Origin, Lifestyle, Development And Against Viruses And Bacteria That Endanger Our Life Struggle

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ABSTRACT

This article describes the origin, way of life, development of viruses and bacteria that threaten our daily life, the application of a new approach to their study, and modern measures to combat them.

Keywords: origin of viruses and bacteria, development of parasites, STEAM approach, COVID-19, capsid.

Introduction

During the current globalization, the biosphere is changing rapidly as a result of human activity. Vernadsky recognized that man is a major geological force in changing the globe. As a result of people's misuse of natural processes, environmental problems became very serious in the middle of the 20th century. Ecological problem is understood as any processes related to natural phenomena, processes that have economic importance in his economic life, in connection with the impact of man on nature.

In order to radically improve state management in the field of ecological security and to protect the environment in the republic, improve ecological conditions, prevent the harmful effects of waste on the environment, and public health, as well as PF-5024 of the President of the Republic of Uzbekistan dated April 21, 2017 «State management in the field of ecology and environment» in accordance with the decree on improvement» and the Nature Protection Committee of the Republic of Uzbekistan was transformed into the State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan.

Many factors can cause environmental damage. For example, as a result of the activity of viruses and bacteria, which are almost always present in our daily life, our healthy life is damaged. To prevent this, we need to know them closely.

Literature Analysis And Methodology

In the world we live in there is a world of very small living things. Although they are all around us, we cannot see them with the naked eye, because these living creatures are so tiny that they can only be seen through a microscope. These invisible living creatures are called microbes (from the Greek word «micros» meaning «small»). Dutch scientist Anton Leeuwenhoek managed to see microbes for the first time 300 years ago.

Microbes are very diverse. Among them, the largest group is bacteria. With the help of modern light and electron microscopes, we can see even the smallest single-celled organisms, whose size is one tenth of a millimeter.

Bacteria are everywhere and they mainly feed on ready-made organic matter. They can be found in the upper layers of the air, in the deep underground and surface layers, in the Arctic glaciers, and in the hot sands of the deserts. They are found in living and dead plants, animals and even human body. Bacteria grow very quickly in foods such as meat, fish, milk, vegetables and fruits.

To study the structure of bacteria, we take one of the hay bacteria, and it appears that it consists of only one cell. A bacterial cell is only a shell and a semi-liquid inside

Consists of substance. In a bacterial cell, the nucleus is not clearly visible. This shows that they are originally simple organisms. Electronic

When viewed through a microscope, it can be seen that the cell membrane of bacteria is several layers. Its composition includes muramic acid, amino acids, lipids, glucosamine and other complex compounds. Under the cell membrane there is a cytoplasmic membrane, it is this membrane that plays an important role in metabolism.

There are ribosomes in the cytoplasm, which contain RNA. There are DNA strands in the bacterial cell, which form a nucleus without a shell, that is, a nucleotide.

The shape, structure, and mobility of bacteria are very diverse. Depending on the cell shape, bacteria are divided into three main groups: 1. Spherical bacteria – cocci. 2. Rod-shaped or cylindrical bacteria – bacilli. 3. Bent bacteria – spirilla. Spherical from 0.4 to 0.8 μm, length is 2-5 μm. Sometimes there are very large bacteria. For example, Thiophusa macrophusa HHHr has a diameter of μm; however, there are also very small bacteria species. They are so small that they can even pass through a bacterial filter.

If the cocci reproduce by division, and after division, they form a chain until they are joined together. This formation is called streptococci. When the cells stick to each other in a vertical direction, they form a bag of cells, such a shape is characteristic of sarcinia. If the cocci divide in any direction, a cluster of cells is formed in the shape of a cluster of grapes, such a shape belongs to staphylococci. The tips of rod-shaped bacteria can be flat «shorn» or more lumpy. These are located individually or in the form of chains. Bacteria that form long threads, mainly live in water. Comma-shaped bacteria, i.e. vibrios, as well as several similar thinly folded ones are called spirochetes.

Bacteria are usually resistant to high temperature, drying, sun and all kinds of chemicals kill bacteria.

