

AP9053078

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
PP 7-12

G. A. Motornaya,
E. Ya. Benyash, B. S. Khristoforov

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STUDY OF $Pb(NO_3)_2-Zn(NO_3)_2-H_2O$ and $Pb(NO_3)_2-Cd(NO_3)_2-H_2O$
SYSTEMS AT 25°C WITH AN ISOPIESTIC METHOD

Activities of water in ternary systems $Pb(NO_3)_2-Zn(NO_3)_2-H_2O$ and $Pb(NO_3)_2-Cd(NO_3)_2-H_2O$ were determined with an isopiestic method at 25°C in the range of total molalities of solutions from 0,6 to 5,2 m.

Average molality coefficients of activity and Harned's coefficients were calculated for lead, zinc and cadmium nitrates at the total molality of solutions from 0,8 to 1,8 m. It was found that the systems studied conform with the rules of Zhdanovsky and Harned.

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Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

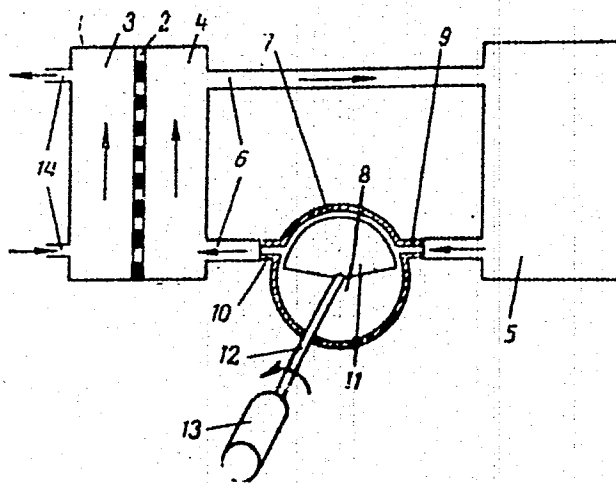
UR 0482

243786 KIDNEY MACHINE, containing dialyzer, recirculation device for dialyzer solution, where on the feed pipe of the recirculation device there is mounted a cylindrical sealed chamber 8 with inlet and outlet tubes, inside which is a rotating shut-off valve consisting of a moving section 11 on a shaft 12 that is connected to an electric motor 13. This periodically changes the flow speed of the dialyzer solution and increases efficiency of the mass transfer. 17.5.68. as 1240216/31-16. U.G.KOZLOV and G.N.BENYASH. Surgical Equipment Res. Inst. (3.10.69) Bul. 17/14.5.69. Class 3kk. Int. Cl.A61m.

Kozlov, Yu. G.; Ben'yash, G. N.
Vsesoyuznyy Nauchno-Issledovatel'skiy Institut
Khirurgicheskoy Apparatury i Instrumentov

19821242

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USSR

UDC 578.085.23

BENYUMOVICH, M. S., and SOROKINA, YE. V., Group of the Biology of Cultured Tumor Cells, Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Moscow

"A Method for Stationary Suspended Cultivation of Cells of Established Lines Previously Maintained in Monolayer"

Leningrad, Tsitologiya, No 4, 1971, pp 536-540

Abstract: HeLa and DAPT cells can be grown indefinitely in a medium containing medium 199 (90%), bovine serum (10%), and antibiotics (streptomycin and colimycin). The cells are not transferred after covering the bottom of the culture vessel, but continue to be incubated at 36° to 37° C with fresh medium added every 4 to 10 days. The bottom of the vessel gradually becomes unsuitable for multiplication of the attached cells, so that many of them peel off and float freely in the culture liquid. About 4% of the HeLa cells and 20 to 70% of the DAPT cells remain attached to the glass. Blowing of oxygen through the culture periodically loosens the attachment of the cells and increases their viability in the suspension. Gently shaking the vessel from

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USSR

BENYUMOVICH, M. S., and SOROKINA, YE. V., Tsitologiya, No 4, 1971, pp 536-540

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Automatic Control: Systems

USSR

UDC 629.1.018.4

BENZAR', V. K., Candidate of Technical Sciences, ROMANOV, A. V., Engineer

"Microwave Level Indicators for Liquids and Particulates"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 10, 1972, pp 17-18

Abstract: New types of microwave signal units are described which utilize the capacity of liquid or particulate media to reflect or absorb electromagnetic radiation. The amplitude and phase component of the electromagnetic field are altered by the presence of the medium in the measurement zone. The proposed level indicators comprise an oscillator, a waveguide line, an actuating circuit, and a power supply. The open end of the waveguide serves as the radiator. Schematics are given and described for three remote level indicators based on this principle. The proposed units are simple and reliable, and direct contact with dangerous substances is not required. The measurement accuracy is within ± 0.3 cm of the exact level for liquids and particulates with permittivity of 1.5 or higher and loss tangent of 0.05 or greater on a wavelength of 3.2 cm. Power consumption is 15 W.

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USSR

UDC 669.017.539.26:620.187

KLIMOVICH, L. G., VAYNBLAT, YU. M., OVECHKIN, B. I., and BER, L. B., All-Union Institute of Light Alloys

"Determination of the Grades of Separations in the Breakdown of the Solid Solution in the Al+0.4%Zr Alloy by Means of Small-Angle X-Ray Dispersion and Electron Microscopy"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 135-137

Abstract: The breakdown of the solid solution was investigated on specimens cut out from pressed bars of the Al+0.4%Zr alloy by the methods of small-angle x-ray dispersion (SXD) and electron microscopy. The specimens were aged at 400° and 500° for 10 to 500 hr after water-hardening and heating at 640° for 10 min. It is shown that the particles separating on aging are spherical. Their average sizes satisfactorily coincide with dimensions calculated by the SXD method of oxide replica. The analysis of volumes of different fractions seems to indicate that the quantity of the larger fraction increases with the duration of aging. The joint application of SXD and electron microscopy methods provides reliable information on aging processes of alloys. Two figures, two tables, five bibliographic references.

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Transformation and Structure

USSR

UDC 669.71'55'721

BER, L. B., VAYNBLAT, YU. M., DAVYDOV, V. G., KHAYUROV, S. S., and SHCHEGLOVA, N. M., All-Union Institute of Light Alloys

"Substructure Changes and Decomposition Processes in the Double Aging of Alloy AD-31 Under the Effect of Plastic Deformation"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 583-590

Abstract: Electron microscopy and mechanical property measurements were employed to study substructure changes and decomposition processes in alloy AD-31 in sheet form with a composition of (in %): 0.73 Mg, 0.57 Si, 0.12 Fe, 0.03 Zn, 0.01 Mn, balance -- Al. The sheets were water quenched from 525°C and rolled in the cold state (30 and 90% reduction) either after quenching or after natural aging for one day. Samples were studied after deformation without subsequent aging and after aging at 155° for five hours. Out of 13 different combinations of quenching, aging and rolling reduction, it was found that the best combination of tensile strength and ductility is achieved by quenching, natural aging for one day, reduction of 90%, and aging at 155°C for 0.5 hours. This treatment yielded a TS of 38.3 kg/mm²,
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USSR

BER, L. B., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973,
pp 583-590

and elongation of 14.5%. Increasing the aging time from 0.5 hours to 48
hours only reduces strength and ductility. Four figures, two tables,
seven bibliographic references.

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USSR

UDC: 621.385.6

BERRASOV, V. A., GROSHKOV, L. M., KUZNETSOV, M. I., Gor'kiy State University

"Experimental Confirmation of the Existence of a Static Synchronous State of the Electron Cloud in the Preoscillation Mode of a Magnetron"

Gor'kiy, IVUZ Radiofizika, Vol 15, No 6, 1972, pp 944-947

Abstract: The paper presents the results of measurements of electric field strength in the sporadic part of the electron cloud of a magnetron diode in magnetic fields appreciably exceeding critical strength. A comparison of the experimental results with theoretical data shows that the state of the space charge in the sporadic section of the electron cloud in a cylindrical magnetron under preoscillation conditions is close to the static synchronous state.

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Inorganic Compounds

USSR

UDC 541. 123.22

MOTORNAYA, G. A., and BEN'YASH, Ye. Ya., All Union Scientific Research
Institute of Mining and Metallurgy of Non-Ferrous Metals, Ust'-Kamenogorsk

"Coefficients of Activity of Lead and Cadmium Nitrates in Mixed Aqueous
Solutions at 25°C"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 8, Aug 73, pp 2074-2077

Abstract: The activity coefficients and osmotic coefficients at 25°C were
calculated from the isopietic determinations of the activity of water in
mixed solutions of $Pb(NO_3)_2$ and $Cd(NO_3)_2$.

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Soviet Inventions Illustrated, Section III Mechanical and General,
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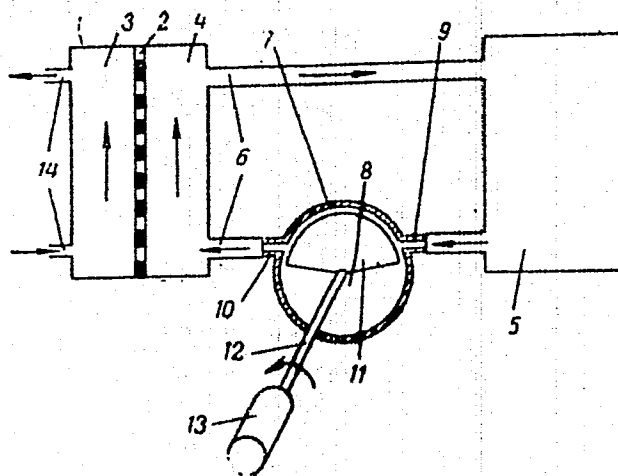
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Kozlov, Yu. G.; Ben'yash, G. N.

