

350025

JPRS 68179

8 November 1976

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS
BIOMEDICAL AND BEHAVIORAL SCIENCES

No. 56

Reproduced From
Best Available Copy



U. S. JOINT PUBLICATIONS RESEARCH SERVICE

REPRODUCED BY
**NATIONAL TECHNICAL
INFORMATION SERVICE**
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

20000315 093

U S S R

EAST
EUROPE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22151. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

BIBLIOGRAPHIC DATA SHEET		1. Report No. JPRS 68179	2.	3. Recipient's Accession No.
4. Title and Subtitle USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS - BIOMEDICAL AND BEHAVIORAL SCIENCES, No. 56			5. Report Date 8 November 1976	6.
7. Author(s)			8. Performing Organization Rept. No.	
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No.	
			11. Contract/Grant No.	
12. Sponsoring Organization Name and Address As above			13. Type of Report & Period Covered	
			14.	
15. Supplementary Notes				
16. Abstracts The report contains abstracts on aerospace medicine, agrotechnology, bionics and bioacoustics, biochemistry, biophysics, environmental and ecological problems, food technology, microbiology, epidemiology and immunology, marine biology, military medicine, physiology, public health, toxicology, radiobiology veterinary medicine, behavioral science, human engineering, psychology, psychiatry and related fields.				
17. Key Words and Document Analysis. 17a. Descriptors				
USSR		Medicine		
Eastern Europe		Microbiology		
Aerospace Medicine		Physiology		
Agrotechnology		Psychology/Psychiatry		
Biology		Public Health		
Botany		Radio Biology		
Epidemiology/Immunology		Toxicology		
Human Engineering		Veterinary Medicine		
Marine Biology				
17b. Identifiers/Open-Ended Terms				
17c. COSATI Field/Group 2, 5E, 5J, 6, 8A				
18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22151			19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 96
			20. Security Class (This Page) UNCLASSIFIED	22. Price \$ 5.00

8 November 1976

USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS

BIOMEDICAL AND BEHAVIORAL SCIENCES

No. 56

This serial publication contains abstracts of articles from USSR and Eastern Europe scientific and technical journals on the specific subjects reflected in the table of contents.

Photoduplications of foreign-language sources may be obtained from the Photoduplication Service, Library of Congress, Washington, D. C. 20540. Requests should provide adequate identification both as to the source and the individual article(s) desired.

CONTENTS	PAGE
BIOMEDICAL SCIENCES	
Aerospace Medicine.....	1
Agrotechnology.....	4
Biochemistry.....	23
Biophysics.....	28
Entomology.....	29
Epidemiology.....	30
Food Supply.....	38
Hydrobiology.....	39
Immunology.....	43
Industrial Toxicology.....	46
Marine Mammals.....	51
Microbiology.....	53
Pharmacology.....	62
Physiology.....	64
Public Health.....	68
Radiobiology.....	72
Therapy.....	73
Veterinary Medicine.....	76
Publications.....	77
BEHAVIORAL SCIENCES	
Physiological Psychology.....	81
Psychiatry.....	82
Publications.....	85

BIOMEDICAL SCIENCES
Aerospace Medicine

USSR

APENCHENKO, YU.

PHYSICIANS AND SPACE

Moscow PRAVDA in Russian 4 Aug 76 p 6

[Text] Space medicine has overcome several serious obstacles in the duel fought for many years with weightlessness. The prologue to the fight was unusual. The question as to whether man would be able to endure a more or less prolonged near-earth orbital flight without damage to his health had to be answered before the beginning of the experiment. Then the problem of adaptation arose. It turned out that the habit of "weight loss" does not come right away. As the length of flight increased, it turned out that the return from the ocean of weightlessness to the earth shore occurs not so painlessly and requires training.

Although in time the sharpness of collision was softened, it is hardly justified to maintain that all the difficulties are behind.

Observing and guarding the cosmonauts' health, scientists more and more widely utilize the opportunities of enriching their knowledge of the human organism in general and of differently evaluating seemingly sufficiently studied phenomena.

1/5

USSR

APENCHENKO, YU., PRAVDA 4 Aug 76 p 6

"Space medicine is a new branch. In its formation it constantly turned to the formed, traditional sections of knowledge and borrowed the experience of physiology, hygiene, aviation medicine and psychology. The time has come to return the debt," this is how Doctor of Medical Sciences I. D. Pestov evaluates the situation.

The new is discovered in the old. Physiologists have been studying blood circulation for hundreds of years. Weightlessness changes the approach to the problem. Blood also "loses weight" and begins to circulate differently than on earth. But how? For example, it was noted that the volume of the cosmonauts' legs is reduced during flight. Blood rises to the head. What happens with the excess fluid? One of the answers is that the excess is discarded and lost and the organism rids itself of the unnecessary load. But not endlessly! The possible losses have a limit. We again go back to the question: Where does the liquid disappear? How is blood redistributed?

"This is a very important question," says Candidate of Medical Sciences V. A. Degtyarev. "Presumably, blood is transferred to the lungs, then to the liver, spleen and the gastrointestinal tract. Presumably, because the organism is capable of unexpectedly demonstrating hidden possibilities. For example, during a prolonged spaceflight veins become the reservoir for the blood that rises to the head."

2/5

USSR

APENCHENKO, YU., PRAVDA 4 Aug 76 p 6

All this can seem too special a subject intended only for scientific dissertations. Ultimately, however, it is a matter of man's abilities to adapt himself to unusual conditions and of the reserves of the strength and flexibility of our organism.

A prolonged bed rest serves as a similarity, although not complete, to weightlessness on earth. The thread of comparison usually stretches upwards, to the orbit. This can be understood. At first weightlessness was "mastered" on ground models and now this suggests how to eliminate the consequences of forced immobility on earth. A trainer reminiscent of the "running space path" was tested in the clinic of the Central Institute of Traumatology and Orthopedics. It is possible to "run" on it without getting out of bed. Equipment helping to bring back stability to the vertical pose is being tested in the Institute of Surgery imeni Vishnevskiy. The cosmonaut's preventive suit begins its everyday service in this way.

Individual examples only explain the essence of the matter. The problem of hypodynamia is much more extensive. Low mobility becomes an intolerably high cost for technical progress which has relieved millions of people of physical work and, finally, simply from the need to walk a lot. Space medicine,

3/5

USSR

APENCHENKO, YU., PRAVDA 4 Aug 76 p 6

searching for means against weightlessness and thoroughly investigating the behavior of the body devoid of a natural load, is capable of giving valid recommendations for the prevention of low mobility.

The most interesting and fascinating experiments in medicine are often masked under the brief and dull name of test. For example, the investigation of respiration. What is being investigated? Inhalation-exhalation? Physicians "look over" about one and half dozen accurate readings. Pulmonary ventilation (how much air passes through the lungs per minute) characterizes the level of the organism's energy expenditures. The vital capacity of the lungs (amount of air that a person is capable of inhaling) shows their functional reserves. At the same time, it is important to recall that in weightlessness the lungs can be a potential blood depot. The rate of inhalation-exhalation is connected with the activity of the cardiac system and muscles, etc.

Not the volume of information and its manysidedness are the most surprising. It is surprising that the object of investigation, i.e., the cosmonaut, rushes around the earth at a great speed. The equipment of an orbital station working for medicine is the fruit of the most modern engineering. From the

4/5

USSR

APENCHENKO, YU., PRAVDA 4 Aug 76 p 6

first steps of their science, space physicians go hand in hand with designers, physicists and specialists in electronics and communication. A remote observation of a patient and an exclusive orientation toward indirect methods of investigation that do not injure the organism are the contribution from orbit to the ancient science of therapy.

For a long time cardiologists from various countries have dreamt of the possibility of rapidly transmitting information on a patient's condition over long distances. This dream is not only realizable, but has been realized. For example, the electrocardiograms of cosmonauts are regularly transmitted to earth. This time they were transmitted when Salyut 5 flew over the Atlantic. The signal from the orbital station was received by the scientific ship "Kosmonavt Yuriy Gagarin," retransmitted through the Molniya communication satellite and received in the flight control center in the Crimea. The electrocardiograms were in 12 high-quality leads.

"What did they show?"

"Everything is normal. Volynov and Zholobov feel fine."

5/5

USSR

UDC 633.1:631.5.57

SAVCHENKO, N. I., BYCHKOVA, T. F., and DEMINA, V. I., All-Union Scientific Research Institute of Sugar Beets, Kiev.

CRUDE PROTEIN CONTENT IN VEGETATIVE ORGANS OF WINTER SOFT WHEAT PLANTS WITH CYTOPLASMIC MALE STERILITY

Kiev CYTOLOGIYA I GENETIKA in Russian Vol 10 No 4 Jul/Aug 76 signed to press 14 Nov 75 pp 317-320

(Text-English language abstract supplied by authors) Studies of biochemical processes in the vegetative organs of winter soft wheat plants with cytoplasmic male sterility showed that male sterile analogues of the varieties Bezostaja I, Kavkaz and Mironovskaja Yubilenjnaja developed on the cytoplasm of T. timopheevi Zhuk. Male sterile mutants induced by physical mutagenes as well as natural forms with CMS and GMS contain less crude protein in their ears, leaves, leaf sheaths and stems at the heading stage as compared to the fertile forms. Table 1; References 14: 11 Russian, 3 Western.

1/1

USSR

UDC 575.1

SIVOLAP, YU. M., and KHOROSHEVSKAYA, L. P., All-Union Selection-Genetics Institute, Odessa

EFFECT OF INTRODUCTION OF RYE GENOME FRACTIONS INTO BARLEY PLANTS

Kiev CYTOLOGIYA I GENETIKA in Russian Vol 10 No 4 Jul/Aug 76 signed to press 24 Nov 75 pp 321-325

(Text-English language abstract supplied by authors) The article deals with the effect of introduction of rye DNA fractions differing by functions in the cell genetic system into barley plants. With this purpose the rye DNA was fractionated on HAP into fast and middle-reassociated fractions and that of unique sequences. Preparatively obtained in the necessary amounts the DNA fractions were then introduced into barley seeds at the milky-ripe stage. It was found that they influence the parameters line not equally. In particular, the regulatory DNA fractions have a noticeable effect on the barley cold-resistance property. Figures 3; Tables 2; References 11: 5 Russian, 6 Western.

1/1

USSR

UDC 575.24:633.11

SICHKAR, V. I., SHKVARNIKOV, P. K., and MAR'YUSHKIN, V. F., Kirovograd Oblast State Agricultural Experimental Station. Institute of Molecular Biology and Genetics, Academy of Sciences Ukr SSR, Kiev

EFFICIENCY OF SOME PHYSICAL AND CHEMICAL MUTAGENS IN THE INDUCTION OF VISIBLE MUTATIONS IN NEW SORTS OF WINTER WHEAT

Moscow GENETIKA in Russian Vol 12 No 8 Aug 76 signed to press 10 Nov 75 pp 5-13

(Text-English language abstract supplied by authors) The frequency of visible mutations in winter wheat varieties Poleskaya 70, Caucasus and Iljuichevka was studied. Gamma-rays were not inferior to such highly active chemical mutagens as N-nitroso-N-methylurea and ethylene imine with respect to both the frequency and the spectrum of induced visible mutations. The highest mutability was exhibited by the variety Caucasus. A number of promising mutants were obtained in the course of these studies that are valuable as the initial material for subsequent wheat breeding. Figures 2; Tables 2; References 36: 26 Russian, 10 Western.

1/1

USSR

[Unsigned]

"RHIZOTORFIN," A NEW PLANT-GROWTH STIMULATOR

Leningrad LENINGRADSKAYA PRAVDA in Russian 15 Aug 76 p 4

[Translation] Accelerating the transformation of atmospheric nitrogen into nitrogenous nutrients which are readily assimilable by plants is possible through use of a new bacterial preparation developed by the All-Union Scientific-Research Institute of Agricultural Microbiology.

The new preparation is called "rhizotorfin," since it is in the form of a loose, peat-like mass "populated" by useful microorganisms. It is extremely effective for the bacterization of the seeds of leguminous plants, so that it raises their yield and improves the quality of the crop. It is estimated that the new preparation will secure about a million-ton increase in the country's protein output per year.

1/1

USSR

UDC 631.527-5

ZELENSKIY, M. A., Ukrainian Agricultural Academy, Kiev

DIVERGENCE OF NEW SELF-POLLINATED LINES OF CORN (MAIZE) IN THEIR MAIN CHARACTERS; LEVEL OF COMBINATORY CAPACITY OF THESE LINES

Moscow DOKLADY AN SSSR Vol 229 No 5, 1976 signed to press 16 Feb 76 pp 1234-1236

[Abstract] It is well known that the productivity of first-generation hybrids depends directly on the combinatory capacity (both general and specific) of the parents. Unfortunately, no theory of heterosis has so far embraced the genetic content of combinatory capacity, even though there is an acute need at the present time for a scientific theory which will isolate linear and other parental material having high combinatory capacity and assuring cross-bred vigor in descendants. Over a period of five years the author and his colleagues bred new self-pollinated lines of corn with contrast levels of analogous characters, using the inbreeding method. The hybrids were subjected to inbreeding; an accumulative sample for divergence in analogous characters was collected. As early as the third or fourth generation of the products of self-pollination, it was possible to isolate and bring to the homozygous state

1/2

USSR

ZELENSKIY, M. A., DOKLADY AN SSSR Vol 229 No 5, 1976 pp 1234-1236

sister lines (from the same initial material) possessing directly opposed levels of exhibition of analogous characters. Tabular data on initial strains used, and physical divergence of the hybrids, as well as their yields, accompany the paper. Tables 2; references 4: 2 Russian, 2 Western.

2/2

USSR

UDC 633.11

REMESLO, V. N., academician, MOROZ, I. V., candidate of biological sciences and
REMESLO, V. V., Mironovskiy Scientific-Research Institute of Selection and
Wheat Seed Cultivation; KUPERMAN, F. M., doctor of biological sciences and
ANAN'YEVA, L. V., Moscow State University

MORPHOPHYSIOLOGICAL ANALYSIS OF POTENTIAL WHEAT YIELD DURING STRAIN TESTING

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 7 (238) July 76
pp 21-27

[Abstract] Current practice in predicting the productivity of new wheat strains suffers from a serious weakness in that it is based largely on the data of phenological and visual observations of resistance to unfavorable ecological conditions, disease and pests. This method requires very long periods of research (to compensate for unevenness of weather) before any given strain can be submitted to the State Commission on Strain Testing; and in any case, the evaluation of promising strains is based on statistical abstractions which do not accurately reflect potential productivity under superior or ideal conditions. The Mironovskiy Institute, collaborating with Moscow State University, has therefore taken up morphophysiological analysis of the basic elements of potential productivity and their realization at various stages of organogenesis, this being used in conjunction with the conventional method. During 1974
1/2

USSR

REMESLO, V. N., MOROZ, I. V., REMESLO, V. V., KUPERMAN, F. M., and ANAN'YEVA, L. V., VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 7, July 76 pp 21-27

and 1975, ten promising strains of winter wheat were tested on this basis, and several of these, both in the USSR and abroad, have already shown a yield greater than the 100 centner per hectare return which was aimed at. Tables for various strains, showing development of significant organs affecting yield (sprouts, ears, etc.) in time, accompany the paper. It is believed that allowance for the potential, in addition to the proven, performance of new strains will substantially raise the effectiveness of planning in this area of agriculture. Figures 3; tables 3; references 7 Russian.

2/2

USSR

UDC 331.876.4

[Unsigned]

STIMULATION OF PRODUCTION OF CORN AND IMPROVEMENT IN ITS QUALITY

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 7(238) July 76 p 4

[Abstract] The All-Union Order of the Red Banner of Labor Scientific-Research Institute of Corn has assumed the following obligations for 1976: 1) to realize general extension and intensification of both basic and applied research in corn (maize) cultivation in the steppe zone of the Ukraine, with the aim of increasing output and yield; 2) to introduce 32 scientific-research developments expected to secure an annual economic benefit of 52 million rubles; 3) to pass on to the USSR Ministry of Agriculture for testing 7 corn hybrids yielding up to 70 centners of grain and 400-500 centners of green mass per hectare, 2 of which have increased content of grain lysine; 4) to provide the seeds of parent forms of zoned corn hybrids in the amount of 9,500 centners (first generation), and the seeds of promising hybrids for state and production strain testing in the amount of 1,700 centners (second generation); 5) through intensification of mechanization, irrigation and the use of pesticides, to

1/2

USSR

[Unsigned], VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 7, July 76 p 4

arrive at yields of 45-60 centners of grain per hectare and 70-80 centners per hectare on irrigated land; and 8) to intensify the work of experiment stations of the Institute in order to realize the following annual increases in output: grain, 35,900 tons; milk, 7,700 tons; and meat, 1,700 tons.

2/2

[Unsigned]

SCIENCE IN THE STRUGGLE FOR RISE IN PRODUCTION OF SUGAR BEET AND OTHER CROPS

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 7(238) July 76 pp 1-3

[Abstract] The All-Union Order of Lenin Scientific-Research Institute of the Sugar Beet has undertaken a number of obligations to be fulfilled during 1976 and subsequently, of which the following are noteworthy:

1) To intensify and improve research in sugar beet production through better coordination of local research facilities and the introduction of three new high-yield varieties and certain hybrids; also, to intensify selection work; 2) to conduct research on the effects of nutrition, soil moisture and solar illumination; to continue studies of mechanization aimed at realizing a labor input of not more than 10 man-hours per centner of beet seed sown; 3) to realize most effective selection of high-yield cultivation zones, with goal of a 400-500-centner per hectare return in Moldavia, the Northern Caucasus and the Central Black Earth Region of the RSFSR; 4) to stimulate mechanization with the aim of realizing a labor input of not more than 180-210 man-hours per hectare and a yield of not less than 500 centners per hectare in the Ukraine, and a yield of not less than 350 centners per hectare in the RSFSR; 5) to organize production tests of four promising varieties of winter wheat, two of 1/2

USSR

[Unsigned], VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 7, July 76 pp 1-3

rye, four of oats, two of peas, and one each of spring wheat, millet and sainfoin; 6) through assistance in the introduction of advanced agricultural technology, to realize, in the testing district of Zhashkovskiy Rayon, Cherkasskaya Oblast, yields of 36 centners per hectare of grains, 42 of winter wheat and 500 of sugar beet, the latter representing 70 centners of sugar and 85 of fodder, in this way supporting the production of 150 centners of meat and 450 of milk for every 100 hectares of tilled land; and, finally, 7) to secure a land-productivity factor of 500 centners of sugar beet per hectare for the Ukraine.

2/2

USSR

UDC 621.375.826 + 63

BONDARENKO, N. F., doctor of technical sciences, the Agrophysical Institute

PROSPECTS FOR THE USE OF LASERS IN AGRICULTURE

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 7(238) Jul 76 pp 138-143

[Abstract] At the present time, conventional techniques in agricultural engineering are in serious need of improvement or supplementation in many areas, notably genetics, crop planning by area, prevention of disease and the care and treatment of farm animals. Fortunately, the correction of many of these weaknesses appears to be possible with the use of laser radiation.

