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ENDODYNAMIC DETERMINATION AND REARRANGEMENT OF VALLEY SYSTEMS IN BULGARIA AT THE PLIOCENE-QUATERNARY BOUNDARY

ABSTRACT: ANGELOVA D., *Endodynamic determination and rearrangement of valley systems in Bulgaria at the Pliocene-Quaternary boundary.* (IT ISSN 1724-4757, 2003).

Valleys are an important relief element. Valley systems include genetically and dynamically connected valleys of different taxonomic rank and order. The regional and local endodynamic features are reflected in their plan outlines and configuration. Centers of valley divergence and convergence are formed morphologically. The present work considers these phenomena in Bulgaria at the Pliocene-Quaternary boundary. The Fore-Carpathian basin was entirely annihilated at that time, the Black Sea basin was extensionally opened and the Mediterranean basin was also subjected to changes. Regional erosion bases were changed. The formation and orientation of almost all the big rivers was influenced by the linear tectonic structures. The main watershed at the Balkans (in the Bulgarian territory) was stable with small exceptions, its line being broken by tectonic deformations. The space between the valley systems was more dynamic. As a result the position of the secondary and tertiary watersheds was changed. New centers of valley divergence and convergence were created. Many new data about the geodynamics of the Bulgarian territory are presented.

KEY WORDS: Valley systems, Regional and local tectonics, Erosion bases, Plio-Quaternary, Bulgaria.

INTRODUCTION

The valley systems are an important element of the relief development in Bulgaria. They include genetically and dynamically related valleys of different taxonomic rank and order. Their morphological features are characterized by great diversity and complexity. Their plan outlines and configuration reflect the regional and local endodynamic specificity (fig. 1).

The problems about the history of the valley system development and their morphology are one of the most well studied and debatable ones in Bulgarian geomorphology. They have been summarized in the works of Angelova & and references therein, Kostadinova (1995), Angelova & *alii* (2001) and others. These problems have been treated in all regional geomorphologic and specialized geological investigations. The present work considers the endodynamic predetermination and the rearrangements of the valley systems in the Bulgarian territory during the time of one of the most dynamic boundaries, the Pliocene-Quaternary. The work has been performed on the basis of basin analysis and the participation of the author in terrain geological and geomorphologic mapping of Bulgaria in the course of 30 years. No such investigation has been carried out so far.

REGIONAL FACTORS AND BASIC REARRANGEMENTS IN THE RIVER SYSTEMS

The Pliocene-Quaternary boundary was one of the most dynamic ones in the territory of the Balkan Peninsula. The basins serving as regional erosion bases were rearranged at that time. The Fore-Carpathian basin was entirely annihilated and the Black Sea basin was extensionally opened. Changes took place in the Mediterranean basin too. The situation of Bulgaria determines its importance as major morpho-hydrological node for decoding the geodynamic development in the space between Europe, Africa and Asia. The reconstruction of the river network in Bulgaria during the Late Pliocene (i.e. before its rearrangement, the setting and formation of the contemporary river-valley network) is shown in figure 2.

It is seen that the most important hydrological node, in which joined the major watersheds on the Balkan Peninsula during this period, was situated here. The tectonic activation during the Wallachian tectonic phase included all the structural units. The energy of the tectonic movements contributed to the formation of the main orographic lines. Radical changes in the main and secondary watershed

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