SUMMARY

N. A. Temuryants, E. N. Chuyan, O. B. Moskovchuk, E. J. Shishko, V. A. Minko. **The influence of EHF-waves on infradian rhythmicity of leukocytes dehydrogenasis activity in rats** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 3-11.

Infradian rhythmicity of lymphocytes and neutrophyls dehydrogenises activity intact and hypokinetic rats under the influence of EHF-waves was investigated. Modifying action of EHF-waves on hypokinetic rats was shown. It supposes that one of mechanisms anti-stress action of EHF-waves connect with their ability to synchronization of physiological processes

Key words: EHF-waves, infradian rhythmicity, dehydrogenises activity, synchronization, desynchronosis.

E. N. Chuyan, N. A. Temuriants, N. V. Chirsky, V. G. Vishnevsky, M. M. Mahonina. **Changes of cateholamine level in erhytrocytes ubder the EHF EMR influence** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 12-19.

The influence of EHF EMR upon the functional state of sympathetic-adrenal system of intact rats and rats with experimentally caused stress-response was investigated. It was proved that EHF EMR limits development of stress via increase of activity of sympathetic-adrenal system. This affect might be considered as the evidence of stress-protective of function of EHF EMF.

Key words: electromagnetic radiation of extremely higher frequency, sympathetic-adrenal system, stress-response.

T. V. Gamma, I. I. Korenyuk, M. Yu. Baevsky, A. A. Zamotailov, L. A. Kobilanskaya. **The effects of benzimidazole influence and some of its derivatives on the parameters of electrical potentials of molluscs neurons** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 20-27.

The applications effects of 2-benzyilbenzimidazole hydrohloride - pharm. medication dibazole, benzimidazole hydrohloride, 2-aminomethyl dihydrohloride and 2-cyclopropanbenzimidazole in a concentration range from 10^{-6} to 10^{-2} M on frequency and amplitude-time characteristics of neurons potentials were studied with the help of led intracellular method. It was established that all of the investigated benzimidazole derivatives cause the electro-biogenesis changes of snail's central nervous system neurons. It is revealed that action potential amplitude depends on a concentration of substances and this dependence has a linear character. On the whole, the results display a complex dynamics of benzimidazole influence and its derivatives on the neurons functional activity and allow concluding that all of the investigated combinations have a neurotropic effect So, the combinations can be used for a regulation of neurons excitability. Moreover, the results demonstrated a great value of the systematic approach in which small quantities of the preparation can be used in small volumes in order to found out a specific neuropharmacological effect within a local scope on the identified molluscs neurons. Beside, the finding indicate that the identified molluscs neurons are very convenient model for an estimation of nervous system sensitiveness to an active biological substances and for an understanding of the mechanisms of their influence.

Key words: mollusc, identified neurons, electrophysiological characteristics, benzimidazole, neurotropic effect.

V. S. Martynyuk, R. Sh. H. Abou Hadda. **The reaction of mast cells on morphine and extremely low frequency magnetic field in vitro** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 28-34.

The reaction of mast cells on influence of magnetic field 8 Hz 25 micrtesla was investigated. The non-monotonous dependence was revealed in concentration range 0-10^{-3} M/l of Ca^{2+} for mast cell reactivity on magnetic field with maximum of 0.5 *10^{-6} - 1.0 *10^{-6} M/l. The efficiency of MF influence on mast cells depends also on concentration of activator of degranulation – morphine. This dependence is not monotonous with maximum in 0.5 *10^{-6} - 1.0 *10^{-6} M/l.

Key words: mast cells, magnetic field, morphin.

P.E. Grigoriev **Mental diseases and variations of interplanetary magnetic field's sign during human embriogenesis** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 35-40.

Retrospective analysis of monthly means of index "sign of interplanetary magnetic field" for periods of antenatal and early postnatal growth for groups of mentally healthy people and people with psychic diseases was performed. Predominance of positive polarity of interplanetary field on 3 month of embryonic period for mentally diseased people was registered in the presence of low level of geomagnetic activity. Negative correlation between the monthly means of sign of interplanetary magnetic field for mentally healthy and diseased people takes place. It allows to presume, that factors connected with the polarity and dynamics of interplanetary field have an influence on forming and developing nervous system's structures.

Key words: interplanetary magnetic field, mental diseases, embriogenesis.

I. I. Korenyuk, A. E. Kizilov, D. R. Husainov. **Modifications of electrical activity of identifical neurons, which were influenced by mebicarum and naloxonum** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 41-45.

The results of mebicarum and naloxonum rescarch and their influence on identified RPa1, RPa2, RPa7 neurons of snail Helix albescenes were described in the article. It was found out that external applicateon of mebicarum in concentration 10^{-3} M causes facilitating influence, expressed in considerable increase of voltage, decrease of AP duration, and besides in reduction of voltage and duration of trace hyperpolarization. The accelaration of activation processes and inactivation of sodic, potassium and probably, other ion channels in cell are the most probable device of mebicarum dependent effects in researched nerve cells.Pecrease of AP voltage and increase of duration of activity potential was observed during application of naloxonum in concentration 10^{-4} M of neurons RPa1, RPa2. The cletinite degrees of specific RPa7 neurones replies expressed in lack of modification of AP duration and in less considerable decreas of its voltage were determined. It is possibly connected with lack of potassium current in it.

