

A palyno-assemblage from Mahadeva Formation in Nidpur area, Madhya Pradesh

R.S. Tiwari & Ram-Awatar

Birbal Sahni Institute of Palaeobotany, 53 University Road, Lucknow 226 007

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Pollen and spores are recorded from a sandy shale, exposed within the Mahadeva package, at about 10 km north of Nidpur bed in the Gopad River, Singrauli Coalfield, M.P. The components of the assemblage having taeniate pollen and cavate spores qualify for a late Early Triassic age of the strata.

Key-words—Palynology, Mahadeva Formation, Nidpur, Early Triassic, India.

INTRODUCTION

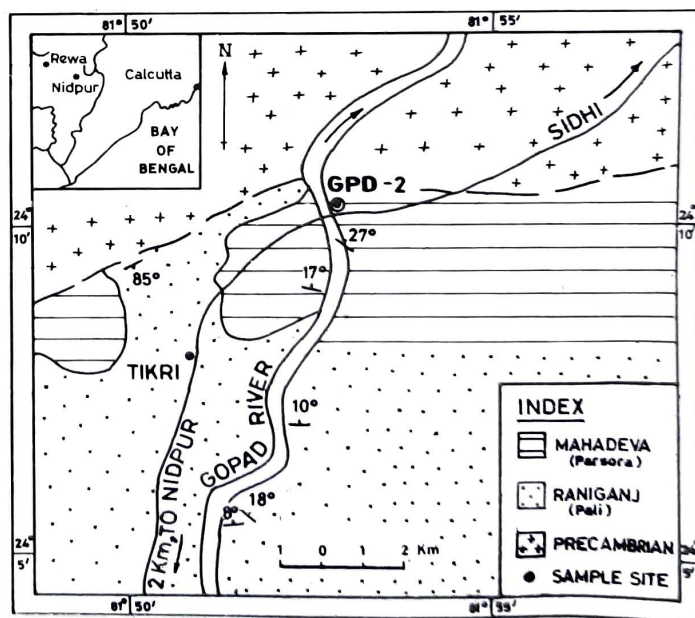
IN the north-western tung of the Singrauli Coalfield (M.P.), the Gopad River flows from South to North, cutting across the Middle and Upper Pali sequences and enters into a patch of Mahadeva Fm which, in its turn, makes a boundary with the Precambrian basement (Map 1, after Raja Rao, 1983). The Nidpur beds, rich in *Dicroidium* flora (Satsangi, 1964), have been dated as Early Triassic by palynological analysis (Chandra & Satsangi, 1965; Bharadwaj & Srivastava, 1969; Trivedi & Misra, 1970; Tiwari & Ram-Awatar, 1990). At about 10 km north of Nidpur village, Mahadeva beds are exposed in the form of high hillocks locally known as "Chakdahi Hills". The sequence comprises massive thickly bedded, medium to coarse-grained ferruginous sandstone with yellow to dark brown pallets of clay and concretion forming nodule-like structure.

PALYNOLOGICAL CONTENTS

A sandy shale band (5 cm thick) exposed within the sandstone (ca 500 m thick) on the right bank of the Gopad River on the northern side of the road bridge (Map 1) has yielded a palyno-assemblage.

The preservation of spores and pollen is poor but reveals fairly well identifiable morphographic characters. The following palynotaxa have been identified (Pl. 1, figs 1-12): *Lunatisporites* Leschik 1955 emend. Scheuring 1970; *Trabeculosporites* Trivedi & Misra 1970 emend. Tiwari & Ram-Awatar 1992; *Densosporites* Weyland

& Krieger emend. Dettmann 1963; *Alisporites* Daughtery emend. Nilson 1958; *Lundbladispora* Balme emend. Playford 1965; *Falcisporites* Leschick emend. Klaus 1963; *Crescentipollenites* Bharadwaj, Tiwari & Kar 1974; *Inaperturopollenites* Pflug & Thomson in Thomson & Pflug 1953; *Striatopodocarpites* Soritsch & Sedova emend. Bharadwaj 1962, and *Klausipollenites* Jansonius 1962.



Map 1. Geological map of the northern portion of the Gopad River Section (after Raja Rao, 1983) showing sample location in the outcrop.

DISCUSSION AND CONCLUSION

The nomenclature of the lithological succession in Gopad River Section has been recently adopted according to the name of the formations used in the South Rewa Basin (Anon, 1990; Tiwari & Ram-Awatar, 1990; Majumdar, 1981). Thus, the earlier mapped Mahadevas are equated with Parsora Formation. They contain grey, medium to coarse-grained sandstone with red to lilac coloured sandstone and shales. Thus the presently studied samples are the part of the Parsora Formation. Similar lithological suite with lilac colour sandstone conformably caps the Nidpur beds (Tiwari & Ram-Awatar, 1990; Anon, 1990).

The presence of taeniate and non-striate disaccate pollen along with cavate spores suggests a Triassic age for the assemblage. When compared with the Nidpur palyno-assemblage (Tiwari & Ram-Awatar, 1990) certain forms, such as *Densipollenites* and *Weylandites* are conspicuously absent from the present assemblage.

Although the impoverished nature of the assemblage does not permit finer tagging within the Triassic succession, nevertheless, more of taeniate pollen group and the absence of *Densipollenites* gives it a younger aspect than the Nidpur assemblage. The stratigraphic position of the sequence also supports this conclusion. The Upper Member of the Pali Formation to which the Nidpur beds belong contains some carbonaceous shaly facies along

with grey shales and fine-grained sandstone. No such lithology is recorded in the Parsora Formation. The Nidpur beds having been equated with lower part of Scythian, the presently studied Parsora (earstwhile Mahadeva in this area) assemblage could be placed at the higher position within the Scythian segment, i.e., late Early Triassic.

