

HELMINTHS, THE HISTORY OF HELMINTHOLOGY AND THE DISCOVERIES OF SCIENTISTS WHO CONDUCTED SCIENTIFIC WORK WITH THIS DISEASE

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Abstract... This article discusses helminths, the history of helminthology, and the discoveries of scientists who have conducted scientific work with the disease

Keywords: Helminths, helminthiasis, helminths in children and adolescents, fauna of helminths, parasitic helminths in children and adolescents, experiments, discoveries, worms, parasites, worms.

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ГЕЛЬМИНТЫ, ИСТОРИЯ ГЕЛЬМИНТОЛОГИИ И ОТКРЫТИЯ УЧЕНЫХ, ПРОВОДИВШИХ НАУЧНУЮ РАБОТУ С ЭТИМ ЗАБОЛЕВАНИЕМ

GELMINTLAR, GELMINTOLOGIYA TARIXI VA USHBU KASALLIK BILAN ILMIY ISH OLIV BORGAN OLIMLAR KASHFIYOTLARI

According to the World Health Organization, 1 billion people are infected with ascariasis, 900 million with hookworm disease, and 700 million with trichocephalosis. about 100,000 people will get sick. Schistosomiasis is endemic for 74 countries of the world; the population of these countries is 200 million. infected with this helminthosis and another 500-600 million people are at risk of contracting schistosomiasis. As can be seen from the above information, parasitic diseases are a clear example of how much economic damage they cause to the health care system and the national economy. This, in turn, requires specialists to have in-depth knowledge of parasitology.

Helminthology (helminths and ...ology) is a science that studies parasitic worms - helminths and the diseases they cause in humans, animals and plants. The structure, physiology, biochemistry, development, ecology, geographical distribution and place of helminthic parasitic worms in the zoological system, also studies their effect on the organism of the host, diagnosis of helminthic diseases [[Helminthoses]], study of their clinical signs, pathogenesis, epidemiology and

epizootology, development of treatment and preventive measures based on them are also included in the tasks of Helminthosis.

Due to the study of parasitic worms, Helminths, on the one hand, is a branch of zoology, and on the other hand, the pathogenicity of helminths and by studying measures to combat them, it is connected with clinical sciences – pathophysiology, pathanatomy, biochemistry, immunology, and others. Applied helminthology is divided into medical and agronomic helminthology.

Although this division of helminths is mostly artificial, it is practically necessary. Medical helminthology studies helminths that are parasitic in the human body. Agronomy Helminthology deals with the study of plant helminths and the development of measures to combat them. Veterinary Helminthology is the study of helminths that parasitize domestic, game and wild animals and their control measures. The first information about helminths that are parasites in humans can be found in the work of Abu Ali ibn Sina “Kitab al-Shifa”. In it, Ibn Sina gave information about the “big and long worm” (cattle tapeworm), “pumpkin seed worm” (pumpkin worm), “small worm” (small chain worm) and the treatment of the diseases caused by them.



Figure 1: “Kitab al-Shifa” by Abu Ali ibn Sina²¹⁷

The first research in the field of helminths was carried out by the Russian tourist A. Conducted by P. Fedchenko in 1868. He studied the biology of the bond in Samarkand. Research in the field of helminths expanded from the 20s of the 20th

²¹⁷ S.D. DADAYEV, G.A. ABDURAKHANOVA “GENERAL PARASITOLOGY” by the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan 5A 140101 - Study guide for students majoring in biology (by science) TASHKENT-2012 page 11

century with the establishment of the Central Asian State University, the Institute of Medical Parasitology, and several tropical institutes.



