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ABOUT CONCEPT FORMING OF «LANDSCAPE COVER» OF THE WORLD IN PHYSICAL GEOGRAPHY

The purpose of the article is genetic systematization for the hierarchical lines of natural complexes within Earth Geographical Mantle on the Land (mainland and islands), it is being notion "landscape" and "natural system" are synonyms. In base of the article did hostage information of long time the author′s geographical expeditions on the Land, in the Ocean and in the Coastal Zone, and analysis of published scientific information by other authors. At the same time, the main research method was integral. Landscape development reliable discovered boundaries of natural systems, its structure, diversity, natural properties, which were conceived and evaluated within land as geosystems and geocomplexes. Solely, within the Land should be logic is development "landscapes" as a natural system. Every of natural systems with different hierarchical the scale of ranks have name "*aquaschaft"* within the coastal zone surrounding and "*thalassogen*" within the Ocean surrounding. The article has inheriting character from working out of classic geographers of last century, especially during up to end of 1900th, before 2000. In the period theory of landscape science formed as a most full weight. What is why I developed scientific materials of second part of 1900th.

Thus, the natural (anthropogenic and natural) systems complexes are not only the landscape system that is specific to mainland. The complexity and diversity of different akvashaftes and talassohenes are well-organized aggregate of various levels of organization in the coastal zone and the open ocean. Moreover, in the Ocean the largest megasystems serve the water and the ocean bottom.

The process of differentiation of megasystems, the three main environments of the geographical envelope, is continuous and covers them simultaneously. This phenomenon is a reflection of the interaction between landscapes, aquascapes and thalassogens.

The materials and conclusions outlined in this article open the perspectives for the positive development of landscape science and the rest of the geographical sciences. Further defining the hierarchical ranks of each mega-system requires detailed descriptions of each taxon to be used in the natural justification of any practical/economic projects. Oceanic natural systems ("complexes") in the Ocean water layer were called *thalassogens* in 1940th yet. In the contact's zone environment between them, they were called *aquaschafts*. Each of the shell parts has its separate hierarchical series, in which each taxon differs from the adjacent ones. In total, their area is 361 mln km^2, or 70.78% of the area of the geographical envelope. In addition, including 9.95% is occupied by the coastal zone of the Ocean (*aquaschaft*), or 7.8 million km^2. The remaining 60.83% is accounted for by the *thalassogen* area.

Key words: geographical mantle, geosystem, geocomplex, landscape, spreading, concept.

INTRODUCTION

Today in geographical literature the term "landscape cover of the Earth" is used more and more persistently. As a rule, it is identified with the concept of "the geographic cover of the Planet", and we often hear the requirements which generally refer to the definition of landscape. Supporters of such an annoying proposal claim that landscapes are ubiquitous on Earth and just constitute the total cover of the planet (works by T.V. Vlasova, A.G. Topchiev, E.A. Pozachenyuk, D.S. Malchikova, D.S. Bóycheva, A.I. Krivul'chenko, etc.). This is not true there are objections to such a non real idea. This issue therefore, requires special consideration since it plays an important role in the development of the theory of natural geography.

The task of the work makes it possible to determine its **purpose** which is formulated in the following way: to analyze the physical geography methodological concept of "landscape cover" of the Earth and evaluate its significance for further development of the theory of physical geography in connection with new scientific information about physical composition of oceanic bottom interior-water layer, and the coastal zone as a natural belt between the Mainland and the Ocean. To achieve the stated goal, the following **basic tasks** should be taken into greater consideration: a) to consider the geographical cover to be a complex system on the Earth surface; b) to interpret the geographical term "landscape"; c) to compare the theoretical concepts of "geographical cover" and "landscape envelop".

RESEARCH AND METHODS

In the course of working on this article the landscape research experience of different authors in Europe, Asia and North America was of immense importance. The study made use of theoretical methods of analysis, comparative-geographical methods, leading factor and synthetic. A number of scientific publications of methodological recommendations of leading landscape scientists in the likings of (P.G. Shishchenko, A.M. Marinich, G.I. Denisik, V.M. Petlin, M.D. Grodzinsky, A.V. Melnik, V.M. Pashchenko, etc.) were equally consulted.

MATERIALS AND THEIR DISCUSSION

To assess the significance of the concept of "landscape cover" of our planet, the characteristics of the system are of primary importance.

