

## SUMMARY

*E. N. Chyan, N. A. Temuryants, N. P. Verko, N. V. Chirsky.* **Modification of adaptogeneses to hypokinetic stress by EMF EHF** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 3-11.

On the model of hypokinetic stress in rats the influence of various combinations actions of EMF EHF on the state of nonspecific resistance was studied. It was estimated according to cytochemical indexes of blood leucocytes. It was shown that EMR EHF modifies adaptogeneses to limiting of mobility. This factor displays decrease of excitability CNS, reduction of uneasiness and increasing of protective potential of blood lymphocytes and neutrophils.

**Key words:** hypokinetic stress, nonspecific resistance, EMR EHF.

*E. N. Chuayn, V. P. Ponomareva.* **Dependence of efficiency EMR EHF from individual features of the examinees and localization of action** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 12-19.

Nowadays, there is no unified conception of the EHF biological effect of MM-exposure. It is known that it depends on exposure localization and human individual properties. Therefore it is necessary to study the individual people reactions on EHF exposure in different location. The obtained data shown, that the exposure localization selection may be based on sensory phenotypes. It rises the EHF therapy effectiveness.

**Key words:** EMR EHF, individual features, localization of action, sensory phenotype, interhemisphere asymmetry.

*P. E. Grigoriev, A. M. Vaiserman, A. V. Lyubarsky.* **About connection between some aspects of human psychic disadaptation and geli-geophysic factors** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 20-24.

Higher geomagnetic activity is probable on the eve of completed suicides, initial visits to specialists by patients with nervous, sexual and reproduction problems. Basing on this search, it is possible to forecast risk days to exacerbation of depression and autoagression.

**Key words:** geomagnetic activity, natural electromagnetic fields, suicide, disadaptation.

*R.Sh. H. Abu Khadda.* **Influence of weak variable magnetic field on lipid peroxidation and lipid composition in cell suspension of rat connected tissue in vitro** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 25-27.

The action of the extremely low frequency magnetic field on free radical peroxidation of lipids and phospholipids composition of suspense of mast cell and fibroblast was studied. It was found that exposure in MF 50 Hz leads to an increase in the concentration of MDA, the stimulating effect being more pronounced in the third hour of exposure. The preliminary analysis of chromatography showed absence of change of lipids composition.

**Key words:** mast cells, lipid peroxidation, magnetic fields.

*U. A. Bukov, I. A. Kovalskaya. Hypoxical training as a preventive treatment and method of physical rehabilitation // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 28-31.*

This work deals with the description of the results of the work that make it possible to recommend discrete hypoxical training regimen as an efficient means of the correction and preventive treatment.

**Key words:** hypoxical training, physical rehabilitation, preventive treatment

*L. M. Bukova, E. E. Uryupin. Morphologic-functional intercommunications informing of somatic health of students // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 32-35.*

This work deals with the description of the problem of the forming of somatic health of human. The findings showed that the rise of aerobic potential is accompanied by the increase of the number of morphologic-functional intercommunications of the parameters that were significantly reliable. That contributes to development of the most equivalent and rational responses that are directed to achieve adapting effect and providing the high level of health.

**Key words:** morphologic-functional intercommunications, somatic health, power potential

*S. V. Gribanova, V. B. Pavlenko, S. A. Makhin. The characteristic of time perception by patients with different mental disorders // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 36-40.*

The article shows on the experimental basis the difference in time production by healthy subjects and people with different mental disorders, and states the dependency between personal time unit Tau and plasticity of nervous processes.

**Key words:** personal time unit Tau, time production, plasticity of nervous processes

*S. F. Kotov, A. I. Repetskaja. The effect of ecological and coenotic factors on vitality *Salicornia europaea* L. // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 41-45.*

The effects of ecotopical (humidity and salinity) and coenotic (initial density of population) on vitality of *Salicornia europaea* have been investigated. The increasing of humidity improved the plant's vitality and the increasing of population's density aggravated the vitality of *Salicornia europaea*.

**Key words:** density, competition, humidity, salinity, *Salicornia europaea*.

*V. S. Martynyuk, D. A. Panov. Superficially active properties of natural phospholipids in various physiological media // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 46-49.*

The behavior of natural phospholipids of an egg yoke in various physiological media was investigated: distilled water, physiological solution, phosphate buffer. It was established that the most reliable method of definition critical micelle-forming concentration is optical. Distilled water and physiological solution are optimal media for study of liposome models of biological membranes.

**Key words:** liposomes, phospholipids, critical micelle-forming concentration.

*A. M. Katsev, E. P. Panova, G. N. Katseva. The application of the Black Sea' luminous bacteria for determination of acute and delayed toxicity // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 50-55.*

From series of samples, obtained from the Black sea in the summer season four strains of luminous bacteria have been isolated and identified, as *Photobacterium phosphoreum* (2 strains) and *Vibrio fischeri* (2 strains). The morphological, physiological and biochemical properties of these strains, and also kinetic properties of their luciferases are investigated. All isolates have been used for assessment of acute and chronic toxicities of five heavy metal ions. The results have shown the applicability of new strains as bioindicators and it is proposed to use them for toxicity assessment of ecological objects.

