#### **SUMMARIES**

Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 3-8.

#### V.I. VERNADSKY JUBILEE IN THE TAURIDA NATIONAL V.I. VERNADSKY UNIVERSITY Berzhansky V.N.

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The article presents a panorama of anniversary events in the Taurida National V.I. Vernadsky University associated with the 150th anniversary of the birth of V.I. Vernadsky. The focus is on the international conference "V.I. Vernadsky and global problems of modern civilization" supported by UNESCO.

Keywords: Anniversary of Vernadsky, the noosphere, global problems of civilization

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> Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 9-24.

#### V.I. VERNADSKY – SCIENTIST – PHILOSOPHER – CITIZEN

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The article is based on the report at the ceremonial meeting of the Russian Academy of Sciences dedicated to the 150th anniversary of VI Vernadsky, April 18, 2013. It is a representation of the stages of identity formation prominent scientist, thinker, public figure and organizer of science of the XX Century V.I.Vernadsky. V.I.Vernadsky role in the development of new directions in science, clearly represented the gift of foresight of the great scientist is described.

Keywords: Vernadsky, thinker, organizer of science, biosphere, noosphere

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#### THREE SYNTHESIS OF SPACE - THE FOUNDATION OF VERNADSKY'S NOOSPHERE G.B.Naumov

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The meaning of V.I. Vernadsky's biosphere doctrine and its transition into the noosphere at the present stage of social development is analyzed. The scientific basis of this doctrine and its basic components: a inorganic and living matter and social scientific thought of mankind is considered. Nucleation of these ideas, the history of their development and the need for competent solutions to contemporary environmental challenges for the further evolution of civilization are shown.

Keywords: Vernadsky, biosphere, noosphere, living matter, scientific thought, evolution.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 39-48.

#### ANTHROPOCOSMICAL IDEAS OF VERNADSKY AND GLOBAL PROBLEMS OF MODERN SCIENCE AND CIVILIZATION Solonenko Y.A.

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The author in this article analyzes the anthropocosmical philosophical issues by V.I. Vernadsky of the place and role of human and the human mind in the Universe, observes basic idea of the scientist of the decisive role of science and the scientific worldview in the exploration surrounding cosmical world and resolving global problems of modernity. Also, the article raised a numerous other actual problems of modern science and civilization. Among them: the problem of the beginning and eternity of biological life, the problem of the origin and evolution of human, the problem of the transition from biosphere into noosphere, the problem of the mission and aim of human development, science and life, the problem of causality, haphazard, consistent pattern, determinism and indeterminism in animate and inanimate nature and others. The author of this article finds answers to many current problems and questions of modern science and civilization in the works of the great Russian philosopher and natural scientist V.I. Vernadsky.

*Keywords:* cosmism, globalism, anthropocosmism, science, noosphere, science as a planetary phenomenon, life, mind, non-linear causality, nonlinear determinism, civilization, Universe.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 49-56.

# TWO UNDERSTANDING OF THE BIOSPHERE AND THE NOOSPHERE (B. VERNADSKY VS A. VON HUMBOLDT) AND THE CHALLENGES OF SUSTAINABLE DEVELOPMENT IN THE WORLD OF CHANGE Shadrin N.V.

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In 1826, A. von Humboldt introduced the concept the sphere of life – the entire set of interconnected living organisms on the Earth, which appeared at a certain stage of development of the planetary system and interact with the inorganic world. In 1875, E. Suess linguistically corrected term, transforming it into a "biosphere". Summing up the accumulated by predecessors, V.I. Vernadsky had created the geochemical concept of the biosphere. Vernadsky's and Humboldt's concepts are complimentary ones; the complimentarity reflects a continuous - discrete duality of life in the biosphere. The geochemical Vernadsky's concept refers to continuous fluxes of elements; the Humboldt's one makes accents on discrete systems - individuals and their communities. "Intellektosfera" introduced by Humboldt preceded Vernadsky's concept of the noosphere. The priority of the terms is not important, but the difference in the meanings. According to Vernadsky, the biosphere inevitably passes into the noosphere, intellektosfera, according to Humboldt, born in the biosphere and interacts with it. The idea of the noosphere is utopian. G. Zavarzin coined the term "kakosphere" as the opposite of the noosphere. Actually now the humanity creates the kakosphere, not the noosphere. Currently the concept of multiplicity of alternative stable states of the natural and socialecological systems - the basis of a reasonable future development of mankind in the biosphere - is developing.

Key words: biosphere, noosphere, kakosphere, alternative stable states.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 57-65

# "NOOSPHERE": SOCIOCENTRISM VERSUS ANTHROPOCENTRISM Voyevodin A.P.

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An effort has been made to give anthropological interpretation of the noosphere notion in this paper. There is a paradox because its usage looks accidental and non productive due

to the fact that the generalized significance in the study of intellect, a man and society is noosphere. To our mind one of the reasons is prevailing in European philosophy anthropocentrical concepts of a man and society which in their presented reasons come out of the knowledge of social to biological or a man is identified with a body which leads to the naturalist idea about noosphere. Noosphere notion needs to overcome anthropocentrical and narrow-minded ideas about a man and society and to reinterpret them from the positions of socio-centrism. From the socio-centrism point of view the reason and consciousness in the whole are not inherent-individual but on the contrary they are particularly a social product: at first, they appear in the process of unconscious collective expedient activity and only then with the appearance of signed systems for social experience transmission they have the possibility to exist independently in the psyche of every individual. To understand it we must separate the notions of a man, individual, and a body. A man like that is incorporeal and ontologically forms the sense contents of a great number of expedient movements which are collectively proved and controlled by every individual; the forms of these movements are reproduced by individuals in the subject world millions of times and are handed down from generation to generation in the form of generalized cultural scenarios or traditions. Expedient schemes of practical actions, virtually existing programs, standards and the rules of cultural movement which are partially understood by individual human organism - a biological inform - transmitter in the process of his transmission into individual human body are components of its social contents. In its abstract sense as a sum total of inherited social information in genes and the experience of socio - practical activity a man is informational and sense contents of noosphere. Anthropological horizon of noosphhere is interpreted with the help of artifacts theory as infinite "subjectivity" and "dis subjectivity" of social information which is not inherited in genes. Thus anthropological environment forms the subject world of artifacts and information- sense programs of human movements dictated by them. The extraction of information occurs in the process of mastering skills to use artifacts. Represented artifact sense by an individual is a reduced scenario of its expedient movement in a particular practical action.

Keywords: anthropocentrism, artifact, noosphere, society, body, a man.

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#### NOOSFEROGENESIS – A LAWS STAGE IN DEVELOPMENT OF THE BIOSPHERE Voronin I.N.

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In last year's modern science has spread noospheric paradigm: the gradual transformation of the biosphere as a sphere of life in the noosphere – the sphere of mind.

The role of the noosphere in the development of civilization the subject of many theoretical works: Pierre Chardin (Le Phenomene humain), V. Vernadsky (Reflections of a naturalist), I. Vinogradov (Theory of world's mind), John Draper (History of the intellectual development of Europe), Jean Reclus (L'homme et la Terre), V. Kuprevich (Russian Cosmizm), I. Moiseev (The Man and the noosphere), V. Kaptyuga, R. Balandin (The area of human's activity: the technosphere, Restructuring of the biosphere), A. Burovsky (Noospheric school) and others.

The founder of modern science - noospherology - a Russian scientist Vladimir Vernadsky. This science must be the foundation of a new world view, able to determine the place and role of humanity in the Universe, the direction of its evolution.

