

Acantocephals and nematodes of fish of waters of the medium flow of the Zarafshan river

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Abstract: The basin of the Zarafshan River is a natural-geographical complex on a transboundary territory, in which there are reservoirs of different ecological conditions. At present, a large number of large reservoirs for complex use with an area of hundreds of thousands of hectares have been created in the Zarafshan river basin. Reservoirs are a new type of water bodies, differing in specific and ecological conditions [2].

Key words: nematodes, acanthocephalus, Cypriniformes fish, Zarafshan, Uzbekistan.

1. Introduction

The study of biocenoses and ichthyocenoses of water bodies of the Zarafshan River will serve as the basis for rational activities in the field of nature management at the national level.

In connection with the intensive human economic activity associated with the use of water resources, there are noticeable qualitative and quantitative changes in biocenoses and ichthyocenoses. In this case, parasitic diseases of fish inevitably arise, which lead to a decrease in the number and productivity, as well as a deterioration of the epizootic situation of water bodies. Parasitic diseases of fish not only cause significant economic damage associated with a decrease in fish productivity, but they are also dangerous for human health [4].

The investigated group of fish from the reservoirs of the Zarafshan River have a diverse fauna of parasites. The available data [3, 4, 5] on the fauna of fish helminths are fragmentary and insufficient. Proceeding

from the above, the study of the species diversity of endohelminths of cyprinids in the reservoirs of the lower reaches of the Zarafshan is quite urgent.

2. Novelty

The features of the nematode and acanthocephalus fauna of Cypriniformes fish, their distribution in the water bodies of the low Zarafshan River were studied. In total, 8 helminth species belonging to the classes Cestoda – (5 species), Nematoda – (1 species) and Acantocephala – (2) are registered in the region. 1 species we marked for the first time for the region of under consideration.

3. Materials and methods

Studies were conducted in 2020 years of different types of water bodies of the Zarafshan River. The collection and study of helminths of fish were carried out by known methods in helminthology and ichthyoparasitology. Researched 135 copies of Cypriniformes fish belonging to 12 species (Cyprinidae – 12 species).

4. Research results

According to preliminary data, the fish groups under investigation in 8 species of helminths belonging to the class Cestoda – (5 species), Nematoda (1 species) and Acantocephala (2 species) were identified in the reservoirs of the region.

Significant species diversity is characterized by the class Nematoda. We have registered 1 species belonging to 1 orders. The detachment *Ascaridida* Skrzjabin et Schulz, 1938 is represented by one species –

Rhaphidascaris acus (Bloch, 1779), which is noted in most Cypriniformes in the natural and artificial reservoirs of the southwest of Uzbekistan. The greatest species diversity is distinguished by the detachment Spirurida Chitwood, 1933. We noted 2 species. The remaining units are represented by 1-2 species - banal fish parasites. The findings of *Dioctophyme renale* Goeze, 1782 (larvae) in Cypriniformes in the studied region should be noted.

The Acanthocephala class is represented by 2 species: *Neoechinorhynchus rutila* Müller, 1780, *Pomphorhynchus laevis* Müller, 1776.

Nematodes are dominant. The results suggest that the most optimal conditions for the functioning of the corresponding helminth communities probably exist in the water bodies of the low flow of the Zarafshan. The abundance of a number of invertebrate groups - the inhabitants of aquatic ecosystems is intermediate hosts of fish parasites. And the accumulation of water birds and mammals in these areas contributes to the circulation of the corresponding species and groups of worms.

All this requires systematic monitoring of fish helminthiasis in order to develop preventive measures.

References

1. Byhovskaya-Pavlovskaya I.E. Parasites of fishes. The manual. - Leningrad: Nauka Publishers, 1985. - 121 pp.
2. Isaev A.I., Karpov E.I. Fish farming of reservoirs. Reference guide. - Moscow: Agropromizdat Publishers. 1989. - 256 pp.
3. Karimov S.B. Parasites of fish in the Ferghana Valley: Dissertation for the degree of Doctor of Sciences. - Tashkent, 2007. - 187 pp.
4. Osmanov S.O. Fish parasites in Uzbekistan. - Tashkent: Fan, 1971. - 532 pp.
5. Safarova F.E. The helminths of Cyprinidae fishes in the waterbodies of the north-east of Uzbekistan.: Dissertation abstract of the doctor of philosophy (PhD) on biological sciences. - Tashkent, 2017. - 42 pp.
6. Avdiev V.V. and others Keys to parasites of freshwater fish fauna USSR.-Leningrad science, 1987. P.3.-337-339 c.
7. Safarova F.E., Azimov J.A., Akramova F.D., Shakarboev E.B., Kahramonov B.A., Fish diseases. - Tashkent, 2019. - 179-183 p.