"Genetic engineering" is a powerful adjunct of agriculture, still only in its initial stage. Its methods, however (combinations with whole cells, cell nuclei, chromosomes, chromosome portions, genes and gene portions), offer the creation of organisms with preassigned properties; and the Institute of Plant Physiology imeni Timiryazev (Academy of Sciences USSR) and the Institute of Botany imeni Kholodnyy (Academy of Sciences Ukrainian SSR) have actually produced a series of new plant forms. Work is being done on introducing the nitrogen-fixation gene into bacteria, where it is lacking, in order to produce

1/3

USSR

BONDARENKO, N. F., VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 7(238) Jul 76 pp 138-143

bacterial nitrogen fixators, which, ultimately, would serve as models for new plant fixators of atmospheric nitrogen. All this research, however, has been based on x-radiation, gamma radiation and physicochemical action, and it is certain that the use of lasers will be far more effective in this area. In particular, focusing of laser beams with quartz-optical microscopes will make possible various micromanipulations upon cellular structures, such as the transplantation of foreign genetic material, the removal of living cell membranes, excision of nuclear elements from the cell, and so on. Joint research by the Agrophysical Institute and the Leningrad Optical-Mechanical Association indicates the probable effectiveness of the use of laser microbeams in fragmenting portions of cell nuclei and in "notching" cell membranes. The Kishinev Agricultural Institute for Improvement of Seed Corn reports that helium-neon and nitrogen lasers produce a narrower range of mutations when applied to corn pollen than do gamma-radiators and chemicals. Still other research indicates increased plant growth and development resulting from laser action.

The already familiar possibilities of lasers in human medicine, which are bound to increase, are duplicated in the field of animal husbandry. Long-distance probing of various atmospheric parameters is already being successfully practiced. Lasers are being developed to probe agricultural crops in space, to determine yield and the degree of disease or parasitism, to measure,

2/3

USSR

BONDARENKO, N. F., VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 7(238) Jul 76 pp 138-143

from a distance, the amount of nutrients in the soil and plant life, as well as content of carbon dioxide and water vapor overlying the vegetative cover. Research is being conducted on the use of laser scanning to prevent harmful results from severe meteorological conditions. Lasers are already being used in construction and surveying work (leveling, tunnel construction, etc.).

All this, and a number of other forms of research on the use of lasers in agriculture, are under the general direction and coordination of the Scientific-Methodological Council, under the All-Union Academy of Agricultural Sciences, created in 1975; this new body will deal with basic and applied research during the period 1976-1980, and will also conduct educational and informational services to advance the use of lasers in agriculture. It is emphasized that the use of lasers in agriculture, while highly promising, must be undertaken only with extreme care, and only in cases where existing techniques and equipment are definitely ineffective; this is mandatory not only because of the great expense and very short supply of laser equipment, but also because of its lack of universality in application. Some technical details of particular laser instruments are given; also the training specialties of some schools interested in the subject.

3/3

USSR

UDC 613.413.5:631.445.4:633.18

NIKOLAYEVA, S. A. and MAYNASHEVA, G. M., Department of General Soil Science, Moscow State University

REDOX CONDITIONS IN CHERNOZEM SOILS USED TO GROW RICE

Moscow BIOLOGICHESKIYE NAUKI in Russian No 8, 1976 signed to press 26 Dec 75 pp 122-125

[Abstract] Flooding clay loam Southern chernozem soils used to grow rice had a marked effect on redox conditions. During the first 3 days after the water was turned on, the redox potential gradually decreased because of the presence of oxygen-acceptor compounds. Exhaustion of the supply of readily-oxidizable compounds (on day 10) stimulated the reduction processes which prevailed until the end of the growing season. This significantly affected the chemical, physicochemical, and biochemical processes, causing the transformation of poorly soluble iron, aluminum, and manganese compounds into more mobile and reactive bivalent forms. The change in redox conditions resulted in disruption of the systems developed in the soils, development of eluvial processes not characteristic of chernozems, and degradation of the soils. Figure 1; table 1; references 14 (Russian).

1/1

USSR

UDC 631.527:633+321++633.11

KRAVCHENKO, M. L., Ternopol' State Experiment Station

FORMATION OF NULLISOMICS AND THEIR USE IN BREEDING SOFT SPRING WHEAT

Moscow BIOLOGICHESKIYE NAUKI in Russian No 8, 1976 signed to press 25 Nov 75
pp 113-117

[Abstract] Aneuploids were produced by raising wheat hybrids obtained by crossing soft winter varieties with spring ones (winter Virgilio X spring Bazhe, spring Bazhe X winter Virgilio, with winter Virgilio and spring Bazhe serving as controls). Subsequent crossing of a nullisomic ($2n = 40$) with an euploid spring wheat variety containing the normal number of chromosomes Bazhe ($2n = 42$) yielded short-stem and highly productive recombinants not found when the ordinary varieties were crossed. The new Rovenskaya spring wheat variety was approved by the state strain-testing station in 1970. It is now planted on irrigated fields of Kazakhstan and Turkmenistan and the results to date are good. Tables 6; references 4: 3 Russian, 1 Western.

1/1

USSR

UDC 633.11:581.1

IVANOV, A. F. and BELOUSOV, A. M., Department of Plant Physiology, Volgograd Agricultural Institute

CORRELATIONS AND DEPENDENCES OF PHOTOSYNTHESIS AND PRODUCTIVITY OF INTENSIVE TYPES OF WINTER WHEAT UNDER IRRIGATED CONDITIONS

Moscow BIOLOGICHESKIYE NAUKI in Russian No 8, 1976 signed to press 26 Nov 75
pp 96-99

[Abstract] Four-year field experiments with 4 winter wheat varieties--the standard Mironovskaya 808 and Bezostoy I and the intensive Mironovskaya yubiléynaya and Kavkaz--showed a direct correlation between dry mass yields and photosynthetic potentials (correlation factor $r = 0.085 \pm 0.15$). The greater yields of the new and intensive varieties is ascribed to their larger leaves. These highly productive intensive varieties produced crops that utilized about 4% of the physiological radiation reaching them. Correlation analysis of the dependence of grain yield on efficiency of solar energy revealed a direct relationship with a high correlation factor (0.829 ± 0.16). Regression equations derived from the experimental results can be used to forecast the total biomass and productivity of grain in intensive winter wheat varieties grown under irrigated conditions in the southeastern European USSR. Table 1; references 13: 11 Russian, 2 Western.

1/1

USSR

UDC 581.162.;:581.45

ZAYTSEVA, L. G. and LEKOMITSEVA, S. N., Department of Lower Plants, Moscow State University

UREDOSPORE GERMINATION AND GERM TUBE PENETRATION OF PUCCINIA GRAMINIS F. SP. TRITICI IN SEEDLING LEAVES OF RESISTANT AND SUSCEPTIBLE PLANTS

Moscow BIOLOGICHESKIYE NAUKI in Russian No 8, 1976 signed to press 25 Jun 75 pp 73-79

[Abstract] Study of the behavior of races 17 and 40 of *Puccinia graminis* f. sp. tritici and 2 biotopes of the latter on the surface of 4 strains of Marquis wheat identical in morphological and differing only in the resistance gene showed that the development of each biotype of the causative agent of stem rust in the stage of germination, formation of appressoria, and penetration was identical except in the case of biotypes 1 and 2, an indication of some specificity in the behavior of the fungus. When wheat varieties differing in resistance were kept for 3 hours in a moist chamber, a slight relationship was observed between the resistance or susceptibility of a variety and the development of the fungus in the stage of appressorium formation and penetration. Figures 5; tables 4; references 42: 5 Russian, 37 Western.

1/1

USSR

UDC 631:633.16

MITYUKLYAYEV, A. P., Scientific Research Institute of Agriculture of North Transural

THE INFLUENCE OF NORMS FOR SEEDING, SOWING, AND MINERAL FERTILIZERS ON THE YIELD OF SPRING BARLEY IN THE NORTHERN FOREST STEPPE OF TYUMEN OBLAST

Novosibirsk SIBIRSKIY VESTNIK SEL'SKOKHZYAYSTVENNOY NAUKI in Russian No 3 (33) May/June 76 pp 85-87

[Abstract] During 1973-1975 the Scientific Research Institute for Agriculture of the North Transurals studied the relationship between the density of barley sowing and applications of mineral fertilizers for various planting times. The soil was dark grey forest heavy clay loam soil, slightly acid with average availability of P_2O_5 and K_2O . The barley was Moskovskiy-121. The time of sowing had a great influence on yields. In 1973 the 9 May planting had lower yields than the 19 May for all six fertilizer variants (No fertilizer, $N_{30}P_{30}K_{20}$, $N_{60}P_{60}K_{40}$, $N_{90}P_{90}K_{60}$, $N_{120}P_{120}K_{80}$, $N_{150}P_{150}K_{100}$). 1973 was dry in the first half of the summer and had excess moisture in the second half, in

1/2

USSR

MITYUKLYAYEV, A. P., SIBIRSKIY VESTNIK SEL'SKOKHYAYSTVENNOY NAUKI No 3 (33)
May/Jun 76 pp 85-87

1974 and 1975, which were wet in the first half and dry in the second, higher yields were obtained in the early planting (28.9 centners per hectare versus 24.9 for 1974 and 22.4 versus 17.2 centners per hectare in 1975). This is due to moisture supply conditions during stem extension. There were four different densities of planting in the experiment (4, 5, 6, and 7 million seeds per hectare). Five million seeds per hectare was the optimal amount. Mathematical processing of the data indicated that the N60P60K40 was the most effective dose and higher doses were irrational. Fertilizer efficiency was similar for all seeding norms and was more effective during those planting dates where moisture was more readily available. Tables 1; references 0.

2/2

USSR

UDC 631.175

KOZLENKO, V. N., Uzhursk Experimental Station for Fodder Cultivation

DATES FOR SOWING AND USING LEGUME-OAT MIXTURES

Novosibirsk SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 3 (33)
May/Jun 76 pp 51-55

[Abstract] The forest steppes in the Prichulye area in Krasnoyarsk Kray experience shortages of fodder beginning in the second half of July. These shortages can be compensated for by planting annual crops. The Uzhurskaya experimental station carried out experimental plantings of legume-oat and vetch-oat mixtures at 15 day intervals from the end of April to 25 July. The soil characteristics, crop varieties and fertilizer applications are given. The results for the two mixtures were quite similar. The later the planting the shorter was the period between planting and cutting maturity. The size of the harvest depended more on meteorological conditions than on time of planting. Changes in legume-oat mixture yields were negligible for plantings up to 10 June: green fodder ranged from 250 to 271 centners per hectare, dry matter from 42.8 to 45.4 and digestible protein 4.22 to 4.68 centners per hectare. Later plantings showed sharp reductions. The yields of the two

USSR

KOZLENKO, V. N., SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 3 (33)
May/Jun 76 pp 51-55

mixtures planted on 10 May and 25 May are compared for different harvest procedures: (1) early cutting using aftergrowth and (2) cutting during tasseling stage using aftergrowth. The second method produced higher figures for green fodder, dry matter, raw protein for both mixtures of the 10 May planting; while for the 25 May planting method (1) produced higher figures: an 18% increase for green fodder, 14 for dry matter and almost 30% for raw protein. Detailed data for the two plantings and two methods are given. The prime costs did not change significantly using the two methods on the 10 May planting, but there was a 16% average decline using the early cutting method on the 25 May planting. The yields of legume-oat mixture aftergrowth increased 3-4% when the main stand is harvested two weeks prior to tasseling. In order to ensure continuous green fodder supply and grass meal production there should be three plantings of legume-oat mixtures from 10 May to 10 June, the May plantings should be harvested early, the aftergrowth utilized and late July plantings can be used for fall and winter pasturing. Tables 5.

2/2

USSR

UDC 636.785:658.5

SABLIN, G. F., First Secretary of the Ordynskiy Rayon Committee, Communist Party of the Soviet Union Novosibirsk Oblast

ON THE PLANNING OF FODDER PRODUCTION

Novosibirsk SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 3 (33)
May/Jun 76 pp 47-51

[Abstract] During the Ninth Five Year Plan farms in the rayon increased hay production 50% and improved yield and cattle delivery weight. Back at the end of the Eighth Five Year Plan the rayon developed a three year plan for the fodder base. This involved fundamental improvements in meadows and pastures and seed raising. The area devoted to perennial grasses increased from 10,000 hectares to 37,000 hectares. Steep slopes and ravines were planted and long term watered pastures were developed. The second stage was the development of the 1970-1975 plan for the development of the fodder base. This included the production of grass meal, the use of watered pasture, improvements in perennial grasses and fodder quality. There was a rayon-wide contest for the development of organizational technical measures. This was won by the Kirzinskiy Sovkhoz. Its achievements are presented in detail. The sovkhov's measures were based on the development of long term watered pastures, calculations for 1/2

USSR

SABLIN, G. F., SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 3 (33) May/
Jun 76 pp 47-51

acquiring equipment and seeds, and pasture care provisions were made. In 1969 the sovkhos had 800 hectares devoted to perennial grasses and by 1975 the figure was 2,200. A table gives figures for the production of hay, haylage, silage, grass meal, and total fodder units. There were great increases for all items except silage. Central to the effort in the rayon in general were improved planning and development of precise agronomic techniques for each crop and type of fodder. Shortcomings in planning caused many difficulties in fodder production. Production-financial plans do not give full attention to problems of fodder production intensification. Many farms make such plans but do not fulfill them. Using a standard methodology a fodder production plan for 1976-1980 has been developed for each farm. The plans are coordinated with general farm plans and make provisions for improving pastures and meadows, installing equipment, and introducing more efficient crops, the latter with the help of the Siberian Scientific Research Institute for fodder. Figures for the new plan are given: haylage production will increase from 35,000 to 63,000 tons, production of grass meal will triple, fodder units per standard head of livestock will increase from 24 centners to 32 centners. Tables 1; references 0.

2/2

USSR

UDC 636.086.1:681.142

GRUZDEV, L. G., candidate of biological sciences, Central Institute for Agro-chemical Service of Agriculture

USE OF ELECTRONIC COMPUTERS IN THE STUDY AND FORECASTING OF THE QUALITY OF CEREAL GRAIN CROP YIELD

Novosibirsk SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 3 (33) May/June 76 pp 30-41

[Abstract] Agronomic and agrochemical techniques can influence the process of protein formation in grain. A study of protein formation patterns permits the construction of models and the making of forecasts of grain quality. Previous literature is briefly surveyed. Variations in the amino acid content of various grain crops are given. Because changes in the fractional composition of protein caused by fertilizer applications and other agronomic methods cause changes in amino acid content the detailed study of fractional composition permits the development of a model to calculate amino acid composition without special and expensive analysis. An algorithm to calculate the amino acid content of protein is presented. Four flow charts and four factor analysis matrices outline the steps and procedures. In addition to analyzing grain amino acid content the program also can also compare the essential amino acid content of grain protein with that of eggs (using the FAO standards). A

1/2

USSR

GRUZDEV, L. G., SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 3 (33)
May/Jun 76 pp 30-41

formula for an index of the biological value of grain protein is given. Computers can thus calculate and forecast amino acid content of protein, essential amino acid content, and biological value, using simpler analytic indicators (total nitrogen, protein, protein fraction). Tables 6; figures 6; references 30: 29 Russian, 1 Western.

2/2

USSR

UDC 631.175:633.11

CHEPIKOV, A. K., candidate of agricultural sciences, and ROMANOVSKIY, G. YE.,
Siberian Affiliate of the All-Union Institute of Plant Raising

DEPENDENCE OF SPRING WHEAT HARVEST ON TIME OF PLANTING AND METEOROLOGICAL
FACTORS IN THE GROWTH PERIOD

Novosibirsk SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 3
(33) May/Jun 76 pp 24-30

[Abstract] Most varieties of grain in West Siberia are from outside the region and even from outside the nation. Their growth periods do not correspond to the soil and climatic conditions of this zone. This leads to low quality grain. For 10 years the Siberian branch of the All-Union Institute of Plant Raising has studied the influence of various factors on the planting and harvest quality of spring wheat. Tests were carried out on leached chernozem drained forest steppe soils in the Ob' river area, with variety Lyutestsens 758. The grain was planted when the soil had reached 5 degrees C at 10 cm. There were three plantings: early (5-9 May); middle (15-17 May); and late (25-27 May). A table gives precipitation during the growth period for the 10 years. There were three dry years and seven years with sufficient precipitation. On the

1/2

USSR

CHEPIKOV, A. K., ROMANOVSKIY, G. YE., SIBIRSKIY VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI No 3 (33) May/Jun 76 pp 24-30

average the early plantings had the best yields for dry and normal years, 7.7% higher than middle and 30.2% higher than late sowings. The early planting also performed better with respect to field sprouting, plant survival, and grain weight. A table gives the correlation between yields for the various plantings and precipitation during various periods of growth. A correlation is found between yields of early plantings and precipitation during the second ten day periods of June and July. The energy of germination was also higher for the early planting. When used as seed grain, early plantings also produced higher yields. It is advisable to plant earlier than has been the case. Tables 7; references 4: Russian.

2/2

USSR

UDC 631.31:631.42

ZAVALISHIN, F. S., doctor of technical sciences, and RUBTSOV, S. V., candidate of technical sciences: (Presented by Academician Rabochev, I. S.)

NEW METHOD FOR DEEP TILLAGE OF THE SOIL

Moscow DOKLADY VASKHNIL in Russian No 4, Apr 76 pp 39-42

[Abstract] A new soil ripper is described and its operation compared with a standard mounted plow. Ordinary plowing methods are energy intensive, the plow shares and bottoms wear out quickly and the plowing process leads to the formation of "plow hardpan" which is often impervious to water. The new device, called a rotary soil ripper (rotornyy rykhlitel' pochvy) is described and illustrated. It superficially resembles a side delivery rake with respect to the rotation of sets of heavy tines mounted on a reel. There are differences, however. The main axis of the reel is at a 90 degree angle to direction of the tractor movement. It is driven by a power takeoff working through a differential located at the center of the reel. The reel of tines rotates and the tines are driven into the soil a depth of 25 centimeters; as the row of tines in the reel pushes towards the rear it separates the soil and pushes it rearward, breaking it up. The tines then rotate rearward and upward. The tractor

1/2

USSR

ZAVALISHIN, F. S., RUBTSOV, S. V., DOKLADY VASKHNIL No 4, Apr 76 pp 39-42

and implement are driven forward by the rotation of the reel. The device could be self propelled if an engine were mounted on it. In 1970 a comparative test was made using a T-40A tractor pulling the RRP and a DT-75 tractor pulling a PN-4-35 mounted plow. The results are given in a table. The weight of the new ripper is less, it requires less power (about one fourth) speed of operation is higher, productivity (in square meters per second) is 3.92 compared to 2.52 for standard plow, relative energy outlays (large Joules per square meter) are 2.05 for the ripper compared to 5.33 for the standard plow. Figures 4; tables 2; references 2 (Russian).

2/2

USSR

UDC 633.11:538.12

KHLEBNYY, V. S., candidate of agricultural sciences, and KLEYMENOV, E. V., candidate of physical mathematical sciences (Presented by Academician Budzko, I. A.)

CHANGES IN THE QUALITY OF SPRING WHEAT SEEDS SUBJECTED TO A STEADY MAGNETIC FIELD

Moscow DOKLADY VASKHNIL No 4, Apr 76 pp 37-39

[Abstract] Spring wheat seeds are subjected to a magnetic field, the parameters of which are given. Regionalized Artemovka and Moskovskaya-35 varieties are used. The seeds were placed in a magnetic field of 0.5 to 1.5 Tesla and kept there for periods ranging from 300 to 900 seconds. The seeds were then stored in sacks in a galvanized steel container. One part of the control (I) was stored with the processed seeds, and another (II) was stored separately. After being stored for various periods, the seeds were planted. Processed seeds which had been stored for less than six months had better yields than unprocessed seeds. For periods exceeding six months the processed seeds showed a reduction in germination. Seeds in the Control I behaved similarly

1/2

USSR

KHLEBNYY, V. S., KLEYMENOV, E. V., DOKLADY VASKHNIL No 4, Apr 76 pp 37-39

to the processed seeds, indicating an inductive influence of processed seeds. A table gives comparisons for variants subjected to differing field strength and time of exposure, and for Controls I and II. The two factors which influenced harvest were ear productivity and stand density. A table gives production figures for the two varieties after various lengths of post processing storage. Tables 2; references 1 (Russian).