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BEN YUSH, V A

Genetics

ABSTRACTS FROM 11TH INTL CONGRESS
OF HUMAN GENETICS, PARIS, 6-11 SEP 1991

703. Characterization and amino acid substitution of normal and variant human phosphoglycerate kinase

YOSHIDA, A., WATANABE, S., CHEN, S.H., GIBLETT, F.R. and MALCOLM, I.A., *Seattle, Wash., U.S.A. and Los, Los, Guinea*

Phosphoglycerate kinase (PGK) is a key enzyme for generation of ATP in the glycolytic pathway. Genetic deficiency of PGK is associated with hemolytic anemia. An electrophoretic variant (PGK-II) was discovered in a New Guinea population and family studies indicated X-linkage of PGK in man. Subsequently, seven other electrophoretic variants were found in other populations. The normal PGK (PGK-I) and the New Guinea variant (PGK-II) were crystallized and their molecular weights (99,000) and amino acid substitution (threonine to asparagine) between PGK-I and PGK-II was elucidated by peptide mapping of their tryptic digests.

704. Selective staining of constitutive heterochromatin and Y-heterochromatin following DNA denaturation and reassociation of exogenous chromosomes

YUNIS, J. J., ALDRICH, J. E. and LI, J. C., *Minneapolis, Minn., U.S.A.*

A new technique for the selective visualization of satellite or highly repetitive DNA in heterochromatin will be discussed. Metaphase slide preparations from bone marrow cells or cultured lymphocytes were prepared by the conventional flame-dried technique. Post-densitometry for 10 min at 85-100°C in 0.1M phosphate buffer, pH 6.8, followed at 60°C for 10 min. If chromosomes are used, it was found that pretreatment of the preparations with hydrochloric acid and RNase prior to denaturation was necessary. The following species were stained: man, mouse, calf, pig, dog, sheep, hamster, Syrian hamster, horse, *Utricularia vesicaria*, *Microtus pennsylvanicus* and *E. leucurus*. After 15 min reassociation all chromosomes showed dark staining except for the Y chromosomes which showed only a few dark spots. Areas of reassociation were observed only in man, extreme hamster and LM, which are associated closely to the late replicating and constitutively heterochromatic chromosome segments. In each species studied, a similar pattern was observed in metaphases obtained from lymphocytes, bone marrow cells and fibroblasts. Furthermore, the conspicuous differential stain of chromosomal segments was observed throughout the cell cycle.

705. Differentiation along human chromosomes in relation to chromosome identification

ZAKHAROV, A. F., SELTZNEV, J. V., BENJUSCH, V. A., IBRANOVSKAYA, L. I. and DUMITSHEVA, V. S., *Moscow, USSR*

After treatment of cultured human lymphocytes from peripheral blood either with 5-bromodeoxyuridine (BrdU) or with 3-thymine deoxyribose (Tdr) for 24 hours, a secondary cell appearance. Anticardiac staining with 3H-thymidine and 3H-thymidine with 3H-thymidine labeling in extended segments of the chromosomes. According to the chromosome spreads with distinct late replicating regions are more often and more clearly segmented (Y and one of two female X chromosomes, some segments of groups B, C, D and F). The segmentation pattern seems to be constant and specific for a given chromosome. This conclusion is substantiated not only by visual estimation but also by analysis of density distribution curves obtained by cytophotometry of individual chromosomes. The chromosomal segmentation induced with the above mentioned agents is interpreted as a morphological manifestation of the functional differentiation of a chromosome along its length, and is a useful tool for chromosome identification.

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Automatic Control: Systems

USSR

UDC 629.1.018.4

BENZAR', V. K., Candidate of Technical Sciences, ROMANOV, A. V., Engineer

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BER, L. B., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973,
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USSR

UDC: 621.385.6

~~BERRASOV, V. A.~~, GROSHKOV, L. M., KUZNETSOV, M. I., Gor'kiy State University

"Experimental Confirmation of the Existence of a Static Synchronous State of the Electron Cloud in the Preoscillation Mode of a Magnetron"

Gor'kiy, IVUZ Radiofizika, Vol 15, No 6, 1972, pp 944-947

Abstract: The paper presents the results of measurements of electric field strength in the sporadic part of the electron cloud of a magnetron diode in magnetic fields appreciably exceeding critical strength. A comparison of the experimental results with theoretical data shows that the state of the space charge in the sporadic section of the electron cloud in a cylindrical magnetron under preoscillation conditions is close to the static synchronous state.

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USSR

UDC: 621.385.642.2

KUZNETSOV, M. I., BERBASOV, V. A.

"Concerning the Diffusion Theory of the Magnetron Diode"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 805-810

Abstract: This paper gives a critical analysis of the diffusion theory of the magnetron diode proposed by U. S. physicists Muthaan and Süsskind (Phys. Fluids, 1965, 8, 1715; J. Appl. Phys., 1966, 37, 7, 2598). Since its inception, the theory has been developed by various Soviet research workers. It is shown that the results of the theory are not in agreement with the initial assumptions or with experimental data. The authors thank V. S. Lukoshkov for fruitful discussion of the work and constructive criticism, and also D. Ye. Samsonov who took an active part in this discussion.

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Television

USSR

UDC 621.385.64

KUZNETSOV, M.I., BERBASOV, V.A., ZHELEZTSOVA, I.N. [Gorkiy State University]

"Pre-Oscillation Charge Distribution In A Cylindrical Magnetron"

Izv.VUZ:Radiofizika, Vol XV, No 2, Feb 1972, pp 283-290

Abstract: In previous works one or more of the authors of this paper discussed certain assumptions on the nature of the diffusion electron motion in a plane magnetron. On the basis of these assumptions, a diffusion equation is obtained for the distribution of potential and charge in a cylindrical magnetron diode. A calculation of the pre-oscillation distribution of charge and potential in the irregular part of the electron cloud was fulfilled with the aid of an electronic computer. It is found that at least, at $H > 1.5 H_{cr}$, the major part of the electron cloud is in the regime close to the static synchronous one. 2 fig. 10 ref. Received by editors, 26 Feb 1971.

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USSR

UDC 621.385.64

KUZNETSOV, M. I., BERBASOV, V. A., ZHELEZTSOVA, I. N., Gor'kiy State University

"Pre-oscillation Charge Distribution in a Cylindrical Magnetron"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 283-290

Abstract: The concepts of the nature of diffusion motion of electrons in a magnetron discussed previously [V. A. Berbasov, Izv. vyssh. uch. zav., Radiofizika, Vol 11, No 9, 1423, 1968; M. I. Kuznetsov, Elektronnaya tekhnika, seriya 1, Elektronika SVCh, No 12, 83, 1970; No 11, 28, 1969] as applied to a flat magnetron were used to obtain the diffusion equation for a cylindrical magnetron. By solving this equation it is shown that at least for $H > 1.5 H_{cr}$, the majority of the electron cloud is close to static synchronous. The calculations show that the charge and potential distributions depend very little on the parameter C_2 [$C_2 = \frac{\tau \omega_n^2}{H^2} / 2\pi\epsilon_0 (e/m) E_r^2$] in a broad range including the experimental values of $50 < C_2 < 1,000-2,000$.^a The standard results of calculations of the preoscillation charge and potential distributions in the irregular section of the electron cloud of a magnetron are presented in graphical form and analyzed. The basic result that the pregeneration state of the space charge in a

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USSR

KUZNETSOV, M. I., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 283-290

cylindrical magnetron is close to static synchronous is confirmed by sonde measurements in magnetrons with thin cathodes [O. Dochler, Ann. de Radioel., No 3, 27, 1948]. It was recently also confirmed by measurements of the potential distribution in a magnetron with a thick cathode at Gor'kiy State University. The results of these measurements will be published later. The results presented in this paper will be of value in constructing the theory of excitation of a magnetron generator.

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UDC 621.385.64

BERBASOV, V. A.

"To the Problem of Distribution of Space Charge in a Magnetron Diode"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 48-54 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A125)

Translation: An analysis is conducted of experimental data on the space charge distribution in a magnetron diode, obtained by Nederman. It is shown that the curves plotted by Nederman correspond to the space charge distribution in that part of the electron cloud where the electrons can enter only under the influence of irregular fields. A comparison is made of Nederman's results with the computed data of work on the diffusion theory of the magnetron diode, which makes it possible to evaluate the adequacy of the latter. 7 ref. Summary.

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USSR

UDC [537.226+537.311.33]:[537+535]

BERCHA, D. M., ZAYACHKOVSKIY, M. P., SLIVKA, V. YU, LOVGA, I. V., TURYANITSA, I. D., AND CHEPUR, D. V.

"Effect of Piezoresistance in BiSeI Crystals"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 53-58 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE651 by G. G. RUDOVOL)

Translation: An investigation was made of the effect of piezoresistance and electrical conductivity in acicular BiSeI single crystals, as well as their temperature dependence in the 270-115° K temperature range. It was established that the piezoresistance coefficient is complexly (peakwise) temperature-dependent. It is suggested that the semiconductor has several donor levels, which are depleted in turn. This results in several peaks, dependent on the number of impurity levels. However, the peak found in the 130-140° K temperature region is due to a phase transition of the second kind. In the 230° K region the piezoresistance does not involve a phase transition but is due to a change in the activation energy of impurity levels. Such an assumption is confirmed by the fact that in experimental studies a shift in the minimum is observed from specimen to specimen, while the minimum remains constant at $T=133^{\circ}$ K.

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CHEMICAL ABST.

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4R 0181

B

106201x Change in the symmetry of SbSI-type crystals during a second-order phase transition. Bercha, D. M.; Hercha, I. V.; Slivka, V. Yu.; Turvanitsa, I. D.; Chepur, D. V. (Uzhgorod Gos. Univ., Uzhgorod, USSR). *Fiz. Tverd. Tela* 1969, 11 (6), 1677-80 (Russ). The temp. dependence of spontaneous polarization p_s and the thermal effects in the region of the 1st- and the 2nd-order phase transitions were investigated for single crystals of SbSI and some solid solns. based on SbSI. Group-theory methods were used to det. a possible type of symmetry of the SbSI-type crystals below the temp. of the 2nd-order phase transition.

