

TALCHIR MIOFLORA FROM KORBA COALFIELD, MADHYA PRADESH

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ABSTRACT

Talchir shales exposed along Dhengur Nala, Korba Coalfield, Madhya Pradesh have been studied palynologically. The *Sporae dispersae* consists of 22 genera and 34 species. Quantitative representation of various taxa at generic level has been given and compared with the known Talchir assemblages. The present assemblage is characterised by the dominance of radial monosaccate pollen grains chiefly *Parasaccites* while *Plicatipollenites* and *Callumispora* occur subdominantly.

INTRODUCTION

Palynological studies of the Talchir rocks were done for the first time by VIRKKI (1939, 1946) from Boulder Beds in Kathwai, Warcha and Jhallelwari, Salt Range, W. Pakistan; Daltonganj Coalfield, Palamau District, Bihar; Pali Rewa, India and Bacchus Marsh Tillite, Victoria, Australia. PANT (1955), PANT and MEHRA (1963) also described the miospores from Bacchus Marsh Tillite, Victoria Australia. VENKATACHALA and KAR (1968) reinvestigated the shales 25 ft. above the Talchir Boulder Bed from Kathwai, Salt Range. POTONIE and LELE (1961) studied the *Sporae dispersae* of Talchir Stage in South Rewa Gondwana Basin. Recently LELE and KARIM (1969, 1971) and LELE and MAKADA (1972) have studied the mioflora of the Talchir rocks exposed in Patharjore Nala, Jayanti Coalfield. LELE and ANIL-CHANDRA (1972) have described the palynology of the marine intercalations in Umaria and Manendragarh. The pollen flora of the latter is rich in monosaccate pollen grains.

Considerable knowledge now exists regarding the miospore assemblages of coal horizons of Korba Coalfield (BHARADWAJ & TIWARI, 1964a, 1964b; TIWARI 1965). Recently BHARADWAJ and SRIVASTAVA (1973) has described the palynological succession in the subsurface sediments of a bore hole NCKB-19 of Korba Coalfield. The succession includes the Talchir-Karharbari stages of the Lower Gondwana sequence. The present investigation has been undertaken to study the mioflora of the Talchir rocks exposed in Dhengur Nala, Korba Coalfield.

The Talchir rocks, which are 2-8 metres thick, are exposed in Dhengur Nala, 82° 40'-82° 45' × 22° 15' N.N.E. of Korba township. The basalmost bed is Talchir Boulder Bed. The boulders are large and spheroidal bound in clayey matrix. The rocks underlying these Boulder Beds are not exposed but overlying the same is a thick layer of fine-grained, blue-green needle shales with brown-black laminations. The sediments overlying the needle shales gradually become coarser, yellowish and sandy in texture. Six samples were collected vertically representing all the lithotypes out of which only 3 of them yielded miospores (Table 1)

Table 1—Section showing the lithological succession exposed along Dhengur Nala, Korba Coalfield

Sample nos.	Lithology	Spore-incidence
6	(Yellow, coarse-grained sandstone	Absent
5	(Yellow-green medium grained sandstone ..	Present
4	(Green-grey needle shales with brown-black laminations	Absent
3	(" " "	Absent
2	(" " "	Present
1	(Boulder bed	Present

MIOFLORAL ASSEMBLAGE

The miospore assemblage recovered from the Talchir rocks exposed in Dhengur Nala, Korba Coalfield consists of 22 genera and 34 species which are listed here:

Leiotriletes sp.

Callumispora tenuis Bharadwaj & Srivastava

Hennellysporites indicus Tiwari

Plicatisporites distinctus Lele & Makada

Cyclogranisporites gondwanensis Bharadwaj & Salujha

Horriditriletes curvibaculosus Bharadwaj & Salujha

Horriditriletes novus Tiwari

Horriditriletes rampurensis Tiwari

Microbaculispora tentula Tiwari

Brevitriletes unicus (Tiwari) Bharadwaj & Srivastava

Jayantisporites pseudozonatus Lele & Makada

Jayantisporites indicus Lele & Makada

Parasaccites distinctus Tiwari

Parasaccites diffusus Tiwari

Parasaccites bilateralis Tiwari

Parasaccites talchirensis Lele & Makada

Parasaccites plicatus Lele & Makada

Tuberisaccites sp.