2/2

USSR

UDC 633"324":632.111.53

KOLBASINA, E. I., candidate of biological sciences (Presented by Academician Pukhal'sk, A. V.)

DETERMINING FROST RESISTANCE OF WINTER CROPS BY A NEW LABORATORY METHOD

Moscow DOKLADY VASKHNIL in Russian No 4, Apr 76 pp 5-6

[Abstract] A laboratory method for determining the frost resistance of germinated seeds which is more productive and less laborious than existing methods is presented. The experiments were carried out at the Moscow division of VIR (All-Union Institute of Plant Raising) during 1973-1975, using 1,063 samples of winter crops (826 wheat, 120 rye, 117 vetch). Seeds were soaked in water for 20 hours and left to germinate at room temperature. They were then placed in plastic containers filled with perlitic sand. There were 25 seeds per container and 4 containers for each variety. The seeds were then placed in a cooling chamber for 7 days and temperatures were reduced 2-3 degrees daily until -18 degrees C was reached. They were kept at this temperature for 24

1/2

USSR

KOLBANINA, E. I., DOKLADY VASKHNIL No 4, Apr 76 pp 5-6

hours. After removal the plants were left for 10 days and then a count was made of the surviving plants. A table gives a comparison of survival figures for winter wheat from the DDR and the BRD (East and West Germany), comparing the Yur'ev method with the new method. Another table gives a comparison of the two methods in testing Finnish varieties of winter rye. The frost resistance of varieties obtained by the laboratory method correspond to field studies carried out at the laboratory of grain and bean crops of the Moscow division of VIR. The new method can be recommended in testing frost resistance. Tables 3; references 6 (Russian).

2/2

USSR

UDC 633.11(470.31)

REMESLO, V. N., academician, KUPERMAN, F. M., doctor of biological sciences, and MURASHEV, V. V.

CHARACTERISTICS OF THE FORMATION OF PRODUCTIVITY OF MIRONOVSKAYA 808 WINTER WHEAT IN THE CENTRAL REGIONS OF THE NONCHERNOZEM ZONE

Moscow DOKLADY VASKHNIL in Russian No 4, Apr 76 pp 2-4

[Abstract] The Mironovskaya 808 variety of winter wheat has been regionalized for the nonchernozem zone. A morphological analysis is made using this variety and the Ul'yanovka and Bezostaya-1 varieties to compare the productivity in the nonchernozem regions with conditions at the Mironovskiy Institute of Selection and Seed Breeding. All varieties were planted for several years on land sections of the Laboratory for the Biology of Plant Development of Moscow State University. There were three plantings: early (15 Aug), optimal (25 Aug), and late (5 Sep). Phenological observations and morphophysiological analyses were made. A four period 12 stage classification of winter wheat

1/2

USSR

REMESLO, V. N., KUPERMAN, F. M., MURASHEV, V. V., DOKLADY VASKHNIL No 4, Apr 76 pp 2-4

growth is used. A table gives the dynamics of the formation and reduction of shoots for the various plantings of the three varieties. The differing characteristics of the formations of buds and shoots of the varieties are discussed. In all cases the number of shoots increases during stages I through VI, and then decreases. During the second period (stages III-IV) the formation of the ear takes place. A set of diagrams shows the dynamics of the formations of flowers and ears in the various stages of growth. The reduction in the number of flowers in the later stages is compared. The Bezostaya-1 was the most promising for the stages VII-VIII, however there was large reduction of flowers in later stages compared to the Mironovskaya 808, possibly due to the less favorable distribution of precipitation and temperature compared to the Kuban'. The grain content in the ear was highest for the Mironovskaya 808. For tall planting times the Ul'yanovka was considerable less productive. The weight of 1,000 grains of Ul'yanovka was 30 grams, for Bezostaya-1 the figure was 44 grams and for Mironovskaya 808 it was 46 grams. In the selection of winter wheat promising varieties should be subjected to a detailed morphological analysis in addition to field testing. Tables 1; figures 1; references 9 (Russian).

2/2

USSR

UDC 613.6:669.162.264.2)-07:612.396.11

MITSENKO, M. D., Biochemical Investigations Group of the Scientific Research Institute of Resuscitation and Expertise in Work Ability of Invalids, Dnepropetrovsk

SPECIFIC FEATURES OF CHANGES IN HUMORAL INDICES OF MUCOPOLYSACCHARIDE METABOLISM AND HEMOCOAGULATION IN WORKERS IN HOT WORKSHOPS AND PRACTICAL SIGNIFICANCE OF DETECTION OF THESE CHANGES

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 14 Apr 75 pp 91-96

(Text-English language abstract supplied by author) On the basis of clinico-instrumental and biochemical examination of 89 metallurgists of prepension age (42-49 years old) with a long service record it is shown that longterm work in hot shops cause substantial shifts in the studied indices, the degree and tendency of which depend upon the health of the examined patients. Practically healthy workers show accumulation of hexoses, seromucoids, ceruloplasmin in the blood and decrease of fibrinolytic

1/2

USSR

MITSENKO, M. D., TERAPEVTICHESKIY ARKHIV Vol 48 No 6 1976 pp 91-96

activity. The appearance of the initial signs of atherosclerosis and especially of hypertensive disease was accompanied by a rise in the level of the sialic acids, drop in the content of heparin, increase in the general coagulation, procoagulation activity and inhibition of the fibrinolytic activity of the blood. Table 1; References 19: 18 Russian, 1 Czech.

2/2

USSR

UDC 613.281:639.245

POPOV, N. I., MROCHKOV, K. A., and KAVERZNEVA, YE. D., All-Union Scientific Research Institute of Marine Fisheries and Oceanography; Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, Moscow

STUDY OF THE COMPOSITION OF ORCA FLESH AS A SOURCE OF FIRST CLASS PROTEIN

Moscow VOPROSY PITANIYA in Russian No 4 Jul/Aug 76 signed to press 1 Mar 76 pp 78-82

(Abstract) The authors determined that orca (*Orsinus Orca*), average length 7.1 m, average mass 5.4 t, yields 35.7% meat. Analysis of the meat proteins revealed that they consisted of water-salt and alkali-soluble fractions, and an insignificant amount of connective tissue proteins; the proteins contain all aminoacids including the essential aminoacids; lysine and histidine content is 1.5 that of beef protein. The nitrogen materials in orca meat are not inferior in food value to those of beef and can be successfully utilized to produce food protein concentrates and hydrolysates. Tables 4; References 12: 9 Russian, 3 Western.

1/1

USSR

UDC 616.39-02:(613.24:613.281)-07:616-008.921.7-074

VYSOTSKIY, V. G., SOKOLOV, V. N., and YATSYSHINA, T. A., Institute of Nutrition, Academy of Medical Sciences USSR, Moscow

THE CONCEPT OF LABILE PROTEIN AND ADAPTATION OF NITROGEN METABOLISM IN PROTEIN DEFICIENCY IN MAN

Moscow VOPROSY PITANIYA in Russian No 4 Jul/Aug 76 signed to press 4 Dec 75 pp 29-36

(Text-English language abstract supplied by authors) Investigations involving 30 healthy males, who for 45 days consumed standard semisynthetic diets differing in the casein content (from 0 to 15.1 g of nitrogen per day) and serving as a sole source of protein, furnished data on nitrogen excretion kinetics and nitrogen balance. Mathematical analysis of these data allowed finding the existence of general regularity in nitrogen excretion and deduction of an integral equation of its losses at different levels of nitrogen consumption. Pertinent calculations have ascertained that by labile protein one should understand not the specific proportion of the total protein in the organism, but the actual rate of its metabolism,

1/2

USSR

VYSOTSKIY, V. G., SOKOLOV, V. N., and YATSYSHINA, T. A., VOPROSY PITANIYA in Russian No 4 Jul/Aug 76 pp 29-36

manifesting itself in the routine lag-phase during adaptation of the nitrogen metabolism to a new level of protein allowances in the body. The data thus made available permitted, at the same time, proposing a criterion for estimating the optimal requirements of man in proteins. Figures 4; References 37: 5 Russian, 32 Western.

2/2

USSR

UDC 613.24:613.28+612.398.192:612-395

GNATYUK, V. N., Kiev Scientific Research Institute of Nutritional Hygiene

COMPARATIVE BIOLOGICAL VALUE OF LOW-PROTEIN RATIONS SUPPLEMENTED WITH INDIVIDUAL AMINOACIDS

Moscow VOPROSY PITANIYA in Russian No 4 Jul/Aug 76 signed to press 18 Feb 76 pp 48-53

(Abstract) The positive role of individual aminoacids to supplement adequate or low protein intake has not received much study. In this connection the USSR has been increasing, yearly, its production of aminoacids. The UkrSSR has set up an economic method to produce glutamic acid, lysine and other aminoacids by hydrolysis of keratin-containing wastes from the meat industry; lysine is produced microbiologically (*Micrococcus brevivacterium-22*) at the Kiev Plant for Bacterial Fertilizers. The author has examined the improvement of low-protein foods by enrichment with L-cystine, L-glutamic acid, and L-lysine, prepared by these methods, and with chemically produced DL-methionine. White rats (85-100 g) were used. Value of the low protein

1/2

USSR

GNATYUK, V. N., VOPROSY PITANIYA in Russian No 4 Jul/Aug 76 pp 48-53

ration was distinctly increased by addition of these aminoacids singly, or all together. The enrichment helped to mitigate destruction of bone marrow cells and to stabilize immunobiological reactivity of the animal body. Figures 4; Tables 3; References 45: 31 Russian, 14 Western.

2/2

USSR

UDC 577.150.6 + 576.851.51

MARSHAVINA, Z. V., and GAZARYAN, V. A., Institute of Microbiology, Academy of Sciences Armenian SSR

RESPIRATORY ENZYME ACTIVITY AND LYSINE BIOSYNTHESIS BY CORYNEBACTERIUM GLUTAMICUM

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 6, 1976 signed to press 20 Jan 76 pp 102-103

[Abstract] The intensive process of respiration and increased activity of the Krebs cycle enzymes can be used as indicators of the physiological activity of a culture. Accordingly, the authors tried to determine the interconnection of respiratory functions and synthetic processes, in auxotrophic mutants of *Corynebacterium glutamicum*, strains 95, 8 and 28. Cultures of these strains were grown on a molasses-corn extract medium, in intensive aeration at 30° for 72 hr. The method was based on measurement of the amount of O₂ absorbed by intact cells, as determined manometrically; also, on determination of dehydrogenase activity. It was found that the absorption of oxygen by the culture cells producing lysine does not remain constant, but is associated with the growth processes, increase and decrease in respiratory capability being strictly regular in all three strains. It is concluded that intensive

1/2

USSR

MARSHAVINA, Z. V., and GAZARYAN, V. A., BIOLOGICHESKIY ZHURNAL ARMENII No 6, 1976 pp 102-103

oxidation processes in auxotrophic mutant-producers of lysine are in direct proportion to enzymatic and biosynthetic activity.

2/2

USSR

UDC 613.26.8

BEDULEVICH, T. S., and DAVYDOVA, V. L., Department of Nutrition Hygiene, First Moscow Medical Institute

INFLUENCE OF VEGETABLE OIL ON THE ANIMAL BODY

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 6 Nov 75 pp 45-51

[Abstract] Food rations with a fat component consisting of vegetable oil cause in albino rats a significant fall of body weight, a stable decrease of the level of β -lipoproteids of blood and droplet fatty infiltration of the liver. However, these animals do not die from the large quantities of polyunsaturated fatty acids (PUFA). An increase of the amount of vegetable oil in the ration brought about a sharp intensification of the process of desaturation of linoleic acid in the liver and a redistribution of PUFA in the biomedial of the adult body. This, apparently, is a genetic cause of the adaptation mechanism of adult animals to large quantities of PUFA in food. Figures 2; tables 5; references 7: 4 Russian, 3 Western.

1/1

Biophysics

USSR

UDC 616.12-089.28-77:621.3.035.2)984.3

ZUBAREV, R. P., and PROKHORENKO, A. S., Institute of Clinical and Experimental Surgery, Ministry of Health USSR, and Department of Hospital Surgery of the First Moscow Medical Institute imeni I. M. Sechenov

DISPENSARIZATION OF PATIENTS WITH IMPLANTED ELECTROCARDIOSTIMULATORS

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press
4 Dec 75 pp 139-142

(Text-English language abstract supplied by authors) The authors bring light to the problem of prophylaxis of possible complications in surgical treatment of patients with atrio-ventricular block of the heart. To prevent complications in this contingent of patients, observation at the prophylactic level is of great significance. Concrete tasks are pointed out for each stage, elements of self-control are described and causes of repeated surgical interventions are mentioned. In the authors' opinion, sufficiently accurate and steady performance of control over the functions of implanted electrostimulators make it possible to make a timely detection of cardiostimulation adequacy disorders and avoid the development of dangerous complications. Chart; References, none.

1/1

USSR

UDC 595.764.4:591.16

IVASHCHENKO, I. I., and OLESHCHENKO, I. N., North Caucasian Scientific-Research Institute of Phytopathology, Krasnodar

SEX PHEROMONE OF THE FEMALE AGRIOTES REITTERI (COLEOPTERA, ELATERIDAE)

Moscow ZOOLOGICHESKIY ZHURNAL Vol 40 No 7, Jul 76 pp 1108-1110

[Abstract] Previous research has shown that in some species of Coleoptera and Elateridae the principal method of assuring intraspecies relations is chemical signalling. Work since 1933 in this area led to the identification of sex pheromones in several species of the orders mentioned, during the late 1960s and early 1970s. Having experimented for some years with the effects of pheromone traps on beetle behavior, the authors report here the results obtained with the harmful beetle pest *Agriotes reitteri* Schw. The tests were run in Severskiy Rayon, Krasnodarskiy Kray, in 1972-1973. Extract of the female pheromone of this species was placed in a number of traps, and measurements were made of the number of attracted males and the distances flown. Figures obtained leave no doubt that the female pheromone is the prime factor in securing the reproduction of this species. This suggests an effective means for control of this pest, and related or similar types. References 11: 1 Russian, 10 Western.

1/1

Epidemiology

USSR

UDC 616.127-005.4-07:616.153.45-074

OSTROVSKAYA, T. P., and ILYUSHINA, I. P., Laboratory of Epidemiology of Cardiovascular Diseases, Institute of Cardiology imeni A. L. Myasnikov, Academy of Medical Sciences USSR, Moscow

METHODOLOGICAL ASPECTS OF THE STUDY OF CARBOHYDRATE TOLERANCE IN EPIDEMIOLOGICAL STUDIES OF ISCHEMIC HEART DISEASE

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 24 Jul 75 pp 24-30

(Text- English language abstract supplied by authors) The authors submit results of the study of disorders in carbohydrate tolerance in epidemiological investigation of ischemic heart disease by means of various methods on the material of 4 selected groups of male population aged 50-59 (2000 persons). It is shown that these disorders can be determined by means of a sugar curve after peroral administration of glucose, detection of glucosuria and calculation of the mean index of PAS-reaction in lymphocytes in the peripheral blood. Reproducibility of the mentioned methods appeared to be high according to the data on investigation. The authors suggest 1/2

USSR

OSTROVSKAYA, T. P., and ILYUSHINA, I. P., TERAPEVTICHESKIY ARKHIV Vol 48 No 6 1976 pp 24-30

a method of a two-step study of carbohydrate tolerance disorders which may be used in experimental-prophylactic investigations: after the first screening examination (determination of blood sugar 1 hour after a glucose load, the degree of glycogen accumulation in the blood lymphocytes and of glucosuria) it is expedient to study the sugar curve with determination of the blood sugar level on fasting stomach 1-2 hours after a glucose load in the patients suspected of carbohydrate tolerance disorders. Figures 4; References 15: 5 Russian, 10 Western.

2/2

USSR

UDC 616.127-605.4-036.88:312.2-055-1(47-25)

ZHUKOV, V. N., OSTROVSKAYA, T. P., and METELITSA, V. I., Laboratory of Epidemiology of Cardiovascular Diseases, Institute of Cardiology imeni A. G. Myasnikov, Academy of Medical Sciences USSR

MORTALITY FROM ISCHEMIC HEART DISEASE AMONG THE MALE POPULATION ACCORDING TO DATA OF PROSPECTIVE EPIDEMIOLOGICAL RESEARCH IN ONE MOSCOW RAYON

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 20 Jan 76 pp 11-18

(Text-English language abstract supplied by authors) Results of the many-year sample prospective studies of the population are presented. It was shown that mean annual rate (for 5 years) of total mortality among male population aged 50-59 years (at the moment of primary survey--1968) was 2190 per 100,000. Mortality due to cardiovascular diseases accounted for 46.3% of total mortality. Mortality rate of ischemic heart disease (IHD) for all the years of the studies on the average was 37.7% of total mortality. The mean mortality rate due to IHD in the whole sample population amounted

1/2

USSR

ZHUKOV, V. N., OSTROVSKAYA, T. P., and METELITSA, V. I., TERAPEVTICHESKIY ARKHIV Vol 48 No 6 1976 pp 11-18

to 812 per 100,000 of population. Men of younger age (50-54 years) who refused to be examined at the Institute of Cardiology subsequently died of IHD more often than those who participated in it, which testifies to the need of dispensary observation over middle-aged men. A tendency to higher incidence of impairment of carbohydrate tolerance, in most cases in combination with hypercholesterolemia or arterial hypertension, was noted among men who subsequently died of IHD as compared with those who died of other causes. Figures 3; Table 1; References 10: 7 Russian, 3 Western.

2/2

USSR

UDC 616.993.192.1:616-058

MEL'NIK, M. N., KOVALEVA, YE. P., PTASHKA, YE. M., SMAYKINA, M. G., and NETREBKO, I. D., Kiev Scientific Research Institute of Epidemiology, Microbiology and Parasitology; Department of Epidemiology of the Central Order of Lenin Institute for the Advanced Training of Physicians; Polyclinic of the Committee of Material Reserves

SOCIAL ECONOMIC ASPECTS OF TOXOPLASMOSIS

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 148-151

(Abstract) Complete characterization of criteria of the social and economic significance of toxoplasmosis is not possible in the USSR because of absence of pertinent information. Morbidity has not been recorded. However the authors report that in one rayon of Kiev city, the incidence is 69.3 per 100,000 adults and 6.0 in children up to 14 years: it thus exceeds diphtheria, poliomyelitis, tetanus, brucellosis, and typhoid taken together. The disease has involved loss of working ability: one patient loses 3 to 130 days work, especially when affected by eye or cerebrospinal forms of the disease. Costs are incurred by the examinations of medical specialists: 1/2

USSR

MEL'NIK, M. N., KOVALEVA, YE. P., PTASHKA, YE. M., SMAYKINA, M. G., and NETREBKO, I. D., VRACHEBNOYE DELO No 8 Aug 76 pp 148-151

one patient expends 5 rubels, 80 kopecks, and repeated observations expend 13 R 80 K. Expenses are cited for laboratory diagnostic support; physical and mental developmental defects are seen in children. Some successes in toxoplasmosis control are listed for oblast consultation and toxoplasmosis rooms in Odessa, Kharkov, Kiev, Voronezh, and Krasnodar cities. Broad prophylactic and antiepidemic measures are urged to assure decrease in the economic losses now incurred by toxoplasmosis. References, 11 (Russian)

2/2

USSR

UDC 616.921.5-036.2(477)

VASIL'YEVA, V. L., SHEVCHENKO, L. F., SAZHOK, R. A., and ZHALKO-TITARENKO, V. P., Kiev Scientific Research Institute of Epidemiology, Microbiology and Parasitology

SOME PROBLEMS OF THE EPIDEMIOLOGY OF PRESENT DAY INFLUENZA BASED ON UKRAINIAN SSR INFORMATION

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 131-137

(Text-English language abstract supplied by authors) Influenza morbidity remains at high levels in the Ukrainian SSR after the 1957 pandemic. There is a stable tendency to morbidity increase and to a reduction of the intervals between epidemics. A certain dependence was established between the intensity of the epidemic process and antigenic type of the pathogen. Large epidemics with a stormy development and mass involvement of the population are caused by new variants of the A₂ influenza virus which differ antigenically from the previously circulating variants. An increase was also noted of the incidence of influenza-like acute respiratory disease in the course of a whole year. Intensification of the epidemic process in
1/2

USSR

VASIL'YEVA, V.L., SHEVCHENKO, L.F., SAZHOK, R.A., and ZHALKO-TITARENKO, V.P., VRACHEBNOYE DELO No 8 Aug 76 pp 131-137

influenza and acute respiratory diseases is caused by the intensification of different forms of communication between people and increase of the role of the speech factor in the mechanism of transmission of the infection. Figures 2; Tables 2; References 16 (Russian).

