about where to meet for Green Hour Hikes this summer and to plan activities in the future.

Katie Watson is moderator as group members post messages to be shared among all. ✨



**PEEC This Week:** weekly e-mail alerts about classes, events, nature and the environment. Anyone who has an e-mail account can receive them. To sign up, go to the website [www.PajaritoEEC.org](http://www.PajaritoEEC.org). This weekly news always includes PEEC activities and local information about nature. You also can contribute appropriate notices.

**Nature Notes** is the quarterly newsletter of the Pajarito Environmental Education Center, Los Alamos, New Mexico 87544

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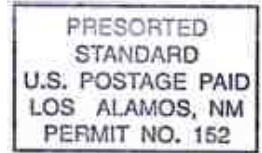
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*Enriching people's lives by strengthening their connection to our canyons, mesas, mountains and skies.*

**Joining or Renewing Is Easy!**

Fill out this form and mail it in with your check or go to the website [www.PajaritoEEC.org](http://www.PajaritoEEC.org). Do it today! Thank you.

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