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HUMAN ECOLOGY AND THE BIOSPHERE THAT AFFECTS IT

Uralova Palina Nurali's Qizi
Student of Samarkand State Medical University
Scientific adviser: Nazarova Gulchehra Khamrakulovna
Assistant of the Department of Medical Biology and Genetics
uralovapalinadoctor02@gmail.com

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Abstract:

This article discusses issues related to human ecology, the origin of anthropoecological systems, living conditions, development and their relationship with the environment, as well as the dynamic relationship of the anthropoecological system with the environment and its satisfaction in this environment.

Keywords: anthropoecological system, adaptive types, ecosystem, agrobiocenosis, urbancoenosis, biological system, biochemical cycle, genetic monitoring, biosphere, migration, radiation.

Since a person develops consciously in all aspects of life, this also happens in relation to his relationship to the external environment. Anthropoecological system demonstrates its dynamic balance since the appearance of man to the present day. This happens on the basis of two different interactions between the natural environment and humans:

1. Biological and social attitudes change under the influence of the environment;
2. The environment itself also changes according to human needs.

Why is the science of human ecology needed and what should it do? Its functions answer this question:

- development of habitat management methods;
- development of measures for the rational use of natural resources;
- study of measures to optimize the human environment;
- to study the ecological adaptation of the human to the environment.

A scientific and technological revolution is also taking place in human ecology. This is only 1.0% of the history of mankind, the remaining 99.0% is mainly climate, alimentary factors, biological factors, geochemical processes. This leads to differentiation of human ecology, i.e. adaptive type.

The adaptive type comes from the meaning of «adaptatio», which is the norm of the best adaptation of a person to a particular environment in terms of morphology, immunology, geography, biochemistry. This is based on variability. Variability means adaptation to the external environment from the moment of the embryonic period to the environment in which it lives. The adaptive type includes:

1. Arctic adaptive type - a cold climate adapted to the conditions of an abundance of livestock products, mainly food.
2. Characteristic features include a well-developed musculoskeletal system, high bone mineral content, high blood hemoglobin, well-developed thermoregulation, high cholesterol, good lipid oxidation, chest size.
3. Tropical adaptive type – hot and humid climate, animal products are rarely found in the diet. Signs of this type include: variability in somatic parameters, lack of muscle mass, limb length, heavy sweating, poor basal and fat metabolism, low blood cholesterol.
4. Desert-adaptive type - solar radiation is formed in a very strong, dry, hot, continental climate. The features include high heat transfer, high water consumption, well-developed sweat glands.
5. Mountain-adaptive type - low atmospheric pressure, low partial pressure of oxygen, cold, the presence of hypoxia, there is a relative monotony of the diet. Specific features of this type include a red blood cell count, high hemoglobin, high blood oxygen, and moderate gas exchange.

In the natural environment, along with human ecology, there are plants, animals and artificial ecology. They are connected by an ecosystem. An ecosystem contains not only living beings, but also all aspects of inanimate nature. The concept of «ecosystem» was first introduced into science by the English biologist A. Tensley in 1935, and the Greek word «oikos» means habitat, system - association. Ecosystems are the basic natural units of the Earth. Ecosystem, we will focus on the anthropoecosystem without deviating from the topic. Anthropoecosystems consist of human communities and are divided into two types:

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– agroecosystem (Greek «agros» - field) - the species composition is limited and differs significantly from urban ecology in the diversity of plant and animal species. The diversity of plants in this ecosystem determines the width of the soil and the availability of crop rotation, labor productivity, mass and how much energy is spent on physiological changes in the human body. On the other hand, the diversity of animal species contributes to the spread of infectious and chronic diseases. Examples of these are anthropozoonoses (echinococcosis, trichinosis), geohelminthiases (ascariasis, hookworm), biohelminthiases (schistosomiasis) from a medical point of view. Based on the study of their morphology, prevention and treatment, we will take a look at the human body with benefit;