2/2

USSR

UDC 616.936-036.22(477.41)"1967-1974"

SOKOL, A.S., KOVBASKO, M.A., PUGACHEVSKAYA, YE. F., and GOLOVENTSOVA, R.I.,
Department of Infectious Diseases of the Kiev Medical Institute; Parasitology
Section of the Kiev City Sanepid Station

CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF MALARIA IN KIEV CITY IN
THE YEARS 1967-1974

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 137-141

(Text-English language abstract supplied by authors) A clinico-epidemiological analysis of 88 cases of malaria (40 patients and 48 carriers) is presented. The peculiarities of the clinical course of malaria and causes of late hospitalization are discussed. It was established that the use of various medicinal agents (antibiotics, sulfanilamides and others) before the diagnosis is verified leads to abnormalities of the clinical course of malaria and early diagnosis becomes difficult. Early diagnosis and specific treatment (delagil, quinocid) proves efficient both in patients and carriers. An analysis of cases of malaria brought from outside the city indicate that the territory at present should be considered as potentially hazardous for outbreak among native inhabitants of the city. Recommendations for early detection of malaria among the population are given. References 5 (Russian).
1/1

USSR

UDC 616-002.71-036.21-022.33.-078(571.63)

KUZNETSOV, V. G., RAKOVSKIY, V. I., VALEKZHANIN, V. S., and SOMOV, G. P.,
Vladivostok Institute of Epidemiology and Mikrobiology

STUDY OF THE EPIDEMIOLOGY OF FAR EASTERN SCARLATIN-LIKE FEVER IN THE MARITIME
KRAY. COMMUNICATION 3. ISOLATION OF A PSEUDOTUBERCULOSIS MICROBE (YERSINIA
PSEUDOTUBERCULOSIS) FROM SOIL AND THE ROLE OF SOIL IN SPREADING THE INFECTION

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 7,
Jul 76 pp 138-139 manuscript received 14 Dec 75

[Abstract] This is an author's abstract. The presence of pseudotuberculosis microbes in the soil was confirmed in many areas of the maritime kray. The I(IB), III and IV serological types of pathogens were observed--commonly found in the scarlatin-like fever locations. The studies were carried out principally in the upper 15 cm layer of the soil. It is possible that the microbes themselves may stay at deeper areas, close to the root systems, where living conditions could be much more stable and advantageous. It is possible that the soil becomes infected in the planting process if infected seedlings or seeds are used, but the authors believe that autoinfection of the soil in

1/2

USSR

KUZNETSOV, V. G., RAKOVSKIY, V. I., VALEKZHANIN, V. S., and SOMOV, G. P.,
ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII No 7, Jul 76 pp 138-139

the kray is also a possibility. Therefore, to avoid accumulation of these microbes in fruit storage areas, thorough drying and examination of the products is recommended prior to storing them. No figures, tables or references.

2/2

USSR

UDC 616.9-022.32-092:616-032

GAPOCHKO, K. G., Military Medical Academy imeni Kirov, Leningrad

THE EFFECT OF THE SITE OF APPLICATION OF THE MICROBIAL AEROSOL ON THE
PATHOGENESIS AND CLINICAL PICTURE OF AEROSOL INFECTION

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 8,
Aug 76 signed to press 6 Jun 75 pp 78-83

[Abstract] On the basis of experimental and clinical study of infections with the aerosol mechanism of infection, there was revealed a relationship between the fractional-dispersive composition of the microbial aerosol, the porta of infection and the clinico-pathogenic peculiarities of the course of the disease. Using as examples, tularemia, plague and other nosological forms, it was demonstrated that coarse-dispersive aerosol led to the appearance of primary pneumonia. In experimental aerosol infection with the causative agents in which the infection in natural conditions is not airborne (botulism, American equine encephalomyelitis, etc.) specific disease as a rule develops without any primary affection of the respiratory organs. No tables or figures, references 38: 12 Russian, 26 Western.

1/1

USSR

UDC 616.981.455-06:616.988-022.151-092.9

DUNAYEV, N. B., Omsk Scientific Research Institute of Infections With
Natural Foci

MIXED INFECTION--TULAREMIA AND OMSK HEMORRHAGIC FEVER IN AN EXPERIMENT ON
ARVICOLA TERRESTRIS L.

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 8,
Aug 76 signed to press 1 Sep 75 pp 118-122

[Abstract] The authors carried out an experimental study of some aspects of the pathogenesis of mixed tularemia and Omsk hemorrhagic fever infection in *Arvicola terrestris* L. The results obtained reflected the dynamics of development of the pathological process of the mixed infection, peculiarities of distribution of *Francisella tularensis* and of the viral antigen in different organs, the character of pathomorphological changes in the body at different periods after the administration of the causative agent. Tables 2; references 11 (Russian).

1/1

USSR

UDC 616-002.71-036.21-078.7(571.63)

KUZNETSOV, V. G., and DAGAYEVA, A. R.

INVESTIGATION OF THE EPIDEMIOLOGY OF FAR EASTERN SCARLATINE-LIKE FEVER IN THE MARITIME KRAY. COMMUNICATION 4. SEROLOGICAL TYPES OF THE STRAINS OF PSEUDOTUBERCULOSIS MICROBE (*YERSINIA PSEUDOTUBERCULOSIS*) ISOLATED IN THE FOCI OF SCARLATINE-LIKE FEVER

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 8,
Aug 76 signed to press 4 Dec 75 pp 132-133

[Abstract] This is an author's abstract. In the areas of far eastern scarlatine-like fever the I(1B), III and IV serological types of pseudotuberculosis microbe are predominant, the greatest etiological and epidemiological role being played by the 1B type. The IV type was rarest and therefore probably not related to the scarlatine-like fever. No figures, tables or references.

1/1

USSR

UDC 576.851.513.06(047)

REZNIK, S. R., Institute of Microbiology and Virology imeni Zabolotnyy Academy of Sciences Ukrainian SSR, Kiev

PATHOGENIC PROPERTIES OF THE SUBTILIS-MESENTERICUS GROUP BACTERIA

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 8, Aug 76 signed to press 22 Dec 75 pp 9-14

[Abstract] A review type paper with 89 references covering the distribution of the subtilis-mesentericus group of bacteria in the environment of humans, their nutritional products, isolation of these bacteria from the bodies of man and animal and their pathogenic properties. These bacteria exist under many variable conditions, they use various sources of nitrogen and carbon for their life processes. They may be responsible for some human diseases of unexplained etiology. No tables or figures; references 89: 67 Russian, 22 Western.

1/1

USSR

UDC 616.981.452-084.4(47 + 507) (091)

LADNYI, I. D., and GOL'D, E. YU., Main Administration of Quarantine Infections, Ministry of Health USSR, Odessa Plague Control Station

PRINCIPAL STAGES OF THE ESTABLISHMENT AND DEVELOPMENT OF THE PLAGUE CONTROL ORGANIZATION (COMMEMORATING THE 75th ANNIVERSARY OF THE ASTRAKHAN PLAGUE CONTROL STATION)

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 8, Aug 76 signed to press 5 Nov 75 pp 135-141

[Abstract] A historical review of antiplague activities starting back in the XVI century and covering the early post-revolutionary period. Currently, the Soviet antiplague organization includes 87 centers: 6 antiplague institutes, 27 stations and 54 branches concerned with measures aimed at sanitary protection of the USSR territory. No figures or tables; references 20: all Russian.

1/1

Food Supply

USSR

[Unsigned]

NEW HIGH-NUTRITION PREPARATION FROM SHRIMP MEAT

Moscow RYBOVODSTVO I RYBOLOVSTVO in Russian No 4, 1976 p 19

[Translation] The new "Okean" dressing, which appeared only a short time ago, is already very popular, and here's why. Prepared from tender, fragrant shrimp meat, "Okean" is at once tasty and nutritious, and can be eaten by people of any age. It stimulates the appetite, reduces fatigue and regulates the metabolism.

The protein of "Okean" is quite as rich in those amino acids needed by the human body as are hen's eggs or beef.

"Okean" lends the taste of crab meat to various dishes, and blends well with cheese, eggs, mayonnaise, sour cream or vegetables.

It is sold ready to use, needing only to be unfrozen. "Okean" may be used in several appetizing recipes.

1/1

USSR

UDC 577.486

BEKLEMISHEV, K. V., State University imeni M. V. Lomonosov, Moscow

BIOTOPIC APPROACH TO MARINE COMMUNITIES AND ITS REALIZATION DURING SOVIET WORK IN THE INTERNATIONAL BIOLOGICAL PROGRAM

Moscow IZVESTIYA AKADEMII NAUK SSSR SERIYA BIOLOGICHESKAYA in Russian No 5 Sep/Oct 76 signed to press 10 Mar 76 pp 688-697

(Text-English language abstract supplied by author) The population of the whole Biosphere is a natural self-regulating system; now it must be regulated by Man like a robot. The work during the IBP has shown that the production of oceanic communities can only be increased in the course of a general reconstruction of the physics, chemistry, and biology of the oceans, the limits of productivity depending on water structure (i.e., its layering), currents and bottom relief. Local and regional man-induced changes can be achieved near shores and in the inland seas. The biotopic approach to marine communities is a necessity since, in the sea, the boundaries of the natural parts of environment (biotopes) generally can not be seen by eye and their detection requires special research. During the IBP the application

1/2

USSR

BEKLEMISHEV, K. V., IZVESTIYA AKADEMII NAUK SSSR SERIYA BIOLOGICHESKAYA in Russian No 5 Sep/Oct 76 pp 688-697

of biotopic approach to marine communities has been extended from the problem of distribution of species and organisms to the analysis of functional characteristics of communities. New concepts were developed, e.g., those of the phytocene biotope and the main pycnocline as its lower boundary. They allow us to compare the biotope to the euphotic zone and to see if both of them are fully utilized by phytoplankton (which is not the case in some oceanic areas, see Figure). Figure 1; Table 1; References 32: 21 Russian, 11 Western.

2/2

USSR

KHRUSTALEV, F.

RESEARCH VOYAGE TO TERPENIYA BAY

Moscow SOVETSKAYA ROSSIYA in Russian 16 Jun 76 p 6

[Translation] Yuzhno-Sakhalinsk. The Sakhalinsk branch of the Pacific Scientific-Research Institute of Fisheries and Oceanography has dispatched the research ship "Seksar" on an expedition to Terpeniya Bay, where comprehensive studies will be made of the ichthyofauna, the food base and the hydrological conditions. The expedition will be headed by Candidate of Biological Sciences F. G. SHVETSOV, who is director of the Laboratory of Marine Industrial Fish.

1/1

USSR

UDC 597.0/5--15

BALAYEV, L. A., MAZMANIDI, N. D. and BAZHASHVILI, T. R., All-Union Scientific-Research Institute of the Marine Fishing Economy and Oceanography, Moscow, and the Georgian Department of that Institute, Batumi

REACTIONS OF CERTAIN BLACK SEA HYDROBIONTS IN AN ELECTRIC FIELD UPON POISONING WITH DISSOLVED PETROL

Moscow VOPROSY IKHTIOLOGII Vol 16 No 4(99), 1976 signed to press 3 Mar 75
pp 715-720

[Abstract] Pollution of the world ocean with petroleum products is a prime concern in any research on marine life; at the present time, the combined effect of this pollution and strong electric currents which are present in marine industry (fishing, etc.) has become a matter of practical importance.

Six species of marine animals were tested for the behavioral effects of applied electric current in petroleum-polluted water (bass, merling, sargo, sole, flounder and prawn, representing three ecological groups--pelagic, benthopelagic and benthic). The tests were run in 80-liter aquariums of organic glass, in which concentrations of 14, 9 and 0.5 mg/l aqueous solutions were maintained; control specimens were kept in pure water. Electric current was applied at specified voltages.

1/2

USSR

BALAYEV, L. A., MAZMANIDI, N. D. and BAZHASHVILI, T. R., VOPROSY IKHTIOLOGII
No 4(99), 1976 pp 715-720

There was a direct relationship between reaction threshold and ecological type. The pelagic fishes were most sensitive to the toxicant, the benthopelagic and benthic least sensitive. Flounder fry were very sensitive to the petroleum additive. The prawn were able to resist higher concentrations than the fish, and showed no change at all in the presence of an electrical field. Complete tabular data accompany the paper. Tables 6.

2/2

USSR

UDC 597:591.5

MARUSOV, YE. A., Moscow State University

ECOLOGICAL STEREOTYPES OF DEFENSIVE BEHAVIOR OF FISH EXPOSED TO CHEMICAL
DANGER SIGNALS

Moscow BIOLOGICHESKIYE NAUKI in Russian No 8, 1976 signed to press 25 Mar 76
pp 67-69

[Abstract] Ten cyprinid species differing in ecology (minnow, Chinese chebachok, roach, gudgeon, Amur false gudgeon, carp, verkhovka, sawbelly, dace, Amur barbel) were exposed to skin extracts from the same species and to water taken from a tank in which a predator--pike, perch, or Amur snakehead--had been kept for 2 hours. All the fishes perceived the chemical danger signals and reacted in the way characteristic of their species. The predator's odor usually provoked an instantaneous reaction lasting no longer than the signal, whereas the reaction to the natural repellent present in skin of the same species had a distinct latent period (30 to 45 sec) and a fairly long residual effect (24 hours or more). The fishes normally inhabiting the top layers of water and open water (verkhovka, dace, etc.)

1/2

USSR

MARUSOV, YE. A., BIOLOGICHESKIYE NAUKI No 8, 1976 pp 67-69

reacted by fleeing from the source of stimulation and then consolidating the school, whereas the fishes usually inhabiting the bottom layers and possessing protective bottom coloration (gudgeon and Amur false gudgeon) rushed from the source of stimulation to the bottom of the tank where they remained a long time. References 15: 9 Russian, 6 Western.

2/2

Immunology

USSR

UDC 616.988.75-085-039.71

SAPOZHNIKOV, I. V., YAKOVLYEVA, R. YE., CHEREZOVA, L. M., and IGNAT'YEVA, M. F., Tyumen Medical Institute, City Health Department, Oblast Sanepid Station, Polyclinic No 7, Tyumen

NONSPECIFIC METHODS FOR PROPHYLAXIS OF INFLUENZA AND OTHER ACUTE RESPIRATORY DISEASES WITH DIBASOL AND ASCORBID ACID

Moscow VOPROSY VIRUSOLOGII in Russian No 4 Jul/Aug 76 signed to press
21 Dec 75 pp 429-431

(Text-English language abstract supplied by authors) A marked prophylactic effect of dibasole and ascorbic acid in influenza and other acute respiratory diseases (ARD) is described. The analysis was based on comparison with a control group observed for the same period and under the same risk of contracting infection with influenza or other ARD. The control group was given glucose according to the same procedure. Tables 2; References 6, all Russian.

1/1

USSR

UDC 616.988.75-085.371-092.9

GERSAMIYA, G. K., KARPOV, V. S., KANATOV, E. P., and KVIRIKADZE, V. V., Moscow Scientific Research Institute of Vaccines and Sera imeni I. I. Metchnikov

EXPERIMENTAL MORPHOLOGICAL STUDY OF THE VACCINATION PROCESS IN AEROSOL APPLICATION OF LIVE DRY ANTIINFLUENZA VACCINES OF TYPE A2/HONG KONG AND B/USSR

Moscow VOPROSY VIRUSOLOGII in Russian No 4 Jul/Aug 76 signed to press
14 Nov 75 pp 436-441

(Text-English language abstract supplied by authors) A comparative study of immunologic, immunomorphological and morphological responses of the viscera of white rats immunized by aerosol intranasally with lyophilized influenza A2/Hong Kong and B/USSR vaccines, with an adjuvant (typhoid antigen) and without it, was carried out. Also lung tissues were examined for intracellular inclusions considered to be a morphological indication of influenza virus implantation. No pathological lesions were found in the organs of the immunized animals. It is concluded that the intensity of immunologic and immuno-morphological responses depends upon the method of vaccine application and upon vaccine type but not upon the adjuvant. Figures 4; Tables 2; References 12: 11 Russian, 1 Western.

1/1

USSR

UDC 615.373.39:576.858.75

SAYATOV, M. KH., and BEYSEMBAYEVA, R. U., Institute of Microbiology and Virology, Academy of Sciences Kazakh SSR, Alma-Ata

PREPARATIVE ISOLATION OF ALPHA-2-MACROGLOBULIN, TRANSFERRIN, ALBUMIN, AND STUDY OF THEIR NONSPECIFIC GAMMA-INHIBITORY ACTIVITY

Moscow VOPROSY VIRUSOLOGII in Russian No 4 Jul/Aug 76 signed to press 23 Feb 76 pp 461-465

(Text-English language abstract supplied by authors) Profiles of distribution of non-specific gamma-inhibitors of influenza A2/Victoria/35/72 in donkey and horse sera were established by gel chromatography in Sephadex G-200. High and low molecular inhibitors were found in 19S and 4S serum fractions. Highly purified preparations of alpha-2-macroglobulin, transferrine and albumin were isolated by a combination of methods of salt precipitation, gel chromatography on Sephadex G-100, G-200 and ion exchange on DEAE-Sephadex A-50. Heating sera resulted in a considerable increase of the antiviral activity of alpha-2-macroglobulin and transferrine and a reduction of albumin activity. Figures c/(2 electrophorogram photos); References 18: 7 Russian, 11 Western.

1/1

USSR

UDC 576.858.75.097.2

KOSYAKOV, P. N., ROVNOVA, Z. I., ISAYEVA, YE. I., PLATONOVA, A. L., and PANKRATOV, V. S., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

COMPARATIVE ANALYSIS OF THE ANTIGENIC COMPOSITION OF A/ENGLAND/42/72 A/PORT CHALMERS/73 AND A/USSR/053/74 INFLUENZA VIRUS HERMAGGLUTININS

Moscow VOPROSY VIRUSOLOGII (Virology Problems) in Russian No 3, May/June 76 pp 301-308 signed to press 6 Oct 75

[Abstract] The presence of three antigenic determinants was demonstrated by the method of selective adsorption of inhibitor-free sera (HI test) and complement-fixation test (CPT) in hemagglutinins (HA) of influenza A/Port Chalmers/73 and A/USSR/053/74 viruses. These variants with closely similar antigenic composition have two antigenic determinants related with HA of A/England/42/72 virus, whereas the third antigenic determinant is specific only for them and is lacking in A/England/42/72 virus HA. According to the results obtained the antigenic composition of HA of these viruses may be designated in the

1/2

USSR

KOSYAKOV, P. N., ROVNOVA, Z. I., ISAYEVA, YE. I., PLATONOVA, A. ., and PANKRATOV, V. S., VOPROSY VIRUSOLOGII No 3, May/Jun 76 pp 301-308

following way: A/England/42/72-H3 H6 H7, A/Port Chalmers/73 and A/USSR/053/74-H3 H7 H8. A method is suggested for preparation of monospecific serum to the antigenic determinant H3 common to all variants of the Hong Kong variety of influenza virus. This serum is free from nonspecific inhibitors, contains no antibody to the host cell antigens and may be used both in CFT and HI test for rapid identification of new influenza virus isolates. Tables 3; references 8: 5 Russian, 3 Western.