At the heart of the teachings of Vernadsky's noosphere are three theses: the belief in the coming triumph of scientific mind, began the transition to a new society, the noosphere is restructuring the entire biosphere in accordance with the requirements of scientific thought.

By V. Vernadsky noosphere – is the biosphere, the converted man. Russian scientist S. Pokrovcky gives this definition of the noosphere: the noosphere – the sphere of the mind, part of the biosphere, which controls the human mind its impact on the environment.

Noosphere – is an integral part of the geographical envelope.

Today the noosphere has a synonyms: anthropologic sphere, economic sphere, culture sphere, social sphere, geoversum.

The process noosferogenesis began 15-20 million years ago – during the emergence of mankind.

Vernadsky's noosphere paradigm was continued in the works of other scientist: the human as a "geological agent" in the writings of English geologist Robert Sherlock; ideas of the English scientist Henry Marsh about the devastating impact of man on nature; "noolithic revolution" in the writings of the French mathematician and researcher Paul Levy, the idea of Russian scientists: heliobiology A. Chizhevsky, space philosophy K. Tsiolkovsky, the theory anthropocosmism N. Kholodny, nomogenesis L. Berg, "technogenesis" A. Fersman, concept social biosphere V. Shalnev and others.

Today we can not talk about the noosphere, and the era of the noosphere, i.e. transitional stage social biosphere's era in the history of mankind.

Noosphere stage in human development – is co-evolution of man and nature.

Keywords: noosphere, noosferogenesis, noospherology, co-evolution.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 73-86

## WAYS OF NOOSPHERIC DEVELOPMENT: MODEL OF SISTEM OF NOOSPHERIC SOCIETY

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The article discusses the main directions of the noospheric development of the humanity at the beginning of the third millennium. An important stage in the transformation of the biosphere to the noosphere is the stage of formation of the noospheric society.

The noospheric society is defined by the formation of the noospheric consciousness and from the point of view of the systems approach consists of a set of noospheric personalities that form the substrate of the system, structure with the quality of the noospheric autotrophy (the independence from the biosphere), the concept of the system – the collective mind of humanity.

Collective intelligence is the necessary condition for the solving of global problems, the next big step in the evolution of mankind, comparable to the emergence of life and intelligence on the planet. The collective mind of mankind is the self-organizing multilevel planetary system that combines humanity in a single socio-cultural unit, consisting

of individual minds of individuals, structures of social consciousness, in the unity of spiritual and informational, cultural and semiotic, psychiatric, sociobiological and technical aspects designed to ensure of processes the co-evolution of society and the nature of the noospheric ideology and the consciousness, synergistic management of the processes of the noospheric development.

The growing autotrophic independence of humanity from conditions of the biosphere is a trend throughout the evolution of mankind, especially accelerated over the last millenniums. The noospheric autotrophy is the growing information, energy and physical independence of mankind from the biosphere, determined by the formation of the noospheric consciousness and the collective mind of humanity, the growth of scientific thought, informational management of processes in the system of substance-energy-information of the noosphere and the biosphere, directed at increasing the vitality of the biosphere and the development of consciousness therein. The noospheric autotrophy is characterized by the use no-biospheric and renewable energy sources, the development of the earth's crust and near-Earth space. The noospheric autotrophy is a complex measure of the progress of humanity on the path of the noospheric development.

The main part of the noospheric development is the noosphere man, understood as the self-organizing creative personality, developing planetary noospheric consciousness and worldview that recognizes the good of the whole is more important than personal, coming from the principle of reverence for life, environmental, moral and noospheric imperatives, which has a wide common cultural and scientific outlook.

The formation of the collective mind, noospheric autotrophy and noospheric person should play an important role in sustainable development, building the noosfericinformation society of the sustainable development.

*Keywords:* collective intelligence, noospheric autotrophy, noospheric development, noospheric people, noospheric consciousness, system of the noospheric society.

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# SOME EVIDENCE OF COMPLETION OF THE FIRST PHASE OF THE NOOSPHERE REVOLUTION IN MODERN SOCIETY

#### Sulyeymenov I. E., Mun G. A., Grigoriev P. Y., Panchenko S. V., Shaltykova D. B., Sulyeymenova K.I.

Shown that the explosive development of the telecommunications industry has led to qualitative changes in the society. Presented arguments for the conclusion of the first stage of the revolution noosphere, expressed in particular in the formation of new structures transpersonal type. It is shown that the formation of these structures can be considered

based on neural mechanisms of evolution of complex systems, alternative Darwinian point of view.

*Keywords:* noosphere, information society, neural networks, non-darwinian evolution scenario.

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#### LINGUOCULTURE AND NOOSPHERE: A NEW PERSPECTIVE OF HUMAN EVOLUTION (LINUOANTHROPOGENESIS IN THE XXI CENTURY) Belyatskaya A.A.

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Evolution of text linguoculture is actualized through the introduction of new social experience into the sphere of "deep planetary evolution influence" – into the noosphere (V.I. Vernadsky). Language and text creation is to be realized as a part of noosphere – as a sphere of verbal responsibility.

The linguoanthropogenetic devepolment is a part of the "vertical evolution" that originates in the activation of a certain group of concepts. Linguoanthopogenesis consists in the creation of a complex categorial universal view in the mind of the reader.

A new evolutionary quality of the text is associated, first of all, with a new quality of social knowledge. Secondly, linguoculture development is connected with the influence on the reader, and, consequently, with the transference of new ideas.

Constant tension rise in the world linguoculture, caused by the new social concept genesis is the rule of linguoculture development. A fall in linguoculture tension is displayed in low gnoseological index of the text linguoculture (conceptual simplicity, conceptual distortion, ets) and results in a linguocultural stagnation.

The phenomenological study of linguoculture shows that linuoculture develops by transferring from a complex conceptual organization into a more organized system. A universal, holistic world view formation is a key cognitive process in linguoanthropogenesis. Linguoculture evolutions by the activation of metaphorical concepts as key social knowledge units in the mind of the reader, writer or speaker.

For the first time in linguoculture science several basic noospheric criteria of linguoanthropogenesis are proposed. They are: humanism, rising (vertical) evolution, holistic world view, metaphorism, anthropocosmism.

Noospheric understanding of the world linguoculture is associated with the evolutionary construction approach that proclaims humanistic activity in every human action (and in verbal activity as well). The acme of the world linguoculture evolution is reached through the creation of humanistic texts that concentrate and maximize the social and spiritual energy of culture by verbalizing the highest cultural values. Such texts direct all the reading and writing humanity to the way of rising evolution and noosphere.

Noospheric approach to the study of language and text is actual and modern. It proposes methodological foundation to the contemporary science investigating the problems of human evolution.

