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Sojourns is a regular publication of the Peaks, Plateaus and Canyons Association.

Each issue explores the extraordinary Colorado Plateau through a different theme.

Purchasing *Sojourns* or subscribing to it through membership helps protect this rare region. For more information please see page 48.

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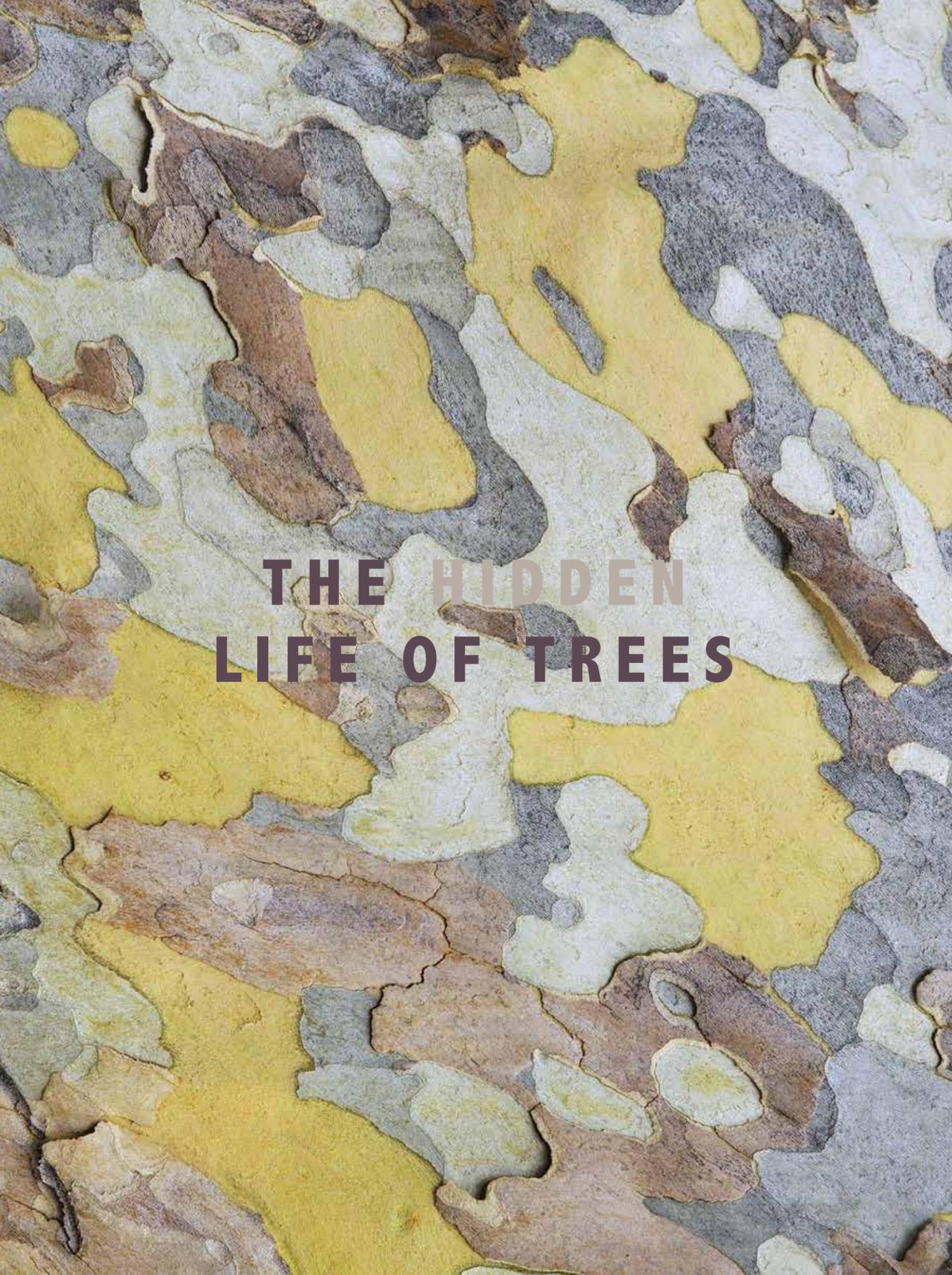
PRAYING FOR LIGHT

A

clanging comes from a tower reaching into the night sky above us. Each swing of the bell sends a hairline crack through the stillness, soon absorbed by the deep solitude along the Chama River. My wife and I are following a path toward the abbey church in a remote canyon of northern New Mexico. We walk without talking to observe the Great Silence, a monastic rule setting aside the hours of darkness for thoughts to turn inward. It's not yet 4:00 in the morning at the Monastery of Christ in the Desert.

