



Valley of the Monks

These remnants of magmatic intrusions were a principle feature of the Valley of the Monks.

2009 APS Fieldtrip to Mexico

*Gerald Klingaman, Fayetteville, AR
All Photos by Author*

The evening before we boarded a plane for El Paso, news reporters breathlessly detailed the murder of 18 people just across the Rio Grande in Juarez. The villains even shot the dog! Ongoing reports about drug violence, swine flu and a general unease about our own economic malaise set the backdrop for the 2009 American Penstemon Society pilgrimage to see some of the south-of-the-border species. But, as it almost always turns out, the situation on the ground was completely different than the media and our own minds could conjure up. The 38 of us who made the trip were shown a side of Mexico few knew still existed.

This was my first APS trip. Libby Wheeler, a dedicated APS fieldtripper, had encouraged me to join for years but I kept my acquaintance with penstemons limited to the species I grew from seeds obtained through the NARGS seed exchange. But when the Copper Canyon trip was proposed I

knew it was time. As a retired horticulture professor I've spent my life around plant people of all stripes and persuasions, and I must confess the APS crowd was the most convivial group I've ever taken to the field with.

And did I mention the organization? The trip was superbly organized and well staffed by botanists, geologists and penstemon specialists. The plant lists prepared for every part of the excursion were detailed and inclusive and a great help to those of us with shaky acquaintance with the flora of northern Mexico. Plus our guide, Cesar Castellanos, did a superb job of giving us the back-story about the state of Chihuahua, its biology and its people.

Before leaving El Paso we were treated to a tour of the Chihuahuan Desert Gardens by Wynn Anderson, the botanical curator of this small but jam-packed garden. He was one of the local experts on Mexican flora who made the trip with us. The garden consists of 15 distinct garden rooms surrounding the Centennial Museum on the University of Texas at El Paso campus which has a truly unique Bhutanese architectural style. Each area features a unique floristic component of the Chihuahuan desert ecosystem. The cactus garden contains 80 species and is designated as a U.S. Plant Rescue Center authorized to receive plant contraband confiscated at the border. This garden is an excellent illustration of how a region's botanical diversity can be showcased in a public space and presented to a broader audience.

The next morning we headed south from Juarez through the Chihuahuan desert scrubland through valleys formed as part

of the southern extension of the basin and range features so uniquely displayed in Nevada. Our first stop was on shifting sand dunes south of Samalayuca at an elevation of about 4000 ft.



*Libby Wheeler and Bob and Phoebe McFarlane inspect our first penstemon find, *P. ambiguous* at the sand dune site.*

Here we saw our first penstemon, *P. ambiguous* (Sand Penstemon), which has a semiwoody base and slender, threadlike leaves. Plants reached about 20 inches tall with an open, lax habit. The corolla tube is pinkish with the petals the purest white. This species ranges as far north as southern Wyoming and occurs in Mexico in the northern part of the State of Chihuahua. We were also fortunate to find the yellow flowered desert marigold (*Baileya multiradiata*), the pink flowered Palafoxia (*P. sphacelata*), white flowered sand evening-primrose (*Oenothera pallida* var. *runcinata*), the white flowered sand heliotrope (*Heliotropium convolvulaceum*) with its pubescent gray foliage and large, morning glory like flowers, and a few other sand-dwellers in full flower.

Later in the afternoon of the first day we passed through the capitol city of Chihuahua where we headed west. Here we left the scrub behind and began transitioning into pastureland and fields, a sure sign the rainfall was increasing as we headed into the Plains and Great Basin Grasslands. We spent the night at Cuauhtemoc, a cow town about 60 miles west of the state capitol. The following morning big well-tended farms, mostly owned by Mormon and Mennonite families who immigrated into the region in the 1920's, lined the roadway as we headed to our grassland stop in an area where the basin and range region begins to give way to the first foothills of the Sierra Madre Occidental.



Penstemon stenophyllus is found in the prairies of this part of Chihuahua. At this stop we made the acquaintance of the blue flowered *Penstemon stenophyllus*, a narrow leaved species found in grassland habitats in two counties in southeastern Arizona and in the states of Chihuahua, Sonora and Durango. It has a broad floral tube with blue-purple flowers on 2 to 3 foot tall stems. This penstemon's impact on the overall flora was minimal but there were lots of other interesting plants to occupy our attention.

Eryngium heterophyllum, a member of the parsley family and generally referred to as sea holly, was prominent here as were wild counterparts of such common garden flowers as cosmos (*Cosmos bipinnatus*), a species marigold (*Tagetes lucida*), and *Zinnia peruviana* and two species of morning glories (*Ipomoea hederaceae* and *I. pubescens*). The golden flowered *Guara mutabilis* was also making its presence known.

