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MUSCLE TREMATODE INFECTION OF ALIEN CYPRINIDS IN THE BASIN OF THE MIDDLE OB (SIBIRIA, RUSSIA)

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Natural foci of opisthorchiasis are located near the Ob, Irtysh, Ural, Volga, Kama, Don, Dnieper, Northern Dvina and Biryusa rivers. The world's largest focus of opisthorchiasis caused by *Opisthorchis felineus* Rivolta, 1884, is associated with the Ob-Irtysh basin. Almost all the territories adjacent to this basin are unfavorable for opisthorchiasis. The Tomsk region occupies one of the leading places in terms of population infection with cat fluke. In the Ob-Irtysh basin, the main carriers of cat fluke metacercariae are cyprinid fish – mainly objects of industrial and amateur fishing: ide, dace and roach. Along with this, the range of hosts-carriers of *O. felineus* metacercariae is expanding as a result of the introduction of cyprinids from other water basins of Russia, which were not previously found on the territory of Siberia. In the Middle Ob basin in different years of the XX century, three species of cyprinid fish were introduced, and later naturalized. Bream, starting from the 30s, settled throughout the Ob-Irtysh basin. Currently, it reaches a large number, in the Tomsk region one of the most important commercial species (the share in the total catch is up to 18-20 %). Bleak was first note for Western Siberia in 1973 in the lake Khoroshee (Ob River basin). It quickly became a numerous species, first recorded in the Tomsk region since the beginning of the 90s. It has no commercial significance, it is an object of amateur fishing. Sunbleak in the reservoirs of Siberia is an accidental invader. It was first noted by Krivoshchekov (1973), penetrated into the rivers of the Ob basin during the descent of carp ponds. Currently, sunbleak is widely distributed in the Ob River basin, mainly in floodplain lakes, where it reaches a high number.

Studies on fish infestation with *O. felineus* metacercariae in the Middle Ob basin were started by S.D. Titova from 1936 (publications 1946-1965), then continued by B.C. Myasoedov (1953-1960) and T.A. Bocharova (1971-2005). According to T.A. Bocharova (2007), larvae of cat fluke were found only in ide, common dace and roach, and were not observed in the muscles of the pike, sunbleak, common bleak, bream, gudgeon, lake minnow, Prussian carp, perch and zander. We have been studying the infestation of fish since 2016, including alien species. We examined 554 fish specimens, including bream - 145 specimens (Ob River), common bleaks - 274 specimens (river Tom), sunbleak - 135 specimens (110 from a floodplain lake, 25 specimens from a continental lake, the Tom river basin). Our studies expanded the range of hosts of metacercariae to include all three alien species. Extensiveness and intensity of infestation of bream and common bleak from 2016 to 2018 was low, but in 2020 there was a sharp increase in both the extensiveness and the intensity of infection (common bleak). Infection of sunbleak from the floodplain lake is high. The infection rate in 2020 is significantly higher than in 2021 (Table). Larvae of trematodes were not found in the muscle tissue of the sunbleak caught in the mainland lake. Thus, we have identified the infestation of alien cyprinid fish species in the basin of the Middle Ob. In different years, the infestation can vary significantly, especially for short-cycle fish species. Infection rates may be local, especially in isolated water.

Table. Indicators of infestation of alien cyprinid fish species, Middle Ob basin

Species	Year	PI, %	II, ind.	IA, ind.	Infected number	Total number
Abramis brama	2016	8.69	1.50 ± 0.5 (1–2)	0.13	2	23
	2017	14.28	1	0.14	1	7
	2018	0.00	0	0.00	0	115
Alburnus alburnus	2016	2.56	1	0.03	5	195
	2017	0.00	0	0.00	0	18
	2018	2.38	1	0.02	1	42
	2020	52.63	13.10 ± 9.17 (1–95)	6.89	10	19
*Leucaspius delineates**	2020	73.33	8.27 ± 2.67 (1–61)	6.07	22	30
	2021	42.50	1.65 ± 0.19 (1–6)	0.70	34	80

Note: PI – prevalence of infection, II – intensity of infection: mean ± standard error (min–max); IA – index of abundance; * – from mainland lake.

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