*Keywords:* linguoculture, noosphere, evolution, linguoanthropogenesis, linguoculture development criteria.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Philosophy.Culturology. Political sciences.Sociology Vol. 26 (65). 2013 г. № 5. С. 106-114

## HOMO NOOSPHERICUS AS IMAGE ACTUALIZATION OF HOMO RESPONSABILIS

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The realisation of gap between existing and proper, and therefore, of deficit of one's substantiality and fullness, that is identity, have caused the phenomenon which Hegel signified as "unhappy consciousness". In the context of opposition of existing and proper and with the help of key points of Noospherology, the idea about sharp necessity of culture-forming ideal image actualization of a person, Homo Responsabilis, is grounded through possible implementation of homo noosphericus project. The deep nostalgia of an individual for integrity and fullness of one's own existence caused the evolution of idealized Homo Responsabilis images in European culture: "Homo Sanctus" of Middle Ages, "Homo Humanitatis" of Renaissance, "Homo Sapiens" of the Rational Era, "Homo Machina" of Enlightenment, "Homo Economicus" of Modern Times and so on. Essentially, up to the middle of the 20th century the ideal image of Homo Responsabilis had actual projection not only to present but mainly to future that generated and stimulated the responsibility of a human for one's present and future. A contemporary person finds oneself in other situation. A separate individual drops behind "the speed" of humankind development in the sense of intellectuality and civilization. In the condition of accelerating multiple increase of information a person is obliged to glide on the surface of signs without having even time to correlate them with corresponding meanings and even more to deepen into their sense. Sad as it may seem to admit the horizons of intellectual

and spiritual wild-growing for a human are becoming more distant. The project Homo Noosphericus, the actualization of Homo Responsabilis image, is justified by the analysis of such key points of noosphere studies as "cosmism", "biosphere", "noosphere", "semiosphere", "gaia conception" and "anthropic principle". Such an analysis allows to uncover and to frame an important meta-anthropological intention. For example, if strong version of anthropic principle is admitted as genuine and modality of responsibility concerning universe is true it will mean that modality of responsibility concerning individual, Homo Responsabilis, will be also veritable. It is logically evident that philosophical meta-anthropology (noospheric anthropology in this context) will become new, possibly the most important phase in the research of a human phenomenon.

*Keywords:* existing and proper, homo responsabilis, homo noosphericus, cosmism, anthropic principle

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#### THE COEVOLUTION AND THE HARMONISATION – METHODOLOGICAL BASIS NOOSPHEROLOGY Potapov A.D., Ryabova S.S.

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The article deals with the theoretical and methodological foundations of philosophical justification for the need to rethink the current stage of the provisions noosphere concept and ways of its development in the theory of the noosphere. As an important methodological basis justified the use of categories of co-evolution and harmonization. The basic principles of these categories is applicable to noospherology. Given the critical evaluation of some of the principles of the concept of the noosphere, and the current understanding of the development of science, technology and culture, given the position of having to change the paradigm of human development with antropotsentrism to biotsentrism. Obstacle to the development of the paradigm shift is the presence of the dominant world religions, which, if carefully examine their fundamental principles, which are likened to the god man appears as the king of nature, which is given to him in the undivided use. From the above it can be concluded on the need for careful attention and the development of such important categories of environmental science as the harmonization and co-evolution. The most important factor that can help accelerate the greening of society is the co-evolution, which appeared under the influence of environmental studies and was able to explain the large number of different phenomena, in particular, are not subject to Darwinian views of evolution. The amazing consistency of all species of life is the result of co-evolution. In humans, the concept of co-evolution is related to long-known in the philosophy of the principle of harmonization, and if we continue the analogy between the development of man and nature, it must be concluded that all the committed person must lead to the harmonization of its relationship with nature, and thus to its internal harmonization. The sharp increase in the scale of human activity in the transformative nature for the first time raises the question of the interaction of harmony between man and nature and causes a need to overcome the crisis of ecological condition and justifies the need to develop a special form of the unity of man and nature. Such is the harmony. The current state of affairs in the ecological state of the biosphere is largely determined by cultural marginality of modern humanity. First of all, there is a need to address the problems of culture, which ensures the success and the solution of environmental problems. The realization of the new man's place in the world, the creation of new value ideals, the formation of a new world and a new culture, education, new technologies and new interaction with the world - it is the task of the current and the next generation - otherwise, future generations will not be able to "live among of life. " Active theoretical development noospheric views, a slow but gradual movement toward greening of science and technology has led to the fact that the beginning of a gradual greening kultury. Tvorchestvo in the transformation of nature as an alternative to the global environmental crisis is realized in the unity of man and nature, the application of the natural environment and the Mind soul that suits the content of the most important philosophical noosphere categories, harmonization and co-evolution.

*Keywords:* harmonization, co-evolution, evolution, harmony, noosphere, noospherology, anthropocentrism, biocentrism, mirovoozrenie, culture, science, methodology.

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#### GLOBAL RELATIONSHIP AND CRISIS IN THE SYSTEM «PEOPLE, EKOSFERA AND INFORMATISATION WORLD» Skalenko A.K.

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As a result of the global systemic analysis of the realities and challenges of our predictions of Academician V.I. Vernadsky and the imperative of world trends by the author reported the presence of global economic and social crisis. The most important realities, mandatorily trends shaping today identified the phenomena actually revolutionary information and in fact the corresponding globalization. On the basis of developed facts, scientific, philosophical predictions universally systemic thinking globalists, especially our fellow Academician Vernadsky S.N. Bulgakov and philosopher, as well as the previously developed system-information methodology, the author formed and presented in this paper, an innovative system conception of measuring the fundamental essence of a global relationship of the human factor, Ecosphere (ecology and economics), information newest historical world phenomenon - a global system of crisis trans information civilization.

It is established that the phenomenon of overexploitation of information, mostly technology plan was the result of the subject-object relationship in which the practical computerization actually ahead of theoretical awareness of the complex problem of building information society noosphere. In the research results presented by the author The system-wide critical moment adequately accounted for, and in the process of scientific inquiry has been given the appropriate attention to the identification of factors does the overall the structure of socio-economic process and the ambiguous impact on the quality and efficiency of operations. It is shown that a proper human factors, and formed a subject-object relationship is perfect and information resource in the global system plan based on existing material and energy resources can be defined as progressive or regressive direction of development. Mechanisms of control system trans information modern world process, disinformation-disintegrative effects as moments of crisis on education globally systemic impact, as well as of recommendation algorithms developed form of anti-crisis strategy at the highest levels of socio-economic activities and development.

*Keywords:* global system, trans information, crisis management, civilization, misinformation, disintegration, ecosphere, interaction, activities, development

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#### NOOSPHERE VORLDWIEV AS THE BASIS FOR THE DEVELOPMENT OF CIVILIZATION Khanin I.G., Polyakov M.V., Alekseeva V.V.

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One of the characteristic conditions of the process of entering the stage of human civilization, the information society in the stage of the Noosphere is the development of scientific, technical, social, ethical, moral and cultural development. Nowadays, more and more clearly is shown expanses of thinking, which is based on the search for solutions of solving environmental problems, harmonizing relationships with nature, to achieve sustainable development.

The theory of the Noosphere in the modern world is increasingly seen as the foundation of civilization in the future. That is why ideas of thinkers H.Skovoroda ,Vernadsky , L.Gumilev , M. Mamardashvili actualize. Through all scientific legacy of thinkers, we meet the motives of humanity, peace and harmony. There are several aspects of the study of the theory of the Noosphere, which can then bring us closer to the answers on the implementation of this concept. Among them - the idea of the Noosphere through the system of semiotics , the creation of the Noosphere in the context of the development of certain spiritual and human value systems , the unity of Noosphere substance on basis of scientific progress.

A prerequisite for the creation of the Noosphere is the introduction of advanced science, the generation of new scientific knowledge, involvement of young people in the design process of the future, creating an environment for the emergence of people with planetary thinking. A characteristic feature of the Noosphere is the synthesis of the physical and non-physical knowledge, the sign nature of being and consciousness as a single continuum, and the non-separation of subject and object, human and technical knowledge.

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#### V.I. VERNADSKY ABOUT SCIENCE Zinnurova L.I.

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The article deals with the fundamental provisions of the creative heritage of V.I. Vernadsky, relating to how he characterized science and its role in society. This is important in two respects. First, V.I. Vernadsky – the greatest scientist who created the science, developed, and it is better than anyone else in the highest degree to understand that there is a science as it should be, that it should create in society. In addition, V.I. Vernadsky – philosophizing scientist and his thoughts about science – an invaluable contribution to the very in demand nowadays philosophy of science. Second, scientific and technological progress advanced science in the title role in society, and the quality of

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performance of this role is very important, because science claims to be involved in social

progress. As to whether these claims with which society accepts uncritically, especially as V.I. Vernadsky in the concept of the noosphere Science Key priorities.

