

PALEOENVIRONMENTAL RECONSTRUCTION FROM CRETACEOUS PELAGIC SEDIMENTS OF KAWAGARH FORMATION IN NIZAMPUR BASIN AND KOHAT RANGE, PAKISTAN

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Abstract

The paleoceanographic conditions and its effects on the evolution of Cretaceous planktonic foraminiferal are evaluated from two stratigraphic sections i.e. Kahi Road Section and Thora Stana Section of the Upper Indus Basin. The Kawagarh Formation at Kahi Road Section in Nizampur area is mainly composed of marl and thin bedded limestone while at Thora Stana Section it is comprised of limestone and black shale. Prior to the evolution of Cretaceous planktonic foraminiferal and subsequent paleoceanographic reconstruction, the hemipelagic sediments of the Kawagarh Formation were put into a reliable time frame using the planktonic foraminiferal biostratigraphy. In Kahi Road Section two planktonic foraminiferal biozones i.e. *Dicarinella asymetrica* and *Globotruncanita elevata* are erected. Based on these two biozones Early Santonian to Early Campanian age is assigned to the Kawagarh Formation in Kahi Road Section. While in Thora Stana Section one planktonic foraminiferal biozone i.e. *Globotruncanita biozone* of early Campanian age is erected. The evolution of Cretaceous planktonic foraminifera is established on the basis of its species richness, rate of speciation, extinction, diversification, and turn over. To further authenticate the paleoceanographic conditions which have affected the evolution of Cretaceous planktonic foraminifera the microfacies details of the Kawagarh Formation are established. In this study a total of 13 microfacies are recognized in both stratigraphic studied sections. At Kahi Road Section, four microfacies i.e. MFKRK 1- MFKRK 4 are established, whereas MFKRK stands for Microfacies of Kahi Road Kawagarh. The microfacies details suggest deposition in in outer ramp and deep basin environment while in Thora Stana Section a total of nine microfacies MFTSK 1-MFTSK 9 microfacies are identified, MFTSK stands for Microfacies of Thora Stana Kawagarh. Based on the microfacies details the Kawagarh Formation in Thora Stana Section is deposited in middle to outer ramp settings.