The reproduction of bacteria occurs as a result of the division of the bacterial cell into two. Under favorable conditions, bacterial cells divide every 20-30 minutes and create young bacteria. Bacteria die quickly under the influence of sunlight and extremely low temperature, in dry air. However, some bacteria turn into spores when exposed to unfavorable conditions. The spores of some bacteria can withstand heat up to 140 C and cold up to 253 C. When favorable conditions arise, the thick layer on the spore is destroyed, and the bacterium begins to feed, hang and multiply again.

Viruses (Latin: virus-poison) are microorganisms that multiply only in living cells and cause infectious diseases in plants, animals, and humans. In the 1960s, the term «viruses» was used to refer to various pathogens, especially unknown agents, and they are also called autonomous genetic structures that cannot develop outside the cell. It is believed that viruses and bacteriophages are special genetic elements of the cell that have evolved together with cellular forms of life. The important difference between pathogens, i.e., viruses and bacteria, was determined after the Russian scientist D. Ivanovsky (1892) and later others proved that protein pathogens of ungulates and ungulates were released from the bacterial filter. A year later, F. Leffler and P. Frosh came to the conclusion that the causative agents of the protein disease found in domestic animals also escape from bacterial water. Finally, in 1917, the Canadian bacteriologist F. De Errel discovered the bacteriophage – a virus that damages bacteria. Thus, viruses were discovered in plants, animals, and microorganisms. These discoveries opened the cell-free forms of life, that is, a new field of science – virology.

Viruses are very widespread in nature and cause severe infectious diseases in humans,

plants and animals. They are spread by special spreaders or mechanical means. Most viruses do not lose their ability to live, they start to cause disease as soon as they get into favorable conditions.

Some viruses lose their characteristics in the external environment. A disease caused by viruses can often be caused by a single virus. For example, a single polio virus or particle can develop into billions of viruses in a few hours. The multiplication of viruses depends on the amioacids in its content. The sum of millions of virus molecules can be seen under a microscope in the form of crystals or X-bodies. The characteristic of causing a disease is that the disease-causing agent is very small compared to other agents and does not develop in a normal artificial nutrient environment. But with the exception of some bacteriophages, it has been proven that they can be reproduced in laboratory conditions. All viruses that can be studied in the laboratory have been identified by various physical methods. Their diameter is 10-300 μm. It is in the form of a rod, ball or thread. Disease-causing viruses in plants and animals are round in shape. Wheat and alfalfa mosaic virus looks like a bacillus or white. The structure of viruses in the electron microscope and X-ray

Through research, some subtle components have been identified. In all of them, the internal substance consists mainly of nucleic acids, and it is surrounded by a protein shell. The chemical composition of several types of viruses has been organized. Phytopathogenic viruses contain ribonucleic acid, and viruses that cause disease from animals and humans contain RNA or DNA. Some viruses are obtained in the form of purified preparations. To isolate and purify viruses, ultracentrifugation is used, and various physical and chemical methods are used.

The classification of viruses and their symbols have not yet been adopted. They are given the same species and genus names as plants and animals, folk expressions and various abbreviations are used. It is called by the name of the genus of the diseased organism and a number is placed next to it, or the virus is combined into a genus and family based on its morphological, chemical and reproductive characteristics.

The virus can accidentally enter the cell through pinocytosis vacuoles formed from the fluid in the intercellular environment. But usually, before the virus enters the cell, it binds to a special protein-receptor on the cell surface. This connection is carried out by special proteins on the surface of the virus. They have the feature of «recognition» of a special sensitive receptor on the surface of the cell. A part of the cell attached to the virus merges with the cytoplasm and becomes a vacuole. In this way, the virus can spread to all parts of the cell.

Steam technology, in contrast to education, ensures that knowledge is not isolated, but mutually proportional. In this way, the student develops the skills of non-standard thinking, finding several solutions to a problem, and creativity, which will be very useful in his future career.

Conclusion

In conclusion, viruses are autonomous genetic structures that cannot develop outside the cell, and the fact that they cannot develop in an artificial nutrient environment is a characteristic of viruses. Virology provides general information about the morphology of viruses and their morphogenesis. Viruses are non-cellular forms of life that reproduce in a foreign cell system under natural conditions that do not have their own synthetic apparatus. Due to the importance of bacteria in nature and economy, metabolism occurs in nature.

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