2/2

Industrial Toxicology

USSR

UDC 616.127-02:(615.916:546.265.1.036.12

SAYMANOV, A. O., KONONOVA, A. M., SERGEYEVA, A. S., MUKHINA, S. T., and DUMKIN, V. N., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

CARDIOPATHY (MYOCARDIODYSTROPHY) IN CHRONIC CARBON DISULFIDE INTOXICATION

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 4 Jan 76 pp 96-100

(Text-English language abstract supplied by authors) The authors studied the incidence of vegetovascular dysfunction and myocardiodystrophy in persons exposed to carbon disulfide in their work and suffering from chronic intoxication with carbon disulfide. Among the workers exposed for a long time to the action of carbon disulfide there was noted a significant increase of the number of cases with vegetovascular dystonia of a hypertensive type and myocardiodystrophy. Clinico-instrumental features of cardiopathy associated with carbon disulfide intoxication are revealed and a differential-diagnosis table for distinguishing the mentioned disease from ischemic heart disease is submitted. Relation between the revealed deviations and the signs of histological shifts and their nonspecific nature is emphasized. Table 1; References 9: 6 Russian, 3 Western.

1/1

USSR

UDC 616.24-003.66

SENKEVICH, N. A., RASHEVSKAYA, A. M., KONCHALOVSKAYA, N. M., and SOKOLOV, V. V., Clinic of the Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Department of Occupational Pathology of the Central Institute for the Advanced Training of Physicians, Moscow

CURRENT PROBLEMS OF DUST-INDUCED PATHOLOGY OF THE LUNGS (PNEUMOCONIOSES)

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 16 Feb 76 pp 100-104

(Text-English language abstract supplied by authors) The authors submit data on the current state of studies of dust-induced occupational diseases of the lungs, particularly, pneumoconiosis. Main attention was paid to the description of different variants of development and clinical course of pneumoconiosis--silicosis, asbestosis, metalconiosis, etc., under modern industrial conditions and also complications of these diseases. Taking, as the basis, the newest data of pathogenesis of silicosis, the authors draw attention to prospects for pathogenetic therapy with various polymers, particularly polyvinylpyridine-N-oxidone. References 32: 23 Russian, 9 Western.

1/1

USSR

UDC 615-099:546.221

IVANENKO, N. A., candidate of medical sciences, Central City Hospital of the Kiev Oblast, Ipren'

SOME PROBLEMS OF THE CLINICAL ASPECTS AND THERAPY OF SEVERE INTOXICATION WITH HYDROGEN SULFIDE

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 126-128

(Abstract) Isolated cases of H₂S intoxication are described in the Soviet literature, and are attributed to negligence of safety measures in sewage lines, petroleum sulfur extraction, and improper use in sulfur water spas. The author cites his clinical experience with three workers in sewage disposal. Despite severe affection with the sewer gas, the subjects recovered with full working capacity; therapy included methylene blue, dehydrated agents, and intravenous protein hydrolysates. No references.

1/1

USSR

UDC 616.5-056.3*057-02:615.285.7.012

BIKBULATOVA, L. I. and GVOZDEV, N. P., Bashkir Medical Institute and Ufa Institute of Hygiene and Occupational Diseases

OCCUPATIONAL DERMATOSIS CAUSED BY THE PRODUCTION OF THE NEW PESTICIDE AZOTOX

Moscow VESTNIK DERMATOLOGII I VENEROLOGII in Russian No 6, 1976 signed to press 17 Apr 75 pp 68-69

[Abstract] After only 10 to 14 days' exposure to the new Soviet acaricide Azotox (the same as the 50% wettable powder Milbex produced in Japan), 5 production workers began to suffer headaches, nausea, and ready fatigability while on the job. All had diffuse erythema with papular and vesicular eruptions and were suffering from pronounced pruritus, burning sensation, hyperhidrosis of the extremities, acrocyanosis, and persistent red dermatographia. Determination of serum protein and protein fractions revealed an increased concentration of gamma globulins (20 to 25%). Positive skin tests with the active ingredients of Azotox--4-chlorophenyl-2,4,5 trichlorophenyl azosulfide and p-chlorothiophenol in all 5 workers, with mostly negatives in the control, plus the abnormal correlation of blood protein fractions implicated the two compounds as allergens. References 3 (Russian).

1/1

USSR

UDC 613.633:[549.623.5+549.892.2

DIANOVA, A. V., KOCHETKOVA, T. A., candidate of medical sciences, RUMYANTSEV, G. I., professor, First Moscow Medical Institute; Moscow Scientific Research Institute for Hygiene imeni F. F. Erisman

THE QUESTION OF THE COMBINED INFLUENCE OF MICA DUST AND RESINS USED IN THE PRODUCTION OF ARTICLES FROM MICANITE

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 17 Feb 75 pp 33-37

[Abstract] A sanitary-hygienic study is performed of the conditions of labor in the production of micanite products, utilizing mica and resins, with simultaneous study of the health of the workers (including chest X-rays) subject to the influence of these types of dust. The types of dust studied, when administered separately to white rats, cause the development of slight pneumoconiosis, primarily diffuse, with various contents of multinuclear giant cells like foreign bodies in granuloma foci. When mica and resin dust are administered together, an "inhibiting" influence of resin and shellac dust on the development of pneumoconiosis caused by mica dust was noted. However, their general toxic and allergic effects were increased. Resin is 1/2

USSR

DIANOVA, A. V., KOCHETKOVA, T. A., RUMYANTSEV, G. I., GIGIYENA I SANITARIYA No 7, Jul 1976 pp 33-37

found to have more clearly expressed general toxic, irritating and allergic properties than mica dust. A maximum permissible concentration of mica and resin dust in combination of 2 mg/m³ is recommended. Figures 3; references 4 (Russian).

2/2

USSR

UDC 615.917:547.233-053.1

TORBIN, V. F., Kiev Scientific Research Institute for Labor Hygiene and Occupational Diseases

COMPARATIVE CHARACTERISTICS OF EMBRYOTOXIC INFLUENCE OF CERTAIN POLYMETHYLENE (ALICYCLIC AMINES)

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 4 Aug 75 pp 100-102

[Abstract] A study is made of the toxicity of a new inhibitor--the oil-soluble salt cyclohexylamine (M-1). The experimental data indicate that the inhibitor M-1, as well as MSDA-II (oil-soluble salt dicyclohexylamine) and NDA (dicyclohexylamine nitrite) have an embryotoxic effect, which depends on the dose of the preparation and the chemical nature of the compound. The results indicate that it is justified to include determination of the influence of polymethylene amines on embryogenesis in general toxicity studies and that compounds can be found which have the necessary technical properties but do not have a damaging effect on intrauterine development. It is considered that M-1 is acceptable for introduction to the national economy as a corrosion inhibitor.

1/1

USSR

UDC 613.632-07:612.349.014.46

STRUSEVICH, YE. A., candidate of medical sciences, FEDYANINA, V. N., candidate of biological sciences, SADOVNIK, O. V., and SEMENOVA, V. N., Novosibirsk Scientific Research and Sanitary Institute

INFLUENCE OF TOXIC SUBSTANCES ON THE ACTIVITY OF PANCREATIC ENZYMES IN A HYGIENIC EXPERIMENT

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 28 Apr 75 pp 102-104

[Abstract] The influence of two different organic chlorine compounds, ethylenechlorohydrin (ETCH) and tetrachloropropene (TCP) on the activity of the enzyme trypsin and rat blood serum inhibitor was studied. The tryptic function of the pancreas and response antitryptic reaction of the organism are similar in sensitivity to the earliest functional systems, including the central nervous system, which also undergoes changes at the level of the threshold doses. The high hygienic significance of studies of the activity of the pancreatic enzymes makes it desirable to study the functional state of the pancreas when setting norms for substances in water. Figures 2; references 3 (Russian).

1/1

USSR

UDC 618.1-057:[547.415.1+547.21

SHIROKOV, O. M., Department of Obstetrics and Gynecology of the Sanitary-Hygienic Faculty, First Moscow Medical Institute imeni I. M. Sechenov

GYNECOLOGICAL MORBIDITY OF WORKERS INVOLVED IN THE PRODUCTION OF ETHYLENE-DIAMINE AND CERTAIN CHLORINATED HYDROCARBONS

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 20 Nov 75 pp 107-108

[Abstract] A study was made of the gynecological morbidity of 378 female workers involved in the production of ethylenediamine and chlorinated hydrocarbons (dichloroethane, ethylchloride, vinyl chloride, polyvinyl chloride). Examinations were performed including taking of case histories, external examination, mirror examination and bimanual examination. Materials were also taken for evaluation of the microbial content of the vagina and for a cytologic examination; colposcopy was performed. Most of the subjects were young, working as equipment operators, laboratory technicians, engineering and technical workers and packaging workers. Times in service ranged from 1 to 10 years. Pathological changes of the reproductive system were found

1/2

USSR

SHIROKOV, O. M., GIGIYENA I SANITARIYA No 7, Jul 1976 pp 107-108

in 34.1% of the workers, most frequently inflammatory diseases of the cervix, uterus and adnexa. Statistically reliable differences were found between the experimental and control group as to the level and nature of gynecological morbidity, due to inflammatory disease. Inflammatory disease morbidity increased with increasing time in service.

2/2

Marine Mammals

USSR

PALLADIN, A., Novosti Correspondent in Ottawa

USE OF DOLPHINS IN ESPIONAGE

Minsk SOVETSKAYA BELORUSSIYA in Russian 20 Jun 76 p 3

[Translation] American scientist Michael Greenwood, one-time worker in the secret laboratories of the Key West Naval Base, has transmitted a curious 150-page document to the press. In it are described in detail the "skills" in which the Pentagon (trainers) are instructing dolphins! These marine animals study, for example, how to set up mines and electronic transmitters on ships. Nobody could be in doubt what the mines are for; the transmitters are for espionage purposes.

At the end of the 1960s, says Greenwood, a long period of time was spent on training a particular dolphin at the Key West base. It was to be the assignment of this animal to make his way into Havana harbor and install a transmitter on the Soviet ship which was there at the time. The project fell through, however, since the dolphin wasn't quite bright enough to distinguish between American and foreign ships!

1/3

USSR

PALLADIN, A., SOVETSKAYA BELORUSSIYA 20 Jun 76 p 3

But the experimenters weren't a bit embarrassed by this failure. Beginning with the 1970s, they started training dolphins to follow Soviet submarines. Just how this venture turned out Greenwood doesn't know, since the project was supersecret. He does know for certain, however, that dolphins were used to observe an atom bomb "accidentally" dropped by the pilot of an American military plane close to the shore of Puerto Rico.

These revelations of Greenwood's were confirmed (and enlarged upon) in an interview between a correspondent of the American newspaper "Newsday" and personnel of the Navy and the Central Intelligence Agency. Dolphins, these people said, are taking a very special course--"How to Destroy Underwater Swimmers." The training is conducted with use of aqualungs, from an ocean vessel, which pays up to 25 dollars a "lesson" to the human participant. "It isn't a very pleasant sensation when you get rammed by a 330-pound body," the swimmers said; "you'd think they could pay just a little more."

And so the "trainers" are dotting upon their dolphins, which are more obedient than dogs and more intelligent than chimpanzees, and which, moreover, don't present any feeding problems.

2/3

USSR

PALLADIN, A., SOVETSKAYA BELORUSSIYA 20 Jun 76 p 3

It looks like these experiments, which present a danger to the whole world, are going to continue...

3/3

USSR

UDC 576.809.53

BUKHAR, M. I., VDOVINA, N. V., MOGIL'NITSKIY, G. M., SHKIDCHENKO, A. N., and KOSHCHENKO, K. A., Institute of Biochemistry and Physiology of Microorganisms, Academy of Sciences USSR, Pushchino

SOME ASPECTS OF TRANSFORMATION OF THE 21-ACETATE OF REICHSTEIN'S SUBSTANCE "S" BY A CULTURE OF TIEGHEMELLA ORCHIDIS

Moscow PRIKLADNAYA BIOKIMIYA I MIKROBIOLOGIYA in Russian Vol 12 No 4 Jul/Aug 76 signed to press 4 Jan 76 pp 485-490

(Text-English language abstract supplied by authors) The transformation of the acetate of the Reichstein substance "S" by the culture of Tieghemella orchidis was studied upon single and fractional addition of the substrate. The effect of streptomycin sulphate, Tween-80, ethanol (steroid solvent) and steroid solution on the respiratory activity of the culture was investigated upon single and fractional addition of the steroid. During transformation the respiratory activity of the culture decreased--by the end of the process (18-20 hours) it fell 2-2.5-fold upon single addition of the steroid (1 g/l) and by 20% upon fractional addition of the steroid (2 g/l). In the latter case the respiratory activity dropped step-by-step if the concentration of the steroid was 1.4-1.6 g/l; simultaneously the transformation activity declined. Figures 4; References 15: 12 Russian, 3 Western.
1/1

USSR

UDC 576.809.8

KORYAGIN, V. V., KONOVALOV, S. A., CHIRKOV, I. M., VOROTILO, S. P., and ZVEREVA, G. A., All-Union Scientific Research Institute of Biosynthesis of Protein Substances

THERMOGENESIS OF MESOPHILIC, THERMOTOLERANT, AND THERMOPHILIC STRAINS OF MICROORGANISMS THAT PRODUCE ENZYMES WHICH DESTROY YEAST CELL-WALLS

Moscow PRIKLADNAYA BIOKIMIYA I MIKROBIOLOGIYA in Russian Vol 12 No 4 Jul/Aug 76 signed to press 9 Jul 75 pp 505-508

(Text-English language abstract supplied by authors) Investigations were carried out to clarify the relationship between thermogenesis and production of yeast wall lyzing enzymes by the mesophilic strain of Bacillus subtilis, thermotolerant strain of Actinomyces sp. II, and thermophilic strain of Actinomyces sp. 10. The enzymic lyzing activity was measured in the culture liquid filtrate of those microorganisms. The thermophilic strain of Actinomyces sp. 10 showed the highest enzymic activity. The thermogenetic curves of the cultures had several inflections. The mesophilic culture of Bacillus subtilis whose enzymic lyzing activity was the lowest displayed the highest heat release. Figure 1; Table 1; References 8: 6 Russian, 2 Western.
1/1

USSR

UDC 577.154

GUZHOVA, E. P., BURDENKO, L. G., and LOGINOVA, L. G., Institute of Microbiology, Academy of Sciences USSR

ENZYMATIC HYDROLYSIS OF WHEAT STRAW BY A PREPARATION OF CELLULASE FROM THE THERMOTOLERANT FUNGUS ASPERGILLUS TERREUS 17P

Moscow PRIKLADNAYA BIOKIMIYA I MIKROBIOLOGIYA in Russian Vol 12 No 4
Jul/Aug 76 signed to press 18 Feb 76 pp 587-590

(Text-English language abstract supplied by authors) The preparation of cellulolytic enzymes isolated from the submerged culture of the thermotolerant fungus *Aspergillus terreus* 17P hydrolyzed wheat straw cellulose. With an increase of the exposure and concentration of the enzyme, the percentage of straw hydrolysis and sugar yield grew. During a 12-day exposure to a 25% concentration of the enzyme at 50°C, the straw hydrolysis reached its maximum--24.8% and the yield of sugar was 17%. Figures 2; Table 1; References 5: 3 Russian, 2 Western.

1/1

USSR

UDC 582.275.39:(546.15+547.96).056

GAZHA, P. A., ANDRIANOV, A. M., STEPANYUK, I. A., BURTNEKO, L. M., GRINCHENKO, L. I., POPELYUKH, G. M., and FEDORENKO, V. D., Institute of General and Inorganic Chemistry, Academy of Sciences Ukrainian SSR, Odessa

ISOLATION OF IODINE-PROTEIN COMPONENTS FROM A BIOMASS OF SEA ALGAE

Moscow PRIKLADNAYA BIOKIMIYA I MIKROBIOLOGIYA in Russian Vol 12 No 4
Jul/Aug 76 signed to press 4 Feb 76 pp 597-601

(Text-English language abstract supplied by authors) The isolation of iodine-organic compounds from Black Sea red alga *Phyllophora nervosa* and its by-products obtained from industrial treatment was investigated. The algal biomass was pressed to remove alkali, subjected to 5-10 min treatment with 11-12% caustic soda, and drying at 125-130°C and washed to yield 95% iodine and over 80% proteins. Iodine was found to be bound with protein of *Phyllophora*. Properties of the isolated iodine-peptide fractions were studied. Figures 4; Tables 2; References 16 (Russian).

1/1

USSR

UDC 632.937.15:632.937.16

KANDYBIN, N. V., All-Union Scientific Research Institute of Agricultural Microbiology, Leningrad-Pushkin

MICROBIOLOGICAL METHODS TO COMBAT INSECTS (STATUS AND PROSPECTS)

Moscow IZVESTIYA AKADEMII NAUK SSSR SERIYA BIOLOGICHESKAYA in Russian No 5 Sep/Oct 76 signed to press 24 Apr 76 pp 649-660

(Text-English language abstract supplied by author) The paper presents data on the isolation of entomopathogenic bacteria, viruses, and fungi and the character of their action on various species of insects. The latest data are referred to concerning Soviet and foreign production and application of microbiological preparations in the fight against insects. The characteristic peculiarities of the various groups of entomopathogens (bacteria, viruses, fungi), the scale and perspectives of their utilization in agriculture and forestry, have been stressed. Theoretical questions of plant and animal protection are discussed in connection with the global problem of protection of the surrounding environment and the perspective of finding and utilization of biological and, primarily, microbiological means possessing repellent, antifidantic, attractive and pseudohormonal action on insects, i.e., such means which would not cause direct harm to biocoenoses. References 65: 31 Russian, 34 Western.

1/1

USSR

UDC 616.981.553-085.371

BATEYKO, V. YA., TOMASHPOL'SKIY, I. V., and GAVURA, V. V., Zaporozhe Infection Clinical Hospital No 2

DAMAGE TO THE PERIPHERAL NERVOUS SYSTEM FOLLOWING ADMINISTRATION OF ANTI-BOTULIN SERUM

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 144-145

(Abstract) In addition to neural effects of botulism, the effects of serum (antibotulin) sickness have been noted by Soviet authors (A. F. Bilibin, 1962; C. K. Ivanov, 1967). The authors report here 12 (22%) cases in 54 patients who received the antiserum; the sickness appeared five-eight days after administration. A typical case is described, viz., a patient, 36, who had used a home-prepared ham, and received 25000 IU polyvalent anti-botulin serum. Recovery from botulism was achieved but the patient contracted plexitis and left arm paresis, apparently unrelated to botulism but caused by the serum. No references.

1/1

USSR

UDC 576.857.533.097.29

GONCHAROVA, V. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

SITE OF APPLICATION AND MECHANISM OF ACTION OF CL. BOTULINUM TOXIN

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 7, Jul 76 signed to press 15 Sep 75 pp 12-19

[Abstract] A review with 49 references. There are two points of view concerning the locus of action of the Cl. botulinum toxin: one group claims that it is a peripheral agent causing a block of nerve impulses through the myoneural synapsis, the other group maintains that this toxin attacks motor centers, the peripheral disorders being of secondary nature. Concerning the mechanism of action, there are no solid explanations. Several hypotheses have been proposed--none have been proven. No tables, figures or references.

