Feeding habits shape infection levels by plerocercoids of the tapeworm *Triaenophorus crassus* in muscle of a sympatric pair of whitefish in an oligotrophic lake

FISHP21

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Background. Teletskoye Lake (**Fig. 1**) is inhabited by a sympatric pair of whitefish, with each member of the pair being characterized by different feeding habits. *Coregonus lavaretus pidschian* (Gmelin, 1789) is a large "benthivorous" form (**Fig. 2a**), while *C. l. pravdinellus* (Dulkeit, 1949) is a small "planktivorous" form (**Fig. 2b**).

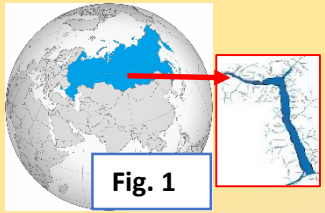


Fig. 1

Teletskoye Lake, West Siberia, Russia (51.79 N; 87.30E)

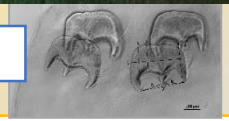
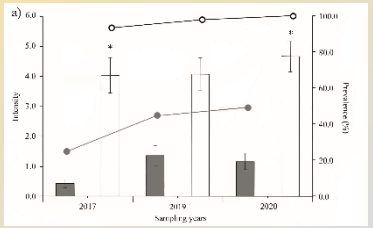


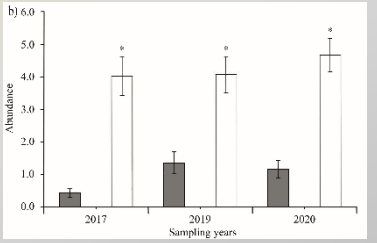
Fig. 3

The trophic diversification of whitefish into "planktivorous" and "benthivorous" forms is likely to affect the transmission of *T. crassus* via food webs (higher in "planktivorous" form than in "benthivorous" one).

According to our morphological results, the studied plerocercoids belong to the species *T. crassus.* Moreover, we provide the first data for barcode analysis based on part of the COI mitochondrial gene for this species.



- "planktivorous" form
- "benthivorous" form



For the "**benthivorous**" form the prevalence, intensity, and abundance of *T. crassus* ranged from **22.4–51.9%**, **1.9–2.8**, **0.4–1.3**, correspondingly, whereas the same indices for the "**planktivorous**" form ranged from **94.7 to 97.5%**, **4.2 – 4.8**, and **4.0 – 4.7**, correspondingly. The level of prevalence of infection and abundance of *T. crassus* in muscle was relatively stable among studied years for both forms.

Conclusion. The trophic specialization of whitefish into "planktivorous" and "benthivorous" forms affected the transmission of *Triaenophorus* parasites through food webs with different levels of infection. Based on the results regarding different infection levels of *T. crassus* in these two forms of whitefish, we can conclude that parasites can be an indicator of trophic niche specialization and reflect changes in habitat selection by fish.

Funding source: **This work was supported by the Russian Foundation for Basic Research (grant number 19-34-60028).**

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