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Resource Management and Agricultural Development

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Dr. R. V. Bhole

'Ravichandram' Survey No-101/1, Plot
No-23, Mundada Nagar, Jalgaon

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Dr. N. G. Mali

Principal Sambhaji College (Arts, Commerce &
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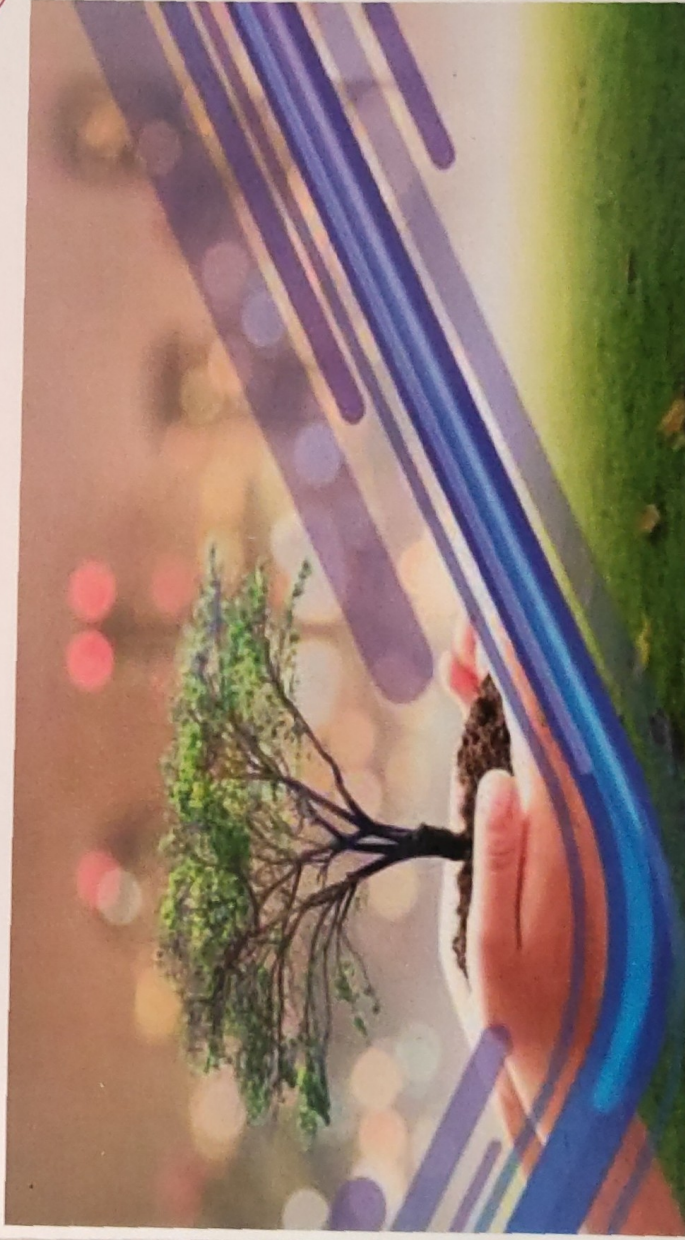
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A Dicot Wood from the Deccan Intertrappean Beds of Shibla (M.S.), India

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Abstract :-

The paper describes the anatomy of a new species of fossil wood from the Deccan Intertrappean Beds of Shibla (Lat. 19°58.141'N and Long. 78°40.838'E) a small village of Pandharkwada tehsil of Yeotmal District (M. S.), India. This fossiliferous locality is a treasure of black cherts having petrified fossils of varying group of plants from Pteridophytes to Angiosperms. The woods and roots are preserved deeply inside the big black cherts and exposed after breaking.

