

DADOXYLON SAHNII
FROM THE OLIVE SERIES OF SALT RANGE, WEST PUNJAB,
PAKISTAN

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ABSTRACT.—The present paper describes a new species of *Dadoxylon*, *D. sahnii* from the Olive Series, Khewra, Salt Range. This is the first and only *Dadoxylon* to be described from the Punjab Salt Range. The characters for specific differentiation are the occasional biseriate medullary rays in the middle and the number of pits in the field with a tendency to aggregate.

INTRODUCTION

THE petrified wood described in this paper is the first well preserved specimen* so far reported from an undisputed Lower Permian horizon of Salt Range region, West Punjab. It comes from the Olive Series (Lower Permian) exposed near Khewra, and was kindly passed on to me for description by the late Prof. B. Sahni, F.R.S.



The fauna in the Olive series is represented by *Eurydesma cordatum*, *E. hobartense*, *E. punjabicum*, *E. subovatum*, *Pterinea* cf. *lata*, *Fenestella fossula*, *Cardiomorpha pinguis*, *Dielasma dadanense*, *Astartila* cf. *ovalis*. and *Nucula pidhensis*.

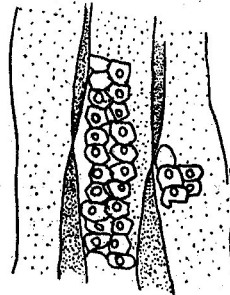
Reed (1931) (Gignoux 1955, 226) subdivided the marine series overlying the Talchir formation into two subdivisions. The lower 200 meters sub-division, Lower Permian in age, consists of a lower sandstone member while the upper member, is represented by lower Productus limestone, with fusulinids and *Richthofenia*.

DESCRIPTION

Although the material is of a friable nature, thinly ground sections were obtained and stained with gentian violet. The stain as well as the brown colour of the material

rendered certain details very clear, which were otherwise obscure.

The specimen is 8 to 9 inches in diameter and about 18 inches in length. It is full of cracks filled with iron oxide, which is either limonite or yellow ochre.

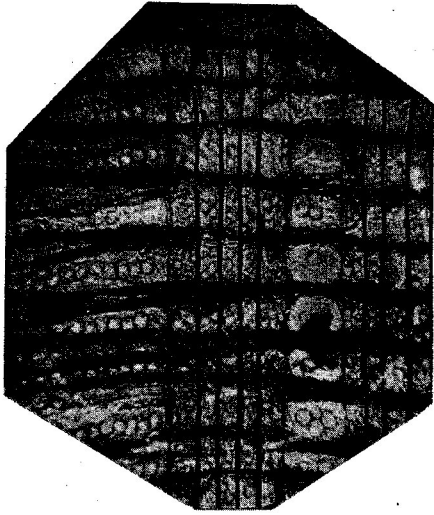


Text-fig. 1. × 210

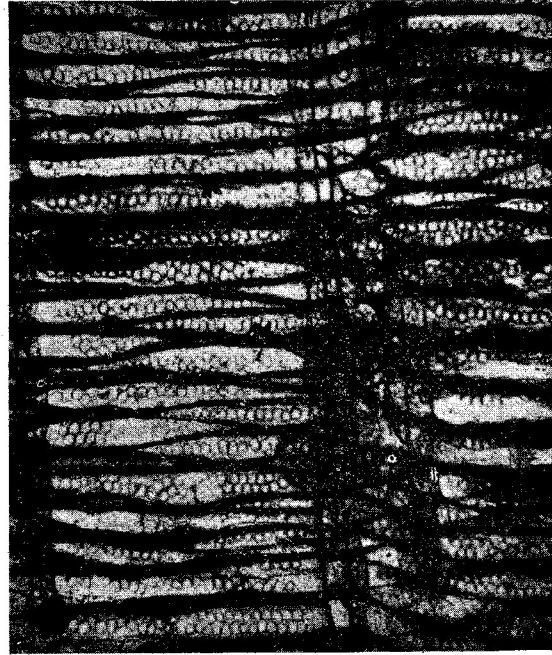
Transverse section—The growth rings are very feebly marked and $\frac{1}{2}$ cm. in width (Pl. 10, fig. 4). The spring and autumn woods are distinguishable only under high magnification and there is very little difference between the two. Xylem parenchyma absent. The trachieds in transverse section are almost isodiametric and measure $27\mu \times 27\mu$ in the autumn wood and $29\mu \times 29\mu$ in the spring wood.

