

REEL #23

OGANES YAN, M.G.

USSR

UDC 531.787 (1)

VARDANYAN, V. R., STEPANYAN, A. A., MAMYAN, S. Z., OGANESYAN, M. G., and
GAMBARYAN, A. A.

"New Combination Sensor for Registration of the Pressure Shock Waves in Air"

Nauch. Tr. Yerevan. Politekhn. In-ta [Scientific Works of the Yerevan Poly-
technic Institute], 1972, Vol 36, No 4, p 1, pp 152-158 (from Referativnyy
Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single
Issue. Abstract No 10.32.714)

Translation: A new combination altitude sensor is described. It has a
movable electrode (membrane) and an immovable electrode located parallel to
it. The capacitance originates between the upper movable membrane, on which
acts the shock wave, and the plane immovable electrode, the gap between which
comprises fractions of a millimeter. Five illustrations, five bibliographical
references.

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Pharmacology and Toxicology

USSR

UDC 575.24

PARONIKYAN, G. M., AKOPYAN, L. G., and OGANESYAN, M. G., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR, Yerevan

"Mutagenic Effect of Some New Chemical Compounds. I. Study of the Mutagenic Effect of Nitrogen Mustards on Escherichia coli P-6/8"

Moscow, Genetika, No 4, 1971, pp 113-117

Abstract: Study of the mutagenic effect of 22 new nitrogen mustards, 2-(4)-alkoxy-5-bromo(chloro)-benzyl-bis-(β -chloroethyl)amines and bis-(β -chloroethyl)amides of 2-alkoxy-5-bromobenzoic acid, showed a distinct relationship between their mutagenic activity and chemical structure. Even minor changes, e.g., lengthening of the alkoxy radical from propyl to amyl, markedly affected the mutagenic activity of the compounds. The most active were substances with methyl and ethyl radicals. Five of the compounds proved to be more active than nitrogen mustard; the most potent was 2-ethoxy-5-bromobenzyl-bis-(β -chloroethyl)amine. These derivatives induced over 200% revertants compared with the control.

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USSR

UDC 576.858.75(A2).06

RITOVA, V. V., SCHASTNYI, E. I., OGANESYAN, O. T., CHEBOTAREV, V. V., MOISEYEV, V. P., LARIONOV, A. S., BYKOVSKIY, A. F., SOKOLOVA, H. N., and MEL'NICHENKO, YE. N., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Study of Influenza A2 Virus Strains Isolated During the 1963-1969 Epidemic from Children in Moscow and in the Moscow Region"

Moscow, Voprosy Virusologii, No 3, May/June 1971, pp 291-196

Abstract: Since 1957, there have been five influenza epidemics in the USSR caused by the A2 virus: in 1957, 1959, 1962, 1965 and 1968-1969. The last one was produced by a newly formed variant of the virus and began in July in Hong-Kong, subsequently spread over Japan, and hit the countries of South-east Asia and the US. In fall 1968 there was a sharp rise in the influenza incidence in England and in other countries of Central Europe. In December, individual A2 and B influenza foci were reported in the Soviet Union in organized children's collectives (child care centers, schools, etc), and by the middle of January in many cities of the USSR, the incidence of influenza surpassed the mean seasonal rate by a factor of five. From 350 sick children 141 strains of the flu virus were isolated from nasopharyngeal washings.

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USSR

RITOVA, V. V., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 291-296

Diagnosis was confirmed serologically. All strains had high receptor activity and were antigenically identical. Neutralization tests showed that the 1969 flu virus is not a new serotype. A structural study showed that the virus consisted of spherical (diameter 2000-3500Å) and filiform. (diameter of the nucleus 700-900Å, length to several microns) structures. Sera from guinea pigs and horses inhibited hemagglutination of the newly separated strains. The effect of sera was not completely removed after heating to 57°C for 30 minutes and processing with KIO₄; but was removed by treatment with cholera vibrios. Only two strains were inhibitor-resistant, all remaining strains were inhibitor-sensitive. The isolated strains were readily adaptable to white mice and from the second or third passage produced death and lung lesions in test animals. Also, in mice, the strains exhibited toxic properties. The immunological responses in convalescents and in immunized animals were high.

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Genetics

USSR

UDC 05-104

MOVSESYAN, S. N., GALUKYAN, M. G., and OGANESYAN, R. A., Yerevan State University

"Preliminary Data on the Mutagenic Effect of Some New Chemical Compounds"

Yerevan, Biologicheskii Zhurnal Armenii, No 5, 1973, pp 39-44

Abstract: Laboratory and field experiments with *Rudbeckia speciosa* and *Rudbeckia triloba* treated with ethylenimine, its derivative preparation 496, and a nitrogen mustard derivative preparation 190 revealed that the new compounds have the same mutagenic effects as ethylenimine: lagging of individual chromosomes, incompleteness of the chromosome set at the poles, and formation of micronuclei in the dyads and tetrads. In the meta- and anaphases, some of the chromosomes did not form at the equator or poles but remained apart from the division figure. And they continued to remain in the cytoplasm in the telophase. These lagging chromosomes formed in the micronuclei (from 1 to 3 or more in a microspore) and persisted for a long time. They were present in the later stages when young mononuclear pollen grains formed. No correlation was observed between the concentration of the chemical compounds and their mutagenic effect.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INVESTIGATION OF INTERFERON INDUCTION IN ANIMALS BY MEANS OF
DIFFERENT STIMULATORS -U-
AUTHOR--(05)-OGI, ESYAN, B.KH., FADEYEVA, L.L., TIKHONENKO, T.I.,
NIKOLSKAYA, I.I., PARFANOVICH, M.I.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 287-291
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INTERFERON, MEASLES, GAMMA GLOBULIN, HEPATITIS, MOUSE, RNA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1853 STEP NO--UR/0402/70/000/003/0287/0291
CIRC ACCESSION NO--AP0125464
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF TESTS OF DIFFERENT PREPARATIONS AS INTERFERON STIMULATORS IN MICE. SYNTHETIC DOUBLE STRANDED COMPLEX OF POLYADENYLIC AND POLYURIDILIC ACIDS (POLY-AU), DOUBLE STRANDED REPLICATIVE FORM OF RNA OF MEASLES VIRUS, GAMMA GLOBULINS OF HUMAN AND HORSE ORIGIN WERE FOUND TO BE ACTIVE INDUCERS ON INTERFERON IN MICE. THE PREPARATIONS UNDER STUDY WERE NOT TOXIC FOR THE ANIMALS. THESE INTERFERON INDUCERS SHOWED ANTIVIRAL ACTIVITY IN MICE AGAINST VIRUS OF MURINE HEPATITIS PROVIDED THE PREPARATION WAS INOCULATED BEFORE THE INFECTION. FACILITY: INSTITUT VIRUSOLOGII IMENI D. I. IVANOVSKOGO AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 533.916

OGANESYAN, R. S., ABRAMYAN, M. G.

"On the Equilibrium and Frequency Spectrum of Pulsations of an Electron Cloud of Plane Symmetry"

Uch. zap. Yerevan. un-t. Yestestv. n. (Scientific Notes of Yerevan University. Natural Sciences), 1972, No. 1(119), pp 19-25 (from RZh-Fizika, No. 11, Nov 72, Abstract No 11G179)

Translation: The problem of the equilibrium state and oscillations of an electron shell over a uniformly, positively charged plane is solved. An expression is obtained for the frequency spectra which represent the combination of Bessel functions. V. A. Abramov.

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1/2, 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIMENT ON THE BEAM EXTRACTION BY AN ELECTROSTATIC DEFLECTOR
FROM THE JINR 2 METRE ISOCHRONOUS CYCLOTRON -U-
AUTHOR--(05)--SHELAYEV, I.A., ALFEYEV, V.S., KOZLOV, S.I., NIKOLAYEV, V.M.,
GGANESYAN, R.IS.
COUNTRY OF INFO--USSR
SOURCE--LAB. OF NUCLEAR REACTIONS). 1970. 12P. DEP. CFSTI
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--IGN BEAM, CYCLOTRON, ELECTROSTATICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0139 STEP NO--UR/0000/70/000/000/0012/0012
CIRC ACCESSION NO--AT0127763
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0127763

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXTRACTION OF THE ION BEAM FROM THE JINR 2 METER ISOCHRONOUS CYCLOTRON BY A SYSTEM COMBINING AN ELECTROSTATIC DEFLECTOR AND FOCUSING MAGNETIC CHANNEL IS DESCRIBED.

FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

USSR

UDC 536.46:662.61

ZIMONT, V. L., IVANOV, V. K., and OGANESYAN, S. KH.

"Self-Ignition and Combustion Cutoff in a Stagnation Zone During Flow About a Two-Dimensional Projection or Indentation by a Supersonic Fuel-Mixture Stream"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 386-391 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.23. Resume)

Translation: On the basis of the heat mechanism and a gas-dynamic flow model are discussed the critical conditions of combustion cutoff in a stagnation zone formed during the flow of a fuel mixture about a projection and an indentation. The critical conditions of self-ignition are investigated on the basis of the heat mechanism and the chain mechanism. The experimental results of an investigation of mass exchange in such stagnation zones are presented for streams with a Mach number of 2.5. Comparisons of the calculated volume with an experimental one are presented, together with examples of numerical calculations of critical conditions for hydrocarbon-air and hydrogen-air mixtures. 3 figures, 9 references.

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USSR

UDC: 51:621.391

OGANESYAN, S. Sh., YAGDZHYAN, V. G., TAIRYAN, V. I.

"Weight Spectra of Some Classes of Cyclic Codes"

Moscow, Vesovyye spektry nekotorykh klassov tsiklicheskih kodov. Nauch. sovet po kompleksn. probl. "Kibernetika" AN SSSR (Cf. English above. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1972, 32 pp, bibl. of 8 titles (manuscript deposited in VINITI, No 5372-73 from 8 Jan 73) (from RZh-Kibernetika, No 5, May 73, abstract No 5V584 DEP by the authors)

Translation: Up to the present attempts have been made to find cyclic representatives for arbitrary cyclic codes over $GF(q)$ where $(n,q) = 1$ (q is the power of the simple number p). In this paper formulas are presented for expressing not only cyclic representatives, but also at the same time formulas are presented for representatives (so-called p -nary representatives) which unite cyclic representatives in accordance with identical weights by means of the operation of involution

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USSR

OGANESYAN, S. Sh. et al., Vesovyye spektry nekotorykh klassov tsiklicheskikh kodov, 1972, No 5372-73 Dep.

of p for arbitrary cyclic codes over $GF(q)$ when $(n,p) = 1$. On the basis of these results and coupling equations stemming from the MacWilliams relation for weight spectra of orthogonal ideals (codes), weight spectra are found for some classes of cyclic codes.