Wherever I turn in the Four Corners country I find myself in a place sacred to one tradition or another. It might be a spring considered holy, a river known as the Long Soul, or a mountain anchoring the sacred geography of the region. I have traveled to those places with people who see the earth as alive, animated by spiritual forces needing to be treated with the utmost respect.

TEXT AND PHOTOS BY SCOTT THYBONY



THE HIDDEN LIFE OF TREES

The Hidden Life of Trees: What They Feel, How They Communicate by Peter Wohlleben, published in the U.S. in September 2016 by Greystone Books.

REVIEWED BY L. GREER PRICE

In the fall of 1977, I found myself driving east on State Route 3 from Watertown, in upstate New York, into the heart of the Adirondack Mountains. I was unemployed, fancy-free, a little lonely, and looking for... adventure? Change? I didn't know. Sometime around dusk, as night fell over one of the thickest and loveliest forests in North America, I pulled off to the side of the road and hiked some distance into the forest, simply to take a rest and to experience the stillness and serenity of that place. There, far from the road and any evidence of human activity, I sat in the rapidly growing dark and felt astonishingly un-alone. I felt as if surrounded by some ethereal mist of goodwill. Gradually I connected this feeling with the community of trees around me, which seemed both aware of and welcoming to my presence.

In the years that followed came similar experiences in other forests of North America: hiking from the slopes of Mt. Tamalpais in northern California through the redwoods of Muir Woods to the coast, I remember feeling as if the trees were singing to me, in high-pitched tones that were barely audible. At tree line on Wheeler Peak in the Snake Range of eastern Nevada, in what is now Great Basin National Park, bristlecone pines projected a sense of presence, if muted by age, then nonetheless real. Among the spruce-fir forests on the higher elevations of the Colorado Plateau there was a harmony and peace that I have rarely known.

For years I attributed those experiences to youthful naiveté, to transitions that came with various passages of life, or simply to wishful thinking. But recent research being done by foresters and botanists into the unexpected communicative abilities of trees suggest perhaps I was on to something real.

One source of these remarkable revelations is *The Hidden Life of Trees: What They Feel, How They Communicate* by Peter Wohlleben. Published in German in 2015 to broad acclaim, it is only now being translated into other languages in nineteen countries; it will appear in English this fall. The author is a professional forester who spent his career around trees and in forests, and, in doing so, often inadvertently discovered things about these communities that no one had previously suspected.

Facing: Camouflage-like sycamore bark. Photo by Michael Collier.

CONNECTING PAST AND PRESENT



THE PURPLE HAZE DANCE HALL

Long before legendary guitarist Jimi Hendrix introduced his signature psychedelic rock anthem “Purple Haze” into the music lexicon, generations of dancers gathered to kick up their heels at an outdoor dance hall known by that name. Just a mile east of the town of Kingston, Utah, population 158, at the mouth of Kingston Canyon, the remains of a once stately dance hall rest quietly amid a dense growth of Russian olive, coyote willow, and Fremont poplar. The white stucco façade of the dance hall provides a striking contrast against the lavender-hued volcanic cliffs framing the entire scene. As in most of the small, pastoral settlements of southern Utah that had outdoor dance halls, the Purple Haze was an important part of the social ties that connected members of the community. These pre-television gathering places were bustling with activities on most weekends from May through October. Over the years of my youth, I recall hearing about an apocryphal encounter that is said to have occurred at this legendary dance hall. It began on a warm summer evening, when the Purple Haze was filled to capacity with couples



enjoying the sounds of the Foot Warmers, a popular swing band from nearby Richfield. As the midnight hour approached, the combination of vibrations from the dancers’ movements and the beat from the band’s base drum aroused a large number of *Crotalus oreganus lutosus*, a species of the western diamondback rattlesnake. According to the story, the rattlesnakes began to emerge from the fractures and cavities in the porous volcanic rock, joining the dancers on the dance floor. The resulting pandemonium produced a variety of highly animated, but careful dance steps. The floor cleared as the screams of the fleeing crowd pierced the night air. The incompatible mix of snakes and shoe leather brought the dance to an abrupt conclusion, and the remainder of the evening was turned over to the new reptilian occupants of the Purple Haze.

