

COAL FIELDS AS HYDROTHERMAL BODIES

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Recent observations contradict the notion on the organic genesis of the hydrocarbon accumulations, coal fields included. Poly-condensation processes resulting in formation of volatile and non-volatile hydrocarbons from CO and H₂ studied by chemists resulted in development of a model of abiogenic synthesis of hydrocarbons in the natural catalyzed systems. Such systems may produce gaseous, liquid, and solid hydrocarbons. The author studies and sampled a 10-m sequence in the Kizel coal field. The interval sampled comprised a high-angle 1.5-m thick coal bed and hosting high-silica rock. Analytical data thus obtained demonstrated a wide range of chemical elements present both in the coal bed and hosting rock. Some chemical elements were more abundant in the rock than in coal. Spatial distribution pattern of chemical elements resembled that of a classical hydrothermal halo inherent in hydrothermal ore bodies. Microscopical studies of the sequence in consideration demonstrated that hydrocarbon-bearing extremely aggressive fluids were involved in formation of the carbonaceous sequence. These fluids replaced the hosting rock thus releasing space to deposit the loading they carried. Thus, data obtained are in agreement with opinion of those numerous researchers who believed coal fields as products of invasion, localization, and evolution of hydrocarbon-bearing fluids during their oxidation and dispersal.