
ANNOTATIONS

GEOLOGY

A. D. Savko, L. T. Shevyrev

WORLD MINERAGENICAL DATABASES – APPOINTMENT, REAL POSSIBILITIES, POSSIBLE WAYS OF UPDATING

Might elevation of the world economics stipulates an interest to the raw materials of the Planet. Their variety and abundance within the national territories are considered to be a factor of the countries elevated competitiveness determined the population economic prosperity. From this viewpoint the principal target of the numerous mineragenical databases creators is clear: to conceive the humanity demands in mineral resources and perspectives of supply (the informative and educative aspects besides). This aspiration looks achievable. Yet the attempts to use like descriptive and far non- utter material in mineragenical generalizations and responsible forecast proposals look doubtful and vulnerable.

LITHOLOGY, STRATIGRAPHY, PALEONTOLOGY

G. V. Kholmovoy

MORPHOSCOPIC FEATURES OF THE NEOGENE AND QUATERNARY VOLCANIC ASHES OF THE VORONEZH OBLAST'

The volcanic ashes of the Gorelka Miocene and the Duvanka Neopleistocene have the similar morphological features. Eight morphological types of the ash particles are differed to wit: 1 — isometric transparent; 2 — extended transparent; 3 — prismatic with dense parallel shading, or goffers; 4) with gas inclusions in the form of pores; 5) with shading and gas inclusions; 6) with individual or rare shading; 7) bubbly formations; 8) branchy forms.

V. A. Shatrov, G. V. Voizekhovskiy

MICROELEMENTS IN SEDIMENTARY FORMATIONS OF KUBOISKAJA STRATA SERIES OF DEVONIAN AS INDICATORS OF SEDIMENTATION IN PASSIVE BORDERLAND ENVIRONMENTS OF CONTINENTS

The paper analyzes potential application of lanthanoids and some other elements for reconstruction of sediment formation process in pericontinental sedimentation sea basins at high rate of sedimentation taking as example the Kuboiskaja strata series of Lower Devonian within the Uimeno-Lebedsky deflection (Mountain Altay).

T. F. Tregub

THE STAGES OF DEVELOPMENT OF VEGETABLE OF THE VORONEZH AREA IN HOLOCENE

Palynological study of water-meadow deposits of Don and its tributaries, archaeology stands allous distinguish development stages of the vegetable and flora of Holocene. On the phytocoenotic base paleolandslapes are restoration. The dissection and correlation of Holocene deposits are conducted in accordance with climatestratigraphic subdivision.

MINERALOGY, PETROGRAPHY, PETROLOGY

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COMPARATIVE PETROCHEMICAL CHARACTERISTIC OF POSTMAGMATIC ALTERATION INTENSITY OF KIMBERLITES FROM YAKUTIA AND AFRICA

Study on secondary alteration processes of kimberlites was carried out based on 930 bulk analyses of core samples from holes of the Mir pipe (Yakutia) and pipe «K» (Angola).

Mass transfer at secondary alteration of kimberlites can be effectively regarded against a background of parameter Q (normative secondary quartz) variation. The algorithm of calculation Q for each chemical analysis is given. Relatively weakly altered kimberlites of the Mir pipe and essentially altered kimberlites of pipe «K» are characterized by variation in Q up to 25 % in first case and up to 80 % in second one.

Slightly altered kimberlites of both the pipes are characterized by close chemical composition. Compositions of all analyzed kimberlites of the Mir pipe and the African pipe differ considerably because of various degrees of secondary alteration. In the Mir pipe occur mainly quartz-bearing kimberlites, and in the African pipe quartzous rocks are present.

The main and the earliest process of mass transfer at secondary alteration is the removal of potassium from deep-seated parts and its localization in subsurface parts of the pipes.

Petrochemical trends reflecting the formation of quartzous (silicified) kimberlites in the studied pipes do not principally differ. They are the removal of a magnesium and accumulation of Al_2O_3 . Kimberlites of different extent of

secondary alteration occur in both the pipes as in subsurface, as in deep-seated parts of the pipes.

