

USSR

UDC 624.072.2.04:539.376

KIZIRIYA, G. V., ~~GVINCHIDZE, G. I.~~, Tbilisi

"Determination of Forces in Statically Indeterminate Structures Considering Creep of Concrete"

Podol'sk, Stroitel'naya mekhanika i raschet sooruzheniy, No. 5, 1971, pp 46-50

Abstract: The change in forces in multiply statically indeterminate structures where the individual bearing elements are combined elements, i.e., made of concretes of different properties reinforced with ordinary and prestressed reinforcement rods, is determined. It is assumed that the spanning structures are erected in the following sequence: first fabricated and installed in place are prestressed rigidity beams and then the assembly plates are installed. The rigidity beam receives a deformation under the action of the prestress and the natural weight. If the rigidity beam were not strengthened with a girder, these deformations would develop freely without causing any additional forces as a result of the creep of concrete. However, the assembled girder in disturbing the free development of deformations of creep of the concrete in the rigidity beam will take up part of the forces acting in the beam and consequently unload it. Solutions based on the linear theory of an elastic-creep body and the

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KIZIRIYA, G. V., GVINCHIDZE, G. I., *Stroitel'naya mekhanika i raschet skoruzheniy*, No. 5, 1971, pp 46-50

theory of aging are given. It is assumed that there are no cracks in the structure. A program was compiled for the BESM-4 computer to determine forces considering the creep of concrete in experimental beams. The forces at the connections were calculated considering deformations of the creep of the concrete on the basis of the theory of an elastic-creep body, the modified theory of aging, and the theory of aging. The divergence between experiment and theory in the calculations were: 5% in calculations based on the theory of elastic-creep body, 20% in calculations based on the modified theory of aging, and 30% in calculations based on the theory of aging.

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1/2 006

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--POLAROGRAPHIC BEHAVIOR OF GALLIUM, III, IN A NONAQUEOUS MEDIUM -U-

AUTHOR--(03)-GAPRINDASHVILI, V.N., GVINEPADZE, D.S., TSVENIASHVILI, V.SH.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 85-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GALLIUM ELECTROLYTE, POLAROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1398

STEP NO--UR/0251/70/057/001/0085/0088

CIRC ACCESSION NO--AP0126936

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF GA WAS STUDIED IN ITS HCONME SUB2 SOLNS. WITH LICLO SUB4, ME SUB4 NI, AND PHME SUB3 NI AS AUXILIARY ELECTROLYTES. AT 10 PRIME NEGATIVE4 -5 TIMES 10 PRIME NEGATIVE3 M GA, THE HEIGHT OF THE REDN. WAVE WAS DIRECTLY PROPORTIONAL TO THE GA CONCN. THE HALF WAVE POTENTIAL WAS NOT AFFECTED BY THE CONCN. BUT WAS AFFECTED BY THE NATURE OF THE IONS OF THE AUXILIARY ELECTROLYTES. AT A GA CONCN. OF 10 PRIME NEGATIVE3 M, THE HALF WAVE POTENTIAL WAS 1.12 V. THE EFFECT OF TEMP. ON THE LIMITING CURRENT AT 20-70DEGREES WAS PLUS 1.4PERCENT-DEGREE. THE REDN. OF GA IN HCONME SU32 WAS A 1-STEP PROCESS ACCORDING TO: GA PRIME3 POSITIVE PLUS 3E YEILDS GA. FACILITY: INST. NEORG. KHIM. ELEKTROKHIM., TBILISI, USSR.

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GVINIANIDZE, Sh.

G

"Decisive Steps Must Be Taken Toward Achieving Ideal Sanitary Conditions"

Tbilisi, Zarya Vostoka, 29 Aug 70, p 4

Translation: Preventing the spread of infectious gastrointestinal diseases depends on all the people, who are called upon to obey strictly the rules of sanitation and hygiene. Many radical measures are planned for this purpose in Kutaisi. There is to be a one-month campaign dedicated to sanitary and social order, in which the city's population will be extensively involved. The campaign is directed by the Kutaisi City Committee of the Party and by the City Executive Committee. A special commission was appointed and approved to head up the project. U. Tskvitinidze, chairman of the Executive Committee of the Kutaisi City Council, is guiding the commission.

The commission accomplished quite a bit in a few days' work. The city is checking closely on the sanitary conditions in industrial plants, government buildings, and homes. Those responsible for this work are the plant directors, secretaries of the party organizations controlling homes, district commissions, and so forth.

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GVINIANIDZE, Sh., Zarya Vostoka, 29 Aug 70, p 4

However, an investigation has shown that this matter is not being treated with the seriousness that it deserves, and that the necessary steps have not been taken.

There are plenty of examples. In the Kutaisi Hotel, the restaurant, cafe, kitchen, and other services are located over the basement, which became flooded with sewage when the pipes were damaged. Grocery store No 55, which is next to the restaurant, and some other places are in the same condition.

The chief unsanitary area in Kutaisi is the Central Market. The construction of the market, which has gone on for years, nullifies all the efforts of its management to put things in order. The builders (L. Babunashvili, Chief of the 4th Building Administration) failed to install a toilet, although the old one, 2 or 3 meters away from where farmers sell their produce, is in disrepair. Moreover, it is washed irregularly because of the lack of water. The laboratory of the market is in a badly run-down place. Public eating places managed by G. Mamrikashvili, M. Khundishvili, Ye. Sepiashvili, and A. Iremadze are in an unsanitary condition.

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GVINIANIDZE, Sh., Zarya Vostoka, 29 Aug 70, p 4

The sanitary condition of Kolkhoz Market No 2 also leaves much to be desired. In front of it is a "fountain" created by a leaking water pipe, with pools of water around it.

"The water has been running for 7 or 8 months," says A. Mamageishvili, director of the market, "but my written requests and oral reminders about the need to fix the pipes have been ignored by the Municipal Department of the Kutaisi City executive committee.

The kitchen of Cafeteria No 5 on Ukrainskaya Street (M. Gogiya, manager, O. Ormotsadze, cook) is situated in a corridor with a toilet, which has been turned into a dump for rusty pans and pails, dried out tubs, and rotten potatoes. The cafeteria is swarming with flies. The walls are battered and the floor is worthless.

On some streets next to Market No 1 rubbish is piled up by the houses. This situation apparently doesn't bother those in charge of the city's garbage trucks, for they systematically break the schedule for garbage removal.

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GVINIANIDZE, Sh., Zarya Vostoka, 29 Aug 70, p 4

The city's wastes are carted off to the right bank of the Rion, where they are dumped. Yet there are various public buildings and houses not far away. When there are strong winds, rubbish is blown into the yards of houses on Ninoshvili Street.

This state of affairs is intolerable. Prompt steps must be taken to deal severely with those responsible.

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UDC 616.13-002.2

GVISHTANA, G. S.; KOBAKHIDZE, N. G.

"Dynamics of Shifts in Lipids, Monoamines and the Coagulation System of the Blood During Atherosclerosis Caused by Restriction of Movement"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 2, Nov 70, pp 445-447

Abstract: Shifts in the composition of lipids, catechol-amines and in the coagulation system of the blood were studied in different periods of experimental atherosclerosis (1, 2, 3, and 4 months). The same indexes were studied in the tissue of the myocardium, liver, and reticular formation of the brain stem of animals at the end of the experiment. At the beginning of the experiment, periodic restriction of movement produced in rabbits an increase in the content of beta-lipoproteins in the blood. It was established that the content of total cholesterol had increased and the lecithin-cholesterol index had decreased at the end of the experiment. In the thalamus, an increase in the

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GVISHIANA, G. S., et al, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 2, Nov 70, pp 445-447

total cholesterol and beta-lipoproteins was observed, while the lecithin-cholesterol index decreased. The content of beta-lipoproteins in the myocardium and that of total cholesterol in the reticular formation of the brain stem increased. The content of catechol-amines was elevated at the beginning of the experiment. During the first months an increase in the level of free adrenalin was observed, while in subsequent months the level of adrenalin in the blood decreased and that of nonadrenalin increased.

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Gvishiani, D.

Economics

59 1164 5583
29 MAR 1979

DEVELOPMENT: MEANS OF INDUSTRIAL GROWTH (1978)

Article by D. Gvishiani. For a list of the books reviewed, see the end of the article. Published in Journal of Economic Surveys, Vol. 2, No. 1, 1978, pp. 1-14.

The article is a survey of the literature on the development of the industrial sector in the developing countries. It is divided into two parts: the first part is devoted to the general theory of industrial development and the second part to the empirical evidence. The author discusses the role of the state in industrial development and the impact of industrialization on the economy. He also discusses the role of the state in the development of the industrial sector in the developing countries.

Keywords: Industrial development, developing countries, state intervention, industrialization, economic growth.

The article is a survey of the literature on the development of the industrial sector in the developing countries. It is divided into two parts: the first part is devoted to the general theory of industrial development and the second part to the empirical evidence. The author discusses the role of the state in industrial development and the impact of industrialization on the economy. He also discusses the role of the state in the development of the industrial sector in the developing countries.

1/6 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOVIET SCIENTIFIC AND TECHNICAL COOPERATION WITH OTHER COUNTRIES.

-U-
AUTHOR--GVISHIANI, D.

COUNTRY OF INFO--USSR, COMMUNIST WORLD, FRANCE, ITALY, EUROPE

SOURCE--INTERNATIONAL AFFAIRS, 1970, NR 2-3, PP 46-51

DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--R AND D BUDGET, S AND T DEVELOPMENT, R AND D COOPERATION,
BILATERAL AGREEMENT, CONTRACT R AND D, PATENT RIGHT, FOREIGN SCIENTIFIC
RELATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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STEP NO--UR/0665/70/000/02-/0046/0051

CIRC ACCESSION NO--AP0122563

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CIRC ACCESSION NO--AP0122563

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPENDITURE ON SCIENTIFIC DEVELOPMENT IS INCREASING RAPIDLY. IN THE LAST SEVENTEEN YEARS ALLOCATIONS FOR SCIENCE HAVE INCREASED ABOUT FOURTEENFOLD; IN LAST YEAR'S BUDGET THEY CAME TO NEARLY 9,000 MILLION RUBLES. RAPID SCIENTIFIC AND TECHNOLOGICAL PROGRESS IS INCONCEIVABLE WITHOUT SPECIALISATION. NEW BRANCHES OF KNOWLEDGE CONSTANTLY EMERGE IN MODERN SCIENCE. THERE ARE ALREADY MORE THAN 2,000 SCIENTIFIC DISCIPLINES, AND THIS RAMIFICATION PROCESS IS GAINING MOMENTUM. DIFFERENTIATION OF SCIENCE AND THE APPEARANCE AND DEVELOPMENT OF INCREASINGLY NUMEROUS INDEPENDENT TRENDS IN RESEARCH ARE ACCOMPANIED BY A REVERSE TENDENCY, COOPERATION AMONG SCIENTISTS AND SPECIALISTS AND THE INTEGRATION OF THE PROCESS OF SCIENTIFIC COGNITION. COOPERATION IS BECOMING AN INCREASINGLY IMPORTANT CONDITION FOR THE DEVELOPMENT OF MODERN SCIENCE, BECAUSE EACH ONE OF ITS BRANCHES AND EVERY SPHERE OF SCIENTIFIC AND TECHNICAL INFORMATION CANNOT EFFECTIVELY DEVELOP BY ITSELF, WITHOUT INTERACTION. THE STATES ASSOCIATED WITH THE COUNCIL FOR MUTUAL ECONOMIC ASSISTANCE COORDINATE SCIENTIFIC AND TECHNOLOGICAL RESEARCH INTO PROBLEMS OF MUTUAL INTEREST. THE CMEA PERMANENT COMMITTEE FOR THE COORDINATION OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH WAS SET UP IN 1960. AT PRESENT, THE CMEA COUNTRIES COOPERATE IN WORKING OUT 700 MAJOR RESEARCH THEMES.

