

## SUMMARY

© **A. M. Zheleznov.** Links between geodynamics and duration of hydrothermal activity on the Northern Mid-Atlantic Ridge.

The main objective of this study was to find any links between different parameters of the hydrothermal fields located within the MAR, such as their distribution, seafloor morphology and age of seafloor massive sulfides. The  $^{230}\text{Th}/\text{U}$ -dating results combined with geomorphological and geological data allowed us to make some geodynamic interpretations.

© **S. B. Kuzmin, S. I. Shamanova.** Zoning of the Irkutsk Region by hazardous geomorphological processes and its synergistic modeling.

A new approach to ecological and geomorphological zoning of areas by hazardous geomorphological processes by the example of the Irkutsk region is developed. The synergistic modeling of structure types of the hazardous geomorphological processes is carried out for structural and genetic zoning and evaluation of synergistic balance in geomorphic systems. The system relationships between ecological and geomorphological areas in field of hazardous geomorphological processes, as well as between the general processes within the areas are analyzed. For ecological and geomorphological regions of the Irkutsk region three types of structures of hazardous geomorphic processes, four structural and genetic zones and the corresponding group of regions on a hypothetical geomorphic profile from the plains to the mountainous areas are identified. It was found that the maximum energy conversion of the relief-forming processes, entropy decrease with an increasing number of communication channels between the geomorphic systems and external environment are typical for transient structural-and-genetic regions.

© **A. Yu. Opekunov.** Establishing of ecological regulation in the USSR (20s—30s of the XXth century).

An analysis of legal acts of the RSFSR and the USSR of 20s—30s of the last century in the field of occupational safety, environmental protection, natural resource management, is presented. It is shown that at this time not only sanitary and hygiene regulation were successfully forming. Large backlog has been made in the development of industrial-resource areas of environmental regulation, laying the foundations of an ecosystem approach to environmental protection. During the pe-

riod of industrialization the constitutional structure of nature protection was created, the environmental control and monitoring system was actively introduced.

© **V. I. Sturman, A. V. Semakina.** Modern foreign and Russian approaches to mapping of air pollution.

Approaches to mapping of air pollution in Russia and most other countries have been analyzed. Development of remote sensing and telecommunication technologies had led to the revolution in this field. Unfortunately, Russia does not take part in those processes. It forms too negative image of air pollution in Russia and simultaneously inadequate low estimations of national monitoring system outside Russia.

Integration of Russia into International projects is complicated through different approaches to hygienic norms. Those different approaches reflect specifics of geographical locations and structure of economics, that leads to different complexes of top-priority pollutants. Russia is behind in case of operative mapping of air pollution, but has achievements in case of long-term one. This approaches must be not opposed but supplementary to each other.

© **A. A. Lobzhanidze.** Modern school geography education in Russia: problems and development prospects.

The article is devoted to the history of the formation of school geography and problems of its development. Much attention is paid to the factors that led to the decline in the prestige of geography as an academic subject; the basic ways of development of geography education in the modern school are proposed.

© **I. L. Kuzin.** On the role of microorganisms in formation of the Earth crust

The mechanism of transformation of the ultramafic rocks of primordial Earth to the acidic rocks of granite layer — an integral part of the crust — is shown. It is situated in geosynclines, where the huge volumes of products of metamorphism of the upper mantle (silica, iron, carbonates, etc.) are carried to the surface by the juvenile waters. Here in shallow geosynclinal basins by the means of cyanobacteria and other microorganisms they are deposited and during the dive and subsequent metamorphization are converted into the rocks of granite complex. Under the oceans the geosynclines are absent, so there is no granitic layer of the crust.

© **G. A. Isachenko.** Landscape between reality and construction (reflections on the article by E. Yu. Kolbovsky).

The article presents a discussion with the publication of E. Yu. Kolbovsky («Izvestia RGO», 2013, vol. 145, N 5), in which the author, based on the experience of using the landscape approach to territorial planning, disputes the basic provisions of the «classical» landscape science: the existence of natural landscapes and their natural hierarchy, objectivity of landscape borders, presence of leading factors in the formation of landscapes, etc. It is shown that the problem touched by

E. Yu. Kolbovsky was discussed in the domestic landscape science in the late 1970s—1980s and marked a shift of «discrete» paradigm in the study of landscapes to continual approaches. Correlation of the main provisions of the «classical» landscape science, landscape ecology and landscape-dynamic concept, the key concepts of which being the location and condition of perennial landscape, is considered. The existence of an own problem field of landscape science is substantiated: it is the only discipline which synthesises the spatial-temporal relationships of components and elements of nature on the local and regional territorial levels.

© **A. A. Anokhin, S. S. Lachininsky.** The evolution of ideas and content of geoeconomic researches.

The article is devoted to one of the directions of human geography — geoeconomy. The significant works of domestic and foreign researchers are considered, the geoeconomy sources in a subsoil of economic geography are pointed. The directions of evolution of geoeconomic ideas in the USA and national science are deeply revealed. The new concept of a «geoeconomic tent» is introduced. The geoeconomic space is considered as a complex network cross-border system.