On a sunny August afternoon, I visit the timeworn structure for the first time. My footsteps break the silence as I cross the concrete dance floor. A quick scan of the interior courtyard reveals the remains of an upright piano next to a cobblestone fireplace—collapsed stucco walls—and the parabolic shape of the orchestra cove now overtaken by vegetation. On some level of consciousness, I imagine hearing the sounds of a swing band playing the Glenn Miller classic “Moonlight Serenade,” couples lost in romance, and the unmistakable melody of a rattlesnake’s song rising from the Purple Haze.

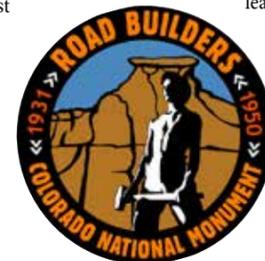
Gayle Pollock
Executive Director,
Bryce Canyon Natural History Association
Photos by Larry E. Davis



CONNECTING AT COLORADO NATIONAL MONUMENT

Thanks to the efforts of John Otto, a group called Local Experienced Men, the Civilian Conservation Corps, the Works Progress Administration, and residents of Grand Junction, Fruita, and Glade Park, twenty-three miles of Rim Rock Drive connect the west entrance of Colorado National Monument with the east entrance. Along this road, photographers capture images of sheer canyon walls and sandstone formations that connect Colorado National Monument to viewers around the globe. Artists set up easels at overlooks with picturesque names such as Book Cliffs View, Grand View, and Cold Shivers. Dozens of couples each year connect their memories of a lifetime to breathtaking red sandstone canyons and rock formations

by making Colorado National Monument the setting for presenting engagement rings or taking marriage vows. The Colorado River and the Gunnison River connect at Grand Junction (hence the name Grand Junction). Bands of desert bighorn crisscross the roughly thirty-two square miles of the monument that lies like a triangle between the Colorado River to the north and the Gunnison River to the east. At the beginning of the 20th century, John Otto forged connections with community leaders and business owners from Grand Junction and Fruita, Colorado. He hosted hikes and picnics in an effort to secure their interest in promoting a national park full of stunning monoliths and 1.8 billion years of geological history. The proposed Monolithic National Park eventually became Colorado National Monument in 1911. Nowadays, bicyclists find it challenging and exhilarating to traverse Rim Rock Drive, connecting with roads outside the monument,



in a grand a thirty-three-mile loop. Hikers connect with the great outdoors and with private inner peace while trekking piñon-juniper woodlands on forty-eight miles of maintained trails. Backcountry campers connect with high desert solitude. Archaeologists connect with Ute and Frémont cultures of the last thousand years through survey and discovery of wickiups and petroglyphs. Geologists contemplate the layers of time. Connections: Life, Love, Earth. Rocks, Plants, Animals. History, Culture, Science. Body, Mind, Soul. Beauty, Health, Endurance. At Colorado National Monument, the connections are strong.

Cherry Odelberg
Bookstore and Membership Manager,
Colorado National Monument Association



Top: Donna Fullerton’s Coke Ovens image graced the cover of the 2016 book *America’s National Parks*. Road Builders logo honors the efforts of area residents, the CCC and WPA. The wedding of John Otto and Beatrice Farnham in 1911.

for the natural day-night cycle, wildlife, and our health. The nearby bustling cities of Denver and Salt Lake City offer visibility of 300 to 500 stars. In surrounding suburbs, up to 2,500. But in the dark at Dinosaur National Monument, we can view an astonishing 4,500 stars on a clear night. From the top of the craggy, slanted peaks of Split Mountain spreads a veritable smorgasbord of stars and planets, and even our own Milky Way galaxy, that our light-sore eyes have forgotten.

Pre-Columbian cultures such as the Incas believed that the Milky Way was a path to the other world, guarded by animals, a river in the sky that connects heaven to earth. Few believe the river is there. We have to train our eyes to look elsewhere, away from the concrete, the bricks, the steel and the mortar, away from the streetlamps and rectangles of light holding our heads to the ground. We have only to look up to reestablish our connection with the cosmos that guided us in the beginning. Will you look up?

John Isom
Interpretive Park Ranger
Dinosaur National Monument

The two aetosaurus illustrated here belonged to an extinct group of heavily armored Triassic herbivores. They made their homes in the banks of Triassic rivers; their remains have been found on the newly acquired lands at Petrified Forest National Park. Art by Smokeybjb, image from Wikipedia.



