

**PALMOXYLON SURANGEI LAKHANPAL (1955). PETRIFIED PALM  
FROM DHAPRO SAND STONE BEDS (LOWER PALEOCENE) OF  
REHMAN DOHRO, DISTRICT DADU, SIND, PAKISTAN.**

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**Abstract**

A petrified fossil wood collected from the tertiary succession of Sind, Pakistan is reported in this paper. On the basis of its peculiar anatomical features it is identified as *Palmoxylon surangei* Lakhnupal (1955).

**Introduction**

The presence of silicified wood of both dicot and monocot in the upper tertiary and quaternary deposits of Sind region was reported by Blanford (1879) but no attempt was made to identify these fossil wood pieces. The first detailed description and identification of fossil wood appeared in 1968 (Khan & Rehmatullah, 1968; 1971), followed by Khan *et al.* (1971), Khan & Rajput (1975) and Rajput & Khan (1982).

The specimen under investigation was collected at the base of western slope of Bara dome (Lat. 26°07' N Long. 67°53' 12" E) in Rehman Dohro, 8 miles west of Amri Railway station which is 270 km north of Karachi.

The geological succession here is as under. —

Lower to Middle Eocene	Tiyon Formation	
Lower Eocene	Laki Formation	
Paleocene	Ranikot Formation	Upper Ranikot
		Lower Ranikot
		Trap Rocks
		Basal Ranikot
		(Dhapro Beds)
		Khadro Formation
		(Cardites Beds)

**Method**

Three dimensional sections of the fossil wood were made by usual method of cutting and grinding. Fossil wood were cut into small thin slices with the help of rock cutting machine. Cut pieces were made thin with the help of different grades of carborandum powder and finally mounted in Canada balsam

### External Characters

Petrified palm wood is dull brown in colour, single piece of 20 cm. long and 6.8 cm. in diameter, centre of the wood is partially hollow. Fibro vascular bundles are visible on the polished surface by naked eye (Fig. 1).

### Anatomical Description

The fibro vascular bundles are broadly ovate to reniform and are irregularly oriented in loosely arranged cells of ground mass (Fig. 2). Average size of fibro vascular bundles is 0.85 – 0.9 mm, and their distribution is 45-50/cm<sup>2</sup>. The fibrous part of the bundles is reniform and consist of thick walled oval cells with small central lumen, partially filled with deposits (Fig. 3). The vascular part of the fibro vascular bundle is not well preserved. Occasionally 2-3 and 4 large vessels are found in some of them (Fig. 3).

The tabular parenchyma is present usually in two layers around the fibro vascular bundles (Fig. 4), the fibro vascular ratio is 4:1. Purely fibrous bundles are also present and consists of about 20 fibres and measures about 260 mm in diameter (Fig. 5 & 6). Stegmata are also present on the fibrous cells (Fig. 8). Leaf trace bundles are absent. The ground cells in T.S are poorly preserved (Fig. 4) but in L.S they are well preserved, compact and are quite big in size, mostly elongated, partially filled with mineral deposits (Fig. 7).

### Discussion

The present paper deals with the second detailed account of palm fossil wood from the Rehman Dohoro beds of Ranikot formation of Sind (Khan *et al.*, 1971). This wood also belongs to the subgroup reniforma (Sahni, 1943). Anatomical features of the present palm wood mostly resembles with the structures of the central part of the *Palmoxylon surangei* described by Lakhanpal (1955) from Deccan intretrappean rocks of Chindwara district of central India. The comparative figures in cross section of both the woods are very much similar in distribution, shape and size of the fibro vascular ratio as well as presence of tubular parenchyma in 1 to 2 layers around the fibro-vascular bundles. Both the woods show presence of purely fibrous bundles with 20 fibres as well as the stegmata on the fibrous cells (Fig. 8), Morphologically the central part of both wood fragments is 6.5 cm. in diameter. On the basis of the above resemblances the present wood is also named as *Palmoxylon surangei* Lakhanpal (1955).