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USSR

UDC 621.382.27

AVAK'YANTS, G. M., Acad. Sci. Armenian SSR, ADAMYAN, Z. N., ARUTCHNYAN, V. M., BARSEGYAN, R. S. and OGANESYAN, S. V.

"Some Studies of Zinc-Doped Silicon Diodes as Optron-Pair Elements"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol 57, No 3, 1973, pp 152-157

Abstract: This article describes an investigation of the light-sensitivity of the time characteristics of the diode structures described in the title in order to determine the possibility of using them as photoreceptors in optron pairs. The volt-ampere characteristics were measured in a couple with a light-emitting diode over a broad range of temperatures. The diodes retained their light sensitivity throughout the entire range of temperatures, from -196° to $+80^{\circ}$ C. In contrast to many other devices, these diodes can be switched both from the low-conductivity to the high-conductivity state and from the high-conductivity to the low-conductivity state simply by changing the level of illumination.

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USSR

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 $\sim 50-100 \text{ ug La}^{3+}$, 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 Daux-1 in Cl^- -form to remove tetravalent

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USSR

GVOZDEV, B. A., et al., Radiokhimiya, 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 546.02:66.091

OGANESYAN, Yu. Ts., PENIONZHKEVICH, Yu. E., SHAMSUTDINOV, A. O., and MAL'TSEVA, N. S.

"Possibilities of Obtaining Isotopes in Fission Reactions"

Moscow, Atomnaya energiya, Vol 29, No 4, Oct 70, pp 264-271

Abstract: This paper investigates the principles of the formation of various isotopes in nuclear fission by heavy ions. The following reactions are studied: $U^{238}(C^{12},f)$; $U^{238}(Ne^{20},f)$; $U^{238}(Ne^{22},f)$; $U^{238}(Ar^{40},f)$. They were compared, in the experimental work, with nuclear fission reactions by high-energy protons and spallation reactions. The experiments were conducted with the internal beam of a 310-cm heavy ion cyclotron in the Nuclear Reactions Laboratory and with the extracted proton beam in the synchrocyclotron of the Joint Institute of Nuclear Research Laboratory for Nuclear Problems. Uranium and bismuth targets were irradiated with C^{12} , Ne^{20} , Ne^{22} , and Ar^{40} ions in a beam of 80-100 μA for C^{12} , 30 μA for Ne^{22} , and 8 μA for Ar^{40} . Gamma radiation spectra were also measured using two Ge(Li) spectrometers. An extensive table of the isotopes obtained and the cross section of their formation in heavy-ion reactions is given. The authors thank G. N. FLEROV as well as lesser assistants for their participation.

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OGANEZIAN, Yu. Ts.

transuranium elements

IN THE COMMITTEE FOR INVENTIONS AND DISCOVERIES
UNDER THE COUNCIL OF MINISTERS USSR

[Announcement; Moscow, Vestnik Akademi Nauk SSSR, Russian, Vol
42, No 11, November 1972, pp 152-153]

transuranium elements

18 Aug 73

MS 58011

(8)

The Committee has registered the following scientific dis-
coveries:

G. N. FIEROV, YU. TS. OGANEZIAN, YU. V. LOBANOV, YU. A. LAZAREV,
GEOORGIOVICH ZVIRIA, V. Z. BELTZ, V. A. DRUIN, A. G.
DENIN, AND YU. P. KHARITONOV,

"ELEMENT NO. 105 OF MENDELEEV'S PERIODIC SYSTEM"

Formulation of the discovery: Experimentally established
was the previously unknown phenomenon of formation of a chemical
element with the ordinal number 105. An isotope of that element
with a half-life $T_{1/2} \approx 2$ seconds was obtained during the ir-
radiation of americium with neon nuclei.

Priority of discovery -- 18 February 1970.

Certificate No. 114. Application No. OT-7896.

The data obtained by the authors of the discovery are of
great scientific importance, as they show a divergence of the
experimentally determined radioactive properties of element
No. 105 from the previously predicted theoretically on the
basis of known semi-empirical laws and require revision of the
latter. The new experimental data relating to the synthesis of
element No. 105 indicate a real possibility of the synthesis of
heavier chemical elements in nuclear reactions, for example,
No. 106, and permit much more confidently predicting the prop-
ties of those elements.

USSR

YELEONSKIY, V. M.; OGANES'YANTS, L. G.; SILIN, V. P. (Lebedev Physics Institute, USSR Academy of Sciences)

"Three-Dimensional Vector Field Structure in Self-Focussing Waveguides"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; August, 1972; pp 532-9

ABSTRACT: It is shown that if account is made for the real vector nature of an electromagnetic field, the equations of nonlinear electrodynamics lead to new self-focussing waveguide solutions. This opens up the possibility of the existence of self-focussing waveguides in which the transverse and longitudinal field strengths are of the same order of magnitude. As particular cases the set of self-focussing waveguides which is characterized by an unusual type of polarized structure of the electrical field includes the TE- and TM-modes previously studied. For a plane geometry a qualitative analysis of the nonlinear electrodynamics equations yields a classification of states of vector self-focussing waveguides. It is shown that under certain conditions in a nonlinear

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USSR

YELEONSKIY, V. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; August, 1972; pp 532-9

medium a peculiar type of phenomenon arises: viz, spatial stratification of the electromagnetic field into "nearly" self-focussing regions of TE- and TM-mode fields. Characteristically, the change in space of the "nearly" self-focussing field mode is due to nonlinear interaction at weak field strengths.

The article includes 13 equations and 5 figures. There are 7 references.

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USSR

UDC 681.2

NURDINOV, S. KH., OGANEZOV, N. P.

"Device for Alphanumeric Representation of Data in an Automated Voice Command Recognition System"

Tr. Gor'kov. politekh. in-ta (Works of the Gor'kiy Politechnic Institute), 1971, Vol 27, No 11, pp 84-86 (from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A463)

Translation: The display unit reproduces alphanumeric data on a cathode ray tube screen using synchronous voltages with respect to the rectangular coordinate axes. There are 2 illustrations and a 2-entry bibliography.

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USSR

UDC: 621.396.6-181.48

OGANEZOV, R. Kh.

"Conditions of Delivery of Crystals With Finished Structures for Hybrid Microcircuits"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, pp 104-105 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V263)

Translation: The paper presents basic conditions for the delivery of plates and crystals with semiconductor triode structures, and indicates the particulars of transportation of these ready-made articles. Resumé.

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USSR

UDC 621.396.6-181.5

BYLOV, K. V., GLAZKOV, YU. B., OGANEZOV, R. KH., STOVBA, V. I., SOKOLOV, V. P.,
STRAKHOV, V. S.

"Utilization of 2T603 Crystals to Create Medium Power Film Hybrid Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineer-
ing. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp.
6 (56), pp 118-120 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V189)

Translation: The structural design of a caseless version of a medium power semiconductor triode based on the series semiconductor triode type 2T603 of npn structure is described. Results are presented from measuring the thermal resistance when mounting the semiconductor triode on the backing of the micro-circuit by two methods -- soldering (with indirect pulse heating) and micro-welding. It is demonstrated that the most effective means of mounting the semiconductor triode on the backing is solder. The magnitude of the thermal resistance drops significantly on increasing the thermal conductivity of the backing material. There are 2 illustrations and 1 table.

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USSR

UDC 665.113.621'431'47'41'33'32'28

KOSTANYAN, K. A., SARINGYULYAN, R. S., KHEKUNTSYAN, V. I., BELOV, N. I.,
OGANEZCVA, R. S., and UL'YANOV, V. V.

"Glass"

USSR Author's Certificate No 366157, Filed 29 Jan 71, Published 16 Jun 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1620354/29-33)

Translation: A glass including SiO_2 , CaO , ZnO , Na_2O , Al_2O_3 , BaO and K_2O , distinguished by the fact that in order to decrease the spectral absorption in the ultraviolet region it contains the above components in the following quantities, weight %: SiO_2 67-76, CaO 1.5-1.2, ZnO 1-4, Na_2O 7-15, Al_2O_3 0.5-5, BaO 0.5-5, K_2O 2-12 and furthermore SnO 0.2-2.0.

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USSR

UDC 612.82

STEFANISOV, B. D., and OGANISYAN, A. A., Laboratory of the Neurophysiological Basis for Compensation of Central Nervous System Functions, Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR

"Compensation and Restoration of Functions Disturbed by Lesions of the Central and Peripheral Nervous System"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 681-687

Abstract: The most important results of research concerning compensation and restoration of disturbed nervous functions, which was conducted during the past 10 years under the general direction of Prof. E. A. Asratyan, Academician of the Academy of Sciences Armenian SSR and Corresponding Member of the Academy of Sciences USSR, are summarized. During World War II, Asratyan investigated traumatic shock in wounded soldiers and, on the basis of his concept of the protective and healing role of certain types of central inhibition predominating in the presence of organic lesions in the nervous system, developed new methods of treating and preventing traumatic shock. By analyzing experimental results and clinical post-shock observations, Asratyan established his most important theory of the crucial role played by the cerebral cortex in restoration of motor functions, emphasizing that this is not the result of automatic

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USSR

STEFANTSOV, B. D., and OGANISYAN, A. A., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 681-687

shifts taking place in the nervous system but that it is a process requiring training and determination by which duplicating mechanisms are utilized and gradually developed to the point that they begin to serve as the anatomic and physiological basis for reestablishment of previously mastered conditioned reflexes. Although fine motor movements are never regained, the overall motor recovery can be so significant that it warrants the concept of a relatively high, though not absolute, flexibility of the central nervous system.

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USSR

KUKINOV, A. M., OGANOV, O. A.

"Automatic Input and Processing of Patterns Formed by Flows of Lines"

Opoznavaniye i Opisaniye Liniy [Recognition and Description of Lines -- Collection of Works], Moscow, Nauka Press, 1972, pp 139-154 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V715 by the authors).