A. Libackyj

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AP9039854

CHEMICAL ABST. 10-69 UR 0076

74907p Determination of the standard heat of formation of silver tellurate(IV). Berchenko, M. A.; Belyaev, A. I.; Leshchinskaya, Z. L. (Mosk. Inst. Stali Splavov, Moscow, USSR). *Zh. Fiz. Khim.* 1969, 43(6), 1403-6 (Russ). Ag_2TeO_4 was prepd. by pptn. from the soln. contg. $AgNO_3$ and Na_2TeO_4 . X-ray powder diagram of Ag_2TeO_4 was made and the calcd. interplanar distances are tabulated. Standard heat of formation (ΔH_{298}°) from elements was calcd. from the measured heat of reaction of Ag_2TeO_4 (cryst.) + $2HNO_3$ (soln.) \rightarrow $2AgNO_3$ (soln.) + H_2TeO_4 (soln.). The measurements were made in an isothermal calorimeter with an accuracy of 1-2%. $\Delta H_{298}^\circ = - (99.20 \pm 0.12)$ kcal./mole. L. Kuch

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USSR

PLEKHOV, V. A., BERDASHKEVICH, N. A., BARYKIN, N. P., KAGANOV, A. A.

"Study of Plasticity and Deformation Resistance of EP303 Steel"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], 1971, No 25, pp 127-134, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V1180 by R. A. Vasin).

Translation: Results are presented from standard tensile and upsetting tests of EP303 steel specimens in the 80-1,300° temperature range. The dependence of the basic characteristics of the steel on temperature and degree of deformation is presented in graphic form; the change in microstructure of specimens at various temperatures is shown.

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USSR

UDC 622.011.43

BERDENNIKOV, N. I., CHIZHOVA, M. V., and BELOZEROV, A. A.

"Concerning the Study of Some Effective Parameters of Real Media on the Basis of Data of Seismic Observations in Boreholes"

Leningrad, Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik (Questions of the Dynamic Theory of the Propagation of Seismic Waves -- Collection of Works), Nauka, No 11, 1971, pp 124-135 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V795 by Ye. I. Lyuke)

Translation: Consideration is given to the possibility of utilizing some effective parameters of a medium, that were obtained on the basis of vertical seismic profiling, for refining an effective seismic model of a cross section. A procedure is proposed for determining the effective coefficients of absorption for various intervals of the cross section, which are established with joint analysis of the amplitude curves, the curve of the apparent resistances ρ_k of the stratum velocities, and other physical and stratigraphic properties of the cross section. The effective coefficient of absorption for a direct wave $\bar{\alpha}$ is determined according to the formula

$$\frac{A_i}{A_1} = \frac{L_i}{L_1} = \rho^{-\bar{\alpha}} (H_i - H_1),$$

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USSR

BERDENNIKOV, N. I., et al., Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik, Nauka, No 11, 1971, pp 124-135

where H_1 is the depth of the observation point, L_1/L_1 is the relative geometric divergence of the direct-wave front. With such determination, in coefficient $\bar{\alpha}$ is included the effect of passage of the wave through thin layers; this effect is characterized by the passage coefficient $1 \pm k_1$. As a result of failure to account for thin stratification, $\bar{\alpha}$ may be overstated in comparison to the average stratum absorption $\sum H_i \alpha_i / \Delta H$, if the determination interval does not contain a gradient of acoustic rigidity, or if the acoustic rigidity increases with depth. If the determination interval is characterized by a negative gradient of acoustic rigidity, coefficient $\bar{\alpha}$ will be understated in comparison to the average-stratum coefficient of absorption. The effective absorption coefficient of a reflected wave $\bar{\alpha}'$ differs from $\bar{\alpha}$ due to a different direction of the incident ray and the reflected ray. Coefficient $\bar{\alpha}'$ is determined from the relationship of the amplitudes of the direct wave and the reflected wave at a given point of observation.

$$\frac{A_{refl}}{A_{dir}} = \frac{L_{dir}}{L_{refl}} K_1^{-2\bar{\alpha}' - 2\Delta h},$$

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BERDENNIKOV, N. I., et al., Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik, Nauka, No 11, 1972, pp 124-135

where k is the coefficient of reflection from the boundary which shapes the given wave; Δh is the distance from the observation point to the reflecting boundary. On the basis of observation at a series of points, it is possible to determine the parameters of $\bar{\alpha}'$ and k . Experimental determination of the values of k , $\bar{\alpha}$ and $\bar{\alpha}'$, conducted within a large volume, showed that the reflection coefficients k are determined with sufficient stability with an error of 10-15%. A considerable difference is ascertained between the absorption coefficients along a direct wave $\bar{\alpha}$ and along a reflected wave $\bar{\alpha}'$ for the same intervals of cross section. The values of $\bar{\alpha}'$ considerably exceed the values of $\bar{\alpha}$. Consequently, when conducting calculations of wave fields, it is necessary to introduce absorption parameters which depend upon the wave type.

3/3

USSR

UDC 621.791.06:669.15-194

TESLENKO, T. S., SOBOLENKO, T. M., and BERDICHEBSKIY, G. V., Institute of Hydrodynamics of the Siberian Department of the Academy of Sciences USSR

"The Structure of Steel Joints Produced by Explosive Welding"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 72, pp 1-4

Abstract: A study was made of the composition and structure of the zone of steel joints produced by explosive welding, the distribution of alloying elements in the seam zone, and their behavior under heat treatment. Investigated were the following material pairs: 1Kh18N9 steel and 1Kh18N9 steel, St. 3 steel and nickel, St.3 steel and 1Kh18N9T, 1Kh18N9T steel and G13L steel, and 1Kh18N9T steel and U8 steel. The parameters of the inter-diffusion of the welded materials and the transition zones are analyzed on the basis of their micropictures and concentration curves immediately after welding and after annealing in vacuum for 4 hrs at 650, 850, and 1200°C. Five illustrations, nine bibliographic references.

1/1

AA0040692- B

Berdiauskii, A.M.

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240728 COMPARTMENT FURNACE intensifies the heat treatment operation in that each section of its gas distributor grid has independent headers to activate part of its lids or caps. The bottoms of the heating (1) and cooling (2) compartments comprise the grid sections (3) to support crushed corundum, firebrick etc, the first section grid (6) rather wider than those following so that the gas can burn well below the level of the wire passing through and provide enough heat to raise the metal to scale temperatures. The gas (short of air) burns and forms a de-oxidising medium, with additional air piped in (7) to finally burn off the gas above the wire level. When working small gauge wire, air preheated in the stove (10) is fed in through the grid caps. When working average gauge material, heat can be removed by the air cooling tube (11), whilst at heavy gauges a water-cooling tube can be inserted.

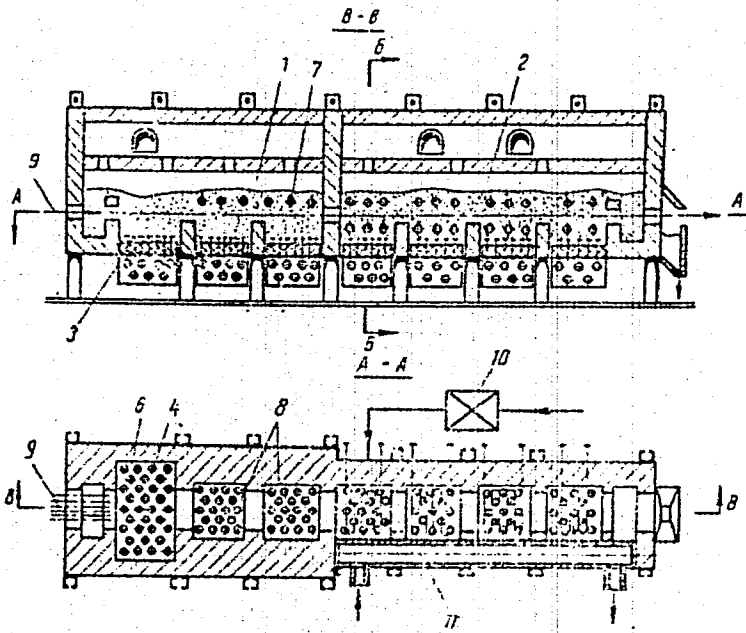
15.12.66 as 1120453/22-1.GUTOVSKII.B.P.et al(14.8.69)
 Bul 13/1.4.69. Class 18c, 31a¹. Int.Cl.C21d, F27b.

1/3

18

19750310

AA0040692



19750311

2/13

LD

AA0040692

AUTHORS: Gutovskiy, B. P.; Orlov, N. A.; Berdichevskiy, A. M.;
Baskakov, A. P.; Zubov, V. Ya.; Grachev, S. V.;
Berg, B. V.; Zavarov, A. S.; Burkov, G. G.;
Krasil'nikov, L. A.; and Sokolov, N. V.

19750312

$\frac{2}{3}$

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AN EXPERIMENT OF FREQUENCY SOUNDING OF THE EARTH ON THE BASIS OF
THE RESULTS OF A SPHERICAL ANALYSIS OF THE GEOMAGNETIC FIELD VARIATIONS
AUTHOR--(05)-GERDICHEVSKIY, M.N., VANYAN, L.L., LAGUTINSKAYA, L.P.,
ROTANGVA, N.M., FAYNBERG, E.B.
COUNTRY OF INFO--USSR **B**
SOURCE--GEOMAGNETIZM I AERGNOMIIA, VOL. 10, NO. 2, 1970, P. 374-377
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GEOMAGNETIC FIELD, RESISTIVITY, MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0163 STEP NO--UR/0203/70/010/002/0374/0377
CIRC ACCESSION NO--AP0119159
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0119159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY RESULTS OF A FREQUENCY SOUNDING OF THE EARTH BASED ON DATA FROM A SPHERICAL ANALYSIS OF SQ. DST, AND 27 DAY GEOMAGNETIC FIELD VARIATIONS. TABLES INCLUDE CALCULATED VALUES OF THE THICKNESS OF THE NONCONDUCTING SHELL, THE RESISTIVITY OF THE NUCLEUS, AND THE MODULI AND ARGUMENTS OF THE RATIO OF THE OUTER AND INNER PORTIONS OF THE MAGNETIC POTENTIAL. THE RESULTS OBTAINED ARE COMPARED WITH THE PARAMETERS OF THE LAMB MODEL. FACILITY:

MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KOSMICHESKIKH ISSLEDOVANII, MOSCOW.

FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIIA RADIOVOLN, KRASNAYA PAKHRA, USSR. FACILITY:

AKADEMIIA NAUK TURKMENSKOI SSR, INSTITUT FIZIKI ZEMLI I ATMOSFERY. ASHKHABAD, TURKMEN SSR.

UNCLASSIFIED

USSR

UDC: 539.3

BERDICHEVSKIY, V. L., Moscow

"Variation Methods of Shell Model Construction"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 36, Vyp 5, 1972,
pp 788-804

Abstract: The goal of this article is to derive the expressions of the elastic shell theory from the variation equation of continuous medium mechanics for the general case of physically and geometrically nonlinear models. The investigation of this problem is of interest because with the variation approach all hypotheses acquire the most compact and clear formulation, a rational basis is provided for the comparison of different models proposed in the shell theory. Shell models provide an interesting example of continuous medium models which possess high order derivatives and in which internal degrees of freedom emerge. The appearance of internal degrees of freedom requires additional equations to determine the

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USSR

BERDICHEVSKIY, V. L., *Prikladnaya Matematika i Mekhanika*, Vol 36, Vyp 5, 1972, pp 788-804

new parameters. The increase of the order of differential equations requires additional boundary conditions. These relations are obtained by the methods developed for the continuous medium models with internal degrees of freedom and high order derivatives. This article provides only the general theory. The particular cases will be analyzed separately.

2/2

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USSR

UDC 531/534:001.8

BERDICHEVSKIY, V. L.

"The Variational Equation in the Mechanics of Continuous Media"

Leningrad, Problemy Mekhaniki Tverdogo Deformirovannogo Tela -- Sbornik (Problems in the Mechanics of a Deformed Solid -- Collection of Works), "Sudostroyeniye," 1970, pp 55-66 (from Referativnyy Zhurnal, Mekhanika, No 7, 1970, Abstract No 7A9)

Translation: The variational formalism in the mechanics of solid media is set forth. Consideration is given to models of continuous media with the local interaction of particles, each of which is characterized by a finite number of values and a finite number of the derivatives of these values with respect to coordinates and time periods. Additional specific definition leads to models of Newtonian and relativistic mechanics. In particular, from a variational equation, as has been shown earlier, it is possible to obtain the equations of motion for a classical elastic body, an elastoplastic body, instantaneous elasticity theory, a viscous liquid, and an ideal liquid. The conditions of the holonomy of

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USSR

BERDICHEVSKIY, V. L., Problemy Mekhaniki Tverdogo Deformirovanogo Tela -- Sbornik, "Sudostroyeniye," 1970, pp 55-66

a variational equation are written out; from these conditions it follows that the equations of motion of a viscous liquid in the Lagrange representation cannot be obtained from a holonomic variational equation. 17 bibliographic entries.

2/2

USSR

UDC 51

BERDICHEVSKIY, V. V., BORODIN, YU. M., KRIVVOY, F. F., PELIPEY, L. N.

"Computer Algorithms for Obtaining the Summary Materials List"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,
pp 130-137 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V395)

No abstract

1/1

USSR

UDC: 681.332.35

TESLER, V. D., BERDICHEVSKIY, Z. M., Polar Scientific Research and Planning
Institute for Deep-Sea Fishing and Oceanography imeni Knipovich

"A Device for Integrating Echo Signals from Schools of Fish"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyya Obratztsy, Tovarnyye Znaki,
No 18, 1970, Author's Certificate No 271902, Filed 2 Jul 68, p 111

Abstract: This Author's Certificate introduces a device for integrating echo signals from schools of fish. The device contains an amplifier, detector, integrating module, summation module, code-to-voltage converter connected in series, a mark generator, delay module, strobing module, holding module, and voltage-to-pulse duration converter. As a distinguishing feature of the patent, the functional possibilities of the device are extended and its operating precision is improved by adding a linear voltage oscillator and a diode functional converter connected in series. The input of the linear voltage oscillator is connected to the input of the voltage-to-pulse duration converter and to the input of the delay unit and acts as the "trigger" input of the device, being connected to the output of an external sounding device. The output of the diode functional converter is connected to the amplifier input. The delay, strobing, and holding modules are connected in series. The output

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TESLER, V. D., BERDICHEVSKIY, Z. M., Otkrytiya, Izobreneniya, Promyshlennyya Obraztzy, Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271902, Filed 2 Jul 68, p 11

of the holding module is connected to the control input of the integrating module. The second and third outputs of the strobing module are connected respectively to the second control input of the amplifier and the first input of the mark generator. The outputs of the voltage-to-pulse duration converter are connected respectively to the second input of the code-to-voltage converter and to the third input of the mark generator. The output of the code-to-voltage converter acts as the output for the device, and the output of the mark generator acts as the "mark" output of the device and is connected to the appropriate input of the external sounding device.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--A TECHNIQUE FOR DETERMINING THE DYNAMICS AND RATE OF PORTAL
CIRCULATION WITH THE AID OF A PLATINUM AND HYDROGEN ELECTRODE -U-
AUTHOR-(04)-VISHNEVSKIY, A.A., VOLYNSKIY, YU.D., DANILOV, M.V., BERDIKYAN,
S.YA.
COUNTRY OF INFO--USSR **B**
SOURCE--KHIRURGIYA, 1970, NR 4, PP 97-99
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD CIRCULATION, LIVER, VEIN, HYPERTENSION, PLATINUM
ELECTRODE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1219 STEP NO--UR/0531/70/000/004/0097/0099
CIRC ACCESSION NO--AP0054114
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PROPOSE A NEW METHOD OF STUDYING THE PORTAL CIRCULATION BY MEANS OF A CATHETER WITH A PLATINUM ELECTRODE INTRODUCED INTO THE HEPATIC VEIN. ASCORBIC ACID SOLUTION WHICH WAS INTRODUCED INTRASPLENICALLY. THE PLATINUM ELECTRODE RECORDS THE INDICATOR DILUTION CURVE IN THE HEPATIC VEIN. THE REFERRED OT TECHNIQUE ENABLES ACCURATE DETERMINATION OF THE RATE OF PORTAL HYPERTENSION AND THE CHARACTER OF INDICATOR EVACUATION FROM THE PORTAL CHANNEL, AS WELL AS HELPS TO ASSESS THE DEGREE OF CIRCULATION IMPAIRMENT THROUGH THE LIVER AND COLLATERAL CIRCULATION.

UNCLASSIFIED

USSR

UDC 612.744+612.825.4

BERDINA, N. A., KOLENKO, O. L., KOTS, YA. M., KUZNETSOV, S. P., RADIONOV, I. N., SAVCHENKO, A. P., and TKHOREVSKIY, V. I., Department of Human and Animal Physiology, Biology-Soil Faculty, Moscow State University; Physiology Department of Roentgenology and Radiology, First Moscow Medical Institute; Physiology of Work Section, Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Efficiency and Blood Supply of Skeletal Muscles During Emotional Stress Induced by Mental Arithmetic"

Leningrad, Fiziologicheskiy Zhurnal SSR imeni I. M. Sechenova, No 4, 1971, pp 546-555

Abstract: Emotional stress arising from mental addition and subtraction produced in most human subjects an increase in the volumetric blood flow rates (by 85% on the average) in resting muscles of the forearm. When mental arithmetic was combined with voluntary muscular exertion (on a squeeze dynamometer) or isometric contraction of the antebrachial muscles elicited by electric stimulation of the nerve, muscular performance increased by 46 and 155%, respectively. This happened in only those subjects in whom mental
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USSR

BERDINA, N. A., et al., Fiziologicheskii Zhurnal SSR imeni I. M. Sechenova,
No 4, 1971, pp 546-555

arithmetic intensified the blood flow in resting muscles. Intraarterial injection of atropine markedly slowed the increase in rate of blood flow in resting muscles due to mental arithmetic. It also reduced the length of time exertion on the squeeze dynamometer could be sustained. Stress-induced muscular efficiency is ascribed to increased blood flow not in the working muscles but in the resting muscles as a result of change in muscle metabolism brought about by the sympathetic nervous system.

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USSR

UDC 615.373.39:576.858.75].012.6

CHARCHOGLYAN, R. A., BERDINSKIKH, M. S., KUPRADZE, S. A., and KOSYAKOV, P. N.,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Preparation of Specific Immune Serum to Sendai Virus Ribonucleoprotein"

Moscow, Voprosy Virusologii, No 5, 1971, pp 610-616

Abstract: Sendai virus was passaged in chick embryos and purified by a single cycle of differential centrifugation, with the sediment resuspended in phosphate buffer. Pure ribonucleoprotein (RNP) was isolated by Hosaka's method: the virus was destroyed with Tween 20 in an alkaline medium after which the RNP was isolated in a CsCl density gradient. Anti-S serum was obtained from rabbits immunized with the isolated RNP mixed with complete Freund adjuvant. The serum was tested in the complement-fixation and immunofluorescence reactions. Injection of the purified RNP resulted in the production of antibodies of different specificities to antigens of both viral and normal cells.

1/1

USSR

UDC 576.858.75.097.37.095.1

BERDINSKIKH, M. S., and CHARCHOGLYAN, R. A., Institute of Virology imeni
D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Reaction of Sendai Virus Complement-Fixing Antigens to Various Factors"

Moscow, Voprosy Virusologii, No 5, 1971, pp 539-543

Abstract: The V and S antigens do not dissolve in alcohol, acetone, or chloroform and are inactivated by these agents. They are also sensitive to sodium periodate and trypsin but resistant to neuraminidase from a filtrate of cholera vibrios. However, both antigens are markedly thermostable, the V antigen more so. While the S antigen loses its serological activity at 77 to 78°C, the V antigen can withstand temperatures ranging from 90 to 95°C. Even after heating to 100°C for 30 min, V antigen is still active but only one-sixth to one-eighth as active as before heating.

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USSR

UDC 576.858.5.097.2

BERDINSKIY M. S., CHARCHOGLYAN, R. A., and KOSYAKOV, P. N., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Isolation of a New Antigen Induced by Sendai Virus"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 524-529

Abstract: Attempts were made to isolate a new antigen (an early protein) induced by Sendai virus in the chorioallantoic membrane of chick embryos using the sucrose-gradient centrifuging method. This antigen differs in its sedimentation properties from antigens of the mature virus particle (or its individual components) and is localized in the same fractions of the gradient as the components of normal host cells. To separate this new antigen from the normal host cells, a more sensitive method is required (for example, electrophoretic separation of cell components in polyacrylamide gel).