Key words: mebicarum, naloxonum, neurons, membrein, activity potential

S. I. Rubtsova. **Quality characteristic of oil-oxidazing bacteria in coastal zone Black sea** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 46-51.

The questions of a modern state of a oil-oxidasing microflora in coastal zone of the Sevastopol region are studied. Definition of oil-oxidazing microorganisms genus belonging and studied of morphological properties of obtained cultures.

Key words: oil-oxidasing microflora, oil hydrocarbons

A. A. Gidulyanov, S. V. Konoshenko. **Dependence of oxidative modification of mammalia some representatives haemoglobins from their intramolecular structure** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 52-54.

It has been determined that total volume of hydrophobic cavities and the hydrophobic level of central parts of haemoglobin's major fractions of mammalia some representatives have the species specificity and inversely connection. The dependence between oxidative modification of haemoglobins and the character of their intramolecular structure has been shown. The haemoglobins with lesser volume of hydrophobic cavities and with greater hydrophobic level of intramolecular parts have more high stability for oxidative processes.

Key words: haemoglobin, hydrophobic, oxidative modification

V. A. Nikolskaya, S. V. Konoshenko. **Influence of an muscle work on structurally functional properties of a serum albumin of the sportsmen, which one are engaged in sporting games** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 55-58.

In the article the findings of investigation of functional activity of a serum albumin of the sportsmen of acyclic kinds of sports is submitted depending on their specialization, and also change of secondary structure of protein volleybal-player at increase him liganding of loading.

Key words: serum albumin, lipids, products of peroxide oxidation of lipids, α-helical structure, muscle work

V. B. Pavlenko, I. N. Konareva. **Event-related EEG potentials as indicators of professional choice** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 59-62.

The article describes the peculiarities of event-related EEG potential in 25-35 years old adults-specialists and in 15-16 years old youngsters. It has been shown that such potentials, as the indicators of unique human neurodynamics can be regarded as well to be the indicators of inclination to certain profession group choice.

Key words: event-related EEG potentials, neurodynamics, profession.

S. V. Pogodina. **Pecularities of realizing of aerobic abilities of young swimmers in the process of their adaptation to physical load for endurance** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 63-66.

This work deals with the description of the factors that conditions, decrease of aerobic productivity of the swimmers, aged 9-12, in the process of their adaptation to physical load for endurance.

Key words: adaptation, energetical potential, aerobic probuctivity, age development pecularities.

I. B. Prosyannicova. **Influence of mildew powdery of oak on the water exchange of the seedlings Quercus petraea L. ex Liebl.(Fagaceae)** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 67-70.

It is studied the influence of powdery mildew of the oak on degree infestation, the total content of water, the intensivity of transpiration, degree of the stomata opening and the water shortage of leaves of seedlings Quercus petraea. It is shown that after warm wet winters infestation

of seedling by powdery mildew has been of the water exchange of plants under penetration of parasite.

Key words: seedlings Quercus petraea, powdery mildew of the oak, exchange of water, epiphytoty

V. S. Martynyuk, N. A. Temuryants, A. V. Yatsenko, I. A. Anisimov, N. G. Ptisyna, G. Villoresi, Yu. A. Kopytenko, E. A. Kopytenko, J. Rasson, D. Pfluger, N. Iucci. **Computer based system for generation and registration of low frequency magnetic fields in magnetobiological experiments** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 71-73.

The computer based system of generation and registration of low frequency magnetic field in magnetobiological investigations was constructed in National Taurida V.Vernadsky University. This system was used for modeling of electromagnetic background in studies of biological activity of magnetic fields with electric-transport-like complex spectra.

Key words: bioelectromagnetics, complex spectral magnetic field.

V. G. Blokhin. **Peroxide oxidation of lipids in foliades of maize on the early stages of ontogenesis under the influence of 6-BAP in extreme temperature conditions** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 74-78.

It was investigated the influence of 6-BAP on the oxidation of lipids in foliages of maize and the content of antioxidation substances during the influence of low (4°C) and high (40°C) reversible damaging temperatures on plants. After the influence of cold the quality of hydroperoxides (HP) and malone dialdegides (MDA) increases in 1,5-2 times in comparison with normal, during up decreases or remains without changes. 6-BAP decreases the quality of HP and MDA independently from temperature stress. Phytohormone increases the content of ascorbinate - on 20-23%, glutathione - on 45-132%, phenol - on 27-37% in comparison with control.

Key words: phytohormones, cytokine, hydroperoxides, malone dialdehid, corn, stress.

L. M. Teplitskaya, N. Yu. Lysyakova, E. G. Biryulova. **Peculiarities of mycotrophnost of some Orchid species in flora of Crimea** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 79-86.

