

SUMMARY

Bugara A. M. Cytofluorimetric and cytomorphometric investigation of nuclear acids and proteins in terpenoid gland cells of *Pelargonium roseum* Willd // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 3-7.

Is carried out quantitative cytochemical investigation of nuclear acids and proteins in terpenoid gland cells of *Pelargonium roseum*, synthesizing and accumulating essential oil. It was shown, that differentiated gland cells contain 4C and 8C DNA in a nucleus, and high level of RNA and proteins in the nucleus and cytoplasm.

Key words: terpenoid, cell, nucleus.

Bugara A. M., Teplitskaya L. M. Electron microscopical and luminescence spectral analysis of terpenoid cell of mint // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 8-14.

Is carried out electron microscopical and cytofluorimetric investigation of gland cells species of *Mentha aquatica* and *M. piperita* differing on a content of essential oil. It was shown, that gland cells of *Mentha piperita* differ by strong development of agranular endoplasmatic reticulum and high functional activity nuclear chromatin.

Key words: terpenoid, ultrastructure, nucleus.

Verko N. P., Temuryants N. A., Chuyan E. N. Inhibition proteolytic activity blood neutrophils in action EMF EHF // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 15-19.

This work was devoted to studying of ability EMF ENF to limit proteolytic activity rat blood neutrophils during the development in the body animals of non-specific stress-reaction. Limitation of movement activity lead to high oscillations proteolytic activity. Combined action of hypokinesia and EMF EHF inhibition proteolytic activity neutrophils.

Key words: EMF EHF, neutrophils, hypokinesia, proteolytic activity.

Gavenko T. V., Yarosh A. M. Influence of town environments with different stages of urbanization on cardio-respiratory system of children // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 20-23.

It is shown that walk of children in a centre of a town makes worse the state of their cardio-vascular system as compared with its state in housing. The walk of them in a garden makes better the state of their cardio-vascular system and breathing.

Key words: town environment, cardio-respiratory system, children.

Grigoriev P.E., Martynyuk V.S., Shekhotkin A.V., Temuryants N.A. Characteristics of the Coordination of Rhythms of the Physiological Processes in Rats after Pinealectomy with Rhythms of the Geliogeophysical Parameters // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 24-29.

The analysis of integral rhythms of physiological parameters of animals with average motor activity in the control and after pinealectomy, and also geliogeophysical indexes reflecting the variations of natural electromagnetic fields was carried out. It is established, that the periods conterminous to the periods of geliogeophysical indexes or close to them are inherent in rhythms of the physiological processes. Most typical periods are 2,6-3,0^d, 5,4-8,2^d, 8,6-10,0^d, 14,0-16,8^d, 18,0-20,0^d, 26,2-28,0^d. Rhythms of animals is synchronized by the variations of the natural EMF. Synchronization is broken because of removal of pineal gland. There is balanced fine tuning in the control group for "internal clocks" under variations of natural electromagnetic fields which is broken because of pinealectomy - "internal clocks" to be fast. Partial keeping of the synchronization even after pinealectomy, is possible due to presence of the other periodic oscillators, for example, APUD-system.

Key words: natural electromagnetic fields (EMF); geliogeophysical indexes; infradian rhythms, physiological processes; pinealectomy.

Eranosyan K. V., Konoshenko S. V. The lipid peroxide oxidation in erythrocytes under initiation of oxidative processes and under pathology // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 30-34.

It has been shown that under incubation of erythrocytes in Fenton solution the more active formation of primary POL products is realized in erythrocytes membranes and secondary products of POL – in hemolysate of erythrocytes. The similar peculiarities of lipid peroxide oxidation in erythrocytes are observed in organism of patients with chronic glomerulonephrite. It has been supposed that under pathology the compensatory mechanisms act and it is directed on supporting of lipid level in erythrocytes membranes and limitation of turning of primary POL products in secondary products.

Key words: erythrocytes, lipid peroxide oxidation, Fenton solution, pathology.

Kolotilova O. I., Pavlenko V. B. Behaviour and bioelectric correlates action aminergic systems and possible effect on it of psychostimulation bemitil substance // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 35-41.

In the article are shown the surveyous information about the investigation of aminergic systems of brain an also cited some example in possibilities "points of plying" antidepressant and psychostimulation substance of bemitil.

Key words: aminergic, noradrenergic, serotonergic systems, locus coeruleus, nucleus raphe, bemitil, psychostimulation, antidepressant effect.

