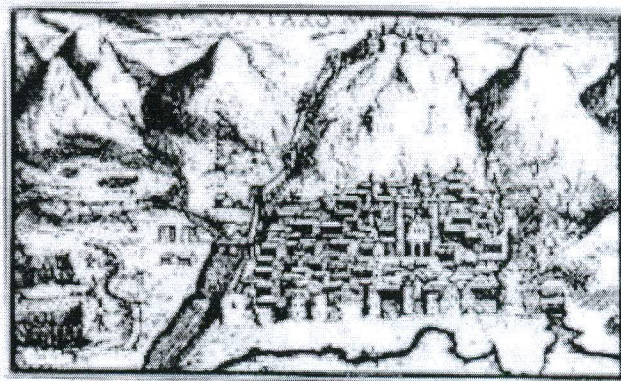


II International Symposium of Ecologists of Montenegro - The Book of Abstracts and Programme

**II INTERNATIONAL SYMPOSIUM OF ECOLOGISTS OF THE
REPUBLIC OF MONTENEGRO**

ISEM2

**THE BOOK OF ABSTRACTS
AND PROGRAMME**



Hotel Fjord, Kotor, 20-24. 09. 2006

With the method of staining by Snesev it was investigated the specific arrangement of glial cells in certain region of the brain, as the connection with the blood vessels too.

CHANGES OF THYROID GLAND UNDER THE INFLUENCE OF THE ETHANOL

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Cytologic and morphometric procedures were used to describe and to changes induced by ethanol in tissue baby rats. Baby rats were given 15% ethanol as only drinking solution before and after birthing.

Point counting was used to determine the volume density of epithelium (Vve), colloid (Vvc), interfollicular spaces (Vvi), capillary (Vvs) and index of activation of the thyroid gland (Ia, $Ia = Vve/Vvc$)

The most prominent cytological changes in the thyroid of the alcoholized baby rats were variously shaped protrusions of the apical cell surface.

Stereological analysis showed a statistically significant increase in the Vve, Vvi and significant reduction in Vve in alcoholized animals.

ALTERATIONS OF ENERGY METABOLISM AND (ANTI)OXIDANT STATUS IN RED BLOOD CELLS OF CARPS (*Cyprinus carpio* L.) EXPOSED TO ACUTE HYPOXIA

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Specimens of the carps (*Cyprinus carpio* L.) were adapted to the oxygen concentration of 6.5 mg/L water (100%) as control (C) group. The first (H1) and second (H2) experimental groups were exposed to progressive reduction of O₂ to 4.2 mg/L (55%) during 1¹⁵ hours and 2.3 mg/L (30%) during 2³⁰ hours, respectively. Acute hypoxia decreased glucose (H1) and pyruvate (H1 and H2) concentrations in the blood of carps, while lactate level was significantly increased (H2). Concentration of red blood cells (RBCs) ATP was decreased in both (H1 and H2) groups of fish. Concomitant increase of ADP concentration was observed in (H2) group of fish. The decrease of ATP/ADP ratio in (H2) group was also found. In carps of (H1) group, the activities of superoxide dismutase (SOD) and catalase (CAT) in RBCs were increased whereas glutathione-S-transferase (GST) activity in the plasma was increased in both groups of fish. Glutathione peroxidase (GSH-Px) activity and the concentration of reduced glutathione (GSH) were decreased in the same conditions. Increased concentration of lipid peroxides (LP) in the blood of (H1 and H2) groups of animals in relation to the controls was also found. *In conclusion*, acute hypoxia induced a significant alteration of antioxidant enzyme activities and lipid peroxide concentration in the blood of carps (*Cyprinus carpio* L.) under influence of progressive reduction of oxygen concentration. All specified changes are dependent from duration of hypoxic conditions. The presented results suggest that during the

evolution carps developed a well defined metabolic regulation and antioxidant defense system for the protection from acute hypoxia.

LIPID PEROXIDATION AND GLUTATHIONE CONTENT IN TISSUES OF HAKE (*Merluccius merluccius* L.) AND SEA BREAM (*Pagellus erythrinus* L.) FROM THE ADRIATIC SEA

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Fish are the most important organisms used in biomonitoring of aquatic ecosystems. Parameters of oxidative stress in fish tissues represent significant biomarkers in the assessment of the status of environment. Specimens of hake (*Merluccius merluccius* L.) and sea bream (*Pagellus erythrinus* L.) were collected at the end of May 2005 from the locality in front of sea-port Bar (South Adriatic Sea). Parameters of oxidative stress (concentration of lipid peroxidase – LP and reduced glutathione – GSH) were determined in the liver and white muscle of hake and sea bream. Physical-chemical parameters (salinity, concentration of dissolved oxygen and temperature) were determined in water of the investigated locality. Obtained results showed that the concentration of LP was higher in liver of hake and sea bream in comparison to white muscle. However, significantly higher concentration of GSH was found in white muscle of hake and sea bream in comparison to liver. These changes of oxidative stress parameters point to tissue specificity, which is the consequence of different metabolic and antioxidative activity. Inter-specific differences were also established. Higher concentrations of LP and GSH in liver of hake and in white muscle of sea bream were recorded, due to changes of physical-chemical parameters of environment. The intensity of oxidative stress in liver of hake and sea bream was higher in comparison to muscle.

INFLUENCE OF ECOLOGICAL FACTORS ON ECLOSION OF EGGS OF EUROPEAN RED MITE (*PANONYCHUS ULMI* KOCH)

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The European Red Mite (*Panonychus ulmi* Koch) is a common pest in orchards in Vojvodina. This species is well-known and very important foliar pest of apple trees. It feeds on the leaves tissues, causing a lightening in the normal green color of the foliage and reduction of photosynthetic rate. Severe infestation can cause foliage bronzing, premature leaf fall, reduced fruit quality and lower fruit yields. Due to significance of this pest in the apple orchards, the objective of our research was to determine influence of ecological factors: temperature, relative air humidity, exposition to sunlight depending on cardinal points and different apple varieties on eclosion of eggs.

Panonychus ulmi over-winters as a "winter" egg in diapause laid on the bark of the trees or smaller branches. These eggs are laid from mid August till late October. During