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B

USSR

UDC 576.858.75.083.35.097.2

CHARCHOGLYAN, R. A., ~~BERDINSKIKH, M. S.~~, and KOSYAKOV, P. N., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"New Antigens Induced by Sendai Virus in Cells of Various Species"

Moscow, Voprosy Virusologii, No 2, Mar/Apr 70, pp 208-212

Abstract: Sendai virus was found to induce a new specific antigen in cells of different species (chick embryo fibroblasts, transplanted human amnion, monkey kidney cells, pig kidney cells, mouse fibroblasts) differing both from antigens of the mature virus and from antigens of normal cells. The specificity of the new antigen did not depend on the cell species, but was determined by the virus. Immunofluorescent studies showed that the new antigen differs from the structural viral antigens by the time of its appearance (it preceded the V-antigen), localization (cytoplasmic from the moment of detection) and the pattern of fluorescence (strictly granular).

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1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--NEW ANTIGENS INDUCED BY SENDAL VIRUS IN CELLS OF DIFFERENT SPECIES
AFFINITY -U-
AUTHOR--(03)-CHARCHOGLYAN, R.A., BERDINSKIKH, M.S., KOSYAKOV, P.N.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 208-212
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VIRUS, CONTINUOUS CULTURE, TISSUE CULTURE, ANTIGEN,
FLUORESCENT ANTIBODY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0735 STEP NO--UR/0402/70/000/002/0208/0212
CIRC ACCESSION NO--AP0108941
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108941

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SENDAI VIRUS WAS FOUND TO INDUCE A NEW SPECIFIC ANTIGEN IN CELLS OF DIFFERENT SPECIES ORIGINS (CHICK EMBRYO FIBROBLASTS, CONTINUOUS HUMAN AMNION CELLS, MONKEY KIDNEY CELLS, PIG EMBRYO KIDNEY CELLS, MOUSE FIBROBLASTS) DIFFERING BOTH FROM ANTIGENS OF THE MATURE VIRUS AND FROM ANTIGENS OF NORMAL CELLS. THE SPECIFICITY OF THE NEW ANTIGEN DID NOT DEPEND BY THE CELL SPECIES BUT WAS DETERMINED BY THE VIRUS. THE IMMUNOFLOUORESCENT STUDIES SHOWED THE NEW ANTIGEN TO DIFFER FROM THE STRUCTURAL VIRAL ANTIGENS BY THE TIME OF APPEARANCE (PROCEEDED THE V,ANTIGEN), LOCALIZATION (CYTOPLASMIC FROM THE MOMENT OF DETECTION) AND THE PATTERN OF FLUORESCENCE (STRICTLY GRANULAR).

UNCLASSIFIED

BERDNIKOV, M. P.

Acc. Nr: AP0044157

Ref. Code: UR 0244

3

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,
pp 23-28

CHARACTERIZATION OF BIOCHEMICAL SHIFTS IN EXPERIMENTAL
B₆-HYPOVITAMINOSIS

Karkalitskiy, I. M.; Karkalitskaya, G. V.; Ashikhmina, Ye. M.;
Kovrizhnykh, N. D.; Tuzova, G. P.; Plotnikova, G. F.; Berdnikov,
M. P.

Tubazid in an amount of 100 mg was administered daily intramuscularly for 7 weeks to *nuria cospus* to produce pyridoxine deficiency. The earliest sign of B₆-hypovitaminosis was diminished passage of 4-pyridoxine acid with the urine, whose week-wise fluctuations were of an undulating nature. The blood serum of animals with pyridoxine deficiency showed a fall of α - and β -globulins, a rise of albumins, declined activity of the aspartate-aminotransferase, unchanged activity of the alanine-aminotransferase and an increase of β -lipoproteids in the blood serum and tissues. The animals also developed fatty degeneration of the liver, kidneys and fatty infiltration of aortic walls. Furthermore, they exhibited symptoms of B₆-hypovitaminosis, such as poor appetite, loss of weight, skin lesions on the tip of the nose, focal affection of the skin around the eyes, bilateral paresis of hind legs, epileptiform seizures and symmetric lamellar desquamation of the skin in hind paws and diminished passage of riboflavin with the urine. All of the listed deviations are corrected following administration of vitamin B₆ to the animals.

REEL/FRA
ME 19770638

12

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CATALYTIC DECOMPOSITION OF HYDROGEN PEROXIDE IN THE PRESENCE OF
COPPER IONS -U-
AUTHOR-(03)-VOROBYEVA, T.P., HERDNIKOV, V.M., DURMALIS, A.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 100-6 **B**
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS
TOPIC TAGS--TETRANITROMETHANE, HYDROGEN PEROXIDE, CHEMICAL DECOMPOSITION,
COPPER, IRON, METAL CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0758 STEP NO--UR/0195/70/011/001/0100/0105
CIRC ACCESSION NO--AP0107300
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATALYTIC DECOMP. OF H SUB2 O SUB2 BY CU ION IS INITIATED BY FE (III) IMPURITIES; CU IONS (ESP. CU PRIME3 POSITIVE) PARTICIPATE IN CHAIN PROPAGATION AND CHAIN TERMINATION STEPS OF THIS DECOMP. C (NO SUB2) SUB4 INHIBITS H SUB2 O SUB2 DECOMP. IN THE PRESENCE OF CU.

UNCLASSIFIED

89

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANISM OF HYDROGEN PEROXIDE DECOMPOSITION BY COPPER AMMONIATES
-U-
AUTHOR--(03)--SHABARCHINA, L.I., BERDNIKOV, V.M., PURMALIS, A.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 265-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION MECHANISM, HYDROGEN PEROXIDE, CHEMICAL
DECOMPOSITION, COPPER COMPOUND, AMMONIA, UV RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2064 STEP NO--UR/0076/70/044/001/0265/0266
CIRC ACCESSION NO--AP0125651
UNCLASSIFIED

B

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0125651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPRESSION FOR THE RATE OF REACTION IN THE SYSTEM $H \text{ SUB}2 \text{ O SUB}2, \text{CU PRIME}2\text{POSITIVE}, \text{NH SUB}3$ HAS THE FORM W EQUALS $N(\text{CU PRIME}2\text{POSITIVE}) (H \text{ SUB}2 \text{ O SUB}2), (H \text{ PRIME POSITIVE})$, WHERE N EQUALS FUNCTION($\text{NH SUB}3$). ANAL. OF THE DEPENDENCE OF N ON ($\text{NH SUB}3$) SHOWED THAT $\text{CU}(\text{NH SUB}3) \text{ SUB}2 \text{ PRIME}2\text{POSITIVE}$ AND $\text{CU}(\text{NH SUB}3) \text{ SUB}3 \text{ PRIME}2\text{POSITIVE}$ ARE THE CATALYTICALLY ACTIVE FORMS. THE MECHANISM OF THE PROCESS IS NOT KNOWN. W DECREASES WHEN QUINONS, ORG. ACIDS, ALCS., NITRILES, AMIDES, AND $\text{NO SUB}2$ CONTG. COMPS. ARE ADDED. THE PROCESS IS NOT ACCELERATED BY THE UV IRRADN. A RADICAL CHAIN MECHANISM WITH HIGH RATE OF INITIATION AND SHORT KINETIC CHAIN LENGTH IS PROPOSED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 624.07:534.1

BERDNIKOV, Yu. N.

"On the Stability of a Cylindrical Shell of Fiberglass Under Axial Compression"

Ob ustoychivosti tsilindricheskoy obolochki iz stekloplastika pri osevom szhatii (cf. English above), Riga, 1972, 9 pp, ill. (Manuscript No. 4812-72 deposited at VINITI from 29 Sep 1972) (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V306 DEP)

Translation: The problem of the stability of an anisotropic cylindrical shell subjected to axial compression is considered. The linearized stability equations in the mixed form are integrated by the Bubnov method and the approximating functions for stresses and bending are described for a version of the boundary conditions corresponding to minimum critical load. 6 ref. V. V. Vasil'yev.

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- 93 -

AA0052689 BERDNIKOVA, Z.K. UR 0482

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Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, J-10

244207 TRENCH EXCAVATOR comprises rotor with buckets. It is distinguished by providing the bucket terminal sections with longitudinal walls 3,5. One of them 3 is made at right angles to the bucket bottom 4, whereas the lower part of the other is made at an angle. This excludes the shock action from the walls of the pipe opening device.

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10.2.68. as 1217820/29-14, ODINTSOV, L.A. et al.
(8.10.69) Bul 17/14.5.69. Class 84d, Int. Cl. E 02f.

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19821472

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AA0052689

Odintsov, L.A.; Belov, B.F.;
Rashchepkin, K.Ye.; Berdnikova, Z.K.; Bakiyeva, O.Z.