Translation: Algorithms and apparatus are described, developed for digital computer input of patterns represented as flows of lines. The reading device used is a program-controlled digital scanner. A class of patterns is studied, the angular description of which is a harmonic function of coordinates.

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Antennas

USSR

UDC: 621.396.670.951

IVANOVA, N. S., BOGDANOV, A. A., MESROPOV, G. M., OGANOVA, L. A., ZUYEV,
F. K., YEGOROV, Ye. M.

"A Fiberglass-Reinforced Polarization Material"

Moscow, Otkrytiya. Izobreteniya. Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 30, Oct 71, Author's Certificate No 317137, Division H, filed 30 Sep 64,
published 7 Oct 71, p 193

Translation: This Author's Certificate introduces a fiberglass-reinforced polarization material based on textolite for antenna reflectors. As a distinguishing feature of the patent, the weight of the reflector is reduced by adding to the glass-textolite reinforcement a layer of metallized glass fabric which contains metallized glass filaments in one of the directions of its structure (warp or weft). The glass filaments consist of elementary glass fibers coated with a layer of metal (aluminum or zinc) securely bonded to the glass fiber surface.

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USSR

UDC: 632.95

OGANYAN, E. A. (Editorial Board of Biol. Zh Armenii ~~Armenia~~ / Biological Journal of

"Herbicidal Activity of Trichotecin"

O Gerbitsidnoy Aktivnosti Trikotetsina (cf. English above), Yerevan, 1970, 7 pp, ill., bibliography: 6 entries (from RZh-Khimiya, No 12, 25 Jun 70, Abstract No 12 N1082 Dep, Author's Abstract)

Translation: Trichotecin (I), an antifungal antibiotic, exhibits herbicidal activity for sprouting seeds and shoots of monostylus (odder parasitizing grapevines and other perennials in concentrations of 0.0001-0.1%, 1/10,000, 1/100,000, and also as 1 and 2% dusts.

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USSR

UDC: 51

OGANYAN, R. A., BONDER, O. V., IGNATENKO, N. V.

"Three Programs for Solving an Intersectoral Dynamic Model"

V sb. Algoritmy i programmy realizatsii narodnokhoz. modeley (Algorithms and Programs for Realizing National Economic Models--collection of works), Novosibirsk, 1971, pp 134-149 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V447)

Translation: Description of three versions of a program for an 18-sector model, flowcharts and texts of the programs in ALPHA language.

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USSR

OGANYAN, R. A.

"Interbranch Model of Development of the Economy"

Probl. Optimiz. Ekon. Resheniy [Problems of Optimization of Economic Decisions -- Collection of Works], Novosibirsk, 1971, pp 175-180, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V448).

NO ABSTRACT.

USSR

UDC 51

OGANYAN, R. A.

"Estimate of the Progressiveness of Control"

Probl. Narodnokhoz. Optimuma., [The Problem of the Economic Optimum--Collection of Works], No 3, Part 1, Novosibirsk, 1970, pp 100-116, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V503, from the Introduction).

Translation: This work is dedicated to mathematical analyses of the economic formulas of V. A. Trapeznikov (RZhMat. 1969, 6V317).

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USSR

UDC: 681.325

OGANYAN, R. V.

"A Device for Connecting Communications Lines to Two Digital Computers"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 48, Dec 73, Author's Certificate No 409224, Division G, filed 30 Jul 70, published 30 Nov 73, p 116

Translation: This Author's Certificate introduces a device for connecting communications lines to two digital computers. The device contains a control module connected to the input and output lines of the unit. Also included is a synchronization module. Connected to the input of the synchronization module are the corresponding input lines of the device. The outputs of the synchronization module are connected to the inputs of six AND gates. The outputs of the second, third, and fifth AND gates are connected to the control module, while the outputs of the first, fourth, and sixth AND gates are connected through two OR gates to the output lines of the device. As a distinguishing feature of the patent, the functional possibilities of the device are expanded by adding two coupling flip-flops. The one-output terminal of the first coupling flip-flop is connected to the

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USSR

OGANYAN, R. V., USSR Author's Certificate No 409224

second input of the third and fifth AND gates. The zero-output terminal of the first coupling flip-flop is connected to the second inputs of the fourth and sixth AND gates. The one-output terminal of the second coupling flip-flop is connected to the second inputs of the second and third AND gates, and the zero-output terminal of this flip-flop is connected to the second inputs of the first and fourth AND gates.

2/2

272 014 UNCLASSIFIED PROCESSING DATE--13NOV70/
TITLE--SEMISYNTHETIC PENICILLINS. III. METHOXY AND
DIALKOXYPHENYLBENZYL PENICILLINS -U-
AUTHOR--(05)--MMDZHOYAN, A.L., TSINKER, M.G., MKRTCHYAN, E.S., TERZAKHARYAN,
YU.Z., OGANYAN, SH.G.
COUNTRY OF INFO--USSR
SOURCE--KHIM.--FARM. ZH. 1970, 4(3), 5-10
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PENICILLIN, BENZENE DERIVATIVE, CHLORIDE, BACTERICIDE,
MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1357 STEP NO--UR/0450/70/004/003/0005/0010
CIRC ACCESSION NO--APO125005
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125005

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MONO AND DISUBSTITUTED BENZOYL CHLORIDES (0.02 MOLE) WERE TREATED WITH 0.02 MOLE 5, AMINOPENICILLANIC ACID (I) TO YIELD 10 II (R PRIME1 EQUALS H OR O, M, OR P-OMe; R PRIME2 EQUALS H, OR P-ALKOXY; N EQUALS O). CONDENSATION OF I WITH MONO AND DISUBSTITUTED PHENACYL CHLORIDES GAVE 9 II (R PRIME1 EQUALS O, M, OR P-MeO; R PRIME2 EQUALS H OR P-ALKOXY; N EQUALS I). AN ANTIBACTERIAL ACTIVITY SPECTRUM OF II IS GIVEN. FACILITY: INST. TONK. ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 616.981.452-022.39-036.23-078.7(479)

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., NAYDEN, P. Ye., YEMEL'YANOV, P. F., GOLUBEV, P. D., FILIMONOVA, Yu. A., GONCHAROV, A. I., LABUETS, N. F., BABAYEV, M. R., ANANYAN, Ye. L., and KHANGULYAN, E. K., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, and Antiplague Stations, Azerbaydzhan SSR and Armenian SSR

"Experience in Serological Detection of Plague in Rodent Nest Substrate and in Predatory Bird Pellets Under Field Conditions in Natural Foci of the Caucasus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

Abstract: Use of the antibody neutralization reaction (ANR) employing plague antigenic erythrocyte diagnosticum was studied as a serological alternative to detection of plague by bacteriological analysis, for which it is not always possible to gather test material in the field. The study was based on the experimental finding that plague F1 antigen persists in the environment long after an epizootic has subsided. In the first phase, three areas in the Caucasus in which epizootics had been registered previously were studied in 1969-1971. Samples of rodent nest substrate were found to contain F1 antigen by the ANR, whereas bacteriological methods were generally unsuccessful.

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USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

indicating the usefulness of this method for retrospective analysis. In the second phase an area in which epizootics had not been recorded previously was studied in 1970-1971. While the ANR revealed the presence of F1 antigen in rodent nest substrate, bacteriological analysis did not produce such evidence until 4 months later. This result indicated that the method is also preferential for early detection of plague epizootics. In the final phase pellets regurgitated by predatory birds feeding on plague-carrying rodents were subjected to the ANR. Once again F1 antigen was detected in areas without previous epizootic history up to 2 months prior to detection by bacterial analysis. As a control pellets from an area known to be free of plague for 40 years was subjected to the ANR, and the results were negative. Thus the ANR is shown to be a suitable and preferential method for retrospective and early field detection of natural plague foci.

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- 10 -

USSR

UDC 616.981.452-022.39:595.775.11-078.7+576.851.45.095.38:576.895.775

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., ANANYAN, Ye. L., KHANGULYAN, E. K., GOLUEEV, P. D., and GONCHAROV, A. I., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus and Armenian Antiplague Station, Ministry of Health USSR

"Experience in Serological Examinations of Fleas of Rodents for Plague"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 2, 1973, p 137

Abstract: The minimum number of infected fleas required for a positive serological result is not more than 5 in a mixture with 25 noninfected specimens. The results of serological tests are available within 24 hrs after infection of the test fleas if they are kept at 25°C in a 2% NaCl solution containing 0.002% gentian violet and 1% formalin which effectively extracts plague pathogen PI antigen from the tissue of the insects and preserves it for at least 45 days. The solution with or without the fleas can be used for the serological test which involves neutralization of antibodies with standard plague antigenic erythrocyte diagnosticum. The method was verified in field work. In the summer of 1969, 85 samples containing a total of 2,397 fleas collected from field mice and their holes in Transcaucasia were analyzed with both methods in parallel. The serological method detected antigen PI in 57 samples, while the

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USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii,
No 1, 1973, p 137

bacteriological method yielded cultures of plague pathogen in only 21 samples.
In summer 1971, positive results were obtained by the serological method in
24% of samples of fleas collected from gophers in the Caucasian Mountains.
Subsequently, the bacteriological method used in October 1971 yielded positive
results for the first time in that region. The faster and more sensitive
serological method is recommended for territorial surveys of plague pathogen.

2/2

USSR

UDC 616.932-08-092

DZHAPARIDZE, M. N., MARTENS, L. A., YEGOROVA, V. D., and OGARENKO, N. E.,
All Union Antiplague Institute "Mikrob" (Director: prof. N. I. NIKOLAYEV),
Saratov

"The Problem of Pathogenetic Therapy of Intoxication Caused by Endotoxins of
Cholera and El-Tor Vibrion"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 5,
Sep/Oct 73, pp 75-78

Abstract: A study of respiration of mitochondria of the liver, heart, kidneys
and small intestine of laboratory animals in a Warburg apparatus in the pres-
ence of malate, succinate and -ketoglutarate demonstrated that inhibition
caused by endotoxin of cholera (strains No 596B Inaba and No 149 Ogava) or El-
Tor vibrion (strains T-4 Inaba and No 573 Ogava) was eliminated only by an
elevation of the concentration of malate. At the height of the disease mito-
chondria of animals affected with endotoxin oxidized malate much less than
the intact animals. Administration of malate to C57Bl mice infected with
endotoxins was accompanied by an increase in the intermediates of the Krebs'
cycle in tissues, producing a therapeutic effect. It has been concluded that
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USSR

DZHAPARIDZE, M. N., et al., *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, No 5, Sep/Oct 73, pp 75-78

malate should be included in the composition of the fluid used for rehydration of the patients suffering from cholera, particularly when the administration was to be oral or through a stomach tube.

