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ABSTRACTS

Lisov V.I. Time of the rise of the geological sector innovativeness.

Sadovnikov G.N. The ecozone *Quadrocladus pachyphyllum* ...
Prilukiella tomiensis of Vyatsky stage of the Upper Permian.

An ecozone *Quadrocladus pachyphyllum* ... *Prilukiella tomiensis* has been distinguished in the lower part of the volcanogenous formations of the Middle Siberia. It corresponds to the beginning (tuffaceous) phase of the trap volcanism, lies on the coal-bearing deposits with the dominant cordaitan flora (*gagarjevsky* horizon) and is overlapped by the tufogenic and volcanomiktic deposits of the *Quadrocladus pachyphyllum* ... *Echinolimnadia mattoxi* ecozone. The ecozone differs very much from the *gagarjevsky* horizon by the complete lack of the leaf remains of cordaitans. It has another generic arthropytes composition. Conchostracan and ferns are much more diverse. Specific composition of the ferns is completely another. It contains *Ginkgoopsida Madygenia* и *Pursongia*. Conifers appear, with dominance of *Voltzia* (?) and with rarity of *Quadrocladus* и *Elatocladus*. The ecozone differs very much from the overlapping deposits by dominant paleophyte palinocomplexes, specific composition of ferns, the presence of *Voltzia* and rare growth of the *Quadrocladus* и *Elatocladus* role. On the Eastern-European platform the ecozone corresponds to the vyatsky stage of the Upper Permian. The ecozone is not sure distinguished in the Dalongkou section in China, which is the very place of choice of non-marine GSSP of the Triassic.

Key words: non-marine Permian, Siberia, Vyatsky stage, trap volcanism, ecozone, ecostratigraphic method.

Komarov V.N., Volkova G.D., Gribovskaya O.A. A new data on the Lower Jurassic spiriferoids of South-West Crimea.

The history of studying and systematic composition of the Lower Jurassic spiriferoids of the eastern part of Bakhchisaray region of Crimea in Eskiordinsk suite are considered in detail. The base of the complex is composed by representatives of *Spiriferina obtusa* species. Their portion is 40 % of the specimen in total. The representatives of *S. Taurica* have a great advance. These small forms take second place in the quantitative relation (24 %). The third place in the spiriferoids associations is taken by

S. haueri и *S. walcotti* in approximately equal portions (about 12 % of each one). Other species are represented by small amounts of specimen to be the secondary components of the complex. The interesting selective preservation of stone material is found. The isolated valves are dominant among the fossils. Only 5 undamaged shells were found among about 100 studied specimen (5 %). The pedicle valves predominate among isolated valves: 62 specimen were found (67 %). 28 % are the portion of dorsal valves (25 specimen). *Spiriferina taurica* Moiseev и *Spiriferina moiseevi* Volkova, Gribovskaya et Komarov, sp. nov. are described. Forty nine of studied specimen are illustrated.

Key words: brachiopods, spiriferoids of *Spiriferina* genus, Sine-murian — Pliensbachian, Eskiordinsk suite, South-West Crimea.

Abramov B.N. Dike complexes of Mesozoic gold deposits from East Transbaikalia: conditions of formation, petrochemical features.

Gold mineralization in East Transbaikalia is associated paragenetically with the dikes of second stage (hybrid porphyries, lamprophyres) of Mesozoic intrusive complexes. By petrochemical features they correspond to the intrusions of volcanic arcs. The formation of Mesozoic intrusives and gold mineralization occurred during common ore-magmatic process. Their sources were the mantle formations. Ore-magmatic systems of gold deposits are characterized by development of multi-level, differentiated to varying degrees magmatic chambers.

Key words: East Transbaikalia; gold mineralization; dike complexes of rocks.

Stepanov V.A., Mel'nikov A.V. Unja-Bomsky ore-placer node of Amur gold province.

The geological structure, golden ore an placer occurrence description of Unja-Bomsky ore-placer node of Amur gold province are shown. Bearing rocks are black shales of Later Paleozoic and Mesozoic age. Intrusives are rare. Unjinsky thrust of subparallel orientation has an ore-controlling importance, where Paleozoic sands are pushed on Mesozoic flysch formations. Ore occurrences of gold are quartz veins zones. Ores are

gold-quartz, lacking of sulfides. Ore minerals are arsenopyrite, scheelite, ferberite, galena and native gold. High content of mercury in native gold is explained by presence of the frontal part of gold column within the node, due to destroy of which the rich placer were formed.