Korenyuk I. I., Gamma T. V. Influence of benzimidazole on mollusk's neurons // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 42-47.

The influence of benzimidazole on electrical potential of mollusks is studied with the help of intracellular projection. It has been revealed that benzimidazole has a depressive neurotropic effect, which can be seen in pre-dependent blocking of all ionic currents that are used in the process of generation in the neurons. Linear correlation of changes and velocity of increase and decrease of the first derivative of action potential from substance concentration was found out. Non-typical responses of neurons on benzimidazole application in different concentrations were described.

Key words: action potential, first derivative, IPSP, neurons, mollusks, benzimidazole.

Madyar S.-A., Berzhansky V.N., Shinkarevsky G.D., Kulichenko A.M., Pavlenko V.B., Kovalevskaya E. E. Psychophysiological effects of colored tables // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 48-54.

There was experimentally studied the influence of S.-A. Madyar color tables on human psychophysiological state. Changes of inter-hemisphere asymmetry of human brain, amplitude and EEG spectrum power, cardio-rhythm dynamics were analyzed. There was shown that effects of color table's perception depend on current psycho-functional state. Observed effects indicated that color tables are able to lead the central nervous system to the optimal functional level.

Key words: color stimulation; color tables, EEG, restless, EEG spectrum power, inter-hemisphere asymmetry.

Minko V. A., Nagaeva E. I. The infradian rhythmicity of behavior parameters rats with various type of behavior in the "an open field» test // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 55-61.

The infradian rhythmicity of behavior parameters rats with various type of behavior in "an open field» test is investigated. The received data allow considering, that the rat's behavior in "open field" cannot be described by *ugashenie*. The animal's behavior has rhythmic character and can be described by infradian rhythmicity only. The researches of physiological responses rats with individual feathers allow to concretizing these descriptions.

Key words: individual feathers, infradian rhythmicity, behavior` parameters, synchronization.

Mischenko S. V. **The membrane constant small size electrical current mechanism influence on the blood coagulation and fibrinolysis processes** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 62-66.

In experiments on rats (control and experimental groups) is shown that the constant small size electrical current (10 mkA) causes the thrombocytes aggregation, blood coagulation and fibrinolysis increasing at the anode which is located on the vessel wall (jugular vein) surface. At the cathode area such an effect was practically absent.

It is established that the blood coagulation and fibrinolysis elevating in the response by the action of constant electrical current connected with the releasing from the vessel wall the physiologically active substances influencing these processes.

Key words: constant electrical current, thrombocytes aggregation, blood coagulation, fibrinolysis, vessel wall.

Pavlenko V. B. **Comparative analysis of neuron reactions in aminergic brain systems and evoked EEG-potentials of neocortex in cat** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 67-74.

The article describes the cortex evoked EEG-potentials, reactions of brain stem aminergic neurons in cat on biologically significant irritators. There is conducted the comparative analysis of their time parameters.

Key words: evoked EEG-potentials, dopaminergic, noradrenergic, serotonergic neurons.

Ponomareva V. P., Chuyan E. N., Makhonina M. M. **Change's sensor coefficients asymmetry under influence of low intensity electromagnetic radiation of high frequency** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 75-81.

The dynamics of sensor coefficients asymmetry by normal tested people with different functional activity profiles under influence of EMR EHF is studied. It was found that the influence of EMR EHF with various localization on healthy people with different phenotypes doesn't cause the inversion of sign functions asymmetry. But EMR EHF influences on size of MPA, appending that its increasing or decreasing depends on localization of the influence.

Key words: EMR EHF, the hemisphere asymmetry, sensor asymmetry, coefficient of sensor asymmetry.

Tiunin V. L., Pavlenko V. B. **Analysis of unfavorable influence of hard computer work on functional status of man** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 82-88.

The article introduces the critical literature review of unfavorable psychophysiological effects, found during active work on personal computer.

Key words: personal computer, psychophysiological status.

Cherniy S. V., Pavlenko V. B. Anxiety, its EEG-correlates and possible mechanisms // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 89-98.

The article reviews modern literature on the basic mechanisms of anxiety, its connection with aminergic brain systems and patterns of EEG-potentials.

Key words: Anxiety, monoaminergic systems, EEG-potentials

Chuyan E. N. Changes melatonin level in rat's blood under influence of low intensity electromagnetic radiation of high frequency // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 99-107.