From this midmorning stop we headed southwest to the town of Creel which was to be our base for the next few days. Creel sits at almost 7800 feet of elevation in a forested region attuned to a monsoonal climate pattern. Eighty percent of the region's rainfall is received from July through October so blooming, especially of penstemons, coincides with this seasonal flux in moisture. The dominant vegetation at the highest elevations is called the Madrean Montane conifer forest, a dryland forest habitat dominated by seven species of evergreen oaks, three pines, one fir (*Abies durangensis*), Douglas fir (*Pseudotsuga menziesii*), and several junipers. Lower down other pines are encountered including the Apache pine (*Pinus engelmannii*), the needles of which is used by the Tarahumara Indians to weave their beautiful baskets. Two cypress, *Cupressus arizonica* and *C. lusitanica*, are also encountered in the area.

The roadside stop 23 miles south of Creel selected for penstemon viewing was well chosen for there we found four Mexican endemic species; *P. kunthii*, *P. miniata*, *P. campanulatus* and *P. fasciculatus*. The site was an open, dry pine woodlands with a small ravine running through it and several north

facing bluffs so the specific site requirements of the species were all represented.



Penstemon fasciculatus was well suited to the mesic conditions along this roadside stop.

In the open and driest areas along the roadside *P. fasciculatus*, an endemic to southwestern Chihuahua, was most common. It grows as a spreading subshrub to 20 inches tall with showy, bright red flowers and slender, linear leaves which share the node with clusters of smaller leaves. It has the overall appearance of *P. pinifolius* in both growth habit and flower color.



Penstemon kunthii grew at the edge of the woods where it got bright light.

In the middle ground between full sun and shade *P. kunthii* and *P. campanulatus* were found. Kunth's penstemon has an evergreen habit with erect growing somewhat lax stems from 15 to 36 inches tall that emerge from a central crown. The leaves are linear-lanceolate and produced up the stem. The bright red tubular flowers are to 1 ½ inch long and produced over a long season. This species is reported to be widely distributed across central and western Chihuahua. 'Yaput' is a vegetatively propagated cultivar said to be hardy to zone 4 that was selected for its more compact habit.



The small, almost wispy stems of P. miniatus made it easy to identify.



Penstemon campanulatus has broader leaves than the closely related P. gentryi

As the name suggests *P. campanulatus* has bell shaped flowers which center around purple or lavender but range from pink to red-violet in color and are produced over a long season. Plants are widely distributed across north central Mexico but do not cross the border into the U.S. Individual plants tend to be well branched with stems as high as three feet tall but in the dry sites where we saw them growing they were half that.

In shaded pinewoods grew *P. miniatus* that is developed along a minimalist plan of development. At the base of the plant, a small rosette of leaves produces an erect, open, slender-stemmed panicle bearing bright red pendant flowers to 1½ inches long. Later when we made our train ride this was the most commonly spotted penstemon before we began descending into the valley. It is reportedly widespread along the Sierra Madre at high elevations as far south as Oaxaca.

The next day after spending a night at the modern Best Western resort in Creel we boarded the school bus for the Valley of the Monks where we were able to enjoy the beautifully sculpted rock formations and view the scenery from the continental divide. And, of course, do a bit of botanizing.



One of the showiest red penstemons was *P. barbatus*.

Here we found *P. barbatus* which grows with basal rosettes of broad, thick evergreen leaves and an erect, unbranched inflorescences of red flowers. *Barbatus* has a similar appearance to *P. miniatus* except the former is more robust in structure and the blooms are pinched down at the tip instead of flaring. In addition to the stunning scenery we were also found *Dichromanthus cinnabarinus* (an orchid called scarlet lady's tresses), *Begonia gracilis*, the white flowered *Silene scouleri* subsp. *pringlei*, several sedums, the pink to lavender flowered *Agastache pringlei*, the white flowered Mexican star (*Millia biflora* – *Liliaceae*), and many other delightful species.

On the way out of the canyon we saw how the Tarahumara Indians lived and farmed. Occasionally a long-leafed Apache pine would be spotted with some decidedly unconventional pruning and a sure sign a basket weaver was nearby.



The botanists couldn't agree if this was *P. gentryi*, but it looked different than *campanulatus* to me.

Our last official penstemon stop in the valley was to look at a stand growing in an open grassland peppered with 50 foot tall *Pinus ponderosa* var. *arizonica*. The penstemons of this locale were – at least in my mind – *P. gentryi*, a look-alike species with dark lavender-purple campanulate flowers which retrogrades to *P. campanulatus*. The only obvious difference I noticed was that the plant I want to call *P. gentryi* had much narrower leaves but even in this stand atop the hill amongst the pines there was considerable variation. At our next stop, Divisadero where we had lunch and overlooked a magnificent view of the main part of Copper Canyon, I found a very dark flowered specimen of what was obviously *P. campanulatus* and it had decidedly broader leaves than the plants in question.

