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## SUPPLEMENTARY ONLINE MATERIAL FOR

### **New records of Upper Triassic wood from Argentina and their biostratigraphic, paleoclimatic, and paleoecological implications**

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#### **Supplementary Online Material**

**SOM Table 1.** Comparison of the anatomical characters of the secondary xylem of *Baieroxylon* species

**SOM Table 2.** Comparison of the anatomical characters of related Triassic species of *Protophyllocladoxylon hilarioense* sp. nov.

**SOM Table 3.** Comparison of the anatomical characters of South American species of *Protophyllocladoxylon*.

#### **References**

**SOM Table 1.** Comparison of the anatomical characters of the secondary xylem of *Baieroxylon* species.

AP= axial parenchyma, HT= helicoidal thickenings, A= absent, P= present, r= rare, d= diffuse. Modified from Gnaedinger (2012).

Taxon	Age and country	Pith	Secondary xylem					
			Tracheid radial pitting	AP	HT	Cross-field pits	Xylem rays	
							Seriation	Height
<i>Baieroxylon multiseriale</i> Prasad, 1982	late Permian India	A	1–4 seriate, circular and hexagonal, alternate, opposite, contiguous and separate	A	P	1–15 circular and oval to simple	1 seriate	1–15
<i>B. cicatricum</i> Prasad and Lele in Crisafulli, 2001	late Permian Uruguay	Scars, homogeneous parenchymatous pith	1–2 seriate, alternate, opposite, contiguous and separate	A	p	Mean 4	1 seriate	3–12
<i>B. cicatricum</i> Prasad and Lele in Crisafulli and Herbst, 2009	late Permian Paraguay	Scars, homogeneous parenchymatous pith	1–2 seriate, alternate, opposite, contiguous and separate	A	p	Mean 4	1 seriate	3–12
<i>B. implexum</i> Greguss, 1961	Late Triassic, Germany Permian, Hungary	A	1–3 seriate, contiguous	r	p	1–4 elliptical, simple	1 seriate	1–8
<i>B. chilensis</i> Torres and Philippe in Crisafulli and Herbst, 2010	Late Triassic, Argentina	A	1 seriate, contiguous, some separate, rarely biseriate alternate	P	P	Cupressoid, 1–4	1 seriate	1–13
<i>B. cicatricum</i> Prasad and Lele, 1984	Late Triassic, India	A	1–3 seriate alternate-opposite, contiguous and separate	A	P	Up to 9	1 seriate	1–10
<i>B. cicatricum</i> Prasad and Lele in Bardola et al., 2009	Late Triassic, Brazil	A	1–2 seriate, alternate, contiguous and separate, mixed type	A	P	1–4	1 seriate	1–14
<i>B. cicatricum</i> Prasad and Lele, 1984 (Vallejos Leiz et al. 2022)	Upper Triassic, Argentina	A	1–2 seriate, alternate, contiguous and separate, mixed type	A	P	Up to 5 arranged in crowns	1 seriate	2–12
<i>B. graminovillae</i> (Zimmermann, 1953) Prasad and Lele, 1984	Late Triassic, Germany	A	1–2 seriate, rarely 3 seriate, araucarioid type	A	P	1–4 oval, simple	1 seriate	1–15
<i>B. cambogdiense</i> Serra, 1966a	Mesozoic, Asia	A	1–2 seriate, opposite, alternate, with crassulae	A	A	4–19 arranged in crowns	1–2 seriate	4–19
<i>B. chilense</i> Torres and Philippe, 2002	Early Jurassic Chile	A	1–2 seriate, contiguous or separate, sometimes alternate	P	A	1–2	1 seriate, some locally 2 seriate	1–7(–15)

<i>B. sp. cf. B. chilense</i> Torres and Philippe in Gnaedinger and Herbst, 2009	Early Jurassic Argentina	A	1–2 seriate, contiguous or separate, alternate or opposite	A	A	1–2	1 seriate, some locally 2 seriate	2–6
<i>B. lindicianum</i> Philippe, 1995 (Philippe and Barbacka 1997)	Early Jurassic, France and Hungary	A	1–2 seriate, alternate- subopposite	A	A	4–7 oval	1–2 seriate	—
<i>B. rocablanquense</i> Gnaedinger, 2012	Early Jurassic Argentina	A	1 seriate, contiguous and separate	A	P	1–6 circular cupressoid pits, in horizontal rows, sometimes 8 arranged in groups or crowns.	1 seriate	2–8
<i>B. cicatricum</i> Prasad and Lele in Rao and Ramanujan, 1986	Cretaceous India	A	1–2 seriate, alternate, opposite, contiguous and separate, occasionally 3 seriate, alternate	d	A	1–8 simple pits, elliptic or oval and oblique	1 seriate	1–11

**SOM Table 2.** Comparison of the anatomical characters of related Triassic species of *Protophylocladoxylon hilarioense* sp. nov. AP= axial parenchyma, GR= growth rings, T= tylosis, A= absent, P= present, ?= uncertain, n.o= not observed, ab= abundant, r= rare.

