USSR

PEREL'MAN, A. YA., and PUNINA, V. A., Izvestiya Vysshikh Uchebnykh Zavedeniy
-- Matematika, No 3, Mar 71, pp 61-71

$$\eta(x, y) = 0 \quad (x > 0, \; y > 0),$$

given g(0) = 0, and

$$\eta(x, y) = 0 \quad (x > 0, \; y > 0),$$

given an arbitrary g(0).

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- 13 -

USSR

PEREL'MAN, A. YA., and PUNINA, V. A., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 3, Mar 71, pp 61-71

The article studies integral equation (1) on a set of kernels of the form

$$l(x) = \cos ax \sum_{k=0}^{n} \frac{b_{1k}}{x^k} + \sin ax \sum_{k=0}^{n} \frac{b_{2k}}{x^k} + \sum_{k=0}^{n} \frac{d_k(a)}{x^k},$$

(4)

where $a > 0$, b_{1k}, $b_{2k}(b_{10}^2 + b_{20}^2 \neq 0)$ are arbitrary, $d_k(a)$ are selected by virtue of the condition

$$l(x) \in C[\alpha, \beta].$$

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USSR

PEREL'MAN, A. YA., and PUNINA, V. A., Izvestiya Vysshikh Uchebnykh Zavedeniy
-- Matematika, No 3, Mar 71, pp 61-71

The subsets $\tilde{\mathfrak{L}}$ and $\tilde{\mathfrak{L}}_*$ are isolated from the set of kernels (¶4), criteria are obtained for testing the inclusions $\iota(x) \in \tilde{\mathfrak{L}}$ and $\iota(x) \in \tilde{\mathfrak{L}}_*$, and a way is shown for changing from kernels (1) from subset $\tilde{\mathfrak{L}}$ to kernels for the solution of (2).

A subsequent article will deal in detail with conditions for the existence and uniqueness of the inversion of (1) in the form of (2), a method for selecting the kernel t(x) from the set $\mathfrak{M}$, and justification for changing the order of integration in (3).

6/6

- 14 -

Acc. Nr.: __ATC047059__   Ref. Code: __URO020__

JPRS 50052

(Abstract: "Determining the Structure of Atmospheric Aerosol by the
Spectral Transparency Method," by N. I. Nikitinskaya, A. Ya. Perel'man
and K. S. Shifrin, Leningrad Forestry Academy; Moscow, Doklady Akademii
Nauk SSSR, Vol. 190, No. 2, 1970, pp. 331-333)

Determining Structure of Atmospheric Aerosol

     This paper presents the results of inversion of data on the spectral
transparency of the aerosol component of a layer of the moist atmosphere
obtained under conditions of high transparency. Inversion was by the
transparency method proposed by K. S. Shifrin, et al., DAN, 151,326, 1963.
This method makes it possible to determine the size distribution of parti-
cles without any assumptions concerning the structure of the investigated
disperse system. The experimental work was done near Leningrad during a
50-day period in the summer and autumn of 1951, but the only data analyzed
here are for 15 days of exceptionally high transparency during prevalence
of Arctic air masses. Studies of the spectral transparency were made us-
ing a Feisner thermoelectric actinometer operating jointly with a gal-
vanometer having a response of 10^{-9} A and a set of narrow-band interference
light filters. Absorption by ozone and oxygen were taken into account.

Reel/Frame

197905 12

Acc. Nr.: AT0047059

The aerosol optical thickness τ_λ was computed using the Bouguer formula. In contrast to the monotonic increase of τ_λ with a decrease in wavelength λ usually observed in a moist atmosphere, during all 15-days characterized by high transparency there was a distinct maximum of the τ_λ curve varying in the range 0.4-0.65 μ. Possible errors in the transparency method are discussed and the results obtained by this method are compared with those obtained by other authors using different methods (in particular, R. W. Fenn, Beiträge zur Physik der Atmosphäre, 37, 69, 1964). It is shown that the use of the transparency method makes it possible to obtain important information on the distribution of radii of aerosol particles by the use of simple instrumentation. The types of distribution of aerosol particles obtained under different conditions by different methods were extremely close.

di

1/2

REEL/FRAME
19790513

USSR

UDC 621.382.3

PEREL'MAN, B.L., PRIDOROGIN, V.M.