Consideration of Article V.I. views Vernadsky science, and his activities in the organization of science, led to the following conclusions:

- Science is clearly a tendency to quantitative rational study of the world and man, eliminating the qualitative emotional approach, which has a detrimental effect on the character of society and man, and that can not contribute to social progress. This trend should be disavowed.

- In science, the emphasis is clearly visible on the differentiation, leading to the separation of science, technical knowledge and socio-humanitarian. Prevailing interest in natural science seriously deformed modern education and fraught Getting together well educated specialist trained unilaterally defective person who is unable to adapt to the modern world. Need to revise the policy reforms in the areas of education and prevent domination of natural science at the expense of social sciences and humanities. Very true and deepening relations of philosophy and science.

- Imperishable significance of the ideas of V.I. Vernadsky in the restoration of the national science as institutionally and substantively, as the situation in the domestic science modern identical to that in which he worked Vernadsky.

- In general we can say that the V.I. Vernadsky – the greatest visionary, defining the high road of science, from which, unfortunately, science has deviated, but that she should be sure to come back to perform their functions in the social progress of mankind as an essential element of culture and the most effective and active ingredient of the noosphere.

Keywords: science, the noosphere, the scientific creativity.

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## EVALUATION AND SELF-EVALUATION

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The paper proposes evaluation and self-evaluation of the intelligentsia is determined by its nature and purpose to be the subject of liberal education, to generate ideas worthy response historic challenge.

*Keywords:* intelligence, intelligent, intellectual, a society in transition, a liberal arts education.

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## V.I. VERNADSKY AND COMMISSION FOR THE STUDY OF NATURAL PRODUCTIVE FORCES OF THE CRIMEA: NEW MATERIALS

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This article is based on the documentary's discoveries and contains the unique information about the work of Commission for the Study of Natural Productive Forces of the Crimea, which was founded in May 1920 and was headed by V.I. Vernadsky. In addition to the archival material, the author is actively engaging the Crimean newspapers period of 1920, and the official information published in the Crimean journals of this time, as supplementary information. These chronicles notes allows to recreate the missing pages of the history of science in the Crimea and, in particular, about the birth, the establishment and work of the Commission for the Study of Natural Productive Forces of the Crimea under the leadership of V.I. Vernadsky.

*Key words:* the productive forces, nature study, an experimental laboratory analysis of the materials, drafting a compendium.

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#### SOME IDEAS OF V. VERNADSKY, UNCOMMONLY DISCUSSED: FROM **REPEATED DISCOVERIES TO THE "BURSTS" OF SCIENTIFIC CREATIVITY** Vladimirsky B. M.

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Great number of non-trivial ideas connected with different parts oh the knowledge, are distributed in the Vernadsky's texts. Probably, his conceptions about social-cultural evolution are passed ahead essentially the time. One of intimate his thought has been formulated as early as 1906 year: "... we are seeing as the same discovery again is appeared in different places of the Earth... without any possibility of the adoption" ("About scientific outlook"). The problem of the origin of similar elements of the culture in independent regions might be illustrated now by many examples: in Platon's theoretical constructions the fragments of "Indian philosophy" may be noticed; ancient Japan ceramics "dzemon" style is very similar to synchronous Mesoamerican ceramics "Valdivia", etc. There is no the explanation of this phenomena up to now. Another important Vernadsky's observation - about the "bursts" of scientific creativity - also have no model description. Real existence of such "bursts" is confirmed now by strict statistical methods. Probably some rhythmics there is the dynamics of this phenomenon - e.g., "Long Kondratiev waves", 55±9 years. According to Vernadsky, last creative burst in the science have been started about 14895 year. So we are observe in our time some drop of social interes to academic investigations (the duration of the bursts is about 70-80 years.

Keywords: creative activity, epistemologic regularities, "bursts" of spiritual activity.

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#### WATER CRISIS - THE GLOBAL PROBLEM OF CIVILIZATION Sotskova L.M., Pozachenyuk K.A., Kalinchuk I.V.

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In the paper the most important aspects of the consequences of the water crisis are analyzed, possible scenarios for the transformation of water resources and the threat of water scarcity in the world are characterized. The objective of this research was the characterization of specific indicators of present-day problems of water consumption and worsening water shortage scenarios. Anthropogenic activities and the intensive growth of water consumption had little effect on the total volume of the hydrosphere and the water cycle, but significantly - on some of its units. The fast growing consumption of water in certain regions caused depletion of some parts of the cycle (river, groundwater, soil) and the gain of others (in particular, atmospheric owning to evaporation from the land) which are extremely unequal from the economic point of view. The authors analyzed data containing information on the amount of river discharge volume. Over the past halfcentury their water content has essentially changed. Discharge of the rivers has decreased, and others - has increased, similar changes are typically occurring of the annual flow distribution in the various regions of the world. Creation of water reservoirs leads not only to a change of the hydrological regime and water quality, but also leads to a change in hydrography of regions. On the one hand, the reservoir water increase water resources in the region in limiting periods and dry years, on the other hand - artificial reservoirs as the largest water consumers greatly increase evaporation from the water surface, and convert a portion of water to inaccessible or to low-value (for human activities) cycle stages reducing the total water resources of the region. The authors compiled the scheme of natural and anthropogenic factors of the global water cycle stages transformation in the XXI century. Anthropogenic load and modification of water resources lead up as to manifestation of the opposite (as the depletion and replenishment of the most important stages of the cycle), but actively interacting processes, and to moving the water masses of the economically available to the economically inaccessible components of the water

cycle. The largest regional duty of water is Asia - about 60% of global water consumption. This is to a far greater degree determined not only growth, but food preferences of the population. It was here where are the main irrigated areas where extremely water-intensive crops - rice and cotton plant - are under cultivation. Europe uses four times less: than 13%. Economic activity, global population growth, fast-growing water consumption may be accompanied by worsening water shortages - the depletion of water supply, available for use of water resources ensuring food and energy security. By the United Nations estimate, to 2050 the population is expected to grow to 9,4 billion people: 58% of them will be able to enjoy the water without any restrictions, 24% - with limited access to water, and 18% may have intractable problems related to water deficit.

In summary, the threat of water shortage has arisen because of the extensive development of the water management which is characterized by constant growth of water consumption, the formation of planetary sector polluted surface and ground water and reduce rate of stream flow. Water scarcity in many countries is a major problem that requires practical solutions. Findings of experts are not upbeat: global population growth and internal migration will be accompanied by worsening water shortages, depletion of water supply available for use by the decline of sanitary-hygienic indicators, and high child mortality rate. Preventing the water crisis requires new scenarios of global, state and regional water infrastructures and innovative solutions in water management.

Keywords: water crisis, the water cycle, water transfer, water supply.

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#### METHODOLOGICAL FOUNDATIONS AND TRENDS OF ECOLOGCALINFRA STRUCTURE DEVELOPMENTIN SOLVING PROBLEMS OF NOOSPHERE SUSTAINABLE DEVELOPMENT

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The oretical and methodological basis ford eve loping environmental infrastructure in the context of problem solving of noosphere sustainable development and identify areas of their head sachievementsin ecological infrastructure. Identified methodological peculiarities of ecological infrastructure. The proposed priority areas for the development of ecological infrastructure investment and institutional support, the formation of investment attractiveness of ecological infrastructure facilities, the use of public-private partnerships in the development of ecological infrastructure, integration efforts of businessand government, the use of marketing and advert ising approach to system development of ecological infrastructure in the context of noosphere transition to sust ainable development include the following:

1.Creation of institutional framework and rationale for the law ones sues related to the formation of ecological infrastructure.

