



New Mexico Orchid Guild Newsletter

July 2017

Our next regular meeting will be:

July 2nd at 1:30pm

Albuquerque Garden Center, 10120 Lomas
Blvd NE

*(Just West of Eubank on the South Side of
Lomas in Los Altos Park)*

As usual, please bring something to share.

Healthy snacks are appreciated



July Program: Ice Cream Social

Bring some homemade (or storebought) ice

Members are encouraged to wear their membership badges

cream, toppings or root beer to share!

Please bring ice cream scoops to serve. NMOG will provide bowls, spoons and napkins

From the President's Desk:

July 2017

On June 11th we welcomed Brenda Oviatt of Botanica Ltd. in Missoula, Montana. Her presentation on African angraecums touched not only on these diverse plants but Madagascar and the conservation challenges facing that country. She brought a welcome wide variety of sales plants offering something for everyone.

July 2nd will be our annual ice cream social. No “official” program is planned but we will have show and tell and some very nice plants for sale. Please bring your favorite ice cream (homemade or store bought), toppings, root beer for floats or some cookies and an ice cream scooper. NMOG will furnish the cups, bowls and spoons. We have three freezers available and will have ice tubs so the home made treats don’t become soup! This should be fun.

Save the date: August 13th our guest speaker will be Ron Midgett, NMOG member and owner of New Earth Orchids in Santa Fe. Ron is one of our favorite speakers and we welcome his return. He always brings us some really special sales plants. His topic will be announced soon.

Join me in welcoming our newest members: Bonnie Carr, Frannie Gaede, and returning member Kathy Roman. Seek them out, introduce yourself and make them welcome in the NMOG family.

Sean Houtman has been serving as both our hospitality chair and transporting our library for librarian Ana Benscoter. New member Harriet Engle has volunteered transport our library to the meetings and Kelly McCracken will add hospitality chair to her numerous guild responsibilities. Thanks to both of you.

For several years Jane Nagel has been responsible for procuring, preparing and transporting supplies to our monthly meeting. Beginning in July Sean will assume responsibility for supplies. Thanks, Jane for your years of service.

In the interest of moving our meetings along the Board finds it necessary to clarify some points relative to the show and tell portion. When you talk about your plants, talk about why this orchid is unique, and keep the information relevant to what others in the club may be interested in. Did you have a special trick to bloom it? Did you water it in an unusual way? Did it bloom out of season? Does it have a funny name?

Members are less interested in details of things such as how many leaves it has grown or how many buds it has lost etc. We are more interested in general culture notes, interesting tips, or perhaps an unusual and interesting fact about the plant.

Please try to keep your comments brief, as show and tell can take a long time. We

ask you to limit your comments to 2 minutes per plant. If you have a recent acquisition, please place it in the non-competitive. You may have plants in both non-competitive and one judged category.

The limit is 3 plants, judged or not. Thanks for your understanding and cooperation.

Thank you to new member Joanne Fine for her donation to NMOG in memory of Margaret Ann Abbott.

See you July 2nd

Keith

NMOG Website: <http://www.nmorchidguild.org/>

American Orchid Society Website: <http://aos.org>

June Show and TellPhotos



Advanced Division--First Place
Dendrobium aggregatum
Daniel Perry



Advanced Division -- 2nd Place
Paphiopedilum Magic Lantern
Jane Cole



Advanced Division -- 3rd Place
IncoDom Popcorn 'Highland'
Daniel Perry



Intermediate Division -- First Place
Matthew Polmanter
Dendrobium Little Atro



Novice Division -- First Place
Matthew Polmanter Phalaenopsis NOID

The Botanists' Last Stand: The Daring Work of Saving the Last Samples of Dying Species

Steve Perlman doesn't take Prozac, like some of the other rare-plant botanists he knows. Instead, he writes poetry.

Either way, you have to do something when a plant you've long known goes extinct. Let's say for 20 years you've been observing a tree on a fern-covered crag thousands of feet above sea level on an island in the Pacific. Then one day you hike up to check on the plant and find it dying. You know it's the last one of its species, and that you're the only witness to the end of hundreds of thousands of years of evolution, the snuffing out of a line of completely unique genetic material. You might have to sit down and write a poem. Or at least bring a bit of the dead plant to a bar and raise a beer to its life. (Perlman has done both.) You might even need an antidepressant.