"Temperature Dependence Of Transmission Coefficient Of The Current Of Silicon
Planar Transistors With Small Injection Levels"

V sb. Poluprovcdn. pribory i ikh primeneniye (Semiconductor Devices And Their
Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 13-
26 (from RZh--Elektronika i yeye primeneniye,No 4, April 1971, Abstract No
4B235)

Translation: The dependence of the transmission coefficient of the current of
silicon transistors on the temperature is analyzed, taking into account the
recombination currents in the body and on the surface of the space charge reg-
ion of the emitter junction. 4 ill. 7 ref. Author's abstract.

1/1

USSR

UDC 539:3:534.1

PEREL'MAN, B. S., POPOV, V. F.

"Calculation of Destructive Stresses in the Compression of Thin-Walled Panels"

V sb. Kratk. tezisy dokl. k Konf. po povrezhdeniyam i ekspluat. nadezhnosti sudovykh konstruktsiy, 1972 (Brief Subjects of Papers at the Conference on Failure and Operational Reliability of Ship Designs, 1972 -- Collection of Works), Vladivostok, 1972, pp 83-87 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V315)

Translation: An algorithm is proposed for calculating a reinforced panel for the limiting state for three different forms of stability loss: local (sheathing between the ribs); general (ribs in its plane), and lateral (ribs out of its plane). Numerical results are not given. N. G. Gur'yanov.

1/1

PERELMAN G-G,

AA0044819   UR 0482   2

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/7b

243977 GENERATOR FREQUENCY STABILISING DEVICE, in which
the piezoelectric element is cut at an angle of
minus 22-24⁰ with the X-axis, and plus 33.5-35⁰ with
the Z axis of the piezoelectric quartz crystal. This
cutting eliminates the effect of temperaturu gradients
in the element on its resonant frequency.
3.7.67 as 1168743/18-10.DIKIDZHI.A.N.et al.(1.10.69)
Bul 17/14.5.69. Class 42s. Int'.Cl'. B 06b.

AUTHORS: Dikidzhi, A. N., Dikidzhi, L. Sh., Ivlev, L. Ye.,
Teren'ko, V. S., Kuznetsova, L. P., Perel'man, G. G.

1/1

19771669

1/2   021   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--RESONANCE INTERACTION BETWEEN AN INTENSIVE PHOTON FLUX AND A BONND
  ELECTRON AND THEORY OF THE TIME DELAY -U-
AUTHOR--PERELMAN, M.YE.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
  NR 6, PP 2139-2146
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RESONANCE SCATTERING, PHOTON EMISSION, CONDUCTION ELECTRON,
  QUANTUM ELECTRODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1703   STEP NO--UR/0056/70/058/006/2139/2146

CIRC ACCESSION NO--AP0120415
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0120415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STIMULATED EMISSION AND ELASTIC
   SCATTERING OF RESONANCE PHOTONS IN A TWO LEVEL SYSTEM ARE CALCULATED BY
   QUANTUM ELECTRODYNAMICS AND SCATTERING THEORY METHODS BY TAKING INTO
   ACCOUNT ABSORPTION AND RE EMISSION OF THE INCIDENT QUANTA. THE RATES OF
   THE REACTIONS POSSESS A SATURATION THRESHOLD WITH RESPECT TO THE PHOTON
   FLUX DENSITY J SUBO SIMILAR TO 1-LAMBDA PRIME2 T WHERE T IS THE DURATION
   OF AN ELEMENTARY SCATTERING ACT. IT IS SHOWN THAT NEW REACTION CHANNELS
   MAY OPEN UP NOT AS A RESULT OF INCREASE OF ENERGY OF THE SCATTERED
   PARTICLE BUT AS A RESULT OF INCREASE OF FLUX DENSITY OF THE INCIDENT
   PARTICLES. AN EXPERIMENTAL INVESTIGATION OF THESE FEATURES (AND ALSO OF
   THE LOWER AND HIGHER LIMITS OF THE MONOCHROMATICITY REGION OF STIMULATED
   RADIATION) MAY HELP TO ELUCIDATE THE PROBLEM OF THE EXISTENCE AND
   MAGNITUDE OF THE TIME DELAY.   FACILITY: INSTITUT KIBERNETIKI AN
   GRUZ, SSR.

