



Petrified Wood

Ancient Forest Fossils

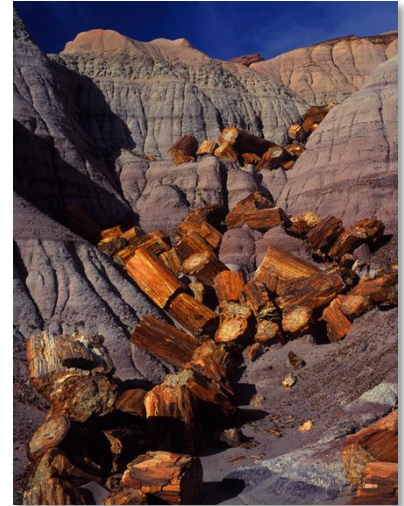
Petrified wood is real wood that has been preserved for millions of years by the process of petrification. This process, where the wood itself is replaced microscopically over time by quartz crystals is called 'petrification'. One of the greatest concentrations of petrified wood in the world is found in the Petrified Forest National Park in North-east Arizona where petrified logs as long as 200 feet and 10 feet diameter have been found in the park. Petrified wood is also common in Australia and the photo below shows a log section from North Queensland.



Petrified wood from Normanton, Queensland

Petrified wood is known for its often exquisite color and detail. Some pieces of petrified wood have retained the original cellular structure of the wood and the grain

can easily be seen. The process of petrification begins with three raw ingredients: the original wood, water and mud. The process that turned the ancient Arizona forests into what is now called 'The Petrified Forest' is a good example of the process of petrification. During the Triassic



The Petrified Forest, Arizona USA

Period when the primitive conifers here fell to the ground and into the waterways, the logs were swept and tumbled downstream with sediment and other debris. The streams traveled through a plain of lakes and swamps where wood, sediment and debris were deposited along the way. In fact, 400 feet of sediments were deposited in the plain by the rivers that originated from the volcanic mountain range. That layer of sediments is known today as the Chinle Formation. As the logs were deposited in the plain they were buried with mud, water and debris. This is when the petrification process began.

The mud that covered the logs contained volcanic ash which was a key ingredient in the petrification process. When the volcanic ash began to decompose it released chemicals into the water and mud. As water seeped into the wood the chemicals from the volcanic ash reacted to the wood and formed into quartz crystals. As the crystals grew over time, the wood became encased in the crystals which over millions of years, turned the wood into stone. The petrified logs were buried in the sediment for millions of years, protected from the elements of decay. During this time the plain was covered by an ocean and another layer of sediments on top of the woodrich Chinle Formation.



Petrified logs in Arizona, USA

It wasn't until 60 million years ago that the ocean moved away and the erosion process began. More than 2600 feet of sediment have eroded to expose the top 100 feet of the Chinle Formation.