"I've already witnessed about 20 species go extinct in the wild," Perlman says. "It can be like you're dealing with your friends or your family, and then they die."



Perlman gestures towards a *Wilkesia gymnoxiphium* in bloom. Better known as iliau, it's a rare species of flowering plant in the sunflower family found only on the island of Kauai in Hawaii (Zoë Schlanger)

Perlman tells me this as we drive up a winding road on the northwestern edge of Kauai, the geologically oldest Hawaiian island. Perlman is 69 with a sturdy build and white hair. That's been enough to last him 45 years and counting on the knife's edge of extreme botany.

The stakes are always high: As the top botanist at Hawaii's Plant Extinction Prevention Program (PEPP), Perlman deals exclusively in plants with 50 or fewer individuals left—in many cases, much fewer, maybe two or three. Of the 238 species currently on that list, 82 are on Kauai; Perlman literally hangs off cliffs and jumps from helicopters to reach them.

Without him, rare Hawaiian plants die out forever. With him, they at least have a shot.

Though now, due to forces beyond Perlman's control, even that slim hope of survival is in jeopardy. Looming budget cuts threaten to make this the final chapter not only in the history of many native Hawaiian species, but in the program designed to keep them alive.

“If your house is on fire, you run in and grab the kid.” The silver lining: even if a species does go extinct in the wild, chances are Perlman has already collected enough seeds and genetic material before the last plant disappeared to grow others in a greenhouse. Extra seeds are shipped to a seed bank, where they sit, dehydrated and chilled, awaiting a more hospitable future. There may not be a viable habitat for that plant now, but what about in 50 years? Or 150? “Part of it is saving all that genetic information,” he says. “If your house is on fire, you run in and grab the kid.”

Most people probably wouldn't speak about obscure threatened plants with this much regard. But we don't necessarily know what we're losing when we let a plant species die, Perlman says. Could it have been a source of medicine? Could it be supporting a food chain that will come tumbling down in its stead? Our foresight on this kind of thing has been abominable so far; one only has to look at what happened when wolves were driven out of Yellowstone National Park, only to cause a massive boom in the newly predator-free elk population, which in turn ate every plant and baby tree in sight, starving bears of their berry supply, birds of their nest sites, and bees of flowers to feed on.

Extinction isn't always forever

Perlman is buoyed by his successes—like the Vulcan palm, which he literally brought back from the dead. The short, Dr. Seussian-looking tree is best described by its nickname: “cabbage on a stick.” There were around 150 left on Kauai when Perlman began his collection, and he knows of only one left in the wild.



The vulcan palm, better known as “cabbage on a stick,” growing in the nursery at the National Tropical Botanical Garden on Kauai, Hawaii. There is only one plant of this species left in the wild. (Zoë Schlanger)

As is the case with most of Kauai's native plants, everything was against the vulcan palm: It was specially adapted to be pollinated by the extremely rare fabulous green sphinx moth (its real name), and was eaten to the brink of extinction by wild goats and pigs introduced to the island, a common story in this part of the world. But by the time the last few vulcan palms were decapitated by hogs, Perlman's seed collections, sent out to botanical gardens, had resulted in thousands of greenhouse seedlings. Now, he says, hundreds of thousands of vulcan palms are grown and sold in Europe as popular ornamental houseplants. I wonder for a moment how many gardeners in Belgium know about the life-or-death drama behind

the strange little tree on their windowsill.

Hawaii is losing plant species at the rate of one per year, when it should be roughly one every 10,000 years. As we drive, a precipice on one side of the road plunges several thousand feet down, opening into a canyon covered in pale greens. “I used to be able to see the white of the hibiscus down in the valley. Now it’s just silk oak,” Perlman says, referring to the silvery-leaved invasive tree species spread by seed planes in the 1930s in a nearsighted attempt to fortify the native forest below. (Foresters at the time felt the native open-canopy environment looked a bit too sparse.) It’s just one of the many instances of misguided human attempts to introduce “useful” species to Hawaii, and every story like it ends the same way: the native species, evolved over hundreds of thousands of years, get choked out or eaten in a matter of decades. Hawaii is losing plant species at the rate of one per year, when it should be roughly one every 10,000 years. The Prozac begins to make sense to me.