Formation of the "landscape" concept. For the past hundred years the question of different responses of the planet's surface to the action of direct and scattered solar radiation, to the action of the internal forces of the planet and their influence on the external appearance of the Earth has been developed in geography. At the same time, on its surface, interpenetration and mutual influence of the transformed solar energy and the substance of individual geospheres (lithosphere, hydrosphere, atmosphere and biosphere) occur. A complex dynamic natural system called landscape is formed. It contains the substance in three states of aggregation: solid, liquid and gaseous, with

an oxidizing medium and living matter, according to the conclusion by V.A. Bokov, I.G. Chervanev, A.V. Melnik, P.G. Shishchenko, V.M. Pashchenko, V.N. Petlin. The first attempt to give a scientific-geographical definition of this anthropogenic-natural system was undertaken by A. von Humboldt, who paid maximum attention to soils, plants and animals as an indicator of the diversity of territories. His ideas, including the definition and description of the object, were subsequently developed by K. Ritter, F. Ratzel, O. Peschel, E. Reclus, V. Hartnak, G. Gerland, V.V. Dokuchaev, L.S. Berg and others, moreover, in the original interpretation. They explained the origin and physical essence of the concept of "landscape", which geographers have been using to these days. At the same time, from the time of the Flemish painters, the artistic concept of landscape has been preserved – a landscape, the word of French (Belgian) origin. It has firmly taken root among people of art, theatrical figures. Many phylologists, such as S.P. Ozhegov, N.D. Ushinsky and D.N. Likhachev, believed that the term landscape had taken root among art critics. Moreover, it took root in parallel with the term "landscape" among the geographers of the German scientific school and then throughout Europe. Since then, for almost 200 years, there has been a description of the natural-anthropogenic (geographical) landscape and each of its territorial units ("taxon"), the general structure of the area, in contrast to the interpretation of artists, poets, writers, art historians and woodcarvers.

As emphasized by A.G. Isachenko (1979), the first indications of the internal heterogeneity of the landscape as its important diagnostic feature were found in the works by V.V. Dokuchaev in 1898 and G.N. Vysotsky in 1904. Later, already in 1932 A.A. Grigoriev (1970) substantiated the integral natural system as a complex "geographic cover", organically and genetically unified, where each component part ("landscape" of a different level of organization) interacts with its neighbours.

In the 30s, most authors substantiated their view of the landscape as a system of conjugated facieses and tracts, and at the same time relied on root words and the meaning of the term. This approach has received widespread support among geographers. They came to the conclusion that landscapes are identified with natural systems, and the systems approach has been primordial and traditional in physical geography for millennium. V.B. Sochava (1972) constantly reminded of the unconditional systematic nature of the landscape. Introduced into the scientific theory by A.A. Grigoriev, the concept of "geographic cover" was accepted by the majority, but in the course of time, other names were proposed. As D.L. Armand (1975) pointed out that the sum of other names eventually occurs to be synonyms, unfortunately. Their authors thought more about themselves in science, and not about science in themselves. Therefore, such synonyms do not provide advantages over simple traditional names, with the exception of a purely linguistic enrichment of geographers with information from the ancient Greek language.

The theory of landscape morphology was developed by N.A. Solntsev, who adopted the ideas of A.A. Grigoriev. He, like G.I. Tanfilyev, S.V. Kalesnik, K.K. Markov, A.I. Soloviev, A.M. Marynich, G.P. Miller, and others, believed

that the geographical cover is differentiated in a natural way. At the same time, according to V.V. Dokuchaev, following the representatives of the German geographical school, "soil is a mirror of the landscape" around the entire globe. It turns out that every part of the geographic envelope is covered with soil, and this is far from the case. The further formation of landscape science is associated with the names of Yu.K. Efremov (1959), D.L. Armand (1975), S.V. Kalesnik (1984), A.M. Marynich, I.V. Gvozdetsky, G.P. Miller, G.I. Denisik, etc. The natural surface system ("landschaft") attracred and is still attracting the maximum attention of specialists in the sphere of special attention as a repository of vital natural resources. In 1947, S.V. Kalesnik considered it necessary to propose the term "landscape envelope" as a synonym of "geographic envelope", because "landscapes are found everywhere". A little later Yu.K. Efremov made a clarification, and began to call the said geographical object "landscape sphere" as a synonym. At the same time, he characterized it by several properties as a complex continental natural system, similar to how the geographic envelope is characterized. These authors, as well as later A.G. Isachenko (1979, p. 89) and G.S. Makunina (1987, p. 44), considered it obligatory to explore the dynamics of the landscape. They presented the following argument: to study the landscape outside of the rhythm and evolution is the same as limiting ourselves to determining the name of a plant, without taking into account the fact that it lives differently and looks different at different points in the growing season. G.S. Makunina regards the conclusion by Prof. B.B. Polynov back in the late 40s of the twentieth century with criticism of the outdated concept of the chorological tradition, "excessive attachment to territoriality", with a call today (that is, back in the 80s of the last century) to give priority not to territorial statics, but to dynamics, transformation and transformation of landscapes.

