

Black-shale series and economic minerals (the south slope of the Greater Caucasus)

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The Jurassic black-shale series in the south slope of the Greater Caucasus includes a number of pyritaceous-polymetallic fields and is composed of clayey shales, phyllites, limestones, sandstones, aleurolites and rocks of a mixed composition. In different stratigraphic levels of the Lower and the Middle Jurassic one can trace rather thick concretionary layers. The rocks are exposed to regional, dynamo-thermal and hydrothermal metamorphism and contain a considerable amount of the organic matter and are characterized by increased concentrations of copper, zinc, lead, gold, silver, etc. As a result of geochemical study it was determined that many of these components enriched their deposits initially. As a result of long sedimentation and post-sedimentation changes there occurred a re-distribution of the ore-forming components and formation of pyritaceous, sideritic, clayey-sideritic, etc. and bedded-lens-shaped accumulations of sulphide ores.

Vast lateral spread of thin laminated, siliceous, pyritized clayey rocks with a high amount of the organic matter and favourable conditions for oil and gas accumulation make it possible to treat the Jurassic black-shale series in the south slope of the Greater Caucasus as the oil-source rocks.

It is interesting that thin-grained fractions of rocks are very good cleaner of high-turbid river waters.