The isoenzymatic spectrum in the liver of hare was dominated by hybrid fractions vs. the cathode fractions which prevail in *Rodentia*. We found that the mountain hare with its terrestrial life habit has a much lower quotient of anaerobiosis in the liver (tissue with anaerobic type of energy production) than wild semi-aquatic beavers.

The information obtained as the result of research into LDH isoenzymatic spectra in mammalian organs broadens the understanding of biochemical characteristics of the animals living in various environments.

IS MINK A SENTINEL SPECIES?

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In the Laboratory of Ecological Animal Physiology we use biochemical tests which provide important information on the degree of deflections from the reference index to assess the health of fur-bearing animals including minks. Monitoring of the physiological condition of animals and humans is an issue where there is influence of environmental factors, including anthropogenic impact.

The concept of "sentinel species " has been proposed for the study of the relationship between the state of the environment and human health (O'Brien et al., 1993; Basu et al., 2007; Schmidt, 2009). The term “sentinel” is derived from the French word ‘sentinelle’, which means watch tower. Species which could in one way or another warn us of coming dangers to human health are selected from the whole variety of the fauna (O'Brien et al., 1993). A typical example of animals serving as sentinel objects is the case when cats got poisoned with fish with high content of mercury caught by Japanese fishermen in the Minamata Bay, which was heavily polluted with methyl mercury. Unusual

behaviour of the cats signalled people about ecological trouble (Takeuchi et al., 1962).

It is believed that wild mammals, being most closely related to humans in their biology, are suitable objects for watching the health of the environment of humans and animals (Carpi et al., 2008; Ohno et al., 2009). The question of whether mink (*Mustela vison*) can be used as a potential sentinel species is discussed.

EVALUATION OF THE PHYSIOLOGICAL STATUS OF MAMMALS AS A CONSTITUENT PART OF ECOLOGICAL MONITORING IN THE EUROPEAN NORTH OF RUSSIA

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The physiological-biochemical parameters of mammals inhabiting Karelia, such as two beaver species, mink, reindeer and bank vole, were analysed. The physiological status of minks living in the wild was shown to have changed in connection with an increasing proportion of minks escaped from fur farms in the population, and parasitic infection was proven to have influenced bank vole blood leucocytes. It was illustrated that assessment of the physiological status of mammals plays a significant role among traditional approaches and methods for monitoring the condition of wildlife populations. Analysis of the morpho-functional activity of leucocytes was recommended for *in vivo* diagnostic investigations as a sensitive indicator of environmental impacts.