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СОДЕРЖАНИЕ

Колонка главного редактора

Лисов В.И. Новые федеральные законы для организаций недропользования 3

Геология

Марусин В.В. Стратиграфические и седиментологические аспекты палеоихнологического анализа 5

Голионко Б.Г., Артемова О.А. Мезоструктурные парагенезы юго-восточной части Эбетинской антиформы (Северный Казахстан) 9

Минералогия, петрография, литология

Игнатов П.А., Зарипов Н.Р., Ким В., Гунин А.П. Типы осветленных красноцветных кимберлитовмещающих пород венда—кембрия Зимнебережного района Архангельской области 15

Полезные ископаемые, методика их поисков и разведки

Косовец Т.Н. Представления о генезисе золотоурановых месторождений Витватерсранда в свете данных по изотопии серы, кислорода, углерода 22

Гидрогеология и инженерная геология

Сидкина Е.С. Особенности химического состава подземных вод и рассолов западной части Тунгусского артезианского бассейна 34

Геофизические методы поисков и разведки

Бахтерев В.В. Закономерности изменения электрических параметров образцов пород гипербазитовых массивов Урала при высоких температурах 41

Техника геолого-разведочных работ

Базанов Л.Д. К вопросу о буквенных обозначениях параметров для бурения скважин 48

Экономика минерального сырья и геолого-разведочных работ

Козловский Е.А. Минерально-сырьевые ресурсы в экономике мира и России. Статья 2. Проблемы стратегического исследования недр России 52

Из истории науки

Комаров В.Н. Вопросы палеонтологии, стратиграфии и исторической геологии в трактате М.В. Ломоносова «О слоях земных» 60

Краткие сообщения

Плюснина Е.Е., Комогоров А.Ю., Заяц П.П., Рубан Д.А. Палеоэкологическое значение следов жизнедеятельности ископаемых организмов из пермских, юрских и меловых отложений Горной Адыгеи 66

Комаров В.Н., Андрухович А.О. Новые данные о систематическом составе танетских гладких теребратулид Юго-Западного Крыма 71

Якуцени С.П. Процессы вторичной концентрации потенциально токсических элементов углеводородами в ходе их онтогенеза 75

Критика и библиография

О книге избранных трудов В.Б. Караулова 79

Хроника

К 85-летию Б.С. Светова 80

**PROCEEDING OF HIGHER EDUCATIONAL ESTABLISHMENTS
GEOLOGY AND EXPLORATION
2015, N 2**

CONTENTS

Main editor's column

Lisov V.I. New federal laws for the organizations-subsoil users. . . 3

Geology

Marusin V.V. Stratigraphic and sedimentological aspects of ichnofabric analysis 5

Golionko B. G., Artemova O. A. Mesosstructural parageneses of the south-eastern part of the Ebeta antiform (Northern Kazakhstan) 9

Mineralogy, petrography, lithology

Ignatov P.A., Zaripov N.R., Kim V., Gunin A.P. Types of clarified red-brown kimberlite-bearing Vend-Cambrian rocks of Zimniberezhniy district of Arkhangelsk region 15

Useful minerals, methods of their prospecting and exploration

Kosovets T.N. Notions of Witwatersrand gold-uranium deposits genesis in the light of sulfur, oxygen and carbon isotopic characteristics 22

Hydrogeology and engineering geology

Sidkina E.S. Chemical composition features of the underground waters and brines in the western part of Tunguska artesian basin 34

Geophysical Methods of Prospecting and Exploration

Bakhterev V.V. The high temperature conductivity of magnetite ore as the possible basis for predicting the mineral composition and the genetic peculiarities of the deposits 41

Geological exploration technique

Bazanov L.D. To the problem of literal symbolization of hole drilling parameters 48

Mineral and Geological Exploration Economics

Kozlovsky E.A. Mineral resources in the world and Russian economics. Part 2. Problems of strategic investigations of subsoil of Russia 52

From the history of science

Komarov V.N. Paleontology, stratigraphy and historical geology problems in M.V. Lomonosov work «About Earth's layers» . . 60

Brief reports

Plyusnina E.E., Komogorova A.Yu., Zayats P.P., Ruban D.A. Palaeoecological importance of trace fossils from the Permian, Jurassic and Cretaceous deposits of Mountainous Adygeya 66

Komarov V.N., Andrukhovich A.O. A new data about systematic composition of Thanetian flat terebratulids of South-West Crimea 71

Yakutseni S.P. Processes of secondary concentration of potentially toxic elements by the hydrocarbons during their ontogenesis 75

Critics and bibliography

About the book of selected works of V.B. Karaulov 79

Chronics

To the 85th anniversary of B.S. Svetov 80

ABSTRACTS

Marusin V.V. Stratigraphic and sedimentological aspects of ichnofabric analysis.

