



Short Communication

Glossopteris mohudaensis Chandra and Surange, 1979 from the Barakar Formation, Early Permian, Prakasham Khani Open Cast Mine II, Manuguru Area, Telangana, India.

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ABSTRACT

Present study deals with the systematic description of *Glossopteris mohudaensis* from the Barakar Formation, Early Permian of Prakasham Khani Open Cast Mine II, Manuguru Area, Telangana, India. Earlier the species was reported from the Kamthi Formation of lower Gondwana deposits of India. However, this is the first detailed systematic investigation of *G. mohudaensis* from the Barakar Formation, Early Permian, lower Gondwana deposits in the area.

Keywords: Barakar Formation, Gondwana, Open Cast Mine, Telangana.

INTRODUCTION

Reports of megafossils from the Godavari Graben are sporadic (King 1881; Lakshminarayana and Murty 1990; Tewari and Jha 2006; Joshi et al. 2015). Comprehensive knowledge of plant megafossils of all the Indian lower Gondwana basins and their comparative studies, it was necessary to carry out the systematic study of plant megafossils from the Godavari Graben which is one of the major coal producing areas. In this study species of *Glossopteris* namely *G. mohudaensis* which is being describing for the first time from the Barakar Formation, Early Permian of Prakasham Khani Open Cast Mine II, Kothagudem Area, Telangana.

MATERIALS AND METHODS

The samples collected from the Prakasham Khani Open Cast Mine II (litholog 1) were grouped, sorted, cleaned, photographed and systematically analysed for morphotaxonomical study. Shape of leaf, nature of apex, base, margin, midrib and venation pattern were considered (Lawrence 1955; Melville 1969; Chandra and Surange 1979) were followed for exact description. The specimens were studied with the help of a hand lens and low power binocular microscope Leica DFC 290 under incident light

for morphotaxonomical characters. The specimens have been deposited in the repository of BSIP Museum vide statement no. 1420.

RESULTS

SYSTEMATIC DESCRIPTION

Glossopteris mohudaensis Chandra and Surange, 1979

Specimen No.: 50/7369.

Locality: Prakasham Khani Open Cast Mine II, Manuguru Area, Godavari Graben, Telangana.

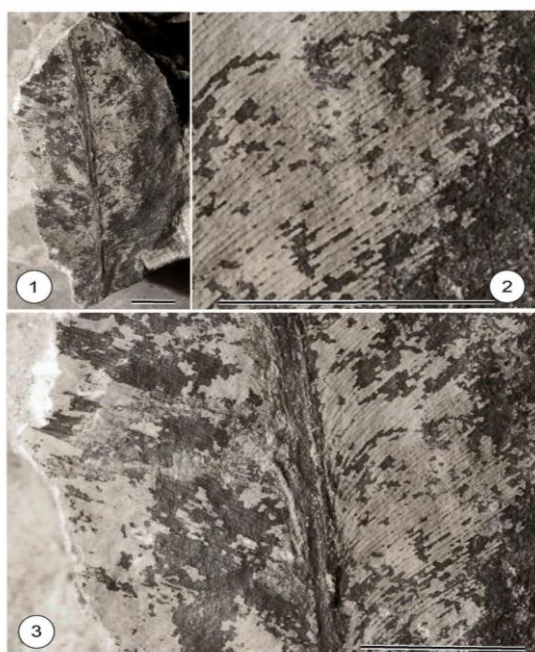
Horizon & Age: Barakar Formation, Early Permian.

Description: There is only one fragmentary leaf in the collection. Preserved portion of the specimen measures 7.8 cm in length and 3.8 cm broad, widest part which is about 2 cm above the middle portion of the specimen. Apex and base are not preserved. Margin is also not preserved. Midrib is thick, elevated, distinct, striated (having 2-3 striations). The secondary veins arise at an angle of 45°-60° after dichotomies and anastomoses form hexagonal, narrow elongate meshes, uniform throughout the lamina. Meshes are 2-3 mm long and 0.2-0.4 mm broad. The vein density near midrib is 18-22 veins per cm while 22-26 veins per cm near the margin.