Through constant tending, the PEPP program has managed to stave off any new extinctions on Hawaii in the last few years. “But if we lose PEPP, we’d go back to that,” Perlman says. The math is pretty simple.

As we ascend, fog envelopes the old minivan, and soon the thick vegetation outside the window becomes a wet, green smudge. Perlman parks the van and walks out, striding until the tips of his work boots hang over the edge of a cliff covered in ferns, with small palms sticking out at odd angles, poking through the mist. It’s green in every shade for thousands of feet down. He’s rappelled down this particular cliff face more than once.

Everything was beautiful, and nothing hurt

Every native plant on Kauai is an insane stroke of luck and chance. Each species arrived to the island as a single seed floating at sea or flying in a bird’s belly from thousands of miles away—2,000 miles of open ocean sit between Kauai and the nearest continent. “We think...probably one or two seeds made it every 1,000 years,” says botanist Ken Wood, Perlman’s longtime field partner.

Once a seed took root, the plant would evolve into a completely new species, or several, all of which came to be “endemic,” or found exclusively on the island. Any defenses the plant’s predecessors may have had—thorns, or poison, or repellent scents—were completely dropped. No large mammals or other potential predators made the journey from mainland to the remote island chain. From the plant’s perspective, there was no reason to spend energy on defenses when there were no predators to fend off. So stinging nettles no longer stung. Mint lost its mint oil. Scientists ominously refer to this process as species becoming “naive.”



A seedling of a rare plant grown in the National Tropical Botanical Garden nursery.
Its tag indicates it grew from seeds Steve Perlman collected in the wild. (Zoë Schlanger)

The same was true for animals like birds and insects when they began to arrive. Famously, when a species of duck made it to the Hawaiian islands, it evolved to drop the concept of flying altogether. Its wings became little nubs. After all, there were no large mammals around to fly away from. The bird grew very large; “gigantism” is an evolutionary phenomena common to islands. Predictably, this huge, flightless duck, known as the “mao-nalo,” went extinct once humans showed up, likely finding them an easy-to-catch source of meat.

Fatal naiveté

When plants are allowed to evolve without fear, they get really, really specific. Take the *Hibiscadelphus*, for example. Found only in Hawaii, members of this genus of plant have flowers custom-shaped to fit the hooked beak of the honeycreeper, the specific bird that pollinates them. “They’re extremely rare. There were only about seven species described ever, and six were already extinct when I found a new one,” says Perlman. He published the discovery in 2014—it was his 50th new plant species discovery.

Almost 15% of the plants of Hawaii evolved to have separate male and female populations—a very high percentage, says Wood, compared to mainland plants. Under normal circumstances, that trait is good for island plants: it forces them to cross-pollinate, keeping the gene pool relatively diverse even if the population is small. But by “small,” evolutionary forces were probably thinking at least 200 individuals—not four or five. When you can count the number of individual plants on one hand, it’s almost certain that the few remaining males and females won’t be anywhere near each other. In those cases, Perlman and Wood painstakingly gather pollen from the males and bring it to the females.

They have to time this just right—or at least try. There is no perfect math to predict what day an individual plant will decide to flower. “And often you need to dangle off helicopters to get to them,” Wood adds. So missing the mark by a day or two and arriving to a flower that is still closed can mean having leapt from a helicopter and rappelled off a cliff and possibly camped for a day or two for naught.