Figure 2: Conducted by P.A.Fedchenko in 1868. He studied the biology of the bond in Samarkand²¹⁸

L. M. Isaev studied the life of the hookworm, developed measures to combat it and started research in the field of medical parasitology. The works in this regard were later reflected in the researches of S.N. Bobojanov. Research in the field of veterinary helminthology in Uzbekistan was founded by N. V. Badan. Species composition, biological and ecological characteristics of wild and domestic helminths and methods of combating them M. A. Sultanov, I. Kh. Ergashev, J. A. Azimov, N. M. Matjonov, A. N. Brudastov, B. S. Salimov. Sh. A. Azimov, M. A. Aminjonov, A. It was reflected in the works of O. Oripov, S. Dadaev, G. S. Polatov and others works.

In 1994, J.A. Azimov was elected a correspondent member of the FA of the Republic of Uzbekistan, and in 2000, a full member. J.A.Azimov is a leading zoologist, helminthologist recognized by world scientists. Based on the research of morphology, biology and ecology of parasitic organisms living in human and animal bodies, he developed unique theoretical concepts on the evolution, phylogeny and systematics of these organisms, which caused great interest in world science, and created his own school. Academician J.A.Azimov's brilliant scientific activity is reflected in more than 600 scientific articles. The author of more than 35 monographs and educational manuals, including "Helmints of lactating

²¹⁸S.D.DADAYEV, G.A.ABDURAKHANOVA "GENERAL PARASITOLOGY" by the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan 5A 140101 -Study guide for students majoring in biology (by science) TASHKENT- 2012 Page 12

domestic animals of Uzbekistan" (1975), "Human and animal schistosomatids" (1975), "Trematodes - parasites of humans and animals" (1986). "Helmints of vertebrates in the mountain ecosystems of Uzbekistan" (1994), "Terrestrial molluscs of Uzbekistan and its border areas" (2003); "Interesting Biology" (2004); "Explanatory dictionary of parasitological terms" (2007) and others are especially appreciated by zoologists and parasitologists of our country.



Picture 3: J.A. Azimov²¹⁹

Study of phytohelminths in Uzbekistan Ye. It was started by S. Kiryanova. Study of soil nematodes in and around the root of various agricultural crops A. It is related to the work of T. Tolaganov and his students. Nematodes of cotton, hemp, vegetable and fodder crops, subtropical plants were studied; prophylactic and chemical methods of fighting nematodes have been developed (A. T. Tolaganov, O. Z. Usmonova, O. Mavlonov, 3. Norboev, Sh. Khurramov, A. I. Zemlyanskaya, etc.). Indicator characteristics of free-living helminths in the soil, evolution of parasitic phytohelminths along with the plants they damage have been revealed (O. Mavlonov, 3. Norboev).

More than 600 species of phytohelminths, including about 80 new species, have been identified. In the following years, G. focused on ecology, biochemistry, etc. is focused on experimental research, parasite-host and phylogenetic relationships between helminths and their hosts are being studied. The work in the field of G. is of great practical importance in maintaining human health, increasing the productivity of agricultural animals and crops, helminthological research at the Institutes of Zoology, Veterinary Medicine and Animal Husbandry of the Academy

²¹⁹ S.D. DADAYEV, G.A. ABDURAKHANOVA "GENERAL PARASITOLOGY" by the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan 5A 140101 - Study guide for students majoring in biology (by science) TASHKENT-2012 page 13

of Sciences of Uzbekistan, at the National University of Uzbekistan, as well as at the state universities of Termiz, Samarkand, Nukus, It is conducted in Tashkent, Samarkand, Andijan Medical Institutes, Tashkent Pedagogical University, Samarkand and Tashkent State Agrarian Departments. Helminthology refers to the study of helminths, commonly called parasitic worms. We can talk about medical and veterinary helminthology, because parasites are usually analyzed for the harm they cause to health in these fields.

Helminths are known to live in their hosts, feed on them, and defend themselves. They are able to accommodate both people and animals. They are usually disease generators and can weaken the affected body over time. As an object of clinical research, helminthology in medical services determined the classification of helminths according to their external forms and the organs in which they are located. They are also supported by data related to their juvenile, egg, and developmental stages from larva to adult. Currently, there are three classifications for this animal group: cestodes, trematodes and nematodes. Helminths as a group are able to live in the intestines, blood and urinary tract. Depending on the residence, the accommodation is different.