2/2

Power, Engine, Turbine, Pump

UDC: 621.433.3-44

USSR

OGARNOV, A. G., BERSHACHEVSKIY, V. S., ANTONYUK, I. A., OL'SHEVSKIY, G. P.

"A Fuel Feed Control System"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 8, Mar 73, Author's Certificate No 367279, Division F, filed 5 May 69, published 23 Jan 73, p 98

Translation: This Author's Certificate introduces a fuel feed control system for a free-piston engine operating on a gas-liquid cycle. The system contains a pump for metering liquid fuel and feeding it to the atomizer, a control mechanism, and a gas-feed valve with a regulator for metering the gas entering from the main line. As a distinguishing feature of the patent, the liquid fuel consumption is reduced, and the pickup of the engine is improved by making the regulator in the form of a cylindrical slide valve and sleeve having openings for delivery of gas to the feed valve. The sleeve is movable with respect to the housing and is fitted with tension members with locking devices, one of which is kinematically coupled to the fuel pump rack, while the other is kinematically coupled to the control mechanism. The patent also covers a modi-

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USSR

OGARKOV, A. G. et al., USSR Author's Certificate No 367279

fication of this control system distinguished by the fact that the regulator is equipped with a startup gas pressure governor and a power corrector made in the form of a cylinder connected to the gas main with a piston whose rod is kinematically coupled to the regulator slide valve.

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Acc. Nr.: AP0100761

Ref. Code: UR 0182

USSR

UDC: 621.73.621.822.5

KOROLEV, A. I. and OGARKOV, B. I.

"Investigation of Pressure Distribution in a Slide Bearing by the Photoelasticity Method"

Moscow, Kuznechno-Shtampoychnoye Proizvodstvo, No. 2, 1970, pp 25-28

Abstract: The authors of this article clarify the character of the distribution of contact pressures along the peripheries of flat bearings for two limiting cases. In the first, they consider a shaft and sleeve made of fluoroethylene resins or amido plastics with various fillers, laminated-wood plastics, and pressed wood, materials in which the ratio of normal elasticity moduli is equal to unity. In the second, the ratio of the moduli of the shaft and sleeve materials was equal to 6000. In both cases, a polarization optical method for investigating stresses was used. The bearing specimens were made of epoxy resins type ED6-M. Two discs,

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Reel/Frame
19850237

Acc. Nr.: AP0100761

one of steel St.3, the other of BD6-M, were used as shaft models. The polarization-optical method of investigating the stresses permits finding, from the interference band pattern, the family of isoclines, and the optical constant of the material of the modules. The difference in normal stresses and the tangential stresses. The formulas for calculating these quantities are given. A table is also presented of these stresses, normal and tangential, for points of the inner bearing surface. The results of the investigation lead to the following conclusions: the real character of the contact pressure distribution in the bearings differs substantially from the character of the pressure distribution in shaft and sleeve pairs; the use of the materials named above in slide bearings leads to an increase in the maximum pressures acting on the contact surfaces of bearing and shaft.

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REEL/FRAME
19850238

USSR

UDC 616-022.32-022.16

OGARKOV, V. I., and GAPOCHKO, K. G., Military Medical Academy imeni Kirov,
Leningrad

"Retention and Primary Distribution of Microbial Aerosols in an Organism"
Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973,
pp 43-46

Abstract: Studies have shown that the effectiveness with which microbial aerosols enter human and animal organisms depends on the size, weight, concentration, and charge of the particles, as well as the rate and depth of respiration. In general, particles greater than 25-50 μ enter as far as the nasopharynx, those that are 25-50 μ in size enter the trachea, those between 10 and 25 μ reach the bronchi, those in the 3-10 μ range reach the bronchioles, and those that are 1-3 μ in diameter may find their way into the alveoli. The aerosols come in contact with the body and enter it through the conjunctiva, the respiratory tree, and the gastrointestinal tract. Although about 100% of the particles in the 1-2 μ range enter the bronchioles and the alveoli, only 40-50% are retained; the rest are exhaled. Studies with ^{32}P labeled brucella aerosols have shown that considerable species differences exist in the facility with which aerosols enter the lungs

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USSR

OGARKOV, V. I., and GAPOCHKO, K. G., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 43-46

(about 5% in guinea pigs and more than 20% in rhesus monkeys). Other studies have also shown that dry aerosols are less efficient than liquid monodisperse aerosols in entering the lower reaches of the respiratory tree. In addition, studies in sheep with live and killed Brucella vaccine aerosols have shown that more live than killed organisms reach the lungs, but that inactivation of the live organisms is greater in the upper part of the respiratory tract than in the lungs.

2/2

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USSR

OGARYSHEV, V. F.

"Mixed Strategies in One Generalization of the Problem of Gross"

Zh. Vychisl. Mat. i Mat. Fiz. [Journal of Computer Mathematics and Mathematical Physics], 1973, Vol 13, No 1, pp 59-70 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V483, by I. Fokin).

Translation: A problem of optimal distribution of resources by two sides among several participants is studied when there are preliminary distributed resources in the sectors. The results of the author confronting pure optimal strategies of player II (RZhMat, 1971, 10V666) are used for the study of optimal strategies of player I. Necessary and sufficient conditions of optimality of a mixed strategy of player I are presented, a probabilistic mixture of pure strategies, concentrating all resources of player I in one of the sectors. Various cases of the relationships of parameters are studied. An expression is written for the value of the game.

1/1

USSR

UDC 518.9

OGARYSHEV, V. F.

"Generalization of the Gross Problem"

Kibernetiku -- na Zluzhbu Kommunizmu. T. 6 [Cybernetics in the Service of Communism, Vol 6 -- Collection of Works], Moscow, Energiya Press, 1971, pp 264-283, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V666 by I. Fokin).

Translation: Two sides distribute their available resources X and Y between n points, selecting the vectors $x = (x_1, \dots, x_n)$ and $y = (y_1, \dots, y_n)$ such that $x_i \geq 0, y_i \geq 0$ ($i = 1, \dots, n$), $\sum_{i=1}^n x_i = X, \sum_{i=1}^n y_i = Y$. The sides have performed preliminary distribution of additional resources A_1, A_2, \dots, A_n and B_1, B_2, \dots, B_n . The winnings of player I are

$$F(x, y) = \sum_{i=1}^n \max \{ \alpha_i x_i'; \rho_i (x_i' - \omega_i y_i') \},$$

where $x_i' = x_i + A_i, y_i' = y_i + B_i, \rho_i > \alpha_i \geq 0, \omega_i \geq 0$ ($i = 1, \dots, n$).

The problems of determination of $\max_x \min_y F(x, y), \min_y \max_x F(x, y)$ and the strategies realizing them are solved. Then the optimal strategies of the players for the games situation are found.

UNCLASSIFIED
 TITLE--COMPARATIVE STUDY OF THE FORMATION OF FREE AMINO ACIDS BY LOCAL
 THERMOPHILIC, LACTIC ACID BACTERIA --U-
 AUTHOR--(031)-OGAY, D.K., MUSAEV, SH.M., MADRAKHIMOV, YU.
 COUNTRY OF INFO--USSR
 SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 103-6
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--AMINO ACID, LACTIC ACID, BACTERIA
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1985/0359
 CIRC ACCESSION NO--AP0100846
 UNCLASSIFIED
 PROCESSING DATE--18SEP70
 STEP NO--UR/0411/70/006/001/0103/0106

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 010

CIRC ACCESSION NO--A0100846
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPTS. WERE PERFORMED ON FREE AMINO ACIDS ACCUMULATION IN CASEIN MEDIUM BY THE THERMOPHILIC LACTIC ACID BACTERIA LACTOBACILLUS THERMOPHILUS 172, L. BULGARICUS 176, AND STR (EPTOCOCCUS) THERMOPHILUS 6 AND 132. INCUBATION WAS AT 45 DEGREES FOR 24, 48, 96, AND 168 HR. ALL INVESTIGATED BACTERIA ACCUMULATED 16 FREE AMINO ACIDS. THE AMT. AND PROPORTION OF THESE AMINO ACIDS VARIED, DEPENDING ON THE TIME OF CULTIVATION, SPECIES, AND STRAIN OF THE MICROORGANISM.

UNCLASSIFIED

USSR .

UDC:511

OGAY, S. V., KHAIROV, A. A.

"One Method of Construction of Diophantine Equations Having a Finite Number of Rational Points"

Tr. Kirg. Un-ta. Ser. Matem. n. [Works of Kirgiz University. Mathematics Sciences Series], No. 7, 1970, pp. 202-205 (Translated from Referativnyy Zhurnal Matematika, No. 12, 1970, Abstract No. 12A101 by O. Fomenko)

Translation: An approach is presented which can be used to construct curves with a finite number of rational points. As an example, a hyper-elliptical curve with this property is constructed.

1/1

USSR

UDC:553.982.2(575.15)

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F.,
BAZARBAYEV, E. G.

"Evaluation of Prospects for Oil and Gas Content of Eastern Portion of
Fergana Depression in the Light of New Data"

Tashkent, Uzbekskiy Geologicheskii Zhurnal, No. 6, 1970, pp. 15-19

Abstract: In spite of the significant number of prospecting operations which have been conducted over the past decade in the Fergana depression, the prospects for oil and gas finds in the eastern portion of this depression have not yet been properly evaluated. This article presents a description of the Suzakskaya structure, which has been a judged promising. Based on the description presented, it is concluded that the formation of the overwhelming majority of oil and gas deposits in this region has occurred primarily due to migration of hydrocarbons from oil and gas conducting suites into collectors within formations, as well as due to lateral --

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UDC:553.982.2(575.15)

USSR

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F.,
BAZARBAEV, E. G., Tashkent, Uzbekskiy Geologicheskii Zhurnal, No. 6,
1970, pp. 15-19

regional -- migration from the deeper portion of the oil and gas forming
area throughout the entire history of geological development of the
structural plan, i. e. both before and after the morphological formation
of the structural forms.

