

From *The Rostrum*, Volume 18, Number 6, November, 2009:

## Fantastic Florissant Michael Hutchins



The Florissant Fossil Beds National Monument, in Colorado, is well known for its wonderfully preserved Eocene insect and plant fossils. I had a chance to visit the Monument, which lies about 30 miles west of Colorado Springs, from August 22-23 on my way to attend a series of meetings with government wildlife officials in Fort Collins, about 60 miles north of Denver.

The weather was fantastic, sunny and in the 80's as I headed south in my rental car from Denver International Airport for a two-plus hour drive on Highways E-470 South and 25 South from the Denver International Airport. Upon reaching Colorado Springs, I headed west into the mountains on Highway 24, passing by the Garden of the Gods, the Manitou Cliff Dwellings and the Cave of the Winds. I was tempted to stop at these well-known tourist attractions, but my time was limited. On the night of the 21<sup>st</sup>, which was a Friday, my goal was to reach a small community about 10-15 minutes drive from Florissant called Mountain View, where I hoped to find lodging. I pulled in around 7:00 PM and found a place to stay immediately adjacent to Highway 24. The Woodland Country Lodge was clean, reasonable, and easy to get in and out of. While unloading my bags in the waning light, I caught some movement in the corner of my eye. An adult red fox had emerged from underneath my car and stood motionless about 10 feet away, calmly staring back at me. He looked healthy and was a bit too friendly, suggesting that previous visitors to the lodge may have been feeding him. Following our brief stare-down, the fox ran off into the woods, never to be seen again. The lodge's proprietor told me that an occasional bear visited the parking lot as well.



I got up early Saturday morning and drove toward the Florissant Fossil Beds National Monument, continuing west through the rugged, high country until I arrived at the small community of Florissant. I followed the signs to the Monument, which was an additional few miles to the south. The park opens at 8:00 AM daily. As I parked and approached the Visitor Center, I was greeted by a friendly ranger, who told me that it was the Monument's 40<sup>th</sup> anniversary and that there were no entrance fees that day. Park personnel were preparing for the festivities, which included talks by some well-known scientists, including Dr. Estella Leopold, a well-known paleobotanist and daughter of Aldo Leopold, one of the founders and a past president of The Wildlife Society, the organization I work for. I might add, she is also a professor at the University of Washington, my Alma matter. I was very tempted to stick around and meet her, but I had flown and driven hundreds of miles to hunt fossils at a nearby privately owned quarry, and I was burning daylight. It

was nearly 10:00 AM and that's when the quarry opened. Furthermore, the talks were not scheduled until 1:00 PM, so I reluctantly decided to move on.

The Florissant area, and the acreage covered by the National Monument, is one of the greatest concentrations of fossils in the world. At one time, this area was dominated by a huge volcano complex, about 16 miles to the southwest, that erupted frequently and produced tremendous mud flows that moved down the Florissant stream drainage and inundated an ancient forest of giant redwood and other trees that once flourished in the valley. The mudflows covered the trees to a height of around 15 feet. These flows eventually hardened into mudstone, and when groundwater leached into the rock, dissolving silica penetrated the wood, causing the stumps to become petrified. The stumps of these huge trees are among the most impressive sights encountered by visitors to the Monument, and I resolved to come back the next day to see them. In the gift shop, I bought some books and pamphlets on the geology and paleontology of the park and a few other mementos, including a 40<sup>th</sup> year anniversary pin. I also examined the many drawers of fossils they had available for public viewing. Of course, being part of the U.S. National Park system, collecting in the Monument is strictly forbidden.

Leaving the Monument, I headed back toward town. The Florissant Quarry is located about 0.25 miles from Highway 24, between the small town of Florissant and the National Monument. The Clare family has operated this commercial quarry for nearly 40 years. I drove up the narrow dirt road, which ended at small shack, the base of operations. Upon arrival, I met Nancy Clare Anderson and her assistant John. Nancy, who is a very knowledgeable and enthusiastic fossil collector herself, showed me the ropes. The quarry charges \$10 an hour for adults and \$5 an hour for children. Visitors are not allowed to dig in the quarry's exposed walls, but rather are given boxes of rocks that are taken freshly from the quarry. They are also allowed to hunt fossils in the many rubble piles that dot the area. The quarry provides several picnic tables on which visitors can work the rocks in their quest to find fossils. The basic idea is to work through the thin layers of shale, one at a time, using a razor blade, table knife or other thin object.