History of helminthology. The revival of helminthology could be due to the wide appreciation of science in the period of the Renaissance between the 17th and 18th centuries. It was at this time that Carlos Linnaeus created a scientific classification of six types of helminths. Later, in the first years of the 20th century, 28 species related to humans were identified. Today, about 300 helminth parasites are able to live in the human body.

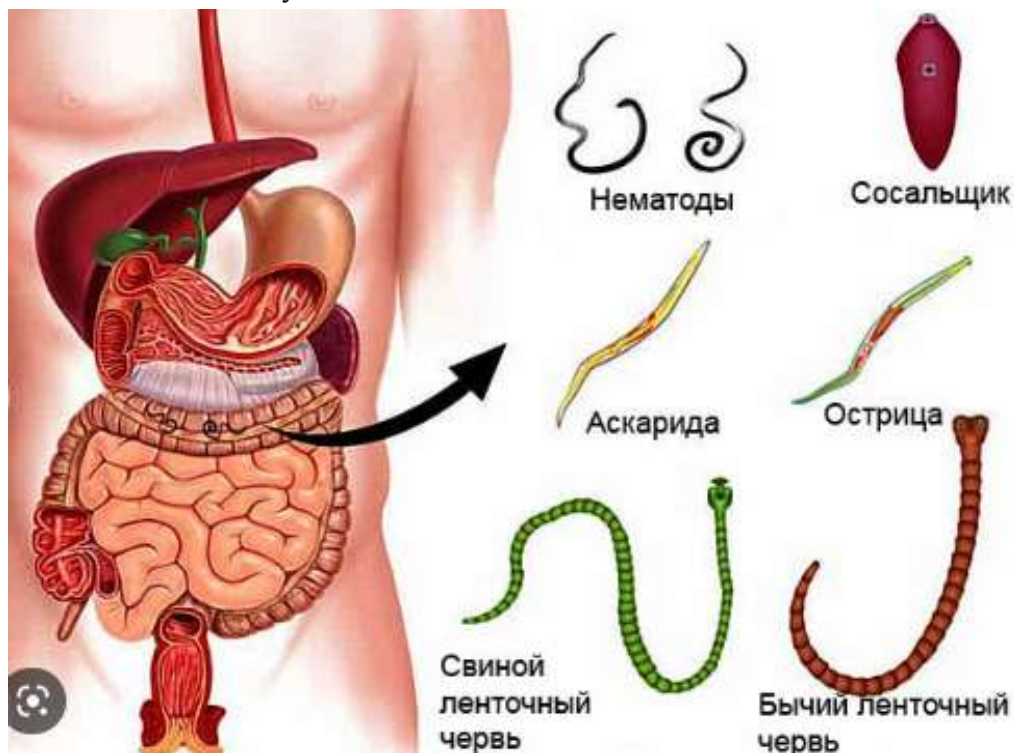


Figure 4: Type of parasitic worms

Antiquities of helminthology are related to the long-standing research of parasites in general. Many observations that have been discovered indicate the presence of parasites in ancient societies due to the characteristics of the described infections.

There is evidence of parasitic infection from Egyptian inscriptions around 3000-400 BC. The Greek, Chinese, and Indian civilizations collected descriptive files of diseases possibly caused by parasites. However, until now, there was still no certainty about which cases were directly related to these animals.

As for the Middle Ages, obscurantism affected the decline of medical achievements. Nevertheless, some traces of the observation of parasitic worms and their connection with diseases were found. The term "helminthology" was proposed by William Ramsay in 1668, thus distinguishing this discipline among others as a field of study focused exclusively on helminth parasites.

Important discoveries. In the nineteenth century, the most important experiments were conducted to understand the processes of parasite transmission, their transmission, and the first treatments. The French scientist Casimir Joseph Davin in 1862 was able to demonstrate the spread of parasites by swallowing eggs.