Key words: high-mercury gold, ore-placer node, gold-bearing province.

Ignatov P.A., Chjaо Hen. Potential jade-bearing areas of Eastern Kunlun.

Based on the analysis of the tectonic and geological maps of China and Asia, high-resolution satellite images and literature data, six potential jade-bearing areas were defined in eastern flanks of Kunlun and the adjacent depression of Taklamakan. The areas are related to ultrabasic rocks within the areas of pre-Cambrian metamorphic carbonate layers and large thrusts. The areas with potential primary jade occurrences coincide with the areas of alluvial and alluvial-proluvial placers of the semi-precious stone. A classification of original and placer deposits within the studied area is suggested.

Key words: jade occurrences, jade-bearing areas, ultrabasic, alluvial and alluvial-proluvial placers, Kunlun, Taklamakan.

Lisenkov A.B., Kosyanov V.A., Pei-Cheng Li. Ecological-hydrogeological system (EHGS) as basic object of study of ecological hydrogeology.

The historical justification of EHGS formulation is shown in the paper. The process of EHGS formation from mathematical point of view is shown to lead «new set of states» in the area of intersection of subsystems. The structure of EHGS, its system properties, conditions of transformation, limits are defined. The realization of models and prognosis of EHGS's state are shown to be probable with usage of Eshby's principle. A new approach to models justification for description and prognosis of EHGS's state is suggested.

Key words: ecology, system, state, structure, transformation, prognosis.

Obornev E.A., Shimelevich M.I., Dolenko S.A. Usage of neural net templates to the geoelectric modeling tasks.

The problem of approximation of forward operator in the magnetotelluric sounding method is considered. The approximation is based on the usage of neural net (NN) techniques. Such approximations, in mathematical sense, are the superposition of non-linear sigmoid functions. The final NN-approximator is constructed by least-square method with set of precise solutions. With numerical examples the approximator of forward operator is shown to incredibly accelerate the time of calculations (due to loss of accuracy) in comparison with classical methods of electric field.

Key words: forward task; approximation; neural net method, geoelectric modeling.

Sizov A.V., Boyarko G.Yu. Supervising during core drilling within the geological-prospecting works.

The necessity of improvement of reliability of geological information during core drilling. Geological, technical and technological factors impact the performance of geological information. The article discusses the transfer of successful experience of well construction supervising in petroleum engineering into the sphere of core drilling for solid minerals. The authors note that proper monitoring of core drilling and core recovery process by independent supervisor could influence the reliability and quality of core material obtained by drilling. The most reasonable candidates for specialists-supervisors will be the graduates of educational programs «Applied geology» and «Geology».

Key words: supervising, core drilling, kern, quality.

Khovanskaya M.A., Kosinova I.I. The method of estimation of comfort of life actuality in mining regions of cryozone.

The method of estimation of comfort of life actuality in mining regions of cryozone is developed, based on additive estimate of the level of geochemical and mechanical factors of influence of different kinds of geological exploration and mining activity on the components of natural environment in the zone of ever frozen rocks. Estimation of comfort of life activity in studied regions is based on typing of ecological-geochemical anomalies and taking into account of level of mechanical degradation of soils. The developed method suggest the estimation of level of influence of different types of geological-prospecting and mining works on the nature environment components in every point of sampling. In result 5 complexes of comfort: comforted, relatively comforted, uncomfirmed, very uncomfirmed, extremely uncomfirmed life conditions.

Key words: comfort of life actuality, estimation, mining activity, permafrost conditions, geochemical and mechanical factors of influence of different types of geological prospecting and mining works.

Bryukhovetsky O.S., Drozdov D.S., Laukhin S.A.

Yashin V.P. About subsoil use portion in accumulated ecological damage of Russian Federation Arctic Zone.

Minerals mining (subsoil use) in Arctic zone of Russian Federation began in 30-s of XX century, as well as active exploration of Russian North, which is connected tightly to the subsoil use. That's why there is a tendency to connect the ecological damage for more than 80 years with subsoil use.