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ABSTRACT/EXTRACT--ANOTHER 69 THEMES ARE BEING ELABORATED BY THE PERMANENT COMMITTEE, WITH MORE THAN 100 SOVIET RESEARCH ORGANISATIONS TAKING PART IN THE WORK IT IS EXPECTED THAT A BIG ROLE IN IMPROVING THE SYSTEM OF SCIENTIFIC AND TECHNOLOGICAL INFORMATION WILL BE PLAYED BY THE INTERNATIONAL CENTRE FOR SCIENTIFIC AND TECHNICAL INFORMATION WHICH WAS ESTABLISHED LAST YEAR. THE QUESTION IS NOW BEING STUDIED OF SETTING UP AN INTERNATIONAL TEAM OF SCIENTISTS AT THE SOVIET INSTITUTE OF PROBLEMS OF CONTROL (AUTOMATION AND TELEMECHANICS). ONE OF THE FORMS OF JOINTLY SOLVING PROBLEMS OF SCIENTIFIC AND TECHNICAL COOPERATION IS DIRECT CONTACT BETWEEN MINISTRIES AND DEPARTMENTS: 55 SOVIET MINISTRIES HAVE SIGNED 190 PROTOCOLS ON DIRECT SCIENTIFIC AND TECHNICAL COOPERATION WITH 83 MINISTRIES IN BULGARIA, CZECHOSLOVAKIA, THE GDR, HUNGARY, POLAND AND YUGOSLAVIA. THE JOINT SPECIALISED WORKING GROUPS SET UP TO THIS END DECIDE ON NEW FIELDS AND FORMS OF LONG TERM COOPERATION WHICH ENSURE THE BEST ECONOMIC EFFECT. ANOTHER NEW FORM OF COOPERATION IS JOINT RESEARCH AND DESIGNING ON THE BASIS OF CONTRACTS. SUCH RESEARCH WORK IS ALREADY BEING DONE IN CERTAIN SPHERES OF SCIENCE AND TECHNOLOGY BY SOVIET AND GDR ORGANISATIONS. THE EXPANSION OF SOVIET FRENCH SCIENTIFIC, TECHNICAL AND ECONOMIC COOPERATION HAS LED TO THE SIGNING ON MAY 26, 1969 OF A NEW AGREEMENT ON TRADE AND ECONOMIC COOPERATION FOR 1970-1974, WHICH STATES THAT THE TWO COUNTRIES WILL STRIVE TO DOUBLE THEIR TRADE IN THIS PERIOD.

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476 014

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--A0122563

ABSTRACT/EXTRACT--THE SOVIET UNION AND FRANCE ALSO COOPERATE IN SOLVING SUCH INTERNATIONALLY IMPORTANT SCIENTIFIC AND TECHNICAL PROBLEMS AS THE INVESTIGATION AND UTILISATION OF THE RESOURCES OF THE WORLD OCEAN, THE APPLICATION OF MATHEMATICS AND COMPUTERS IN PLANNING AND ECONOMIC MANAGEMENT, PROBLEMS OF BIOLOGY, GENETICS, MEDICINE, PUBLIC HEALTH AND WATER SUPPLY. PRACTICAL MEASURES IN THESE FIELDS INCLUDE THE JOINT STUDY OF THE INTERACTION OF THE OCEAN AND THE ATMOSPHERE BY THE SOVIET OCEANOGRAPHIC SURVEY SHIP MIKHAIL LOMONOSOV AND A FRENCH BYOU LABORATORY, THE SOVIET FRENCH COLLOQUIUM ON THE PURIFICATION OF SEWAGE AND THE PREPARATION OF DRINKING WATER (PARIS, APRIL 1969), AND THE CONFERENCE OF SOVIET AND FRENCH EXPERTS ON THE METHODOLOGY OF SCIENTIFIC AND TECHNOLOGICAL FORECASTING. SCIENTIFIC, TECHNICAL AND ECONOMIC COOPERATION BETWEEN THE SOVIET UNION AND ITALY UNDER THE INTERGOVERNMENTAL AGREEMENT OF APRIL 26, 1966, IS DEVELOPING SUCCESSFULLY. THIS APPLIES PARTICULARLY TO THE AUTOMOBILE INDUSTRY (THE AGREEMENT WITH FIAT), TO THE CHEMICAL, OIL AND GAS, METALWORKING, TESTILE AND KNITTED GOODS INDUSTRIES, AND TO INDUSTRIAL AUTOMATION, AND OTHER BRANCHES. SCIENTIFIC COOPERATION IS ALSO PROCEEDING ON THE BASIS OF AN AGREEMENT SIGNED BY THE USSR ACADEMY OF SCIENCES WITH ITALY'S THREE BIGGEST SCIENTIFIC ORGANISATIONS, THE NATIONAL RESEARCH COUNCIL, THE ACCADEMIA DEI LINCEI AND THE NATIONAL INSTITUTE OF NUCLEAR PHYSICS.

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122563

ABSTRACT/EXTRACT--THE SIGNING OF AN INTERGOVERNMENTAL AGREEMENT ON SCIENTIFIC AND TECHNICAL COOPERATION WITH BRITAIN (JANUARY 19, 1968) MADE IT POSSIBLE FOR MIXED SOVIET BRITISH WORKING GROUPS TO DISCUSS PROPOSALS FOR PROMOTING COOPERATION, NOTABLY IN THE INSTRUMENT MAKING, ELECTRICAL ENGINEERING, THE AUTOMOBILE AND TRACTOR INDUSTRIES. SOVIET FINNISH SCIENTIFIC AND TECHNICAL COOPERATION IN SUCH TRADITIONAL FIELDS AS PULP AND PAPER, WOODWORKING INDUSTRY, FORESTRY AND TIMBER, MELIORATION AND CONSTRUCTION HAS BEEN GOING ON FOR FIFTEEN YEARS. ITS EXPANSION HAS MADE IT POSSIBLE TO FIND NEW AREAS OF COOPERATION INTERESTING FOR BOTH COUNTRIES. THEY INCLUDE PROTECTION OF THE WATERS OF THE GULF OF FINLAND FROM POLLUTION, PURIFICATION OF DRINKING AND SEWAGE WATER, AND THE TECHNOLOGY OF NONFERROUS METAL PRODUCTION. COOPERATION BETWEEN THE SOVIET UNION AND AUSTRIA UNDER INTERGOVERNMENTAL AGREEMENT EXTENDS TO THE MACHINE BUILDING, CHEMICAL AND ELECTRICAL ENGINEERING INDUSTRIES: A BIG JOB WAS DONE LAST YEAR TO DETERMINE NEW AREAS AND FORMS OF SOVIET AUSTRIAN COOPERATION. ANALOGICAL WORK IS TO BE DONE IN THE NEAR FUTURE WITH BELGIUM UNDER THE INTERGOVERNMENTAL AGREEMENT CONCLUDED IN JULY 1969. FOR YEARS THE SOVIET UNION HAS MAINTAINED CLOSE TIES WITH SCIENTIFIC ORGANISATIONS AND LEADING INDUSTRIAL FIRMS IN SUCH DEVELOPED CAPITALIST COUNTRIES AS JAPAN, THE NETHERLANDS, SWEDEN, SWITZERLAND, THE FEDERAL REPUBLIC OF GERMANY, DENMARK AND NORWAY. THE SOVIET UNION EXCHANGES SCIENTIFIC INFORMATION WITH THE UNITED STATES AND CANADA.

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122563

ABSTRACT/EXTRACT--PATENT RIGHTS (PROBLEMS HANDLED BY THE UNITED INTERNATIONAL BUREAUX FOR THE PROTECTION OF INDUSTRIAL, LITERARY AND ARTISTIC PROPERTY AND THE COUNTRIES WHICH RATIFIED THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY). THERE IS A VERY LARGE NUMBER OF PATENTS AND APPLICATIONS FOR THEM (THE TOTAL NUMBER OF APPLICATIONS THROUGHOUT THE WORLD EXCEEDS 600,000, WITH THE SOVIET UNION ACCOUNTING FOR 100,000) AND EFFORTS ARE NOW DIRECTED TOWARDS ACCELERATING EXAMINATION BY EXPERTS AND IMPROVING THE PROCEDURE AND TECHNIQUE FOR PATENTING. A DRAFT INTERNATIONAL AGREEMENT IN THIS FIELD HAS BEEN WORKED OUT WITH THE PARTICIPATION OF SOVIET EXPERTS.

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UDC 616.13--002.2

GVISHIANI, G. S., and KOBAKHIDZE, N. G.

"Dynamics of the Shifts in Lipids, Monoamines, and the Blood Coagulation System Associated With Atherosclerosis Caused by Restriction of Movement"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 2, Nov 1970, p 447

Translation: Shifts in the composition of lipids and catecholamines and in the blood coagulation system were studied at various times during the onset of experimental atherosclerosis (after one, two, three, and four months). Following decapitation of the animals at the conclusion of the experiment, the same indices were studied in the tissue of the myocardium, the liver, and the reticular formation of the brain stem.

Periodic restriction of movement caused an increase in the beta-lipoproteins present in the blood of rabbits at the beginning of the experiment. An increase in total cholesterol and a reduction of the lecithin-cholesterol index were established at the end of the experiment. An increase in total cholesterol and beta-lipoproteins and a reduction of the lecithin-cholesterol

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GVISHIANAI, G. S., and KOBAKHIDZE, N. G., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 2, Nov 1970, p 447

index were noted in the thalamus. Beta-lipoproteins in the myocardium increased and there was an increase in overall cholesterol content in the reticular formation of the brain stem; the percentage of catecholamines present at the beginning of the experiment was increased. In the first months, free adrenaline generally increased, but in the following months the adrenaline in the blood decreased and the noradrenaline increased.

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USSR

UDC 539.376.532.135

GALUSTOV, K. Z., and GVOZDEV, A. A.

