

**Analysis of fluctuating asymmetry rate of hydrobionts from the Chernobyl Exclusion Zone and the Dnieper River**A. Yavnyuk<sup>a</sup>, N. Efremova<sup>a</sup>, O. Protsenko<sup>a</sup> and D. Gudkov<sup>b</sup><sup>a</sup>*National Aviation University, Kosmonavta Komarova Ave.1, UA-03058 Kiev, Ukraine;*<sup>b</sup>*Institute of Hydrobiology, Geroyev Stalingrada Ave. 12, UA-04210 Kiev, Ukraine  
digudkov@svitonline.com*

The level of morphological deviations in living organisms during ontogenesis is a sensitive indicator of natural populations' state, which allows estimating general impact of unfavorable environmental factors on biota including a man-caused impact. The main objects of studies were the bivalve mollusk zebra mussel (*Dreissena polymorpha* Pall.) from the Chernobyl NPP cooling pond and the higher aquatic plant floating pondweed (*Potamogeton natans* L.) from Glubokoye Lake, located within the most contaminated area of the Chernobyl Exclusion Zone. The following morphometric parameters of mollusk's shell were analyzed: total length, protuberance of left and right valves and also mass. The results of measurements were compared with analogous ones for mollusks from Zaporozhye NPP cooling pond and from the southern part of Kakhovka reservoir of the Dnieper River. For floating pondweed we have measured the following parameter of leaves: widths of left and right half, quantity of the major and minor veins on the different half. The results were compared with leaves of plants from conditionally "clean" Kiev and Kanev reservoirs of the Dnieper River. Obtained results testify that the highest evidence of fluctuating asymmetry of valves protuberance is observed in mollusks from Chernobyl NPP cooling pond. This value equals 0.8192. Mollusks from Zaporozhye NPP cooling pond and Kakhovka reservoir are characterized by considerably less value of this attribute evidence (0.0547 and 0.0328 correspondingly). High content of radionuclides in the main components of Chernobyl NPP cooling pond ecosystem, and also chronic impact of radiation exposure on zebra mussel population allow to assume that the radiation factor may be considered as determinative one, which affects the significance of asymmetry of mollusks' valves height. Higher level of bilateral asymmetry in zebra mussel from Zaporozhye NPP, in comparison with mollusks from relatively "clean" part of Kakhovka reservoir, also pays attention to itself. The leaves of floating pondweed from Glubokoye Lake characterized by the value of asymmetry 0.063 for widths of left and right half and 0.02 and 0.03 for major and minor veins. The analogous parameters of plant leaves from the Dnieper reservoirs were 0.045, 0.00 and 0.02 respectively. In spite of the established difference between asymmetry value of leaves from contaminated and conditionally "clean" water bodies it is supposed that floating pondweed is less sensitive object for analysis of fluctuating asymmetry value in radioactive contaminated aquatic ecosystems.