As you can see, over time, the number of researchers who argue that the subject of complex physical geography is that sphere of the Earth, which is defined as landscape and its constituent complexes, or the nature of this sphere, is growing. At the same time, the concepts "geographic cover" and "landscape envelope" were taken as synonyms, for example, according to F.N. Mil'kov or I.S. Shchukin. The most general natural differentiation of the geographic envelope led to its isolation into subordinate spheres, according to A.A. Grigoriev (1970, p. 73): troposphere, hydrosphere, lithosphere, as well as the biosphere (genetically organized complicated of organisms), and scientists have been guided by it for many decades, to be more precise for about 100 years. During this time, the concept of "landscape" has become so firmly entrenched in general geography that researchers began by any part, to any stage of the geographic cover, and the landscape was adopted as a synonym for any natural system. We often see, for example, in the geographical works by A.G. Isachenko (1979, p. 69), V.M. Litvin and V.V. Fedorov (1994, p. 17), K.M. Petrov (1989, p. 42), V.M. Pashchenko (1999, p. 73), etc. "sea landscape", "underwater landscape", "littoral landscapes", "landscapes of the oceanic environment", "aquatic landscapes", etc. A.G. Isachenko (Isachenko, 1979,

p. 69) reads directly: "…the Ocean bottom should be considered as the sphere of underwater landscapes together with the bottom layer of the water column". Such concepts are extremely incorrect: the concept denoted by the roots «wasser», «aqua» («tallasie») cannot be a landscape, by definition and by the mode of exchange of matter and energy in a natural geographical system.

It should be remembered that geography is one of the most ancient sciences; it is not for nothing that in the past the classical philosophy of the ancients was built on geographical foundations (the teachings of Heraclitus, Herodotus, Socrates, Plato, Aristotle, Eratosthenes, Claudius Ptolemy and others). In other words, it will forever remain the most important worldview science. It can be argued that it was geography that contributed to the emergence of many other vital sciences. Therefore, within the framework of geography, so many problems were solved from different angles for thousands of years that this led to numerous understandings of the same geographic object or complex. It turned out that there is only one object of geographical research, and many names were given to it by different authors. Such objects, among others, include «landscape». D.L. Armand (1975, p. 16) and M.D. Grodzinsky (2006, pp. 8–73) pay particular attention to this feature. These authors, like the overwhelming majority of geographers, following V.B. Sochava (1972, pp. 18–22), all the many terms that are called landscapes are reduced to the concept of "natural system" ("natural-anthropogenic") or as part of ecology, to the concept of "ecosystem." Therefore, a lake is a system, a swamp is a system, a coastal spit is a system, a cliff is a system, an island is a system, water masses are also systems, oceanic eddies in the water column and tidal waves are systems of different levels of organization, like oceanic structural zones along the vertical. We have proposed a similar hierarchical approach as relevant and appropriate for all taxa of the geographic envelope as a whole, but not only for landscapes.

Geographic cover as a complex system on the Earth surface. Today, geographers have no objection to the fact that the geographic cover is a complex system. Like a cover (envelope or shell), it spans around the Globe, according to its essence and definition. According to the view of A.G. Isachenko (1979) and V.M. Petlin (2018), the level of its organization is the most general. All other systems are subordinate and at a lower level of organization, and form a hierarchical series up to an elementary taxon, landscape facieses. According to the historical laws of Nature, the systems formed in the lithosphere differ from the systems of other spheres. The same is inherent in the troposphere, hydrosphere and biosphere, each of which has an individual history naturally, has evolved differently and is different from any other ones. Each sphere has its own hierarchical series, which differs from all others. In general, they differ fundamentally among themselves in the composition of individual spheres. This means that between any natural systems there are fundamental differences in quantity, external forms and genetic characteristics.

In each sphere, under the influence of the segular processes of differentiation forming of the flows: *a*) matter and *b*) energy (Grigoriev, 1970). As a finding,

individual systems took shape, which in literature can be called natural complexes. They are analogues of geographical systems. We consider it necessary to recall, for example, according to the conclusions by V.M. Pashchenko (1984), which every landscape represented as a specific taxon is unique neither in space nor in time. The uniqueness of landscape systems, as well as hydrogen systems, in space means that each landscape taxon is localized and occupies a strictly defined place in the composition of the geographical cover. Moreover, apart from individual localization, in landscape space, none of the landscapes (systems) actually existing in nature anywhere on the globe has its exact copy, this is in accordance to the law of geographical locality, by V.M. Petlin (2018). The uniqueness of the landscape in time follows from the general concept of development as an irreversible change in the quality state of one or another object of nature and is confirmed by all stages of natural evolution. The spatio-temporal originality is different within the lithosphere, atmosphere, hydrosphere, biosphere as part of the geographical envelope.

Thus, differentiation is quite explainable by the action of the different flows of matter and energy, at different times and with different intensity (Kalesnik, 1984). In geography, it is generally accepted that, as part of the geographical envelope, the landscape structure is inherent primarily in the continental and territorial environment, I.S. Shchukin (1980), D.L. Armand (1975) and M.D. Grodzinsky (2006, p. 56). For a landscape hierarchical series, the structure is first of all typically determined by the characteristic regime of energy and substance flows, which is also unique in the composition of the geographic envelope.

