

## The philosophy of environmental management: evolution of the scientific conceptions

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**Received: 01.03.2021. Accepted 09.04.2021**

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It is noted that the knowledge of mutual connection of the processes taking place in nature moves forward thanks to four great discoveries in natural science: discovery of the cell; law of conservation and transformation of energy; evolutionary teachings of Darwin and creation of a periodic system of elements by D.I. Mendeleev. It is emphasized that based on the use of industrial and domestic waste, there is a saving of huge state funds for purification of environmental pollution, preservation of humanity from abnormal natural pollution of environment (an environmental emergency on a global scale and a biological emergency originating from living creatures and organisms). It is proved that receiving from the environment of means of livelihood in necessary quantity, which were completely restored due to natural processes of biotic circulation, people returned to the biosphere what was used by other living beings for the activity. It is underlined that scientific research carried out by academic and sectoral institutions on environmental issues should be expanded; it is needed to ensure the development and implementation of scientifically sound environmental and economic standards that determine environmental requirements for economic activities.

**Key words:** environmental management, natural processes, environmental pollution, environmental emergency, knowledge about nature

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### Introduction

The constant intensification and expansion of the scale in human economic activity within economic development is accompanied by uncontrolled growth in production. The production of goods to meet the material and spiritual needs of man is accompanied by processing and use of resources created by nature and achievement of scientific and technological progress. It is this direction in use of natural resources that leads to disruption of environmental development and increasingly frequent natural and man-made emergencies, phenomena and processes characterized by sharp deviations from norms. Such phenomena and processes lead to natural disasters and accidents with multiple loss of human life. There are huge material losses and violations of the necessary conditions for life. The active impact of man on the habitat (intensive development of industrial and agricultural production, introduction of technological achievements, and unreasonable use of natural resources) negatively affects the processes of human life. Analysis of the causes of population losses from the consequences of the use of atomic energy (Chernobyl disaster), the use of various bio-additives, the use of incomplete technology in production leads to various destructive processes of epidemics (avian flu, swine flu, COVID-19, radiation disease, diseases associated with immunodeficiency, radiation, bleaching). The systematization of scientific thought focused on the study of evolution of environmental management was carried out over a long period of time by many scientists, in particular the following: P. Murphy, W. Fox, J. Sinatra, D. Tacey, J. Thompson. Nevertheless, the philosophy of scientific thought concerning environmental management needs further development and improvement.

## Results

Based on nanotechnologies, methods for preventing the development of cancer formations and cloning farm animals are developed and described.

For human survival in the "habitat" system two main tasks should be continuously solved: to provide food, water and air needs; to create and use protection against negative impacts of the habitat. However, not all human actions should be justified. The fact is that not everything that is created by man works favorably on the person himself and on the environment. For each habitat, a complex of chemical, physical and biological conditions is needed. Therefore, for certain living things and microorganisms their own environment with parameters for active life is also needed (Fox, 1989; Thompson, 1990).

Man, using advances in genetic engineering and biology, should not forget that everything that is, has its own and negative aspects that negatively affect living organisms. Water is needed to quench thirst, but a lot of water is catastrophe and destruction. The knowledge of mutual connection of the processes taking place in nature moves forward thanks to four great discoveries in natural science: Discovery of the cell (1839); Law of conservation and transformation of energy (1842); Evolutionary teachings of Darwin (1859); Creation of a periodic system of elements by D.I. Mendeleev (1869) (Godfrey-Smith, 1982; Elliott, 1982; Elliott & Gare, 1983; Fox, 1989; Eckersley, 1992; Drengson & Inoue, 1995; Gare, 1996).

Thanks to these successes of natural science, it was revealed not only the connection that exists between the processes of nature in its individual areas, but also the connection, which exists between these individual areas. It was possible to give a general picture of nature of a living cell and its connection with the environment systematically using the facts of natural science. Marx and Engels, developing the dialectic of Hegel, concluded that man should perceive nature in a materialistic sense. They later created a new form of materialism - dialectical materialism. They explain their theory as follows: the production of direct material means for life forms the basis of each stage of development of the people, on which state institutions, legal views, art and even religious ideas of people develop and, therefore, must be explained by the economic basis of society. To the question that arose before him, from where people have ideas and what are the driving causes of political changes, Marx notes that the economic conditions of life and the social and political relations of this period explain all historical phenomena (Eckersley, 1992; Malpas, 1999).