Another relevant finding occurs around the study of the parasite *Trichinella* in the 19th century. The analysis made it possible to observe the possibility of parasite transmission between different animal species. For example, Friedrich Zenker's research in 1860 showed that the parasite *Trichinella* could be transmitted to humans by ingesting pork.

At the end of this century, the German parasitologist Arthur Looss was accidentally infected with a worm. hookworm This fact allowed him to determine that the entry of these parasites into the body occurs through skin penetration. In the 20th century itself, more precisely in 1922, a Japanese pediatrician named Shimesu Koino was able to determine the life cycle and migration of parasite larvae in the human body. His research work involved self-infection to determine outcomes.

Parasites have been associated with human life since prehistoric times, that is, they appeared 15,000 years ago during the Ice Age, when people began to live in new areas of the Earth. Both evolution and the constant migration of humans are factors that have allowed parasites to spread around the world. Ancient movements added new types of parasitic species from one place to another, different from the ones humans inherited from their ancestors.

The development of civilizations and communication routes spread infectious disease between groups. Events such as the discovery of the "New World" also marked a new path for the transfer of parasites from slave groups in Africa.

Among other trends in parasite development, it should be noted that autoimmune diseases have created conditions for new infections in humans.

In addition, parasites can be associated with archaeological research. In most cases, helminth eggs have been found in the remains or in the remains or dismembered remains of preserved corpses. Educational areas such as paleoparasitology are emerging, focused on the study of parasites and their behavior in the past.

There are several doctors who stand out in the field of helminthology. For example, Francisco Redi was responsible for discovering how insects do not arise from spontaneous generation. His research dates back to 1668, when he experimented with meat in two jars, one closed and the other open. Over time, the absence of worms has always been proven in a closed container, in contrast to what was observed in an open bottle. Redi is considered the founder of helminthology. In the second part of the 19th century, the investigations of Friedrich Kuchenmeister took place. His experiments were conducted on prisoners sentenced to death. Kuchenmeister took it upon himself to make the prisoners eat cestode worms. When these prisoners were executed, Kuchenmeister analyzed the internal parts of their bodies and was able to reject the idea that helminths appeared spontaneously in the human body.

Helminthology is the study of parasitic worms, commonly known as helminths. This field of medicine is responsible for creating a scientific classification of helminths and determining their consequences for humans. These parasitic worms are the cause of many diseases worldwide. Although a small group of helminths are actually considered dangerous organisms.

Helminthology is one of the areas of medical research in which the development of available information is growing rapidly. This has happened with the development of new medical treatments, drugs, and the creation of knowledge about the interrelationship between the host and the parasite.

Helminth research is becoming increasingly important throughout the world. Helminthology is able to study the parasitism of helminths or diseases such as helminthiasis, onchocerciasis or loiosis, and is also responsible for the study of roundworms.

Worms are worms, organisms that spend their parasitic life in the human body. Age does not play a role in this, both adults and children can get sick. The classification of helminths is very broad, especially in countries with a warm climate.²²⁰

It can be concluded that helminthosis is a serious disease not only of a separate organ, but of the whole organism, and when its symptoms appear, it is necessary to consult a doctor in time.

It is more important to prevent the disease than to cure it. In order to prevent helminthiasis, it is necessary to strictly follow the rules of personal hygiene.

²²⁰ A. Zikiryayev, A. Tokhtayev, I. Azimov N. Sonin "Biologiya" T. 2014

Everyone should have their own personal hygiene products. Wash your hands thoroughly with soap before eating, after entering and leaving the toilet, after handling door handles, after working with soil, and when children are playing on the street. It is also necessary to keep the nails short. Avoid putting your hands in your mouth while working on the lawn or in the garden. Especially, as we said above, the negative habit of putting the hand in the mouth is characteristic of young children.

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