On "landscapes" as a part of the geographical cover. Analysis of various spheres of the geographic envelope as depicted in (Ermolaev, 1975; Petlin, 2018) shows that the flow of matter and energy in the natural environments of the land, Ocean, and coastal zone respond differently. They differ in location, size, structure, properties, hierarchical series and other indicators. Each row is different from the others, which is reflected in the names of the systems. Each of them, by its origin and essence, differs from all the others, and therefore should have a different name. As is usually the case in geography, the study of natural (in later – natural-anthropogenic) systems began with vital, and of maximum economic importance for people, systems on land.

Their scientific research started in the first half of the XIX century, in the geographical works by German, French, English, Russian authors. Among the «*pioneers*» of these studies were German scientists A. Humboldt, C. Ritter, F. Ratzel, F. Richthofen and others, English scientist A. Herbertson, French geographer E. Reclus, American naturalist C.V. Davis and others. M.D. Grodzinsky remind (2006, p. 8–73), that land, soil, and territory with defined boundaries, on which agriculture or forestry is conducted, which was cultivated and assigned to a particular owner, in the German languages received the designation "*land*". The suffix "*schaft*" in modern German, English and Danish means "*device*", "arranged by nature", "*ordering of the object*". This is how the concept of "*landscape*" *("landschaft")* has developed as a *territorial*

system created by nature of the Mainlands and Islands exceptionally. Over time, such territorial (from the Latin word *terra* – the Land) research has improved. The term "*landscape*" finally entered the literature in the works by German geographer S. Passarge (in an article in 1906 and in his monographic works 1913, 1919, 1921) and the Soviet geographer L. S. Berg (primarily the article of 1913). Today, descriptions of various landscapes both throughout the territory and their parts are so detailed and unambiguous that they allow their definitions to accurately reflect each taxon of the territorial hierarchical series. According to the systematization theory (Armand, 1975, p. 41; Pashchenko, 1999, p. 32), each taxon in any part of the geographic envelope, including landscape, has its own name with no repetitions, no tautologies. Each element and component of the landscape or natural (natural-anthropogenic) complex (system) at any point on the Earth has its own description, which differs from all others. This is what led to the modern clear and unambiguous definition of the concept of "*landscape*" in a hierarchical series.

It so happened that this concept sounds different within the representatives of the different authors of various scientific schools. Their analysis showed that the meaning of all physical and geographical definitions comes down to those proposed by three researchers. In scientific works by N.A. Gvozdetsky and D.L. Armand (1975, p. 16) a broad concept of "*landscape*" is presented as "…a set of natural *territorial* complexes, even if they are fragmented, but have a set of the same actively interacting components, moreover, being in the same composition and condition". We note that the two authors mentioned take into account the justification of those who were the first to propose the name of this concept, and consider natural complexes to be *territorial*, from the word *terra* – land, land in aerial conditions. A very close generic definition is given by the third researcher, famous Ukrainian theoretician M.D. Grodzinsky (2006, p. 22): "Landscape is a *territorial* system, which is composed of natural, or natural and man-made components that interact with each other, and also consists of complexes of a lower taxonomic rank", up to the elementary, that is, facieses.

As territorial ("aerial") systems, landscapes are classified by I.S. Shchukin (1980, p. 222), as well as the vast majority of modern geographers, in accordance with detailed descriptions of elements and components on land. The author considers the landscape, firstly, as a peerless unit, which can form the basis for zoning units and various natural sites, such as taiga landscape, steppe landscape, marshy landscape, desert landscape, urban landscape, *etc*. As you can see, all rankles units also relate to the natural conditions of the land, despite the fact that D.L. Armand, A.G. Isachenko, K.M. Petrov, B.V. Preobrazhensky, F.N. Mil'kov, V.A. Manuylov and several others allowed the study of the *aquatorial* geography complex. Moreover, these authors, like (Litvin, & Feodorov, 1994; Petrov, 1989), talked about the possibility of highlighting the sea landscape, the landscape of the seabed, the landscape in the thickness of the ocean, underwater landscape science and so on. Such definitions are extremely incorrect. No wonder this author (Lyamin, 2012,

p.40) places all cartographic examples of various landscapes on land, in particular in (Grodzinskiy, 2006; Makunina, 1987; Nikolayev, 2006). The second quality of landscapes, according to I. S. Shchukin, consists in their ranking, in the presence of a certain genetic series, in the logical combination of its morphological parts, namely: localities, tracts, facieses, etc.