Trace fossils are one of the paleontological groups that could be used for solving complex geological problems. Trace fossils represent the sedimentological structures, produced by living organisms in the mass of sediment. This complex, both paleontological and sedimentological, nature of ichnofossils results in serious limitations for sedimentary sequences stratigraphic dissection, correlation and age determination. This paper demonstrates the main aspects of trace fossils and appliance of ichnofabric analysis for solving sedimentological and stratigraphic problems.

Key words: trace fossils, ichnofacies, ichnofabric analysis, ichnostratigraphy.

Golionko B.G., Artemova O.A. Mesosstructural parageneses of the south-eastern part of the Ebeta antiform (Northern Kazakhstan).

Data on a geological structure and evolution of mesostructural complexes of a southeast part of the Ebeta antiform has been provided. Multistage nature of the deformations and a metamorphism of a Mamyt metamorphic complex and its frame have been established. Early stages of deformations and a metamorphism of granulate and amphibolitic facies of Mamyt complex have been shown to be connected with its internal evolution. In a frame of a complex, three stages of deformations have been established. The first stage of forma-

tion of sheath and isoclinal folds occurred before formation of structure of the area and probably has late Precambrian age. The second, marked by formation of asymmetric folds of the western vergence, corresponds to Paleozoic stage of removal of the Mamyt complex; ophiolite obduction and formation of fold and thrust structure. The third stage of shear movements fixed both in Mamyt metamorphic complex and in its frame, brought to formation of late shear folds with steeply dipping hinges, having complicated earlier created structure.

Key words: metamorphism, amphibolites, ophiolites, mesostructures, folds, stage of deformation, Ebeta antiform.

Ignatov P.A., Zaripov N.R., Kim V., Gunin A.P. Types of clarified red-brown kimberlite-bearing Vend-Cambrian rocks of Zimniberezhniy district of Arkhangelsk region.

In Zimniberezhniy district of Arkhangelsk diamondiferous subprovincediagenetic, katagenetic (gleization) and endogenic types of clarification have been detected for host red-brown terrigenous Vend-Cambrian rocks due to mineral and element composition, geological position and forms of occurrence. Endogenic vein clarification differs by presence of saponite and concentrations of K, Fe, Zn, Rb, Sr, Ni. The aureole of endogenic clarification around Arkhangelsk kimberlite tube is shown. The size of the aureole reaches two diameters of crater.

Key words: Arkhangelsk diamondiferous province, kimberlite, secondary alterations, gleization, indicator features, diagenetic, katagenetic, epigenetic.

Kosovets T.N. Notions of Witwatersrand gold-uranium deposits genesis in the light of sulfur, oxygen and carbon isotopic characteristics.

A review of foreign and Russian publications on gold-bearing Witwatersrand conglomerates dealing with investigations of sulfur isotopic composition of shingle-like formations of pyrites, that often contain gold, and of oxygen isotopic composition of quartz shingles, and carbon isotopic composition of host rocks, has been presented. In line with the development of isotopic investigations methods the values diapason of $\delta^{34}\text{S}$ has been shown to essentially widen. However, the task of determination of the source of gold has not been solved yet. Investigations of $\delta^{18}\text{O}$ help to determine the fact of difference of the sources of gold and uranium. The presence of photosynthesis during Archean era has been confirmed as the source of oxygen in atmosphere.

Key words: sulfur isotopic composition, light isotope of sulfur, heavy isotope of sulfur.

Sidkina E.S. Chemical composition features of the underground waters and brines in the western part of Tunguska artesian basin.

By geochemical analysis fresh, brackish, salty underground waters and the brines of various salinity and different types have been shown to occur in Western Tunguska artesian basin. The salinity of them increases with depth. It is not tracing in oil and gas Vendean and Riphean sediment layers of Baykitska antecline and Katangskaya saddle. The highest salinity brines occur in salt-bearing hydrogeological formation (Є). They are chloride calcium composition and rich in bromine, strontium, lithium, cesium, rubidium, chromium and other chemical elements. On the North-West territory (on the South side of Kureyskaya syncline) chloride calcium brines occur on the depth of 700 m and less. They are more close to the surface than in the South sites of the region.

Key words: underground water, brines, Tunguska artesian basin, chemical composition, salinity, types of water.

Bakhterev V.V. The high temperature conductivity of magnetite ore as the possible basis for predicting the mineral composition and the genetic peculiarities of the deposits.

The rock samples from different structural-material complexes of some ultramafic massifs of the Urals have been investigated. The experiments have allowed establishing a dependence of electrical resistance on temperature in the range of 20–800 °C. The electrical parameters $\lg R_0$, E_0 of studied samples have been defined. There was an inverse linear dependence between the parameters. It is expressed by the formula $\lg R_0 = a - bE_0$. The coefficient a stays practically the same for all studied massifs and plots them (6,2–7,2); the coefficient b — changes continuously from 5,8 to 13,2; its value differs not only for each ultramafic massif, but even for an individual plot within the same massif. Position of the samples on the line $\lg R_0 = a - bE_0$ with specific coefficients a and b depends on the degree of metamorphism.