Marx's philosophy proved that a person needs constant growth in his/her mind; consciousness makes man progress, so he/she searches, doubts, checks and achieves his/her objectives. To achieve goals, a person fights against the political structure surrounding him/her; strive for independence, for the good, for comfort, for a better life. In this struggle, political and economic struggle manifests itself. The social system is changing. Values are changing. However, the struggle for human survival on the planet is becoming more progressive. The success of production activities has contributed to accumulation of knowledge about nature. Democritus was a scientist and the first encyclopedic mind of Greeks. He accepted the atomistic doctrine of Leucippus, enriched science about the structure of matter and said that atoms are in perpetual motion, atoms are moving matter. He called atoms as being, and emptiness as not being, and emptiness considered as real existing one, as well as an atom. Atoms exist forever; they are qualitatively the same and differ only quantitatively. All things are made up of atoms: "Atoms are the essence of all kinds of slightest bodies, without qualities, emptiness is some place in which all these bodies are carried up and down for all eternity, or weave together in some way, or run into each other, diverge or converge again into such compounds and thus they produce all other complex things, and our bodies, and their states and sensations". In these statements, a picture of the infinite variety of phenomena of nature is visible. Philosophers saw the phenomena of nature as follows: Thales - in water, Anaximenes - in air, Heraclitus - in fire, Pythagoras - in figures. They explained the phenomena of nature, the phenomena of the world. Philosophers were so close to understanding the phenomena associated with the vital activities of living organisms, their influence on nature, ecology, and the nature of production of protein formations (Elliott & Gare, 1983; Tacey, D. (2011). In Western Europe, for a long time, single-cell food protein has been obtained from various agro-industrial wastes. Protein is produced from milk whey (80 thousand tons per year). Up to 25 thousand tons per year of protein, compounds are produced from sulfite solutions. In Cuba, unicellular protein is produced from the mass of sugarcane. How accurate were the statements of the Greek philosopher, Democritus today. The science has proved that all substances consist of atoms, from the form of compound of atoms, order and position, as well as the contact of atoms; a substance with certain physical and chemical properties is obtained. In addition, the formation of such a substance is achieved by active vital activity of microorganisms. Industry is based on the achievements of human worldviews that were laid down at the beginning of our era. For example, production of biogas from waste of various industrial industries and household waste, human waste and farm animals. Construction debris, waste and dumps of the mining industry, agro-industrial waste are raw materials for production of protein compounds. Based on the use of industrial and domestic waste, there is a saving of huge state funds for purification of environmental pollution, preservation of humanity from abnormal natural pollution of environment (an environmental emergency on a global scale and a biological emergency originating from living creatures and organisms).

The ways of impact of human on nature developed long since. With the advent of the reasonable person on the earth, a number of questions arose before him, on the fact that how to keep life and to continue the existence with continuation of the human race. At the initial stages of existence of people, they reasonably or not began to affect the nature and environment with the purpose to fill the stomach with a product. In fight for survival of people, influencing the habitat had not differ from influence of other organisms at which the instinct of continuation of life was not less expressed (Gare, 1996; Mathews, 2006). Receiving from the environment of means of livelihood in necessary quantity, which were completely restored due to natural processes of biotic circulation, people returned to the biosphere what was used by other living beings for the activity. Microorganisms, using in the activity some substances turned them into other substances. People paid attention that microorganisms have ability to destroy organic matter to turn them into mineral substances and vice versa. People began to involve such

transformations in the economic activity. Thus, people began to take active part in biotic circulation. Now people learned how to extract from the surrounding biosphere various raw materials in a significant amount, which is used in industry and in agriculture. In the industry from raw materials of the biosphere, both people and farm animals produce necessary substances for the national economy, which will be used. From this point, circulation becomes not closed. Industry waste, polluting soil and water, poisoning with chemical gases and substances vegetation, break life cycle of all live, destroying natural biogeocenoses. Uncontrollable human activity became the reason of destruction of wild animals, ruthless deforestation bringing huge damage of ecology. At the beginning of the 19th century, the scientists Zh.L. Byuffon and Zh.B. Lamarck sounded the alarm that people's active intervention in the nature does huge harm to the biosphere. Intensive use of natural resources put humanity before ecological crisis, i.e. brings the habitat of people to an unsuitable condition. Scientists note that ecological crisis is created by people and further leads to change of the nature of the earth. In their activity, people can come to such consequences, which can be qualified as crime against humanity. This are creation of a greenhouse state, deadly radiation background, epidemiological diseases, raising of level of underground waters, global hunger, raising of level of waters of oceans (Merchant, 1980; Eckersley, 1992).

J. Leeb, who spoke from positions that were not known to his predecessors, put the idea of the abilities of living beings to change behavior and to learn some actions forward. Jacques Loeb theoretically suggested that tropism in its structure resembles a reflex, since the latter represents a natural and inevitable reaction of the living to external influence. However, it is more universal than the reflex, since it determines the nature of behavior not only of living creatures that do not yet possess the nervous system, but also of plants. The reflex as an independent type of reaction, produced by a specialized device, was dissolved in the general and physicochemical laws of protoplasm. In the nineteenth century, zoopsychologists began to widely use psychological concepts that did not pass natural science testing. Biologists immediately responded to such actions. The research of biologists strengthened the objective method of studying the behavior of microorganisms in contrast to the subjective method. Since the 80s, "social" forms of behavior without vertebrates, in which a prototype of human relations has been seen, have been of particular interest. These works include the studies of D. Lebbok, J. A. Fabre, the studies of Augustus Trout, where special thoughts were expressed concerning insect sensations. The revolutionary areas have scientific works of such scientists as Jacques Leeb and Conway, Lloyd-Morgan (Elliott & Gare, 1983; Gare, 1996).

