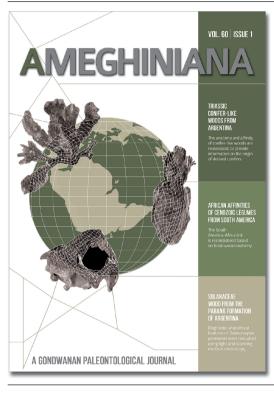


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GONDWANAN PERSPECTIVES: FOSSIL WOOD ANATOMY

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TRIASSIC CONIFER-LIKE WOODS FROM ARGENTINA

The anatomy and affinity of conifer-like woods are reassessed, to provide information on the origin of derived conifers.

AFRICAN AFFINITIES OF CENOZOIC LEGUMES FROM SOUTH AMERICA

The South America-Africa link is reconsidered based on fossil wood anatomy.

SOLANACEAE WOOD FROM THE PARANÁ FORMATION OF ARGENTINA

Diagnostic anatomical features of *Solanumxylon paranensis* were restudied using light and scanning electron microscopy.

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Fossil woods are commonly preserved as permineralizations and usually studied under an optical microscope using petrographic slides or in the scanning electron microscope (SEM). The anatomical studies of wood are then used as a basis for broader studies, for example, in systematics and taxonomy, biogeography, evolution, paleoecology, and paleoclimatology.

Argentina has an abundant record of fossil woods with around 325 taxa, including gymnosperms (conifer, cycads, pteridosperms, corystosperms/umkomasialeans, equisetaleans, and indeterminate gymnosperms) and eudicots (Pujana, 2022). They encompass a long interval of time, from the Carboniferous (Pujana & Césari, 2008) to the Pleistocene (*i.e.*, Ramos *et al.*, 2017) and covering almost all the regions of the country, especially Patagonia (Pujana, 2022).

The study of fossil woods (or paleoxylology) is one of paleobotanists' most widely developed lines of research. In Argentina, the first detailed description of fossil woods is from Conwentz (1884). Then, there were sporadic publications in the country until 2000, when works related to fossil wood began to be frequent (Pujana, 2022), and relatively many professionals are specialized in this subject now.

This special issue entitled "Fossil wood anatomy" publishes some of the works presented at the symposium "Paleoxilología y anatomía de ejes caulinares" held during the XII Congreso de la Asociación Paleontológica Argentina carried out online in November 2021. In addition, one manuscript sent to Ameghiniana during the elaboration of this special issue and fitting with it was also included. The issue brings together six papers by 23 authors covering diverse

topics, such as new fossil wood records with their anatomical descriptions and some with evolutionary and paleobiogeographic implications.

Greppi et al. describe 21 silicified woods from the Kachaike Formation (Albian, mid-Cretaceous) from the Santa Cruz Province, Argentina. This paper provides evidence of conifers' dominance of the tree canopy during the Cretaceous of Patagonia and, specifically in this locality, the dominance of Araucariaceae and Hirmeriellaceae/ Cheirolepidiaceae.

Bodnar *et al.* explore the first appearance of Gondwana's main derived conifer families. This paper provides the anatomy and affinity of Triassic Argentinean conifer-like woods. It adds information to resolve the controversy and systematic affinities of Araucariaceae, Cupressaceae, Hirmeriellaceae/Cheirolepidiaceae, and Podocarpaceae woods recovered from Argentina.

Moya *et al.* analyze the affinities of the legume fossil woods from the upper Cenozoic of the lower La Plata Basin (South America) with extant African genera and add information about their implications for paleoecology and paleophytogeography.

Franco and Brea redescribe *Solanumxylon paranensis* from the Late Miocene of the Paraná Formation (Entre Ríos Province, Argentina). In this revision paper the diagnosis is emended and confirms its assignment to Solanaceae and its affinity with extant *Solanum*.

Martínez Martínez reports a new record of Moraceae fossil wood and erects a new genus and species of Moraceae. These specimens were recovered from the fluvial sediments of the Ituzaingó Formation of Toma Vieja locality, Entre Ríos Province, Argentina.

Martínez *et al.* describe the first record of Mesozoic Araucariaceae fossil wood from the Corrientes Province, Argentina. These fossils assigned to *Agathoxylon* were recovered from Late Jurassic–Early Cretaceous Solari/Batucatú Formation at Paraje Tres Cerros.

The future of paleoxilology in Argentina is promising. In the last two decades, the studies of fossil woods of different geological periods and geographic regions have increased significantly (Pujana, 2022), and this trend seems to continue. In recent years, the number of researchers specialized in this discipline has increased considerably, with entire labs dedicated to the subject and including numerous Ph.D. theses. On these grounds, paleoxilology in Argentina will continue to develop in the upcoming years.

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