Keywords :- Petrified, Chert, Fossiliferous

Introduction:-

Although petrified woods are reported by various authors from many fossiliferous localities of Maharashtra State. Some of the dicotyledonous woods described from these localities are, *Barringtonioxylonmahurzarii* (Shallom, 1960), *Aeschynomenetertiara* (Prakash, 1963), *Anacardioxylonsemicarpoides* (Prakash and Dayal, 1965), *Hibiscoxylonintertrappeum* (Trivedi and Ambawani 1971), *Shoreoxylonmahurzarii* (Paradkar, 1972), *Aristolochioxylonprakashii* (Kulkarni and Patil, 1977), *Sterculioxylonbaradense* (Sheikh and Kolhe, 1978), *Aeschynomenoxylonmawargaoensis* (Shete and Kulkarni, 1982), *Grewioxyloncandisum* (Bande and Shrivastava, 1995), *Ailanthoxylonindicum* (Prasad et al., 2007), *Erythroxylonmahurzarii* (Kagade, 2007), *Barringtonioxylondeccanense* (Shallom (Shrivastava et al., 2009). The present investigation adds further to knowledge of the fossil flora of these localities.

Material And Method:- A piece of chert having the petrified material of wood have brought into the laboratory; After breaking the chert material have been exposed in its transverse section. With the help of tiles saw T. L. S. and R. L. S. have been taken. After etching with HF (Darrah, 1936) and by using cellulose acetate peel method the required slides are made for the further study. The peels are mounted on DPX mountant. Photographs of the slides are taken for the detail study of the wood. Camera lucida diagrams have drawn to measure frequency of vessels, appearance of vessels and size of the various other structures.

Description:-

Topography :- The specimen under study is a petrified piece of Dicotyledonous wood showing primary as well as secondary structures. The collected fossil wood specimen measures about 3 cm in diameter and 8 cm in length. The primary tissues are present but growth rings are absent.

Pith :- Central part of wood consist ill preserved and crushed pith. It consists loosely arranged parenchymatous cells which are oval to isodiametric in shape (Plate 1, fig. 1).

Primary xylem :- Pith is surrounded by ill preserved primary xylem. It consist ill preserved xylem and phloem (Plate 1, fig. 1).

Secondary xylem :- It is compact and surrounded on primary xylem. It consist of vessels, xylem parenchyma, wood rays and fibres.

Vessels :- The wood is diffuse porous and vessels are visible to the naked eyes as small dots on the transverse surface. The vessels are medium sized and solitary; distribution is long radial multiples type and occur in radial rows of 2 - 3, sometimes as in older regions in clusters of 3 - 6. But near to pith region contain solitary or in multiple of 2. Circular to oval in cross section with flat contact walls when in groups, often with contiguous rays on one side, sheathed with parenchyma, evenly distributed (Plate 1, fig. 2). Smaller vessel measure up to 60 µm to 80 µm and larger one up to 120 µm to 150 µm in diameter. They are circular in transverse plane. Their boundary walls are thick. The vessel frequency is 15 to 18 per square mm. (Plate 1, fig. 2). Rays are seen contiguous with vessel. Perforation plates are simple and oblique, (Plate 2, figs. 2, 3 and 4). Intervascular pit pairs are simple, alternate, bordered and rounded to oval in shape (Plate 2, figs. 4 and 5).

Xylem Parenchyma :- It is predominantly Paratracheal vasicentric type. One celled thick parenchyma forms complete ring around the vessels. (Plate 2, fig. 1).

Wood rays :- The wood rays are microscopic. They are heterogeneous, biseriate to multiseriate (Plate 1, fig. 4). Rays are heterocellular consisting of erect and procumbent parenchymatous cells. Biseriate xylem rays are 09 to 15 cells and few 11 to 15 cells in height. Multiseriate xylem rays are 13 to 18 cells in height. The frequency of xylem rays is 12 to 15 per square mm. The average diameter of xylem rays measure up to 30 µm. Narrow rays and broad rays are clearly differentiated. Narrow rays are comparatively abundant.



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CERTIFICATE

This is to certify that Prof./Dr./Mr./Ms. Nitin M. Ghatbandhe
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