Palaeobotanist 53(2004) : 177-180
0031-0174/2004/177-180 $2.00

Short Communication

Podocarpoxylon bansaense n. sp. from the Bansa beds, South Rewa Gondwana Basin

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(Received 18 March 2004; revised version accepted 20 May 2004)

INTRODUCTION

CONTINENTAL fresh water deposits of Upper Gondwana Sequence in India are characterised by Ptilophyllum flora preserved in the form of leaves, stems, fructifications and associated parts. A gymnosperm dominant vegetation spread over wide geographic area assignable to Early Cretaceous age has been studied by various workers particularly for floristic correlation (see Lakhanpal *et al.*, 1976; Venkatachala & Maheshwari, 1988; Rajanikanth & Prakash, 1996).

Upper Gondwana Sequence of South Rewa Gondwana Basin is represented by soft massive sandstones, white, yellow and pinkish shales with sporadic lignite and coal seams and limestone bands. Bansa beds (Jabalpur Formation) overlie the Vindhyans in the west and older Gondwana rocks of Parsora and Damuda units in the east (Sastry *et al.*, 1977; Datta *et al.*, 1984). The deposition of Bansa beds commenced in the north western extremity of the basin after a pronounced hiatus spread over entire Jurassic Period (Datta *et al.*, 1984). Lithologically Bansa beds are distinguished by sandstones, clay and carbonaceous clay and in turn overlien by the Lameta beds of Maastrichtian age.

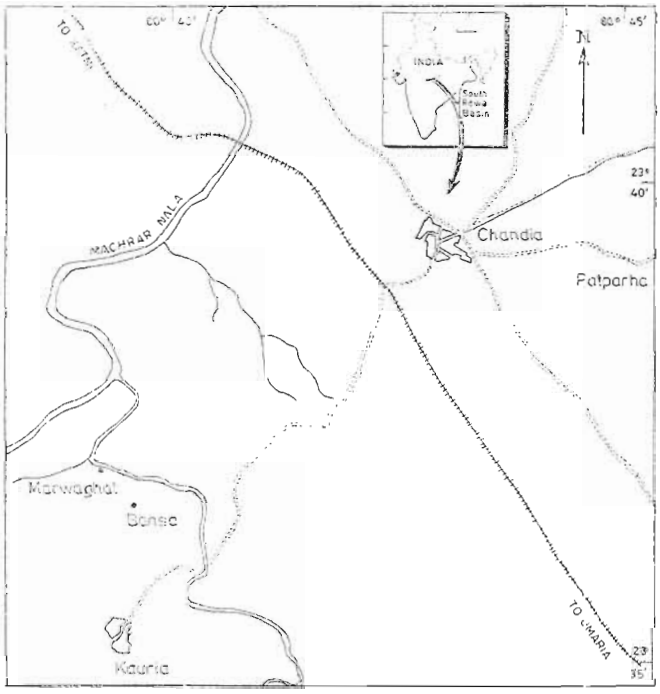

Fig. 1—Map showing location of fossil occurrence.

Mesozoic plant fossils of the South Rewa Gondwana Basin are preserved in the form of leaves, stem impressions, spore-pollen and associated remains have been studied and palaeobotanical analyses have been made (Sukh-Dev, 1970, 1972; Bose, 1959; Maheshwari, 1974; Sukh-Dev & Zeba Bano, 1976, 1977).

Wood flora has not been recorded so far except *Araucarioxylon* sp. from Triassic Tiki Formation, South Rewa Gondwana Basin (Sahni. 1931). The present communication constitutes first report of petrified wood taxa *Podocarpoxylon* from the Early Cretaceous Bansa beds.

Dark brown petrified wood measuring 30 x 14 cm was collected from the Marwar Ghat (80° 38' : 23° 37') about 1.5 km north east of Bansa Village, Umaria District, Madhya Pradesh (Fig. 1). The slides are prepared using conventional section cutting method and polished slides have been deposited in the Museum repository of Birbal Sahni Institute of Palaeobotany, Lucknow.

SYSTEMATICS

Kingdom—PLANTAE

Class—GYMNOSPERMS

Order—CONIFERALES

Family—PODOCARPACEAE

Genus—PODOCARPOXYLON

Lithounits	Lithology	Age
	Laterite, old and recent Alluvium	Recent
Deccan Trap	Lava flows	Eocene to Late Cretaceous
Lameta	Coarse, calcareous, conglomerate, Limestone, purple grits/sills, Green sandstone	Late Cretaceous
	—UNCONFORMITY—	
Bansa beds Jabalpur Formation	Sandstone alternating with clays, conglomerate, earthy haematite, coal, carbonaceous shale, red clay and bed of chert	Early Cretaceous
	—UNCONFORMITY—	
Denwa	Alternating bed of sandstone and variegated clays (red green and buff coloured clays)	Triassic
Bagra	Conglomerates, limestone and variegated red clays	
	—UNCONFORMITY—	
Lower Gondwana		Permian
	—UNCONFORMITY—	
Archaean		Azoic

Fig. 2— Showing sedimentary sequences around the area of study (modified after Kumar, 1994)

PODOCARPOXYLON BANSAENSE n. sp.

Present wood is identified by the presence of distinct growth rings, resin parenchyma, uni-biseriate bordered radial wall pits and 2-3 podocarpoid cross field pits.

Transverse Section—Growth rings distinct, wide, early wood 8-22 cells wide, Late wood cells 4-7 wide, resin parenchyma scattered, transition from early to late wood gradual.

Tangential longitudinal Section—Xylem rays uniseriate, very rarely biseriate, mostly short, 2-14 cells in height, tangential wall pits absent, xylem cells oval, 15-40 µm.