2. Investment security and the development of methodological and methodical basis for assessing the investment attractiveness of ecological infrastructure facilities.

andassumptionsformation 3.Development of methodologicalprinciples ofinteraction between the stateand business, sharing of responsibilities and functions on the principles ofpartnership, proved the feasibility of developing and implementing the concept of the ofpublic-privatepartnerships andmechanisms for implementationin formation its infrastructure, raising public, ecological social and environmental responsibilityof interestedstake-holders.

4. Strategicintegrated managementand controlbuildingecological infrastructure.

5. Inclusion in planning environmental management system ecological infract rupture and expand the horizons of planning, an extensive system of planning the development of interdependent plans: strategic, tactical operational. The planning process should be used prior strategic assessment of the effects of targets, scientifically justify the choice of goals and the possibility of their achievement, use of criteria to determine the degree of effect iveness of plans and goal susing economic indicators, their social land environment a dimension.

6.Focusing on the definition of criteria and selection of strategic direction and operation of environmental infrastructure in terms of global challenges, the environmental crisis, the depletion of the environment, attracting domestic and foreign investors to participate in the various stages of projects (grants, transfer of technology and expertise, specialist training required qualifications and other)

7.Creation ofdatabaseand statisticalobservations, theinstitutions of governance, monitoring, dynamics, scenarios and consequences of the operation and development of ecological infrastructure.

8.Training ofskilledhuman resources, competent staff. administrators, education culture, environmental awareness, develop modernenvironmental education that meets the requirementsof development modern andthe time, the of methods developmentofenvironmental infrastructure, information communicationof technology, an effective mechanism forpublic participation indecision-making.

9. The use of marketing communications and advertising in order to build a national system of ecological infrastructure.

Facilitate the process of increasing the investment appeal of objects of ecological infrastructure needs tosetpro active legislative and legal, economic, institutional, organizational, implementation of a program of measuresto improve the investmentclimate, improving the quality of tax, credit and financial, resource, institutional, investment and innovationmanagementof natural resources; implementation todevelopingan innovative ofa program-basedapproaches model ofecological infrastructureat the nationaland regionalnature. Development ideology application of the public-private partnership in the formation of environmental infrastructure includes phased development and implementation of a system of partnerships between government and business, and other interested parties the potential interaction (teaching, non-profit organizations, international financial and non-profit organizations, NGOs, etc.).

Development of ecological infrastructure needs to be improved and the formation of a new system of self-adaptation and transition to a more stable state with the assistance of the latest models of regulation on the basis of current models of advertising.

*Keywords:*ecological infrastructure, noosphere sustainable development, investment attractiveness ofecological infrastructurefacilities, investment ofecological infrastructure, public-private partnerships in the development ofecological infrastructure, advertising of investmentin ecological infrastructure.

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#### TRANSDISCIPLINARITY BASIS OF FORMING NOOSPHERE MODEL OF ECONOMIC DEVELOPMENT Hrvniv L. S

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Methodological problems of forming a new model of sustainable economy are researched based on theoretical and philosophical concept of interrelatedness of natural, social and economic processes and phenomena coinciding in a spatial areal. Complicated natural, social and economic systems (CNSES) as potentially self-organizing territorial multi-level components of biosphere constitute the object of research and managing.

The terms of "ecological demand" and "ecological supply" of terrestrial systems as well as of "price of negentropy function of nature" as the elements of "economy of nature" "market mechanism" within the local territory boundaries are justified. These problems are considered jointly with research of biodiversity conservation measures for terrestrial systems.

The natural capital is treated, after V.Vernadsky, as the CNSES' internal energy and living matter of the planet. An assessment of the natural capital's role in natural, as well social and economic processes of biospheric space, and of the mechanism of their interaction, is performed. This mechanism is researched based on the analysis of novel achievements of natural and social sciences: non-linear thermodynamics (I.Prigogine's theory of irreversible processes), biophysics, V.Vernadsky's concept of noosphere, synergetic theory, macroeconomic theory, regional energy economy, as well as ecology. Based on integration of these scientific achievements, the theory of natural, social and economic systems' sustainable development is justified.

*Keywords:* negentropic function of natural capital, noospheric model of ecological sustainable economic development, functions of ecological sustainable economy, natural, social and economic systems' sustainable supply.

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#### AGRICULTURAL LANDSCAPES SIMULATION FOR THE PURPOSES OF SUSTAINABLE DEVELOPMENT

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The article presents the results of the inventory and assessment phase in landscape planning of agrolandscape territory in Chuguyivsky district, Kharkiv region. In carrying out the analysis of land at the level of land use territory topographic maps horizontals have been vectorized, which then turned into a GIS digital relief model. As an attribute to the data of the maps the relevant information is attached about the individual characteristics of the relief.

A digital relief model is a combination of the evaluation value exceeding relief linked to the units of rather small regular network, which is a digital expression of high-altitude terrain features on a topographic map.

Based on DEM, in turn, we can quickly create a series of themed maps of major morphometric parameters: hypsometric maps, maps of slope and slope exposure, and based on them - the erosion hazard maps,runoff directions, of geochemical migration of elements, landscapes stability, etc.

The model allows us to estimate the spatial distribution of potentially dangerous in terms of erosion regions Chuguyivsky area. As the model shows, northwestern, extreme eastern and south-eastern parts of the area have the most important inclination angles. It is these areas where possible, should be withdrawn from agricultural use to preserve natural soil and prevent erosion processes.

The resulting map is the zoning map on a set of optimization measures. At the top quality soils, topographical conditions when placing the first technological arable land on slopes of up to 3 degrees with non-erosive and weak erosive soils field rotation is designed. Technical, grain and forage crops are placed in these rotations, not placed in other rotations. In the conditions of clearly developed terrain and soil erosion, in many cases it is necessary to predict the differentiated location of these cultures in two field crop rotations taking into consideration the topography and threat of soil erosion.

The structure of the second technology group includes arable land, located on the slopes of 3-5 ° with prevailing moderately washed soils. On the lands of this group soil

protection grain-grass crop rotations with cultivated crops are designed. On moderately and severely eroded lands, as well as on weakly eroded lands located on the slopes of more than 3 degrees, which are very erosion dangerous soil protection crop rotation is designed.

In the third technological group we combined arable lands located on the slopes of more than 5  $^{\circ}$ . They are used for soil protection grassland rotations or for meadows.

*Keywords*: landscape planning, agricultural landscapes, modeling, optimization measures, GIS technology, Chuguivs'kyi area.

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### SECTORAL DEVELOPMENT PRIORITIES IN THE CONTEXT OF THE ECONOMY ECOLOGIZATION NATIONAL POLICY

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The retrospective view of the international and national legal adjusting of the economy ecologization and providing of guard and rational use of natural resources are considered in the context of ideology of world development. Tasks transformations in the natural capital rational uses and in the guards of environment that have status of global tasks of society and reflect the environment protection international cooperation are investigated. The Ukrainian environment legislation and its adaptation to the international norms are considered with the effectiveness and disadvantages assessment.

The entity of key stages of the world humanity genesis and the production ecologization place both are defined in society development conceptions. It is shown how the sustainable development concept and the «green economy» concept are linked and what are the place and the role of the ecological component.

