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## On the possible analogy between the Dizi Series of the Southern slope zone of the Greater Caucasus and the folded basement of the plain Crimea: composition, metamorphism, magmatism and age

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The Dizi Series is exposed within the Southern slope zone of the Greater Caucasus that occurs as a complex geological structure, which constitutes an integral part of the Mediterranean (Alpine-Himalayan) collisional orogenic belt. It is built up of terrigenous and volcanogenic-sedimentary rocks faunistically dated from the Devonian to Triassic inclusive (Somin, 1971; Somin, Belov, 1976; Kutelia 1983). Most of them are metamorphosed under conditions of chlorite-sericite subfacies of the greenschist facies of regional metamorphism (chlorite-phengite-albite±quartz, graphite-sericite-quartz phyllites and marbleized limestones), and only a minor part represented by clay-carbonaceous, phengite-chlorite-carbonaceous and prehnite-chlorite-carbonate schists underwent anchimetamorphism (Shengelia et al., 2015). The Dizi Series is intruded by numerous magmatic bodies of gabbro-diabases, diabases, diorites, diorite-porphyrries, syenites, monzo-syenites and granitoids. The age of the intrusions was defined by K-Ar method at 176-165 Ma (Dudaui, Togonidze, 1998) and by U-Pb LA-ICP-MS zircon dating at  $166.5 \pm 4.6$  Ma (authors' unpublished data) and corresponds to the Bathonian orogeny. The Middle Jurassic intrusions caused intense contact metamorphism of the rocks of the Dizi Series resulted in the formation of various hornfelses containing andalusite, cordierite, corundum, biotite, plagioclase, potassium feldspar, clinzoisite, hornblende, cummingtonite, clinopyroxene, wollastonite and scapolite. These rocks correspond to albite-epidote-hornfels, andalusite-biotite-muscovite-chlorite-hornfels and andalusite-biotite-muscovite-hornfels subfacies of the contact metamorphism (Javakhishvili et al., 2020). The analogues of the Dizi Series rocks have not previously been established either in the Greater Caucasus or in the neighboring regions. In our view, Paleozoic rocks similar to the Dizi Series occur under the Cretaceous and Jurassic deposits within the folded basement of the plain Crimea where they were recovered by wells. Most of these rocks, as in the Dizi Series, underwent metamorphism of chlorite subfacies of the greenschist facies and, to a lesser extent, deep epigenesis (clayey-carbonaceous, sericite-carbonaceous, actinolite-chlorite-prehnite, muscovite-albite-chlorite, epidote-actinolite-chlorite and graphite-talc-quartz schists) (Chernyak, 1969). These rocks are also intruded by Middle Jurassic igneous rocks, including gabbro-diabases, diabases, diorites, syenites, monzo-syenites, granite-porphyrries, etc. (Shniukova, 2016; Shumlyansky, 2019).

As a result of the contact metamorphism of the basement rocks, muscovite-quartz-cordierite and cordierite-quartz-feldspar micaceous hornfels were formed. Quartz syenite yielded a K-Ar age of 158 Ma (Scherbak, 1981), while monzo-syenite was dated at  $170 \pm 5$  Ma applying  $^{40}\text{Ar}/^{39}\text{Ar}$  method (Meijers, 2010). Thus, based on the rock associations, the nature of metamorphism, the age of the metamorphic and igneous rocks, and on the spatial position of the Dizi Series and folded basement of the plain Crimea we assume that these units developed coevally in similar environment and geological conditions.

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