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Remarks: The present specimen is comparable with *Glossopteris mohudaensis* (Fig.1) described by Chandra and Surange (1979, Pl. 11, Fig. 2; Pl. 18, Fig.14; Pl. 46, Fig. 2; Text-Figs 39B b, 51 G) having distinct, broad midrib and narrow-elongate hexagonal meshes. However, it differs in having the less angle of origin of secondary veins in comparison to *G. mohudaensis* described by Chandra and Surange (1979). *G. mohudaensis* shows taeniopteroid type of venation pattern as in *Glossopteris taeniopteroides* (Maheshwari 1965, Pl. 2, Fig. 10). *G. mohudaensis* is distinct in having meshes slightly arched upward and not transverse as in *G. taeniopteroides*. The present leaf also resembles with *G. mohudaensis* described from the Kamthi Formation, Bazargaon Area, Wardha Basin, Maharashtra (Chandra and Prasad 1981, Pl.3, Fig.24), the Kamthi Formation of Mahanadi Basin, Odisha (Chandra and Singh 1992, Pl.11, Fig.4), Wardha Coalfield, Maharashtra (Tewari 2008, Pl.4, Fig.7), Satpura Gondwana Basin, Madhya Pradesh (Srivastava and Agnihotri 2010, Pl.3, Fig.11) in having similar shape, midrib and the venation pattern.



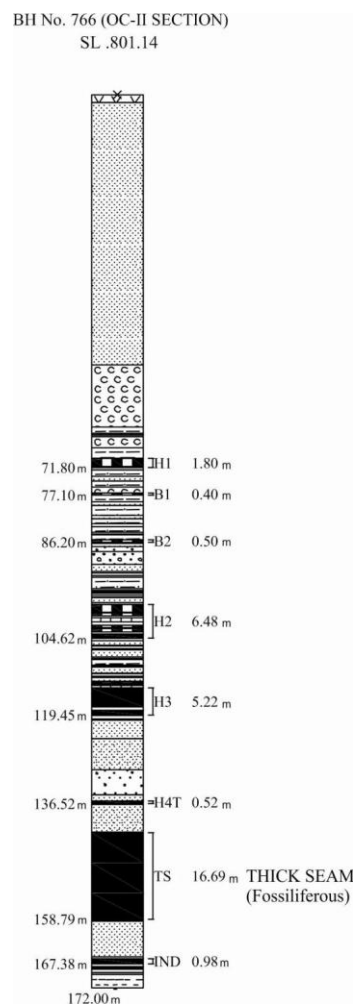
(Scale bar = 1 cm)

Fig. 1. 1. *Glossopteris mohudaensis* Chandra and Surange, 1979. Specimen no. 50/7369. 2. Enlargement showing the details of venation pattern near the margin of leaf. 3. Enlargement showing the details of midrib and venation pattern of leaf.

DISCUSSION

The study revealed that the *Glossopteris mohudiensis* is sparsely distributed in the lower Gondwana sequences in India, mainly from the Kamthi Formation (= Raniganj Formation): Bazargaon Area, Wardha Basin,

Maharashtra (Chandra and Prasad 1981), Mahanadi Basin, Odisha (Chandra and Singh 1992), Wardha Coalfield, Wardha Basin, Maharashtra (Tewari 2008), Bijori Formation, Satpura Gondwana Basin, Madhya Pradesh (Srivatsava and Agnihothri 2010). Occurrence of *G. mohudaensis* from the Barakar Formation, Early Permian of Prakasham Khani Open Cast Mine II, Manuguru Area, Telangana contributes towards the existing knowledge of this species (Joshi 2016).



Litholog 1. General lithostratigraphic succession of the Prakasham Khani Open Cast Mine II (after SCCL, 2011)

Conclusion

Present study helpful to understand the phytogeographic distribution of this species and widens the scope of this species as one of the characteristic forms of the Barakar Formation of Early Permian age.

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