

Road Trip

The Big Impression
Gain in Payne without Pain
The Coal Miner's Daughter's Brother

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When planning our annual trip to Florida, we try to get in some rock collecting along with sightseeing. So when we decided to return from Florida via Alabama, we found some collecting spots in Fort Payne, Alabama. We also came across two other areas of interest.

The Big Impression

When traveling, we like to pick up the tourist information brochures. In Alabama, we picked up a paper called "The Historical News". The back of the newspaper had an article about the Wetumpka Impact Crater. Another brochure listed a lecture from an Auburn University geologist on Thursday, February 2, School Tours on February 3 and general public tours on Saturday, February 4. Our schedule allowed us to take the Saturday tour.

The hills east of downtown Wetumpka Alabama are part of the eroded remains of a five mile meteor crater. The impact occurred about 83 million years ago. In the circular pattern that makes up the rim of the crater, the hard rocks of the Piedmont are bent sharply upward and point toward the center of the impact. Figure 1 shows a portion of the rim where the underlying schist exposed. The normally horizontal layers of more recent surface rocks are mixed in and around the crater. Normally the sedimentary rocks of the Coastal Plain overlap the older and harder metamorphic rocks of the Piedmont. But at Wetumpka, rocks of more than two hundred million years different of age are intermixed. Below the surface, concentric rings of fractures and zones of shattered rock encircle the area.



Figure 1. *Exposed schist at Wetumpka*

In 1891, State Geologist Eugene Allen Smith noted the unusual nature of the Wetumpka area and marked the area on geological maps as “structurally disturbed”.

In 1972, Geological Survey of Alabama Geologist Tony Neathery headed a team making detailed map of the county. When they approached Wetumpka, they found layers bent a different angles and directions than other rocks in the area.

In 1976, they published their findings, calling the feature an Astrobleme or “star wound”. The conclusion was greeted with skepticism. In 1998, two cores revealed shocked quartz, which could only be formed by an enormous explosion such as a meteor impact. Another piece of evidence was that the level of the element iridium was 20 times the normal level¹. Iridium is rare on earth, but much more common in meteorites. Another piece of evidence indicating an impact crater was the difference in gravitational pull in the area because of the faults and fractures in the underlying rocks. More studies confirmed the results and in 2002, scientists established the site as an internationally recognized impact crater. At the time of impact, the area was covered by a shallow sea of up to 100 feet in depth. The resultant tidal wave washed away the southern portion of the crater and any remaining meteor material. Based on scientific calculations, the meteor was estimated to be 1000 feet in diameter. The energy released from the impact is estimated to be 1,500 megatons, or the equivalent of 1,500,000,000 tons of TNT². This was 15% of the explosive power of the Cold War’s nuclear Arsenal.



Our tour consisted of a half-hour lecture on the history and geology of the area. We were then driven by vans around the rim of the crater. We did make one stop to make a short hike for a better view of the center of the crater, Figure 2.

Figure 2. *View showing center of Wetumpka crater.*

During the stop, we collected small pieces of quartz and schist. Note that only microscopic examination would determine if the quartz was shocked.

The city of Wetumpka hosts tours once a year, usually in winter when the leaves were off the trees for a better view. We were fortunate to have traveled in the area when they hosted the 2012 tour. For information about the tour, contact the City of Wetumpka, P. O. Box 1180, Wetumpka, AL 36092, telephone 334-567-1313. The web site is cityofwetumpka.com.

1. King, David T., Jr. and Petruny, “Lucille W. Neathery, Thornton L. Drilling Into Wetumpka Impact Crater, Alabama” Geology office, Auburn University, Auburn, AL, Astra-Terra Research, Auburn, AL, Neathery and Associates, Tuscaloosa, AL

2. Ibid.

Gain in Payne without Pain

While preparing for our trip, we researched potential collecting areas in the regions where we would travel. We came across an article on the Internet by Ray Hill describing collecting fossils, limestone, slate, agate, chert and drusy quartz in Fort Payne, Alabama.

When we arrived, we stopped at the DeKalb County Tourist Association. We loaded up with brochures of local attractions and chatted with Ms. Avice Pearson. She didn't know anything of any of the rock collecting areas. Then we showed her the Ray Hill article, which had cited her as being helpful. To say the least, she was thrilled to see her name in the article and made a copy of the article.

Our first stop was in the back of an old strip mall, near the Alfa Insurance and Sears building. The temperature was in the low 60s, making a great day for collecting. In the back was a 15 foot bank which contained limestone, chert, drusy quartz and geodes. Collecting was easy except for extracting the geodes from the chert. The geodes were thin walled so we could only obtain pieces of the geodes. Figure 3 shows a typical geode in the chert.



Figure 3. *Geode in Chert*

Our next stop was on Route 11, just past mile marker 231. On the right was a gravel driveway. We drove up the driveway (avoiding the ruts) and parked. The collecting area was on the flat section at the base of the banks, Figure 4. We collected a few plates of marine fossils. The fossils were plentiful, Figure 5. We obtained a couple samples and moved on.

We checked out the chert quarries cited in the article, but decided that we had enough chert, so we didn't collect. One quarry looked like it was still active.



Figure 4. *Fort Payne Fossil Area*



Figure 5. *Fossils in Fort Payne*

The Coal Miner's Daughter's Brother

Our journey took us to the hills of eastern Kentucky. This area is famous for two things – coal and country music. And often the music is about coal mining.

This led us to the town of Van Lear. It seemed like most of the road names in the town had the word “hollow” in it – Akers Hollow Road, Storehouse Hollow Road, Possum Hollow Road. On the far side of town, there is Butcher Hollow Road.

Van Lear was a coal town. The Consolidated Coal Company operated mines in the area from 1910 to 1946. One of the workers was a Mr. Melvin (Ted) Webb, who worked in the No. 5 mine, Figure 6, off of Butcher Hollow Road. Mr. Webb had eight children. The second of his children, Loretta Lynn Webb, sang about the coal mining - Loretta Lynn, the Coal Miner's Daughter. She now lives in Nashville, TN, but the Webb homestead, Figure 7, still stands as a monument to the coal mining days. Also still standing is the No. 5 Store, Figure 8, the company store. It is now owned and operated by Herman Webb and his wife. Herman is Loretta's brother.



Figure 6. *Van Lear # 5 Mine, in 1930*



Figure 7. *The Webb Homestead in Van Lear*



Figure 8. *Webb Grocery Store*

We drove by the homestead on Butcher Hollow Road. The road barely had room for one car, although it was paved. On the way, we passed homes that had collapsed and many homes in need of upkeep. It is a poor community.

After driving by the Webb homestead, we stopped at the store. Herman was there and asked us where we were from. He talked about the coal mining days and his store had items such as carbide lamps, pictures of the old mines and devices to detect if there was gas in the mine. He also had memorabilia from Loretta Lynn, Crystal Gayle (Loretta's sister). Two other siblings, Peggy Sue and Jay Lee also were professional musicians. Herman said that Jay Lee was really talented. Herman also offers tours of the home.

Unfortunately, we did not have time to visit the coal mining museum or explore for any coal samples, although we obtained pieces of shale from a local road cut. On the first weekend in August, Van Lear hosts a celebration of their coal mining past. The visit made us appreciate the hardships that the coal miners endured. Note – camera problems prevented us from having pictures of Van Lear. Pictures of the store and Webb homestead are from the Internet.