Taxon	Age and country	GR	AP	T	Radial pits	Tangential pits	Cross-field pits	Xylem rays	
								Seriation	Height
<i>Protophylocladoxylon zhaobishanensis</i> Wan, Yang, and Wang, 2019	Zhaobishan, Shanshan, Turpan, Xinjiang, China.	P	A	P	1–2- seriate, rarely 3 seriate; rounded to polygonal rarely flattened in outline, with circular apertures, uniseriate contiguous rarely arranged in groups. Multiseriate pits contiguously and alternatively arranged.	1–2 seriate	1–2; window-like, sometimes circular, oval simple pits	1 seriate	1–28
<i>P. xenoxylodes</i> Serra, 1966a	Phnom-Ker, Cambodia	A	P	P	1–2 seriate; alternate, rarely opposite, flattened, elliptic or circular	n.o.	1 occasionally 2; oval to circular horizontal	1, rarely 2 seriate	1–12
<i>P. thylloides</i> Serra, 1966a	Ho-Hom, Quang-Nam, Vietnam	P	?	ab	1–2 seriate; uniseriate flattened; biseriate, alternate, rarely opposite, contiguous or separate, hexagonal	n.o.	1–2; elliptic, oblique to almost vertical, rarely horizontal	1 seriate, rarely 2 seriate	1–29
<i>P. lechangense</i> Wang, 1993	South China	A	A	A	1–3, rarely 4 seriate; 2–3 seriate in earlywood, alternate, hexagonal, uniseriate in latewood, contiguous, subcircular	r	1–2; rectangular with rounded angles or elliptic, horizontal	1 seriate	1–11
<i>P. korubaense</i> Serra, 1966b	Rovieng, Kompong Thom, Cambodia	A	P	P	1–2 seriate; uniseriate, contiguous or separate circular; biseriate, alternate, rarely opposite	r	1–2; oval to circular	1–2 seriate	1–28
<i>P. parathylloides</i> Vozenin-Serra, 1970	Quang-Nam, Vietnam	A	?	ab	1–2 seriate; araucarian, with a mixed tendency	n.o.	1–2; small more or less oval, obliquely disposed, sometimes with a vertical tendency	1-2 seriate	1–48
<i>P. szei</i> Wang, 1991	Guangdong, Mongolia	A	A	A	1 seriate; contiguous or sometime separate, circular or sometimes flattened	n.o.	1; large, circular, broadly oval or elliptic, vertical or oblique	1 seriate	1–10
<i>P. hilarioense</i> (Vallejos Leiz et al. 2022)	Hilario, San Juan, Argentina	P	A	A	1–2 seriate; uniseriate, contiguous to flattened, sometimes separate with abietinoid tendency circular; biseriate, subopposite, contiguous and flattened, rarely separate circular	1, rarely 2 seriate	1–2; elliptic, oblique, rarely horizontal	1 seriate; partly 2 seriate	1–10

**SOM Table 3.** Comparison of the anatomical characters of South American species of *Protophyllocladoxylon*.

AP= axial parenchyma, GR= growth rings, A= absent, P= present, n.o= not observed, r= rare.

Taxon	Locality and country	Age	Secondary xylem						
			GR	AP	Radial pits	Tangencial pits	Cross-field pits	Xylem rays	
								Seriation	Height
<i>Protophyllocladoxylon dolianitii</i> Mussa, 1958	Brazil	late Carboniferous (Mississippian)	A	A	1–3 seriate; alternate and polygonal	n.o.	1–2, horizontal or oblique	1 seriate	1–30
<i>P. derby</i> (Oliveira, 1936) Maheshwari, 1972	Brazil	late Carboniferous (Pennsylvanian)	P	A	1 seriate; oblique and oval	r	1–2	1 seriate; partly 2 seriate	1–47
<i>P. rosablancaense</i> Pons, 1971	Colombia	Early Cretaceous	A	A	1–2 seriate; uniseriate, contiguous, flattened, rarely circular; biseriate, alternate, flattened	n.o.	1–2, elliptic, oblique, rarely horizontal	1-2 seriate	1–20
<i>P. hilarioense</i> (Vallejos Leiz et al. 2022)	Argentina	Upper Triassic	P	A	1–2 seriate; uniseriate, contiguous to flattened, sometimes separate with abietinoid tendency, circular; biseriate, subopposite, contiguous and flattened, rarely separate, circular	1, rarely 2 seriate	1–2; elliptic, oblique, rarely horizontal	1 seriate; partly 2 seriate	1–10

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