of man-caused transformation, which assess the increase intake water-soluble components and dust, coefficient of the self-cleaning capability of soils, module of the aerial-technogenic intake of the substance, the index of dust burden to the background quality of dust, the total index of the general man-caused of elements with regard to the background.

3. The combined use of the above stated and other qualitative geochemical factors will allow the exact fixation of the qualitative state of landscapes. The qualitative criteria are rather various, but they must be unique by the estimation of morbidity. The most valuable are the data about the maximum permissible concentrations of chemical elements and polluting substances, defined in comparison to the basic norms, as extreme, long-term burdens on the landscapes predetermine the increase of morbidity of the population. Geochemical and man-caused anomalies may be easily fix'ecLif the natural geochemical background, the model of which are landscapes, situated beyond the bounds of the direct influence of man-caused pollution sources, is well-known.

4. Thus by means of imposing a landscape and a geochemical maps we can define the regularities of the distribution of the chemical elements. In the places of landscapes where the migration of chemical elements subsides, concentration is evident, and vice versa by the intensification of migration the places of dispersion are amassed. The landscapes, characterised by anomalous concentrations of chemical elements, always become a nidus. The rapt attention should be drawn to the overburden, involved into the migration of chemical elements, i.e. lithogen base of the landscaped, as only this base is relatively stable and represents a long-term storage of all natural processes and man-caused changes in the landscapes.

5. Basing on the materials of landscape-geochemical studies, hygiene, medical geography and medical ecology will go on solving the aims according to its own methods, but on a reliable landscape base. For research workers in the field of medicine, studying these problems, the main estimation criterion of the critical state of environment will always remain the increase in the morbidity of the population and search for the ways of its rehabilitation. In the course of the last decades the hygienic studies in this field were directed on the normalization of the unhealthy environmental factors, creation of the socio-hygienic monitoring and definition of the ecological harm to the population health. Medical ecology also studies the state of health among the population, living under the conditions of the ecological crisis and on this basis tries to find the main reasons of the diseases, predetermined by the environmental factors, to work out strategic direction of their preventive measures and treatment. Medical ecology may be considered as a hew approach, a perspective scientific tendency with a specific technology of selection, analyses and generalization of the information for the treatment choice for every patient.

Thus, the synthesis of hygiene, medical geography and medical ecology on the basis of landscape-geochemical studies will allow these sciences in the 21st century to become one of the most useful for mankind for solving ecologo-hygienic problems and prophylaxis of the morbidity of the population.

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THE ROLE OF FOREST ECOSYSTEMS IN THE DEGRADATION STABILTY OF LANDSCAPES

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Forest degradation has long ago been considered one of the main global ecological problems. Forests determine natural and ecological potential of landscapes, which the degradation stability depends on. The reduction of forests causes the breach of the stability and to the processes of rapid erosion. The stability criteria to the man-caused effect are difficult to find. But the equilibrium of the functions of landscapes always depends on the biological productivity and the ability for renewing of forests. The main criterion of the stable functioning of forest landscapes is their high productivity which is determined by a normal natural renewability of the forests.

The problem o landscape stability depends on their natural and ecological potentials what is determined by the optimal correlation of warmth and moisture. This is typical of forest-steppe, deciduous and taiga landscapes of Russia. These landscapes are characterized by the highest natural and ecological potential, restrain the processes of rapid erosion, that means the degradation of geosystems. The biggest mass of flora and fauna communities to the square unit or habitat volume. To the north of the above mentioned types of landscapes i.e. in sylva-tundra and tundra regions a disproportion in the product amount of gas and moistening. That is why the species composition of flora and fauna is poor here, their biomass is extremely insignificant. To the south of the region of the optimal correlation of warmth and moisture, i.e. in steppe, half-desert and desert types of landscapes, under the conditions of the excess of warmth and lack of moisture the existence and correlation of the living

organisms caused depletion of the species composition of flora and fauna, to the insignificant biological productivity.