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- 100 -

USSR

UDC: 8.74

OGAY, V. S.

"Program for Realizing a Multistage Procedure for Selecting the Essential Characteristics of a Process"

Tomsk, Kibernetika i vuz--sbornik (Cybernetics and Higher Education--collection of works), vyp. 5, 1972, pp 125-132 (from RZh-Kibernetika, No 5, May 73, abstract No 5V787 by the author)

Translation: The paper describes a program for realizing a multistage procedure for selecting the essential characteristics of a process in "MIR-1" computer language. A brief description of the multistage procedure is given.

1/1

USSR

SILICH, V. A., OGAY, V. S.

"Program for Processing Statistical Data Using the Method of Primary Components"

Kibernetika i vuz. [Cybernetics and the University -- Collection of Works], Tomsk, Tomsk University Press, No 4, 1971, pp 174-183, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V718 by the author's).

Translation: A program is described for realization of the method of primary components in ALPHA-language and MIR-1 computer language.

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USSR

UDC 547.245*118.07

KAMENSKIY, A. B., OGAYDZHAN, E. P., PONOMAREV, V. V., GOLUBTSOB, S. A.,
and IGNATOVICH, YU. A.

"A Method of Making Organyl Halosilyl Phosphines"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 22, Aug 72, Author's Certificate No 345167, Div C, filed 31 Jul 70,
published 14 Jul 72, p 97

Translation: This Author's Certificate introduces a method of making organyl
halyl phosphines by reacting hydrogen-containing halosilanes with chloro-
phosphines in an organic solvent with subsequent isolation of the goal
product by conventional methods. As a distinguishing feature of the patent,
the process is simplified by using organyl chlorophosphines as the chloro-
phosphines, and carrying out the process in the presence of a hydrogen
chloride acceptor such as triethylamine.

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USSR

UDC 678.84

KAMENSKIY, A. B., ~~OGAYDZHAN, E. P.~~, PONOMAREV, V. V., and GOLUBTSOV, S. A.

"A Method of Synthesizing Organophosphorus Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 36, 1971, Author's Certificate No 322346, Division C, filed 31 Jul 70, published 30 Nov 71, p 55

Translation: This Author's Certificate introduces: 1. A method of synthesizing organophosphorus compounds by interacting trichlorosilane with organophosphines. As a distinguishing feature of the patent, compounds containing the P-P bond in the main chain are synthesized by using organyl-dichlorophosphines as the organophosphines, and carrying out the reaction in the presence of a tertiary amine in an organic solvent. 2. A modification of this method distinguished by the fact that the tertiary amine is taken in quantities from catalytic to equimolecular.

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1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANISM OF THE THERMAL DECOMPOSITION OF TERTBUTYL HYDROPEROXIDE
TO ESTERS -U-
AUTHOR-(03)-OGIBIN, YU.N., PALANUYER, I.A., NIKISHIN, G.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 592-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--REACTION DINETICS, THERMAL DECOMPOSITON, HYDROPEROXIDE,
CARBOXYLIC ACID ESTER, MALONIC ESTER, CHLOROBENZENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0732 STEP NO--UR/0062/70/000/003/0592/0596
CIRC ACCESSION NO--AP0124402
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

212 008

CIRC ACCESSION NO--AP0124402
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. KINETIC CURVES WERE SHOWN FOR THE
TITLE REACTION IN MEDIA SELECTED FROM: PHCL, ME CAPROATE, DI ET
MALONATE AND THEIR COMBINATIONS. THE REACTION RUN AT 130DEGREES
PROCEEDED BY ACYLATION OF THE PEROXIDE BY THE ESTER PRESENT AND
HOMOLYSIS OF THE RESULTING PERESTER ME SUB3 COOCOC SUB5 H SUB11, WHICH
WAS PREPD. FROM CAPROYL CHLORIDE AND RO SUB2 H, IN 42PERCENT YIELD; B
SUBO.05 29DEGREES, N PRIME20 SUBD 1.4210, D PIME20 0.9075. IN ME
CAPROATE ME SUB3 COOH GAVE RATE CONSTS. OF DECOMP. THAT CHANGED FROM
THE INITIAL VALUE OF 4.25 TIMES 10 PRIME NEGATIVE1 SEC PRIME NEGATIVE1
TO 1.9 TIMES 10 PRIME NEGATIVE4 SEC PRIME NEGATIVE1 AFTER SOME 30 MIN OF
REACTION; IN DI ET MALONATE THE RATE CONST. WAS 6 TIME 10 PRIME
NEGATIVE4 SEC PRIME NEGATIVE1 AND LACKED A PERIOD OF AUTOACCELERATION,
PROBABLY OWING TO RAPID ESTABLISHMENT OF THE STATIONARY CONC. OF THE
PERESTER.
USSR. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW,

UNCLASSIFIED

1/2 009 UNCLASSIFIED
TITLE--PASTE FOR POLISHING COATINGS--U-

PROCESSING DATE--160C170

AUTHOR--(03)-BERZINS, R., OGILETS, M.V., SHINT, A.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,574

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PATENT, WAX, PASTE, ETHYLENE GLYCOL, ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1085

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116551

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 009

CIRC ACCESSION NO--AA0116551

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

ABSTRACT. THE TITLE PASTE HAS THE FOLLOWING
COMPN.: AEROSIL 4-10, MIXT. OF POLYETHYLENE GLYCOL ETHERS OF HIGHER
FATTY ALCS. 4-7, BLEACHED MONTAN WAX 3-13, PARAFFIN 3-7, CERESIN 1-3,
APINDLE OIL 1-4, PROTECTIVE LUBRICANT (CONSISTING OF 75PERCENT NITRATED
OIL, 1.5PERCENT OXIDIZED PETROLATUM, 5PERCENT AL COMPD. AND 5PERCENT
PARAFFIN) 1-3, TECH. PH SUB2 O 0.5-1, WHITE SPIRITS 30-8, AND H SUB2 O
25-41, 5PERCENT.

FACILITY: SPECIAL CONSTRUCTION BUREAU OF
CHEMIZATION OF THE NATIONAL ECONOMY, LATVIAN S.S.R.

UNCLASSIFIED

USSR

UDC 620.193.1:669.295

TOMASHOV, N. D., ANOSHKIN, N. F., MOROZNIKOVA, S. V., OGINSKAYA, YE. I.,
RUSKOL, YU. S., and CHERNOVA, G. P., Institute of Physical Chemistry, Academy
of Sciences USSR

"Investigation of the Effect of Palladium on the Engineering, Mechanical and
Corrosion Properties of Titanium Alloys OT4 and VT14"

Moscow, Zashchita Metallov, Vol 9, No 6, 1973, pp 672-675

Abstract: The possibility of increasing the corrosion resistance of titanium
alloys OT4 and VT14 by means of alloying with 0.2% Pd was studied. The alloys
were produced in a vacuum-arc furnace with the palladium added in the form of
powder. Structure of OT4 and OT4+0.2% Pd was the alpha-solid solution, and
VT14 and VT14+0.2% Pd--fine grains of the alpha- and alpha"-phases inside a
beta-matrix. Strength properties of the titanium alloys were improved somewhat
with the addition of palladium while ductility was lowered. The addition of
2.0% Pd significantly lowered the oxidation tendency of the alloys at 600 and
800°C, and especially at 1000°C. 3 figures, 4 tables, 6 bibliographic refer-
ences.

1/1

Acc. Nr.: M0040450

Ref. Code: UR 0482

UDC 621.375.4.523.8 JPRS 50248

USSR

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

Abstract: An author certificate has been granted for a transistorized amplifier for a tracking system. The amplifier is made in the form of a preliminary amplifier summator and a two half-period amplifier-demodulator with a negative output current feedback. To simplify and to increase reliability, it contains a current transformer in the feedback circuit, two windings of the transformer are connected in series with the demodulator transistors, while the third winding (step-up) is connected to the preliminary amplifier input.

Reel/Frame
19741942

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USSR

UDC 621.375.4.523.8

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrabotsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

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172 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HARDENING OF EPOXY RESINS -U-
AUTHOR--(03)-OGIY, M.S., KARPENKO, L.M., MOSKCHINSKAYA, N.K.
COUNTRY OF INFO--USSR
SOURCE--USSR 264,687
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--03MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--EPOXY RESIN, CHEMICAL PATENT, CURING AGENT, CHLORINATED
ORGANIC COMPOUND, BENZENE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1466 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0128865
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPOXY RESINS ARE HARDENED BY USING THE CONDENSATION PRODUCT OF 2,3, 5,6, TETRACHLORO, P, XYLYLENE DICHLORIDE WITH PHENOL AS A CURING AGENT. FACILITY: DZERZHINSKII, F. E., CHEMICAL TECHNOLOGICAL INSTITUTE, DNEPROPETROVSK.

UNCLASSIFIED

USSR

UDC: 576.851.45.097.2.07

KATS, L.N., MESECHERYAKOVA, I.S., and ~~OGIVEVERSKAYA~~, M.M., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, and Institute of Biophysics, Academy of Sciences USSR

"Determination of the Localization of Antigens in *F. tularensis* Using Ferritin-Labeled Antibodies: Electron-Microscope Studies"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, pp 51-55

Abstract: Localization of Vi and O-antigenic complexes in tularemia bacteria was studied using ferritin-labeled antibodies. Vi antigen in a virulent strain and O antigen in an avirulent strain were found in the outer, mucous, capsule-like sheath of the bacterial cell, and not on the surface of the cell wall. The Vi antigen was localized in the mass of the sheath, and the O antigen on its surface. The nature and amount of Vi and O antigenic determinants as revealed by the ferritin method corresponded to the visual picture of Vi and O agglutination in tularemia bacteria.

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- 27 -

Acc. Nr: AP0043864

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Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, PP 51-55

ELECTRON MICROSCOPIC STUDIES OF ANTIGENS LOCALIZATION IN F. TULARENSIS WITH THE AID OF FERRITIN-LABELED ANTIBODIES

Kats, L. N.; Mescheryakova, I. S.; Ogiyevetskaya, M. M.