UNCLASSIFIED

USSR

PEREL'MAN, R. G., Candidate of Technical Sciences, Docent, BAULIN, V. I., Assistant and DENISOV, YU. D., Graduate Student

"The Role of Dynamic Stresses During Droplet Impact Erosion"

Abstract: The authors study the basic regularities associated with the droplet impact erosion of the blades of wet-steam turbines during the period of discovered damage on the basis of analyzing the dynamic stresses in an elastic half-space during its collision with a droplet. The authors conclude that the cyclic effect of Rayleigh surface waves during this period represent the main damage factor. Experimental data are given which support the validity of the new droplet impact erosion model. This article was presented for publication by Professor G.S. Sku-bachevskiy of the Moscow Aviation Institute.

1/1

PEREL'MAN, R. G., and DENISOV, YU. D., Moscow Aviation Institute

"Installation for Accelerated Tests for Resistance to Erosion"

Abstract: An erosion testing installation is described in which speci-
mens, rotating in a vacuum chamber and colliding with dispersion drops
(d=0.3-1.2 mm) from a drop generator, erode in a medium of saturated
steam. As the rotating velocity of specimens is two orders higher than
the vertical motion speed of the drops, the collision takes place practically
at right angles. At v=300 m/sec rotation velocity, 1-mm drops produce
at 1.6 mm wide and ⌒ 10 mm high erosion zone. Materials of Kh18N9T,
2Kh13, or 15Kh12VMF types begin to wear out after 15-20 min at v=800 m/sec
and d=1 mm. Characteristic dependences of erosion wear, determined from
weighing the specimens and microscopically investigating their caverns,
are shown. Three figures, one table.

1/1

USSR   UDC 669.882.886.41(088.8)

PEREL'MAN   R. G.

"Method of Purification of Alkali Metals"

USSR Author's Certificate No 308079, filed 8/05/69, published 23/08.71.
(Translated from Referativnyy Zhurnal Metallurgiya, No 2, 1972, Abstract No
2G187P by G. Svodtseva).

Translation: A method of purification of alkali metals of O by circulation
through a filter at temperature 10-50° above the melting point, differing in
that in order to increase the purity of the metal, filtration is performed on
a eutectic mixture of the purified metal with another alkali metal with sub-
sequent separation of the end-product metal by vacuum-thermal distillation
at 580-600°. The method allows the purity of the metal to be improved by
a factor of more than 10.

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1/2   033
UNCLASSIFIED
TITLE--AUTOMATIC MAINTENANCE OF A DEFINITE LEVEL OF ANESTHESIA -U-
PROCESSING DATE--13NOV70

AUTHOR-(03)-DARBINYAN, T.M., PERELMUTR, A.S., NEVZOROV, V.P.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
61-67
DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, AUTOMATIC CONTROL SYSTEM, MEDICAL APPARATUS,
ELECTROENCEPHALOGRAPHY, BLOOD PRESSURE, HEART RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0625
STEP NO--UR/0481/70/000/002/0061/0067

