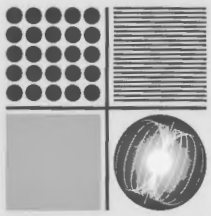

HIGHER EDUCATION CENTRE SEZANA
Laboratory for Geomagnetism and Aeronomy

International Conference on Magnetism, Geomagnetism and Biomagnetism

MGB – 2008

Abstracts booklet

7. – 8. november 2008
Sezana, Slovenia

CHANGES IN LATERAL PROTOCEREBRAL NEUROSECRETORY NEURONS OF *LYMANTRIA DISPAR* L. LARVAE AFTER THE EXPOSURE TO CONSTANT AND EXTREME LOW FREQUENCY MAGNETIC FIELD

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POSTER ABSTRACT

The neuroendocrine system of insects consists of neurosecretory neurons located in the brain and ventral nerve cord. Neurohormones are synthesized and secrete in neurosecretory neurons. Neurohormones represent the main regulators of physiological and metabolic processes including secretion of hormones that regulate molting, metamorphosis, reproduction, stress responses and homeostasis in insects. The dorsolateral neurosecretory neurons of insect protocerebrum are known to be a site of synthesis of allatostatins and large form of prothoracicotropic hormone, the regulators of metabolic and morphogenetic processes in insects.

The effects of constant magnetic (average magnet induction of 235 mT) and extreme low frequency (average magnet induction of 6 mT) magnetic field on morphometric characteristics of L2' neurosecretory neurons in 4^{th} instar gypsy moth larvae were investigated. Larvae were reared from first until third day of 4^{th} instar on artificial diet and in constant and extreme low frequency magnetic field.

The acute effect of constant magnetic field on morphometric characteristics of L2' neurosecretory neurons in gypsy moth larvae were not detected. The extreme low frequency magnetic field led to a decrease in L2' cells size. Both type of magnetic fields induced an increase in amount of neurosecretory material. After the exposure to constant magnetic field the neurosecretory material was medium size grained, while after the exposure to extreme low frequency magnetic filed the large size grained neurosecretory material was dominantly presented. In this paper the reduction in L2' neurosecretory activity was obtained. It is known that these cells synthesize neurohormones involved in morphogenesis, and their level is decreased in the middle of larval instar and also when the instar is prolonged which be one of stress response action.

Keywords: L2' neurosecretory neurons, magnetic fields, gypsy moth