"Linear Theory of the Creep of Concrete with Linear Compression"

Moscow, Mekhanika Tverdogo Tela, No 1, Jan-Feb 72, pp 85-91

Abstract: The basic working hypotheses of the linear theory of the creep of concrete are formulated; in this theory, deformations developing in time are subdivided into components, namely the residual effect, and irreversible deformation of the first kind. Elastic-instantaneous deformations depend linearly upon the acting stresses all the way to values that are close to the static strength of the concrete. Deformations due to the residual effect depend linearly upon the stresses caused by them, are subject to the principle of superposition, and include that part of the irreversible deformations that is due to the aging of the concrete. Irreversible deformations of the first kind are the cause for nonadherence of the superposition principle; they depend nonlinearly upon the stresses caused by them. The basic equations of the theory are written out, and possible methods of segregating the components of deformation are considered. The equations of the two-component theory of the creep of concrete were verified experimentally on the basis of complex stepwise-changing regimes of the loading of experimental samples. It is shown that the theory

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GALUSTOV, K. Z., and GVOZDEV, A. A., Mekhanika Tverdogo Tela, No 1, Jan-Feb 72, pp 85-91

of an elastically creeping solid yields exaggerated values in the case of stepwise increasing stress; this is linked to errors of the principle of influence imposition. Deformations computed according to the theory of an elastically creeping solid and according to the two-component theory of the creep of concrete under stepwise-increasing loads are in satisfactory agreement with the experimental data. In the case of load removals and repeated loading, the theoretical curves on the basis of the theory of an elastically creeping solid diverge considerably from the experimental values, whereas curves on the basis of the two-component theory of the creep of concrete are in good agreement with the experimental values. The conclusion is drawn that an application of the nonlinear theory of an elastically creeping solid, when describing periodically changing loading regimes, leads to substantial errors. The basic hypotheses of the two-component nonlinear theory of an elastically creeping solid, and the basic equations based upon these hypotheses, make it possible to describe correctly the experimental data obtained for variable applications of compression stresses by taking into account irreversible creep deformations of the first kind. 14 references.

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1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CONVERTER STEELMAKING -U-
AUTHOR--(05)-BAKLAN, P.P., OSTAPENKO, V.D., STAKHNEVICH, V.L., GVOZDEV,
A.L., PERESVETOV, S.M.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,623
REFERENCE--LITKRYIYA, IZBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL PATENT, STEEL MANUFACTURE PROCESS, SPONGE IRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--3004/1824 STEP NO--UK/0482/79/000/0000/0000
CIRC ACCESSION NO--AA0132089
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PROCESSING DATE--20NOV79

CIRC ACCESSION NO--AA0132089

ABSTRACT/EXTRACT--(U) GP-0-

OF SMALLER THAN 30PERCENT

40PERCENT SPONGE FE.

ABSTRACT. STEEL IS MELTED BY USING CHARGES
HEAT URE BRIQUETS AND SMALLER THAN OR EQUAL TO

FACILITY: GOSUDARSTVENNYY

PROYEKTNO-IZYSKATEL'SKIY I TORFAZVEDUCHNYY INSTITUT GIPROTRAFRAZVEDKA.

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UDC 543.545:546.65:539.173.8

GVOZDEV, B. A., GRITCHENKO, Z. G., MAKAROVA, T. F., OGANESYAN, Yu. Ts., and STEPANOV, A. V.

"Use of the Electromigration Method in Studying the Yields of Certain Rare-Earth Elements in the Reactions $U(^{12}C, f)$, $U(^{22}Ne, f)$ and $U(^{40}Ar, f)$ "

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 421-429

Abstract: Fission reactions of the nuclei of heavy ions are important 1) in the theoretical treatment of the fission of strongly excited nuclei, and 2) in the practical synthesis of new elements and isotopes.

A thick target ($\sim 20 \text{ mg/cm}^2 \text{ U}_3\text{O}_8$) was irradiated for several hours with the inner beam of the 300 cm cyclotron of the Laboratory of Nuclear Physics, United Institute of Nuclear Research, with ^{12}C , ^{22}Ne or ^{40}Ar (energies of ~ 110 , 190 and 350 Mev, respectively); after which the irradiated target was dissolved in HNO_3 , and addition of a carrier of $\sim 50-100 \text{ } \mu\text{g La}^{3+}$, the La and rare earth fluorides were precipitated. The latter was transformed into hydroxides in 7.5 N HCl, the resulting solution was passed through a column filled with the anion exchanger Dauex-1 in Cl^- -form to remove tetravalent

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GVOZDEV, B. A., et al., Radickhimiya, Vol XIII, No 3, 1971, pp 421-429

elements captured by LaF_3 . The filtrate, containing all the rare earths and the tetravalent actinides, was heated to dryness, then separated by the electromigration method, with use of ordinary electrophoretic equipment. Relative yields of La, Ce, Pr, Nd, Pm, Sm, Eu and Gd isotopes, resulting from uranium fission by C, Ne and Ar ions, were measured. Tabular data accompany the paper.

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USSR

UDC 539.173.8:546.791

GVOZDEV, B. A., GINS, YE., IONESCU, S., SASEU, K., and SPILIDU, S.

"Radiochemical Investigation of the Fission Products of Uranium Irradiated by Accelerated Argon Ions"

Leningrad, Radiokhimiya, Vol 12, No 4, 1973, pp 612-617

Abstract: The authors determined the yields of various products of fission of a nucleus with $Z = 110$ from the excited state formed as a result of interaction of uranium-238 with argon-40 ($U^{238} + Ar^{40} \rightarrow f$). An attempt was also made to evaluate certain characteristics of the fission process for this case. Uranium was irradiated on the inner beam of a multiple-charge ion cyclotron at the Joint Institute of Nuclear Research. The target was U_3O_8 on an aluminum substrate. Bombardment with Ar^{7+} ions at 270 Mev varied from 5 to 12 hours. After irradiation the target was dissolved in nitric acid containing carriers of Ag, Te, Ba, La, Tb and Au. The solution was then treated sequentially to extract the silver, barium, rare earth elements, gold and tellurium. The chemical yield of the elements was determined by weighing or spectrophotometry, and the results were used to calculate mass yields of the fission products. It was found that the experimental data conform satisfactorily to Gaussian distribution. The half-peak width of this distribution is approximately 60 mass units. The maximum fission product yield is estimated at approximately $1/2$

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GVOZDEV, E. A., et al., Radiokhimiya, Vol 12, No 4, 1970, pp 612-617

20 mb. A comparison of the results with the mass distribution of uranium fission products yielded by irradiation with neon ions shows a somewhat wider mass distribution for argon than for neon. In conclusion the authors thank G. N. FLEROV for formulating the problem, I. ZVARE and YU. TS. OGANESYAN for constructive discussion of the results, and also Z. SHEGLOVSKIY and I. I. CHUEURKOVA for assistance in carrying out the experiments.

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USSR

UDC 612.115+797.57

GVOZDEV, P. I., LYTKIN, M. I., and MOZZHUKHIN, A. S., Military Medical Academy imeni S. M. Kirov

"Changes in the Coagulating and Anticoagulating Systems After Parachute Jumps"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 10, 1971, pp 1,526-1,530

Abstract: Preparation for and completion of a parachute jump increases the heparin concentration, intensifies fibrinolysis, reduces the prothrombin concentration, and lengthens the recalcification time, i.e., parachute jumping induces hypocoagulability. These blood changes, which persist for more than 24 hours, are ascribed to conditioned reflex mechanisms that control anticoagulative activity. Under the influence of the stress of parachute jumping, heparin is released into the blood when the threshold concentration of thrombin is reached. Heparin then forms a complex compound with epinephrine which helps to decrease coagulation and prevent clotting. The more jumps an individual makes, the more pronounced the changes noted above. Training has the same effect on cardiovascular reactions of parachutists in the form of changes in arterial pressure and cardiac rate.

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USSR

UDC: 621.372.544(088.8)

SHCHERBAKOV, N. S., TIKHONOV, G. A., ZUBAREVA, N. A., GVOZDEV, S. A.

"A Flip-Flop Device"

USSR Author's Certificate No 263665, filed 18 Nov 68, published 8 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G300 P)

Translation: A flip-flop device based on potential AND-OR logic elements is proposed. The device contains main and auxiliary setting flip-flops and four controlling circuits. To improve the operational reliability of the device, the outputs of the controlling circuits of the main setting flip-flop are connected to dissimilar inputs of the auxiliary setting flip-flop, and the outputs of the controlling circuits of the auxiliary setting flip-flop are connected to identical inputs of the main setting flip-flop. The inputs and outputs respectively of each of the controlling circuits of the main and auxiliary flip-flop are interconnected.

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USSR

UDC: 681.325.65:621.382

NIKOLAYEV, Ye. I., GVOZDEV, S. A., TURCHENKO, L. S.

"A Pulse-Potential Diode-Transformer Rectifier"

USSR Author's Certificate No 253439, filed 7 May 65, published 25 Feb 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11,
Nov 70, Abstract No 11A57 P)

Translation: This Author's Certificate introduces a pulse-potential diode-transformer rectifier with an amplifier and a resistance-capacitance circuit for delaying the potential by the time of pulse operation. To reduce interference with simultaneous arrival of the input pulse and the leading edge of the enabling potential, as well as to increase speed and improve resistance to interference in the supply circuit, additional semiconductor diodes are connected in parallel with the resistor in the potential delay circuit and between the pulse and potential inputs. The capacitor in the potential delay circuit is connected to the output of the collector supply source. One illustration. V. M.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ORGANIZATION OF THE PRODUCTION OF A STRIP FOR CANNING TARES AT

ALUMINUM PLANTS -U-
AUTHOR--(02)-GVOZDEV, S.G., GLEYZER, M.M.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 61-2

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, ALUMINUM PRODUCTION, METAL STRIP, FOOD
CANNING/(U)AMTS ALUMINUM ALLOY, (U)AMR22 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1921

STEP NO--UR/0136/70/043/002/0061/0062

CIRC ACCESSION NO--AP0109250

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIFICATIONS ARE GIVEN FOR AL AND ITS ALLOYS TO BE EMPLOYED IN THE PRODUCTION OF CANNING TARES. THE POSSIBLE TECHN. PRODUCTION PROCESSES OF A STRIP FROM AL AND ALLOYS AMTS AND AMR2 ARE ALSO CONSIDERED.

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UNCLASSIFIED

USSR

UDC 532.529

GVOZDEV, V. D., and KLIMENKO, A. L.

"Concerning the Question of Heat Transfer in a Vacuum-Evaporated Vibroboiling Layer"

Ivanovo, Gidrodinamika, Teplo- i Massoobmen v Psevdozhizh. Sloye -- Sbornik (Hydrodynamics, Heat and Mass Exchange in a Pseudoliquefied Layer -- Collection of Works), 1971, pp 39-45 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No ZB953 by V. A. Kernerman)

Translation: Results of measurements of the coefficient of heat transfer from a vertical cylindrical heater to a vibroboiling layer, carried out at atmospheric pressure (760 mm Hg) and in a vacuum (0.05 mm Hg) in a hermetic apparatus 150 mm in diameter and 250 mm high, show that in a vacuum-evaporated layer the coefficients of heat transfer are considerably smaller (by a factor of 4-5) than at atmospheric pressure, and practically do not depend upon the particle size (within the interval of 0.75-1.75 mm). Measurement of the temperature profile with respect to the layer showed that the basic temperature drop takes place at a distance of about 1 mm from the heater surface. Under vacuum conditions the temperature gradient at the wall is higher than at atmospheric pressure; this points to the important role of the filtration component of the gas phase in the boiling layer. Seventeen references

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1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DURABILITY OF THE ADHESIVE BONDS OF SHOE MATERIALS DURING REPEATED
COMPRESSION -U-
AUTHOR--(03)-NURIYEV, M.A., GVOZDEV, YU.M., BARAMBOYM, N.K.
COUNTRY OF INFO--USSR
SOURCE--KOZH. OBUV. PRGM. 1970, 12(3), 42-4
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--ELASTOMER, RUBBER ADHESIVE, ELASTIC MODULUS, FATIGUE STRENGTH,
FOOTGEAR, BONDING PROPERTY/(U)SKB ELASTOMER

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0881

STEP NO--UR/0498/70/012/003/0042/0044

CIRC ACCESSION NO--AP0124544

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS ELASTOMER SOLES (BRAND B),
BONDED WITH NAIRIT NT-101 KRESIN BLEND AND NONPOROUS ELASTOMER SKB
(CONTG. VARIABLE AMTS. OF CHANNEL BLACK), WERE SUBJECTED TO REPEATED
COMPRESSIONS ON A SPECIALLY DESIGNED APP. THE FATIGUE STRENGTH OF THE
ADHESIVE BOND WAS PROPORTIONAL TO THE ELASTIC MODULUS AND DEPENDED ON
THE PHYSICOMECH. PROPERTIES OF THE BONDED MATERIALS.

UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF ACID ESTERS OF TETRACARBOXYLIC ACIDS AND POLYPROPYLENE
GLYCOLS AS HARDENERS FOR THE PREPARATION OF HEAT RESISTANT COATING BASED
AUTHOR--(02)-LEVKOVICH, G.A., GVOZDEVA, F.N.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 7--9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBOXYLIC ACID ESTER, GLYCOL, POLYPROPYLENE, EPOXY RESIN,
ORGANOSILICON COMPOUND, CONDENSATION REACTION, PYROMELLITIC ACID,
ANHYDRIDE, HETEROCYCLIC OXYGEN COMPOUND, ELASTICITY, IMPACT STRENGTH,
PLASTIC COATING, HEAT RESISTANCE/(U)KE30 EPOXY SILICONE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0431

STEP NO--UR/0303/70/000/001/0007/0009

CIRC ACCESSION NO--AP0119367

UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119367

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF PYROMELLITIC DIANHYDRIDE, BUTANETETRACARBOXYLIC ACID DIANHYDRIDE, OR CYCLOPENTANETETRACARBOXYLIC ACID DIANHYDRIDE WITH HO(CH SUB2 CH2O) SUBN H (MOL. WT. 415-528) IN CYCLOHEXANONE AT 120-30DEGREES GAVE DIRECTLY SOLNS. OF RO(CH SUB2 CH2O) SUBN R (I) (R SI, E.G., II, III, OR IV), WHICH WERE USED AS EPOXY RESIN HARDENERS. I WERE PARTICULARLY EFFECTIVE IN HARDENING EPOXY SILICONE RESINS KE-30 AND KE-40 (PREPD. BY REACTING ALKOXYSILOXANES WITH EPOXY RESINS). THE HARDENING OF THESE RESINS WITH I GAVE FILMS WHICH LOST LESS THAN OR EQUAL TO 30.2 WT. PERCENT ON HEATING TO 620DEGREES AND RETAINED ELASTICITY AND SUFFICIENT IMPACT STRENGTH UP TO 620DEGREES.

UNCLASSIFIED

USSR

UDC 632.95

~~CHUDEVA, I. V.~~ LURIK, B. B., STARKOV, A. V., KAMENNOV, N. A., POGODINA, L. N., and SUKHOVA, M. N.

"Search for Synergists of Pyrethrins in the Methylene Dioxy Phenyl Series"

Tr. VNII dezinfektsii i steriliz. (Works of the All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 101-106 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N431)

Translation: For purposes of studying synergistic activity, a series of piperonylic acid esters and amides, and piperonal acetals, were synthesized. The synergistic activity of the synthesized compounds was tested in a mixture with pyrethrins in a 10:1 ratio by the topical method. In tests on houseflies, the greatest synergistic activity was shown by butyl, nonyl and cyclohexyl esters and N,N-dipropyl amide. N,N-disubstituted amides are more active than N-substituted amides. Among the amides synthesized on the basis of heterocyclic amines, morpholide showed the greatest activity. The most toxic for red cockroaches were mixtures of pyrethrins with N-isopropyl amide and piperidide. Among the acetals, the most active compounds for houseflies were ethyl carbitolic and butyl carbitolic acetals of piperonal, and butyl and heptyl acetals. The acetals are weak synergists for red cockroaches. An investigation was made of the synergistic activity of the synthesized compounds on strains of houseflies highly resistant to DDT. T. A. Belyayeva.

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USSR

UDC 533.6.011.72

BAZHENOVA, T. V., GVOZDEVA, L. G., KOMAROV, V. S., and SUKHOV, B. G.

"Investigation of the Diffraction of Strong Shock Waves at Convex Angles"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 4, 1973, pp 122-134

Abstract: Results are presented of an investigation of the diffraction of strong shock waves at two-dimensional convex angles ($M_0 = 2-10$) in gases with change of the adiabatic exponent from 1.66 to 1.05.

New features of the diffraction pattern are disclosed, that are linked by interaction of the retardation wave with the free jet boundary layer. It is established that the shape of the diffracting shock wave depends upon the Mach number M_0 of the shock wave and the diffraction angle α_0 . The Mach number of the wall portion of the shock wave does not depend upon the adiabatic exponent of the gas ν if the adiabatic exponent varies within the range of 1.4--1.15. With an increase of the diffraction angle and the Mach number of the incident shock wave in the wall portion of the diffracting shock wave, there consecutively originate a point of inflection, a Mach reflection, and a nearly regular reflection.

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USSR

BAZHENOVA, T. V., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 4, 1973, pp 122-134

Experimental values of the stall angles are obtained. It is shown that the stall takes place at a pressure greater than p_0 , but less than $2 p_0$. The pressure on the wall surface during diffraction of the shock wave changes from the value at the front of the diffracted part of the shock wave to the value at the end of the rarefaction wave. An approximation formula is presented, which gives the relationship of the value of the pressure on the front of the diffracted shock wave to the Mach number of the incident wave and to the wedge angle. Values of the pressure at the end of the expansion wave are obtained on the basis of experimentally measured values of the stall angle. 15 references.

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USSR

UDC: 629.78.015:535.6.011.55

GVOZDEVA, L. G.

"Motion of Shock Waves in Channels of Variable Cross Section and in Nozzles"

Nauch. Tr. In-t Mekh. Mosk. Un-ta [Scientific Works of Institute of Mechanics, Moscow University], 1972, No 20, pp 27-52 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 7, Moscow, 1973, Abstract No 7.41.115, by E. R. S.).

Translation: A review is presented of hypersonic flow (F) in variable cross section channels. The regularities of Mach reflection (MR) of weak shock waves (SW) in ideal and real gasses are described for low Mach numbers. It is demonstrated that at the present time there is no satisfactory method for calculating MR for strong SW even at low Mach numbers (less than 3). The basic theoretical and experimental results on the diffraction of SW in an expanding stream produced to date are presented. Experiments have shown that the diffraction picture is complex and depends little on the physical properties of the gas, and have indicated the inaccuracy of known theoretical results, particularly in the case of F with flow separation. It follows from the results of many theoretical and experimental works that when the method of the one-dimensional F is used, the asymptotic behavior of SW in channels

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GVOZDEVA, L. G., Nauch. Tr. In-t Mekh. Mosk. Un-ta, 1972, No 20, pp 27-52.

of variable cross section and in nozzles can be determined. Successive analysis of processes of MR and diffraction allow us to construct a two-dimensional wave picture for various moments in time. Full calculation of the two-dimensional flow in time at the present time is possible only in the most elementary cases. 27 figures, 65 biblio. refs.

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GVOZDEVA, N. I.

STATE OF NATURAL IMMUNITY OF DOGS DURING CHRONIC GAMMA IRRADIATION UNDER THE INFLUENCE OF ANTITRAVITE

UDC 615.843.1.015.46

JPRS 56030
18 May 72

[Article by S. I. Pol'mina, V. A. Zhayeva, N. I. Gvozdeva, N. S. Shil'naya, A. A. Anisimov and E. S. Zubenkova; Moscow, *Kosmicheskaya Biologiya i Medicina*, Russian, Vol 6, No 2, March-April 1972, pp 24-29, submitted for publication 11 February 1971.]

Abstract: The effect of antitravite, a biological protectant, on the state of natural immunity was investigated in experiments on dogs exposed to three-year chronic gamma irradiation simulating the dose characteristics of a space-flight environment. Long-term irradiation of dogs with low dose gamma ray damages induced wavelike changes in the natural immunity of the test animals. Regular administration of antitravite produced a normalizing effect on the state of natural immunity, favored a positive stability of the indices of blood phagocytic activity, and restrained the development of autoimmune reactions.

It has been established in numerous investigations that body exposure to ionizing radiation in large doses, leading to the development of acute or subacute radiation sickness, is accompanied by an impairment of many body functions. Among these impairments a leading place is occupied by a decrease in natural and artificial immunity (P. N. Kiselev and P. A. Buznii; N. N. Klemarukhina, et al.; V. M. Shilov; R. V. Petrov, and others). However, the problem of the effect of prolonged chronic irradiation in small doses on immunobiological reactivity and the influence exerted on it by protective-therapeutic measures has not been adequately covered.

The objective of this study was an evaluation of the effectiveness of one of the means of biological defence, the drug antitravite, on the state of natural immunity in dogs subjected to prolonged chronic gamma irradiation. This study is a part of a complex investigation with chronic irradiation which in dose level and intensity simulated the radiation conditions of a prolonged space flight (Yu. G. Gligor'yev and B. A. Markelov, and others).

1/2 041

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--EXPERIMENTS IN THE APPLICATION OF PROPHYLACTICS AGAINST RADIATION INJURIES UNDER SIMULATED PROLONGED SPACE FLIGHT CONDITIONS -U-

AUTHOR--(05)-ROGOZKIN, V.D., SBITNEVA, M.F., SHAPIRO, G.A., GVOZDEVA, N.I., ZUKHBAYA, T.M.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL 4, MAR.-APR. 1970, P. 20-24

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS

TOPIC TAGS--DOG, GAMMA RADIATION, RADIATION DOSAGE, HEMATOPOIESIS, RADIATION INJURY, RADIATION PROPHYLAXIS, ANTIRADIATION DRUG, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/1710

STEP NO--UR/0453/70/004/000/0020/0024

CIRC ACCESSION NO--AP0138683

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0138683

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF ONE YEAR OBSERVATIONS OF RADIATION EFFECTS IN A GROUP OF 54 DOGS EXPOSED TO CHRONIC GAMMA RADIATION DOSES OF 75 REM-YEAR WITH ADDITIONAL SOLAR FLARE SIMULATING DOSES OF 50 REM GIVEN 3 TIMES DURING THE YEAR TO A TOTAL OF 225 REM-YEAR. ADENOSINE TRIPHOSPHATE OR AMITETRAVIT (A COMBINATION OF VITAMINES C, P, BL, AND B6 WITH TRYPTOPHAN AND HISTIDINE) WERE GIVEN TO THE DOGS AS MEDICATION. A NORMALIZING EFFECT OF THESE PREPARATIONS ON HEMOPOIESSIS IS ESTABLISHED IN RADIATION EXPOSED DOGS.