In the article localization of fungus mycorrhiza-former in cells and tissues of root system of 4 Orchid species was described. Reasons of mycotrophism modification were discussed according to frequency of meeting, degree and intensity of mycotrophnost in connection with phases of ontogenesis and belonging to plant species. Biotechnological characteristics of fungus colony, morphometric indexes of fungus in vitro and in plant are represented, they can be indexes of physiological condition of fungus and its stage of development.

Key words: Orchidaceae, mycorrhiza, symbiosis, mycotrophnost, pellotones, hypha, mycelium

S. I. Chmeleva. **The effect of gibberellin on the vine steadiness to mildew affection** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 87-90.

The extent of mildew affection on some kinds of vine while the tveatment ty different gibberellin concentvations (20, 30, 40, 50 mg/l) was studied. The problem concerned with the effect of exogenous hormone on the vine steadiness to mildew affection is under consideration.

Key words: vine steadiness, gibberellin, mildew.

I.A. Stepanyuk **Detecting of atmospheric EM-fields in the sea on-water layer as the ecological factor for hydrobiontes** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. - P. 91-99.

The amplitude-modulated electromagnetic sygnals (AM EMS) generated by storms and atmospheric processes were detected in the on-water lyers. Such AM EMS can be importatnt ecological factor for various electrosensitive marine animals which migrate to depths before or during biologically dangerous atmospheric processes.

Key words: amplitude-modulated electromagnetic sygnals, biologically dangerous meteorological processes, hydrobiontes.

V. F. Shul'gin, A. N. Gusev, V. Ya. Zub, G. M. Larin. **The weak-long range exchange interaction between paramagnetic ions in monomeric binuclear complexes of the acylbishydrazones** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 100-112.

Results of the investigations of the weak-long range exchange interaction between paramagnetic ions via polymethylene chain in the monomeric binuclear complexes of copper(II) and vanadium(II) by EPR method are presented in this review. The reasons that influences on exchange intensity are analyses and probable mechanisms of this phenomena are discussed.

Key words: copper (II) complexes, vanadium (IV) complexes, acylbishydrazones, EPR, spin-spinoor exchange.

I. N. Yurkova, V. R. Estrela-Llopis **The conductometric algotest of the quality of aqueous medium** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 113-118.

The influence of different concentrations of heavy metals on a change in the biological activity of the cells of green microalgae Chlorella vulgaris LARG-3 was investigated. This change was monitored with respect to a relative change in the electrical conductivity of dispersion medium after the exposure of biomass in this medium.The investigated method is characterized by rapidity. high sensitivity can be used for the control of the pollution of aqueous media on the early stages, when the action of toxicants bears the reversible nature.

Key words: conductometry, biotest, Chlorella vulgaris LARG-3, the permeability of cell membranes

V. V. Krymova, N. A. Surova. **Use of a method invertional voltammetry for an estimation of a condition of pollution of fresh-water and sea ecological systems heavy metals** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. - P. 119-121.

Has shown an opportunity of application of a method the IVA for the analysis of heavy metals, as in fresh-water, and sea ecosystems. Laws of seasonal distribution pollutats in fresh and sea water that enables to define anthropogenous sources of receipt, and also the general ecological condition of ecosystem are revealed.

Key words: IVA (invertional voltammetry), tresh – water and sea, ecological systems, maximum permissible, pollutats.

E. D. Pershina, I. V. Aleksashkin, A. I. Strizhevskiy. **Catalytically expansion H_2O_2 in alkaline condition at presence of copper (II) ions** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 122-127.

The outcomes of definition of constants of speeds and activation energy of process of decay hydrogen peroxide catalyzed hidroxoforms of copper (II) in a limits values pH 7-12. Is established, that the velocity of decay H_2O_2 is incremented in a limits values pH 9-12, thus the molecular mechanism of decay predominates.

Key words: peroxide of hydrogen, catalysis, hydroxide of copper

A. V. Borodina. **Spirulina platensis (Nordst.) Geilter growth characteristics when substitution hydrocarbonatis to carbonates in Zarrouk medium** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 128-132.

Data on Spirulina platensis (Nordst.) Geilter growth characteristics under conditions of substitution of $NaHCO_3$ to Na_2CO_3 in comparison with standard Zarrouk medium are presented. Dynamics of organic and inorganic carbon and pH in two nutrition medium is shown.

Key words: Spirulina, Zarrouk medium, carbon

G. N. Shadrin, V. V. Crymova, V. P. Gorobey. **The influence of non-ionogenic SAS on the electric properties at the solution-air border-surface** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2003. – V.16 (55). – №1. – P. 133-134.

We Have studied the influence of non-ionogenic SAS (surface-active substances) on the value of interphasal electric potential at the solution-air border-surface. It was found out that with the increase of absolute value occurs. Obtained data accords with up-to-date theoretical concepts held in physical chemistry.

Key words: non-ionogenic SAS, interphase electrical potential.