PHOSPHORITES OF LOWER-MIDDLE CAMBRIAN KUONAMKA FORMATION BLACK SHALES OF THE SIBERIAN PLATFORM

ZANIN, Y. N., ZAMIRAILOVA, A. G. and PISAREVA, G. M. Institute of Petroleum

Geology, Siberian Branch of RAS, Novosibirsk, Russia

The Lower-Middle Cambrian Kuonamka Formation is widespread in the northern and northeastern parts of the Siberian Platform. The area of its prevalence is related to two structure elements of the Platform its stable part, where thickness of the Formation is about 25-30m, and the Yudomo-Mayskaya depression, where it is about 850m thick. The influence of catagenesis (deep burial) in the last case was much more intensive than in the first one. Phosphorite-bearing black shale unit is situated in the lower part of the Kuonamka Formation. It includes dolomite layers and phosphorite nodules. Phosphorite nodules are rounded or, more often, flat; they show an irregular form in plane. Their sizes in plane are up to 35cm with the thickness up to 3cm. Tracks of the bottom animals vital activity are observed sometimes at the base of nodules. As it has been shown early, acritarchs are the most widespread forms of organisms of phosphorite nodules. Fragments of sponge skeletons, coccus-like and filamentous forms are less common. The contents of P2O5 of phosphorite nodules ranges mainly from 25 to 30%. The TOC of nodules ranges mainly from 3 to 10%. Pyrite, often of the framboidel form, and sphalerite are usual minerals of phosphorite nodules. The secondary gypsum is formed as the result of the polar arid climate. The comparison of element contents of phosphorite nodules of the stable part of the Siberian Platform and Yudomo-Mayskaya depression allowed to conclude that at least U and Cd were removed from the crystal structure of apatite during catagenesis.The research was financially supported by the Russian Fund of Fundamental Investigation (grant 99-05-64650).