A study was made of localization of Vi- and O-antigenic complexes in the virulent (S), vaccine (SR) and avirulent (R) strains of F. tularensis with the aid of ferritin-labeled antibodies. Vi- and O-globulins were marked with ferritin by Singer's method (1959). Vi- and O-globulins were prepared from antisera obtained in immunization of rabbits with the S- and R-cultures of F. tularensis, respectively. Electron microscopic studies were carried out on intact microbial cells. Considerable amount of Vi-antigen of the virulent strain proved to localize along the whole thickness of the capsule-like coat, and O-antigen — on its surface. In avirulent strain O-antigen also localized along the whole capsule-like coat. The problem on localization of ferritin-labeled antibodies in other bacteria, and also on the structures of bacterial cells serving as the antigen-carriers is discussed.

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REEL/FRA
19770288

6-DI

172 008 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--A NONLINEAR REALIZATION AND BREAKING OF SU(3) SYMMETRY -U-
AUTHOR--OGIEVETSKIY, V.
COUNTRY OF INFO--USSR
SOURCE--INP-681, PP 29-45
DATE PUBLISHED-----70
SUBJECT AREA--PHYSICS
TOPIC TAGS--PARTICLE SYMMETRY, NONLINEAR EQUATION, SCATTERING AMPLITUDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1755 STEP NO--UR/0000/70/000/000/0029/0045
CIRC ACCESSION NO--AT0054593
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0054593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE NONLINEAR METHOD IS VERY CONVENIENT FOR THE TREATMENT OF SYMMETRY BREAKING. THE SIMPLEST NONLINEAR REALIZATION OF SU(3) IS ANALOGOUS TO THAT OF SU(2) TIMES SU(2). ALL FEATURES OF NONLINEAR REALIZATIONS ARE EASILY SEEN, AND A GENERALIZATION TO SU(3) TIMES SU(3) IS EVIDENT. ALSO THE PROBLEM OF THE DERIVATION OF MASS FORMULAS WITH THE ADDITIONAL REQUIREMENT OF A REASONABLY HIGH ENERGY BEHAVIOR OF SCATTERING AMPLITUDES IS DISCUSSED.

FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

UNCLASSIFIED

AM0037533

NUCLEAR SCI. ABST. 1/70 UR 0000

3891 (LA-tr-69-23(Draft)) DESIGN OF THE ISOCHRO-
 NOUS CYCLOTRON LABORATORY OF THE I. V. KURCHATOV
 INSTITUTE OF ATOMIC ENERGY, Venkov, N. I.; Orlobin,
 A. A.; Khaldin, N. N.; Kondrashev, L. P. Translated by Helen
 J. Dahlby (Los Alamos Scientific Lab., N. Mex.), from report
 IAE-1888. 13p. Dep. CFSTI.

The laboratory is based on the U-240 isochronous cyclotron
 designed at the D. V. Efremov Scientific Research Institute of
 Electrophysical Apparatus. To expand the possibilities of the
 accelerator, an axial injector of ions from external sources
 (polarized protons, tritium, lithium, heavy ions) and a device
 for obtaining intensive pulsed neutron beams are planned. To
 improve the energy discontinuity of the beam $\pm 0.02\%$ without
 loss of intensity, a special system of external monochromatiza-
 tion will be used. Obtaining heavy ions preliminarily accelerated
 in a tandem (an electrostatic electron-stripping) generator and
 injected into the U-240 with stripping of the electrons inside the
 latter is specified for the future. (auth)

20

19730503

19

USSR

OGLOBLIN, A. F.

"Expansion of the Capabilities of the BESM-3M, BESM-4 and M-220 Computers"

Prikl. Matematika. Vyp 3 [Applied Mathematics, No 3 -- Collection of Works], Irkutsk, 1971, pp 168-175, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V483).

NO ABSTRACT.

USSR

UDC 621.165+621.438.018

OGLOBLIN, G. A., PRUTKOVSKIY, Ye. N., PAKSHIN, A. V., and CZEROV, V. I.

"Investigation of the Efficiency of Steam-Gas Plants With Different Modes of Discharging Gases Into the Boiler"

Tr. Sev.-Zap. Zaach. Politekhn. In-ta [Works of the Northwestern Correspondence Polytechnic Institute], No 19, 1972, pp 36-40 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49.28)

Translation: The suggested method simplifies the analysis of thermal efficiency of steam-gas plants (SGP) with discharging under conditions of partial loads. The efficiency reduction on load reduction of SGP becomes less intensive with increase of the gas temperature t_3 before the gas turbine, but at $t_3 > 1200$ °C the load reduction effects an efficiency increase of SGP. The shielding of the combustion chamber of the gas stage by steam superheating heat surfaces increases the efficiency of SGP and increases it the more the lower the load of SGP. Two illustr., six biblio. refs.

1/1

Acc. Nr:

AP0036559

Abstracting Service:
CHEMICAL ABST. 4170

Ref. Code:

4R 0366

78319s Reaction of nitrosyl chloride with unsaturated compounds. XXIX. Cleavage of nitroso chlorides of some vinyl ethers. Ogloblin, K. A.; Kunovskaya, D. M. (Leningrad. Gos. Univ., Leningrad-USSR). *Zh. Org. Khim.* 1970, 6(1), 40-2 (Russ). The reaction of $\text{Me}_2\text{C}:\text{CHOR}$ (R is Me, Et, or Bu) with NOCl in Et_2O at -60° gives deep blue $\text{Me}_2\text{C}(\text{NO})\text{CH}(\text{OR})\text{Cl}$ (I), which decomp. at room temp. and cannot be isolated. The addn. of ROH (R as above) to the cold reaction mixt. gives $\text{Me}_2\text{C}:\text{NOH}$ (II), $\text{CH}(\text{OR})_2$ (III), RCI , and HCO_2R as the end products. Evidently $\text{I} + \text{ROH} \rightarrow \text{Me}_2\text{C}(\text{NO})\text{CH}(\text{OR})_2$ (IV) + HCl ; $\text{I} + \text{ROH} + \text{HCl} \rightarrow \text{Me}_2\text{C}(\text{N}:\text{O} \cdots \text{H}^+)\text{CH}(\text{OR})\text{Cl} \rightarrow \text{II} + \text{HC}^+(\text{OR})\text{Cl}$ (V); $\text{V} + 2\text{ROH} \rightarrow \text{III} + \text{RCI} + \text{HCO}_2\text{R}$. Also, I react with RONa to give IV directly, which are decompd. with dry HCl to II.

CPJR

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ALS

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REEL/FRAME
19721411

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRONIC ASPECTS OF THE PHOTODIMERIZATION OF PYRIMIDINE BASES AND
THEIR DERIVATIVES -U-
AUTHOR--(04)-KRUGLYAK, YU.A., DANILOV, V.I., KUPRIYEVICH, V.A., OGLOBLIN,
V.V.
COUNTRY OF INFO--USSR
SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 33-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIMERIZATION, PYRIMIDINE, EXCITED STATE, URACIL, THYMINE,
PHOTOEFFECT, FREE RADICAL, DNA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/1114 STEP NO--UR/0379/70/006/001/0033/0039
CIRC ACCESSION NO--A70128541
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123541

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

ABSTRACT. CALCNS. WERE MADE ON THE LOWEST EXCITED TRIPLET (T SUB1) AND SINGLET (S SUB1) STATES OF THE TITLE COMPS. (URACIL, 6, METHYLURACIL, THYMINE, URATIC ACID, 5, AMENDURACIL, CYTOSINE, 5, METHYLCYTOSINE, 2, THIOTHYMINE, ISOCYTOSINE, 5, NITROURACIL, AND 6, AZATHYMINE) BY SCF CI (CONFIGURATION INTERACTION) METHODS. EXCITATION ESP. CONCERNS THE C SUB5 C SUB6 BOND IN T SUB1 AND S SUB1 STATES, TRIPLET EXCITATION BEING ENTIRELY LOCALIZED ON THIS BOND. IN THE T SUB1 STATE, THIS BOND IS VERY WEAKENED AND, THUS, THE CONDITIONS FOR DIMERIZATION ARE MORE FAVORABLE IN THE T SUB1 THAN IN THE S SUB1 STATE. A CORRELATION IS PROPOSED BETWEEN THE DEGREE OF LOCALIZATION OF TRIPLET EXCITATION OF C SUB5 C SUB6 BOND AND THE EASE OF PHOTODIMERIZATION. EXPTL. DATA CONCERNING FORMATION OF THYMINE FREE RADICALS IN DNA ARE EXPLAINED. FACILITY: INST. FIZ. KHIM. IM. PISARZHEVSKOGO, KIEV, USSR.

UNCLASSIFIED

OG. LOBLINA, I.P.

gas chromatography

USE OF GAS CHROMATOGRAPHY IN PETROCHEMISTRY

(Conference in Moscow)

Article by Doctor of Chemical Sciences V. G. Petzshkin, Moscow, Vsesoyuznyy Nauchnyy Tsentr, Russian, No. 5, June 1973, pp 129-130

5945 54718
6 Aug 1973
P

(15)

Increase of the effectiveness of scientific investigations and growth of the productivity and rate of chemical processes used in industry are stimulated to a considerable degree by the successful development of new physicochemical methods of conducting scientific experiments and controlling production. One such method is gas chromatography. Many quantitative determinations previously considered practically impossible are performed by means of gas chromatography in the course of minutes and in some cases even of seconds. The method has high resolution and sensitivity, is readily automated, and makes it possible to effectively control technological processes.

The scientific council's for Petrochemistry and Chromatography, the Institute of Petrochemical Synthesis imeni A. V. Topchiyev of the AS USSR and the scientific and technological council of the Ministry of Petroleum Refining and Petrochemical Industry USSR conducted on 5-8 February the first All-Union Conference on the Use of Gas Chromatography in Petrochemistry. Participants in it were over 200 persons representing over 90 enterprises, including research organizations, enterprises, special design offices and VUZ. Thirty-four reports were heard.

In his introductory speech the Chairman of the scientific Council for Chromatography of the AS USSR, K. V. Chumakov noted the ever-increasing importance of gas chromatography in the analysis of complex mixtures in petroleum refining and adsorption, in studying the thermodynamics of absorption and catalysis, in determining the processes of chemisorption and catalysis, and in determining the diffusive characteristics of gases and liquids and other physicochemical characteristics.