Changes melatonin level in serum and relative weight factors of adrenal glands and timus under influence of hypokinesia, low intensity EMR EHF and their combinations are investigated. It is shown, that influence of nine-daily restriction of mobility, experimental animals lead to decreasing melatonin level in serum, increasing weight of adrenal glands and weight decreasing timus. At action of EMR EHF on animals, which are taking place in conditions both as normal, and limited of impellent activity has exposed increasing melatonin level and registered in serum, weights and decrease of weight adrenal glands, concerning values of these parameters at animals of control group, and, especially, at rats, which are taking place in conditions of restriction mobility. It is supposition that action of EMR EHF connected with increasing melatonin level in blood.

Key words: low intensity electromagnetic radiation of high frequency, hypokinesia, melatonin, timus, adrenal glands.

Shishko E. Y., Malygina V. I. The influence of hypokinetic stress on infradian rhythmicity of sympathetic adrenal system of rats // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 108-115.

In the given work influence of stress reaction on infradian rhythmic sympathetic adrenal system of rats is investigated. At hypokinetic stress change infradian rhythmicity, which is shown in alteration of spectrum of capacity, displacement of phases, transform of amplitudes, decrease in factor of correlation between A and NA, which testifies to development desynchronize.

Key words: hypokinetic stress, infradian rhythmic, sympathetic adrenal system, desynchronizes.

Yurkova O. F., Yarosh A. M. Influence of ether oils of lavender and cytric wormwood on capacity to mental work of operators // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 116-120.

It was carried out an automatic psychophysiological estimation of lavender and cytric wormwood ether oils influence upon operators. The studies showed a perspectiveness of these oils use for mental efficiency of operators improvement.

Key words: ether oils, operators, mental efficiency

Yurkova I. N. **The express-control of membranoactivity operation of synthetic and plant biologically active substances** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 121-126.

Membranoactivity operation of different biologically active substances was investigated. This changes were monitored with a relative change in the electrical conductivity of dispersion medium after the exposure of biomass in this medium. The test-method can be used for research of new medicinal preparations.

Key words: biologically active substances, membranoactivity operation, express-screening, permeability of cell membranes, bioconductometry

Berzhanskaya L.U., Berzhansky V.N., Starchevskaya T.G., Chubov I.I. **Luminescent and population instability of photobacterium during periods of geomagnetic disturbances** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 127-130.

Experimental results of geomagnetic disturbances and induced magnetic fields effect on luminescent and morphological properties photobacterium are discussed.

Key words: magnetic storm, photobacterium, luminescent.

Syshko D.V. **Influence of vestibule irritation on indices of autmatized electrocardiography in sportsmen** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 131-136.

The changes of parameters electrocardiography after vestibule of an irritation at the sportsmen are investigated. Is revealed, that the parameters change variously depending on a type of reaction. The decrease (reduction), increase and absence of changes of duration of a heart cycle, decrease (reduction) of an interval PQ, and increase of intervals QRS and QT is marked.

Key words: electrocardiography, vestibule irritation.

Kotov S.F. **The analysis of interspecific interactions between plants in Halimionetum (pedunculatae) salicorniosum communities** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 137-142.

The vitality and growth of plants is reduced by competition. Phytocoenotypic optimum of *Halimione pedunculata* is shifted towards lower stand's humidity by interspecific competition.

Key words: competition, *Salicornia perennans*, *Suaeda prostrata*.

Ravaeva M. Yu., Korenyuk I. I. The electrophysiological parameters neurons at action of glycopeptides derivatives // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 143-149.

With the help of a technique intracellular of assignment of biopotentials and analysis of the first derivative of action potentials was investigated to the influence of glycopeptides derivative on electrical activity identified and unidentified neurons *Helix albescens* Rossm. Is established, that inhibitions action the glycopeptides derivatives are stipulated by reduction of speed entering sodium and calcium ionic currents and leaving potassium of a current, however, potassium and calcium ionic currents were more sensitive to action of the data of derivatives.

Key words: membrane potential, action potential, molluscs, neurons, glycopeptides

Martynyuk V. S., Tseisler Yu. V. Influence of some hydrophobic ligands on spectral characteristics of hemoglobin // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.17 (56). – №1. – P. 150-155.

The influence of chloroform and benzol on spectral characteristics of human hemoglobin was researched. It was revealed that influence of hydrophobic ligands results in change of polarity around gem and makes its more accessible to molecules of water.

Key words: hemoglobin, hydrophobic forces.