274d Mercurialism as Environment-Related Problem in Saint-Petersburg

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The purpose of the present research was studying mercury contamination in the environment of Saint-Petersburg (SPb), and the correlation of this data with the levels of mercury in the blood of pregnant women, the most vulnerable group of the population. We used a known property of mushrooms to accumulate mercury in their bodies as means of studying the impurity surrounding the environment in SPb. We also had an opportunity to study the blood of approximately 50 women from SPb in different stages of pregnancy. The levels of mercury in the mushrooms and in the blood were determined by means of a cold vapor technique. In all of the places where the data was collected, we saw mercury levels significantly higher than the maximum concentration limit. We observed that the mercury levels of the mushrooms collected from the city center was higher than the levels of those collected from the suburbs. Also, mercury was detected in both maternal and newborn blood (n=5) in pregnant women with gestation age of 5 weeks to term (n=158). Some women were examined twice within one three-month interval. The results showed that the concentration of mercury in blood of pregnant women in the first and the second trimester did not fluctuate significantly. The mean blood values of mercury concentration were 1,25±0,33 μg/l (n=47) in this period. The mercury concentration in the third trimester woman increased greatly, up to 3 – 4 μg/l. The blood mercury level in the infants was about twice as high as the corresponding maternal blood mercury level. The mercury concentration in the newborn blood was about seven times greater than the concentrations found in the maternal blood of the first trimester of pregnancy. The data shows that mushrooms are an effective indicator of ecological contamination by mercury.