On the taxonomy of the geographical cover. Whatever the approach of one or another author to the interpretation of the concept of "landscape", it is undoubtful that this natural complex (natural system) refers to land. Basically, it comes from the keyword "*land*" and is terrigenous (from the Latin "*terra*"). Given the most general structure of the geographical envelope of the Earth, it should be noted that it consists not only of land, but also of other components of equal importance. Those, first of all, and according to (Isachenko, 1979; Lyamin, 2012; Sochava, 1972), include the World Ocean and the coastal zone of the sea. Moreover, as part of the oceans, a single dynamic mega-system can separately be considered at the bottom and the water column. The Ocean bottom surface is differentiated by the processes of bottom morpho-litho-genesis and biogenesis, and the water column in the oceans and seas can be differentiated through the formation of water masses and energy and mass transfer between the water area and the surrounding atmosphere. They are initiated by the action of wind pressure flow of different strengths on water surface. In this case, turbulent eddies of various sizes and temporary wind currents can develop. Strengthening wind speeds and increasing the time of their long action usually lead to the formation of water masses in the surface of the structural zone of the Ocean. Moreover, in a very dynamic environment it is very difficult to establish clear boundaries between natural systems of different levels of organization, as in many parts of lands between landscape systems. These and a number of other hydrogenic phenomena are the main mechanisms of hydrogenic differentiation of the water column in the Ocean. But this causes a fundamental difference, qualitative differences between landscapes and thalassogens within the geographic envelope of the Earth.

We consider the differentiation of the natural system at the active contact between the Land and the Ocean more complicated (Shuisky, 2015). The geographical location (localization) of the coastal zone and the coast as a whole led to an active interaction between the natural forces of Land, from one hand, and the Ocean forces, on other hand. The highest mechanical energy potential that provides this interaction has provided it with great intensity, and therefore to the formation of a third environment, also in the basis of a hydrogenic one, which has no analogues on the Land or in the Ocean (coastal-marine), within geographical cover in total. All this means that the coastal zone has a global distribution in structure, properties and dynamics which corresponds to the global level of organization of the Land and Ocean natural systems within the geographical envelope (Shuisky, 2018). The coastal natural system has a small area in comparison with the Ocean, but it is observed at all latitudes and in every of geographical climatic zones. Therefore, in terms of breadth

of distribution, this system belongs to the same level of differentiation with land and ocean. But at the same time, not each of them is equal in location, mode of energy and substance flows, number and size of elements and components, direction and intensity of interaction, mode of adjustment and the final stage of differentiation, very good dousing etc.

The coastal natural system ("aquaschaft") consists of two genetically related parts: *a*) a coastal underwater slope with a water column above it; *b*) the adjacent strip of coastal land, which is in the sphere of the active influence of the hydrogen factor (wind, waves, tides, surges, drops of sea water, sea ice, etc.). That is why, both at the bottom and in the Ocean water columns, but unlike the Land, *the coastal zone is not a landscape system*, it was not built according to the landscape scheme, although it belongs to the natural system (Lyamin, 2012, p. 40; Shuisky, 2015, 2019a). Consequently, *landscapes*, *aqua-landscapes mixed*, and *thalassogens* are subordinate parts of the geographic envelope as a whole, but each part cannot be called a "*landscape*" by definition. Each of them cannot be a cover (envelope, shell *etc*), but only a subordinate mega-system in it. Moreover, the area of the last two mega-systems in the composition of the cover (envelope or shell) occupies most of the entire area on the Earth surface and in total is 2 times larger than the landscape part.

In this regard, despite the desperate attempts of A. G. Topchiev and his followers and supporters (Topchiev et al., 2018), to identify the geographical envelope with the geographical landscapes – it is unrealistic for any indicators. The landscape mega-system is fundamentally different from this other two (coastal-marine mixed and oceanic) not only in the according to variability etc., i. e. with different levels of system organization. Physico-geographical facieses is a system, like a territorial region, a district, a locality, a natural boundary, a secondary field, a mosaic of facieses etc. That is why the entire geographical cover is the totality of systems within mainland, islands, seas and oceans, between them in coastal zone, in atmosphere, etc.

The geographic envelope, in addition to landscapes (natural systems), also includes oceanic systems ("thalassogens", it is our own definition) and its intermediate between the Land and the Ocean as a medium environment of interaction and mutual influence between them – the coastal zone ("aqua shafts", by our own definition (Shuisky, 2015, 2019a). To date, thalassogens and aqua-landscapes have been studied relatively as a whole. Like landscapes, they are also highly differentiated and are able to build hierarchical rows.

The foregoing makes it possible to assert that the geographical envelope consists of at least the three mega-systems mentioned above. Each mega-system, as well as landscape ("aerial"), is characterized by its own hierarchy – oceanic ("hydrogenic") and coastal zone ("quasi-hydrogenic"). Moreover, each row is fundamentally different from the other two, and each taxon of a separate hierarchical series is different from all the others.