General questions of the application of gas chromatography in the petroleum refining and petrochemical industry were examined in the speech of the deputy chief of the Technological Administration of the Ministry, Yu. N. Heyenkikhren.

The report of V. G. Hevakin was devoted to the most promising direction of the development of gas chromatography. The main attention, in the opinion of the reporter, should be given to theoretical and applied investigations directed toward the elaboration and methods of improving gas-chemical-graphic separation and identification of chromatographic zones, the acceleration of chromatographic analysis and the improvement of methods of analyzing mixtures. The survey of publications on the given theme cited by the reporter showed that gas chromatography has become the basic method of analysis of organic compounds in analytical chemistry.

Much interest was aroused by the report of A. A. Zhuravskiy et al in which the role of adsorption effects in gas-liquid chromatography and methods of their quantitative consideration were characterized.

I. P. Golubina dwelt on the question, urgent for petrochemistry, of the standardization of gas-chromatographic procedures. She substantiated the need for their very rapid standardization, pointing out the sources of errors of experiments connected with the lack of a solution of that problem.

The development of highly sensitive methods of analyzing mixtures is especially important in the investigation of mono-mer and other high-purity substances. High volatile stable compounds in concentrations of 10⁻⁵ - 10⁻⁴% can be determined by means of gas chromatography (A. V. Aleksyeva and Ye. Ye. Kozheneva). The same method permits analyzing compounds with a boiling point of up to 700°C (N. S. Nikitina, A. A. Zakurpa and Ye. Ye. Myzak).

Distinctive features of the investigation of oxygen-containing compounds were examined by Yu. N. Bogdanovskiy.

Gas chromatography is used more and more as a method of automatic control of the composition of technological streams. At least 70% of the total number of industrial analyzers now using automatic chromatographs; in 1963-1971 the total number from the application of industrial chromatographs, in the opinion of the authors, amounted to at least 60 million rubles in the presence of capital expenditures of not more than 9 million rubles.

USSR

MAKHMUDOV, Ya. Kh., KHAKIMOV, Kh. A., and OGLOBLINA, N. M., Uzbek Scientific Research Institute of Hematology and Blood Transfusion

"Obtaining Large Amounts of Donor Plasma through Plasmapheresis"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, p 53

Translation: The effects of repeated plasmapheresis on the donor's organism were studied. Over the course of two years, 80 persons aged 20 to 50, who had been donors for one to 20 years or more, were examined. Because plastic bags and a special centrifuge were not available, 500-milliliter flasks made of domestic glass of the NS-2 brand were used; they underwent chemical and physical processing, sterilization, and centrifugation at 1,500-3,000 rpm without cooling. Microscopic examination of the blood after centrifugation revealed that no damage was done to the formed elements. The donors were examined in the usual manner; in addition, their liver functions were tested and the concentration of plasma proteins and their fractions was measured. The flasks with blood were equilibrated on a balance and centrifuged for 20 minutes at 1,500 rpm. The plasma was drawn off, and the formed elements were reinfused into the donors. On the average 250 ml of plasma were obtained from 400 ml of blood per donor. Most plasma donors displayed small fluctuations in their hematological indices, but these were essentially within the

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USSR

MAKHMUDOV, Ya. Kh., et al, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, p 53

normal range. No post-transfusion complications were observed in either the donors or the patients. The results indicate that the method of plasmapheresis on a centrifuge without cooling is harmless, and that it can be recommended for wide use in the blood transfusion service.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPLEXES OF METALS WITH SOME NITROGEN CONTAINING LIGANDS. XVIII.
COMPLEXES OF ZINC WITH 1,5-DIBENZIMIDAZOLYLFORMAZANS -U-
AUTHOR-(03)-OGLOBLINA, R.I., BEDNYAGINA, N.P., GARNOVSKIY, A.D.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 367-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--METAL COMPLEX COMPOUND, ZINC COMPLEX, BENZIMIDAZOLE,
HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, MOLECULAR
STRUCTURE, DIPOLE MOMENT, ABSORPTION SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1394 STEP NO--UR/0079/70/040/002/0367/0372
CIRC ACCESSION NO--AP0116842
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING APPROPRIATE
1,5,BIS(1,ALKYL,2,BENZIMIDAZOLYL), 3,ALKYLFORMAZANS WITH ZN CHLORIDE OR
ACETATE GAVE COMPLEXES I (R AND R PRIME1 SHOWN, RESP.): PHCH SUB2, ME,
M. 280-5DEGREES; SAME WITH ADDED ME SUB2 CO OF CRYSTN., M. 280-5DEGREES;
ME, ME, M. 295-8DEGREES; ET, ME, M. 290-3DEGREES; PHCH SUB2, PR, M.
293-8DEGREES; AND II PHCH SUB2, ME, M. 178-80DEGREES; SAME WITH ADDED
ZN(OH) SUB2, M. 210-15DEGREES; REACTION OF THE FORMAZANS WITH ZN(OAC)
SUB2 IN ME SUB2 CO GAVE II, PHCH SUB2, ME, M. 180-20DEGREES; MONOHYDRATE
OF II, ET, ME, M. 188-90DEGREES. ABSORPTION SPECTRA ARE GIVEN. THE
DIPOLE MOMENTS AND THE SPECTROSCOPIC DATA INDICATED THAT COMPLEXES OF
TYPE I WHICH HAVE LOW SOLY. IN NONPOLAR SOLVENTS, HAVE THE STRUCTURE
SHOWN; THE COMPLEXES OF TYPE II WITH DIPOLE MOMENTS OF 1.5-2 D ARE THUS
SHOWN TO BE TRUE CHELATES WITH TETRAHEDRAL STRUCTURE TYPICAL OF ZN PRIME
POSITIVE POSITIVE COMPLEXES. THUS, AZOLYLFORMAZANS MAY FORM WITH METALS
EITHER CHELATES OR MOL. COMPLEXES WITH DATIVE BONDS MAINLY AT THE
HETERO-N ATOMS, OR CYANINES WITH ZNCL SUB2. FACILITY: URAL.
POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

AKHMANOV, S. A., KOVRIGIN, A. I., MAKSIMOV, S. A., and OGLUZDIN, V. YE., Moscow State University imeni M. V. Lomonosov

"Dispersion of Resonant Nonlinear Susceptibility in Potassium Vapors"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 186-191

Abstract: The article describes results of an experimental study of the dispersion of nonlinear susceptibility of potassium vapors near the transitions $4S_{1/2} - 4P_{3/2}$ ($\nu_{01} = 13043 \text{ cm}^{-1}$) and $4S_{1/2} - 4P_{1/2}$ ($\nu_{02} = 12985 \text{ cm}^{-1}$).

The use of a frequency-tunable, high-power pulse, parametric light oscillator as the source for the observation of self-modulation, self-focusing, and self-defocusing effects made it possible for the first time to trace the dispersion of the modulus and sign of nonlinear susceptibility in the entire frequency range $\nu = \nu_{01}$; $\nu_{01} > \nu > \nu_{02}$; $\nu < \nu_{02}$. The strong effect of nonlinearity saturation and group velocity dispersions was pronounced in the experiments.

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- 105 -

Lubricants and Lubrication

USSR

UDC 621.777.2:621.892

KARPENKO, I. V., OGNETOVA, ZH. N., and PRIMISLER, V. B.

"Action of Molybdenum Disulfide-Base Lubricants During Hydrostatic Extrusion"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 10, Oct 73, pp 12-15

Abstract: Investigation of MoS_2 -base lubricants was conducted for the hydrostatic extrusion of steels U8, ShKh15, R6M3, and R18, and titanium alloy VT8. Data are presented in this article for steel ShKh15 since the mechanism of the action of solid MoS_2 -base lubricants was identical for all the materials studied. Extrusion was done at room temperature using a MoS_2 -base, thermoreactive film-forming substance -- phenolformaldehyde resin, and a MoS_2 -base thermoplastic substance -- polyvinyl acetate resin. For comparison, lubricant VMLINP-232, consisting of MoS_2 and mineral oil, was also studied. The working fluid used was "Industrial'noye-12" oil. Studies showed that the properties of the film-forming substances have a substantial effect on lubricating action. Extrusion pressure is not lowered using VMLINP-232 but is lowered using the polyvinyl acetate resin. In both cases scratches were found on the extruded surfaces. In the hydrostatic extrusion of hard-to-deform materials with large

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USSR

KARPENKO, I. V., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 10, Oct 73, pp 12-15

degrees of deformation in the contact zone of the blank material with the die, any liquid or solid lubricant is squeezed out. The degree of deformation has limits depending on type of lubricant. For instance, in the extrusion of a blank, using a solid lubricant with the PVA resin, the lubricant is not squeezed out of the contact zone at reductions of 30 and 50% (at 30% reduction the pressure was reduced by 33% and at 50% -- by 7%). A reduction of 66% was not possible with VNIIMP-232 because, evidently, the pressure increased so much that the lubricant was squeezed from the contact zone. The solid lubricant, MoS₂-phenolformaldehyde resin, possesses higher strength properties and is not squeezed out at the contact pressures which form for a 66% degree of reduction. Thus, thermo-reactive resins provide the best lubricating properties for hydrostatic extrusion at high degrees of reduction because they provide a separating film. Two figures, three tables, four bibliographic references.

2/2

- 26 -

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF THE MOLYBDENUM DISULFIDE BASED LUBRICANTS ON THE
HYDROEXTRUSION PROCESS OF THE SHKH15 STEEL -U-
AUTHOR--(04)--KARPENKO, I.V., KATSOV, K.B., OGNETOVA, ZH.N., KHRUNIK, R.A.
COUNTRY OF INFO--USSR
SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
115, 116
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HYDROSTATIC EXTRUSION, METAL LUBRICANT, MOLYBDENUM DISULFIDE,
BALL BEARING STEEL, BIBLIOGRAPHY/(U)SHKH15 BALL BEARING STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0072 STEP NO--UR/0369/70/006/002/0115/0116
CIRC ACCESSION NO--AP0125907
UNCLASSIFIED

PROCESSING DATE--20NOV70

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--APC125907

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

ABSTRACT. STUDY OF THE HYDROEXTRUSION PROCESS OF SHKH15 STEEL AT DIFFERENT REDUCTIONS AND USING DIFFERENT LUBRICANTS. THE USEFULNESS OF LUBRICANTS BASED ON MOLYBDENUM DISULFIDE AND PHENOL FORMALDEHYDE RESIN FOR HYDROEXTRUSION PURPOSES IS DEMONSTRATED.

FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO-TEKHNICHESKII INSTITUT, DONETSK, UKRAINE
FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO-MEKANICHESKII INSTITUT, LYOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 615.849.19.015:612.46

OGNEY, B. V., VISHNEVSKIY, A. A., Jr., TROITSKIY, R. A., FOLONSKIY, A. K.,
VAL'TER, E. O., TIMIKHINA, N. I., KASSIN, V. Yu., and CHERKASOV, A. V.
Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR,
Moscow

"Investigation of the Action of Gas Laser Rays on the Kidney Under Experimental
Conditions"

Moscow, Urologiya i Nefrologiya, No 2, Mar/Apr 73, pp 33-36

Abstract: Laparotomy was performed under local anesthesia in rabbits, and the left kidney was transected with a focused impulsive neodymium laser beam. The transection was bloodless, and renal temperature rose to 42-43°C for a brief period. Penicillin was applied in the abdominal area, and the kidney and the abdomen were closed with sutures. During the uncomplicated postoperative month, the animals were sacrificed at intervals. Histological examination of renal tissue taken 1 hr after surgery revealed a wedge-shaped crater on the surface, 216 μ wide and 90 μ deep, from which tracks extended up to 110 μ deep into the renal cortex. The crater was covered with a homogeneous, foamy coagulate. The lesion was surrounded by a thin layer of necrotic tissue. In 1 day, the edges of the fibrous capsule were peeled off 500 μ from the center of the crater. The necrotic zone was 360 μ wide and 300 μ deep, and it was 1/2

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surrounded by an infiltrated layer separating it from healthy tissue. On subsequent days, the necrotic zone enlarged to a maximum of 900 μ , but no hemorrhages or suppurative inflammation developed. On the 10th day, the surface of the lesion was covered with a thin connective tissue capsule which gradually grew thicker. New capillaries formed in the parenchyma. On the 20th day, the lesion was filled with scar tissue whose thickness diminished to about 100 μ on the 30th day. The right kidney was free of pathology throughout the experimental period. Thus, transection of the kidney with laser is bloodless and causes strictly local morphological changes, leaving surrounding tissue intact. Organization of scar tissue is not completed in 30 days.

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"Symposia on the Problems of Application of Lasers in Medicine and Biology"

Moscow, Khirurgiya, No 12, 1971, pp 118-119

Translation: At the present time, we have been given the possibility of employing and developing a promising achievement of quantum physics -- optical quantum generators (lasers). Besides the medical aspect, the laser is also important because the construction of lasers was first accomplished by the Soviet physicists N. G. Basov and A. M. Prokhorov, who were awarded the Lenin Prize in 1959 for their work. Later, in 1964, they were awarded the Nobel prize for work in this field along with the American scientist Towns (Tauns). The most important properties of lasers, high coherence, monochromaticity of radiation, immense energy density, and the possibility of focusing, have attracted the attention of specialists in various scientific fields. In spite of a comparatively short period since the creation of lasers, several experiments have been run on their use of biology and medicine. As a result, we have succeeded in obtaining many valuable and encouraging results not only under experimental conditions, but also in actual therapy.

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Results of medical and biological studies with lasers are presented in over 800 published works. Symposia, which took place in May 1971 in Kiev (All Union) and in Leningrad, were dedicated to this important new field. Short abstracts of the proceedings are presented in this article. Physicians, biologists and engineers shared in the work of these symposia. A study of the use of lasers in biology conducted at the Kiev Institute of Oncology, deserves attention. Specifically, the report of N. F. Gamaley, et al., showed that irradiation with ultraviolet laser microwaves provided valuable data on the metabolism not only of normal cells, but also cells treated with various stains, antibiotics and vitamins. The same authors, using local exposure of the mitochondria of cardiac muscle cells in rats, succeeded in accelerating, retarding and even halting the reduction of cells. We may hope that the results of expanded, intensive supplemental studies will help the study of the metabolism of living cells and will in the future be used by clinicians.

Another important aspect of the biological significance of the problem, as described by V. M. Inyushin et al., in their report, is the ability of laser

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radiation to cause a shift in the energy state of the cell, which leads to the stimulation of the redox process and which, in the final analysis, will make possible acceleration or inhibition of cell growth. We may assume that it will prove possible to control processes in living organisms by means of laser rays. At this time this would apply only to the very simplest structures; microbes, plant cells, etc. The data cited by the authors, shows the importance of laser applications in genetics; which, in principle, could provide regulation and control of cellular processes.

Furthermore, the first and most successful application of lasers in medicine was in ophthalmology at the institute imeni F. P. Filatov. The reason for this was, on one hand, because the transparent medium of the eye is permeable to the passage of the laser ray. However, on the other hand, it is difficult to imagine any other organ consisting of tissues with a higher range of contrast. For this reason, after many experimental studies by oculists, they were able to determine guidelines for the application of lasers in clinical (therapeutic) conditions, treating retinal detachment, ocular neoplasms, and even to experimentally approach the creation of an artificial pupil, all of which will be significant in therapeutic application (the results of work in 3/8

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this area were presented in the report of L. A. Vedmedenko, L. A. Linnik, G. G. Melikov, N. A. Puchkovskaya, L. S. Terent'yeva).

The application of lasers in oncology is of special interest. In the reports of V. V. Gorodilova, I. G. Lagunova, I. R. Kazerev, V. Ye. Likhtenshteyn, R. Ye. Kavetskiy, B. V. Ognev, S. D. Pletnev, et al., it was shown that pulsed and continuous laser rays were able to coagulate malignant tumors in humans and animals. In particular, encouraging results were obtained from the irradiation of experimentally-produced Harding-Passl tumors, the carcinoma RSM [Rous Sarcoma in mice], Brown-Pearce tumors, and also melanoma, skin cancers, angiomas, fibromas and nevuses in man. It was established that the tumor and its metastasis must be fully irradiated, and that pigmented tumors show greater sensitivity to lasers than unpigmented tumors. This clarifies and provides a scientific basis for the initial results in erasing a tattoo, as obtained by A. A. Vishnevskiy (the younger) of the Institute of Surgery imeni A. V. Vishnevskiy. The valuable properties of laser therapy, in comparison to other methods of treating surface tumors, are the speed and painless nature of irradiation. It is usually conducted in one sitting,

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without anesthesia, there is an absence of side effects and rapid healing of the irradiated site, usually not accompanied by infection (R. Ye. Kavetskiy).

The reports of B. V. Ognev, et al., and R. A. Troitskiy, A. K. Polonskiy, B. M. Khromov were devoted to the application of the continuous action laser rays as a "light scalpel." Surgery without hemorrhage, such as dissection and resection of the kidney, liver, intestine and amputation of limbs, is possible using the coagulating property of laser rays. This is extremely important. When B. M. Khromov, et al., compared operations performed with a scalpel, by thermocautery and with laser rays, it was found that the surgical incisions from the rays are replaced by connective tissue. The scar forms in 3-4 weeks depending on the organ and the nature of the tissue. At the same time, in analogous operations performed with a scalpel and using thermocautery, much slower regeneration was observed. The scar from the operation with a scalpel is more tender than that from the laser.

A most promising application of laser rays will be in neurosurgery, where bloodless operations have future importance. Even today R. A. Troitskiy and A. K. Polonskiy have succeeded in stopping rather extensive hemorrhage of

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large vessels of rabbits with defocused laser rays. In addition, it was shown that surgery using lasers takes considerably longer than scalpel operations. This is explained by the still inadequate laser equipment. In connection with this problem, great interest was given to the report of the Engineering Academy, by N. D. Devyatkov, V. P. Belyayev, I. V. Kudravnsev, et al., which discussed the prospects of creating new lasers for surgical work.

Another series of reports described the characteristic effect of lasers on different organs and tissues. It was established that the destructive effect of laser radiation is determined by the biological make-up of the irradiated objects (B. V. Ognev, et al., and B. M. Koromov, et al.). The characteristics of the effect of lasers on laryngeal cartilage, (A. Ye. Lapko), tooth pulp (E. Ye. Tarsis, et al.), liver (V. G. Pinchuk, et al.), spine and spinal cortex (A. A. Vishnevskiy, et al.) intestinal walls and lymph nodes (R. A. Troitskiy, A. K. Polonskiy), and skin (V. V. Byalik, et al.) were determined.

The reports of D. D. Kopytniy, L. Ya. Zazulevskiy provided experimental confirmation of the stimulation of phagocytosis by local laser irradiation.

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P. P. Chekurov showed the stimulating effect of laser radiation on regeneration of bone tissue. They also succeeded in adapting lasers in clinics for treatment of polyarthritis, radiculitis and endarteritis obliterans.

Of utmost importance to future development of medical and biological research is the problem of reliable protection of healthy body parts -- especially the eyes of the researcher. Principles of organization are being developed for laser laboratories, as well as for laser operations, clothing, and safety glasses. The results obtained to date cannot be considered satisfactory. This is especially true since great importance is attached to the effect of reflected laser rays (report of B. P. Korichinskiy, I. R. Lazarev, et al.).

Experiments have shown dystrophic effects in the 17th sector of the cortex and other sections of the brains of rabbits and guinea pigs, after laser irradiation of their eyes. This confirms the importance and complexity of the problem of protection from laser radiation, both direct and reflected (A. A. Vishnevskiy, R. A. Troitskiy, N. I. Timokhina). In this respect, therefore, it is necessary to examine the rapid development of laser technology. Already, new devices have been developed, such as liquid lasers, which, undoubtedly, will be used

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in biology and medicine since they combine the merits of solid and gas lasers.

It must, however, be stressed that for medical and biological studies, there are few good lasers in spite of the great importance attached to work in this field. Questions on focusing, depth of penetration of light in living tissue and absorption of laser radiation remain undecided. For this reason, the members of the symposia concluded that medical and biological studies with lasers must be conducted in cooperation with engineers working in this field. In conclusion, we should note the fine organization of the symposia in Kiev and in Leningrad.

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