1/1

USSR

UDC 612.819.5.014.2.014.46:576.851.553.097.29

ANOSOV, I. YA., and BULATOVA, T. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medicinal Sciences USSR, Moscow

MORPHOLOGICAL AND HISTOCHEMICAL CHARACTERISTICS OF THE REACTION OF THE BODY TO ADMINISTRATION OF CL. BOTULINUM TOXIN. COMMUNICATION 4. CYTOCHEMICAL CHANGES IN THE CELLS OF THE MESENCEPHALIC NUCLEUS OF THE TRIGEMINAL NERVE AFTER ADMINISTRATION OF CL. BOTULINUM, TYPE B, TOXIN

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 7, Jul 76 signed to press 27 Oct 75 pp 33-37

[Abstract] After the administration to guinea pigs per os of 1 Dlm of botulin toxin, type B, a change of the RNA synthesis in the nucleoli and DNA depolymerization in the nuclei was observed in some of the cells of the mesencephalic nucleus of the trigeminal nerve. An increase in the activity of succinic dehydrogenase and of acid phosphatase took place without any necrotic processes in the cells. Based on changes in the activity of succinic dehydrogenase in the neurons of the mesencephalic nucleus, the conclusion was drawn that hypoxia began to develop at the period of appearance of paralyzes of the limbs and reached its maximum in myasthenia. Figures 3; references 13: 11 Russian, 2 Western.

1/1

USSR

UDC 576.851.555.097.29 + 612.112.014.46:576.851.555.097.29

TSELUKH, A. V., PROTCHENKO, P. Z., and GOLOVATYUK, A. L., Odessa Medical Institute imeni Pirogov

STUDY OF LEUKOTOXIC ACTIVITY OF CL. PERFRINGENS TYPE A TOXIN AND ITS FRACTIONS OBTAINED IN GEL-FILTRATION AND ION-EXCHANGE CHROMATOGRAPHY

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 7, Jul 76 signed to press 10 Dec 74 pp 119-123

[Abstract] In gel filtration of Cl. perfringens type A toxin on Sephadex F-100 and F-50 a relationship was revealed between the leukotoxic activity and a high-molecular component. The method of ion-exchange chromatography on a column with DEAE-Sephadex A-25 from the Cl. perfringens toxin obtained 8 fractions, 3 of which possessed a marked leukotoxic activity: the capacity to destroy neutrophils in the Svejcar and Vancurik test, and, to depress the phagocytic activity of leukocytes. Lecithinase and lethal activity were revealed in one of these fractions only. Leukotoxic fractions differed in capacity to destroy neutrophils and to decrease their phagocytic activity. Figure 1; table 1; references 22: 13 Russian, 9 Western.

1/1

USSR

UDC 576.858.083.35.07

DEMIDOVA, S. A., TSAREVA, A. A., MIKHAYLOVA, G. R., PEREKREST, V. V., GUSHCHIN, B. V., KLIMENKO, S. M., GADASHEVICH, V. N., PANTSULAYA, L. L., GUSHCHINA, YE. A., CHEREDNICHENKO, YU. N., and ZHDANOV, V. M., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

SOME METHODOLOGICAL PROBLEMS OF CELL CULTURE CONTROL

Moscow VOPROSY VIRUSOLOGII (Virology Problems) in Russian No 3, May/June 76 signed to press 18 Dec 75 pp 371-379

[Abstract] Some human and animal continuous cell lines as well as primary cell cultures were examined by karyological, electron microscope, virological and molecular biological methods and also by electrophotometric motility of glucose-6-phosphate dehydrogenase (G-6-PDG) in polyacrylamide gel. All human and animal continuous cell lines were shown to contain mycoplasma, seventeen contained intracytoplasmic particles of the type A oncornaviruses, 5--type B oncornaviruses similar to Mason-Phizer virus, 8--paramyxoviruses, 2--oncornaviruses type C. A high molecular RNA with sedimentation constant 64-70 S was found in oncornaviruses isolated from cell cultures. Intracellular virus or

1/2

USSR

DEMIDOVA, S. A., TSAREVA, A. A., MIKHAYLOVA, G. R., PEREKREST, V. V., GUSHCHIN, B. V., KLIMENKO, S. M., GADASHEVICH, V. N., PANTSULAYA, L. L., GUSHCHINA, YE. A., CHEREDNICHENKO, YU. N., and ZHDANOV, V. M., VOPROSY VIRUSOLOGII No 3, May/Jun 76 pp 371-379

subviral structures were detected by association of the reverse transcriptase activity with high molecular RNA. The presence in the cell cultures of marker chromosomes of HeLa cells, the absence of these cultures of Y chromosomes, the presence of the G-6-PDG enzyme with type A motility indicate the possibility of contamination of human continuous cell lines with HeLa cells. Figures 5; tables 3; references 12: 8 Russian, 4 Western.

2/2

USSR

UDC 576.858.75.083.35:612.64-085.23

BEKTEMIROV, T. A., MOYSIADI, S. A., PROKUDINA-KANTOROVICH, YE. N., and BEREZINA, O. N., Central Institute for the Advanced Training of Physicians, Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

CHRONIC INFECTION OF THE DIPLOID CELLS OF SKIN-MUSCLE TISSUE OF HUMAN EMBRYO

Moscow VOPROSY VIRUSOLOGII (Virology Problems) in Russian No 3, May/Jun 76 signed to press 24 Jun 75 pp 289-293

[Abstract] A model was developed for chronic influenza infection in a strain of diploid cells of human embryo skin-muscle tissue (KM_{WSN}). On propagation without changing the medium, the cells produced virus regularly in low infection titers as well as hemagglutinins in titers of 1:2 and 1:4. Frequent changes of the medium led to more intensive reproduction of infectious virus; there was no or little accumulation of hemagglutinin. Superinfection of the KM_{WSN} cultures even with frequent changes of the medium led to reduced production of the infectious virus; no interferon could be detected. The observed pattern of virus production led to the postulation of a persistence mechanism in this system, in connection with the interfering effect of the defective virus produced by the cells. Figures 3; table 1; references 11: 9 Russian, 2 Western.

1/1

USSR

UDC 616.988.25-022.395.42-092.9-097.3:577.15

DUBOV, A. V., and GLADYSHEV, S. P., Tyumen Scientific Research Institute of Regional Infectious Pathology, Ministry of Health RSFSR, Tyumen Oblast' Clinical Hospital of the Ministry of Health RSFSR

HISTOCHEMICAL STUDY OF SOME ENZYME ACTIVITY IN THE COURSE OF IMMUNOGENESIS IN MONKEYS INFECTED PERORALLY WITH VIRUSES OF THE TICK-BORNE ENCEPHALITIS COMPLEX

Moscow VOPROSY VIROLOGII (Virology Problems) in Russian No 3, May/Jun 76 signed to press 11 Nov 75 pp 337-341

[Abstract] The activity of succinate dehydrogenase, and acid and alkaline phosphatases was studied histochemically in immunocompetent organs of *Macacus rhesus* monkeys infected orally with viruses of the tick-borne encephalitis complex with different biological properties. A gradual increase in the activity of acid phosphatase and succinate dehydrogenase was observed by the 10th-15th day of the experiment followed by its decline to normal by 90 days. The content of alkaline phosphatase in lymphoid organs diminished markedly in the first day of the study and then increased in 15-30 days after antigenic stimulation. No tables; figures 3; references 13: 8 Russian, 5 Western.

1/1

USSR

UDC 576.890:33

KARIMYAN, R. S., AKHINYAN, R. M., PETROSYAN, L. G., and ARAKELYAN, Institute of Microbiology, Academy of Sciences Armenian SSR

BIOMASS ACCUMULATION ON MEDIA PREPARED FROM HYDROLYSATES OF VARIOUS INDUSTRIAL WASTES

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 6, 1976 signed to press 20 Feb 76 pp 104-105

[Abstract] This study was aimed at determining the biomass accumulation capacity of certain new strains of asporogenic yeasts grown on media prepared from hydrolysates from industrial wastes (breweries, geranic acid production, wood-processing mills, citric acid production, sugar plants, tataric acid production). The strains studied were *Torulopsis uvae* 63, *T. candida* 65 and 66, *T. albida* 70, *T. famata* 75, 78, 80 and 87, and *T. pulcherimma* 90; and *Candida melinii* 83. These were isolated by the Institute of Microbiology, Academy of Sciences Armenian SSR. It was found that after 72 hours the number of yeast cells in every case had increased by a factor of nearly 50; while with the addition of mineral substances, in addition to the initial sugar, the yeast biomass in all the nutrient media had increased by 100-200%. For most

1/2

USSR

KARIMYAN, R. S., AKHINYAN, R. M., PETROSYAN, L. G., and ARAKELYAN, BIOLOGI-
CHESKIY ZHURNAL ARMENII No 6, 1976 pp 104-105

of the yeasts, increase in biomass output exceeded 50%, and in nutritive media from the wash water of citric acid production it was 100%. In mixed nutritive media from hydrolysate from waste products of breweries containing microelements, as from hydrolysate from wood-processing mills, there was a 50% increase in biomass over the control.

For the production of nutrient yeasts, it is proposed to use the wastes of wood-processing combines and breweries jointly, since tartaric acid production wastes contain a number of trace elements which stimulate yeast growth (dry biomass yield in this case reaches 81.25%). The wash waters of citric acid production (Spitak Sugar Refinery) are recommended as a nutrient medium; here the yield of dry biomass reached 181.00%.

2/2

USSR

UDC 576.8.668.12

SEVOYAN, A. G., SARUKHANYAN, F. G., STEPANYAN, M. L., AKHINYAN, R. M.,
KARIMYAN, R. S. and PETROSYAN, L. G.

SPECIES BREAKDOWN OF YEASTS WHICH UTILIZE CELLULOSE WASTE PRODUCTS

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Armenian No 6, 1976 pp 57-61

[Translation of Russian language resume] Yeasts isolated by the authors from various habitats, following the guides set up T. Lodder and N. T. W. Kreger van Rij, and by H. A. Diddens and T. Lodder, belong to the following species: *Torulopsis uvae*, *T. candida*, *T. albida*, *T. famata*, *T. pulcherrima*, *Candida melinii*, *C. pelliculosa* and *C. brumptii*. Of those studied, the most valuable were found to be *Candida pelliculosa* 507 and *Torulopsis pulcherrima* 90, which develop well on the basis of hydrolysates of chemical industry wastes, and can be used as valuable supplemental fodder.

1/1

USSR

UDC 576.312.38

IL'YINSHIKH, N. N., and IL'YINSKIKH, I. N., Tyumen Medical Institute

INFLUENCE OF TICKBORNE ENCEPHALITIS VIRUS ON THE CHROMOSOME COMPLEX OF HUMAN CELLS

Kiev CYTOLOGIYA I GENETIKA in Russian Vol 10 No 4 Jul/Aug 76 signed to press
23 Oct 75 pp 331-333

(Abstract) Viruses play a large role in causing mutational changes, and some vaccines can induce cytogenetic disturbances in human cells. The authors have examined the mutagenic effects of tick encephalitis virus on human cells in vivo and in vitro. Native virus (Yelantsev strain) was found to be capable of evoking cytogenetic injury in a culture of human donor leukocytes; the number of hypoploidic and hyperploidic cells and of cells with structural chromosome damage increases. Most frequently affected are the telomeric areas of the long arms of Group A chromosomes. Inactivated tick encephalitis vaccine induced no changes in the karyotype of vaccinated individuals or upon its addition to a healthy donor leukocyte culture. Figure 1; Table 1; References 15: 8 Russian, 7 Western.

1/1

USSR

UDC 575.1

ZOLOTAREVA, G. N., LAVRETSKAYA, E. F., OBLAPENKO, N. G., SURAYKINA, T. I., and FONSHTEYN, L. M., Scientific Research Institute for Biological Testing of Chemical Compounds, Krysavna, Moscow Oblast

MUTAGENIC ACTIVITY OF PSYCHOTROPIC AND ANTICONVULSANT PREPARATIONS

Kiev CYTOLOGIYA I GENETIKA in Russian Vol 10 No 4 Jul/Aug 76 signed to press 9 Sep 75 pp 367-376

(Abstract) Genetic sequelae of pollution of the human habitat has been made the subject of symposia and conferences of geneticists, and collections of reports have appeared on the evaluation of the mutagenic activity of chemical compounds. Many pharmaceuticals exhibit such activity and the authors have reviewed the pertinent literature on these drugs. They devote attention to neuroleptics, lithium preparations, indoles, tranquilizers, antidepressants, psychostimulants, psychotomimetics, narcotics and soporifics, anticonvulsants, antihistaminics, narco-analgesics, and psychotropics. References 114: 29 Russian, 85 Western.
1/1

USSR

UDC 615.372:576.851.553].015.2:615.811.1
015.4:612.46

GENDLER, I. E., SINEL'NIKOV, G. YE., and TIKHONOVA, N. M., Tomsk Scientific-Research Institute of Vaccines and Sera and Tomsk Medical Institute

HISTOLOGICAL AND HISTOCHEMICAL CHANGES IN THE KIDNEYS OF RABBITS IMMUNIZED WITH CL. BOTULINUM TOXOID, TYPE B, IN COMBINATION WITH BLOOD LOSS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII in Russian No 7, Jul 76 signed to press 22 Dec 75 pp 38-41

[Abstract] Immunization of rabbits with increasing doses of Cl botulinum toxoid, type B, led to the development, in the kidneys, of a focal intracapillary productive glomerulonephritis, and also of productive endo- and perivascularities. Blood letting (in the amount of 1% of the body weight) aggravated the morphological picture of the affection due to superinfection of the alternative and exudative components. At the same time blood letting led to reduction of the NAD-diaphorase, succinic dehydrogenase and glucose-6-phosphatase activity in the epithelium of the proximal portions of the nephrons. Table 1; references 14: 6 Russian, 8 Western.

1/1

USSR

UDC 614.7:615.285.7:547.58]+615.285.7:
547.58].099

PAN'SHINA, T. N., candidate of medical sciences, All-Union Scientific Research Institute for Hygiene and Toxicology of Pesticides, Polymers and Plastics, Kiev

HYGIENIC ASPECTS OF THE AGRICULTURAL USE AND TOXICOLOGY OF CERTAIN HERBICIDES

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 24 Jul 75 pp 38-41

[Abstract] Halogen-substituted carboxylic acid anilide derivatives have a high degree of selective action on weeds; they are therefore used as herbicides in various branches of agriculture. This article reports on a long-term (9-10 month) chronic study of the toxic properties of propanide, ramrod and solane. Their ability to cause the formation of methemoglobin, influence on morphological blood composition, activity of redox enzymes, catalases and peroxidases in the blood, content of nicotinamidadenine dinucleotides in the blood and tissues of the internal organs were studied. The functional status of the central nervous system was judged by the summation-threshold indicator. The functional status of the thyroid was studied. A definite difference was
1/2

USSR

PAN'SHINA, T. N., GIGIYENA I SANITARIYA No 7, Jul 1976 pp 38-41

found in the toxic strength and nature of biological action of the herbicides consisting of halogen-substituted carboxylic acid anilides. The basic means suggested for prevention of poisoning by these devices consist in following the rules for use published with the packages of the herbicides. Tables 2; references 10 (Russian).

2/2

Physiology

USSR

UDC 616.127-005.4-036.865

KOGAN, B. M., SOKOLOVA, D. A., and KUZ'MISHIN, L. YE., Laboratory of Electrocardiological Diagnosis, Central Scientific Research Institute of Expertise in Ability to Work and Organization of Work of Invalids, Ministry of Social Security RSFSR, Moscow

COMPLEX ASSESSMENT OF THE FUNCTIONAL CONDITION OF THE MYOCARDIUM AND ITS SIGNIFICANCE FOR MEDICAL EXPERTISE OF ABILITY TO WORK IN PATIENTS WITH ISCHEMIC HEART DISEASE

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press 25 Sep 75 pp 18-24

(Text-English language abstract supplied by authors) The authors submit results of the studies of the functional condition of the myocardium in 90 patients with uncomplicated forms of ischemic heart disease with the employment of electrocardiography, polycardiography, and kinetocardiography at rest and under conditions of bicycle ergometric loading. During and after the loading in 62.3% of the patients there were revealed pathological changes, in 10%--threshold and in 27.7%--physiological changes of 1/2

USSR

KOGAN, B. M., SOKOLOVA, D. A., and KUZ'MISHIN, L. YE., TERAPEVTICHESKIY ARKHIV Vol 48 No 6 1976 pp 18-24

the ECG. In 32.2% of the cases a negative dynamics of polycardiography and kinetocardiography (depending on hypodynamia) indices were recorded after the loading.

A conclusion is made about the necessity of complex study of patients with ischemic heart disease for diagnosing the presence and markedness of chronic coronary insufficiency and evaluating potentials of the myocardium as the main criteria for determination of capacity for work of patients with ischemic heart disease. Figure 1; References 18: 17 Russian, 1 Western.

2/2

USSR

UDC 575.591

GINDILIS, V. M., and FINOGENOVA, S. A., Institute of Psychiatry, Academy of Medical Sciences USSR, Moscow

INHERITABILITY OF THE CHARACTERISTICS OF FINGER AND PALM DERMATOGLYPHICS IN MAN

Moscow GENETIKA in Russian Vol 12 No 8 Aug 76 signed to press 24 Nov 75 pp 139-150

(Text-English language abstract supplied by authors) The degree of genetic determination of 25 quantitative dermatoglyphic characteristics has been studied on family twin material: 45 pairs of MZ and 75 single-sex DZ twins; and 53 single-sex "parent-child" pairs. Approximating formulae were used to estimate main components of phenotypic variance due to additive interaction of genetic factors, to non-linear effects (intralocus dominance) and to the effect of total-familial and random environmental factors. All the finger dermatoglyphic characteristics studied had a high degree of genetic determination ($G > 0.80$), and for most of them the contribution into the large variance of intralocus dominance effects was $1/2$

USSR

GINDILIS, V. M., and FINOGENOVA, S. A., GENETIKA Vol 12 No 8 Aug 76 pp 139-150

comparable with that of additive gene interaction, included in the determination of these characters. There are some palm dermatoglyphic characteristics ("ad" distance, "cd" comb counting, "bad", "adt" and "cda" angles), whose degree of genetic determination is low ($G < 0.35$). At least ten quantitative finger and palm dermatoglyphic characteristics with a high degree of genetic determination can be used for special studies in frames of multidimensional genetical analysis, including determination of twin zygosity type.

Earlier described "indices" (using twin data) of relative role of genetic and environment factors in the determination of populational variability of quantitative characters are considered. None of them is shown to be a reliable estimate of the coefficient of genetic character determination. The use of these indices in practical studies can result in wrong conclusions about the degree and the character of genetic determination of quantitative characters. Tables 2; References 15: 7 Russian 8 Western.

2/2

USSR

UDC 612.821.6.001.5

VORONIN, L. G., corresponding member, Academy of Sciences USSR, GROMYKO, N. M., and KONOVALOV, V. F., Institute of Biological Physics, Academy of Sciences USSR, Pushchino, Moscow Oblast'

RELATIONSHIP BETWEEN ELECTROGRAPHIC COMPONENTS OF TRACE PROCESSES AND SHORT TIME MEMORY CAPACITY IN CHILDREN AND ADULTS

Moscow DOKLADY AKADEMII NAUK SSSR in Russian Vol 229, No 3, Jul 76 signed to press 10 Mar 76 pp 764-766

[Abstract] Perception of color prints evoking pleasant emotions in 4-5 year old children and 18-30 year old adults leads to higher expression of trace processes than perception of visual stimuli in form of uniform light. Statistically significant differences were observed in the number of pictures remembered by children and adults: 4.1 ± 0.95 for children and 7.5 ± 0.50 for adults. Mechanisms of emotions and of the secondary signal system intensify the functions of the activation system of brain finding an expression in the orientation reflex and development of condition-reflex and conditional reactions based on it. Figure 1; references 4 (Russian).