UNCLASSIFIED

USSR

UDC 612.014.424:591.18+591.881

SEURANOVA, Zh. P., BURMISTROV, Yu. M., GVCZDIKOVA, Z. M., EL'KINA, G. A.,
Institute of Higher Nervous Activity and Neurophysiology of the USSR Academy
of Sciences, Moscow

"Circulation of Nerve Impulses in the Cerebral Cortex"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 4, No 2, 1973, pp 42-54

Abstract: The basic laws characteristic of multiple pulse discharges arising as a result of the circulation of excitation in the system of so-called lateral giant axons of the river crayfish which is a closed chain of a limited number (4-12) of neurons. In the effort to extend these laws to the neuron activity of the brain of a rabbit it turned out that 1) there are still no reliable data either for or against the proposition of the participation of reverberation processes in the genesis of the background activity of the cortical neurons; 2) the contribution of these processes to the organization of the neuron response to direct electrical stimulation under the conditions of the intact cortex has very low probability; 3) on the contrary, the proposition is made of the presence of the excitation circulation processes in the organization of the reaction to an analogous stimulation in a neuronally isolated strip of the cortex. The conclusion with respect to the possibility of circulation of an excitation in an isolated strip is based entirely on recording; the
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USSR

SHURANOVA, Zh. P., et al., Uspekhi Fiziologicheskikh Nauk, Vol 4, No 2, 1973, pp 42-54

activity of individual neurons. It was shown that this mechanism probably begins during the recovery period after the inhibition interval. There is no absolute proof that the post-inhibition activation in the strip takes place by the reverberation mechanism, but the similarity of the group discharges of the neurons of the strip to the well investigated activity of the reverberation nature makes the proposition probable. An additional stimulation administered against the background of trace discharge of a neuron immediately stopped the pulsation. Three possible interpretations of this fact are presented.

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USSR

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GVOZDOVER, R. S., LUK'YANOV, A. YE., SPIVAK, G. V., RAU, E. I.,
BYKOV, M. V.

"Electron Microscopy of Periodic Piezoelectric Fields"

Moscow, Izvestiya Akademii Nauk, Seriya Fizicheskaya, Vol 34,
No 7, 1970, pp 1483-1491

Abstract: This article discusses problems in the formation of the image field contrast varying periodically with time, computes the amplitudes of the piezoelectric fields producing the contrast on the screen of a mirror or raster electron microscope, and describes an experimental method for visualizing and measuring these piezoelectric fields. The piezoelectricity in question takes place on the surfaces of crystals under the action of ultrasonics, a phenomenon often investigated by electron microscopes stroboscopically operated. The results of experiments performed on crystals of quartz, lithium niobate -- LiNbO_3 , and cadmium sulfide (CdS) are given and the ultrasonic delay lines from the quartz and LiNbO_3 crystals investigated. Gratitude is expressed to V. Ye. Lyamov for his useful comments on some of the results of the work.

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USSR

UDC: None

GYUNNINEN, E. M., Editor

"Problemy difraktsii i rasprostraneniya voln" (Problems of Wave Diffraction and Propagation) Leningrad, Izdatel'stvo leningradskogo universiteta, 1972, 208 pp, p 2

Translation: This collection is devoted to problems in the propagation of radio waves of the ultra-longwave range in the earth's waveguide channel, the ionosphere, as well as allied matters.

The collection should prove interesting to a very broad group of specialists working in the field of wave propagation and diffraction, as well as for aspirants and students in advanced courses specializing in this field.

Chief editor, E. M. Gyunninen

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USSR

UDC: None

GYUNNINEN, E. M., Editor

"Problemy difraktsii i rasprostraneniya voln" (Problems of Wave Diffraction and Propagation) Leningrad, Izdatel'stvo leningradskogo universiteta, 1972, 208 pp, p 207

Translation:

TABLE OF CONTENTS

G. I. Makarov, V. V. Novikov, Eigenvalues of Normal Waves in a Flat Waveguide Channel.

G. I. Makarov, V. V. Novikov, Electromagnetic Field in a Plane Thin Waveguide.

G. F. Remenets, Variation Method of Moments and Several Iterational Processes for Determining the Characteristics of Ultra-Longwave Propagation in the Earth-Anisotropic Ionosphere Waveguide Channel, Part 1. . . .
2/5

USSR

UDC: 621.391:519.2

GUSYATINSKIY, I. A., RYSKIN, E. A.

"Analysis of the Interference Resistance of a Demodulator With Frequency Feedback"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 88-96 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A45)

Translation: The authors determine the analytical relationship between the input and output signal-to-noise ratios of an FM demodulator with frequency feedback. The results are compared with experimental data published in the works of other authors. Resumé.

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USSR

UDC 621.396.621.59:621.391.812.7(088.8)

VAYSBURG, G. M., GUSYATINSKIY, I. A., KOZLOV, V. V., NEMIROVSKIY, A. S., PLEKH-
ANOV, V. V., BERNOSKUNI, YU. V.

"Device for Signal Reception with Equivalent Frequency Spacing"

USSR Author's Certificate No 296221, filed 21 Jul 1969, published 8 Apr 1971
(from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D78P)

Translation: A device is introduced for signal reception with equidistant frequency spacing containing heterodynes and two frequency converters connected in series to it, the input signal to the first of which is fed directly and the input signal to the second of which is fed via a delay line. The device also includes a phase detector one of the inputs of which is connected to the output of the first converter via a band filter. For reception of $N - 1$ signals with equidistant frequency spacing by one device, for a decrease in distortions, a phase modulator the control input of which is connected to the output of the phase detector is included between the output of the mentioned heterodyne and the other input of the phase detector. The delay of the delay line is selected equal to the inverse of the frequency separation, and the pass band of the band filter is selected not exceeding twice the magnitude of the frequency separation.

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USSR

UDC: 513.312

GUTS, A. K., Novosibirsk

"Concerning Mappings of Families of Oricycles in Lobachevski Space"

Moscow, Matematicheskii Sbornik, Novaya Seriya, Vol 90(132), No 1, Jan 73,
pp 131-138

Abstract: Examples are given of families of oricycles in Lobachevski space of dimensionality two or greater whose invariance relative to bijective mappings defines these mappings as motions. In particular, a bijective mapping which maps any oricycle onto an oricycle is a motion. A family of parallel straight lines passing through points which are members of the given space is used to construct a Poincaré model of Lobachevski space. Three theorems of bijective mappings and motions are proved within the framework of this theoretical model.

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1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--GAS CHROMATOGRAPHY OF FLUORINATED COMPOUNDS ON POROUS POLYMERS -U-

AUTHOR--(02)-GVOZDOVICH, T.N., YASHIN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--J. CHROMATOGR. 1970, 49(1), 36-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, FLUORINATED ORGANIC COMPOUND,
ACETOPHENONE, PROPANOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0978

STEP NO--NE/0000/70/049/001/0036/0039

CIRC ACCESSION NO--AP0136408

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SUITABILITY OF THE WEAKLY SPECIFIC ADSORBENTS CHROMOSORBS 101 AND 102 (BOTH ARE POROUS POLYMERS) FOR THE GAS CHROMATOGRAPHIC SEPN. OF ORG. COMPS. AND THEIR FLUORINATED ANALOGS IS DISCUSSED. IN GENERAL, THE FLUORINATED COMPS. ARE ELUTED 1ST. CHROMATOGRAMS AND HEATS OF ADSORPTION ON THE CHROMOSORB COLUMNS AND ON A PORAPAK T COLUMN ARE GIVEN FOR MEQAC, CF SUB3 OAC, PROH, PERFLUOROPROPANOL, N,AMYL ALC., N,PERFLUOROAMYL ALC., ACETOPHENONE, AND P,FLUOROACETOPHENONE. FACILITY: EXPTL. DESIGN BUR. AUTOMAT., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632:576.851.55

GVOZDYAK, R. I., LIPSHIVTS, V. V., and KHODOS, S. F.

"New Disease of Common Hornbeam (*Carpinus betulus* L.) Caused by Anaerobic Bacteria"

Kiev, Doklady Akademii Nauk Ukrain's'koy SSR, Seriya B. Geologiya, Geofizika, Khimiya i Biologiya, No 11, 1971, pp 1,034-1,036

Abstract: Samples of hornbeam with tubercular growths were investigated. Leaves of trees were artificially infected with bacterial suspension. Fungi were not found in the infected areas, so it was concluded that anaerobic bacteria were instrumental in the infection process. Three *Clostridium* strains were isolated. It was concluded that the described symptoms indeed represent a new kind of plant disease of a cancer-tubercular variety. The disease is caused by *Clostridium* bacteria. This is the first time that the phytopathogenic properties of *Clostridium* bacteria have been identified.

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USSR

UDC 669.3+669.27].018.95

IVANOVA, V. S., FRIDMAN, Z. B., and GVOZDYK, V. G.

"Investigation by Means of High-Temperature Metallography of the Failure Macromechanism of Copper Reinforced With Tungsten Wire"

V sb. Novyye napravleniya razvitiya vysokotemperatur. metallogr. (New Trends in Development of High-Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye" (Machine-Building), 1971, pp 144-147 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11738 by authors)

Translation of Abstract: The authors present results of an investigation, by means of high-temperature metallography, of the macromechanism of breaking strain of copper reinforced by a net and unidirectional fibers of tungsten. Reinforcement of Cu with a net is more effective than reinforcement with unidirectional fibers from the standpoint of high-temperature strain resistance. Two illustrations. Bibliography with four titles.

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USSR

UDC 539.4:536.453

IVANOVA, V. S., FRIDMAN, Z. G., GVOZDYK, V. G.

"Study of the Macromechanism of the Breakdown of Copper Reinforced With Tungsten Wire Using High Temperature Metallography"

V sb. Novyye napravleniya razvitiya vysokotemperaturn. metallogr. (New Trends in the Development of High Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye", 1971, pp 144-147 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12V1554)

Translation: The results of a study of the macromechanism of the breakdown deformation of copper reinforced by a grid and one-directional wires using high-temperature metallography are presented. It is shown that reinforcement of the copper with a grid is more effective in comparison to reinforcement with unidirectional wires from the aspect of resistance to high-temperature deformation. Authors' abstract.

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USSR

UDC: 621.383.8 : 621.039.66

BARYSHEV, B. A., ~~GYAVGYANEN, L. V.~~, DIAMANT, L. M., ISKOL'DSKIY, A. M., KRASNOGOLOVYY, I. I., and NESTERIKHIN, Yu. Ye.

"Nanosecond Electron -Optical Photorecorder 'Channel' With Amplified Image Brightness"

Novosibirsk, Avtometriya, No 6, 1971, pp 53-58

Abstract: This paper represents a continuation of the work being done by the Institute of Automation and Electrometry on the design of devices for parallel recording and processing of optical signals obtained in the investigation of nanosecond and subnanosecond processes. A description is given in this paper of a multistage electronic-optical converter, developed by the authors, which has an electrostatic input chamber and two stages of image brightness magnification. A photograph and a functional diagram of the converter are given. Some of the advantages of this "Kanal" (Channel) instrument are low exposure time in frame operation, high electric field intensity near the photocathode due to the presence there of a control grid, a larger screen, high noise immunity, and a type of structure permitting assembly-line production by the Ministry of the Electronics Industry. The authors thank Yu. A. Shapiro for making the numerical computations, V. Yu. Sholokhov, Yu. H.

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- 174 -

USSR

UDC: 621.383.8 : 621.039.66

BARYSHEV, B. A., et al, Avtometriya, No 6, 1971, pp 53-58

Yevgrafov, and V. A. Gubachenko for their help in the structural development of the instrument, and V. D. Prilepskikh for helping prepare the apparatus.