Plicatipollenites indicus Lele

Plicatipollenites densus Srivastava

Cannanoropollis densus (Lele) Bose & Maheshwari

Caheniasaccites ovatus Bose & Kar

Caheniasaccites indicus Srivastava

Potonieisporites lelei Maheshwari

Potonieisporites barrelis Tiwari

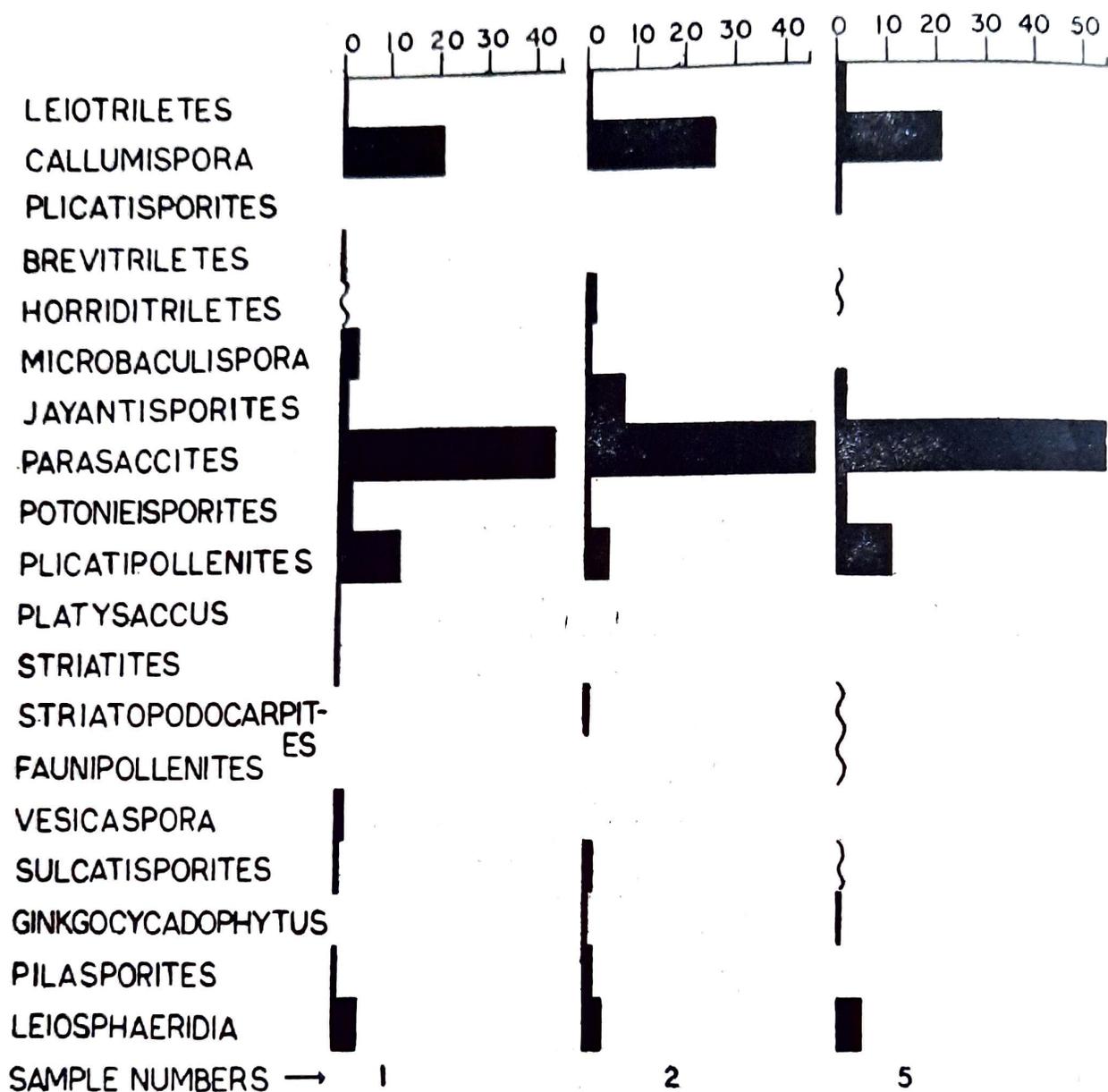
Faunipollenites varius Bharadwaj

Faunipollenites goraiensis (Potonié & Lele) Maithy

Vesicaspora ovata (Schemel) Hart

Sulcalisporites maximum (Hart) Singh

Ginkgocycadophytus novus Srivastava
Pilasporites calculus Balme & Hennelly
Balmcella tetragona Pant & Mehra
Leiosphaeridia indica Lele & Anli-Chandra
Portalites sp.



HISTOGRAM 1- SHOWING DISTRIBUTION OF MIOSPORES IN
 DHENGUR NALA , KORBA COALFIELD

The quantitative representation of each of these miospores have been estimated at the generic level (Histogram 1). The radial monosaccate pollen grains are the dominant constituents being present up to 60 per cent. *Parasaccites* alone occurs up to 48 per cent. *Plicatipollenites* occurs next to it (10%). The trilete miospores range up to 31 per cent. Amongst these *Callumispora* ranges up to 22 per cent. Laevigate and apiculate triletes (e.g. *Leiotriletes*, *Brevitriletes*, *Horriditriletes*), *Varitriletes* and *Zonate triletes* are poorly present (3%, 2%, and 4% respectively). Straited bisaccates, nonstriated bisaccates, monocolpate and alete sporomorphs occur rarely (less than 5 per cent). Thus, the miofloral assemblage

is totally dominated by the radial monosaccate pollen grains associated with trilete miospores of *Callumispora* type.

The *Sporae dispersae* from South Rewa Gondwana Basin described by POTONIÉ and LELE (1961) resembles very much in having a similar dominance of monosaccate pollen grains, viz. *Parasaccites* and *Plicatipollenites* (then *Nuskoisporites* complex). Miospores similar to *Callumispora* are very few unlike that in the present investigation. Alete miospore (*Pilasporites*) and acritarchs viz. *Balmeella*, *Leiosphaeridia* and *Portalites* are also absent in the assemblage described by POTONIÉ and LELE (1961). The miospore assemblage described from the Talchir rocks including the boulder bed of Jayanti Coalfield (LELE & KARIM, 1971; LELE & MAKADA, 1972) also shows similar abundance of monosaccate pollen grains. The mioflora of the marine intercalations of Manendragarh (LELE & ANIL-CHANDRA, 1972) shows the dominance of *Plicatipollenites* (56%) and *Parasaccites* (33%). The older part of the Biozone No. 1 of the Korba Coalfield (BHARADWAJ & SRIVASTAVA, 1973) resembles very closely with the present assemblage in view of the similar dominance of trilete bearing radial monosaccates.

Thus, the present miofloral assemblage sets an additional evidence that the Talchir stage is wholly dominated by the radial monosaccates, while the trilete and disaccates are rare in occurrence.

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