Interestingly, Lloyd-Morgan, professor of zoology and geology at Bristol, played an important role in strengthening the prestige of comparative psychology. He put forward the "law of economy" (it is commonly called the Lloyd-Morgan canon), according to which it is unacceptable to explain the behavior of a living organism based on higher mental ability, if it can be explained by the ability that stands lower in the evolutionary-psychological scale. This opinion of Lloyd-Morgan was directed against anthropomorphism. His research results were supported by a huge amount of information about the behavior of animals in various situations. According to Lloyd-Morgan, in some cases, animals act according to the method of trial and error. They do not reach the goal immediately, but only after, they try completely different possibilities at random. In his understanding, this method did not mean a "blind" response at all.

The animal (living organism) is looking for a way, being armed with certain mental means, insufficient for a completely meaningful action. J. Leeb outlined the behavior of a living organism of his labor. In theory of tropism, he expressed the opinion that tropism in structure resembles a reflex, since the reflex represents a natural and inescapable reaction of the living to external influences. The reaction of a living organism to the influence of the external environment, according to J. Leeb, is more universal than the reflex, since it determines the nature of behavior of not only living beings, but plants, not yet possessing the nervous system. Studying the behavior of living organisms in a certain environment, we wonder how a living cell will behave under the influence of this environment? Biologists argue that unicellular living organisms can "capture" food, digest it, release waste, move, build houses, engage in sexual activity, and without tissues, organs, hearts and mental abilities, they actually have everything we own" (Merchant, 1980; See & Molly, 1998). Diatoms, unicellular organisms, extract silicon and oxygen from seawater, producing glass from which they build tiny "tablet boxes" to store green chlorophyll. The nutritional value of diatoms lies largely in the oil they produce, which helps them rise close to the surface of water, where their chlorophyll can receive solar energy, enriched by solar light. When studying the behavior of a living organism, scientists face various questions regarding the influence of the environment on living cells. What basic mechanism allows organisms of one type, (as scientists suggest) to evolve into an organism of another type? Alternatively, what changes occur in the structure of the cell? What do structurally altered cells begin to produce? Exactly what environmental parameters affect the "productivity" of the cell? What environmental components can affect the cell's intended productivity? According to evolutionists, in all this, various changes within the nucleus of the cell play a major role. In addition, the first place among them is occupied by "random" changes, the so-called mutations. It is believed that mutational changes occur in the genes and chromosomes of sex cells and therefore can be transferred to offspring. Some scholars believe that mutations are the basis of evolution. Paleontologist Stephen Stanley called the mutations as "raw materials" for evolution. In addition, geneticist P. Koller said that mutations are "necessary for evolutionary progress." How do mutations arise? It is believed that most of them occur in the usual process of reproducing the cell. However, experiments show that mutations can also be caused by external factors, such as radiation and chemicals. According to the American Encyclopedia, the reproduction of genetic material in a cell has constancy (Godfrey-Smith, 1982; Elliott & Gare, 1983; Fox, 1989; Gare, 1996; Graham, 1999; Malpas, 1999).

## Conclusions

More than ever, new environmental thinking is needed nowadays. The tasks of not only construction of new treatment facilities, but also the optimal placement of industrial enterprises using environmentally friendly technologies are put on the fore. It is

necessary to turn to the reasonable use of the resources of the territory, assess its current state and forecast. As far as human actions, societies will be reasonably regulated, so the state of the environment will meet the needs of life.

Scientific research carried out by academic and sectoral institutions on environmental issues should be expanded; it is needed to ensure the development and implementation of scientifically sound environmental and economic standards that determine environmental requirements for economic activities. Today, more than ever, scientific work is needed "to advance the situation," to make a reliable forecast and anticipation of possible environmental changes.

We supposed that it is necessary to create a system for monitoring the natural complex of Ukraine using information tools of ministries and departments, as well as a single state environmental information system on condition of environment and natural resources in the country. We also consider that to fully support the social movement in nature protection, to involve the population in events to improve cities and villages, suburban forests, places of mass recreation are the obvious and urgent tasks.

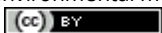
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### Citation:

Hren, L.M., Chebotarev, M.K., Ruban, A.V., Shvedun, V.O., Sysoieva, S.I., Stankevych, S.V., Smirnova, L.N., Sokolov, A.S. (2021). The philosophy of environmental management: evolution of the scientific conceptions. *Ukrainian Journal of Ecology*, 11 (2), 378-381.



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