The use of values of normative quartz contents at studying of secondary mass transfer was effective both in slightly altered, and in much more altered rocks.

Parameter Q was used for testing of genetic hypotheses. According to one of them in the African pipe there are significant volumes of enclosing sedimentary rocks. Variation of Q along the profiles of holes has shown that in all cases it subject to regularities which are peculiar to products of infiltration metasomatism. So, the hypothesis about the presence of sedimentary rocks was rejected.

Keywords: kimberlite, postmagmatic alteration, normative quartz.

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REE MINERALIZATION IN THE BLACK SCHISTS OF THE TIM-YASTREBOVSKAYA STRUCTURE (VORONEZH CRYSTALLINE MASSIF) AND MICROPROBE MONAZITE GEOCHRONOLOGY

The REE-mineralization was found in the black schists of The Tim-Yastrebovskaya structure. The REE minerals include allanite [$\text{CaREEAl}_2\text{Fe}^{2+}\text{Si}_3\text{O}_{11}\text{O}(\text{OH})$], bastnaesite [$(\text{Ce},\text{La})(\text{CO}_3)\text{F}$], synchysite [$\text{Ca}(\text{Ce},\text{La},\text{Nd})(\text{CO}_3)_2\text{F}$] and monazite [$(\text{Ce},\text{La},\text{Nd},\text{Th})\text{PO}_4$]. Analyzed monazite contains detectable Pb and U concentrations (0,091–0,461 % PbO, 0,073–0,154 % UO₂) that it is necessary for the microprobe monazite geochronology. Two ages populations were obtained: (1) 1807–2134 ma and (2) 1041–1471 ma. The first population is reflected the time of the regional greenschists facies metamorphism and the reheating as a result of the magmatic masses intrusion due to Sarmatia and Volgouralia collision at 2.1 Ga. The second population is reflected the low T fluid acting produced the retrograde processes development.

M. L. Levchenko

MINERALOGO-TECHNOGECAL GLAUCONITE FEATURE DEFINING BASIC AREAS OF ITS APPLICATION

Glauconite belongs to industrial minerals of multifunctional purpose. Owing to many specific features it is a valuable raw material for paint base, water softener, sorbent production and appears also as truly salutary cleaner for rehabilitation of radionuclide-polluted territories and territories under heavy technogenic impact. Unique adsorption and cation-exchange properties of glauconite are also used in creating of artificial geochemical barriers for heavy metals and oil-slams and industrial effluences and for elimination of soils and water pollution

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ARCHAEOAN ANORTHOSITE-DIORITE-GRANODIORITE-PLAGIORANITE SERIES OF ALEXANDROVKA STRUCTURE (MIDDLE-DNIEPER BLOCK OF UKRAINIAN SHIELD)

Andesine anorthosites, diorites, granodiorites and plagiogranites of Alexandrovka structure (3060 Ma) are relating to one series of magmatic rocks. It was formed, possibly, as a result of different stages of partial melting of metabazites with toleitic composition with hornblende and/or garnet residue at mean ore large depths with subsequent fractional crystallization of this melt on anorthosite and granite magmas at fraction crystallization of hornblende and plagioclase in intermediate abyssal cells. Prominent feature of plagiogranitoids of this series is low content of K₂O, Rb, Nb, Ta, REE, U, Th and positive Eu anomalies ($\text{Eu}/\text{Eu}^* = 1,07-3,57$), due to they differ from plagiogranitoids of sursky complex (TTG formations).

