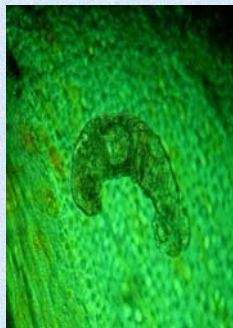
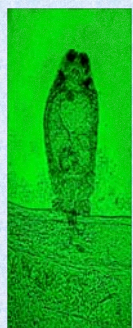


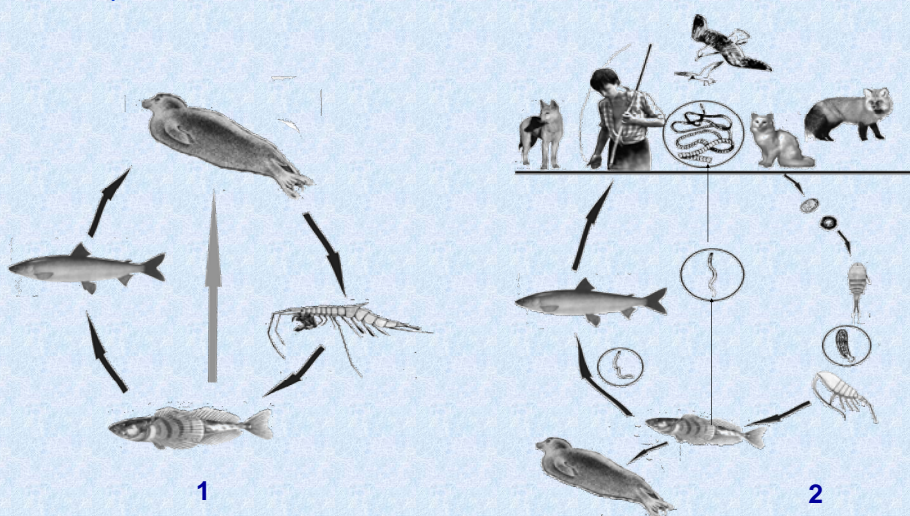
AGE OF THE LAKE BAIKAL'S PARASITE SYSTEMS RUSINEK O.

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Endemic fish parasites from the Lake Baikal



In the Lake Baikal are known 255 species and subspecies (240 are aboriginal fauna, 15 – introduced fauna) of fish parasites of 13 types: Kinetoplastida, Polymastigota, Sporozoa, Microspora, Myxozoa, Ciliophora, Cnidaria, Plathelminthes, Nemathelminthes, Acanthocephales, Annelida, Mollusca, Arthropoda and 18 classes of invertebrates: Kinetoplastidea – 16, Diplomonadea – 2, Coccidea – 5, Microsporea – 3, Myxosporea – 1, Phyllopharyngea – 2, Oligopharyngea – 28, Protozoa incertae sedis – 1, Hydrozoa – 1, Monogenea – 52, Amphilinida – 1, Cestoda – 26, Trematoda – 29, Aspidogastrea – 1, Nematoda – 13, Acanthocephala – 7, Hirudinea – 4, Bivalvia – 2, Crustacea – 15. 63 % of parasites has life cycle without intermediate hosts (Protozoa, Monogenea, Hirudinea, Crustacea). Endemic species and subspecies – 37. Fish parasites belonging to 5 faunal complexes (in Hovsgol only 3 faunal complexes): boreal-plain, boreal sub-mountain, arctic freshwater, baicalian, sino-indian. According to current hypothesis, fishes appeared in Lake Baikal at different times (Pliocene-Holocene) (Rusinek, 2003, 2005). Baikal's faunal complex of fishes is the most ancient and had been shaping itself during a long time interval of isolation of Cottoidea; at present Lake Baikal is home also to other fishes with an evolution of several millions years (perch, pike, cyprinids, and sturgeon) but they colonized the lake considerably later. Fish introduction in Lake Baikal in the Pliocene-Holocene resulted in new cenotic connections. Cottoidei are included in the life cycles of cestodes, trematodes, nematodes, acanthocephales of new faunal complexes and play the role of parathenic, intermediate and definitive hosts. The great depth of Baikal was beneficial for the emergence of parasite systems similar to those from the sea and ocean water basins, with numerous intermediate, parathenic and definitive hosts (Rusinek, 1987). In Baikal it is the parasite system of cestode *Diphyllobothrium dendriticum* (Pseudophyllidea). Forty-eight animal species form part of this parasite system (Rusinek, Fefelov, 2005). Fish-eating birds, predatory mammals, and humans are the main definitive hosts of *D. dendriticum*. The climate optimum of Holocene humidification developed main (powerful) migrations in Baikal, and there appeared numerous nesting groups of birds connected with water. Omul (2nd intermediate host of *D. dendriticum*) is also widespread in Baikal. The modern pelagic community shaped itself 11 ky ago, but it involves organisms with ancient evolution (Bezrukova et al., 1991; Granina et al., 1993; Grachev et al., 1998; Khursevich et al., 2001). Cottoidei incorporated in the life cycle of *D. dendriticum* at the climate optimum of Holocene moisture. *Phoca sinica* (nerpa) is an abortive host of the parasite because this cestode is not mature in this animal organism. *D. dendriticum* causes intoxication in humans, especially in children. This fact is suggestive of the comparatively recent inclusion of humans in the life cycle of this parasite.



Life cycles of *Contracaecum osculatum baicalensis* (1)
and *Diphyllobothrium dendriticum* (2) in the Lake Baikal.