### Diagnostic Characters

Radius 6.5 cm. Fibrovascular bundles are ovate to reniform about 45-50/cm<sup>2</sup> and 0.9 x 0.85 mm in diameter. Fibro vascular ratio is 4:1. Xylem with 3 to 4 vessels.

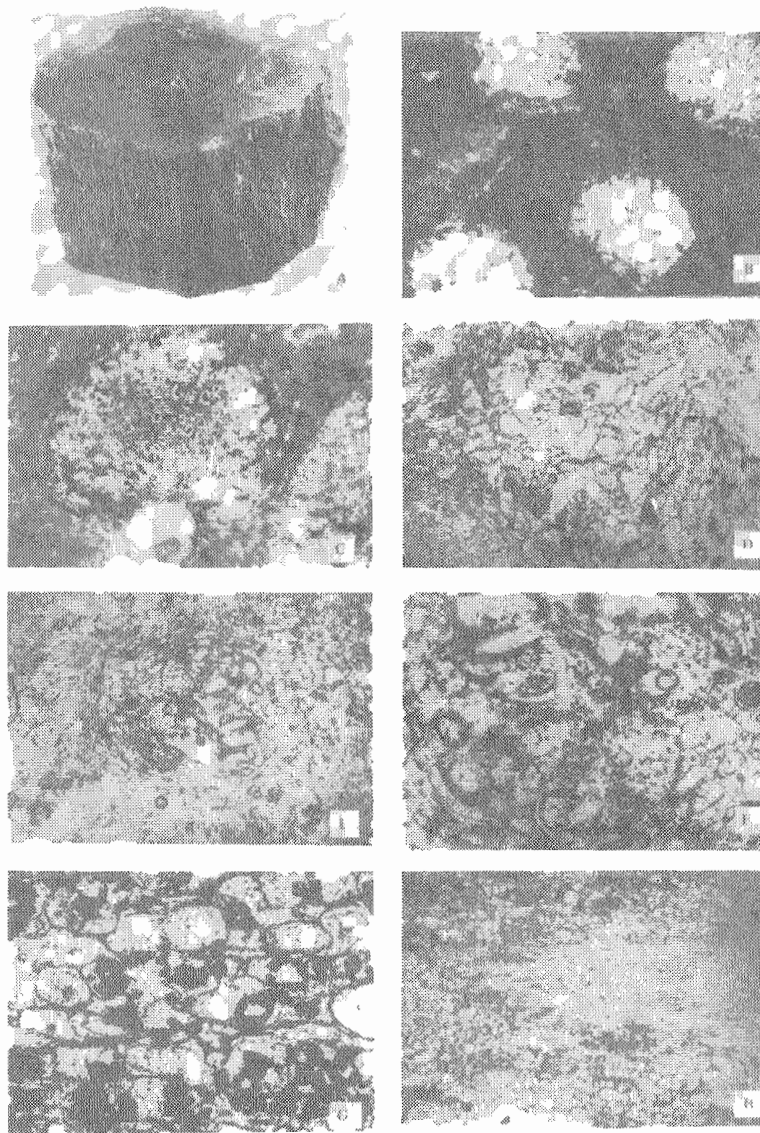


Fig. 1 A. Silicified wood piece showing fibro vascular bundles on the polished surface.  
 B. T.S. showing arrangement of fibro vascular bundles x 120  
 C. T.S. showing enlarged fibro vascular bundle x 200.  
 D. Ground cells in cross section x 320.  
 E. T.S. showing fibrous bundle x 288.  
 F. T.S. showing enlarged fibrous bundle x 800.  
 G. L.S. showing compact ground cells x 800.  
 H. L.S. showing stegmata on fibrous cells x 288.

Stigmata present on fibrous cells. Ground cells in L.S are elongated to oval oblong and fairly compact

Locality:	Rehman Dohro
Geological horizon:	Dhapro sand stone beds
Age:	Probably lower Paleocene

### Classification

Class	Monocotyledon
Group	Palmae
Subgroup	Reniforma
Genus	<i>Palmoxylon</i>
Species	<i>P. surangei</i> Lakhapal (1955)

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