MINERAL RESOURCES

N. M. Chernyshov

REGIONAL AND LOCAL FEATURES AND CRITERIA FOR FORECASTING AND PROSPECTING GOLD-PLATINOID MINERALIZATION OF A BLACK-SHALE TYPE OF THE PRECAMBRIAN BASEMENT OF KURSK-VORONEZH REGION

Systematics and structural and material characteristics of the noble-metal mineralization associated with different-age carbonaceous sequences and metasomatites of VCM are given. Boundary features and criteria for predicting the most important economic Tim, Kshen and Stary Oskol types of two-level gold-platinoid mineralization: a) regional and b) local are distinguished. The basic ore-forming parameters (geologic-tectonic, structural and material, metamorphic and hydrothermal-metasomatic, ore-localizing, ore-mineralogical-geochemical, etc.), which determine the choice and evaluation of areas of development of carbonaceous sequences and their metasomatites for specific types of gold-platinoid mineralization, are obtained. The model for forecasting and prospecting gold-platinoid mineralization is suggested.

V. L. Bocharov

APATITE-MAGNETITE-SILICATE ORES DUBRAVINSK FIELD KMA

Types of apatite rock and ores carbonatites field differ from contain useful component and have definite feature

likeness with carbonatites complex line-cleft sub formation Ukraine and Baltic shields. Evaluations apatite and magnetite Dubravinsk field conducts in detail. Information collects of mineralization, accompany forms a carbonatites body, associate with apatite alkaline pyroxene. Conditions define formation apatite-magnetite-silicate ores. They tie with staged process development makecarbonatites ore-magmatism system.

M. N. Chernyshova

THE ROLE OF DYKES IN FORECASTING AND EVALUATING POTENTIAL ORE CONTENT OF INTRUSIONS OF MAMON AND ELAN COMPLEXES FOR SULFIDE PLATINOID-COPPER-NICKEL MINERALIZATION

A set of structural and material, mineralogical-petrographic petrogeochemical parameters of dyke formations characterizing the potential nickel and platinum content of Mamon and Elan types of intrusive dyke systems of VCM is suggested. Economic and potentially economic intrusions, compared with the barren ones, are characterized by a high degree of dyke saturation, the common composition of rock-forming minerals and typical for sulfide platinoid-copper-nickel deposits of Mamon and Elan types' accessory mineral association, monotypic distribution and similar values of the ratio for rock-and ore-forming elements.

I. I. Shmakov, E. N. Bozhko

ORIGINE OF MARINE DIAMOND PLACERS OF NAMIBIAN SEACOST

The *diamond coast* of southern Africa is one of the most famous alluvial gem quality stones producers in the world. In fact, the diamond primary sources of coast placers are Cretaceous aged kimberlites of South Africa continent interior as well as Permo-Carboniferous aged Dwyka tillite. The high diamond enrichment of these placers is attributed to the alluvial diamond supply by Orange River drainage system that have brought the diamonds to the coast as well as the marine and aeolian processes that have transported and concentrated the diamonds alongshore northwards. Geological data from onshore and offshore study results clearly suggest that diamondiferous deposits developed at different levels as results of repeated glacial and interglacial ocean transgressions and regressions as well as different fluvial systems have reworked older deposits and released diamonds in younger gravels.

Thus, the principal model of diamondiferous placers evolution of Atlantic coast of Namibia is mainly discussed in this article.

GEOPHYSICS

A. A. Auzin

ABOUT GEOLOGICAL PRODUCTIVITY OF BOREHOLE GEOPHYSICIST BY INVESTIGATION OF DEPOSITS OF NICKEL ON THE VORONEZH CRYSTAL MASSIF (A PART THE FIRST - LOGGING)

The problems which caused by depletion a mineral base of Russia is roused the interest to nickel considered area in a southeast of Voronezh crystal massif (VCM). In the given situation the estimation of geological efficiency of geophysical prospecting for investigation of deposits of nickel ores on VCM is very interest. This article is devoted to the analysis of productivity of logging.

