



BOOK OF ABSTRACTS & PROGRAMME

1st Central European Symposium for Aquatic Macroinvertebrate Research (CESAMIR) - 10-13 April 2014, Szarvas, Hungary



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JOINT SYMPOSIA

**1st Central European Symposium
for Aquatic Macroinvertebrate Research**

and

**11th Hungarian Symposium
for Aquatic Macroinvertebrate Research
10-13 April 2014, Szarvas, Hungary**

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up left: *Palingenia longicauda* (by courtesy of Arnold Móra)

up right: Maros River (by courtesy of Arnold Móra)

middle left: stream in the Mecsek Mts. (by courtesy of Zoltán Kálmán)

middle right: *Cordulegaster heros* (by courtesy of Réka Boda)

down left: *Notonecta lutea* (by courtesy of Arnold Móra)

down right: Égervölgyi pond in Mecsek Mts. (by courtesy of Réka Boda)

P2 – Thursday, 15⁴⁰

Trout farm effect on antioxidative defense in *Dinocras megacephala* (Plecoptera: Perlidae) larvae

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Trout production represents one of the major agricultural activities in the first and second order streams of Serbia. Organic compounds are drained into the environment usually without previous sedimentation and thus affect stream biota. Since biological monitoring is commonly based on aquatic macroinvertebrates, we used *Dinocras megacephala* (Klapálek, 1907) larvae as the target organism in order to estimate trout farm effects on physiological stress. Four localities were chosen at the channel of the Raska River (in the vicinity of Novi Pazar, Serbia), two upstream localities and the other two downstream from the trout farm outlet. Specimens were collected with tweezers and placed in liquid nitrogen for further analysis. Basic physical and chemical water parameters were measured directly in the field: temperature, dissolved oxygen, pH and conductivity, and in the laboratory: total phosphorus (TP), orthophosphates (OP) and ionized ammonia (NH₄⁺). Even though the temperature stayed quite constant along the water course (11.1°C to 11.2°C), oxygen concentration decreased from the reference localities (10.4 mg/l and 11 mg/l) to the downstream localities (7 mg/l and 8 mg/l). Also, the concentration of ionized ammonia was almost ten times higher at the same localities (from 0.0319 and 0.0288 mg/l to 0.3141 and 0.2423 mg/l). The activity of superoxide dismutase (SOD), catalase (CAT) and the total glutathione amount (GSH) were analyzed in order to determine the level of oxidative stress caused by the increase of organic compounds originating from the trout farm. The activity of SOD and CAT enzymes was significantly higher in the samples collected at the both downstream localities. Total glutathione amount (GSH) decreases in the specimens collected at the first downstream locality, while the level of enzyme activity at the second downstream locality coincides with the samples from both upstream localities. The results indisputably indicate that

higher concentration of organic compounds from the trout farm induce the significant increase of the oxidative stress in the examined species.

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O4 – Saturday, 10⁵⁰

Revised and annotated checklist of Hungarian aquatic Heteroptera (Nepomorpha, Gerromorpha) with notes on occurrence frequency and conservation

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In consequence of climate change the number of species, distribution of native species or frequency of their occurrences might be changed. Hence, countries might be aware the more knowledge of their fauna, and respectively the conservational status and frequency of occurrences of it. To find the answer to how shifts the distribution ranges of the species, how changes the frequency of occurrences, or how preventing the loss of biodiversity in this region, the first step is to define the “zero state”. But, across the aquatic Heteroptera as a whole, a comprehensive faunistical overview was not published yet in Hungary. These facts together create a growing need for a revised and completed Hungarian checklist with faunistical situation assessment. Thus, the main goals of recent study are to (1) complete a checklist of species so far detected, (2) briefly summarize the ancient and recent data to define the zero state as a base to evaluate long term changes in the future, (3) conservation evaluate of the species and (4) contribute the distributional map of each species.

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