The ways of the national economy sectors ecologization are grounded based on the principle of the achieving sustainable development criteria on the main grounds of the

negative environment impact. Such sectors include agriculture, fisheries, forestry, construction, energy, industry, tourism, transport, waste management and water management. Priorities of eco-oriented development in these sectors are defined. In this sense, the national strategy for economy ecologization is considered as a model that realizes the tactical priorities of economy sectors, intra-regional and inter-regional cooperation possibility to strengthen the economic growth. It is possible only on the economic stabilization basis, expanded reproduction and technical progress, innovative technologies introduction, environmental and social problems solutions.

Strategic priorities realization ways of economic sectoral development are presented systematically. They are based on a new of social development ideology and focus on the environment preservation for future generations. Main levers of ecologization are motivation, encouragement and compensation, search, accumulation and implementation of environmental innovation, the environmental infrastructure creation, educational activities, the civil society activation, international cooperation.

*Keywords:* economy ecologization, sustainable development, "green" growth strategy, sectoral development priorities.

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HYDROENERGETICAL POWER OF CRIMEA RIVERS Oliferov A. N.

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The article shows the feasibility of the rivers of Crimea small hydroelectric power plants (HPP). The indices to determine the power of the rivers - they fall and runoff. It was revealed that particularly large fall in the upper reaches of the rivers south coastal slope (700-1200 m). Unfortunately, the high incidence of the rivers here are not accompanied by high costs. In the western part of the northern macro-value rivers falling too large (400-800 m). The high value of the fall is accompanied by relatively high costs, which creates a real prospect for the development of small hydropower plants. For each gauging station were built hydrograph runoff. By the rivers of the western part of the northern macro security spending three months greater than 0.20 m3 / s, which makes it possible to plant work. H areca southern macro spending less.

The estimated hydropower resources are unevenly distributed. The highest they have in the western part of the northern macroslope (3256-6671 kW). By the rivers of the southern macroslope they are much smaller (170-370 kW). Energy supply varies over time.

The calculated power plant on the turbine shaft more than anything in the rivers of the western part of the northern macro (2960-3400 kW). The calculated power at the shaft of the generator (2400-2800 kW) was also in the area. A number of specific projects to create hydroelectric power station in the different regions of the Crimea.

Studies of river flow as a source of hydroelectric power have shown that the turbine, developed by Kharkov Scientific-Production Association "Turboatom" does not quite meet the needs of hydropower Crimea (the minimum flow for the turbine 0.20 m3 / s). It can be used in the construction of small hydropower plants for the western part of the northern macroslope rivers of the Crimean mountains.

*Keywords:* hudroele ctrostation, power of rivers, runoff fal, potencial power, power of turbina, power of htntrator.

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#### MODERN ECOLOGICAL AND ENVIRONMENTAL EDUCATION AS THE PERSPECTIVE FOR THE NOOSPHERE'S DEVELOPMENT Nekos A.N., Bodak I.V., Semibratova P.V.

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The article is dedicated to analyzing the integrating role of modern ecological and environmental education in the process of forming the ecological culture of society as the fundamental basis for the noosphere's development. The results of our research show that the ecologically literate society is the necessary condition for the rational coevolution between human and nature and the perspective for the noosphere's development. The popularization of the ecological information with the help of the formal and non-formal ecological education gives the opportunity to implement the noosphere's ideas into the everyday life of people.

Nowadays only the limited groups of people (ecologists, biologists, geographers etc.) have the ecological outlook, but the global ecological problems are everyone's concern. That's why today there is a pressing need for improving the education system in order to create a new noospheric paradigm of our world outlook with the main focus on the young generation.

According to the Concept of Environmental Education the government policy of Ukraine stands for the "environmentalisation" of education right from the kindergartens up to the structures of postgraduate education. Nevertheles, nowadays we still don't have the effective methodics of implementation of the new paradigm of ecological and environmental education into all spheres of the social activities.

The effectivness of environmental education depends on the level of its integration into the life of the society that can be achieved with the help of formal and non-formal methods of education. The formal and non-formal education guarantee the regularity and continuity of the pedagogical process together with systematization of the fragmentary knowledge that person gained at different age periods and in different spheres of activities. Today the non-formal form of environmental education is very popular all aroud the world for its accessibility and simplicity for understanding. For example, socio- ecological

advertising and ecological websites are used widly. But the government of Ukraine focuses almost on the formal education.

Taking into account that Ukraine is making steady progress in implementing the European higher education system in the context of the sustainable development today there is a strong need for the reorientation of the higer ecological education. We not only have to change the information content of education but also find the innovative methods of teaching (computer technologies, interactive methods of teaching, distance education, international student exchange programs etc.).

The ecological education is the effective tool of preventing the nature degradation and saving the environment because it helps not only minimize anthropogenic impact on wildlife but also rationalize the use of natural resources.

Keywords: ecological and environmental education, noosphere, ecological thinking.

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#### CANYONS OF THE CONTINENTAL SLOPE OF THE BLACK SEA L.A. Pasynkova

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Canyons are widespread on the shelf and continental slope of the Black Sea. Prerequisites for the detection of the canyons in the Black Sea has created a well-known Lieutenant F.P. Manganari's map of the Black Sea (1834). First canyons in the Black Sea are described in

1868 by Lieutenant Commander L. Cumani during the measurements for the cable English-Indian telegraph. These days, found about 150 canyons.

The most ambitious in the last period of the geological development of the Holocene transgression led to an increase in the pool from - 87.5 to + 2 m and flooding of coastal alluvial and alluvial plains of the north-western shelf of the Black Sea and the north-west of the Sea of Azov and the formation of the coastal alluvial - deltaic floodplain plain. Maritime expeditions of the Institute of Geological Sciences (IGS) and the Division of Marine Geology and Sedimentary Ore Formation (OMGOR) National Academy of Sciences of Ukraine was established broad development paleoriver buried valleys in the Black and Azov Seas, the network of valleys and canyons on the continental slope of the Black Sea.

Thus, recent studies have led to a significant revision of the provisions of valley-canyon systems of the Black Sea.

Within the north-western part of the Black Sea in Ukraine, the largest by the length are canyons of Paleo-Danube and Paleo-Kalanchak.

Paleoriver buried valleys of Paleo-Dnieper and Paleo-Kalanchak cut into the hinge point of inflection of the shelf and, thanks to the action of submarine discharge and turbidity currents, give rise to the canyons of the same name, dissects the surface of the slope on individual dendritic gorges and narrow "watershed" ranges.

Within the South Coast - Crimean morphostructural region of the continental slope on the current data identified 22 canyon-like valleys systems having different configuration thalwegs and other morphometric characteristics of the canyon all over the slope.

The reason of combining separate canyons in the system, use the following criteria: location and localization of canyons, monotonous stretch, predefined common geological and structural-tectonic conditions of formation, the development of certain morphosculptural.

Most often canyons are originated in the upper edge of the continental slope, with the prevailing stretch of thalwegs directed along the normal to the shoreline, while keeping the overall north-south direction, deviating to the west and east by  $10-20^{\circ}$ . The slope of the sides of canyons may be significant: from  $5-10^{\circ}$  to  $40^{\circ}$  or more.

In the field of "merging" the canyon valley and its tributaries has been an increase depths of the canyon floor and its maximum extension. Eastern slope canyons have steep walls and steeply inclined thalwegs devoid of recent sediments.

Side inflows are typical for some canyons, comparable in scale of the development, with separate distinct canyons. Smaller forms of erosional dissection of the slope are ditches, ravines, gullies, crevices, small valleys and hollows, confined to the transition zone to the foot of the scarp slope of the deep-water basin box.