Key words: ultrabasite, metamorphism electrical resistance, activation energy, high temperature.

Bazanov L.D. To the literal symbolization of hole drilling parameters.

An approach to using of different literal symbolizations of parameters, functional ties and calculations in technical problems of geology exploration wells drilling is briefly shown. The tens of literal symbols of technical parameters are needed to be used. So, the terminology in drilling is straight connected with literal symbolization. The various use of literal symbols complicates of processes perception and can lead to misunderstanding and even serious errors.

The major part of the symbols are derived from physics and mathematics. However, those sciences have much more bigger parameters than Latin and Greek letters. That is why the same letter can mean different parameters.

Key words: literal symbols, parameters of drilling, axial loadings, frequency of rotation, the cleaning agent charge etc.

Kozlovsky E.A. Mineral resources in the world and Russian economics. Part 2. Problems of strategic investigations of subsoil of Russia.

Based on analysis of different countries economical indexes their economy is shown to be linked tightly with the mineral resources and possibilities of the countries to build their own independent policy. Russia is concluded to have lack of thought and scientifically proven state strategy of development and use of mineral resources, based on

the model of self-maintenance with required degree of export and limited import. Such situation puts the national safety of the country under threat and leads to the loss of geopolitical priorities in the world mineral sector. The number of measures of the principal break in the state policy in the sphere of geological studying of the subsurface, reproduction of the mineral base, management of the geological investigations. While development of the new concept of the low «About subsurface» it's needed to take into account the main thing — economical safety of the country.

Key words: mineral base, economical safety of country, geological research of the subsurface, new low «About subsurface».

Komarov V.N. Paleontology, stratigraphy and historical geology problems in M.V. Lomonosov work «About Earth's layers».

The 250th anniversary of death of generous Russian scientist M.V. Lomonosov is celebrated in April 2015. His work «About the Earth's layers» is the most important geological work of Lomonosov, which ideas were ahead of time and concerned different aspects of paleontological investigations. The stratigraphic investigations showed the stratification of geological sections. The idea of consistent evolution of the nature played an important role for natural sciences.

Key words: Lomonosov M.V., paleontology, stratigraphy, historical geology.

Plyusnina E.E., Komogorov A.Yu., Zayats P.P., Ruban D.A. Palaeoecological importance of trace fossils from the Permian, Jurassic and Cretaceous deposits of Mountainous Adygeya.

Trace fossils may be of crucial importance for palaeoenvironmental reconstructions, which is demonstrated by example of new ichnological finds in Mountainous Adygeya. Two horizons with trace fossils from the Lower–Middle Permian molasse indicate continental and marine depositional environments and their rapid change. Bioturbation in shales of the Lower–Middle Jurassic permits to establish punctuated or low-intensity dysoxic conditions that explain continuous development of biota in unfavorable environments. The presence of *Thalassinoides* isp. with untypical bifurcation in the Aptian (Lower Cretaceous) glauconite-bearing sandstones questions the local depositional setting and allows to suppose that the oxygen concentration in sea water was characteristic for formation of neither glauconite, nor typical representatives of the noted ichnogenus.

Key words: trace fossils, ichnology, palaeoenvironment, Mountainous Adygeya, Permian Period, Jurassic Period, Cretaceous Period.

Komarov V.N., Andrukhovich A.O. A new data about systematic composition of Thanetian flat terebratulids of South-West Crimea.

The revision of flat Thanetian terebratulids of South-West Crimea, included until the last time *Terebratula bisinuata* Lam., *T. mischensis* Ilyina, *T. plana* Zel. and *Oleneothyris pinguinensis* Zel., has been made. The material of studying has been the collection of brachiopods, collected from the lower and middle parts of Kachinsky suite and comprising 403 specimens. The investigation has shown that at the all age stages brachiopods are characterized by significant individual variability of shell outline, increased with age. Beginning with length of 5.3 sm. all terebratulids have folds. The main significant morphological features of terebratulids are also much variable. The given data allows defining the species *Terebratula mischensis* and *Terebratula plana* as junior synonyms of *Terebratula bisinuata*. The conclusions justified the rule of incompatibility of two or more closely related species in the single ecological niche. The illustrations of 26 studied samples are shown.

Key words: variability, brachiopods, terebratulids, Thanetian, Kachinskaya suite, South-West Crimea.

Yakutseni S.P. Processes of secondary concentration of potentially toxic elements by the hydrocarbons during their ontogenesis.

Geochemical parameters of hydrocarbon pools with their further enrichment of the potentially toxic elements during ontogenesis are considered. The mechanisms of the metal accumulation by hydrocarbons are discussed, in particular, peculiarities of the metal sequestration by hard and soft acids and bases. The highest concentrations of V, Ni, Zn, Co, Au and other metals are expected in oil on the base of metal complexes. The most active enrichment of the oil by microcomponents, including potentially toxic elements, takes place on the protooil generation stage.

Key words: hydrocarbons, ontogenesis, oil, metal complexes.