GSW61793: Rohtas limestone: An Extensive Review

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Abstract

The Vindhyan Supergroup is the world's second largest Proterozoic basin, consisting of four groups: Semri, Kaimur, Rewa, and Bhander. These groups span from Mesoproterozoic to Neoproterozoic times. The Supergroup is divided into three sectors: the Son valley sector, the Bundelkhand Sector, and the Rajasthan sector. It is bounded by the Son-Narmada (SONA) faults from the south and the Great Boundary Fault (GBF) from the southwest. Despite these fault lines, the area remains mostly undisturbed. The succession has undergone extensive examination by numerous geoscientists throughout the years, resulting in a multitude of advancements, analyses, theories, and conclusions. The transitions between these stages have been found to exhibit diverse characteristics, although a clear unconformity is only observed in a limited number of locations. Furthermore, various geologists have discovered discrepancies in the sedimentation of various types of limestones. The existence of diverse limestone facies within a roughly 50m thick sequence in the examined region has consistently captivated geologists, prompting further investigation. The sedimentation of the entire sequence is not consistent across its geographical span. Additionally, the quality of the limestone discovered also exhibits variations. It should be emphasized that the eastern Son valley sector, specifically the Kaimur and Rohtas districts in Bihar, has not received as much attention in research compared to the other two sectors located in Madhya Pradesh and Rajasthan. It is crucial to compile the findings and conduct a thorough comparison. Based on different findings, there have been speculations regarding the nomenclature and division of the succession, which now demands significant attention and further study. Exploring this subject matter can open up a fresh avenue for research and discourse. The central and southern regions of the basin are predominantly occupied by the Deccan Traps, while the northern part is covered by Gangetic alluvium. Analyzing these formations can provide valuable insights into the geological study of Bihar. The objective of this paper is to comprehensively examine and consolidate the advancements made in this field over the years. The focus of this study is primarily on Rohtas district, specifically on the Rohtas Limestone from the Semri Group (Lower Vindhyans), as well as the Lower Kaimur Sandstones and Bijaigarh Shales from the Kaimur Group (Upper Vindhyans). However, it is important to note that this research is specifically limited to the uppermost section of the Semri Group, known as Rohtas Limestone, and the base of the Kaimur Group, known as the Lower Kaimur Sandstone. The aggregation of data provides us with a reasonable understanding of the advancements made in this specific region throughout a span of approximately 160 years.

Keywords: Rohtas limestone, Kaimur sandstone, Bijaigarh shales, Vindhyan Supergroup