The authors tried to show that accumulated ecological damage in Arctic zone in Russia is related to subsoil use only partially. The main part of the damage is due to the actions of defense supply on the northern boundaries of Russia; development and servicing of Northern Marine Way; metallurgic and other industries. The importance and complexity of separation accumulated ecological damage of subsoil use from the ecological damage of different factors and it can be removed not only due to subsoil use.

Key words: Arctic Zone of Russian Federation, accumulated ecological damage, subsoil use.

Komarov V.N. Life devoted to the science.

The 150 th anniversary from the day of death of the outstanding Russian scientist Christian Ivanovitch Pander, who can be considered as one of the most bright paleontologists and biologists-evolutionaries of the first half of 19th century, will be held in 2015. C.I. Pander has been underlined to be the first who described monographically the Ordovician fauna of Saint-Petersburg neighborhood and gave the paleontological ground of dismemberment of Lower Paleozoic deposits of north-west of Russia. Discovery of conodonts, which C.I. Pander considered to be tooth of Lower Siluric fishes, has been concluded to have the biggest importance among all his paleontological discoveries. C.I. Pander managed to identify 14 genres and 56 species on the basis of analysis of appearance and interior structure's features. Later conodonts got crucial stratigraphic importance. Pander's contribution to the fish fauna of Silurian and Devonian studying has been considered. C.I. Pander has been pointed out not only to be the one having described loricates, dipnoans and crossopterygians, but gave author reconstructions of representatives of some species. The contribution of Pander to the development of paleoecology has been also considered. Short biographic data has been given.

Key words: C.I. Pander, paleontology, conodonts, fish fauna, Paleozoic, north-west Russia.

Lun'kin A.N. Subsystems providing the management of training processes of new type of staff for the subsoil use.

The personnel provision, participative management. Opened management, new organizational culture in the organization- management aspect as subsystems of creative personnel training for the business in the subsoil sector are given; the main problems in the realization of this task are revealed, and also the algorithm of their overcoming is suggested.

Key words: creative personnel, participative management, opened management, new organizational culture, educational benefit, paid service, dual system of professional education, public-government-private partnership.

Ruban D.A. New finds of traces of Palaeocene marine organisms in the vicinities of Abrau Djurso (Krasnodar region).

In the section of the Palaeocene flysch in the vicinities of Abrau Djurso in the Northwestern Caucasus, there was found ?*Ophiomorpha rudis* (Ksiazkiewicz, 1977) — a 3D system of burrows of deep-marine shrimp-like organisms. The presence of the ichnofacies *Ophiomorpha rudis*, which is typical for turbidite-dominated environment of continental slope toe, is supposed on the territory of Russia for the first time. The studied ichnofossil locality is proposed as a geological heritage site.

Key words: ichnofossils, ichnofacies analysis, bioturbation, flysch, geological heritage site, Palaeocene, Northwest Caucasus.

Andreeva K.D. Technique of operational determination of capacity of cationic exchange of clays.

The results of researches on creation an operation technique of determination the capacity of cationic exchange of Q_{100} clays on the basis of measurements of optical properties of water solution methylene blue (MB) after contact with clay are stated in the paper. It was established that the existing technique of 1958 has the essential shortcomings reducing the accuracy and efficiency of researches. In the developed technique the definition of Q_{100} was considerably specified and prerequisites for establishment of a ratio of the optical sizes measured on the photocolimeter with parameters of the created technique are received. Mathematical modeling established optimum sizes of initial concentration and volume of the MB working solution, and also mass of the studied clay sample. It provided the greatest accuracy of definition of Q_{100} . In the technique more effective processing methods and devices of preparation of MB solution after contact with clay for measurement on the photocolimeter are offered that finally increase efficiency of researches.

Key words: clay, the capacity of a cationic exchange, methylene blue.

Liu Ts'in. On the question of regulation of water resource ownership in The People's Republic of China.

The problems of legal regulation of water resource ownership were researched in different regions. In the past decade, great changes have taken place in understanding of the importance of water resources. The change of water resource ownership system reflects these processes. Research on the legal regulation of water ownership, and analysis of the practical application in the various regions of the world, are supposed to help optimize water resource ownership system, and create the useful water market.

Key words: water, water resource ownership, tradable ownership of water resources.