**Key words:** bacterium, toxicity, toxic metal.

*S. N. Kabuzenco, M. N. Zhyzhyna, N. N. Kuznetsova. Variation of Biological Productivity and Content of Some Anaboletes in the Shoots of Maize as the Reaction on Salinization and Growth Regulators // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 56-60.*

The possibility of removal of negative influence of salinity stress on maize with the help of growth regulators (6 – BAP, ivin) was studied. Wetting of seeds in solution and of growth regulators and in 0,1 n solution NaCl increases tolerance of shoots to salinity stress that in revealed in improvement of biological and photosynthetic productivity, considerable increase of content of protein and cellulose in the leaves.

**Key words:** maize, salinity stress, growth regulators, biological and photosynthetic productivity, tolerance

*N. V. Pospelova, N. T. Berberova, M. V. Nekhoroshev. Method of ecological estimation of mussel culture // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 61-64.*

On the base of biological active substances and metal flow investigation complex method of estimation mussel culture was developed. The techniques for determination of vitamins A and E, carotenoids, steroids (in one sample) and trace elements (Cd, Zn, Cu, Pb) concentration in suspended matter (mussel feeding base), mussel *Mytilus galloprovincialis* different organs and its biodeposits were selected and improved. Also electrochemical method of determination of antioxidants in sea organism lipids was proposed.

**Key words:** D.E.: HPLC, AAS,  $\alpha$  – tocopherol, retinol, carotenoids, steroids, trace elements, mussel *Mytilus galloprovincialis*, antioxidants.

*S. Yu. Rybalko, A. M. Katsev, A. A. Gorlov. Researches of electrical durability of membranes erythrocytes of the man at operation of the electromagnetic factors of not thermal intensity // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 65-67.*

In clause the results of researches of electrical properties of membranes erythrocytes of the man are described at operation of a variable magnetic field and electromagnetic radiation of the highest frequency.

**Key words:** erythrocyte, electrical test of a membrane, electromagnetic radiation EHF, low frequency magnetic field.

*A. A. Stryukov. Corynosoma pseudohamanni Zdzitowiecki, 1984 (Acanthocephala, Polymorphidae) – a parasite of the Mirounga leonina (L.) from Pacific part of the Antarctic // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 68-72.*

Specimens examined of *Corynosoma pseudohamanni* from *Mirounga leonina* from the Pacific sector of Antarctic are distinct from the described specimens from the Atlantic sector of Antarctic in their body shape, body size, the size and shape of some organs and armature of proboscis [1]. So we describe the studied material to clarify their taxonomical status.

**Key words:** Acanthocephala, Pinnipedia, Antarctic

*I. A. Stepanyuk, V. M. Muraveiko. EM-field of Earth-ionosphere resonator as the synchronizer of internal biorhythmicity in hydrobionts // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 73-76.*

Statistical analysis of basic impulse activity in neurons, connected with Lorentini's ampules of *Raja radiata* indicates the coincidence of basic modes with first modes of energy specter of Earth-ionosphere resonance EM field. This fact evidence on important role of EM field in synchronization of internal biorhythms of hydrobiontes.

**Key words:** impulse neuronal activity, biorhythms, electromagnetic fields, synchronization.

*I. A. Stepanyuk, O. M. Gorokhova, A. L. Zayachkovsky. Influence of low frequency magnetic fields on autooscillatory processes in electrochemical system metal-water // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 77-80.*

Steady autooscillatory processes in electrochemical systems metal-water and influence of low frequency magnetic fields on these oscillation were investigated. It was shown that magnetic field influence can initiate or inhibit the oscillatory modes.

**Key words:** electrochemical processes, autooscillations, low frequency magnetic fields.

*E. D. Vyatkina, E. D. Pershina. Influence of dispersy rate of bentonite on kinetic of hydrogen peroxide destruction in water media // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 81-85.*

In paper the kinetics of decay hydrogen peroxide in aqueous mediums with bentonite surveyed. The modification of values pH of a medium, separation homogen catalysts and heterogen catalysts component of process is established. The deduction about the composite mechanism of catalytic decay hydrogen peroxide in explored systems was made. And homogen catalysts stage will be limited by an exit of ions  $Fe^{3+}$  from structure montmorillonite clay, and at a stage of complete losses of weak coupled ions of iron character of catalytic influence may be change reaction at all.

**Key words:** bentonite, kinetics of decay, hydrogen peroxide, montmorillonite clay: ions of iron, catalytic activity, homogeneous catalysis, contact catalysis

*M. Y. Baevsky, V. V. Tscycalov, P. Y. Grachev.* **Condensation o-phenyldians with carbonic acid in presens of boric acid** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 86-88.