In connection with the aforementioned, the planetary system of landscapes categorically cannot be the (cover, envelope or shell) of the Earth. At the same time, the

so-called landscape cover, by definition, cannot be an analogue, much less the identity of the geographical envelope. As a part of the geographical envelope, landscapes as territorial systems occupy 29.22% of the total area; mixed complex aqua-landscapes are located on the total area of 9.95%. The area of oceanic thalassogens is 60.83%. Therefore, the structure of the geographical envelope excludes the existence of the landscape cover.

In the numbers of the author publications, natural systems of different environments within continents, the Ocean and coastal zone were represented according to the principle of hierarchy and close interaction.

REFERENCES

Ayzatullin, N. A., Lebedev, V. L. & Khailov, K.M. (1984). *Okean: fronti, dyspersyia, zhyzn. (Ocean: fronts, dispersion, life).* Leningrad: Hydrometeoizdat, 192 p. [in Russian].

Armand, D. L. (1975). *Nauka o landshafte (osnovy teorii i logiko-matematicheskie metody): monografiya. (The Science on Landscape (theory bases and logic-mathematical methods).* Moscow: Mysl Publ. Co., 287 p. [in Russian].

Arshinova, M. A., Vlasova, T. V. & Kovaleva, T.A. Fizicheskaya geografiya materikov i okeanov. (Physical Geography of the Mainland and the Ocean). Moscow: Academia Publ. Co., 2009. 640 p. [in Russian].

Heptner, V. G. (1976). Sistematica (Systematics) *BSE:* by ed. A.M. Prokhorov. Vol. 3. Moscow: Sov. Encycl. Publ. Co., pp. 1398–1408 [in Russian].

Grigoriev, A. A. (1970). *Tipy geograficheskoj sredy. (Types of Global Environment).* Moscow: Mysl Publ. Co., 468 p. [in Russian].

Grodzinskiy, M. D. (2006). *Piznannya landshaftu: misce i prostir. (Development of Landscape: Place and Time)*. Vol. 1. Kiyev National University by Shevchenko Publ. Co., 503 p. [in Ukrainian].

Erjomina, V. A., Pritula, T. Yu. & Sprialin, A. N. (2005). *Fizicheskaya geografiya materikov i okeanov. (Physical Geography of Mainlands and Oceans).* Moscow: VLADOS Publ. Co., 255 p. [in Russian].

Isachenko, A. G. (1979). *Geografiya segodnya. (Geography To-day).* Moscow: Prosveshchenie Publ. Co., 192 p. [in Russian].

Isachenko, A. G. (1995). *Landshafty SSSR. (Landscapes by USSR).* Sankt-Peterburg: LGU-Publ. House., 320 p. [In Russian].

Kalesnik, S. V. (1984). *Problemy fizicheskoj geografii. (Problems of Physical Geography).* Choice Volumes. Leningrad: Nauka Publ. Co., 288 p. [In Russian].

Karlin, L. N., Brovko, P. F., Petrov K.M. & Manuylov., V.A. *Osnovnye koncepcii sovremennogo beregopol'zovaniya. (Basic conception of a modern coast-usage)*. S.-P.: TOP RGGMU Publ. Co., 297 p. [in Russian].

Litvin, V. M. & Fedorov, V. V. (1994). *Mir podvodnyh landshaftov (Areas of underwater landscapes).* Sankt-Peterbourg: RosGS Publ. Co., 135 p. [in Russian].

Lyamin, V. S. (2012). *Mesto geografii v geneticheskoj klassifikacii nauk. (Geography Place in Genetic Classification of a Sciences)*. Odessa: Astroprint, 185 p. [in Russian].

Makunina, G. S. (1987). *Metody polevyh fiziko-geograficheskih issledovanij. Struktura i dinamika landshafta. (Methods of Field Natural and Physical Geography Research. Structure and Dynamics of Landscapes).* Moscow: MSU Publ. Co., 116 p. [in Russian].

Manuylov, V. A. (1990). *Podvodnye landshafty zaliva Petra Velikogo. (Underwater Landscapes in Piter Greate Gulf).* Vladivostok: FEFU Publ. Co, 175 p. [in Russian].

Nikolayev, V. A. (2006). *Landshaftovedenie. Prakticheskie raboty. (Landscape Sciences. Practice and Training Works).* Moskow: Moskow State University by Lomonosov Publ. Co., 208 p. [in Russian).

Petrov, K. M. (1989). *Podvodnye landshafty: teoriya, metody issledovaniya. (Underwater landscapes: theory, research' methods).* Leningrad: Nauka Publ. Co., 128 p. [in Russian].

Petlin, V. N. (2018). *Iyerarxiyi pry`rodny`x tery`torial`ny`x sy`stem (Hierarchy of natural territorial systems).* Lutsk: VOP Publ. Co. 475 p. [in Ukrainian].