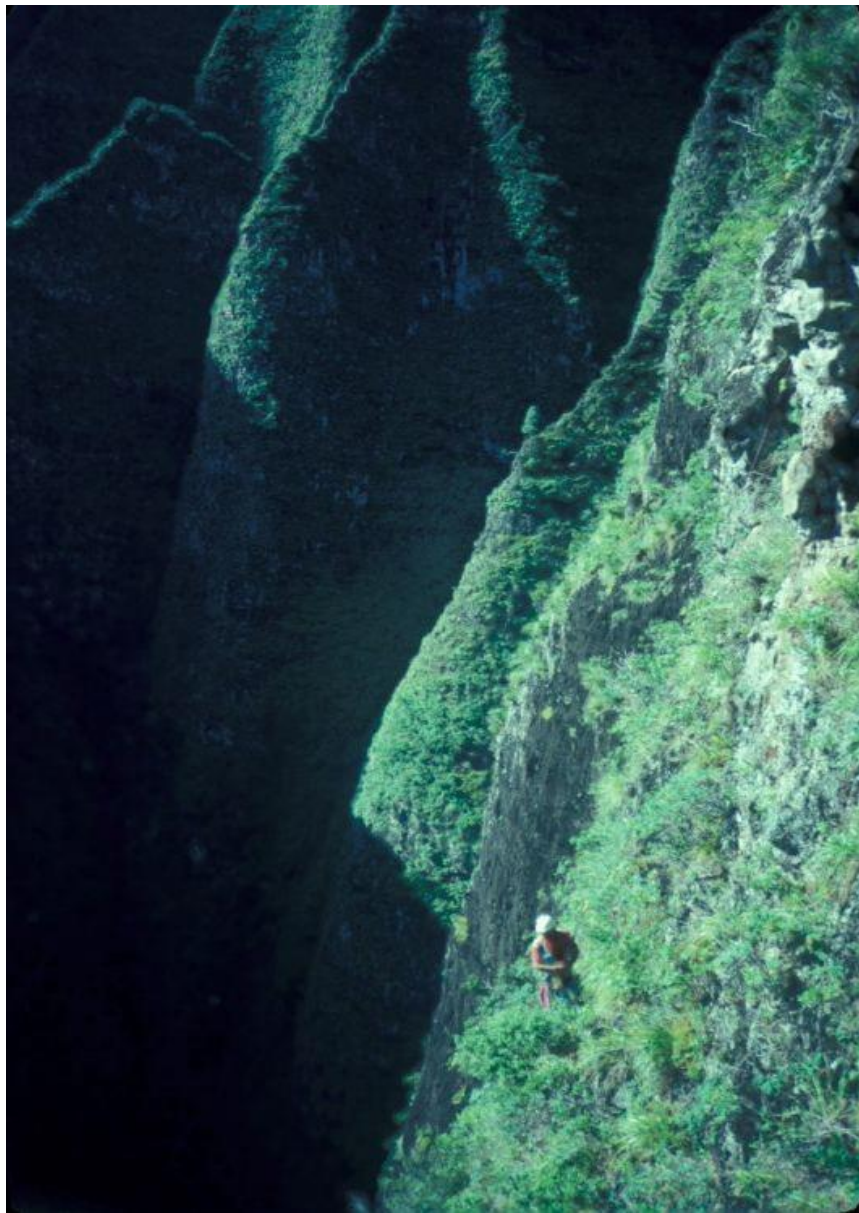
“That’s what Ken doesn’t like—he likes to go in and go out,” Perlman tells me later. He proudly points to a photo on his laptop screen. It shows him collecting seeds from the last-known member of the endemic fan palm species *Pritchardia munroi*. The palm was clinging to a slope 2,000 feet up in the air on the tiny Hawaiian island of Molokai. “I had to go there three times to get the seed when it’s ripe,” Perlman says.

The competition between Perlman and Wood is playful but real. Back at the National Tropical Botanical Garden headquarters, where they both bring their specimens, Perlman shows me his field logs. In a massive Excel spreadsheet, he records every day spent in the field on a separate line, all the way back to 1975. The spreadsheet has 3,233 lines—“nine years worth of days of being out in the field every single day,” Perlman says. He also keeps a separate spreadsheet for all

the plants he's found, with a line for each new collection or rare plant sighting. That one has 25,512 lines. "Now, Kenny Wood is up to 17,000 on his log. But I've got about 10 years on him," Perlman says, letting out a chuckle.

Perlman takes out a three-ring binder where he tracks all of his discoveries and shows me a published paper, dated 1988, announcing the discovery of *Heliotropium perlmanii*. "They named it after me; I've got 10 plants named after me now," he says, grinning.

When Perlman and Wood started working together 30 years ago, no one had tried to do what they were about to embark on. "People were just watching the plants go extinct. No one had done cliff work, as botanists, in Hawaii before," says Perlman.



