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THE GENUS *GLOSSOPTERIS* FROM LOWER GONDWANA FORMATIONS OF IB-RIVER COALFIELD, ORISSA, INDIA

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ABSTRACT

The Ib-River Coalfield in Orissa State is a part of the Mahanadi Master Basin. Recent extensive investigations were conducted in this coalfield to locate fossiliferous beds in the Lower Gondwana deposits and as a result a large cache of plant fossils was recovered from six different exposures belonging to the Barakar and Lower Kamthi Formations. The complete flora includes 23 genera representing nine orders viz., Lycopodiales, Equisetales, Sphenophyllales, Filicales, Cordaitales, Coniferales, Ginkgoales, Cycadales and Glossopteridales.

Only *Glossopteris*, comprising 53 species and constituting 64.73% of the total plant assemblage, is discussed. The remaining plant groups are under publication. Of the 53 species, 49 are reported for the first time from the Ib-River Coalfield. Similarly, 31 and two species of this genus have been recorded for the first time in the Indian Gondwana from the Barakar and Kamthi Formations respectively. *Glossopteris browniana* forms the dominant taxa (20.4%, 110 specimens) followed by *G. communis* (14.8%, 80 specimens) and *G. indica* (14.3%, 77 specimens) in the Barakar Formation, whereas in the Lower Kamthi Formation *Glossopteris indica* dominates (30.2%) the flora followed by *G. communis* (17 %) and *G. raniganjensis* (13.2 %). Huge collection of *Glossopteris* specimens (593), with high specific diversity demonstrates that the genus *Glossopteris* grew as luxuriantly in the Barakar and the Lower Kamthi Formations as in the Raniganj Formation of the Indian Gondwana. Abundant leaves of *Glossopteris* in the fine sediments indicate seasonal falling and favourable conditions for plant growth. The range of variation within the species has also been observed. A diversification pattern of different *Glossopteris* species in various Gondwana formations of Peninsular India is discussed. A comparative account of the distribution of *Glossopteris* species in the Gondwana sediments of Mahanadi Master Basin is reviewed. Distribution of *Glossopteris* species in the context of other Lower Gondwana coalfields has also been analyzed.

Keywords: *Glossopteris*, Ib-River, Mahanadi Basin, Barakar Formation, Kamthi Formation