Radial longitudinal section—The trachieds are elongated, measuring on the average 510μ in length; greatest width 27μ ; transverse walls oblique. Pitting of the araucarian type, mostly uniseriate or

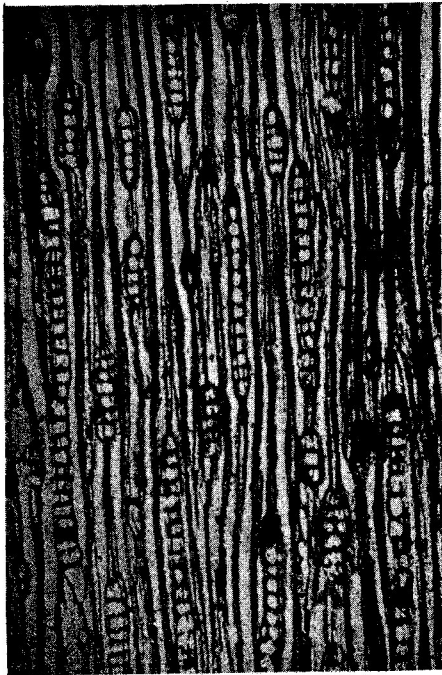
*I also found a petrified wood about 1 inch in length, in the Speckled Sandstone exposed in the Pidh road section, Khewra. The preservation was extremely poor, and exact generic determination was not possible. Probably that was also a *Dadoxylon*.



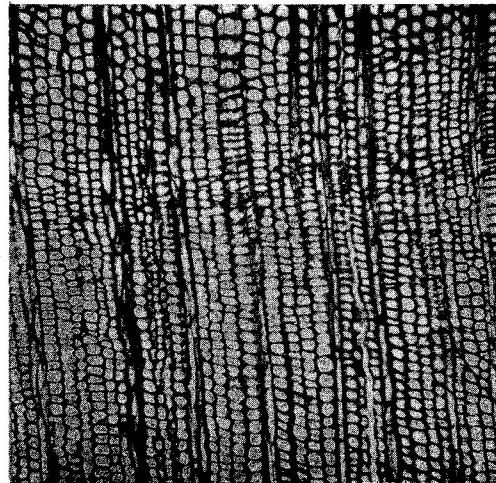
1



2



3



4

SINGH : DADOXYLON SAHNII SP. NOV.

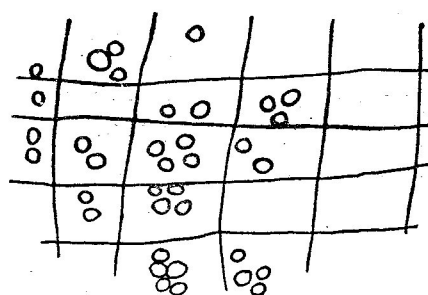
biseriate, occasionally triseriate. The pits measure $9-10\mu \times 10-12\mu$ including the border (Pl. 10, fig. 1; text-fig. 1); they are slightly flattened at the top and bottom when uniseriate, polygonal and alternate when biseriate or triseriate. Pores roughly circular in outline measuring $5\mu \times 5\mu$ in diameter (Pl. 10, fig. 2; text-fig. 1). Pits in the field simple, circular in outline, 1 to 6 in number and measure 5μ to 7μ with a tendency to aggregate (Pl. 10, fig. 1; text-figs. 2-3).

From *D. nummularium*—Seward, 1917, it differs in having occasional triseriate pitting on the radial wall, and the height of medullary rays is greater.