CIRC ACCESSION NO--AP0108840
UNCLASSIFIED

CIRC ACCESSION NO--AP0108840
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMATIC MAINTENANCE OF A
 DEFINITE LEVEL OF ANESTHESIA IS EXPEDIENT TO CARRY OUT BY MEANS OF THE
 ANESTHETIC CONCENTRATION IN THE BRONCHOALVEOLAR GAS OF THE PATIENT,
 SINCE THIS INDEX MORE FULLY REFLECTS THE DEPTH OF ANESTHESIA AND
 QUANTITATIVEL CHARACTERIZES THE VALUE OF THE MAIN EFFECT ON THE PATIENT
 DURING ANESTHESIA. AUTOMATIC MAINTENANCE OF A DEFINITE CONCENTRATION OF
 THE ANESTHETIC IN THE PATIENT'S BRONCHOALVEOLAR GAS ENSURES NOT ONLY A
 STABLE SUPPLY OF THE ANESTHETIC TO THE PATIENT, BUT ALSO, IN ALL OTHER
 CONDITIONS BEING EQUAL, LEADS TO LESSER FLUCTUATIONS OF SUCH INDICES AS
 FREQUENCY INTEGRATED ELECTROENCEPHALOGRAM, SYSTOLIC ARTERIAL PRESSURE
 AND PULSE RATE WHICH, TO A CERTAIN MEASURE, MAY CHARACTERIZE THE
 STABILITY OF THE PATIENT'S CONDITION DURING ANESTHESIA. IN ORDER TO
 ENSURE RAPID CESSATION OF ANESTHESIA IT IS EXPEDIENT TO EMPLOY AN
 AUTOMATICALLY CHANGING RESPIRATORY CONTOUR OF THE ANESTHETIC APPARATUS,
 EXCLUDING THE PASSAGE OF THE ANESTHETIC AGENT INTO THE ORGANISM.
 FACILITY: LABORATORIYA ANESTEZIOLOGII REANIMATOLOGII INSTITUTA KHIRURG.
 IM. A.V. VISHNEVSKOGO AMN SSSR.   FACILITY: OTDEL NARKOZNOY I
 REANIMATSIONNOY TEKHNIKI VSESOYUZNOGO N I INST. MED. PRIBORO. MOSCOW.

UNCLASSIFIED

USSR

UDC 532.694:669.046.542

KRIVOGLAZ, M. A., NAYDEK, V. L., OSINOVSKIY, M. YE., and PEPELOMA, V. A.,
Institute of Metal Physics, Academy of Sciences Ukr SSR and Institute of Foundry
Problems, Academy of Sciences Ukr SSR

Abstract: A drop of liquid with a low boiling point in a fused metal is
surrounded by a gas layer of their vapors, owing to vaporization. A liquid-
gas inclusion is formed. The mechanisms of heat exchange between the metal
and inclusion are discussed. It is shown that the basic mechanism of heat
transfer through the gas layer can be determined by the turbulence which occurs
near the boiling drop. Boundary conditions for the surface problem of thermal
conductivity were formulated. The distribution of temperatures around the
rapidly moving inclusion, having the shape of an arbitrary rotating figure, at
these boundary conditions was determined. The case of a sphere and a strongly
flattened ellipsoid were investigated in more detail. The effect of the surface-
active film on the movement of an inclusion and heat exchange is discussed.
Diffusion of impurity atoms from the fused metal to an inclusion and the chemi-
cal reactions at the inclusion-metal interface was examined. The results
obtained were used for investigating the interaction of a drop of liquid oxygen
with molten Fe-C alloys. 6 bibliographic references.
1/1

- 53 -

TITLE--METHOD OF GENERATING FUNCTIONS FOR QUANTUM OSCILLATOR -U-

AUTHOR-(02)-PERELOMOV, A.M., POPOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP
377-391

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--QUANTUM OSCILLATOR, QUANTUM OSCILLATION, FUNCTION THEORY,
FUNCTIONAL EQUATION, TRANSITION PROBABILITY, RELAXATION PROCESS,
THERMOSTAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1247   STEP NO--UR/0646/70/003/003/0377/0391

CIRC ACCESSION NO--AP0124899
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0124899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF GENERATING FUNCTIONS
HAS BEEN DEVELOPED FOR THE STUDY OF THE QUANTUM OSCILLATOR WITH VARIABLE
FREQUENCY OMEGA (T) BEING UNDER THE ACTION OF THE EXTERNAL FORCE F(T).
WITH THIS METHOD THE EXPLICIT EXPRESSION IS OBTAINED FOR THE TRANSITION
PROBABILITIES OMEGA SUBMFL BETWEEN THE STATES (SHOWN ON MICROFICHE)
POSSESSING THE DEFINITE NUMBER QUANTA AT THE BEGINNING (N) OR THE END
(M) OF THE PROCESSES. THE DISCUSSION OF HEISENBERG PICTURE AND THE
GEOMETRICAL INTERPRETATION CONNECTED WITH IT OF THE DYNAMICAL VARIABLES
ON A PHASE PLANE ARE GIVEN. WITH THE AID OF THE PHASE PLANE THE FORMULA
OF OMEGA SUBMN IN QUASI CLASSICAL LIMIT (STRONGLY EXICTED OSCILLATOR FOR
WHICH M, N IS GREATER THAN 1) ARE OBTAINED. THE APPLICATION OF THE
METHOD DEVELOPED TO THE PROBLEM OF THE RELAXATION OF THE QUANTUM
OSCILLATOR INTERACTING WITH THE THERMOSTAT IS ALSO DISCUSSED.