– urban ecosystem (lat. «urbs» - city) is a man-made ecosystem. This ecosystem consists of natural and artificial components, with a relatively small number of natural components (light, water, air, soil, fungi, microorganisms, animals, plants), there are mainly artificial components (industrial plants, architectural structures, recreation areas and habitats). Artificial ingredients are artificial ingredients that consist of the processing of natural ingredients. The second anthropogenic component has a significant impact on the abiotic and biotic components in many large cities. In particular, gas contamination of industrial enterprises and transport systems in cities, a decrease in the number of many species of animals and plants, an increase in the content of carbon dioxide and carbon monoxide lead to their poisoning and a number of other factors that reduce soil fertility, salinization and wastewater discharge. Installation of antennas and means of communication in urban networks leads to an increase in noise, activity of the human nervous system and intimidation of wild animals, which is 1.5-2 times higher than the agricultural system. Relatively low consumption of plants and dairy products leads to detrimental effects on humans at a much lower birth rate. To prevent this, based on technological theory, solar panels and relatively low-energy lighting equipment are used. Efforts are being made to introduce rational methods of production in industrial enterprises.

In nature, the biotic and abiotic parts form a single biological system. A biological system consists of self-generation and adaptation of its dynamic balance to feedback signals. Self-education can be understood as a new organism formed as a result of biological, chemical and physical internal and external influences. Biotic components include the living organisms listed above. The abiotic ones include soil, water, air, sun, etc., which satisfy the vital functions of these living organisms. Both are necessary factors for the benefit of man, for his dynamics. The biotic factors themselves are divided into two, consisting of heterotrophs and autotrophs. Heterotrophs are organisms that have the ability to absorb energy produced by the activity of another organism. Autotrophs, on the other hand, generate their own energy using abiotic parts on their own. The fact that they interact with each other creates a food chain. Humans are at the top of the food chain. Because he is a consciously created being.

Biochemical cycle All living organisms need organic and inorganic substances. This requires the elementary and molecular substances of the biotic and abiotic parts of nature. Take, for example, phosphorus. This lays the foundation for the synthesis of ATP (adenosine triphosphate) and nucleotides, which are universal energy sources. Nitrogen, a nitrifying agent, is a key element necessary for the vital activity of bacteria, the synthesis of substances containing nucleic acid and protein. Oxygen is actively involved in the respiratory processes of the body. Carbon dioxide and water are essential factors for the photosynthetic function of plants. All these elements are inextricably linked. This connection is called the biochemical cycle.

Genetic monitoring is the concept of developing several methods for detecting, controlling, analyzing and detecting hereditary diseases occurring in a population or species, such as environmental hazards, mutagenic effects, conditions that lead to the death and semi-death of living organisms. Genetic monitoring is widely used in the following activities:

– determination of genetic load using medical statistics;

– identification of the phenotype of dominant mutations;

– the study of serum proteins by electrophoresis to identify mutant proteins;

– cytogenetic screening for spontaneous abortions, stillbirths, preterm births and congenital defects.

We can say that the body is able to control itself, maintain its dynamic balance in any environment, so it is desirable to change your health for the better.

The biosphere encompasses all aspects of life systems from the origin of life to the present day and the associated abiotic environment. The term biosphere was first introduced into science by Jean-Baptiste Lamarck, which means «bio» - life, «sphere» - sphere, earth. The unit of the biosphere is the

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biogeocenosis. Biogeocenosis consists of a set of ecosystems in which the food chain, biological system, genetic exchange, reproduction and many other processes take place. The biosphere is primarily derived from the cell, which is the smallest unit of all large beings. Gradually, man began to create comfort for himself from the biosphere. During the Mesolithic and Neolithic periods, people began to move from simplicity to complexity. In connection with the biosphere, the atmosphere, lithosphere, and hydrospheres interact. This attitude satisfies all aspects of man in complex categories, the theories of scientists, the conscious thoughts and conclusions of philosophers, and the technologies created by technologists. As man relates to nature, so nature responds to him!

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