

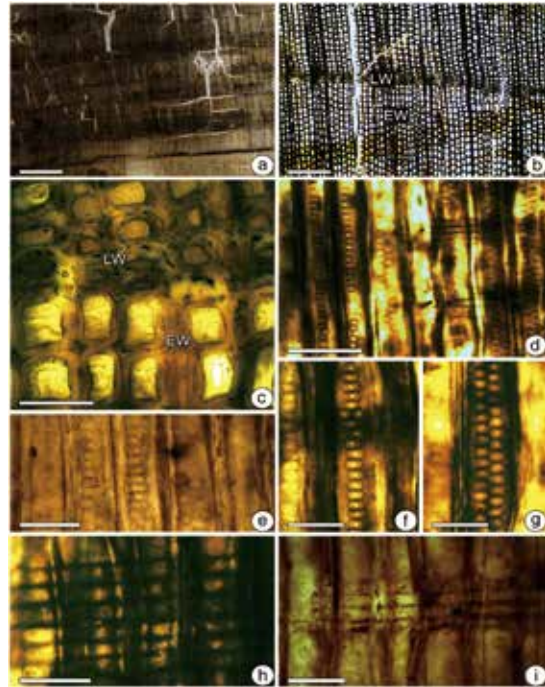
Fossil Wood *Xenoxylon* Indicates a Palaeoclimatic Cooling Event in 200 Ma

Fossil wood is among the significant proxies for terrestrial paleoclimate and paleogeographical reconstruction in Earth history. Abundant and diversified Mesozoic fossil woods are well recorded in China; however, Triassic fossil wood is rare.

A Sino-French research team led by Prof. WANG Yongdong from Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (NIGPAS) have found a new fossil wood from the Late Triassic Xujiahe Formation (Norian to Rhaetian) in Guangyuan of northern Sichuan Basin, southwestern China (dated to ca. 200 Ma). The fossil wood material consists of two well-preserved specimens yielding secondary xylem with distinct growth rings. Bordered pits on the radial tracheid walls are mostly contiguous, biseriate alternate, locally uniseriate and strongly flattened. Cross-fields show a large window-like pore. This anatomy is typical for an important fossil wood morphogenus *Xenoxylon* Gothan. Based on a novel combination of radial and cross-field pitting type and ray height, a new species, *Xenoxylon guangyuanense* sp. nov. is recognized.

The finding of this new fossil wood taxon contributes to a better understanding of the yet poorly documented *Xenoxylon* early radiation during the Late Triassic. This study was conducted by Dr. TIAN Ning (Shenyang Normal University), Prof. WANG Yongdong and Dr. LI Liqin from NIGPAS, Dr. Marc Philippe from University of Lyon 1, France, as well as other experts from Qufu Normal University and Chinese Academy of Geological Sciences, Beijing.

Xenoxylon is a paleobiogeographically significant conifer genus, which is considered to be an index for the cooler and/or wetter climates of Northern Hemisphere throughout the Late Triassic–Late Cretaceous range. The occurrence of *Xenoxylon* in the Sichuan Basin of southern China may indicate a short-term cooling event episode, sandwiched within a period during which warm and wet climate conditions largely prevailed over lower latitude regions of the Northern Hemisphere. Such a cooling event in the Sichuan Basin, which was located at a low



Anatomical structures of *Xenoxylon guangyuanense* sp. nov. from the Upper Triassic of the Sichuan Basin, showing growth rings, trachids and cross-field pitting. (Image by courtesy of Prof. WANG Yongdong's group)

paleolatitude on the eastern rim of Tethys, may be in accordance in time with the temperature decline event in Norian–Rhaetian boundary uncovered by oxygen isotope ($\delta^{18}\text{O}$) record in Italy of the western rim of Tethys.

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Reference

Tian N, Wang Y D*, Philippe M, Li LQ, Xie XP, Jiang ZK, 2016. New record of fossil wood *Xenoxylon* from the Late Triassic in the Sichuan Basin, southern China and its palaeoclimatic implications. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 464: 65–75. (*corresponding author).