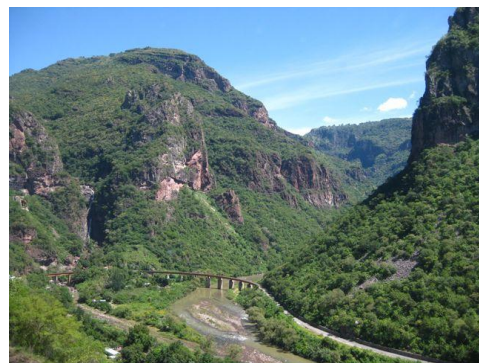


The area around the Basaseachic waterfalls offered some great botanizing.

The following day we headed for the Cascada de Basaseachic, an 850-foot tall waterfall where we encountered a completely different floral mix but no new penstemons. We started at the overlook and hiked down about 500 feet along a dry, woodlands trail to where the river careens over the face of the cliff. Neither time nor energy permitted the 850-foot descent to the canyon floor but, as floristically rich as this area was, one can only imagine what treasures lurk further down.

Along this trail we saw the red to orange flowered *Dahlia coccinea*, the red flowered Cardinal catchfly (*Silene laciniata*), several species of marigolds and cosmos, three species of *Oxalis*, two *Selaginella*, a number of ferns and a host of other interesting species. Along the river valley we saw *Ilex rubra* (red holly), *Cupressus lusitanica*, and a good compliment of the evergreen oaks.

The next day our merry band of travelers parted company with a dozen returning via van to El Paso while the rest of us boarded the train for the ride through the canyonland to the lowland city of El Fuerte in the state of Sinaloa. Whereas Creel is a small mountain town with a population of 3,500 people that was founded a century ago to log the forest, El Fuerte is much older and dates back to the first days of Spanish rule. It was founded in 1564 and has 50 buildings that date before 1700. The Hotel El Fuerte Lodge was a luxuriously remodeled old hacienda that was located only a short block from the city square, its 17th century church and intriguing Spanish architecture. This was a tropical climate with palm trees, bougainvilleas and, along the river, my first sighting of some small *Taxodium mucronatum*, Montezuma cypress.



The Copper Canyon train was a fun way of seeing the sights.

The train ride from El Fuerte to Creel takes about six hours and passes through a series of ecological zones as it rises from 100 feet to the 7800 feet elevation of Creel. These range from semi-desert scrub to lush tropical areas to a gradual gradation of forest ecotypes as you head northeast up the face of the scarp. To accomplish this engineering feat the track passes over some enormous canyons on trestles and through 85

tunnels as it winds its way northeast back to Creel. The scenery is all that is advertised and our group has its fair collection of blurry photos shot out of the perches at the front of each car to prove it.

Copper Canyon, really a network of three main canyons and hundreds of smaller side canyons, is described as being bigger and deeper than the Grand Canyon. While this may be true the casual visitor, at least when viewing it from the window of a bus or the train, has difficulty grasping this great enormity. The trees surrounding so much of the Mexican canyon, at least in the parts we were exposed to, don't allow the vast expanse to be taken in all at once as is the case in Arizona. Geologically these two canyons are very different although canyon systems are estimated to be about 10 to 15 million years old. Copper Canyon's rocks were laid down by five periods of volcanic activity and pyroclastic flow, the biggest of which concluded in the middle Tertiary about 25 mybp. The Grand Canyon formed as the region was uplifted and the Colorado River bisected the ancient sediments deposited over the past two billion years.



The Paquime Ruins are an important archeological site helping researchers define the relationships between the Ancient Pueblo peoples.

After another night in Creel we headed north through the grasslands of the central valleys to Casas Grandes where we toured the Paquime archeological site and its associated museum. This earthen pueblo style ruin is believed to be a part of a series of sites linking ancient peoples of the Mesa Verde cliff dwellings to the modern Tarahumara Indians of Copper Canyon. Though I didn't thoroughly research the archeological details it seems that the people referred to as the Ancestral Pueblo Indians (I think of them as "Anasazi", but they were in the northern part of this big area) abandoned principal sites 600 to 800 years ago following periods of prolonged droughts. The Hopi and the Tarahumara are linked culturally and linguistically and remain as modern extensions of these ancient peoples.

On September 12, our last day in Mexico, we headed to Mata Ortiz where we were shown how the ancients built pots. This tiny village is internationally known for its pot makers and we all had the opportunity to help the Mexican economy by bringing home our fair share of their beautifully designed earthenware. From this last stop we headed home via the Palomas border crossing into New Mexico.

This was a truly memorable trip into an area I have long wanted to visit. While it is true we gave up the freedom of quickly veering off the road to inspect an intriguing wildflower site, the tour format did provide a venue for seeing an area I probably would never had the confidence to make by car. The road mileage, not counting the train trip, was

about 1600 miles. I've already got the June Colorado trip down on next year's calendar where I hope to see my new penstomaniac friends again.