Steve Perlman on cliffs of Kalalau in Kauai, Hawaii, in 1997. (Ken Wood)

When you're combing Earth for a single plant or two, you don't want to miss anything. But to the untrained eye, most of what grows in the wild looks like any old greenery. Before expeditions to areas he hasn't been, Perlman spends days among the herbarium specimens at the Bishop Museum in Honolulu, to study everything that's already been collected from the region.

But after as many years as Perlman and Wood have been at it, rare-plant hunting has become as much about intuition as careful planning. "You'd think it was systematic," Perlman says, "But it is wandering. But it's not being stopped by anything—not waterfalls, streams—you just go and keep going."

"It just shows how cosmic Kenny is." Once, in a bout of insomnia, Wood spent a sleepless night browsing Google Earth, studying satellite images of a particular valley. In the morning, he told Perlman he had a gut feeling about where they could find *Diellia mannii*, a meter-high lacy fern thought to be extinct in the wild for decades. He felt sure of it. They hiked for three days round trip to get to the spot he'd marked on the satellite picture, eating granola bars and foil packets of tuna salad for every meal as always, to preserve precious space in their packs for equipment. Sure enough, when they got to the spot, a stand of 25 *Diellia* were waving in the breeze. "It just shows how cosmic Kenny is," Perlman says.

The helicopter budget has evaporated

The reality, Perlman says, is that the technology exists to save every one of the 238 plants on the PEPP list. The challenge is finding enough money and people to do it. Says Perlman, "There are days when you get depressed about it, and feel like, why can't we have millions of dollars and a staff?"

"Why can't we have millions of dollars and a staff?" But saving rare plants can be a hard sell in an era of major funding cuts to environmental science programs. With cuts to its own funding looming, the US Fish and Wildlife Service, which previously supplied between 70% and 90% of PEPP's \$1 million annual budget, is reducing the program's funds by half this year. PEPP's manager, Joan Yoshioka, expects the funding to shrink by half again for 2018. Layoffs are inevitable.

Without immediate donations from private sources, preventable extinctions are, too.

Perlman's annual \$50,000 helicopter budget has already disappeared. Now he has to hitch a ride on other people's projects, a precarious and unreliable arrangement that can't possibly support the full bulk of his work.

Perlman brings up *Cyanea undulata*, a plant with long, curved, purple-and-white-striped flowers that is down to just a few specimens. They hadn't yet gotten it growing in greenhouses. Luckily, Perlman says, "Kenny Wood just told me this week he got some funding to do a study on *Phyllostegia elektra*"—a rare mint varietal—"and there happens to be Elektra in that area where the *Cyanea* is. So we're going to use that money to get in there." But they're only able to save *Cyanea undulata* because previous work told them exactly where to find these last remaining members of the species—and by the stroke of luck that gave them the opportunity they needed to go back to those spots.



Steve Perlman rappels down a cliff in search of endangered plants on the Hawaiian island of Molokai (Hank Oppenheimer)

Most people have little feeling toward rare plants—fewer have any idea of the fight going on to bring them back from the brink. “We have a term called ‘plant-blindness,’” Yoshioka tells me. People simply don’t *see* them, she says; they view greenery as an indistinguishable mass, rather than as thousands of genetically separate and fragile individuals, as distinct from one another as a lion is to a tiger.

Plant blindness makes it hard to convince anyone that individual plant species need saving. If you don’t even see them, you can’t possibly love them. The reality is that humans choose what other living things to protect based on their known utility or visual affinity. Charismatic endangered animals like cheetahs and rhinos draw in tens of millions of dollars of conservation money each year. Even a sliver of that could save hundreds of plant species here.

“They were here well before humans ever reached Hawaii,” Yoshioka says. “It was our actions, as humans, that have made them disappear every year. It’s our responsibility as caretakers of this place to do something about it.”

You don’t just abandon a species, not if you can still get to it, even if it’s on the face of a remote and jagged cliff. Or as Wood puts it, “We try, because we’re not going to not try.”

Classifieds

Email Kelly@dunn-nm.com to list orchids for sale or trade, orchid related items, or "In Search Of" posts