Besides, it is hard for biota and ecosystems to survive here because of such man-caused factors as rapid water erosion, secondary salting and progressive desertification. It carries along degradation of the biota of landscapes, first of all. fauna what causes reduction or the complete loss of their biological productivity. Speed of the destruction of landscapes depends on it. In tundra, forest-tundra, half-deserted and deserted landscapes the danger of total degradation of landscapes is rapidly growing, because of the absence *of* forests. In forest ecosystems the destruction of landscapes is going on. connected with irrational land tenure, which causes the processes of rapid erosion, developing arable lands from barren slopes and slopes subject to erosion, non-fulfillment of assistance measures lor the natural renewance of the forests, which is also caused by fires, unsystematic and uncontrolled felling an the л alloy .slopes and in the mountains.

All that caused deforestation in many regions and rapid degradation of landscapes i.e. to the abrupt reduction of the species diversity in forest ecosystems.

Landscape researches of the territory and analyses of the used fund and cartographic materials let us come to the following conclusion: in each natural territorial complex (NTC) the potential possibilities and abilities for use are based. To take into account means not only to learn how to run the economy but also to control landscapes, i.e. to stimulate their fulfilment of the functions that most fully satisfy the requirements of nature users without destroying the dynamic stability of landscapes. To foresee the reaction of the landscapes and their constituent pails to the changes, it is necessary to estimate each concrete NTC from the point of view of the degree of appropriateness to this or that kind of economy use.

1. Up to the present times the distribution of the forest, meadow and plough lands is solved without the necessary scientific grounds. As a result of the rapid processes of plane washing away and linear erosion, non-fulfilment of anti-erosion measures many places in most of landscapes have turned into erosion and are spotted by the dense ravine -joist network. The scientist seems tS be not in the non-chernozem region but somewhere on the territory of an upland forest and steppe zones of Russia.

2. The stated actual state of use of the main renewable natural resources caused other pernicious consequences among them the deterioration of the outflow regime (its greater nonuniformity in different seasons, the increase in the surficial component of the outflow) and in general to the deterioration of the condition of small rivers and rivulets. In boundary periods small rivers and rivulets in our zones characterized by superfluous humidity have not only grown shallow, but on the enduring areas they have turned into temporal streams, parch. Shallowing of the permanent outflows, drop in their level caused the reinforcement of the erosion processes, what carried along drying up of the agricultural lands especially in the valleys and in the valley-side.

3. The amount of the outflow during the spring flood and abimdant rains has also changed. In these periods the recurrence of the biggest expenses and summary layer of the outflow. That is why the solid outflow has increased. As a result the strong siltation of the springs, watercourse-beds, closed water bodies including ponds their overgrowing.

4. The anti-erosion stability of the slopes and rates of plane, linear and rapid erosion depend on the man-caused factors (especially on the degree of ploughing up) as well as on the lithology of the rocks, resistance to the washing away, on the slope steepness and length.

5. Uneven distribution of forests within individual landscapes and in the river basin is on the whole unacceptable. Slope surfaces need to be transferred from arable lands into other kinds of lands (meadow, forest) as the humic horizon as well as podzolic and iiluvial horizons have been washed off.

6. In the places with temporal or permanent abundant humidity the most optimal conditions of habitat of the arboreal vegetation have been formed. It would be at least unsensible to cultivate these places as agricultural lands.

7. For the significant improvement of the actual complex use of land, water and plant resources in all the landscapes it is necessary to solve questions of the prohibition of felling in the forests of water-protective zones, to increase the age of felling of the main forest-forming species, to widen the water-protective stripes along water valleys including small rivers and rivulets, carry out the measures on more even afforestation of the river basins. It is necessary to prohibit the felling of bushes of anti-erosion and nature-protective meaning, especially in bottomlands, on the slopes, in places of the forming of the outflow of small rivers, annually carry out measures of forestation of ravines, sands and shrub areas, creation of protective forests on the coasts of lakes, ponds and storage reservoirs.

8. These principal measures of the improvement of use of the renwable natural resources would allow to slow down the degradation processes of landscapes significantly.

