Luxuriant Growth of Arkansas Forests Began in Ancient Past as Revealed by Buried Remains of Petrified Trees

By R. Paul Hardee

The luxuriant growth of Arkansas, as is well known, was made possible by the climate which prevailed during the Tertiary period of the earth's history. The present forest growth of the state is a product of the contemporary climate, which is quite different from that which prevailed during the Tertiary period. The present climate is characterized by a warm, humid summer and a cool, dry winter. The Tertiary climate, on the other hand, was much hotter and wetter than the present climate. The Tertiary climate was also much more variable, with frequent droughts and floods.

The Tertiary climate of Arkansas was conducive to the growth of luxuriant forests, which covered much of the state. These forests were composed of a variety of trees, including conifers, deciduous trees, and ferns. The forest cover provided a fertile environment for the growth of a wide variety of plants and animals. The luxuriant growth of the Tertiary forests was revealed in the preservation of numerous petrified trees, which are now found throughout the state. These petrified trees are a valuable resource for the study of the geology and paleontology of the Tertiary period.

Fossil Oyster Beds in Crow Creek

Forrest Creek, Arkansas

Paragould Daily Pro.

Crow Creek, a tributary of the South Fork Bayou, is approximately 44 miles west of Memphis and 82 miles east of Little Rock. It is a tributary of the White River, which flows into the Mississippi River near Memphis.

Crow Creek is notable for its fossil oyster beds, which are found along the creek for several miles. The fossil oysters are well preserved and can be easily observed. The fossil oysters are a valuable resource for the study of the geology and paleontology of the Tertiary period.

Paleontological reconnaissance was conducted in Crow Creek by the University of Arkansas and the U.S. Geological Survey. The reconnaissance revealed a rich assemblage of fossil oysters, which are a valuable resource for the study of the geology and paleontology of the Tertiary period.

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Petrified Forest in Clay County


It is a well known tendency of the human race to look upon things which lie at a great distance as more desirable or more worthy of study than things which are close at hand. Likewise, many persons who have traveled a good bit in the world are far better acquainted with the wonders which lie in far places than they are with those which are to be found, figuratively speaking, in their own doorways.

Take the petrified forest of Arizona, for instance. There is hardly a boy or girl of grammar school age who has not learned of this natural wonder from textbooks. But not one in a thousand, likely, knows that there is a petrified forest in Arkansas, a petrified forest that is just as old, just as much of a scientific wonder, as the one in Arizona. In fact, the existence of this forest is so little known that there are many people living nearby who have given no thought to its existence, even though an occasional petrified log may lie in their own fields or pastures.

Although the existence of this natural wonder is an established fact, the territory is not to be recommended for sightseers, since with few exceptions, the great stone trunks are buried many feet underground and are brought to light only when rains uncover them by washing the surface soil away, or during operations at gravel pits or other excavations. The fact that the petrified forest is a buried one is responsible for the lack of general information about it, although in recent years much has been done to publicize it.

Discovery of the petrified forest has been due largely to efforts of the Harlan brothers, the late H. H. Harlan and Ira W. Harlan of Piggott, who began uncovering the logs several years ago. Living on a small hill farm near the outskirts of Piggott, "Uncle Hays" Harlan, as he was known, was an amateur naturalist for many years, and he took great interest in all natural phenomena in the hills around his home. He was constantly on the lookout for petrified trunks before he gave much thought to the odd petrified trees that he occasionally came across. He gradually realized that these logs were no occasional petrified trees, such as one is apt to find nearly anywhere in a region where conditions are favorable for petrification, but that the logs were connected with a much greater number of them buried under the red Clay county hills. Tracing out the area of the upland forest and trying to locate a buddy with. His brother, T. W., who shared his enthusiasm for all natural phenomena, he began to study all records he could obtain of petrified logs that had been found in the area, and of excavating the chosen specimens that he could find, which were close enough to Piggott to be easily transported. The two men excited more than a dozen chose specimens of the logs, and one of these, a 12-foot specimen of beautiful cream colored stone, was chosen to be mounted in the county courthouse at Piggott, as a monument to the forest. This monument now stands in a concrete base, and bears in its eastern face a marble tablet, with names of citizens who contributed toward the erection of the monument.

The buried trees are found at all depths and though relatively few of them have been uncovered, thus far it is believed that there is an enormous number of them under the ground. The section in which the trees now are known to lie is several miles wide, and perhaps 30 miles in length. All which have been found are in the hills of Crowley's Ridge. So far none of the logs have been found in the lowlands. The soil in which they are found varies; some of them being in red clay, others in a sandy, gravelly mixture that probably is of sedimentary origin. Geologists say that the part of Arkansas from the eastern edge of Ozarks to the Mississippi river once was under water, and that the petrified trees antedated the period when the country was inundated. They are buried under this sand and gravel formation.

Whether the trees actually grew upon the same tracts of land at which they are now found is not known. They may have been washed great distances during some tidal wave or upheaval, or only to become waterlogged and sink to the bottom of the sea, there to be covered by the silt of thousands of years. Another upheaval, the land again rose and the logs now "turned to stone" by the forces in the rivers, principally by the waters of the Little Red river, were probably pushed upward. What once had been the bottom of the ocean was raised to the level of the land. That the petrified logs were petrified before this latter upheaval came is known by the "breaks" where the trunks were split, for the logs are all broken into short lengths, the average being four or five feet long. Water soluble materials, due to the strong and stress of the upheaval. The breaks are all clean and smooth, not the rough, splintery breaks that would have occurred had they been broken as wood. The specimens have been identified as a species of hickory, and most of those discovered have been so well preserved that the grain of the wood, the weather cracks, and even the knots can be seen as plainly as though they were newly cut logs.

The popular phrase, "turning to stone," of course is misleading, since the logs do not turn to stone. Not a molecule of the original wood exists in the object in any form. When any object, whether a tree, molluse, reptile or whatnot, become buried in a suitable soil, decay sets in. In the soil are certain minerals, mainly lime and silica, with traces of iron and various other substances, all carried in solution by the moisture or water in the soil. As each atom and molecule of the original object decays and is washed away by the water trickling through it, it is replaced by a molecule of the lime and silica. As more and more of the particles of the original object decay and are gone, their places are taken by the minerals. Finally the day comes when all of the original wood is gone, but lying in its place in the soil is an exact counterpart of the object, so perfect in construction that even microscopic details are reproduced. Thus it will be seen that petrified trees are not the original trees, but stone reproductions of them, carved by the matchless hand of nature.

The color of the petrified trunks varies according to the other minerals in the soil. If iron is present, the stones will be colored in various shades of yellow and red. The Clay county objects are all of a light cream color, but the trees in the petrified forest of Arkansas are in various shades of brown and red. It will be seen that this is from the fact that the petrified objects only under certain conditions, the soil must contain just the right amount of lime and silica and other conditions must be favorable.

Not only are petrified trees found in the northeastern part of Arkansas, but other objects as well. In the collection of Mr. Harlan are petrified sweet potatoes, twigs and other articles. In the gravel pit one may find many remains of small sea creatures, coral and many other forms of sea life.

Many of the logs have been dragged out of fields where they are found, broken up and used to fill gullies, or built into foundations of some building. In the old cemetery at Piggott many small fragments are found serving as markers at graves. A large log stands at the grave of the late Hays Harlan.