Sochava, V. B. (1972). Uchenie o geosistemah – sovremennyj etap kompleksnoj fizicheskoj geografii. (Theory of geosystems – modern stage of complex physical geography). *Izvestiya Acad. Sci. USSR. Ser. Geography*. 3. 18–22 [in Russian].

Topchiyev, A. G., Malchikova, D. S., Pilipenko, I. O. & Yavorskaya, V. V. (2018). *Metodologichni osnovy` geografiyi: landshaftna obolonka Zemli. Dovkillya (Methodological Bases of Geography: landscape envelop of the Earth. Environment).* Kherson: Gelvetika Publ. Co., 348 p. [in Ukrainian].

Chursin, A. I. & Kryukova, N. A. (2014). *Landshaftovedenie. (Landscape Science).* Penza: PGUAS Publ. Co., 200 p. [in Russian].

Shuisky, Yu. D. (2015). Osobennosti prirodnyh kompleksov v beregovoj zone morej. (Natural complex peculiarities in coastal zone of a seas). *Herald of Odessa Mechnikov National University*. Vol. 20. Issue 1 (24). 97–114. [in Russian].

Shuisky, Yu. D. (2019a). Pro pry`rodni sy`stemy` v rizny`x oblastyax zemnoyi obolonki. (About natural systems in different fields of the Earth Geography mantle). *Scientific Notes of Vinnitsa State Pedagogical University. Ser. Geography.* Issue 31 (3–4). 5–15 [in Ukrainian].

Shuisky Yu. D. (2019b). Nizmennosti v fizicheskoj geografii. (The low of geographical locality in physical (natural) geography). *Geographical Herald of Perm' Federal University (RF)*. № 4. 163–172. [in Russian].

Shchukin, I. S. (1980). *Chetyrekh'yazychnyy Enzhiklopedicheskiy slovar' terminov po fizicheskoy geografiyi. (Quad-language Encyclopedic Dictionary of Terms on Physical Geography).* Moskva: Iz-dvo Soviet Entzikl. 703 p. [in Russian].

СПИСОК ВИКОРИСТАНОЇ ЛІТЕРАТУРИ

Айзатулин Т.А., Лебедев В. Л., Хайлов К. М. Океан: фронты, дисперсия, жизнь. Ленинград: Гидрометеоиздат, 1984. 192.

Арманд Д. Л. Наука о ландшафте (основы теории и логико-математические методы): монография. Москва: Мысль, 1975. 287 с.

Аршинова М. А., Власова Т. В., Ковалева Т. А. Физическая география материков и океанов. Москва: Академическое изд-во. 2009. 640.

Гептнер В. Г. Систематика. *Большая Советская Энциклопедия* / под ред.: А. М. Прохорова. Москва: Изд-во Сов. Энциклопедия, 1976. Т. 3. С. 1398–1408.

Григорьев А. А. Типы географической среды: монография. Мысль, 1970. 468 с.

Гродзинський М. Д. Пізнання ландшафту: місце і простір: монографія: Київ: Вид-во КНУ ім. Тараса Шевченка, 2006. т. 2. 503 с.

Еремина В. А., Притула Т. Ю., Спрялин А. Н. Физическая география материков и океанов. М.: Владос, 2005. 255 с.

Исаченко А. Г. География сегодня: монография. Просвещение, 1979. 192 с.

Исаченко А. Г. Ландшафты СССР. С.-Петербург: Издательство ПГУ, 1995. 320 с.

Калесник С. В. Проблемы физической географии: избранные труды. Ленинград: Наука, 1984. 288 с.

Карлин Л. Н, Бровко П. Ф., Петров К. М. Основные концепции современного берегопользования. Монография СПб.: РГГМУ, 2012. 297 с.

Литвин В. М., Федоров В. В. Мир подводных ландшафтов: монография. СПб: РГО, 1994. 135 с.

Лямин В. С. Место географии в генетической классификации наук: монография. Одесса: Астропринт, 2012. 185 с.

Макунина Г. С. Методы полевых физико-географических исследований. Структура и динамика ландшафта: учебн. пособ. МГУ, 1987. 116 с.

Мануйлов В. А. Подводные ландшафты залива Петра Великого. Дальневост. кн. изд-во, 1990. 175 с.

Николаев В. А. Ландшафтоведение. Практические работы. М-ва: Изд-во МГУ имени Ломоносова. 2006. 208 с.

Петров К. М. Подводные ландшафты: теория, методы исследования. Ленинград: Наука, 1989. 124 с.

Петлін В. М. Ієрархії природних територіальних систем: монографія. Луцьк: ПрАТ «Волинська обласна друкарня», 2018. 476 с.

Сочава В. Б. Учение о геосистемах – современный этап комплексной физической географии. Известия АН СССР. Серия географическая. 1972. № 3. С. 18–22.

