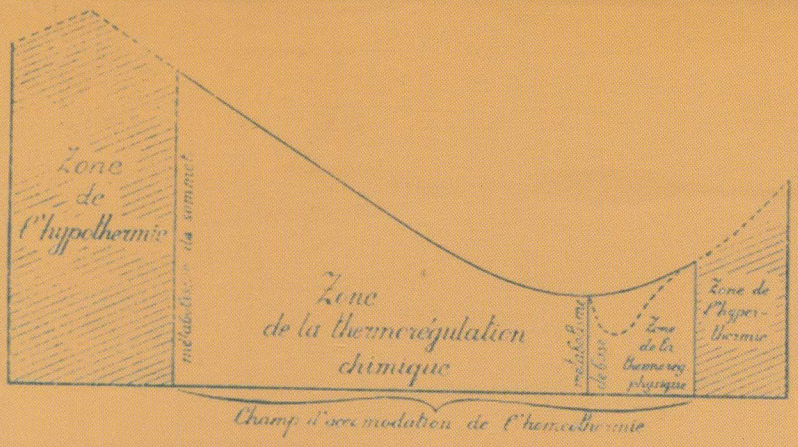

INTERNATIONAL SYMPOSIUM

ONE HUNDRED YEARS OF IVAN DJAJA's (JEAN GIAJA) BELGRADE SCHOOL OF PHYSIOLOGY

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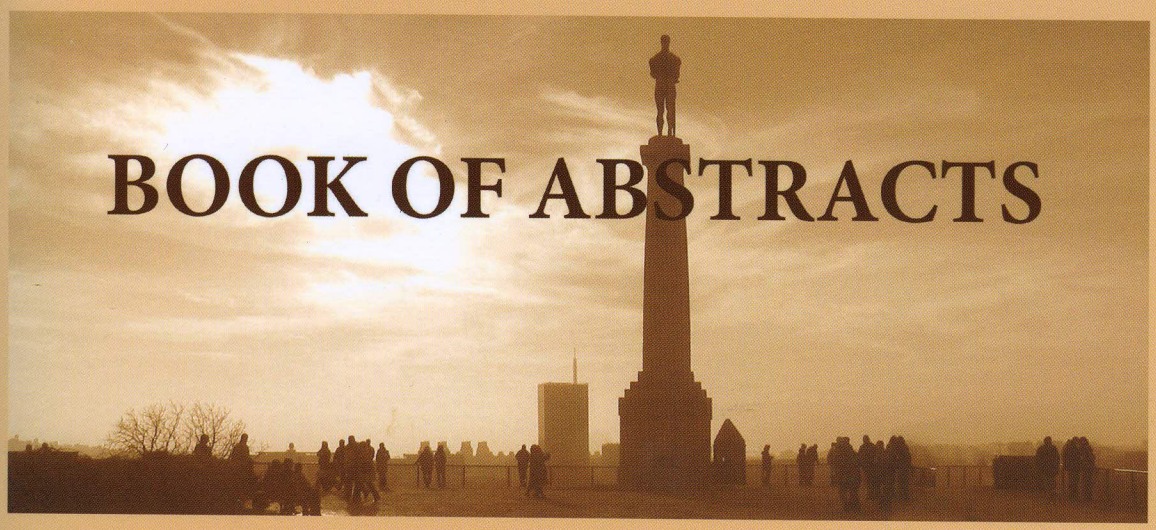

BOOK OF ABSTRACTS

ANTIOXIDANT DEFENCE ENZYME ACTIVITIES IN SOME TISSUES OF THE FRESHWATER BIVALVE *Anodonta woodiana* FROM THE SAVA RIVER

Borković Mitić S.S.[1], Pavlović S.Z.[1], Radovanović T.B.[1], Perendija B.R.[1], Despotović S.G.[1], Gavrić J.P.[1], Paunović M.[2], Pajović S.B.[3], Saičić Z.S.[1]

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In the present study, we have used the activity of antioxidant defence enzymes: superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GSH-Px), glutathione reductase (GR) and the activity of the glutathione-S-transferase (GST), an enzyme of the phase II biotransformation process to evaluate their utility as biological tools for pollution monitoring in the Sava River. We also determined total protein content, as well as the protein and SOD electrophoretic profiles in the digestive gland and the gills of the freshwater bivalve *Anodonta woodiana*. The obtained results indicate a significant influence of tissue specifity on the all investigated enzyme activities. The activities of SOD, CAT, GSH-Px and phase II biotransformation enzyme GST were significantly higher in the digestive gland in respect to the gills, whereas GR activity exhibited higher levels in the gills. This was most likely a reflection of different metabolic activities and different responses to environmental conditions of the examined tissues. Our study also suggest, that the variations of SOD expression pattern in *Anodonta woodiana* could be used as a tool for the environmental monitoring. Our work represents the first study of its kind and showed that the antioxidant defence enzymes can be considered as potential biomarkers of the freshwater bivalve *Anodonta woodiana* from the Sava River.