UNCLASSIFIED

Composite Materials

USSR

UDC 669.71:669.24.27.28

KARPINOS, D. M., TUCHINSKIY, L. I., VISHNYAKOV, L. R., PERESELENTSEVA, L. N., KLIMENKO, L. N., and DEYMONTOVICH, V. B., Kiev

"Effect of Alloying a Nickel Matrix With Reinforcing Metal Fibers on the Structural Stability of Ni-W and Ni-Mo Composites"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 72, pp 107-113

Abstract: The problem of creating structurally stable composites for the Ni-W and Ni-Mo system was examined. By alloying the nickel matrix with tungsten up to the maximum saturation of the nickel solid solution, reinforced tungsten fibers were obtained in which the fibers did not dissolve at 1000-1200°C. At these temperatures the Ni-Mo composite was not so stable because an intermetallic compound is formed at the fiber-matrix interface and the maximum saturation of the nickel matrix with molybdenum does not prevent dissolution of the molybdenum fibers. Four figures, 2 tables, and 8 bibliographic references.

1/1

USSR
Circuit Theory
UDC 621.384.6

IVANOV, I.N., IOVNOVICH, M.L., MAKHAN'KOV, V.G., PEREL'SHTEYN, E.L.

Tr. Vees. soveshchaniya po uskoritelyam zaryazhen. chaatits, 1968. T. 2 (Works Of The All-Union Conference On Charged Particle Accelerators, 1968. Vol 2), Moscow, VINITI, 1970, pp 503-506 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A422)

Translation: The basic problems connected with the stability of an electron-ion ring in an internal magnetic field are considered. The method of investigation of similar systems consists in a combined study of kinetic equations for functions of the distribution of electrons and ions, and systems of Maxwell equations for the electromagnetic field. The results are presented of similar investigations, both in linear and nonlinear approximations. 9 ref. G.B.

1/1

USSR

PANINA, S. M., PEREL'SHTEYN, Ts. N.

"Operating Conditions of a Computing and Information Center"

Translation: A standard draft resolution, "Operating Conditions of Computing and Information Centers in Enterprises", worked out by the State Scientific Research and Design Institute on Introducing Computer Facilities into the National Economy, considers questions of the obligations of subdivisions of computing and information centers, the system of organizing accounting, storage and processing of incoming reference-normative and operational documentation. The materials are presented in the form of instructions, and are intended for use in the following subdivisions of the computing and information center: 1) the subdivision of reception and storage of reference-normative documentation; 2) the subdivision for receiving, checking and transmitting operational documentation; 3) the subdivision for storing and inserting changes in the punchcard file; 4) the subdivision for receiving, storing and transmitting magnetic tapes; 5) the data preparation subdivision.

1/1

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USSR   UDC 624.07:534.1

PEREL'SHTEYN, V. N.

"On the Deformation of an Oscillatory System With Many Degrees of Freedom
Under Impact on the Supporting Surface"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering
Under Oscillations of Mechanical Systems -- Collection of Works), Kiev,
"Nauk. dumka", 1972, pp 119-127 (from RZh-Mekhanika, No 3, Mar 73,
Abstract No 3V267)

Translation: A model consisting of a certain moving rigid mass and beam
placed perpendicular to the motion and connected with the mass at the cen-
ter of the beam is investigated. The problem of optimal parameters of a
device dampening impact is formulated from the aspect of obtaining the least
forces and accelerations in the oscillating beam. By assigning different
values of the damping force satisfying a condition obtained in the work, one
can determine forces and accelerations in the beam and select the necessary
change in the damper reaction. It is assumed that the breaking time is
greater than the half period of the vibration mode of the beam. A. S.
Yerokhin.