Exogenous geological processes operating on the territory of the land, and on the bottom of the Black Sea caused by the same display of endogeodinamic activity processes: neotectonic and contemporary tectonic activity and seismic processes operating within the

South-Eastern Crimea. But these processes are not only interdependent, but interrelated activity of underwater marine processes is not only an active coastal erosion, but also leads to the activation of landslides, slope denudation processes and even mudflows.

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# ANALYSIS OF THE DYNAMICS OF BUILDING CLIMATE SOIL FORMATION OF THE CRIMEAN PENINSULA

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Using the energy approach to study the main trends in terms of the heat and moisture of the Crimean peninsula. The role of climate in the evolution of the soil cover. The opportunity of boundary migration of soil-geographic sub-zones in the Crimea during the Holocene.

Recently, in the scientific literature and in the media, considerable attention is paid to the issue of global climate change, and the impact of this process on the dynamics of many geodynamics phenomena, including the intensity and manifestations of soil formation. In establishing relationships in the "soil-climate" it is important to take into account the nonlinearity of influence of heat and moisture in the soil-forming process efficiency. Often, it is the cause of this can be explained by the low productivity of soil and climatic correlations with some integrated indicators, not to mention the more common characteristics of heat-and moisture-sufficiency of soil-geographic zones. Evaluation characteristic ability to provide natural factors of soil formation. Potential factors of soil formation are the ability of a combination to initiate and develop a soil-forming process.

Only by using computational method for evaluation of the potential of regional climate system, we can estimate the magnitude of climatic parameters that can make changes in soils evolutionary dimension. According climate data, the amplitude of oscillations of

inter-annual average air temperature reaches 2  $^{\circ}$  C, and precipitation amounts to 18%. This is equivalent to a deviation building energy costs for soil formation rate of up to 180 MJ/m<sup>2</sup> year, which is slightly more than the actual energy interdecadal changes of soil formation.

A detailed analysis of climatic and historical information about the nature of the region suggests that the persistent climate of this order within the plain area of the Crimean peninsula has been the potential for migration of pulsating soil-geographical sub-zones. Previously, we carried out a mapping assessment of territorial changes in the magnitude of energy costs on soil formation in the Crimea, a detailed analysis which allows us to estimate the dimension of vibration limits of soil-geographic sub-zones within a 43-52 km. The validity of this hypothesis reinforces the approach based on the ergodicity of a space-time compensation phenomenon, which allows for the possibility to carry out replacement of estimates with time estimates in space and vice versa. Therefore, for the conditions of the Crimean peninsula, where the width of the distribution of areas of southern black soil is in the range of 20 km, black soil of the foothills - 30-35 km, the chestnut soils - 40 km, the possibility of transforming the evolution of soils throughout the Holocene may be regarded as sufficiently justified.

Analysis of conditions of heat and moisture during the Crimean Peninsula in the Holocene suggests that, within the limits of the Crimean peninsula has been the potential for migration of pulsating soil-geographical sub-zones in dimension fluctuations in the 43-52 km. Therefore, for the conditions of the Crimean peninsula, transforming possible evolution of soils throughout the Holocene in the past and in the future while maintaining the above described trends of climate change: excess vibration amplitude of inter-annual average temperature is 2 ° C and precipitation above 18%.

Keywords: soil-forming potential of climate, soil, energy costs on soil- formation.

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## THE CONTRIBUTION OF V. I. VERNADSKY IN THE SOIL BIOGEOCHEMISTRY

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V.I. Vernadsky was a disciple and follower of the brilliant school of V.V. Dokuchaeva. The studies are set out in the soil of his first scientific article .

At the request of Dokuchaeva Vernadsky represented by his collection of soil at the World Exhibition in Paris. This collection was a big hit at the show and helped popularize the Russian school of soil in the scientific world.

By definition, Vernadsk, the outer shell of the Earth covered by geochemical activity of living matter, corresponds to the term "biosphere." The most important role in this system plays the interactions between living matter and inert matter of the Earth. These processes occur as a result of the activity of organisms and are classified as biogeochemical. Later, he comes to the conclusion that "the role of soil in the history of the world is much bigger than it usually seems." Vernadsky first drew attention to the crucial role of living matter in the formation of soil from the geochemical point of view.

Vernadsky examines the role of different organisms to change the structure and physical properties of soils. The analysis of the content of the work of Vernadsky concerning soils indicates that they are of outstanding importance in the field of theoretical soil science,

and have not lost their relevance in our time. In this regard, it should be noted as a remarkable collection of the work of Vernadsky "Works on biogeochemistry and geochemistry of the soil."

The most detailed way he considers every form of manifestation of the impact of living matter in the soil-forming process in the soil.

The living substance acts mass and composition of the prisoners therein compounds. It itself as such or products of change amounts of the soil.

Living matter causes the fine-textured soils. It changes its structure, due to disintegrating or cementing of its constituent organisms or products they die. It directly affects the chemical processes in the soil, turning them into biochemical processes.

Living matter is extraordinary mix of chemical elements in the soil, being the main factor in this mix , and this is due to the progress of all chemical reactions in the soil.

Describing the variety of biochemical processes in the soil, Vernadsky particular attention to the process of mixing different chemicals, which occurs in the bodies of living organisms in the soil resulted in the selection of their right to their life elements. This process Vernadsky suggested naming the organogenic paragenesis joint finding of the chemical elements in the soil and the earth's crust.

Methods of soil analysis, taking into account their biogeochemical characteristics of Vernadsky has repeatedly appealed to his scientific work , dedicating this special publication of the researc.

In the words of Vladimir Ivanovich, in the history of black earth soil science has played the role of " frog ". To paraphrase his words, we can say that the soil has played the same role in the history of the study of the biosphere, the founder of which he is a national.

Vernadsky's name is inextricably linked to soil science as well as geochemistry. He developed the theoretical foundations of the science of soil cover - pedosphere, which is characterized by a particularly high density living and high geochemical energy of living matter. His work he contributed to raising the level of soil science to one of the most important environmental sciences Biosphere class.

Based on biogeochemical ideas of Vernadsky developed the doctrine of weathering crusts and landscape geochemistry (B.B. Polynov, Kovda B.A., M.A. Glazovskaya). These areas of science are of great importance for the study of the evolution of the soil cover, land valuation, the improvements, as well as for mineral exploration.

*Keywords:* soil, pedosphere, living matter, the biosphere, the chemical elements, biogeochemical processes.

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## HISTORICAL AND GEO-ENVIRONMENTAL ANALYSIS AND UNDERSTANDING OF RESOURCE AND ENVIRONMENTAL CRISES AS THE ORIGINS OF THE DOCTRINE OF THE NOOSPHERE Sotskova L.M., Panin A.G., Dragan N.A.

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Noospherology - a very young science, which has, however, deep and ancient roots. According to the authors, environmental or, more precisely, resource and environmental crises - it's not only the immediate impetus for the progress of mankind. Oral, written, archaeological information about these crises and on ecological and economic revolutions to overcome them, they accumulate in the historical consciousness of mankind, analyzing and reflecting on them, is also a complex origins of the current theory of the noosphere. This article analyzes the work of V.I. Vernadsky, I.F. Reimers and other authors of the noosphere, crises and revolutions. In terms of increasing the current global environmental crisis that threaten the existence of the biosphere and the type of Homo Sapiens, seem highly relevant deepening, widening, revealing new aspects of the theory of the noosphere. The aim of this work - to show the role of resource and environmental crises and ecological-economic revolutions to overcome them as motivating elements for the historical development of scientific concepts of conservation, optimization of natural resources. And, therefore, and for the emergence of the doctrine of the noosphere, that is, the sphere of reason. Work tasks - describe the specific features of some resource and environmental crises and ecological-economic revolutions to overcome them as the origins of the doctrine of the noosphere. In the course of the analysis of available data, the authors concluded: noospherology did not come out of nowhere, and has deep and ancient roots in the form of a meaningful analysis of old and new human resource and environmental crises and ecological-economic revolutions to overcome them; accumulation of human knowledge and practical skills in this area is gradually prepared the creation theory of the noosphere, historical and geo-environmental review of the marked crises and revolutions - an important part of noospheric genetic analysis and development of the theory of the noosphere as a whole.

