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THE NEMATODE FAUNA OF THE DOMESTIC CARNIVORES IN THE TERRITORY OF AZERBAIJAN

R. Sh. Ibrahimova*

Institute of Zoology, Azerbaijan National Academy of Sciences, Baku, Azerbaijan

Abstract. In the paper we give the results of the investigations on the nematode fauna of the domestic carnivores in the territory of Azerbaijan. As a result of the investigation, the nematode fauna of the carnivores in the territory of Azerbaijan, 28 species of the nematodes were detected. 13 species of the total detected nematodes were detected. 25 species of the nematodes were found in the stray dogs, while 19 species in the domestic cats. 17 species of the detected nematodes are the biohelminthes, and 11 species of them are the geohelminthes. 12 species of the nematodes that the characteristic for the studied areas, 14 species of the nematodes that the specific for the domestic carnivores, 8 species of the nematodes that include to the nematode fauna of the domestic carnivores from the mixed hearth and 14 species of the nematodes that assume the epizootical and the epidemiological significance were detected. As well as, the factors which have a direct impact on the formulation of the nematode fauna of the domestic carnivores were specified and it is recommended to prepare and implement the preventive and the struggle measures against the nematodes which spread widely among the animals and assume the epizootical and the epidemiological significance.

Keywords: *stray dogs, domestic cats, nematode, specificity, abiotic factors, epizoology-epidemiology.*

***Corresponding Author:** R.Sh. Ibrahimova, Institute of Zoology, Azerbaijan National Academy of Sciences, Str. A.Abbaszadeh, pass.1128, block 504, AZ 1004, Baku, Azerbaijan,*
e-mail: ibrahimova_reyhan@bk.ru

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1. Introduction

The favorable climate of Azerbaijan caused the widespread various species of the vertebrate and the invertebrate animals in this territory. The domestic carnivores (the stray dogs and the domestic cats) which belong to a group of the vertebrates are the major hosts and the carriers of the dangerous nematodes for the human and the domestic ruminating animals. Some of the invertebrate animals are the intermediate hosts of the nematodes which spread widely among the domestic carnivores.

These animals play an important role in increasing the epizootical and the epidemiological significance of the nematodes, while taking a special place in the circulation of the pathogenic nematodes among the human and the domestic ruminating animals.

Despite the fact that the domestic carnivores assume a great importance, the data on study of the helminth fauna of these animals have only provided by Ismayilov (1969), Elchuyev (1981) and Ibrahimova (1969, 1994).

However, as this information includes only some regions of the country and the number of studied animals is the small, it doesn't address some parasitological problems. There are some factors that cause an increase in the number of species of the nematode fauna of the domestic carnivores, the widespread nematodes among the

animals, an increase in the epizootical and the epidemiological significance of the nematodes.

Therefore to study the nematode fauna of the domestic carnivores is a current issue of our era and suggests the scientific innovation and the practical significance.

2. Materials and methods

In order to study the nematode fauna of the domestic carnivores, we have studied 854 stray dogs and 972 domestic cats by the hematological dissection during the study conducted in the various territories of Azerbaijan (Skrjabin, 1928).

The found nematodes were fixed in the 4 % formalin. The temporary medicines have been prepared from the nematodes by the mixing milk acid with the glycerin (1:1). Both permanent medicines and temporary medicines and the biometric measurements have specified in the dimension of the x20 and the x40 based on the specific book by using the Olympus microscope for each species (Kozlov, 1977).

3. Conclusion and discussion

During the helminthological research of the domestic carnivores, 28 species of the detected helminths in them are nematodes in the territory of Azerbaijan. 17 species of the nematodes are the biohelminths, while 11 species are the geohelminths (Table 1).

As we see in the Table 1, the stray dogs are surpass from the domestic cats, both according to the species diversity and also the number of nematodes. As we see from the table, the stray dogs are infected with 25 species, while the domestic cats with 19 species nematodes.

The high infection of the stray dogs with the nematodes in number is due to having more active lifestyles, the variety of the food composition, and having wider feeding areal than the domestic cats.

We found 13 species of the nematodes in the domestic carnivores for the first time: *C.felis-cati, U.stenocephala, A.caninum, A.tubaeforme, T.spiralis, A.vasorum, T.mystax, T.canis, R.affinis, R.cahirensis, Ph.sibirica, A.strongylina, D.repens.*

16 species of the detected nematodes in the domestic carnivores noted in both animals include the community; 9 species (*Tr.georgicus, Tr.vulpis, St.vulpis, G.pulchrum, Cr.vulpis, A.vasorum, S.arctica, Sp.lupi, A.strongylina*) only in the stray dogs; while 3 species *(C.felis-cati, A.tubaeforme, T.mystax)* noted only in the domestic cats include the specifity.

C.plica, Th.aerophilus, A.caninum, U.stenocephala, M.patens, T.leonina, Sp.rytipleutites, Ph.praeputiale, R.affinis from the detected nematodes during the research, are more widespread among in the domestic carnivores; while *T.canis, T.mystax, Tr.spiralis, Tr.brevior, Ph.sibirica, R.cahirensis, D.repens* are limited spread.

Such regularity is due to the influence on the bioecological features of the areas (the density of the animals in the areas, the distribution of the intermediate hosts and the influence of the current abiotic factors).

In different feeding places, the composition of the food and the distribution of the intermediate hosts forming the food, cause both the diversity of the species composition and also to be high in number in the nematode fauna. Because the infection with the helminth is connected correlative with the composition of the food (Fataliyev *et al.*, 2013).