Is Studied a reaction 1,2-phenyldians with phenoxyacetic acid in presence of boric acids in o-xylene. Established, that by condensing agent is metaboric acid. Shown, that application metaboric acid hastens a reaction and allows to be accorded 2-phenoxyethylbenzimidazole with more high going output.

**Key words:** benzimidazole, boric acid, metaboric acid, condensation.

*E. A. Gunner.* **Interaction of  $Pb(NO_3)_2$  with  $NH_3$  in water solution** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 89-92.

The interaction in the system of  $Pb(NO_3)_2 - NH_3 - H_2O$  was studied using rest concentrations of  $NH_3$  and  $Pb_{2+}$  method and sedimentation analysis. Areas of formation of  $(Pb(OH)(NO_3))$ ,  $Pb_5(OH)_7(NO_3)_3$ ,  $Pb_2(OH)_3(NO_3)$ ,  $Pb_5(OH)_9(NO_3)$  were evaluated. It was revealed that  $NH_3$  not precipitate  $Pb(OH)_2$  from solution of  $Pb(NO_3)_2$ .

**Key words:** hydroxonitrates.

*V. A. Kropotov.* **Approximation of potentiometric titration curves by logarithmic functios: processing of titration of dibasic acids** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 93-102.

The logarithmic function approximation of titration curves of dibasic acid is described. The possibility of employing this approach for precise evaluation of equivalence points is shown. The relative error in end titration points depends on the leap magnitude and is within the 0,1 – 5 % limits.

**Key words:** potentiometric titration. equivalence points.

*K. D. Pershina, I. V. Aleksashkin, S. V. Kostyk.* **Influence of component composition on catalytic and oxidation – redaction processes of solutions hydrogen of peroxide** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 103-106.

In clause the contribution of influence pH on the forms of manganese and iron in aqueous mediums is considered, on the basis of that the realization of different catalytic process of disintegration peroxide of hydrogen, and as a consequence, realization of varying mechanisms of oxidizing destruction of organic compounds is proved.

**Key words:** peroxide of hydrogen, catalysis, transition metals

*K. V. Rabotyagov, V. M. Dubovichenko, Yu. A. Maletin.* **Co-ordination compounds of some 3-d metals chlorides with N',N'-dimethylhydrazides 2,4-dichlorophenoxyacetic acid** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 107-111.

The co-ordination compounds of 2,4-dichlorophenoxyacetic acid N',N'-dimethylhydrazides with manganese(II), cobalt(II), nickel(II) and zinc chlorides  $[CoL_2(H_2O)_2][CoCl_4]$ ,  $[MnL_2(H_2O)_2]Cl_2$ ,  $[NiLCl_2(H_2O)_2]$ ,  $[ZnL(H_2O)_2][ZnCl_4]$  are synthesised. The substances was investigated by methods of thermogravimetry, electronic and infra-red spectroscopy.

**Key words:** co-ordination compounds, hydrazides, dimethylhydrazine

*A. I. Svezhentsov, I. E. Ametov.* **Ftaloilglycinats of Copper(II) and Cobalt(II) as perspective additives an the microelements in fodder of agricultural birds** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 112-114.

Ftaloilglycinate Copper(II) and ftaloilglycinate Cobalt(II) of microquantities were added in the ration duck-broilers. Checking for reactions on the different nursing was realized on following factors: increase of alive mass and safety live-stocks. Results of conducting experiment have shown that using an ftaloilaminoacetate copper and cobalt as additives in fodder economic reasonable.

**Key words:** ftaloilglycinates, microelements.

*N. I. Aristova, T. A. Zhilyakova, E. A. Slastia, E. P. Panova, G. I. Katseva.* **Controle of citric acid content in musts, vines and non-alchole drinks using HPLC** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 115-117.

The HPLC-based methods of determination of citric acid in musts, vines and non-alchole drinks was elaborated. The high accuracy and sensitivity of this methods were shown.

**Key words:** citric acid, HPLC.

*E. I. Ovsyany, O. G. Ignatyeva, A. S. Romanov, E. G. Kirichenko.* **Dependence of trace metals sorption by the bottom sediments from physico-chemical properties of sediments (Sevastopol Bay, Black Sea)** // Uchenye zapiski Tavricheskogo Natsionalnogo Universiteta im. V. I. Vernadskogo. Series «Biology, chemistry». – 2002. – V.15 (54). – №1. – P. 118-120.

The trace metals concentrations (zinc and copper) were determined in sediments of the main harbor of Sevastopol, the Sevastopol Bay. Sediments were sampled at 33 stations, covering all square of the Sevastopol Bay. The degree of sediments contamination varied considerably, depending on sources location and physico-chemical properties of the sediments.

**Key words:** sediments, pollution, trace metals, bay.