Топчієв О. Г., Мальчікова Д. С., Пилипенко І. О., Яворська В. В. Методологічні основи географії: ландшафтна оболонка Землі. Довкілля: монографія. Херсон: Гельветіка, 2018. – 348 с.

Чурсин А. И., Крюкова Н. А. Ландшафтоведение. Пенза: ПГУАС, 2014. 200 с.

Шуйский Ю. Д. Особенности природных комплексов в береговой зоне морей. *Вісник Одеського національного університету. Географічні та геологічні науки.* 2015. Т. 20. Вип. 1 (24). С. 97–113.

Шуйський Ю. Д. Про природні системи в різних областях географічної земної оболонки. *Наукові записки Вінницького державного педагогічного університету імені Михайла Коцюбинського*. Серія: Географія. 2019. Т. 31. Вип. 3–4. С. 5–15.

Шуйский Ю. Д. Низменности в физической географии. *Географический Вестник Пермского федерального университета*. Вып. 4. С. 163–172.

Щукин И. С. Четырехъязычный Энциклопедический словарь терминов по физической географии. Терминологический словарь. Москва: Сов. Энциклопедия, 1980. 703 с.

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ПРО ФОРМУВАННЯ ПОНЯТТЯ «ПЛАНЕТАРНА ЛАНДШАФТНА ОБОЛОНКА» В ФІЗИЧНІЙ ГЕОГРАФІЇ

Резюме

Викладені результати вирішення деяких питань про природні системи в різних середовищах географічної оболонки Землі, яка має ≈ 510 млн км^2. Відтак, метою статті є генетична систематизація ієрархічних рядів різних природних комплексів в межах географічної оболонки: на суходолі, в океані та в береговій зоні моря. При цьому поняття «ландшафт» і «природна система» розуміються як синоніми. В основу роботи покладені багаторічні експедиційні спостереження автора на суходолі та в морях, аналіз понятійно-термінологічного апарату в різних географічних науках, результати опублікованих материалів і висновків різних авторів. Основними методами дослідження були синтез, картографічний, перехід кількості в якість. Урахування понять та визначень ландшафтів дозволило надійно представити кордони їх розповсюдження, структуру, різноманіття, природні властивості, характер диференціації, які можуть бути започатковані та розвиватися на суходолі у вигляді теригенних територіальних геосистем («геокомплексів»). Саме на суходолі вони відповідають сенсу «ландшафти різних рівнів організації» (з корнем «land»), що вже протягом сотні років щільно увійшов до арсеналу географії. Площа їх розповсюдження в межах суходолу становить ≈ 149 млн км^2, чи 29,22% всієї площі географічної оболонки. Природні комплекси інших частин (сфер або ступенів) географічної оболонки цим поняттям не відповідають. Бо вони є іншими об′єктами досліджень, мають інше походження, іншу структуру, інші властивості, характеристики, з іншими поняттями та місцем розташування тощо. Відповідно, вони потребують іншої назви, з іншим обгрунтуван-

ням. Океанічні природні системи (комплекси) в шарі води та на дні океану були названі талассогенами, а в контактному середовищі в береговій зоні були названі аквашафтами. Кожна з частин оболонки має власний ієрархічний ряд, в якому кожний таксон відрізняється від суміжних. Суммарно їх площа складає ≈ 361 млн км^2, чи 70,78% від площі географічної оболонки. В тому числі 9,95% посідає берегову зону Океану (аквашафти), або 7,8 млн км^2. Решта 60,83% припадає на площу талассогенів, на площу відкритої частині всього Світового океану.

Ключові слова: географічна оболонка, геосистема, геокомплекс, ландшафт, поняття, розповсюдження, властивості.

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О ФОРМИРОВАНИИ ПОНЯТИЯ «ПЛАНЕТАРНАЯ ЛАНДШАФТНАЯ ОБОЛОЧКА» В ФИЗИЧЕСКОЙ ГЕОГРАФИИ

Аннотация
Данная статья посвящена генетической систематизации иерархических рядов разных природных комплексов в пределах географической оболочки: на суше и островах, в Мировом океане и в береговой зоне между Океаном и сушей. Цель статьи состоит в выполнении генетической систематизации иерархических рядов природных систем в пределах всей географической оболочки: а) на суше; б) в Мировом океане; в) в природной среде взаимовлияния (в береговой зоне) первых двух. В статье обсуждаются несколько узловых вопросов. Среди них, прежде всего, экзогенная мегасистема суши, обозначаемая как landschaft. Принципиально другую природную среду образует талассоген, толща воды и дно открытого океана. Третьей экзогенной мегасистемой является береговая зона, среда активного взаимовлияния суши и океана. Каждая мегасистема имеет свой отличительный иерархический ряд. Приводится обоснование каждой составной части географической оболочки.

Ключевые слова: географическая оболочка, геосистема, геокомплекс, ландшафт, понятие, распространение, свойства.