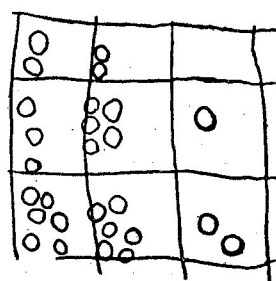
COMPARISON WITH INDIAN SPECIES

It resembles *D. Zaleskyi* Sahni 1933 only in the absence of pits on tangential walls but differs in all other characters.

D. bengalensis Holden, resembles it only in the tendency of grouping of the pits in the



Text-fig. 2. $\times 210$



Text-fig. 3. $\times 210$

Tangential section—Medullary rays uniseriate, occasionally biseriate in the middle; 2 to 39 cells high; pits absent on the tangential walls. (Pl. 10, fig. 3.)

COMPARISON

A comparison, with many species from the Palaeozoic, Mesozoic and Tertiary of northern and southern hemispheres was made, and a tabular account of those species with which it resembles closely is given in Table 1. (For tabular description of other species, see Chitale 1949, pp. 175-176.)

Our species resembles *D. indicum* Holden (1916) having pits in the field with a tendency to fuse, but it differs in all other characters.

field, but differs in the height of medullary rays and other characters.

With *Dadoxylon* sp. Sahni, it resembles in having faintly marked growth rings, but differs in not having absolutely uniseriate medullary rays, and its height and other characters.

With *D. Deccani* Shukla 1938 it resembles in having 1-6 pits in the field, absence of tangential pit, but differs in the height of the medullary rays, and the indistinct growth ring.

D. resinosum Shukla, 1944, resembles it in the height of medullary rays, but differs very much in all other characters.

With *D. chandaensis* Chitale 1949 it resembles only in having uni-bi-or occasionally triseriate radial pits; the height of medullary rays in *Di sahani* s.p. nov. is greater, being

EXPLANATION OF PLATE 10

- FIG. 1—*Dadoxylon sahnii* sp. nov.
2—*Dadoxylon sahnii* sp. nov.
3—*Dadoxylon sahnii* sp. nov.
4—*Dadoxylon sahnii* sp. nov.

- Radial longitudinal section, showing pits in the field. $\times 150$.
Radial longitudinal section, showing nature of pits on the radial walls of tracheids. $\times 65$.
Tangential section, showing nature of medullary rays. $\times 85$.
Transverse section. $\times 55$.

TABLE 1

Southern Hemisphere Species

Name	Tangential Section	Radial longitudinal Section
<i>D. nummularium</i> Seward 1917.	Medullary rays mostly uniseriate, 1 to 30 cells high.	1 to 2 row of pit on the radial wall.
<i>D. indicum</i> Holden 1916.	Uniseriate, 2 to 7 cells high.	1 to 2 rows of pits ; pits in the field 1 to 4, with a tendency to fuse. Growth rings well marked.
<i>D. brandlingii</i> Seward 1919.	Uniseriate, 40 cells high ; tendency to scaliform pitting.	1 to 5 row of pits on the radial wall ; 'V' shaped leaf bases.
<i>Salt Range Species</i>		
<i>D. sahnii</i> sp. nov. (Salt Range).	Uniseriate, occasionally biseriate in the middle ; 1 to 39 cells high.	1 to 2 rows occasionally 3 on the radial wall ; pits in the field 1 to 6 with a tendency to aggregate.

2-39 cells, in all other characters *D. sahnii* sp. nov. differs from *D. chandaensis*.

The chief interest of this specimen is that it is the only well preserved specimen of *Dadoxylon* found *in situ* in undisputed Lower Permian beds of Salt Range. This happens to be also the only *Dadoxylon* so far known from the Salt Range of the Punjab.

In view of the differences from the known Palaeozoic Gondwana species, I am provisionally giving it a new specific name *Dadoxylon sahnii* in memory of late Prof. Birbal Sahni, F.R.S., to whom I am indebted for the material and for guidance.

SPECIFIC DIAGNOSIS

Febly marked growth rings, araucarian type uni-or biseriate, occasionally triseriate pits on the radial walls ; pits in the field having tendency to aggregate, medullary rays occasionally biseriate in the middle, height 2-39 cells, pits on tangential walls absent.

ACKNOWLEDGMENT

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