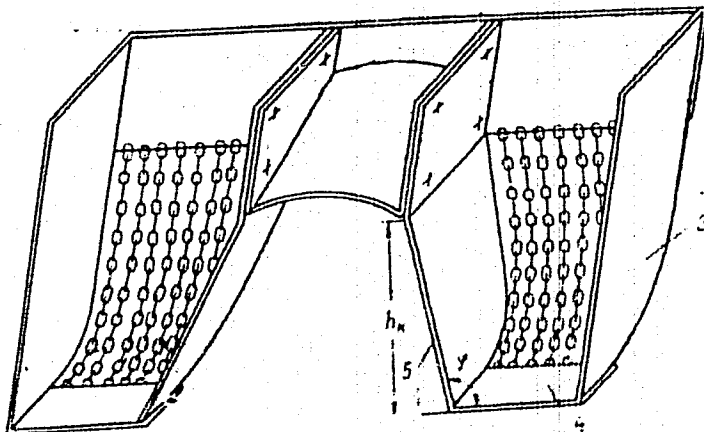


Fig 1

118

19821473

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--STABILIZATION OF AUSTENITE -U-
AUTHOR--(03)-BERDOVA, V.S., YERSHOV, V.M., OSLOV, N.L.
COUNTRY OF INFO--USSR **B**
SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 209-12
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--AUSTENITE, CRYSTAL LATTICE, MARTENSITE, HYDROGEN, NITROGEN,
THERMAL STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0187 STEP NO--UR/0126/70/029/001/0209/0212
CIRC ACCESSION NO--AP0054983

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILIZATION OF AUSTENITE IS GOVERNED BY ITS INITIAL STATE. IN THE 1ST STAGE OF MARTENSITE CONVERSION WHEN, OWING TO COHERENCE BETWEEN THE GAMMA PHASE AND MARTENSITE PHASES, THE AUSTENITE LATTICE IS ELASTICALLY STRETCHED, AND POSSESSES PARAMETERS ABOVE THE ANTICIPATED, AS DETD. BY GRAPHIC EXTRAPOLATION, THERMAL STABILIZATION OF THE AUSTENITE IS GOVERNED BY THE INTRODUCTION OF C ATOMS IN ADDN. POSSIBLY TO H AND N IN THE GAMMA PHASE LATTICE, I. E. A LOWERING OF THE MARTENSITE POINT. IN THE FINAL STAGE OF MARTENSITE CONVERSION, WHEN THE AUSTENITE IS COMPRESSED BY THE SKELETON OF MARTENSITE CRYSTALS FORMING, STABILIZATION OF THE AUSTENITE IS GOVERNED BY MECH. HARDENING AND ELASTIC RELAXATION STRESSES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--03JUL70

TITLE--SUBSTITUTED HYDRAZIDES OF HYDROXY CARBOXYLIC ACIDS. LXVIII/
ALPHA, BETA, DISUBSTITUTED PHENYLHYDRAZIDES OF DIARYLGLYCOLIC ACIDS -U-
AUTHOR--BERDANSKIY, I.S., PCSYAGINA, E.YU.

B

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12*

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(1), 151-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AZIDE, HYDROXYL RADICAL, CARBOXYLIC ACID, BENZENE DERIVATIVE,
HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REF/FRAME--1980/0562

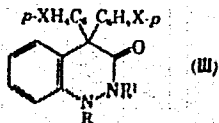
STEP NO--UR/C366/70/006/001/0151/0156

CIRC ACCESSION NO--APCC48799

UNCLASSIFIED

Acc. Nr: **AP0048799** Abstracting Service: **4170** Ref. Code: **UR0366**
CHEMICAL ABST.

90394v Substituted hydrazides of hydroxy carboxylic acids.
LXVIII. α,β -Disubstituted phenylhydrazides of diarylglycolic acids. Berdinskii, I. S.; Posyagina, E. Yu. (Perm. Gos. Univ. im. Gor'kogo, Perm, USSR). *Zh. Org. Khim.* 1970, 6(1), 151-6 (Russ). The reaction of PhNRNR' with ClCOCO_2Et gave 62-5% $\text{PhNRNR}'\text{COCO}_2\text{Et}$ (I) (R and R' given): Et, Me; Me, Et; Et, Et; Ph, Me. Reacting I with $p\text{-XC}_6\text{H}_4\text{MgBr}$ gave 70-99% $\text{PhNRNR}'\text{COC}(\text{OH})(\text{C}_6\text{H}_4\text{X}-p)_2$ (II) (R, R', and X given): Me, Et, H; Me, Et, iso-Pr; Me, Et, Cl; Me, Et, F; Et, Me, H; Et, Me, iso-Pr; Et, Me, Cl; Et, Et, Cl; Et, Et, F; Ph, Me, H; Ph, Me, Cl; Ph, Me, F. The direct alkylation of $\text{PhNRNHCO}(\text{OH})(\text{C}_6\text{H}_4\text{X}-p)_2$ with Me_2SO_4 gave the following II (R, R', and X given): Me, Me, H; Me, Me, Me. The addn. of H_2SO_4 to II gives a transient coloration due to the formation of halochromic salts, which in 10-30 sec are converted to 3-oxo-1,2,3,4-tetrahydrocinnolines (III) (R, R', and X given): Me,



Et, H; Me, Et, iso-Pr; Me, Et, Cl; Et, Et, Cl; Et, Me, Cl;
Ph, Me, H; Ph, Me, F. CPJR

REEL/FRAME
19800562

Biophysics

USSR

UDC 591.112.1

BABSKIY, Ye. B., Academician, Academy of Sciences Ukrainian SSR, BERDYAYEV, S. Yu., and MAKARYCHEV, V. A., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Automatic Activity of Myocardial Fibers Due to Shifts in the Ionic Conductivity of the Membrane"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 496-498

Abstract: The effect of shifts in the ionic conductivity of membranes of myocardial fibers on the automatic activity of the fibers was studied on a strip of myocardium from the ventricle of a frog heart. The action potentials of fibers in the strip were determined using glass microelectrodes. The strip exhibited no spontaneous activity after being kept in a Ringer solution of normal composition or a Ringer solution without Ca^{++} or K^+ . When Ca^{++} was excluded and K^+ simultaneously reduced in concentration or excluded entirely, a spontaneous action potential developed. Addition to the Ringer solution of tetraethylammonium chloride (which inhibits K^+ conductivity) induced spontaneous activity. This effect set in earlier in a Ringer solution without Ca^{++} . Spontaneous activity was also induced at a
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USSR

BABSKIY, Ye. B., et al, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 496-498

normal K^+ content by the addition of EDTA, which bound Ca^{++} and thus increased the Na^+ conductivity. Both the exclusion of Ca^{++} from the solution and the addition of EDTA produced spontaneous activity. The effect of EDTA, which took place at a normal K^+ concentration, was more pronounced, since EDTA bound traces of Ca^{++} that entered the solution from intercellular spaces of the myocardial fibers.

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Acc. Nr: AP0044600

B

Ref. Code:

UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 71-74

ON THE EFFECTIVENESS OF REPEATED CLIMATIC
TREATMENT OF CHRONIC GLOMERULONEPHRITIS

~~E. B. Berdyev~~

Summary

After climatic treatment at the Bairam-Ali sanatorium in patients with different forms of chronic glomerulonephritis the author observed rarer relapses, improved work capacity and a reduced susceptibility to infections. Repeated courses of climatic therapy produce a stable positive effect manifested by a reduction of the arterial pressure without the use of hypotensive agents or their use in a low dosage, diminution of proteinuria and improvement of the urinary precipitate, disappearance of edema. A noticeable therapeutic and prophylactic effect was noted in patients with latent nephritis (chronic glomerulonephritis with an isolated urinary syndrome), as well as in patients with chronic glomerulonephritis of a nephrotic form; there were individual cases of practical recovery (or a stable prolonged remission).

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REEL/FRAME
19771276

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USSR

UDC 577.1:615.7/9

PUZIK, V. I., BERDYEVA, A. T., DYUKANOVA, M. YA.

"Activity of Succinate Dehydrogenase in Organs of White Rats During Intoxication With *Vipera Lebetine* Poison"

Byul. Eksperim. biol. i med. (Bulletin of Experimental Biology and Medicine), Vol 69, No 1, 1970, pp 93-94 (from Referativnyy Zhurnal - Biologicheskaya Khimiya, No 14, 25 Jul 70, Abstract No 14 F1944)

Translation: Studied were the effects of a toxic and a lethal dose of *Vipera lebetina* poison on the specific histochemical activity of succinate dehydrogenase (I) of the liver, kidneys, myocardium, lung tissue, and brain of white rats. The character of the changes in the activity of I depends on the duration and dose of the poison. As a rule, the drop in activity of I corresponds to the extent of dystrophic changes in the parenchymal organs.

Yu. Loykin

Acc. Nr.: **AP0031144**

B

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol 69, Nr 1, pp 93-94

ACTIVITY OF SUCCINIC DENYDROGENASE IN THE ORGANS OF WHITE RATS
AFTER INTOXICATION WITH THE TOXIN OF THE SNAKE "GUERZA"

V. I. Puzik, A. T. Berdueva, M. Ya. Dyukanova

Central Research Institute of Tuberculosis, Moscow, Institute of Regional Medicine
Ashkhabad

The authors report on results of histochemical study of the activity of succinate dehydrogenase after intoxication with the poison of the snake "guerza". Marked difference was found in the distribution and activity of the enzyme in various organs. Character of changes of the activity depended on the dose and the duration of action of the poison.

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REEL/FRAME

19691189

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USSR

UDC 612.822.3+612.817.3

TLEULIN, S. Zh. and ~~BERDYAKOVICHIN, M. T.~~, Institute of Physiology, Kazakh Academy of Sciences, and Institute of Regional Pathology, Kazakh Ministry of Health

"Relationship Between Some Indices of Higher Nervous Activity, Muscle Tone, and the Nature of Cortical Electrical Activity"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 3, 1970, pp 644-646

Abstract: The article reports the results of an attempt to correlate cortical electrical activity with characteristics of higher nervous activity, judged by performance in a proofreading test (number of letters crossed out in a minute and amount of errors), and muscle tone in 103 male and female students 21 years of age. The subjects were divided into three groups according to the nature of the EEG. Muscle tone was found to be highest in the group in which the beta rhythm predominated, next highest in the group with a pronounced alpha rhythm, and lowest in the group in which slow waves were present. The results of the proofreading test correlated well with the nature of the individual EEG's. The group with the beta rhythm predominating performed the test the fastest and made the fewest mistakes, while the group showing slow waves was the slowest and made the most errors. The group with the alpha rhythm predominating occupied an intermediate position.

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USSR

UIC 581.198:582.264

BERDYKULOV, Kh. A., Institute of Botany, Academy of Sciences, Uzbek SSR

"Photosynthesis of *Scenedesmus obliquus* Cultured Outdoors in Winter"

Tashkent, *Uzbekskiy Biologicheskiy Zhurnal*, No 6, 1972, pp 29-31

Abstract: The mesophilic alga *Scenedesmus obliquus* was grown outdoors in January and February in Uzbekistan in an apparatus using the combustion products of natural gas in a boiler room. The rate of photosynthesis varied primarily with the light and the density of the culture. It was generally highest at 1800 hours when the light was about 15,000 lux. Light saturation of photosynthesis increased with increasing density of the culture. At a density of 3 million cells in 1 ml, light saturation began at 3000 to 4000 lux; at 5 million cells, 5000 to 6000 lux; at 20 million cells, 14 to 15 million cells. Photosynthesis increased at a density of 3 to 15 million cells in 1 ml, but decreased at a density of 20 million cells because of the insufficient duration and intensity of light in winter.