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Plate 1

(All photomicrographs enlarged ca x 500, Leitz Microscope No. 512794/066300).

1. *Lunatisporites* Sl. No. BSIP. 10654; Coordinate: 15, x 101.
- 2.5. *Trabeculospores* Sl. Nos. BSIP.10659; 10658; Coordinates: 11, x 102, 41, x.108.
3. *Densoisporites* Sl. No. BSIP. 10655; Coordinate: 32, x 96.
4. *Alisporites* Sl. No. BSIP. 10710; Coordinate : 10, x 112.
6. *Lundbladispore* Sl. No. BSIP. 10661; Coordinate: 15, x 107.
7. *Falcisporites* Sl. No. BSIP. 10655; Coordinate: 43, x 106.
8. *Inaperturopollenites* (a portion) Sl. No. BSIP. 10661. Coordinate: 36, x108.
9. *Crescentipollenites* Sl. No. BSIP. 10656; Coordinate: 37, x102.
10. *Lunatisporites* Sl. No. BSIP.10654; Coordinate: 15, x 101. Ca x 750.
11. *Striatopodocarpites* Sl. No. BSIP. 10661; Coordinate: 22, x 103.
12. *Klausipollenites* Sl. No. BSIP. 10657; Coordinate: 30.5, x 99.5.

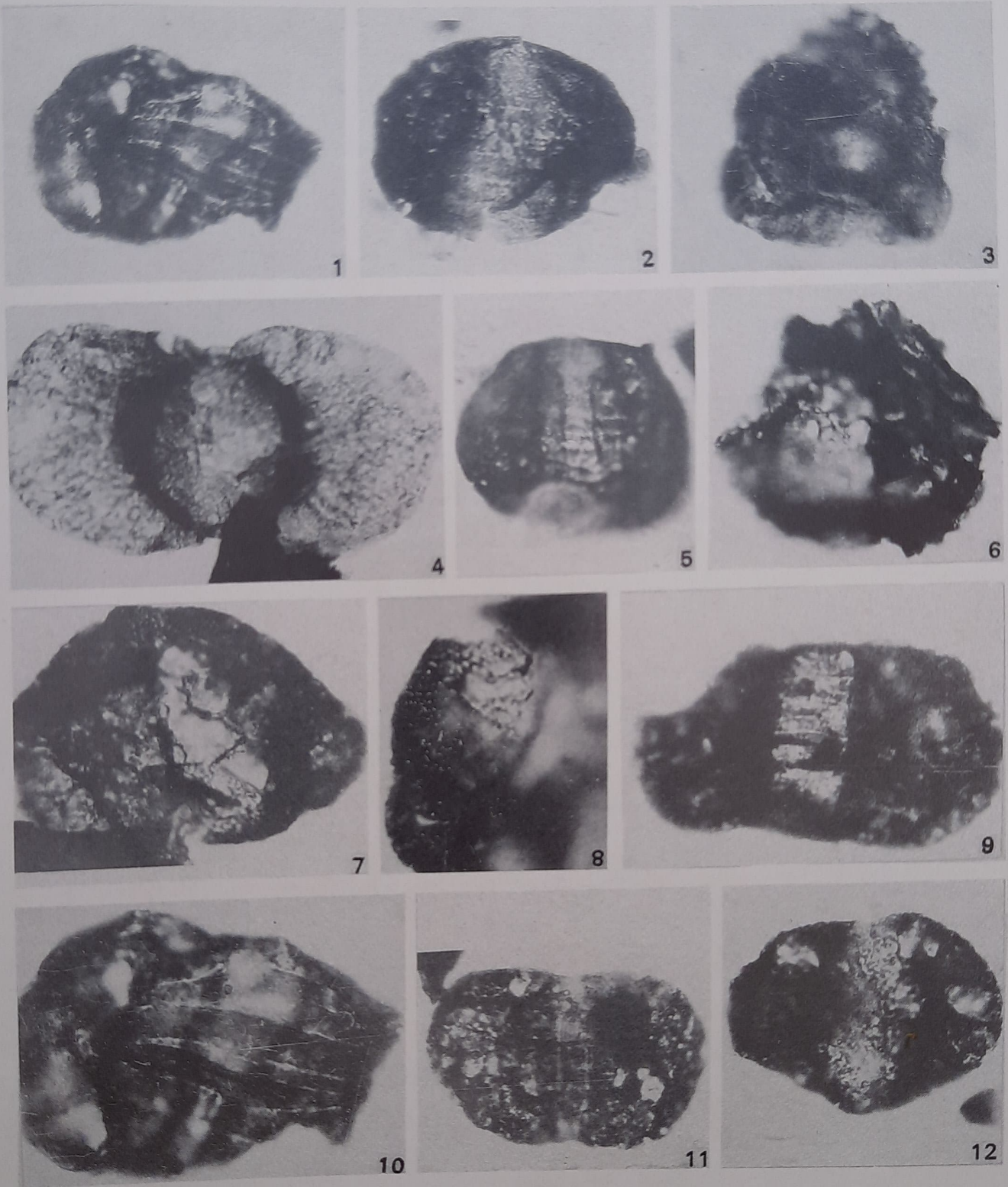


Plate 1