The quarry is the site of an ancient lakebed, created when one of the volcanic mudflows impounded the stream drainage. Mud and silt, along with layers of volcanic ash from the nearby volcanoes, created sediments on the lake bottom, entombing many plant and insects that had fallen on the lake's surface. The sediments eventually compacted to form shale; these 34 million year-old rocks preserve in exquisite detail the miniscule parts of insects and tiny veins of leaves. Vertebrates are rare in these deposits, but fossil fish and birds are found occasionally. Fossils collected in the Florissant area are on display in over 20 U.K. and U.S. museums and universities.

Fossils are typically found in the darker grey areas of the rock that are separated by the lighter grey volcanic ash layers. It took an hour or so for me to perfect my technique, but I found the razor blade to be the most useful tool for splitting the thin layers of shale. Within minutes, I had found my first insect, a quarter of an inch long bee that had not seen the light of day for 34 million years! I spent several hours at the quarry the first day, and found numerous insect and plant fossils. Many of these fossils are small and quite fragile, and must be carefully wrapped for transportation. About mid-afternoon, John reinforced the notion that the rubble piles were good places to look. Showing some visitors around, he stooped over and picked up a beautiful fossil spider—a nice serendipitous find. After I had had enough fresh air and warm sun for the day, I headed back to my hotel for the night, resolving to come back in the morning.



On Sunday morning, I got up early and headed back to the National Monument. Only two other cars were there as I pulled into the parking lot. It was clear and sunny, but the sun was still low in the sky and the temperature was perfect; cool and no humidity. I parked my car and headed immediately to the 1.4 mile long Petrified Forest Loop. As I proceeded down the path, I enjoyed watching the abundant birds and ground squirrels that inhabit the grounds. I walked by the Scudder Pit, which is the excavation where most of the fossils collected at the site were found. The Pit was named for Samuel Scudder, a paleontologist who collected there in the late 1800s. Visitors are

not allowed to enter this area unless accompanied by a ranger, so I continued along the path. My next stop was the "Big Stump"—the largest petrified redwood stump found on the property. The 12 foot tall, 38 foot in circumference, fossilized tree stump was one of the most impressive fossils I've ever seen. It's fortunate that this natural wonder still exists. Before 1900, amateur and commercial collectors made many unsuccessful attempts to saw the stump into moveable fragments that could be reassembled elsewhere. Broken saw blades are still visible near the top of the stump, rusted from many decades of exposure to moisture and air. Before the National Monument was created, much of this ancient forest was carted away from the area by curiosity seekers. Once the 6000 acre Monument was established in 1969, however, many of these large stumps were reburied in order to protect them from people and the elements.

Having observed what remained of the ancient redwood forest, I noticed it was almost 10:00 AM and time to head back to the quarry. Knowing that I had to drive all the way to Fort Collins that day, I wanted to start early so that I could get on the road at a reasonable time. John was just opening the gate when I drove up. I followed him onto the property, parked and got started again with a new box of rocks. I hunted around three hours that day, finding a few more insects and plants, but my luck was not as good as the day before. My best finds were of a small bee and a green lacewing, *Palaeochrysa* sp. which are both common in these rocks. I also found what appears to be the leaf of a golden rain tree, *Koelreunteria allenii*. All in all, I enjoyed my experience in the Florissant area, and would certainly come back if the opportunity presented itself.

Further information on this site, can be found by contacting Toni Clare or Nancy Clare Anderson at P.O. Box 126, Florissant, Co 80816, (719) 748-3275 or on the Florissant Fossil Quarry's website at <http://florissantfossils.tripod.com/>. Information on the National Monument can be found at: <http://www.nps.gov/flfo/index.htm>.