

Main Features of Geological Structure and Geotourism Potential of Georgia, the Caucasus

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Abstract: The general overview of geology of the territory of Georgia as a component of Caucasian segment of the Mediterranean (Alpine-Himalayan) collisional orogenic belt is presented. Georgia is built up of Neoproterozoic-Paleozoic metamorphic complexes of supra-subduction zones, Mesozoic-Cenozoic sedimentary, submarine and subaerial volcanic rocks and intrusives of various ages and composition. The unique geological structure of Georgia's territory allows to be distinguished of several potential geoparks and geotourist routes. As the potential geoparks we could consider: 1) Kazbegi - Quaternary volcanoes and Pre-Jurassic Daryali massif; 2) Vardzia – Upper Miocene Megacaldera, its an ignimbrite flow (35 km length), explosion products of 1 km thickness and Vardzia rock-cut city; 3) Dmanisi - Dmanisi hominids site and the Mashavera gorge basaltic flow of 20 km length; 4) Sataplia - Dinosaur Footprints, together Sataplia and Prometheus caves. Geotourist route: 1) Tbilisi-Pasanauri-Kazbegi (155 km length) - crossing of the Eastern Greater Caucasus; 2) Tbilisi–Borjomi-Vardzia (240 km length) - crossing of the Lesser Caucasus; 3) Tbilisi-Kutaisi -Ushguli (450 km length) - Crossing of the transcaucasian massive and Western Greater Caucasus.

Key words: Caucasus, Georgia, geoparks, geotourist route

1. Introduction

The territory of Georgia is a component of the Caucasian segment of the Mediterranean (Alpine-Himalayan) collisional orogenic belt developing during the Neoproterozoic and Phanerozoic at the margins of Proto-Paleo- and –Neotethys oceanic basins [1]. Its territory covers all major structural units of the Caucasian Orogeny: the Greater and the Lesser Caucasus fold systems and intermountain depressions lying between them. This area represents a real “natural geological laboratory” exposing magmatic,

sedimentary and metamorphic rocks, ranging wide on the geologic time scale (from the Neoproterozoic to the Quaternary inclusive), which are well studied. These rocks keep of the history of geological processes that have built numerous geological sites of important geological information observed in the present-day Georgia and are excellent destination for development of geotourism industry [3, 23, 28].

Nearly all geologic processes, that occur in the Earth's crust, can be observed and studied in Georgia in natural conditions. Furthermore, during Soviet period the country was actually restricted for foreign geologists, which fosters a special interest in geology of this country. Besides interesting natural geologic sites, various types of mineral resources are widespread on the territory of Georgia: mineral water

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