2/2

USSR

UDC 539.173.8:543.791

GVOZDEV, L. A., GHAD, YE., IONESCU, S., SABEV, K., and SIMONOV, S.

"Radiochemical Investigation of the Fission Products of Uranium Irradiated by Accelerated Argon Ions"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 612-617

Abstract: The authors determined the yields of various products of fission of a nucleus with $Z = 110$ from the excited state formed as a result of interaction of uranium-238 with argon-40 ($U^{238} + Ar^{40} \rightarrow f$). An attempt was also made to evaluate certain characteristics of the fission process for this case. Uranium was irradiated on the inner beam of a multiple-charge ion cyclotron at the Joint Institute of Nuclear Research. The target was U_2O_8 on an aluminum substrate. Bombardment with Ar^{7+} ions at 270 Mev varied from 5 to 12 hours. After irradiation the target was dissolved in nitric acid containing carriers of Ag, Te, Ba, La, Tb and Au. The solution was then treated sequentially to extract the silver, barium, rare earth elements, gold and tellurium. The chemical yield of the elements was determined by weighing or spectrophotometry, and the results were used to calculate mass yields of the fission products. It was found that the experimental data conform satisfactorily to Gaussian distribution. The half-peak width of this distribution is approximately 60 mass units. The maximum fission product yield is estimated at approximately $1/2$

USSR"

GVOZDEV, B. A., et al., Radiokhimiya, Vol 12, No 4, 1970, pp 612-617

20 mb. A comparison of the results with the mass distribution of uranium fission products yielded by irradiation with neon ions shows a somewhat wider mass distribution for argon than for neon. In conclusion the authors thank G. N. FLEROV for formulating the problem, I. ZVARE and YU. TS. OGANESIAN for constructive discussion of the results, and also Z. SHEGLOVSKIY and I. I. CHUBURKOVA for assistance in carrying out the experiments.

2/2

USSR

UDC 547.833.6.9

GYUL'BUDAGYAN, L. V., MARGARYAN, N. A., and DURGARYAN, V. G., Yerevan State University

"New Derivatives of 4-Quinaldinol. XVII. 2-Methyl-3-(3-chlorobuten-2-yl-1)-4-hydroxyquinoline-6-carboxylic acid and Some of Its Reactions"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1681-1682

Abstract: Following reactions are reported. Cyclization of ethyl ether of 2-(3-chlorobuten-2-yl-1)-3-(p-carbethoxyanilino)-crotonic acid by heating it in vaseline oil to 245° yields 2-methyl-(3-chlorobuten-2-yl-1)-4-hydroxy-6-carbethoxyquinoline (I), m.p. 270°. A solution of 3.2 g (I) in 100 ml alcohol containing 2 g NaOH is heated for 30 min, the alcohol is removed, 10 ml of water is added to the residue, filtered, the pH is brought to 6-6.5, yielding crystalline 2-methyl-3-(3-chlorobuten-2-yl-1)-4-hydroxyquinoline-6-carboxylic acid (II), m.p. 314-316°. To 3.2 g of (I) 10 ml of phosphorus oxychloride is added, the mixture is heated for 3 hrs. excess phosphorus oxychloride is removed, ice water is added and the mixture neutralized to yield 2-methyl-3-(3-chlorobuten-2-yl-1)-4-chloro-6-carbethoxyquinoline (III), m.p. 102-103°. To a heated solution of (III) in alcohol, alcoholic NaOH is added, refluxed for 2 hrs, the alcohol is evaporated, water is added, and neutralized to yield 1/2

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GYUL'BUDAGYAN, L. V., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1681-1682

2-methyl-3-(3-chlorobuten-2-yl-1)-4-chloroquinoline-6-carboxylic acid (IV), m.p. 162. To obtain 1-(2-methyl-4-hydroxy-6-carboxyquinolinyl-3)butanone-3, m.p., 272-273°, (II) was dissolved in sulfuric acid and heated to 50° until all HCl formed has been removed. The mixture was then diluted with water, neutralized, and the product precipitated. Analogously 1-(2-methyl-4-chloro-6-carboxyquinolinyl-3)butanone-3 was obtained from (IV).

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USSR

UDC 542.91+547.831.2

GYUL'BUDAGYAN, L. V., SAGATELYAN, S. A., Yerevan State University

"Quinaldine Derivatives. XXI. β -(2-methyl-4-oxy(chloro)-6-amino-3-quinoly) Propionic Acids"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 2, 1971, pp 157-160

Abstract: A study is made of the synthesis of 6-amino derivatives of β -(2-methyl-4-oxy(chloro)-6-amino-3-quinoly) propionic acids (II, VII). The (II) acid is obtained by sulphuric acid hydrolysis of 2-methyl-3-(γ,γ -dichloroallyl)-4-oxy-6-acetaminoquinoline (I) which was synthesized previously [L. V. Gyul'budagyan, et al., *Arm. Khim. Zh.*, 24, 38, 1971]. The acid was obtained by saponification and deacetylation of the ethyl ether of β -(2-methyl-4-oxy-6-acetamino-3-quinoly) propionic acid (IV) obtained by thermal ring formation of α -(β -carbethoxyethyl)- β -(*n*-acetaminophenylamino) crotonic acid (III). By sulphuric acid hydrolysis of 4-chloro analog of I(VI), the 4-chloro analog of II(VII) is obtained. The VII was also obtained from the 4-chloro analog of IV(V) obtained by interaction of IV with POCl_3 . The experimental procedures, some physical-chemical properties and yields are given for the mentioned compounds.

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USSR

UDC 612.018.2+612.4597-07

GYULLING, E. V., Candidate of Medical Sciences, KAVSAN, V. K., Candidate of Biological Sciences, MEL'NIKOV, O. F., NIKOL'SKIY, I. S., and SEREBNYANYI, S. B., Doctor of Chemical Sciences, Kiev Scientific Research Institute of Otolaryngology, and Sector of Molecular Biology and Genetics, Academy of Sciences USSR

"Possible Regulation of the Immunological Activity of the Lymphoid System by Thymus Factors. 1. Stimulation of Antibody Formation by Calf Thymus Extract Fractions Obtained by Means of Sephadex G-25"

Kiev, Zhurnal Ushnykh Nosovykh i Gorlovykh Bolezney, No 6, 1971, pp 25-27

Abstract: The crude extract of the thymus gland has no biological activity. However, when the acetone-insoluble extract of calf thymus is separated into three fractions by means of gel filtration through Sephadex G-25, the first two fractions stimulate immunogenesis in newborn mice, that is, 15 microgram thymus protein doses injected subcutaneously increase the number of antibody-producing cells in the spleen and the weight of the spleen. It was concluded that the crude thymus extract contains stimulating and inhibiting factors and that after Sephadex filtration the latter remain in the third fraction. It is suggested that the purified stimulating factors might be useful in treating diseases developing as a result of immunological insufficiency.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPLEXING IN LEAD IODIDE SODIUM IODIDE WATER AND MERCURY II IODIDE
MERCURY II NITRATE WATER SYSTEMS STUDIED BY A SOLUBILITY METHOD -U-
AUTHOR-(02)-GYUNNER, E.A., YAKHKIND, N.D.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 147-50

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITRATE, IODIDE, WATER, MERCURY, SOLUBILITY, SODIUM COMPOUND,
COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1934

STEP NO--UR/0073/70/036/002/0147/0150

CIRC ACCESSION NO--AP0118896

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0118896
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF PBI SUB2 IN NAI
SOLNS. OF VARIOUS CONC. AT IONIC STRENGTH (NANO SUB3) 3.9 AND 20DEGREES
AND THE SOLY. OF HGI SUB2 IN HG(NO SUB3) SUB2 SOLNS. AT IONIC STRENGTH
5.2 AND THE SAME TEMP. WERE DETD. THE COMPLEXES FORMED WERE PB SUB4 I
SUB12 PRIME4 NEGATIVE, HG SUB2 I SUB2 PRIME2 POSITIVE AND HG SUB3 I SUB2
PRIME4 POSITIVE WITH INSTABILITY CONSTS. OF 1.1 TIMES 10 PRIME
NEGATIVE29, 1.0 TIMES 10 PRIME NEGATIVE28, AND 5.1 TIMES 10 PRIME
NEGATIVE28, RESP. THE EQUIL. CONSTS. FOR THE SOLN. OF HGI SUB2 IN HG
PRIME2 POSITIVE SOLNS. ARE 9.83 TIMES 10 PRIME NEGATIVE2 AND 1.97 TIMES
10 PRIME NEGATIVE2, RESP. FACILITY: KRYM. PEDAGOG. INST. IM.
FRUNZE, SIMFEROPOL, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REACTION OF LEAD NITRATE WITH SODIUM AND POTASSIUM CHROMATES IN
AQUEOUS SOLUTIONS -U-
AUTHOR-(02)-GYUNNER, E.A., TSAREVA, A.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1084-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LEAD COMPOUND, NITRATE, SODIUM COMPOUND, POTASSIUM COMPOUND,
CHROMATE, AQUEOUS SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1107 STEP NO--UR/0078/70/015/004/1084/0185
CIRC ACCESSION NO--AP0123099
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTIONS IN THE P8(NO SUB3) SUB2
M SUB3 CRO SUB4 (M EQUALS NA, K)-H SUB2 O SYSTEM WERE STUDIED BY DETN.
OF N OF THESE SOLNS. AND BY SOLY. METHOD. A DIAGRAM OF DELTA N CHANGES
IN THE SYSTEM OF M EQUALS K WITH CHANGING K SUB2 CRO SUB4 CONC. IS
CONSTRUCTED. THE NA SUB2 CRO SUB4 SYSTEM FORMS ONLY PBCRO SUB4 WHEN K
SUB2 CRO SUB4 SYSTEM FORMS PBCRO SUB4 AND 4PCRO SUB4 .3K SUB2 CRO SUB4.

UNCLASSIFIED

USSR

UDC 621.357.7.035.4:699.587(088.8)

TODT, KHANS GYUNTER, AND FOSS, GYUNTER, Sharing Co., West Berlin, Germany

"An Acid Electrolyte for Galvanizing"

Author's Certificate No 330640, filed 10 Apr 70, published 7 Apr 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L303P by V. N. Titova)

Translation: An electrolyte is patented for depositing a shiny galvanizing coat. It is improved in that to obtain the shine and pliability for large thicknesses of the zinc film, an aromatic ketone is added to the composition of the acid galvanizing electrolyte. The proposed electrolyte has the following composition, in g/liter: the zinc salt, 50-200; NH_4Cl , 50-300; polyethylene glycol, 0.1-20; the aromatic ketone, 0.01 - 5; a pH of 3-6 with an optimum range of 4.5 to 5.5; a temperature of 10-45°; and D_k 0.1-10 amps/decimeter². The solution is mixed either by air or by stirring with a cathode. The following series of compounds may be used for the aromatic ketone: acetophenone, ethylphenolketone, propiophenone, benzylacetone, 2-hydroxybenzalacetone, benzoylacetone, 3-acetylpyridine, 2-benzoylpyridine, the ethyl ether of benzoylacetic acid, 3-acetylcoumarin, thienyldenacetone and others.