A BIGGER FOOTPRINT, A BIGGER PICTURE

Forty thousand acres of new land has increased the footprint of Petrified Forest to an area roughly the size of the city of Chicago. For the last fifteen years, park paleontologists have been relocating historical sites, teasing apart the layers of rock strata of the Late Triassic Chinle Formation, and piecing together the story of plants and animals that lived in northern Arizona some 228 million years ago. As staff and research collaborators survey the newly added lands, they are able to test hypotheses based on study of the original footprint of the park. Exploring and looking for fossils on the new expansion lands allows researchers to test whether one layer is really younger or older than another, for example. Discovering new fossils on the expansion lands provides new insights into what was happening to global biodiversity during the end of the Triassic Period. One idea is that a minor extinction occurred 215 million years ago prior to the end-Triassic mass

extinction around the same time as a meteor impacted eastern Quebec.

Petrified Forest was home to an incredibly diverse group of animals during the Triassic Period. At that time, Arizona was situated as close to the equator as modern-day Costa Rica, and had a similar tropical climate. Huge amphibians waited at the bottom of small lakes and swamps for unsuspecting animals while long-snouted phytosaurs stalked riverbanks for animals thirsty enough to drink there.

The first dinosaurs in North America walked alongside members of older lineages that did not survive the end-Triassic mass extinction that came 27 million years later. Fossils of these and countless other organisms are preserved in almost every rock layer of Petrified Forest National Park. Because of such rich paleontological resources, the park is staffed with paleontologists, geologists, fossil preparators, and museum curators who work together to provide a perspective on what life was like over 200 million years ago. The huge swaths of land to the east and west added to the park by Congress were formerly grazing land and include areas of badlands, out of which petrified wood



Left: Deciphering Late Cretaceous bones in the Kaiparowits Formation on the Grand Staircase. Photo by Gary Ladd. Above: An artist's conception of how things may have looked when the big beasts prowled the area. Depiction by Andrey Atuchin.

and vertebrate fossils have eroded. The current project to inventory and monitor fossil localities in the expansion lands will continue beyond the end of the year.

As of August of 2016, eighty-nine new fossil sites were documented and over two hundred individual fossils were collected. They will be cleaned, reassembled, and incorporated into the park's museum.

Project paleontologists are collecting fossils in danger of being lost to the natural processes of erosion, but also fossils that help identify the animals once present—for example, patterns on the armored plates on the backs of aetosaurus, which have different patterns depending on the species. The researchers also take careful notes of the geology of each fossil discovery, place its location on topographic maps, and record precise GPS coordinates. In doing this, the fossil acts as a “voucher specimen” to signify that a specific kind of animal was present in a precise place and time.

So far, the remains of at least eighteen different kinds of animals have been recorded on the expansion lands, including freshwater mussels, ferns, multiple species of armored aetosaurus and toothy phytosaurs, and burrows of invertebrate animals that made their homes in the banks of Triassic rivers.

The data and conclusions derived from the paleontological inventory are being made available to researchers and the public alike. In fact, research groups like that of the Burke Museum at the University of Washington are contributing significant fossil discoveries from these lands. The Burke Museum is actively quarrying a site that is full of hundreds of bones from shuvosaurs, which are extinct relatives of crocodiles and alligators that walked on two legs and probably behaved a lot like dinosaurs.

The park is designing new exhibits for the Rainbow Forest Museum that highlight some of the work being done for the expansion project. Park staff is hoping to include skeletal mounts of animals that have been found in these areas like gracile shuvosaurs, armored *Reveltosaurus*, and a new predatory animal related to *Azendohsaurus* from Morocco and Madagascar.

The park's fossil and rock resources may help to understand how certain animal groups respond to climate change through time, which in turn can affect how we manage energy resources, wildlife, and other biological resources at the local, state, or federal level during modern climate shifts.

Adam Marsh
Paleontologist, Petrified Forest National Park

WHERE DINOSAURS ROAMED

Back in the late 1980s I worked with the Museum of Northern Arizona doing paleontology in what would later become southern Utah's Grand Staircase-Escalante National Monument. We were working in rocks from the Late Cretaceous, near the end of the Age of Dinosaurs, between about 74 million and 95 million years ago, the formations that compose the “Grey Cliffs” of the Grand Staircase. Not the flashiest rocks on the Colorado Plateau, they are often sped by for more photogenic red rocks and sandstone walls. We were just trying to see what was there, spending long hours walking the landscape's grey, piñon- and juniper-covered badlands searching for bones and fossil plants. We found some things, but nothing that struck me as that impressive. I could not have been more mistaken. These sediments have since proven to contain one of the best records of the late Age of Dinosaurs in the world.

After the Grand Staircase-Escalante National Monument was established in 1996, a flood of researchers poured in, and it didn't take long for them to begin to find world-class fossils in almost every category of life, plants and