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## Regional and Contact Metamorphism of the Dizi Series (the Greater Caucasus)

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The Greater Caucasus - the complex geological structure of the Caucasus is an integrated part of the Mediterranean (Alpine-Himalayan) collision orogenic belt. The Dizi series is exposed within the Greater Caucasus Southern Slope zone, in the core of Svaneti anticlinorium. It is composed of faunistically dated from the Devonian to the Triassic inclusively thin-striped and crenulated terrigenous deposits, various volcanites and marbles. Despite the well-studied stratigraphy and tectonics of the Dizi series, the issues of metamorphism, unlike the other rocks of the pre-Alpine crystalline basement of the Greater Caucasus are less studied. The rocks of the Dizi series underwent regional metamorphism of the greenschist facies chlorite-sericite sub-facies under a temperature of 300-340°C and pressures of  $\approx$  2-2.5 kbar. Characteristic mineral assemblages are established on the basis of microprobe analysis of chlorite, K-mica, plagioclase, actinolite, actinolitic hornblende and prehnite. Due to the contact impact of the Bathonian intrusions on the regionally metamorphosed rocks of the Dizi series, various hornfelses, spotted schists and skarns were formed. Composition of minerals of contact-metamorphism - biotite, cordierite, muscovite, plagioclase, cummingtonite, hornblende, chlorite, clinopyroxene, clinozoisite and K-feldspar is determined. According to the results of studies of key mineral assemblages of contact-metamorphosed rocks, three exocontact zones are distinguished, corresponding to the albite-epidote-hornfels, andalusite-biotite-muscovite-chlorite-hornfels and andalusite-biotite-muscovite-hornfels sub-facies conditions. The first zone is marked by the appearance of biotite, muscovite and plagioclase of oligoclase-andesine series in metapelites; hornblende, biotite and clinozoisite in metabasites and amphibole schists; wollastonite and clinozoisite in carbonate-silicate schists. The beginning of the second zone is marked in the appearance of cordierite, corundum in metapelites and of scapolite in metabasites and carbonate-silicate schists. By the disappearance of chlorite in the metapelites, the appearance of cummingtonite in metabasites and garnet in carbonate-silicate schists, a transition to the third zone is established. In the high-temperature part of the last zone, in the metapelites fibrolite is formed. The maximum temperature in the aureole of contact metamorphism is 550°C, and the pressure is about 0.5-1 kbar. Due to very low pressure during the re-crystallization of rocks pyralspite garnet is missing in the mineral associations of the Dizi series rocks. Instead of garnet, the association of chlorite-quartz-muscovite appeared. Under the conditions of increasing temperature during the metamorphism a change in the characteristic features of the mineral composition is shown graphically. Based on the accessible data the authors have drawn the contact metamorphism fields on the existing general scheme of facies

and subfacies of regional metamorphism.

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