Yu. V. Antonov, C. I. Kogteva

OF GRAVITY FORCE LINEAR ANOMALIES AND ITS VERTICAL GRADIENT IN THE SOUTH-EASTERN PART OF VORONEZH CRYSTALLIZED MASSIVE

The article analyses the stretching of gravity force linear anomalies and its vertical gradient on the territory of Voronezh crystallized massive south-eastern part. Evidently there are two basic entailing stretching systems: orthogonal anomaly system in the north-western and north-eastern direction and a meridian-latitude anomaly system. A large tectonic block was discovered between Voronezh and Calatch.

Key words: of gravity force, vertical gradient, Voronezh massive, axis anomaly

K. Yu. Silkin, A. I. Dubyanskiy

METHODOLOGICAL RESEARCHES FOR APPLICATION OF THE WAVELET ANALYSIS TO THE SEISMOLOGICAL DATA ON VCM

Information, algorithmic and program development for the wavelet analysis realization of local seismological events on VCM are described. Wavelet analysis of the chemical explosion recordings in career Shkurlat, near Pavlovsk are resulted. Recommendations on application of wavelets transformations to the seismological data are given.

Key words: wavelet, wavelet-transform, seismology, career, explosion, waves.

**HYDROGEOLOGY, ENGINEERING GEOLOGY,
GEOECOLOGY**

S. A. Zhukov, I. I. Kosinova, V. S. Starodubtsev

**ASPECTS OF METHODOLOGY BY
INVESTIGATING ECOLOGO-GEOLOGICAL
SYSTEMS**

Intensive development of vast territories, growth of mega cities are demanded systematic approaches to studying damaged natural systems. The article deals with the major principals of quantification and discretization of ecologo-geological systems and recommendations how to implement monitoring in the damaged natural systems.

*A. I. Tregub, N. A. Korabelnikov, S. A. Tregub,
A. A. Staruchin*

**TERRITORIAL PROGNOSIS OF DEVELOPMENT
OF DANGEROUS EXOGENOUS PROCESSES IN
THE LIPETSK AREA**

In the article the methodic of territorial prognosis of development of dangerous exogenous processes are considered. It bases on the complex using of neotectonic dates, peculiarity of section and hydrogeology of the Lipeck area. The lots of possible appearances of carbonate karst, landslides, water erosion.

A. Ya. Smirnova, E. N. Kislyakova

**INFLUENCE AUTOTRAWELLING TRANSPORT
ON WATER ECOSYSTEM OF BASIN RIVER
PESCHANKA**

BRIF REPORTS

V. I. Sirotin

**NEW DATA ON METEORITE ASTEROID
BOMBARDMENT IN THE EARTH'S HISTORY**

Nine stages in the Earth's history confirmed by the increase in asteroid-meteoritic bombardment are distinguished on the basis of comparative planetology data.

V. N. Buneyev, A. B. Zhabin

THE FLISCH FROM BELAYA REVER'S VALLEY

Authors consider, that it is impossible to define all rhythmically constructed thicknesses as flysches or turbidites. Rocks reliable diagnostics and sediments genesis definition demand carrying out a different analytical researches.

A. G. Tchigarev

**AERATION BARKS ON MARL-CRETACEOUS
BREEDS OF THE PODDUBENSKY SITE (THE
BELGOROD AREA GUBKINSKY AREA)**

By means of macroscopic, microscopic and precision methods of research santonic circle adjournment of the Poddubensky site have been studied. As a result 5 types of breeds have been allocated, have been established, that in thickness from below upwards there is an increase SiO_2 the general, including the amorphous maintenance to simultaneous reduction CaO , what authenticate about aeration of marl-cretaceous breeds

E. O. Ivanova

**SCANNING ELECTRON MICROSCOPY STUDY
OF UPPER CRETACEOUS ROCKS FROM THE
KURSK AND BELGOROD AREAS**

The article deals with marls and chalks of Santonian, Turonian and Maastrichtian age. They were investigated using scanning electron microscopy methods to identify composition and microstructural characteristics of rocks and morphology of coccoliths and foraminifers.