Radial longitudinal Section—Radial wall pits mostly uniseriate, rarely biseriate, bordered, circular, opposite, 6-11 µm in size, Cross field pits 2-3, podocarpoid, 3-7 µm.

REMARKS

The present wood is the first report from the South Rewa Gondwana Basin and resembles some extant *Podocarpoxylon indicum* Bharadwaj 1953 described from the Rajmahal Formation. But differ in cross-field pit characters. There are five species of *Podocarpoxylon* species known from the Early Cretaceous Rajmahal, Gangapur and Sriperumbudur horizons, (Bharadwaj, 1953; Jain, 1965; Manik & Srivastava, 1991; Sahni, 1931; Suryanarayana, 1953), all of which differ in radial and cross-field pit characters.

Locality—Marwar Ghat, Umaria District, Madhya Pradesh.

Horizon and Age—Bansa beds, Jabalpur Formation, Early Cretaceous.

Museum Slide No.—BSIP 39106 A, B, C.

Acknowledgements—*The authors are thankful to the authorities of Birbal Sahni Institute of Palaeobotany, Lucknow for infrastructural facilities.*

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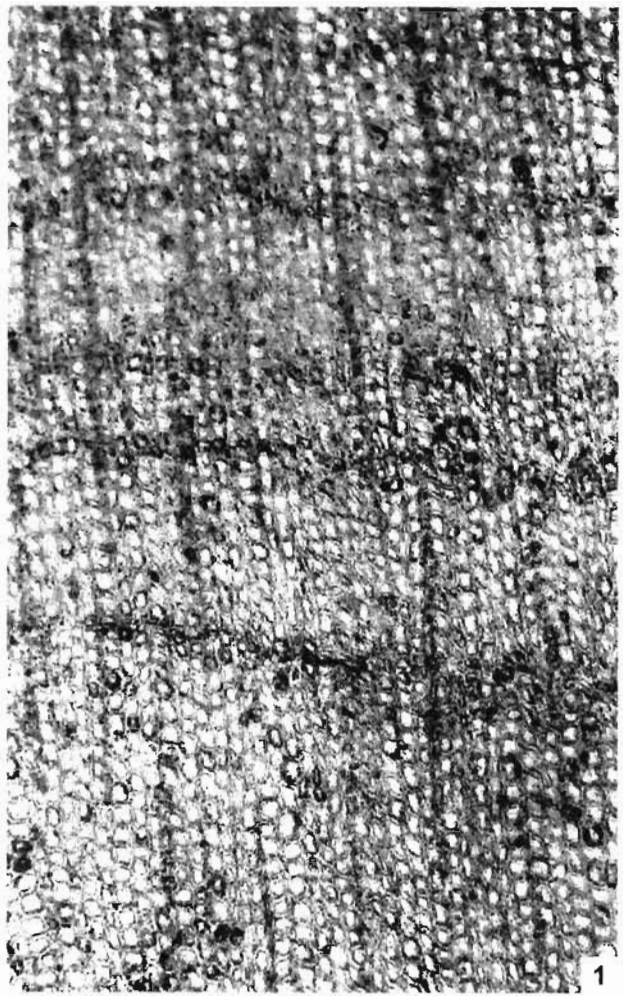
PLATE 1 →

1. Transverse section showing distinct growth rings. x 30.
2. Tangential longitudinal section showing short uniseriate xylem rays. x 30.
3. Tangential longitudinal section showing uniseriate xylem rays. x 180.
4. Radial longitudinal section showing circular uniseriate bordered radial wall pits. x 500.
5. Radial longitudinal section showing cross field pits. x 300.



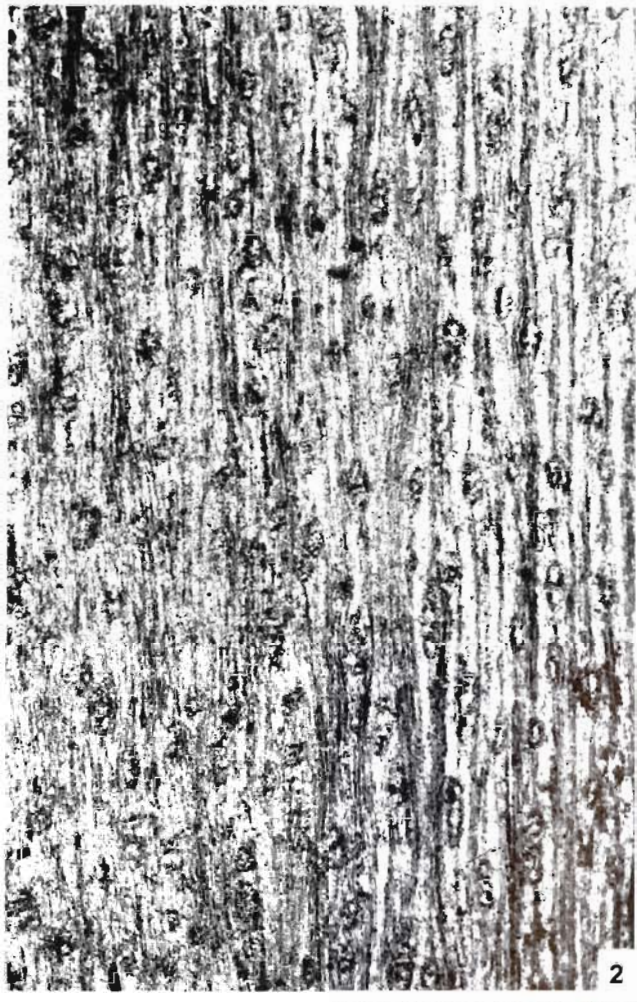


PLATE 1

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