1/1

USSR

UDC 577.12:576.12:155.3

ASHMARIN, I. P., YEROPKIN, M. YU., and MALYUKOVA, I. V., Leningrad State University imeni A. A. Zhdanov and Institute of Evolutional Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

LEARNING ABILITY OF RATS WITH POSITIVE AND NEGATIVE CONFIRMATION UNDER CONDITIONS OF NONSPECIFIC IMMUNOSTIMULATION

Moscow DOKLADY AKADEMII NAUK SSSR in Russian Vol 229, No 3, Jul 76 signed to press 1 Apr 76 pp 761-763

[Abstract] Experiments were carried out on Wistar rats to check the hypothesis that the mechanisms of long-lasting neurological memory are similar to some mechanisms of immunological processes. The animals were injected with Freund adjuvant (CFA) sc and after three weeks of hiatus were tested for learning ability. The experiments showed that CFA had a detrimental effect on learning ability in a food-based experiment, but stimulated the retention and learning process in electric shock experiments, agreeing with the observations of ASHMARIN and ANTIPENKO. However, at present this effect remains unexplained. Figures 2; references 10: 5 Russian, 5 Western.

1/1

USSR

UDC 628.517.2:614.89

KUZNETSOV, V. S., candidate of biological sciences, TARASENKO, G. I., (Moscow) and PETROVA, G. I. (Leningrad)

THE PROBLEM OF THE OPTIMAL FORCE OF COMPRESSION OF NOISE PROTECTION DEVICES

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 pp 112-113 manuscript received 20 Feb 75

[Abstract] One feature of noise protection devices of all types is that they must be pressed tightly against the surfaces of the body requiring protection from noise. However, the pressures required induce discomfort, headache, local pain sensations at the contact point and other symptoms. It is found that a pressure in the area of the zygomatic process of 30-50 g/cm² is optimal for noise protection, both lower and higher pressures producing lower levels of protection. The optimal compressive force must be considered to be 800±40 g, as defined in the state standard. This creates the required pressure just mentioned. Figure 1.

1/1

USSR

IVANOVA, M. P. and LOMOV, A. A., All-Union Scientific Research Institute of Physical Culture

EEG CHANGES IN ATHLETES INDUCED BY ADEQUATE STIMULATION OF THE VESTIBULAR ANALYZER

Moscow TEORIYA I PRAKTIKA FIZICHESKOY KUL'TURY in Russian No 8, 1976 pp 17-19

[Abstract] Rotation of healthy, well-trained athletes (figure skaters) on an electromechanical chair in a clockwise and counterclockwise direction (60 revolutions in 2 minutes) caused the index and amplitude of the alpha waves to decrease and give rise to slow delta and theta waves on the EEG. The changes in rhythms affected the motor regions of the brain more than the occipital. And they were more pronounced when the athletes were rotated to the left (the more customary direction) than to the right (less customary). This shows the importance of training for increasing the resistance of the vestibular apparatus to stimulation and overstimulation. Figures 3; references 8: 6 Russian, 2 Western.

1/1

USSR

UDC 615.47:62

DVORYAKOVSKIY, V. A., Ministry of the Medical Industry USSR, Moscow

MEDICAL TECHNOLOGY AND IMPROVEMENT OF MEDICAL SERVICE

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 8, 1976 signed to press 20 Apr 76 pp 3-5

[Abstract] The substantial improvement in the quality of medical care and level of organization of work in hospitals and clinics called for by the 25th Congress of the Communist Party of the Soviet Union cannot be achieved without new equipment and extensive mechanization and automation of many diagnostic and therapeutic procedures. This will require great efforts not only by the medical instrument construction agencies proper but also by many other branches of industry, e.g., food and communications. Design of new instruments, automated systems for mass screening of the population for major diseases and follow-up examinations, automation of tests and laboratory analyses of blood and urine, etc. are also required if the goal set by the party is to be reached.

1/1

USSR

UDC 613.5:697.95

GUBERNSKIY, YU. D., candidate of medical sciences, DMITRIYEV, M. T., doctor of chemical sciences, D'YACHKOVA, N. G., candidate of medical sciences, DMITRIYEVA, R. A., candidate of biological sciences, RASTYANNIKOV, YE. G., candidate of chemical sciences, A. N. Sysin Institute of General and Communal Hygiene, Academy of Medical Sciences USSR

EXPERIMENTAL STUDY FOR DETERMINATION OF THE OPTIMAL AIR EXCHANGE IN RESIDENTIAL AND PUBLIC BUILDINGS

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 3 Sep 75 pp 26-29

[Abstract] In order to provide a foundation for optimal air exchange, studies were performed in a special 27 m³ chamber. The criterion used to evaluate the condition of the air was the concentration of the products of human vital activity, established by determining the content of anthropotoxins in the air with various values of air exchange. The subjects in the chamber were in a state of relative quiet, involved in reading. The concentration of anthropotoxins was determined by mass spectrometry, the content of CO₂ and CO by

1/2

USSR

GUBERNSKIY, YU. D., DMITRIYEV, M. T., D'YACHKOVA, N. G., DMITRIYEVA, R. A., RASTYANNIKOV, YE. G., GIGIYENA I SANITARIYA No 7, Jul 1976 pp 26-29

gas chromatography, the content of ammonia by photolorimetry, the dust content by a Kimoto analyzer, the bacterial count by a Krotov apparatus. New anthropotoxins are detected: azole, butane, butylene, butadiene, vinylacetone, methylacetone, ethylene oxide, propylene, methylstyrene and finolin. The optimal air exchange is 120 m³/hr per person (as air influx). Figures 2; tables 2; references 7 (Russian).

2/2

USSR

UDC 614.3/.4.07.007.1:658.381

KOSACHEVSKAYA, P. I., BARAN, N. A., and DUCHINSKIY, B. M., candidates of medical sciences, Department of Communal Hygiene, Kiev Institute for the Advanced Training of Physicians and Kiev Oblast Sanitary-Epidemiological Station

THE DISTRIBUTION OF THE WORKING TIME OF CHIEF DOCTORS OF RAYON SANITARY-EPIDEMIOLOGICAL STATIONS

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 pp 64-66 manuscript received 25 Nov 75

[Abstract] The distribution of working time of Chief Doctors of Sanitary-Epidemiological Stations was studied using methods of examination, timing and statistical studies. The maximum time during the course of the day and week is spent on visiting objects, trips to infectious foci, trips on assignment and preventive sanitary inspection (average 26.5-32.2%). Visits to the Rayon Party Committee, Executive Committee and other organizations occupy 10.4-18.3% of the doctors' time, more time being spent in this type of work on Mondays than the other days of the week. Visiting with colleagues and coffee breaks occupy an average of 5% of physicians' time, 10% on Mondays.

1/2

USSR

KOSACHEVSKAYA, P. I., BARAN, N. A., DUCHINSKIY, B. M., GIGIYENA I SANITARIYA
No 7, Jul 1976 pp 64-66

Meetings occupy 4.2-9.1% of their time, the maximum on Thursday. Reception of visitors occupies 2.3-6.9% of working time. Answering requests of organizations--4.7-5.9% of time, making of working plans and reports--3.7-8.5% (maximum Wednesday), visiting of the Sanitary and Technical Council--0.7% (Monday) and 2.9% (Thursday). Based on the results of the study, several recommendations are made. The Chief Doctors should spend less time visiting remote locations, increase the time spent in preventive inspections and supervision, increase the time spent in studying reports of branch sanitary doctors and in the composition of plans, by eliminating time spent on routine sanitary inspection. Public sanitary inspectors should be more actively used, giving the Chief Doctor more time for higher level work. Table 1.

2/2

USSR

UDC 613-092.9

TRAKHTENBERG, I. M., professor, SHEFTEL', V. O., and SOVA, R. YE., candidates of medical sciences, and ONIKIYENKO, F. A., candidate of biological sciences, Scientific Research Institute for Labor Hygiene and Occupational Diseases, Ministry of Health Ukr SSR Kiev; Institute for Hygiene and Toxicology of Pesticides, Polymers and Plastics, Ministry of Health USSR, Kiev

THE PROBLEM OF THE BIOLOGICAL NORM IN EXPERIMENTAL HYGIENE STUDIES

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 27 Aug 75 pp 91-95

[Abstract] The problem of the norm in hygiene, as in the area of biology, has a clear philosophical aspect. We know that most deviations from the mean level caused by processes occurring within the organism itself or in the environment are not pathological, and should be considered realizations of the adaptive capabilities of the organism. However, determination of the physiological boundaries of adaptation of the organism is always very difficult for the researcher in the area of hygiene, particularly as our ability to measure tiny variations from the "norm" increases. While some biological indicators can be

1/2

USSR

TRAKHTENBERG, I. M., SHEFTEL', V. G., SOVA, R. YE., ONIKIYENKO, F. A.,
GIGIYENA I SANITARIYA No 7, Jul 1976 pp 91-95

considered to have absolute norms, in other cases, particularly due to the rate variability of the population, the boundary between normal and abnormal is essentially lost, and "normal" becomes a fictitious concept. Therefore, experimental results must be compared with the norm as determined for individual subjects or groups of animals, which must further be adjusted for normal seasonal variations. References 10: 9 Russian, 1 Western.

2/2

Radiobiology

USSR

UDC 614.31:614.73:546.26.02.14

ZAPOL'SKAYA, N. A., candidate of medical sciences, PAVLITSKAYA, YE. D., FEDOROVA, A. V., candidate of biological sciences, SHAMOV, V. P., professor, Leningrad Scientific Research Institute for Radiation Hygiene, Ministry of Health, RSFSR

NORMALIZATION OF C^{14} ENTERING THE HUMAN ORGANISM WITH FOOD PRODUCTS

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 8 Dec 75 pp 55-60

[Abstract] The multiplicity factor used to calculate the quantity of C^{14} entering the human body and stored, primarily in the form of stable carbon and fat, is recalculated. Rather than the multiplicity factors of 9-18 currently accepted, factors of 30-40 are more accurate. This means that the permissible level of C^{14} in the environment, particularly in the air, must be reduced, in order to avoid excessive accumulation of C^{14} in the human body as it enters in the form of food. Tables 2; references 10 (Russian).

1/1

Therapy

USSR

UDC 616.8-009.12-085.84

KOLESNIKOV, G. F., professor, AND IOFFE, YA. Z., Neurological Sanitarium imeni First of May, Kiev

EXPERIENCE WITH ELECTRIC STIMULATION OF PATIENTS WITH SPASTIC PARESSES OF VASCULAR GENESIS WITH THE HELP OF THE "BION" APPARATUS

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 72-75

(Text-English language abstract supplied by authors) The complex treatment of 279 patients with pyramidal disorders due to cerebral circulatory disturbances included also stimulation of the most impaired muscles by means of the "BION" apparatus which produces electrical signals close to those impulses which arise in the Ranvier nodes of the motor nerve fiber. This type of electric stimulation was well tolerated by the patient as the electric stimuli were in form, amplitude, duration and frequency close to physiological values. Positive results obtained in 85.2% of patients indicate that the described method is efficient in the complex of medical and certain instances also of occupational rehabilitation of patients with spastic paresis of vascular genesis. Table 1; References 7 (Russian).

1/1

USSR

UDC 616.895.8-085.214:612.35

DANILENKO, YE. T., and VLOKH, I. I., Department of Psychiatry, Lvov Medical Institute

DYNAMICS OF THE ACTIVITY OF LIVER ENZYMES IN PATIENTS WITH SCHIZOPHRENIA IN THE COURSE OF TREATMENT WITH MAZHEPTIL

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 111-115

(Text-English language abstract supplied by authors) The activity of liver enzymes (unspecific and specific) was studied in the blood serum of 65 schizophrenics in the course of mazheptil treatment. Two groups of patients were singled out: i) 151 patients without clinical manifestations of liver function impairment; ii) 14 patients with mild symptoms of liver lesions. Before mazheptil treatment all patients showed latent liver function impairment. In the course of mazheptil treatment the two groups of patients showed a tendency to normalization of the enzymatic activity during the remission period. Latent liver dysfunction revealed in all patients before treatment is apparently related to prior prolonged treatment by phenothiazin preparations but it is not excluded that it is an index of hepatic insufficiency of patients suffering from schizophrenia. Tables 3; References, none.

1/1

USSR

UDC 615.849.19.03:616-006

PLETIVEV, S. D., and ABDURAZAKOV, M. SH., Optic Quanta Generator Group of the Moscow Scientific Research Oncological Institute imeni P. A. Gertsen

PROSPECTS FOR THE USE OF CONTINUOUS WAVE GAS LASERS IN ONCOLOGY

Moscow SOVETSKAYA MEDITSINA in Russian No 8 Aug 76 signed to press 17 Feb 76 pp 50-54

(Text-English language abstract supplied by authors) Results are presented of experimental and clinical investigations of the possibility of using different types of gaseous lasers in oncology. Proceeding from the data, the most promising trends of using laser emissions with different wave lengths were determined. Low-energy radiations of lasers in the visible wave-length range (0.63, 0.44, 0.33 μ) result in the activation of regenerative processes in the tissues, which makes it possible to employ some of them for speeding up the healing of chronic lingering wounds and ulcers. It has been found that the treatment of malignant tumors can be done most effectively with CO₂ lasers at a wave-length of 10.6 μ . By applying diverse methods
1/2

USSR

PLETIVEV, S. D., and ABDURAZAKOV, M. SH., SOVETSKAYA MEDITSINA No 8 Aug 76 pp 50-54

of laser action (irradiation with defocused beams, coagulation and exsection with a focused ray) a total of 147 tumor nodes in 30 patients were treated in this way. Immediate and present results of the treatment proved satisfactory. Figures 3; References 4: 3 Russian, 1 Western.

2/2

USSR

UDC 615.11:[614.27:616.89:362.11

SELEZNEVA, V. T., and KHORINKO, M. N., Perm' Pharmaceutical Institute

FILLING PRESCRIPTIONS IN MENTAL HOSPITAL PHARMACIES

Moscow FARMATSIYA in Russian No 4, 1976 signed to press 11 May 76 pp 53-55

[Abstract] The pharmacies of Perm' Municipal, Perm' Oblast, Sverdlovsk Oblast, and Kirov Oblast mental hospitals filled 18,164 prescriptions in January 1971. The percentage of ready drugs varied from about 36 to 52%, or the same as in general hospital pharmacies. A total of 11,569 ex tempore prescriptions were filled the same month, or an average of 2.65 prescriptions per bed. Drugs in liquid form (for internal or external use, injection) constituted 89.5% of all the drugs filled. Some 87% of the prescriptions called for 1 to 3 ingredients (water, ethyl alcohol, and vaseline were counted as ingredients). Of the 57 most frequent prescriptions, 14 were common to all 4 pharmacies (e.g., 10% calcium chloride solution, 30% sodium sulfacyl, and injection solutions such as glucose, Novocain, and amytal sodium). Tables 3; no references.

1/1

USSR

KUSHNIR, M., candidate of technical sciences, Donetsk

Moscow MEDITSINSKAYA GAZETA in Russian 3 Sep 76 p 2

[Translation] More than 10 years ago the "Berezka" sanatorium-preventorium was established at Donetsk Chemical Reagent Plant. Since that time, thousands of workers have maintained good health there. At "Berezka," extensive use is made of physical culture and massage, ultrasound, quartz light, ionophoresis and diathermy. The institution also employs such highly effective means of therapy and prophylaxis as "oxygen cocktails," therapeutic mud, and hydrogen sulfide, pine and salt-water baths. Workers of the preventorium are dealing very adequately with the tasks presented to them. The experienced physician TAT'YANA FEDOROVNA LOBANOVA became head of "Berezka" more than five years ago. Just recently she completed courses in advanced training for physicians in Kazan'.

1/1

Veterinary Medicine

USSR

UDC 614.777:628.357.3

IVANOV, A. N., KOLTYPIN, YU. A., and TARASOV, YE. A., Podol'sk Sanitary-Epidemiological Station, All-Union Institute of Animal Husbandry and Moscow Fish-Melioration Experimental Station

HYGIENIC EVALUATION OF FISH-BIOLOGICAL PONDS USED FOR PURIFICATION OF THE WASTE WATERS OF CATTLE-BREEDING FARMS

Moscow GIGIYENA I SANITARIYA in Russian No 7, Jul 1976 signed to press 25 Nov 75 pp 99-100

[Abstract] An experiment in biological purification of the waste water from a cattle-breeding farm was conducted in Moscow oblast. The purification plan was somewhat different in that the last stage of purification consisted of a fish pond. This allowed the organic matter in the waste water to be assimilated to a higher trophic level in the fish, thus making maximum use of the organic matter and biogenic elements in the wastes. The experiment is rated as successful. Table 1.

1/1

Publications

USSR

UDC 629.12.06:628.1

EL'PINER, L. I.

WATER SUPPLY ON MARINE VESSELS

Moscow VODOSNABZHENIYE MORSKIKH SUDOV 1975 Transport

[Translation] Annotation

Given here are the sanitary-hygienic principles of the layout and operation of water-supply systems of marine vessels.

Modern hygienic requirements on the quality of drinking water, methods of improving drinking water, and questions of its storage and regeneration aboard ship, are all considered here; also methods for the freshening of sea water.

Considerable attention is given to the hygienic requirements placed on the layout and operation of marine water-supply systems, and on their sanitary servicing.

The book is intended for the use of crews at sea or on vessels of mixed service, ship doctors and water-transport sanitation workers.

1/5

USSR

EL'PINER, L. I., VODOSNABZHENIYE MORSKIKH SUDOV 1975 Transport

TABLE OF CONTENTS

Foreword	3
Chapter 1. Sanitary-Technical Principles of Water Supply on Marine Vessels	5
Chapter 2. Modern Hygienic Requirements on the Quality of Drinking Water	11
Organoleptic and Chemical Indices of Water Quality; Their Hygienic Significance	11
Hygienic Norms of Water Quality	20
Chapter 3. Features of Change in Water Quality during Storage Aboard Ship	23
Effect of Storage Conditions	23
Effect of Anticorrosion Coatings	34

2/5

USSR

EL'PINER, L. I., VODOSNABZHENIYE MORSKIKH SUDOV 1975 Transport

Chapter 4. Principles of Modern Methods for Improving Water Quality	40
Improvement of Organoleptic Indices of Water Quality	40
Elimination of Odorous Substances from Water (Deodorization)	43
Elimination of Bad Tastes	45
Disinfection of Water	45
Chapter 5. Storage of Drinking Water	55
Silvering of Water	55
Ship Installations for Silvering Water	66
Chapter 6. Regeneration of Drinking Water Aboard Ship	71
Choice of Methods	71
Practical Means of Regenerating Water Aboard Ship	76
Chapter 7. Hygienic Requirements Imposed on the Layout and Operation of Marine Water-Supply Systems	94
Chapter 8. Sanitary Servicing of Marine Water-Supply Systems	102
Control Measures	102
Disinfection of Marine Water-Supply systems	103

3/5

USSR

EL'PINER, L. I., VODOSNABZHENIYE MORSKIKH SUDOV 1975 Transport

Chapter 9. Water Supply on Ships of Mixed Service	108
Features of Water Supply on Ships of Mixed Service	108
On-Board Water Preparation Stations	110
Checking Quality of Water from On-Board Water Preparation Stations	122
Chapter 10. Principles of Methods for Freshening Sea Water	127
Chapter 11. Freshening Sea Water by Distillation	131
Marine Freshening Installations	131
Hygienic Features of Freshening Sea Water by Distillation	132
Chapter 12. Correction of Salt Content of Distillate to Make it Drinkable (Mineralization)	144
Hygienic Principles of Modeling the Salt Content of Drinking Water	144
Chemical Bases for Modeling the Salt Content of Drinking Water	144
Hygienic Characteristics of Mineralized Distillate as Drinking Water	159

4/5

USSR

EL'PINER, L. I., VODOSNABZHENIYE MORSKIKH SUDOV 1975 Transport

Marine Installations for Mineralization of Distillate	171
Hygienic Requirements on the Installation and Operation of Marine Water-Supply Systems with Use of Fresh Water	173
Chapter 13. Methods of Freshening Which are Promising for Use	
Aboard Ship	176
Electrodialysis with Ion-Exchange Membranes	176
Hyperfiltration (Reverse Osmosis)	187
Freezing Out	191
Bibliography	193

5/5

USSR

KOROGODIN, V. I., doctor of biological sciences and KOROGODINA, YU. V.,
candidate of biological sciences

RESTORATION OF DAMAGED CELLS

Moscow VOSSTANOVLENIYE KLETOK OT POVREZHDENIY Moscow 1976, Znaniye Publishing
House

[Translation] Annotation

The ability to recover from injuries is one of the basic properties of living organisms; it is just as universal as reproduction or hereditary mutability. The present brochure describes the forms in which recovery from damage takes place on the cellular level. It is demonstrated that single-cell organisms, as well as the cells of higher plants and animals, can recover from mechanical injury or molecular changes of various cell structures arising from radiation (ultraviolet or ionizing) and the action of chemicals. Particular attention is devoted to the recovery of cells suffering from damage to the genetic apparatus--DNA and the chromosome. An examination is made, also, of the role of restoration in the vital activity of the cell and in those pathological changes in cells and in multicellular organisms which may lead to disruption of restorative capability.