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USSR

UDC 576.358.23(Coxsackie)095.33:599.323.4

KISELEVA, N. V., PETROV, B. V., and PERDYLIYEV, O. M., Ashkhabad Scientific Research Institute of Epidemiology and Hygiene

"Isolation of Coxsackie A Viruses From the Intestine of the House Mouse"

Moscow, Voprosy Virusologii, No 6, 1972, pp 713-716

Abstract: Intestinal suspensions from 90 *Mus musculus* Severtzovi Kaschkar were tested virologically to determine their part in hepatitis foci of the Turkmen SSR. Isolated agent had cytopathic effects on human embryo kidney cells and human fibroblasts, manifested titers of 10^5 - 10^6 TCID₅₀ with respect to cytopathic activity, were stable in response to ether and chloroform, and were nonagglutinating. Three of four strains isolated, could be neutralized by Coxsackie A9 antiserum. Suckling mice infected with the agent displayed disease symptoms by the 3d day. Pathology was most pronounced in skeletal musculature. Histological findings for these mice and two adult mice not infected experimentally but ones which had come in contact with the former and contracted the disease are described in detail. Complement-fixing antibodies against Coxsackie A₂, A₃, A₄, A₅, A₆, A₇, A₉, and A₁₃ viruses were detected in blood serums of 129 mice. One sample contained antibodies to several Coxsackie A viruses. Investigation of the pathogens is continuing.

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USSR

UDC 591.105

BREKHMAN, I. I., BERDYSHEV, G. D., and GOLOTIN, V. G., Institute of Biologically Active Substances, Academy of Sciences USSR, Vladivostok

"The Effect of Eleutherococcus and Ginseng on the Activity and Adaptive Synthesis of Tryptophan Pyrrolase in Rats"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1971, pp 31-37

Abstract: Liquid extracts of eleutherococcus and ginseng had no effect on tryptophan pyrrolase (TPase) activity in normal or adrenalectomized rats. Following the simultaneous injection of normal rats with hydrocortisone and eleutherococcus, the latter intensified hormonal induction of TPase, whereas hydrocortisone plus ginseng did not alter the activity of the enzyme. After stress (caused by suspension by the neck folds for 24 hours) eleutherococcus intensified the activity and hormonal induction of TPase in both normal and adrenalectomized rats. Ginseng, on 1/2

USSR

BREKHMEN, I. I., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1971, pp 31-37

the other hand, had no effect on the activity or hormonal induction of the enzyme in normal animals, but sharply lowered the level of hormonal induction in adrenalectomized animals without affecting the activity of the enzyme. Since stress alone or against a background of eleutherococcus significantly increases the activity and adaptive synthesis of TPase, it would appear that the enzyme is regulated through a nonadrenal mechanism.

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USSR

UDC 577.1:547.963.4

BERDYSHEV, G. D.

"Biochemical Methods of Quantitative Identification of Nucleic Acids"

Abstract: This article is a survey of modern literature on biochemical methods of quantitative identification of nucleic acids. It cites the results of the author research and his associates on methods of determining the amount of nucleic acids in animal tissues. A modification of the methods of Tsanev, Markov, and Orlovyy is presented in detail, and recommendations for the rational use of various methods of quantitative analysis of nucleic acids in biological tests are made.

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USSR

UDC 616.003.96+359.6

SOLODKOV, A. S. and ~~BERDYSHEV, V. V.~~

"Development of Physiological Stress in Sailors During Cruises in the Low Latitudes"

Moscow, Voenno-Meditsinskiy Zhurnal, No 7, 1972, pp 86-90

Abstract: The dynamics of the following biochemical and physiological parameters was traced in 52 sailors during a 6-week cruise in the low latitudes on a ship lacking air conditioning: adrenal activity, content of some metabolites in urine and sweat, thermoregulation, cardiovascular, central nervous system, and analyser function, and nonspecific reactivity. The results of the studies showed an intensification of adrenal activity, increased excretion of 17-ketosteroids, total nitrogen, creatine, and vitamin B₁, decreased excretion of sodium and potassium, elevated body temperature and intensification of perspiration, accelerated heart beat, decrease in systolic and pulse pressures, slowing of various reflexes, decrease in lability of the visual analyser, and marked decrease in phagocytic activity of white blood cells and decrease in osmotic resistance of red blood cells. It is noted that prolonged physiological stress caused by heat not only does not necessarily result in adaptation, it may even give rise to mental and physical disorders. The article concludes
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SOLODKOV, A. S. and BERDYSHEV, V. V., Voenno-Meditsinskiy Zhurnal, No 7, 1972,
pp 86-90

with recommendations for preventing or minimizing stress, e.g., installation
of air conditioning, suitable work and rest routines, rational diet, systematic
physical exercise, and use of certain drugs (adaptogens).

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- 49 -

USSR

UDC 612.017-02-09(213)

BERDYSHEV, V. V.

"Changes in Some Indices of Nonspecific Reactivity During Cruises in the Low Latitudes"

Moscow, Voenno-Meditsinskiy Zhurnal, No 6, 1971, p 81

Translation: The state of nonspecific reactivity was studied in engineroom workers, radio operators, and deck specialists during cruises of different durations in the low latitudes. It was found that cruising on ships without air conditioning results in decreased phagocytic activity of the leukocytes (PAL): phagocytosis decreased by 13 to 71%, the phagocytic index by 22 to 73%, the trypan index by 18 to 51% and the time of the Rotter test increased by 21 to 54% ($p < 0.05$). During the first week of a cruise the number of persons with normal vascular resistance decreased by 18% but increased by 12% ($p < 0.01$) after 20 to 25 days at sea.

The dynamics of nonspecific reactivity is directly related to the work and rest conditions and the extent to which the men are exposed to unfavorable environmental factors. For example, during the 6th week of a cruise the PAL and phagocytic index decreased in deck specialists by 10.7 and 24%, respectively compared with 29.5 and 42% in radio operators and 17.8 and 34% ($p < 0.01$)

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USSR

BERDYSHEV, V. V., Voenno-Meditsinskiy Zhurnal, No 6, 1971, p 81

in engine-room workers. Individuals not on watch duty also had rather high indexes of vascular resistance. Watch duty by engineroom workers and radio operators under specific microclimatic conditions during all stages of a cruise caused a significant decreased in reactivity, specifically in vascular resistance (by 23 to 33%, $p < 0.01$) and PAL (by 42 to 54%, $p < 0.01$).

Air conditioning on a ship considerably minimizes the decrease in resistance experienced during a cruise.

Regular physical exercises helps to retain a higher level of reactivity during a cruise. For example, in the 6th week of a cruise in the tropics, phagocytes was 64.7% and the phagocytic index 14.% in athletes (29 persons) compared with 49% and 10.3%, respectively, in the control ($p < 0.01$). The former did not include a single individual with sharply decreased vascular resistance (2d or 3d degree), whereas these degrees of resistance were observed in 15% of the controls.

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- 72 -

USSR

UDC 576.895.421

BERDYEV, A., Institute of Zoology, Academy of Sciences Turkmen SSR

"*Hyalomma asiaticum asiaticum* P. Sch. et E. Schl. Parasitizing Farm Animals in Turkmenia"

Ashgabat, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauka, No 4, 1971, pp 79-82

Abstract: In 1965-1969, seven of Turkmenia's regions with recurrent cattle fever and tickborne typhus were investigated for the presence of various species of ticks. Over 4,000 mature ticks were found on 1,643 farm animals, in barns, and on ground. Camels, sheep, and cattle were infested to a greater degree than goats, horses, and donkeys. Though mature ticks thrive on these animals all year round, the tick population periodically increases in March-May and September-October. Turkmenia's desert regions are infested with *Hyalomma asiaticum* to a much greater degree than are piedmont plains and mountainous areas.

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- 28 -

BERDYEV, A.A.

ACOUSTIC INVESTIGATIONS OF LIQUIDS AT ULTRASONIC AND HYPERSONIC FREQUENCIES

[Article by Academician of the AS Turkmen SSR A. A. BERDYEV, Vestnik Akademii Nauk SSSR, Russian, No. 6 June 1973, pp 95-96]

Handwritten notes:
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Valuable information about the physical properties and structure of a substance, especially in the liquid state, is given by the application of acoustic methods. Detailed studies in liquids of relaxation regions, which in general can be manifested in a very wide range of frequencies from the ultrasonic intermolecular, permits determining regularities of rapid such important physical parameters as the relaxation time, the bulk viscosity, etc. However, the investigation of liquids at hypersonic and hyperacoustic frequencies involves a number of experimental difficulties.

In the Physico-Technical Institute of the AS Turkmen SSR a procedure has been elaborated and precision acoustic installations have been created with artificial generation of sound in a wide range of frequencies of quartz and lithium niobate, which has expanded the range of investigations from 10⁶ to 3 x 10¹⁰ Hz. A resonance method of excitations and reception of sound has been used for the first time to study liquids, and an optical system using interference of light to measure microdisplacements. The possibility has been found of precisely determining the speed of sound in liquids at supersonic frequencies by the method of coherent shift of a delayed radio-frequency signal and a signal which has passed through an acoustic channel. An ultrahigh-frequency photo-acoustic apparatus has been created with simultaneous registration of luminous and acoustic interference effects, apparatus which permits conducting dispersion acoustic experiments and also measurements of sound absorption at ultrahigh frequencies.

