

Fossilization

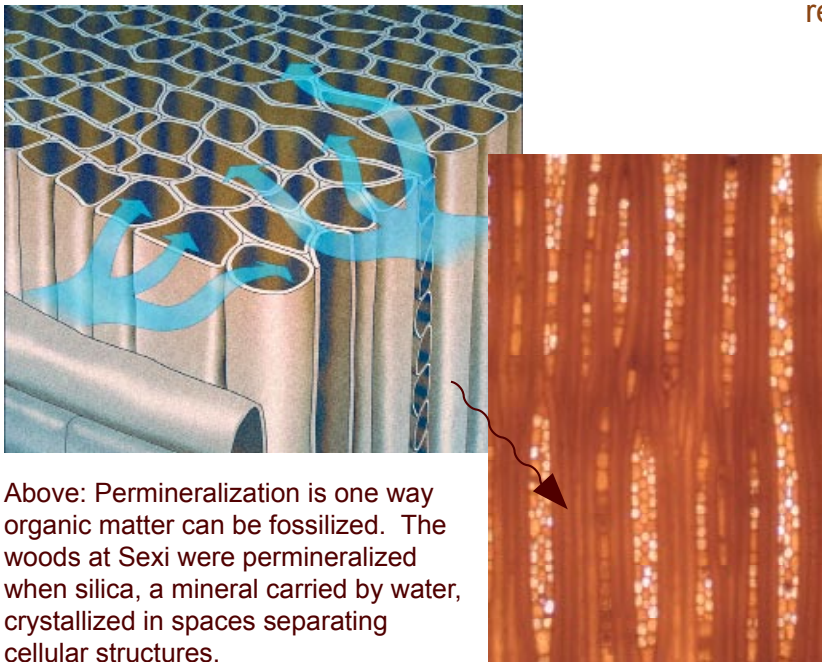
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Preservation

Fossilized leaves and wood are both found at The Petrified Forest Piedra Chamana. Due to the differing nature of their internal structures, the wood fossilized through permineralization, whereas leaves were preserved as delicate impressions.

Fossilized Wood

The volcanic debris flow that buried wood at Sexi also contained water enriched with the mineral silica (SiO_2). Water and silica slowly infiltrated and filled in spaces in the wood. As a result, the anatomical structure of the wood was preserved as rock.



Above: Permineralization is one way organic matter can be fossilized. The woods at Sexi were permineralized when silica, a mineral carried by water, crystallized in spaces separating cellular structures.

Right: The preserved anatomies of the petrified trees are visible when viewing thin sections of fossilized plant material with a microscope.

Fossilized Leaves

During one of the volcanic eruptions, leaves were buried in volcanic ash. Over time the organic matter in the leaves decayed and became compacted and consolidated in the ash. Today the leaves are preserved as impressions, but no original plant material remains.



Although the leaves have deteriorated since their deposition, impressions of their veins and shapes remain preserved in ash.

Significance

These fossilization processes have preserved detailed features of the woods and leaves. This information is useful in scientific investigations of the past environment, such as those examining the diversity of the Eocene environment or making inferences about the climate at Sexi 39 million years ago.

Peruvian law provides for the conservation and protection of the petrified forest. The fossils are part of the Patrimony of the Nation and fall under the jurisdiction of the Peruvian Ministry of Culture.

Continue by reading about the diversity of the fossil woods and leaves at Sexi.