

Reestablishment of the Mesozoic and Cenozoic Stratigraphic Events of the Fergana Basin, Uzbekistan

*OTABEK ULUGBEK OGLI ANVAROV¹, Ken-ichiro Hisada¹, Teruyuki Maruoka¹, Junichiro Kuroda², Sherzod Makhmudov³

1. UNIVERSITY OF TSUKUBA, 2. Atmosphere and Ocean Research Institute, the University of Tokyo, 3. State Committee of Geology and Mineral Resources of Uzbekistan

Despite the fact that the Fergana Basin is being the important geologic and tectonic region in Central Asia, for more than a century of research represented that different views have been formed on its geological structure and history of development. Although, it is the least studied intermountain depressions within the Tien-Shan, and lies at the northeastern part of Uzbekistan, covering the 22.000 km² area. The first attempts on the basins geological investigations dates back to 1916's research by A.D. Arkhangel'skiy which he started the descriptions of the preliminary stratigraphy of the Cretaceous deposits of the basin and adjacent areas. So far, the scientific debates got interrupted after the explorations of the important industrial resources as oil, gas, gold, uranium and so on, from the 50's during the Soviet Period, where all geological investigations concentrated only on broad explorations of resources. Yet, after the collapse of the Soviet Union, the studies still remained as minor and all works were referenced back to the old data, where the most studies were lack of the reliability. The purpose of this study is to reconstruct the stratigraphy of the Fergana Basin.

Generally, three stratigraphic units are involved in the stratigraphy of the basin. The lower one is represented by the Paleozoic formations. The second unit includes Mesozoic to Paleogene sediments. The third is composed of a thick unit of the Cenozoic molasses and the Quaternary sediments covering them. Five geological sections around Chust City, northern part of the Fergana Basin at the foothills of Northwestern Tien-Shan and Chatkal-Kurama Mountain Ranges in the Republic of Uzbekistan were selected and preliminary observations were carried out. The study area were represented by very well exposed deposits starting from the Permian andesites, trachytes and tuffs, the Triassic trachytes, the Cretaceous red beds of conglomerates, paleosols and sandstone shell beds of oyster and bivalve fossils, and the Paleogene grey limestones, sandstones and conglomerates with oyster fossils. At the sections from the Cretaceous to Paleogene, the transitions from terrestrial to marine environment were observed with alluvial, lagoon and coastal-marine deposits. But, at the Cretaceous deposits the Upper Cretaceous sections were not observed, where documented as observable by the study of Abduazimova et al. (2012).

The preliminary results showed that the analyzed samples from the Cretaceous, just boundary to the Paleogene beds were the Aptian age of the Lower Cretaceous, therefore this study does not agree with Abduazimova et al. (2012), which documented the existence of the Upper Cretaceous deposits. The Paleogene samples showed the Eocene time. Therefore, the preliminary results of this study can suggest that the existence of disconformity between the Cretaceous and Paleogene sections, which suggests the Paleogene regression following the Late Cretaceous transgression.

Keywords: Fergana Basin, Stable Isotope Stratigraphy, Shell bed, Cretaceous, Paleogene