1/2

USSR

KOROGODIN, V. I., and KOROGODINA, YU. V., VOSSTANOVLENIYE KLETOK OF POVRE-
ZHDENIY 1976

TABLE OF CONTENTS

Recovery from injuries--a Common Property of Living Things	3
Restoration of Cells from Damage Produced by Physical Destruction	8
Restoration of Cells from Damage to the Genetic Apparatus	19
The Conception of Potential Damage	25
Molecular Mechanisms of Restoration	28
Genetic Control of Restoration	47
General-Biological and Applied Aspects of Restoration	56
Recommended Literature	63

2/2

BEHAVIORAL SCIENCES
Physiological Psychology

USSR

UDC 612.833.8

MANUKYAN, L. A., KHANBABYAN, M. V., GRIGORYAN, A. A., KARAMANUKYAN, A. K.,
and NAZARYAN, O. A., Institute of Experimental Biology, Academy of Sciences
Armenian SSR

VARIATIONS IN THE CONTENT OF PROTEINS AND RNA IN THE BRAIN DURING INSTRUCTION
(LEARNING)

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 6, 1976 signed to press
16 Feb 76 pp 106-107

[Abstract] Present evidence largely indicates that the basis of long-term retention and recall of information in the central nervous system is based on structural-chemical reconstructions within the system. If this is true, the role of proteins and nucleic acids in memory storage is all the more important. Experiments were run on three groups of white rats: intact animals; an "Active" control, subjected to the same stimuli as during learning but without any inter-connection; and animals taught the reactions of avoiding electric currents in a T-shaped labyrinth. The amount of RNA, total protein and acid proteins in the cytoplasm, pyramid neurons of the cortex of the major hemispheres and the Purkinje cells of the cerebellum was then determined interferometrically and cytophotometrically. The "educated" and "active control" rats
1/2

USSR

MANUKYAN, L. A., KHANBABYAN, M. V., GRIGORYAN, A. A., KARAMANUKYAN, A. K.,
and NAZARYAN, O. A., BIOLOGICHESKIY ZHURNAL ARMENII No 6, 1976 pp 106-107

did not show any verifiable increase in RNA content in neurons of the 5th motor region of the major hemispheres; but in the "educated" group there was some increase in the case of the Purkinje cells of the cerebellum, owing, apparently, to increase in the content of substance in the cytoplasm. There were significant shifts in the content of acid protoplasm in the cytoplasm of both pyramid neurons and in Purkinje cells. The content of acid proteins in the "active control" group and the "educated" group went up significantly (no reliable differences were found between the two); the increase amounted to 70-72% in the cerebellum and 76-78% in the hemispheres. Total protein did not vary significantly between the two test groups; the increase averaged 30-45% in the pyramid neurons and 17-25% in the Purkinje cells. The data obtained indicate variation in the activity of the genetic apparatus of neurons during various functional states of the brain. The question of the specificity of such variations remains open. Further study of shifts in content of nuclear RNA and proteins, and in the quality of changes in nuclear and cytoplasmic DNA, RNA and proteins, is indicated.

2/2

Psychiatry

USSR

UDC 616.8+616.89(063)

PRONIV, D. I., Department of Neural Diseases of the Lvov Medical Institute

URGENT PROBLEMS OF MEDICAL NEUROGENETICS: BASED ON MATERIALS OF THE SIXTH ALL-UNION CONGRESS OF NEUROPATHOLOGISTS AND PSYCHIATRISTS

Kiev VRACHEBNOYE DELO in Russian No 8 Aug 76 pp 6-10

(Abstract) The author draws attention to what he regards as the most important topics (in the genetics of nervous and mental diseases) examined, at the plenary session and three sectional meetings, by 47 principal participants and other contributors. Prof. N. P. Bochkov, Moscow analyzed genetic polymorphism and its role in pathology. Major contributions were made by Bochkov, Prof. V. M. Gindilis, I. V. Shakhmatova-Pavlova, Moscow, on diseases involving inherited predisposition. Prospects for genetic success in study of such diseases were felt to exist in two basic approaches, genetic epidemiology and multidimensional genetic analysis (M. V. Vartonyan), Prof. R. A. Tkachev and Ye. D. Markov, Moscow, described basic trends in clinical neurogenetics. Gene engineering was touched upon as potentially
1/2

USSR

PRONIV, D. I., VRACHEBNOYE DELO No 8 Aug 76 pp 6-10

useful in etiological therapy; medical-genetic consultation might make fruitful use of prenatal diagnosis. Inheritable neuromuscular diseases evoked comment from L. O. Badalyan, Bochkov, N. A. Il'yina, K. N. Nazarov, Tkachev, A. M. Shevchenko, and Ye. V. Schmidt. Great effort was exerted by the participants to formulate a useful approach to treatment of neural diseases (1500 were estimated) with hereditary aspects; interdisciplinary communication is desirable. Moscow will host an international congress of geneticists within two years.

2/2

USSR

UDC 616.127-005.4-08:616.89

RAYSKIY, V. A., KASATKINA, L. V., GRIGOR'YANTS, R. A., and PROKUDIN, V. N.,
Moscow Institute of Psychiatry, Ministry of Health RSFSR, and Institute
of Cardiology, Academy of Medical Sciences USSR, Moscow

PSYCHOSOMATIC ASPECTS OF THERAPY OF ISCHEMIC HEART DISEASE

Moscow TERAPEVTICHESKIY ARKHIV in Russian Vol 48 No 6 1976 signed to press
14 Nov 75 pp 46-51

(Text-English language abstract supplied by authors) The authors analyze the efficacy of differentiated treatment with psychopharmacological preparations of 232 patients with ischemic heart disease accompanied by psychic disorders in the form of somatogenically caused protracted asthenic, astheno-neurotic, astheno-hypochondrical and astheno-depressive conditions. Of psychotropic substances tranquilizers, neuroleptics and antidepressants were used. The evaluation of the efficacy was made by the blind method of investigation. Alongside with a therapeutical effect of psychotropic substances on the general neurotic symptoms marked abatement and sometimes disappearance of the stenocardiac syndrome were noted. Changes in the
1/2

USSR

RAYSKIY, V. A., KASATKINA, L. V., GRIGOR'YANTS, R. A., and PROKUDIN, V. N.,
TERAPEVTICHESKIY ARKHIV Vol 48 No 6 1976 pp 46-51

affective background and the emotional-behavioural component of the pain reaction, lowering of elevated vascular reactivity under the effect of neurogenic factors and favourable metabolic shifts in the sympatho-adrenal system in the myocardium caused by the central effect of psychotropic agents, direct effect of a number of studied preparations on myocardium metabolism and coronary blood flow can be regarded as possible mechanisms of the psychopharmacotherapy favourable effect on the anginous syndrome. Differentiated psychopharmacotherapy is considered to be an important component of complex therapy of ischemic heart disease increasing its efficacy. Table 1; References 37: 29 Russian, 8 Western.

2/2

USSR

KRASNOPOL'SKAYA, I.

BOTH THERAPY AND WORK

Moscow MOSKOVSKAYA PRAVDA (Moscow Truth) in Russian No 196, 22 Aug 76 p 3

[Abstract] An agreement was reached between the Psychiatric Hospital No 4 imeni P. B. Gannushkin and Moscow State Industrial Association "Massantekhprom" on a project for attracting chronic alcoholics to therapeutically-oriented work. The principal idea was to have the patients earn money while being treated in order to overcome one of the most difficult aspects of the treatment process: feeling of being a burden to the family. The therapy course consists of five stages. The first lasts only one week and is designed to impress upon the candidate the extent of the process. The next--lasting 3-4 weeks--sees the patients assigned to work groups requiring no special training. The third stage starts the work therapy directly at the facilities of the industrial concern. The entire fourth period (starting after two months or so) is designed to strengthen the therapeutic effect achieved in previous stages, the workers now being able to participate not only in working sessions but also in social activities involving the collective. The final stage--
1/2

USSR

KRASNOPOL'SKAYA, I., MOSKOVSKAYA PRAVDA No 196, 22 Aug 76

that of rehabilitation--starts after about 3 months when the drugs are stopped for 10-12 days and the patients are watched. On weekends now they are released to their homes. If no relapses occur, they are discharged. In the first six months only three failures were noted with this approach. Based on this program other centers of this type have begun to form.

2/2

Publications

USSR

GEBOS, ANATOLIY IVANOVICH, Bel'tskiy State Pedagogical Institute imeni Aleku Russo

PSYCHOLOGY OF THE COGNITIVE ACTIVITY OF STUDENTS DURING INSTRUCTION

Kishinev PSIKHOLOGIYA POZNAVATEL'NOY AKTIVNOSTI UCHASHCHIKHSYA 1975

[Translation] Annotation

This monograph offers theoretical and experimental material making possible a deeper penetration into the psychological laws of systems of problem and programmed instruction. It discusses certain psychological questions of activation of cognitive activity of students in these systems of instruction.

The book is intended for the use of psychologists, college teachers, secondary school teachers, students and specialists in programmed instruction.

TABLE OF CONTENTS

Introduction	4
1/2	

USSR

GEBOS, ANATOLIY IVANOVICH, PSIKHOLOGIYA POZNAVATEL'NOY AKTIVNOSTI UCHASHCHIKHSYA 1975

Chapter I. The Problem of the Activation of Cognitive Activity in Students	11
Chapter II. Psychological Problems in the Control of Cognitive Activity	38
Chapter III. Means of Activating Cognitive Activity during Programming of Instruction on Linear Problems	56
Conclusion	84
Appendix	88
Bibliography	95

2/2

USSR

LURIYA, A. R. (Editor)

THE BRAIN AND MEMORY (VOLUNTARY AND INVOLUNTARY DISTURBANCES OF MEMORIZATION WITH LOCAL BRAIN DAMAGE)

Moscow MOSZ I PAMYAT' (NARUSHENIYE PROIZVOL'NOGO I NEPROIZVOL'NOGO ZAPOMINANIYA PRI LOKAL'NYKH PORAZHENIYAKH MOZGA) 1976, Moscow University Publishing House

[Translation]

TABLE OF CONTENTS

Introduction	5
Chapter I. Forms and Factors Figuring in Memory Disorders Associated with Local Brain Damage	7
Chapter II. Variants of Memory Disorders during Pathology of the Hypothalamus-Diencephalic Structures, and Their Connection with the Clinical Picture of the Disease	15

1/3

USSR

LURIYA, A. R., MOSZ I PAMYAT' (NARUSHENIYE PROIZVOL'NOGO I NEPROIZVOL'NOGO ZAPOMINANIYA PRI LOKAL'NYKH PORAZHENIYAKH MOZGA) 1976

Section 1. Pneuropsychological Study of the Memory Function and Pathology of the Hypothalamus-Diencephalic Region	15
Section 2. Fundamental Features of the Amnesiac Syndrome Connected with Damage to the Hypothalamic Structures	19
Section 3. Features of Memory Disorders in Patients with Various Clinical Syndromes of Hypothalamus-Diencephalic Pathology	24
Chapter III. Certain Features of the Functional State of the Brain and Their Connection with Memory Disorders	46
Section 1. The Role of the Hypothalamus-Diencephalic Structures in Fulfilling the Regulatory Functions of the Brain	46
Section 2. Features of the Functional State of the Brain in Patients with Various Degrees of Memory Disorder	48

2/3

USSR

LURIYA, A. R., MOSZ I PAMYAT' (NARUSHENIYE PROIZVOL'NOGO I NEPROIZVOL'NOGO ZAPOMINANIYA PRI LOKAL'NYKH PORAZHENIYAKH MOZGA) 1976

Section 3. Disruption of the Functional State of the Brain in Patients with Korsakoff's Amnestic Syndrome	58
Chapter IV. Prospective Research of the Memory Processes in the Presence of Local Brain Damage	66

3/3

USSR

UMANSKIY, L. I. and LUTOSHKIN, A. N.

PSYCHOLOGY AND PEDOGOGY OF THE WORK OF THE KOMSOMOL ORGANIZER

Moscow PSIKHOLOGIYA I PEDAGOGIKA RABOTY KOMSORGA 1975, Molodaya Gvardiya Publ. House

[Translation] Annotation

This book, addressed to the Komsomol leader, deals with the bases of the psychology and pedagogy of the organizational activity of the elective body, and with the interrelationships in the young people's collective. There are a number of problems in the work of the Komsomol organizer which can be resolved only with due allowance for the principles and methods of social psychology, pedagogy and ethics. The present work represents a revision and enlargement of the authors' earlier book, "Psychology of the Work of the Komsomal Organizer."

1/4

USSR

UMANSKIY, L. I. and LUTOSHKIN, A. N., PSIKHOLOGIYA I PEDAGOGIKA RABOTY KOM-SORGA 1975

TABLE OF CONTENTS

Introduction to the Problem

I. The Organizer and Psychology	
Structure of Organizational Activity	27
What Organizational Abilities Consist Of	33
General Features	37
Specific Features	40
Individuality of the Komsomol Organizer	49
II. The Group and Group Psychology	
Foundation of the Organization	58
Structure of the Group	61
Effect of the Group on the Personality	64
Adjustments within the Group	74
'Microclimate' of the Organization	80
Levels of Group Development	87

2/4

USSR

UMANSKIY, L. I. and LUTOSHKIN, A. N., PSIKHOLOGIYA I PEDAGOGIKA RABOTY KOM-SORGA 1975

III. Pedagogy in Komsomol Work	
Methods of the Komsomol Organizer-Leader	99
The Ability to Convince	104
Requirement Placed on the Organizer	109
Assigning the Organizational Task	111
Strategy of Competition	115
Criticism and Self-Criticism	119
Encouragement and Censure	121
Going to the Individual	125
IV. "Ability in Practical Organization"	
Stages and Methods of Organizational Work	136
Readiness for Organization	140
Style of Leadership	145
Rules of Organizational Work	152

3/4

USSR

UMANSKIY, L. I. and LUTOSHKIN, A. N., PSIKHOLOGIYA I PEDAGOGIKA RABOTY KOM-SORGA 1975

V. Unit of Instruction and Practice	
Choice and Disposition of Organizers	157
Methods of Assessing the Effectiveness of the Organizer's Work and Personality	163
Forms of Combining Practice and Instruction	175
Glossary	186
Bibliography	206

4/4

USSR

SHCHERBA, SERGEY PETROVICH

INVESTIGATION AND FORENSIC EXAMINATION OF THE AFFAIRS OF PHYSICALLY OR MENTALLY DISABLED PERSONS

Moscow RASLEDOVANIYE I SUDEBNOYE RAZBIRATEL'STVO PO DELAM LITS, STRADAYUSH-CHIKH FIZICHESKIMI ILI PSIKHICHESKIMI NEDOSTATKAMI 1976 Yuridicheskaya Literaturnaya Publ. House

[Translation] Annotation

Described here are the concept and the criminal-procedural significance of physical and mental disabilities of persons who have committed socially dangerous acts; also, the special features of the preliminary investigation and the court proceedings.

The book is intended for the use of investigators, procurators, judges, MVD workers, attorneys, and students and teachers of law schools.

USSR

SHCHERBA, SERGEY PETROVICH, RASSLEDOVANIYE I SUDEBNOYE RAZBIRATEL'STVO PO DELAM LITS, STRADAYUSHCHIKH FIZICHESKIMI ILI PSIKHICHESKIMI NEDOSTATKAMI 1976

TABLE OF CONTENTS

Introduction	3
Chapter I. Legal Significance of Physical and Mental Disabilities of the Defendant	
Section 1. The Concept of Physical and Mental Disabilities Having Juridical Significance	6
Section 2. Demonstration of Physical Disabilities	26
Section 3. Demonstration of Mental Disabilities Which Do Not Constitute Irresponsibility	32
Chapter II. Special Features of the Procedural (Juridical) Position of Defendant Suffering Physical or Mental Disability	
Section 1. Limited Possibilities of the Defendant to Participate in the Testimony and Impossibility of His Unaided Defense of His Rights	36

USSR

SHCHERBA, SERGEY PETROVICH, RASSLEDOVANIYE I SUDEBNOYE RAZBIRATEL'STVO PO DELAM LITS, STRADAYUSHCHIKH FIZICHESKIMI ILI PSIKHICHESKIMI NEDOSTATKAMI 1976

Section 2. Obligation to Conduct Preliminary Investigation	40
Section 3. Obligatory Participation of Counsel for the Defense from the Moment of Accusation	43
Section 4. Participation by Legal Representatives of Persons Suffering Physical or Mental Disability	58
Chapter III. Juridical, Psychological and Tactical Features of the Preliminary Investigation	
Section 1. Bases and Order of Presentation of Accusation	60
Section 2. Effect of Physical or Mental Disabilities on the Testimony of the Defendant	66
Section 3. Psychological Bases and Procedural Features of the Interrogation of Defendants Suffering Physical or Mental Disability	75

USSR

SHCHERBA, SERGEY PETROVICH, RASSLEDOVANIYE I SUDEBNOYE RAZBIRATEL'STVO PO
DELAM LITS, STRADAYUSHCHIKH FIZICHESKIMI ILI PSIKHICHESKIMI NEDOSTATKAMI 1976

Section 4. Tactics of the Interrogation of Persons Suffering Physical or Mental Disability. Methods of Recording Their Testimony	87
Section 5. Features of the Inspection, Identification and Other Investigatory Actions with Participation of Defendants Suffering Physical or Mental Disability	99
Section 6. Acquiring Familiarity with Written Materials Pertaining to the Affairs of a Defendant Suffering Physical or Mental Disability	107
Chapter IV. Features of the Forensic Examination of Crimes Committed by Persons Suffering Physical or Mental Disability	
Section 1. Arraignment and Verification of Circumstances Entailing the Special Features of the Legal Procedure	113
Section 2. Procedural Features of the Preparation and Conduct of Legal Investigation	118

4/5

USSR

SHCHERBA, SERGEY PETROVICH, RASSLEDOVANIYE I SUDEBNOYE RAZBIRATEL'STVO PO
DELAM LITS, STRADAYUSHCHIKH FIZICHESKIMI ILI PSIKHICHESKIMI NEDOSTATKAMI 1976

Section 3. Interrogation of the Deaf, Dumb, Blind and Deaf-Mute Suffering from Mental Disability	123
Section 4. Investigation and Evaluation of Information on Physical or Mental Disability, and Materials Relating to the Personality of the Accused	130
Section 5. Allowance for Physical and Mental Disability in Imposing Sentence	134
Chapter V. Procurator Supervision over the Investigation and Judicial Examination of the Affairs of Persons Suffering Physical or Mental Disability	138

5/5

CSO: 1840

- END -