Acc. Nr:

AP0049646

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

URO202

B

104091h Ultrasonic absorption in ethylene glycol, glycerol, and diethylene glycol. Berdyev, A. A.; Khenraev, B.; Seidov, A. (Fiz.-Tekh. Inst., Ashkhabad, USSR). *Izv. Akad. Nauk Turkm. SSR, Ser. Fiz.-Tekh., Khim. Geol. Nauk* 1970, (1), 98-101 (Russ). The ultrasonic absorption of ethylene glycol (I), glycerol (II), and diethylene glycol (III) was studied at 5-40° with the frequencies, ν , at 20-1000 MHz. The quantities detd. were the absorption coeff. of the ultrasound, α , measured by the impulse method, as well as the ultrasound velocity, c , the viscosity, η , and the d , d . Thus, the values found at 30° were as follows [compd., d , η in P, c in m/sec, and Stokes absorption characteristics $(\alpha/\nu^2)_{30} \times 10^{-17}$ in $\text{cm}^{-1} \text{sec}^2$ are given]: I, 1.1034, 0.15, 1645, 81; II, 1.2468, 2.57, 1904, 797; III, 1.1095, 1.78, 1568, 1093. The spectrum of relaxation times was broad at the frequencies and temps. studied. The use of the method of reduced variables for I and III shows the temp.-frequency dependence to be identical for all relaxation times. C. Parkanyi

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1/2 043 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FERROMAGNETIC SEMICONDUCTOR WITH EXCHANGE INTERACTION VIA
CONDUCTION ELECTRONS -U-
AUTHOR--(03)-VGNISOVSKIY, S.V., SAMOKHVALOV, A.A., BERDYSHEV, A.A.
COUNTRY OF INFO--USSR
SOURCE--HELV. PHYS. ACTA 1970, 43(1), 9-16
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--FERROMAGNETIC MATERIAL, SEMICONDUCTOR CONDUCTIVITY,
MAGNETIZATION, CURIE POINT, PRESSURE EFFECT, FERROMAGNETIC RESONANCE,
HALL EFFECT, MAGNETORESISTANCE, ELECTRON PARAMAGNETIC RESONANCE, CHARGE
EXCHANGE, EUROPIUM COMPOUND, GADOLINIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1139 STEP NO--SZ/0000/70/043/001/0009/0016
CIRC ACCESSION NO--AP0124794
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124794

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF EU SUBO.OI O WERE INVESTIGATED BY MEASURING THE FOLLOWING PROPERTIES: THE MAGNETIZATION AT 177-300DEGREESK WITH FIELDS UP TO 16 KOE BY USE OF VIBRATING MAGNETOMETER, THE SHIFT IN THE CURIE TEMP. UNDER HYDROSTATIC PRESSURE UP TO 11 KILOBARS, PARAMAGNETIC AND FERROMAGNETIC RESONANCES AT 9.5 GHZ, ELEC. COND., HALL EFFECT, AND MAGNETORESISTANCE. THERE ARE INDICATIONS OF EXCHANGE INTERACTIONS VIA COND. ELECTRONS.
FACILITY: INST. METALLPHYS., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RELAXATION PHENOMENA IN VISCOUS LIQUIDS AT 700-1600 MHZ -U-
AUTHOR-(02)-BERDYEV, A.A., KHERMAYEV, B.
COUNTRY OF INFO--USSR **B**
SOURCE--IZV. AKAÐ. NAUK TURKM. SSR, SER. FIZ. TEKH., KHIM. GEOL. NAUK
1970, (1), 97-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ETHYLENE; TRANSFORMER OIL, GLYCEROL, ABSORPTION, ETHYLENE
GLYCOL, ULTRASONIC EFFECT, RELAXATION PROCESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1553 STEP NO--UR/0202/70/000/001/0097/0098
CIRC ACCESSION NO--AP0118536
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118536

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ULTRASONIC ABSORPTION AT 700-1600 MHZ AND 20DEGREES WAS STUDIED FOR CASTOR, VACUUM, PARAFFIN, TRANSFORMER AND BLEACHED OILS, GLYCEROL, AND ETHYLENE AND DIETHYLENE GLYCOLS. THE ABSORPTION DEVIATES FROM THE QUADRATIC RELATION. FACILITY: FIZ.-TEKH. INST., ASHKHABAD, USSR.

UNCLASSIFIED

USSR

BERDYEV, A. S., GLEBEZDIN, V. S., OVEZMUKHAMMEDOV, A., and REMYANNIKOVA, T. N.

"First Congress of the All-Union Society of Protozoologists (12-15 October 1971)"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskish
Nauk, No 1, 1972, pp 92-93

Abstract: The first congress of the All-Union Society of Protozoologists, meeting in Baku, was attended by 250 delegates and guests, including nine persons from Turkmenia. There were three plenary sessions and four sections (General Protozoology; Medical Protozoology; Veterinary Protozoology; Parasitic Protozoa of Fish and Invertebrates). The president of the All-Union of Protozoologists, Professor Yu. I. Polyanskiy, spoke of "Prospects of Development of Protozoology in the USSR." Sh. D. Moshkovskiy, corresponding member of the Academy of Medical Sciences, USSR, spoke on "Protozoology and Immunology," Professor D. N. Zasukhin delivered a lecture on "I. I. Mechnikov and Contemporary Problems of Protozoology," Professor N. A. Kolabskiy spoke on "Professor V. L. Yakimov and his Role in the Development of Protozoology and Chemotherapy." Particular attention was attracted by the lecture of Professor Yu. I. Polyanskiy, "Some Aspects of the Evolution of Protozoa."

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UDC 616.919:598.12-07:616-008.931:577.158-074

PUZIK, V. I., BERDYEVA, A. T., and DYUKANOVA, M. YA., Pathomorphology Department, Central Scientific Research Tuberculosis Institute, Ministry of Health USSR, and Institute of Regional Medicine, Academy of Sciences, Turkmen SSR

"Succinic Dehydrogenase Activity in Organs of White Rats Poisoned with Viper Venom"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1970, pp 93-94

Abstract: Injection of rats with viper venom markedly affected succinic dehydrogenase (SD) activity. The nature of the changes varied with the dose and duration of action of the poison. Toxic doses (4 mg/kg) produced degenerative changes in the liver, kidneys, then in the myocardium and brain. Toxic doses sharply lowered SD activity at the same time. Lethal doses (10 mg/kg) brought about degenerative changes within 10 minutes in organs, similar to those observed with toxic doses after 24 hours. Initially, SD activity was lowest in the myocardium and kidneys. At the time of respiratory arrest, there was a sharp decrease in SD activity in the liver 1/2

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PUZIK, V. I., et al., Moscow, *Bulleten' Eksperimental'noy Biologii i Meditsiny*, No 1, 1970, pp 93-94

and lungs, but a slight increase in the kidneys, myocardium, and brain. The increase in activity of the enzymes is ascribed to the increased permeability of the blood vessels and cellular membranes due to poisoning by viper venom.

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UDC 598.126:591.461.2

BERDYEVA, A. T., and DYUKANOVA, M. Ya., Institute of Physiology and Experimental Pathology of Arid Zones, Academy of Sciences Turkmen SSR, and Pathomorphological Department, Central Scientific Research Institute of Tuberculosis, Ministry of Health USSR

"Dynamics of the Change in Kidney Parenchyma and Vessel Walls Caused by Intoxication From Kufi and Cobra Venoms"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1970, pp 81-85

Abstract: The degenerative changes in the kidneys of white rats upon administration of toxic and lethal doses of Kufi and Cobra venoms were studied, with particular reference to morphological and histochemical reactions of the kidney parenchyma and the arterial walls. The changes observed were accompanied by a breakdown of the oxidation-reduction reactions and a change in the nucleic acid content. The character of the pathological changes and the dynamics of their course depend on the type of snake, the dose, and the time of action of the venom.

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UDC 621.382.2

BERKELIYEV, A., ~~BEREDA, I. I.~~

"p-InSb Magnetodiodes"

Ashkhabad, Izvestiya Akademii Nauk Turkmenkoy SSR, Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 5, 1971, pp 36-40

Abstract: A study was made of the magnetodiode effect of the direct and inverse branches of the volt-ampere characteristics of diodes based on p-InSb alloyed with germanium. The experimental procedure and results are presented. Graphs are presented for the direct branch of the magnetodiode for various values of the magnetic field, the volt magnetosensitivity of the diode for various currents through the diode, the return branch of the volt-ampere characteristic of the magnetodiode for various values of the magnetic field, and the direct branch of the volt-ampere characteristic of the magnetodiode with different base length in a magnetic field. With an increase in the magnetic field the direct current through the diode decreases, and the characteristic deviates toward the voltage axis, that is, the proportion of the voltage drop on the diode base increases. On the

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BERKELIYEV, A., et al, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No. 5, 1971, pp 36-40

return branch of the volt-ampere characteristic in the absence of an external magnetic field, several breaks are observed before breakdown. On the direct branch of the volt-ampere characteristic of the diode, for certain values of the magnetic field a negative magnetodiode effect is observed. The mechanisms causing these effects are described.

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UDC: 669.295

RYBAKOV, B. N. and BEREGOVAYA, G. D.

"The Phase Constitution of Nonmetallic Films on Porous Titanium"

Moscow, Tsvetnyye Metally, No 10, Oct 73, pp 39-41

Abstract: The authors study the phase constitution of porous titanium defects. This is done with the aim of explaining the mechanism responsible for defect formation and to differentiate production defects from storage defects. It is known that the titanium dioxide obtained at high temperatures has a rutile structure, while that obtained at low temperatures has an anatase structure. The presence of hydrated titanium dioxide in the defects and of anatase in their thermal decomposition products makes it possible to differentiate production defects from storage defects.

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FROM: FBIS Daily Report, Soviet Union, 6 Jan 1970, Vol III, Nr 3, pp D5-D7

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ORBITAL STATIONS OFFER DIVERSE PROSPECTS

Moscow RED STAR 1 Jan 70 p 4 L

[Article by USSR pilot-cosmonaut, twice Hero of the Soviet Union Maj Gen of Aviation G. Beregovoy: "Cosmonautics: the Contours of the Future"]

[Excerpt] The first steps toward creating orbital stations have already been taken, and the people of the earth have appraised the tempting prospects of this development of cosmonautics. (paragraph continues)

Orbital stations are capable of helping solve many national economic tasks: observations of forest fires and discovery of schools of fish, appraisal of water resources and the state of the harvest, compilation of accurate maps and a warning about hurricanes, search

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