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USSR

TODT, et al., Author's Certificate No 330640, filed 10 Apr 70, published 7 Apr 72

Other brighteners may be used in the electrolyte, for example, thio compounds, high molecular compounds, aromatic aldehydes, and also non-frothing surface active compounds in particular, short chain alkyl sulfates. For example, in g/liter: $ZnCl_2$, 150; NH_4Cl , 175; polyethylene glycol (average molecular weight of 4000), 2.0; 3-acetylcurmarin 0.2; salicylic acid (the potassium salt), 4.0; pH of 4.8; temperature 20°; D_k 5.0 amps/decimeter²; and an

injection of air.

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USSR

UDC 612.791.5:632.954

GZHECOTSKIY, M. I., and DOLOSHITSKIY, S. L., Chair of General Hygiene, Lvov
Medical Institute

"The Skin Resorption Effect of Herbicides"

Kiev, Vrachebnoye Delo, No 11, 1971, pp 133-134

Abstract: The toxicity of several herbicides commonly used in the Ukraine was tested on rabbits, guinea pigs, and rats. After repeated application to depilated skin, trichloro propionitrile, sodium trichloroacetate, dicotex, pyramin, alicep, avadex, and carbin cause local skin irritation; some also induce necrosis. These compounds are absorbed through the skin and induce neutrophilic leukocytosis, reduce erythrocyte and hemoglobin concentration, lower blood peroxidase and cholinesterase activity, increase blood sugar concentration, prolong clotting time, and cause loss of body weight. When applied to the eyes, they induce acute suppurative keratoconjunctivitis. Dichloralurea, ceratox, and propazine are not absorbed through the skin.

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USSR

UDC 614.72:632.954(047)

G
~~GZHEGOTSKIY, M. I.~~ and MOROZ, A. M., Central Scientific Research Laboratory of
Biologically Active Substances, L'vov Medical Institute

"Accumulation, Circulation, and Persistence of Herbicides in the Environment"

Moscow, Gigiyena i Sanitariya, No 5, 1970, pp 79-83

Abstract: This is a review of the Soviet and foreign literature (about 40 reports) on the subject. The reports deal with the effect of soil temperature, moisture content, evaporation, leaching, type of soil, microbial activity, uptake by plants, and other factors on the accumulation and persistence of a variety of herbicides. Many herbicides are readily leached from the soil into the groundwater, where they may remain indefinitely. The evidence points to the fact that they can accumulate in food plants grown on soil treated with them, and thus constitute a hazard for the animal and human consumers of these plants. Many herbicides have not been studied in this respect, nor has much attention been paid to the accumulation of herbicides in relation to climatic conditions.

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USSR

UDC 639.3.331.5

GZHEGOTSKIY, M. I., DOLOSHITSKIY, S. L. and MARTYNYUK, N. V., L'Vov Medical Institute

"Toxicity of Some Chlorine-Containing Herbicides for Fish"

Moscow, Rybnoye Khozyaystvo, No 8, 1971, pp 27-28

Abstract: The toxic effects of chlorine-containing, herbicides acting on roots (propazin, piramin, tselatoks and alitsep) and of chlorine-containing carbamate herbicides (avadeks and karbin) were investigated on 370 carp and guppies. In concentrations of 0.1-10.0 mg per liter of water, the herbicides were nontoxic throughout the duration of the experiment (3 months). The minimum toxic dose ranged from 0.5-10.0 mg/l. The minimum toxic dose caused the death of several fishes, preceded by general irritability and loss of body weight. In the group exposed to the lethal concentration of 5-50 mg/l, all fish died within 2.5 hours to 30 days. Death was preceded by general irritability, periodic clonus, lateral position, and dyspnea. Internal organs emitted a faint odor of the herbicides. It was concluded that the herbicides investigated should be classified as highly toxic compounds able to produce acute and chronic poisoning in fish.

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1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ON THE ROLE OF PAUNCH IN THE PROCESS OF DIGESTIUN AND METABOLISM
-U-
AUTHOR--GZHITSKIY, S.Z. 6
COUNTRY OF INFO--USSR
SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 201-206
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTION, METABOLISM, DIET, EXPERIMENT ANIMAL, ANIMAL
HUSBANDRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1679

STEP NO--UR/0300/70/042/002/0201/0206

CIRC ACCESSION NO--AP0106425

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--0200T70

CIRC ACCESSION NO--AP0106425

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RESULTS OF EXPERIMENTS ARE PRESENTED ON THE ROLE OF PAUNCHES IN THE PROCESSES OF DIGESTION AND METABOLISM IN RUMINANTS. THE RESEARCHES GIVE PRECONDITIONS FOR CREATION OF SCIENTIFIC BASES FOR RATIONAL FEEDING OF RUMINANTS AND CORRECT UNDERSTANDING THE PECULIARITIES OF METABOLISM IN THEM.

UNCLASSIFIED

USSR

UDC 547.963:612.112.94.014.48

HAIKAZYAN, E. V., MIKHELSON, V. M., and ZHESTYANIKOV, V. D., Laboratory of Radiation Cytology, Institute of Cytology of the Academy of Sciences of the USSR, Leningrad

"The Mechanisms of Action of the Inhibitors of Cell Postradiation Recovery. I. The Caffeine Inhibition of the Rejoining of Radiation-Induced Single-Strand Breaks in Human Lymphocyte DNA"

Leningrad, Tsitologiya, Vol 15, No 7, Jul 1973, pp 881-887

Abstract: Haikazyan, Mikhelson and Zhestyanikov study the mechanism of caffeine on one of the many indisputable examples of post-radiation reparation on a molecular level -- recovery of single strand breaks of DNA in human lymphocytes after the action of ionizing radiation. Caffeine increases the number of chromosomal aberrations of many types after irradiation and acts as inhibitors in post radiation recovery. Ultracentrifuged DNA of human lymphocytes in an alkaline sucrose gradient shows that gamma-irradiation in dosages of 10-30 krads induces reduction of the molecular weight of DNA (from 50 to 4.5 min under a dosage of 20 krads). Sixty-minute incubation of post-irradiated lymphocytes in the sucrose medium at 37°C produces almost half the rejoining of radiation-induced breaks of the DNA and the recovery of the resultant

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USSR

HAIKAZYAN, E. V., et al., Tsitologiya, Vol 15, No 7, Jul 1973, pp 881-887
molecular weight. The presence of caffeine during incubation in a $6 \cdot 10^{-3}$
and $6 \cdot 10^{-4}$ M concentration prevents rejoining of the breaks; the reparation
of the inhibiting effect of caffeine rises with the increase of its concen-
tration. Graphs 2-4 indicate caffeine concentration effects on the above
post-irradiation recovery of single strand DNA in the cells observed.

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FOR Ia... NAMES

PLEASE SEE Ya...

Electricity & Magnetism

USSR

UDC 539. 239. 538. 113

ABDULLAYEV, G. B., IBRAGIMOV, N. I., and IBADOV, A. KH., Institute of Physics

"Paramagnetism of Selenium As Affected by Heat Treatment Time at Various Temperatures"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol 26, No 8, 1970, pp 17-20

Abstract: A previous study by the authors considered the effect of heat treatment on the formation of paramagnetic centers in selenium with fixed treatment times. The present article describes results of a study of EPR absorption in selenium at various treatment temperatures $T_{tr} \leq 550^{\circ}\text{C}$ as a function of the treatment time (t_{tr}). Amorphous V-5 brand selenium was used for the study. It was found that the paramagnetic center concentration N increased with time at each T_{tr} , reaching a certain steady value at $t_{tr} \approx 5$ hr. This limiting value N_{max} is determined by T_{tr} . A study of variations in the width ΔH_m of the EPR signal with heat treatment time for various T_{tr} shows that up to $T_{tr} \leq 450^{\circ}\text{C}$ ΔH_m remains within 5-6 oe regardless of the treatment time. For an entire group of specimens, despite variations in

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USSR

ABDULLAYEV, G. B., et al, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol 26, No 8, 1970, pp 17-20

their N over the wide range 10^{15} - 10^{17} cm⁻³, the process of EPR signal broadening always begins at $T_{tr} \gg 500^{\circ}\text{C}$. ΔH_m increased monotonically with time, reaching approximately 1 oe after 12 hours of exposure. The chain concentration as a function of temperature was also studied. An explanation is suggested for the increase in the concentration of paramagnetic centers with t_{tr} .

2/2

- 38 -

1/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DECOMPOSITION OF PARAMAGNETIC CENTERS IN SELENIUM -U-
AUTHOR--(04)-ABDULLAYEV, G.B., IBRAGIMOV, N.I., MAMEDOV, SH.V., IBADOV,
A.KH.
COUNTRY OF INFO--USSR I
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 97-100
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ELECTRON PARAMAGNETIC RESONANCE, POTENTIAL DIFFERENCE,
ACTIVATION ENERGY, SELENIUM, PARAMAGNETIC METAL, CRYSTAL DEFORMATION,
BROMINE, IODINE, OXYGEN, THALLIUM, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1004 STEP NO--UR/0449/70/004/001/0097/0100
CIRC ACCESSION NO--AP0053724
UNCLASSIFIED

2/2 031
CIRC ACCESSION NO--A0053924
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. AN EPR STUDY WAS CARRIED OUT OF SE
(PURITY 99.9999 AND 99.99PERCENT) WITH O, BR, I AND TL IMPURITIES AT T
EQUALS 300-700DEGREEK. THE TEMP. DEPENDENCE OF THE CONC. OF
PARAMAGNETIC CENTERS (N) OBEYS THE FORMULA $N = N_0 \exp(-\frac{E_a}{RT})$, WHERE
THE ACTIVATION ENERGY, DELTA E, OF THE REVERSIBLE DECOMP. OF
PARAMAGNETIC CENTERS IS 0.12, 0.24, AND 0.28 EV FOR O, BR, AND I, RESP.;
THETA IS THE TEMP. AT WHICH THE PARAMAGNETIC CENTERS DECOMP. COMPLETELY.
THIS THETA IS IDENTICAL WITH THE TEMP. AT WHICH THE CHAIN LIKE
STRUCTURE OF LIQ. SE IS DESTROYED (I.E. IS SIMILAR TO 740DEGREEK). A
CORRELATION IS FOUND BETWEEN DELTA E AND THE AFFINITY WITH THE ACCEPTOR
MOL. ELECTRON, PHI: DELTA E EQUALS 0.16PHI.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--OPTIMIZATION AND CHARACTERISTICS OF A PLASMA ION SOURCE IN A HOLLOW
CATHODE -U-
AUTHOR--IBADOV, S. I
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO. 5, 1970, PP 1027-1037
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ION SOURCE, CATHODE, DISCHARGE PLASMA, REFRACTORY METAL, LOW
PRESSURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1832 STEP NO--UR/0109/70/000/005/1027/1037
CIRC ACCESSION NO--AP0133778
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN PRACTICALLY ALL PLASMA ION SOURCES OF REFRACTORY METALS, A DEPENDENT DISCHARGE WITH AN INCANDESCENT CATHODE IS USED AS WELL AS OTHER DEVICES LEADING TO HIGH POWER EXPENDITURE, COMPLEX ION SOURCE STRUCTURE, AND HIGH VOLTAGE ELECTRICAL CIRCUITS. THE AUTHOR PROPOSES AND INVESTIGATES A PLASMA ION SOURCE USING AN AUTONOMOUS LOW PRESSURE DISCHARGE IN A HOLLOW CATHODE TO OBTAIN IONS OF GASES AND REFRACTORY METALS. THE OPTIMIZATION OF THE SOURCE BY IMPROVING ITS EFFICIENCY WITH LOW ENERGY EXPENDITURE IS ALSO CONSIDERED. THE AUTHOR FINDS VALUES FOR SOME OF THE SOURCE PARAMETERS WHICH WILL PROVIDE MAXIMUM EFFICIENCY WITH MINIMUM CONSUMPTION OF ENERGY. ON THE ASSUMPTION THAT THE CATHODE CAVITY IS FILLED WITH A DENSE, UNIFORM GAS DISCHARGE PLASMA, THE AUTHOR DETERMINES THE OPTIMAL GEOMETRY FOR THE DISCHARGE CHAMBER AND DERIVES SOME OF THE LOW PRESSURE DISCHARGE CHARACTERISTICS FOR THE HOLLOW CATHODE IN A MAGNETIC FIELD. HE ALSO CONSIDERS THE EFFECT OF INTENSE BOMBARDMENT OF THE CATHODE BY HIGH ENERGY IONS WHICH CAUSES ATOMS TO LEAVE THE INNER CATHODE SURFACE AND ENTER THE PLASMA SPACE. SOME SPECIAL CASES ARE STUDIED. IN CONCLUDING, THE AUTHOR EXPRESSES HIS GRATITUDE TO YE. M. DUBININA FOR HER COMMENTS.