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TO THE QUESTION OF GLOBAL PROBLEMS OF MODERN CIVILIZATION

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Many scientific works claim, that humanity is approaching the global ecocatastrophe. The main reason for it is determined by the impetuous growth of the Earth population. It causes the necessity of the continuous growth of the industrial production, power engineering and also the use of ecologically dangerous kinds of fuel. The elaboration of the energy- and resource-saving, as well as zero-discharge technologies will no doubt slow down the process of the destruction of the biosphere.

The problem of the global warming of the climate especially acute in the least decades and its consequences also belongs to the analyses of the influence of man upon the Earth landscapes. However, we should keep in mind, that the main reason for this process is not the growth of the carbonic acid concentration in the near-ground strata of the atmosphere and other anthropogenic factors, but natural regularities. In the Earth evolution ice ages were-followed by inter-ice periods. It is especially typical for the anthropogen. In the course of the following several thousands of years we faced the gradual warming of the climate, as the inter-ice age has come. With this natural process of warming collide the well-known anthropogenic factors. That is why in the course of the last 25-30 years the climate has really become the warmest in comparison to the more that a century-long period from the beginning of the instrumental observations.

The progressive degradation of the landscapes, the abrupt reduction of the species diversity of the living organisms are connected with the pollution of all the habitats of the organisms, the recourse depletion. These processes are accumulating and in many regions they have already reached and exceeded the permissible limits. The stability of the geosystems especially of the local level has been broken давно.

Man never took into consideration natural laws and regularities, never thought about the consequences of his vital forces. The reason for that lies not only in the fact that he was unaware of them in most cases. He has just been and remains потребитель in his relations with nature.

The evolution of civilization must be under rigid control. It is necessary to increase the effectiveness of the use of all natural recourses, especially those of the biosphere.

Despite the existence of various kinds of monitorings only some restricted facts about temporal changes of the geosystems are available for us.

The surface field studies, especially expeditionary, are actually stopped. We just can suppose that we can study the accelerating global changes better on the grounds of the space surveys, and according the results of mathematical and computer-based modelling.

The acceleration increase of the processes of economic development of the society, unreasoned use of natural recourses have caused, as it has been stated, the instability of natural landscapes. These problems of the society have a global character at present.

The individual activity of man and society in general seems unpredictable. That is why natural laws have lost the guarantees of the stable development.

Man's unlimited greediness, his criminal use of the natural resources, the myth of their inexhaustibility have caused the beak of the dynamic balance of the evolution of the system nature-society.

Man should have long ago realized that he is only part of nature that is independent from anything but its own laws and regularities. The earth nature, which he has turned into a poisoned planet, possesses such important qualities as self-preservation and self-development.

At present the natural environment has lost its ability of self-regulation and self-cleansing, as the stability limit has been increased. It can be accounted by the fact, that the annual products of the productive activity of man increase the biomass of the dry land landscapes, produced by the biosphere. These man-caused substances are alien to the natural-qualities of the environment and stimulate the rapid degradation of landscapes. It is already impossible to revive the natural landscapes.

The life of man as well as other living beings has temporal restrictions, but nature is in space and eternal in time, though there is nothing permanent in it except the changes. Man has always realized nature as object of the intensive uncontrolled and unpunished use of its riches, which he can appropriate.

Sensible co-existence with natural environment has been realized by man only in theory. In fact he does nothing and he may even be unable to solve many global problems, which he has himself created on the local and regional levels. It is already impossible to slow down the development of technical progress. But the pollution of the habitats of the living organisms, ruthless эксплуатация of mineral resources, actual elimination of the rest of the resources, decrease of the natural fertility of the soils, deterioration of the water, air quality, excessive forest felling, the elimination of many species of animals is not the inevitable consequence of the development of the production progress and human civilization. One of the reasons for the global ecological problem is man's striving for the unrestrained growth of the consumption and enrichment. This all proves the criminal attitude of man to his living environment.

Man acts in such a way as he is aware of the temporal limits of his existence on the Earth and in the Universe. But to leave good reminiscences of his existence for the future generations he has to solve at