Table 1. The nematodes detected in the domestic carnivores in Azerbaijan

The species of the nematodes	Stray dogs	Domestic cats
1	**2**	**3**
Capillaria plica Rudolphi, 1819	+	+
C. felis-cati Bellingham, 1845	_	+
C. putorii Rudolphi, 1819	+	+
Thominx aerophilus Creplin, 1839	+	+
Trichocephalus georgicus Rodonaya, 1950	+	_
Tr. vulpis Froelich, 1789	+	_
Trichinella spiralis Owen, 1835	+	+
Strongyloides vulpis Petrow, 1941	+	_
Ancylostoma caninum Ercolani, 1859	+	+
A. tubaeforme Zeder, 1800	_	+
Uncinaria stenocephala Railliet, 1854	+	+
Crenosoma vulpis Rudolphi, 1819	+	_
Troglostrongylus brevior Gerichter, 1948	+	+
Angiostrongylus vasorum Railliet, 1866	+	_
Molineus patens Dujardin, 1845	+	+
Toxascaris leonina Linstow, 1902	+	+
Toxocara canis Werner, 1782	+	+
T. mystax Zeder, 1800	_	+
Gongylonema pulchrum Molin, 1857	+	_
Spirura rytipleurites Deslongchamps, 1824	+	+
Spirocerca arctica Petrow, 1927	+	_
Sp. lupi Rudolphi, 1809	+	_
Physaloptera praeputiale Linstow, 1889	+	+
Ph. sibirica Petrow et Gorbunow, 1931	+	+
Rictularia affinis Jagerskiold, 1904	+	+
R. cahirensis Jagerskiold, 1904	+	+
Ascarops strongylina Rudolphi, 1819	+	_
Dirofilaria repens Railliet et Henry, 1911	+	+
Total: 28	**25**	**19**

So the infection occurred with the species *C.plica, C.putorii, Th.aerophilus,* when the domestic carnivores swallow also the earthworms accidentally with the food in the different feeding areas; with the species *Cr.vulpis, Tr.brevior, A.vasorum,* when swallow the land snails; with the species *G.pulchrum, Sp.rytipleurites, Sp.arctica, Sp.lupi, Ph.praeputiale, Ph.sibirica, R.affinis, R.cahirensis, A.strongylina,* when feeding with the beetles, the cockroaches, orthopteras from various species of the insects. The infection occurred with the species *D. repens,* when being in contact (when stung) with the mosquitoes of the genus *Anopheles.*

The increasing of the eggs of the *C.felis-cati, Th.georgicus, T.vulpis, S.vulpis, A.caninum, A.tubaeforme, U.stenocephala, M.patens, T.leonina, T.canis, T.mystax* from the nematodes, which are geohelmint, takes place in the external environment (on the soil). These eggs can keep their invasive ability, staying up to 17 months under the influence on the abiotic factors (Guliyeva, 1989).

During the research conducted by us, 12 characteristic species from the detected nematodes in the domestic carnivores for the areas were determined: *C. plica, Th.aerophilus, A.caninum, U.stenocephala, M.patens, T.leonina, T.canis, Sp. rytipleurites, Ph.praeputiale, R.affinis, R.cahirensis, D.repens* (Yolchuyev *et al*., 2013).

14 specific species were determined for the domestic carnivores. 9 species of them (*Tr.georgicus, Cr.vulpis, Tr.vulpis, S.vulpis, A.caninum, U.stenocephala, T.canis, Sp.lupi, A.vasorum*) for the stray dogs; while 5 species (*C.felis-cati, A.tubaeforme, T.brevior, T.mystax, Sp.rytipleurites*) are specific for the domestic cats.

Due to the influence on the structure of the nematode fauna of the domestic carnivores the inclusion of 8 species of the nematodes (*G.pulchrum, T.brevior, M.patens, T.vulpis, S.vulpis, A.vasorum, A. strongylina, S.lupi*), which are from the mixed hearth created by the wild animals and to be a new host of the animals for these nematodes were determined by us (Ibrahimova *et al.*, 2015).

In addition to them, the epizootic and epidemiological significance of 14 species of the detected nematodes in the domestic carnivores were determined: *Sp.lupi, T.leonina, T.canis, A.caninum, U.stenocephala, T.aerophilus, Tr.spiralis, Sp.rytipleurites, S.vulpis, G.pulchrum, C.felis-cati, Ph.sibirica, Ph.praeputiale, D.repens* (Ibrahimova, 2016).

These notes - the lifestyle of the animal, widespread the characteristic and specific species in the areas, the species included the structure of the nematode fauna from the mixed hearth, the influence on the abiotic factors affect directly to the quantitative and the qualitative formation of the nematode fauna of the domestic carnivores.

That's why, it is expedient to prepare and implement the preventive and the struggle measures against the factors that directly affect to the formation of the nematode fauna of the domestic carnivores, the epizootiological and the epidemiological significance nematodes.

So the nematode fauna of the domestic animals in the territory of Azerbaijan has been studied, and 28 species of the nematodes have been found, 25 species of them have been found in the stray dogs, while 19 species in the domestic cats. 13 species of the nematodes have been found in the domestic animals for the first time. 9 species of the nematodes have been recorded only in the stray dogs, while 3 species in the domestic cats. 14 specific species, 12 characteristic species for the areas, 14 epizootical and epidemiological significance species have been identified in the nematodes found in the domestic carnivores.

The factors which have a direct impact on the formulation of the nematode fauna of the domestic carnivores have been specified (the way of the life, the composition of the food in the various sources of the feeding, the spreading of the intermediate hosts in the territories, the abiotic factors and the mixed hearth).

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