*Keywords:* resource and environmental crisis, ecological and economic revolution, the noosphere.

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## MODERN DEVELOPMENT OF GLOBAL WARMING IN THE OVERLAY RESULT OF HUMAN ACTIVITY ON NATURAL CLIMATE CYCLES

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One of the greatest environmental challenges of our time - global warming is growing part of the current global crisis, the reliability of ecological systems, and one of the major obstacles to the transformation of the biosphere into the noosphere. The melting of continental glaciers activates rising sea levels, and other effects are expected, up to catastrophic. The main cause of the current warming is usually referred to as the growth of man-made emissions of carbon dioxide and other greenhouse gases. However, fluctuations in the climate history of the planet, up to glaciations and interglacial periods have been observed many times, including before the appearance of man. The researchers explain glaciation combination of terrestrial and space reasons. Late-summer 1850 climate cycles - a certain background for human activity - number of researchers connects with astronomical and space reasons - the frequency of the alignment of the Earth, Moon and Sun in a straight line. With more frequent their opposition intensified tidal processes in the oceans and seas. Then go up to the surface of the great masses of cold water, which leads to a general cooling of the climate and moisture. In the opposite case - the opposite. In various ways the fixed bias arising from this natural areas and high altitude zones, the growth or melting of glaciers, changes in the levels of the oceans, seas and lakes. In the second half of the Holocene peaks of cold spells and waterlogging were from the chronological point of 3900 years, 2200 years, 300 years BC, 1400 years BC, and the future has to fall on 3250 years BC, the same peaks of warming and dry necessary - for 3100 years, 1300 years BC, 480 years BC, and future must come to 2300 years BC. Thus, the current anthropogenic warming is occurring against the backdrop of the natural cycle of warming inside. 1850-year cycles are complicated by shorter cycles caused by changes in solar activity. As a result, the hypothetical melting of land ice ocean, which rises to 66 m can be flooded territory, which is home to a quarter of 7-billion humanity. This will create a huge and varied challenges. Counter the effects of natural warming difficult. Anthropogenic component of global warming is possible and necessary to limit by introducing new technologies that reduce greenhouse gas emissions. Here a wide field for the development and application of scientific and applied part noospherology and in general for the conversion of the biosphere into the noosphere.

Keywords: noosphere, climatic cycle, human activities, global warming.

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Vol. 26 (65). 2013 г. № 3. С. 299-309

## THE CONCEPT "MODERN LANDSCAPE" AND THE ENVIRONMENTAL MANAGEMENT ORGANIZATION (ON THE EXAMPLE OF THE WATER PRESERVING ZONES)

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The known fact that natural landscapes in various degree are transformed by human activity and long ago lost the primitive shape. From that as we understand a landscape,

what landscape is formed under anthropogenous influence, depends not only our life, but also life of the landscape sphere surrounding us. To approach to modern understanding of a landscape it is necessary to address to works given scientists, to track evolution of ideas of a landscape, to designate the modern directions in understanding and landscape studying.

Ideas of a landscape changed repeatedly, transformed and supplemented. With the development of science deepened by studying of natural natural processes and their interrelation with human activity, the concept a landscape revealed, extended, covering not only natural, but also the economic, cultural, social sphere.

Modern landscape – the difficult three-dimensional existential geosystem which has stood apart within the landscape sphere at the expense of processes of self-organization natural and adjustable (conscious or spontaneous) anthropogenous.

The leading principle of interaction of society with environment – the principle of compatibility. The socioeconomic subsystem has to be compatible in space and time with natural, i.e. to develop and exist in coordination with development of that system to which it belongs, and not to lead to destruction of all system. It will provide a sustainable development of nature society system with the minimum destructive processes and a favorable ecological condition.

The essence of the koadaptivny concept of environmental management consists in such organization of the territory at which the region would function as complete steady system where the economic subsystem is coordinated with natural by the principle of compatibility of components of the nature of a natural landscape.

Authors made attempt to study and display modern environmental management of studied areas, namely the Central Foothills of the Main ridge of the Crimean Mountains (fig. 2), and also Central Prisivashya.

Considering that into modern landscapes enter both natural, and natural and anthropogenous components, takes place to speak about landscape optimization, i.e. "nature of placement of settlements, agricultural fields, the industrial enterprises, the woods, reservoirs, transport ways and other natural and technogenic objects".

It is obvious that the coexistence of the nature and society is possible only through the rational territorial organization economic and social. One of ways of such organization is creation of buffer zones. We will consider system of the water preserving zones, as a way of the organization of environmental management which are one of types of buffer zones. Allocation of the water preserving zones possibly with application of three approaches: standard, settlement and landscape. In work the card of the water preserving zones of the largest rivers of the Foothills of the Main ridge of the Crimean Mountains, and also the small rivers of Central Prisivashya, including part of the North Crimean channel within the territory was made.

**Keywords:** modern landscape, environmental management, buffer zone, the water preserving zone, Foothills of the Crimean Mountains, Prisivashye.

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Scientific Notes of Taurida National V.I.Vernadsky University. Series: Geography Vol. 26 (65). 2013 г. № 3. С. 310-319

#### COMPARATIVE ANALYSIS OF LEVELS OF LANDSCAPE PLANNING Gostischeva K.S.

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Landscape planning is implemented as a hierarchical system. Levels LP made regarding the territory areas. For each level of planning documentation revealed.

In order to validate and improve business operations, there are several levels of the LP covering certain areas (Landscape Planning : Principles, Methods ...., 2002)

Federal or macro level - the development of concepts, master plans and plans for the development of economic activities in the territory of the state, large regions, economic regions. The scope of planning - 1:5000000 - 1:1000000 .

The regional level is designed for geo-environmental study of schemes and projects of regional planning. The scope of planning - 1:500000 -1:25000.

Melkoregionalny and local level - development of small regional planning districts, counties, individual settlements, industrial zones, land. The scope of planning - 1:50000 - 1:10000.

Local (Local) - landscape and architectural study and justification of planning projects populated areas, industrial zones and protected areas, development of detailed planning centers, residential areas and industrial cities, plans and land development projects. The scope of planning - 1:25000 - 1:2000.

The result of each level is a planning framework document: Landscape program framework landscaping plan, a large-scale landscape plan, landscaping plan.

The basis of the comparative analysis is based on the administrative -territorial division of the countries in the area and territory. The author offers a comparative analysis of the levels of LP in Germany and Russia, as in these countries, the LP has received sufficient development and has developed a methodical basis . The basis of allocation of documents LP were taken analogues in Russia and Germany and the ratio of areas of the territory and the extent of existing planning and cartographic materials .

Based on the analysis of the existing planning and cartographic basis for certain areas of Ukraine , it is determined that the LP should be based on the existing target material, which is the most detailed and accurate.

For the territory of Ukraine and the Autonomous Republic of Crimea developed planning levels, corresponding to the existing levels of LP in Germany and Russia. Proposed scope of the planning documents, the relevant scales of planning documentation, as well as an accurate reflection of the situation of the administrative -territorial division.

*Keywords:* landscape planning, landscape planning levels, the administrative-territorial division of the scale landscape planning.

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