UNCLASSIFIED

USSR

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UDC: 533.9.07

~~IBADOV, S.~~

"Optimization and Characteristics of a Plasma Ion Source in a Hollow Cathode"

Moscow, Radiotekhnika i Elektronika, No. 5, 1970, pp 1027-1037

Abstract: In practically all plasma ion sources of refractory metals, a dependent discharge with an incandescent cathode is used as well as other devices leading to high power expenditure, complex ion source structure, and high-voltage electrical circuits. The author proposes and investigates a plasma ion source using an autonomous low-pressure discharge in a hollow cathode to obtain ions of gases and refractory metals. The optimization of the source by improving its efficiency with low energy expenditure is also considered. The author finds values for some of the source parameters which will provide maximum efficiency with minimum consumption of energy. On the assumption that the cathode cavity

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USSR

IBADOV, S.

Radiotekhnika i Elektronika, No. 5, 1970, pp 1027-1037

is filled with a dense, uniform gas-discharge plasma, the author determines the optimal geometry for the discharge chamber and derives some of the low-pressure discharge characteristics for the hollow cathode in a magnetic field. He also considers the effect of intense bombardment of the cathode by high-energy ions which causes atoms to leave the inner cathode surface and enter the plasma space. Some special cases are studied. In concluding, the author expresses his gratitude to Ye. M. Dubinina for her comments.

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UDC 615.216.5:547.581.2/.036.8.07

KHARKEVICH, D. A., SKOLDINOV, A. P., and IBADOVA, D. N., Laboratory of the Pharmacology of the Nervous System and Laboratory of Organic Synthesis, Institute of Pharmacology, Academy of Medical Sciences USSR; Chair of Pharmacology of the Therapeutic and Sanitary Hygiene Faculties of the First Moscow Medical Institute imeni I. M. Sechenov, Moscow

"The Myoparalytic Activity of Mono-Quaternary Ammonium Derivatives of Benzoic Acid Esters"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 44-48

Abstract: Animal experiments showed that mono-quaternary ammonium derivatives of benzoic acid esters of the type $\text{PhCOO}(\text{CH}_2)_n\text{NMe}_3^+\text{I}^-$ had a pronounced curariform activity. The optimum effect was produced at $n = 4$. The activity was enhanced by introducing suitable substituents into the phenyl ring. The substituents that produced the optimum effect in this respect were SO_2NMe_2 and NO_2 in the para-position. Introduction of MeO or Cl into the ring produced the activity. The compounds in question produced a short-lived depolarizing effect. Proserine generally did not reduce the action of these compounds, but in many cases enhanced it. Replacement with NH of the O atom in the CO group reduced the myoparalytic activity. Replacement with an adamantyl radical of $1/2$

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KHARKEVICH, D. A., et al., *Farmakologiya i Toksikologiya*, Vol 36, No 1,
Jan/Feb 73, pp 44-48

one of the Me groups at the quaternary N changed the mechanism of action to one of the non-depolarizing type and also reduced the myoparalytic activity. The adamantyl derivatives reduced or prevented entirely the stimulating effect of acetylcholine and carbacholine on the muscle. In experiments on cats proserine acted as an antagonist of these derivatives.

2/2

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIOECOLOGICAL PARAMETERS OF THE CHAIN, LICHEN, NORTHERN DEER, MAN
-U-
AUTHOR--(05)--RAMZAYEV, P.V., TROITSKAYA, M.N., IBATULLIN, M.S., MOISEYEV,
A.A., NIZHNIKOV, A.I.
COUNTRY OF INFO--USSR, ARCTIC OCEAN
SOURCE--GIGIYENA I SANITARIYA, 1970, NR 6, PP 38-42
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CESIUM ISOTOPE, RADIOACTIVE WASTE, ECOLOGY, GEOGRAPHIC
LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0925

STEP NO--UR/0240/70/000/006/0038/0042

CIRC ACCESSION NO--AP0126584

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF INVESTIGATIONS CARRIED OUT FOR A PERIOD OF FIVE YEARS (1962-1966) ALONG THE SOVIET COAST OF THE ARTIC OCEAN FROM CHUKOTKA TO THE KOLA PENINSULA THE AUTHORS DETERMINED THE EXTENT OF MIGRATION OF RADIONUCLIDES, ESPECIALLY THAT OF CS PRIME137 IN THE CHAIN "LICHEN, NORTHER-DEER, MAN". THE FINDINGS MAKE IT POSSIBLE TO PREDICT THE CONTAMINATION LEVEL OF THE CHAIN. THE AUTHORS POINT TO THE NECESSITY OF WIDER RADIOBIOLOGICAL INVESTIGATION OF THE NORTHERN CHAIN, AS THE DOSES ABSORBED IN ITS LINKS APPROACH THE EXISTING MAXIMAL PERMISSIBLE RADIOACTIVE DOSES. FACILITY: LENINGRAD. N-I INST. RADIATSIONNOY GIGIYENY MINISTERSTVA ZDRAVCOKHRANENIYA RSFSR.

UDC 51

USSR

DADABAYEVA, R. A., IBRAGINKHODZHAYEV, S., KASYMOV, S.

"Determining the Linear 'Kinematic' Production Function Considering the Effect of External Loading"

Nauch. zap. Tashkent. in-t nar. kh-va (Scientific Notes of Tashkent Institute of the National Economy), 1971, vyp. 60, pp 49-53 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V509)

No abstract

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UDC 691.3.002:513.5

USSR

IBRAGIMKHODZHAYEV, S. A., SKURIDIN, V. P.

"Geometric Language and Possibilities of Its Application in Information Retrieval Systems"

UzSSR Finlar Akad. ahhboroti. Tekhn. fanlari ser., Izv. AN UzSSR. Ser. tekhn. n. (News of the Uzbek SSR Academy of Sciences, Technical Sciences Series), 1970, No 4, pp 64-65 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2336)

Translation: The possibility of using functional diagrams as descriptors in information retrieval systems is discussed. The bibliography has 5 entries.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THERMOELASTIC INTERACTION OF DIAMONDS AND DIAMOND CONTAINING
MATRICES -U-
AUTHOR-(03)-ABDULZADE, A.M., ABRASOV, I.K., IBRAGIMOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--ZA TEKHN. PROGRESS (TOWARD TECHNICAL PROGRESS), 1969, NO 7, PP
REFERENCE--RZH-MEKHANIKA, NO 2, FEB 70, ABSTRACT NO 2V1149
DATE PUBLISHED----FEB 70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--DIAMOND, THERMOELASTICITY, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1996/1019

STEP NO--UR/0423/69/000/007/0024/0025

CIRC ACCESSION NO--AR0118176

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--15OCT70

CIRC ACCESSION NO--AR0118176

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS THE INITIAL MODEL FOR THE PROBLEM, THE AUTHORS ASSUME THAT THE MATRIX IS A SPHERE WITH CENTRALLY LOCATED DIAMOND INCLUSION. THE SYSTEM IS SUBJECTED TO A TEMPERATURE FIELD WHICH IS CONSTANT IN THE RADIAL DIRECTION. THE PROBLEM IS SOLVED FOR THE CASE OF A UNIFORM INCREASE IN TEMPERATURE (STEADY STATE) WHERE THERMOELASTIC INTERACTION RESULTS FROM THE DIFFERENCE BETWEEN THE MODULI OF ELASTICITY AND COEFFICIENTS OF THERMAL EXPANSION OF MATRIX AND INCLUSION. THE RESULTS OF CALCULATION OF TEMPERATURE STRESSES ARE GIVEN FOR A SPECIFIC EXAMPLE. THE POSSIBILITY OF DEVELOPMENT OF PLASTIC ZONES IN THE REGION OF CONTACT BETWEEN THE DIAMOND PARTICLE AND THE SURROUNDING MATRIX IS DISCUSSED.

UNCLASSIFIED

USSR

UDC 66.074.7

TURSUNOV, M., RIZAYEV, N. U., MIRZAKARIMOV, R. M., IBRAGIMOV, A. P., and SUKHININA, L. A., Tashkent Polytechnical Institute

"Change in the Sorption Capacity of Ion Exchange Resin Towards Gossypol and Free Fatty Acids Under the Influence of γ -Irradiation"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 8, Aug 72, pp 1828-1832

Abstract: Increase in the γ -irradiation dose leads to an increased swelling of the anion exchange resin AV-17-6(m) and EDE-10p in the OH^- form in distilled water and in methanol; the anion exchange resin EDE-10p in the CO_3^{2+} form and FAN-2 in the OH^- form increase their swelling also, but only to a certain specific dose. The weight of the anion exchange resin has been noted to increase also. Under the influence of γ -irradiation AV-17-6(m) anion exchange resin in the OH^- form exhibits selective sorption towards gossypol. Both the AV-17-6(m) and the EDE-10p anion exchange resins in the CO_3^{2+} form become lighter in color under the influence of increasing radiation dose.

1/1

USSR

UDC: 547.963.3

IBRAGIMOV, A. P. and DIVAVIN, I. A., Institute of Biochemistry of the Uzbek SSR Academy of Sciences

"Pyrimidine Oligonucleotides of DNA of Cotton Sprouts in Normal State and When Grown From Irradiated Seeds"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 3, 1970, pp 384-386

Abstract: DNA was isolated from seven-day cotton sprouts, using cotton varieties 108-F and its radio-mutant prepared by gamma-irradiation with Co^{60} (budding phase) at a dose of 2 kilorads. Base compositions of radio-mutant and irradiated samples compared with control were as follows (guanine-cytosine pairs, mole %): variety 108-F -- 45.9, radio-mutant -- 469.9, after irradiation with 25 kilorads -- 48.8. Separation of nucleotides by polymericity showed that neither the radio-mutant nor the irradiated samples substantially differed from control. Thyminecytosine ratio varied from 1.54 in control to 1.50 in radio-mutant and 1.42 after 25 kilorad irradiation of seeds. Thus, variations in composition and sequence of pyrimidines occurs mainly due to reduction in thymine content, evidently linked with its radiation-chemical breakdown.

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