1/1

- 92 -

USSR

UDC 533.6:621.4

TUNAKOV, A. P., and PEREL'SHTEYN, YE. KH.

"Study of the Ideal Cycle of a Continuous-Action Gas Turbine with Stepwise Heat Removal (Cycle with Re-expansion)"

Tr. Kazan. aviats. in-ta (Transactions of the Kazan' Aviation Institute), Vypusk (Issue) 114, pp 18-30 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B483, by Yu. F. Ditaskin)

Translation: Results of a calculation study of the ideal cycle of a gas turbine with stepwise heat removal are presented. If the process of heat removal is isothermal, the specific work in the cycle can be increased. This is realized by stepwise heat removal, achieved as a the deep (glubokoye) re-expansion of the gas in the turbine, cooling in a cooler, followed by compression in the compressor to the ambient pressure, or by stepwise compression. A formula is derived for the thermal efficiency of the cycle, working with two stages of heat removal, i.e., with cooling of gas after re-expansion, and with gas compression in the compressor to the ambient pressure. Formulas are derived for the efficiency and specific internal work of the gas. Plots of thermal efficiency of the cycle and other factors
1/2

- 19 -

USSR

TUNAKOV, A. P., and PEREL'SHTEYN, YE. KH., Tr. Kazan. aviats. in-ta, Vypusk (Issue) 114, pp 18-30 (from RZh-Medhanika, No 12, Dec 70, Abstract No 12B483, by Yu. F. Dityakin)

versus pressure rise are constructed by these formulas. It is concluded that change in the ordinary section of the cycle by introducing step-wise heat removal is useful. Employment of stepwise heat removal is shown not to lead to lower efficiency. Bibliography: 4 entries.

2/2

USSR   UDC: 574.94

MONAKHOVA, T. Ye., PROSKURNINA, N. F., TOLKACHEV, O. N., KOBANOV, V. S.,
PEREL'SON, M. Ye., All Union Scientific Research Institute of Medicinal
Plants

"Alkaloids of Sophora Alopecuroides. 3-α-Hydroxysophoridine"

Abstract: In a continuation of research on the alkaloids of Sophora alopecu-
roides, preparations were made from the aerial part of the plant in the fruit-
bearing stage. The sum of the alkaloids obtained by the conventional dichloro-
ethane method (2.5%) was divided into fractions of strong and weak bases.
The following alkaloids were distinguished in the fraction of weak bases by
extraction with various solvents combined with aluminum oxide chromatography:
sophoridine, cytisine and three bases -- $C_{13}H_{18}N_2O_2$(III), $C_{15}H_{24}N_2O_2$ (IV), and
$C_{15}H_{24}N_2O_2$ (VI). The fraction of strong bases yielded sophoridine, cytisine
and baptifoline (V). This is the first time that the alkaloids cytisine and
baptifoline have been isolated from this plant. Infrared and mass spectroscopy
suggest the structure of 3α-hydroxysophoridine for base IV.

1/1

USSR   UDC 547.944/945

FADEYEVA, I. I., FESENKO, D. A., IL'INSKAYA, T. N., PEREL'SON, M. YE., and
TOLKACHEV, O. N., All- Union Scientific-Research Institute of Medicinal Plants

"Alkaloids of Stephania Hernandifolia. VIII. Methylhernanine"

Abstract: This a is a continuation of research begun on alkaloids extracted
from the above-ground portion of Stephania bernandifolia.
     From the hydrochloride, which is weakly soluble in alcohol, a new alka-
loid was extracted with formula $C_{20}H_{27}O_6N$ and melting point 152-153°C
(ethanol-ether), which was named methylhernandine. The infrared and magnetic
resonance spectra of this substance were obtained.
     The alkaloid was finally identified with N-methylamine alcohol, which
is obtained in the hydrolysis of hernandifoline.

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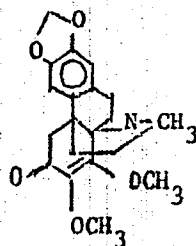USSR   UDC 547.944/945

FADEYEVA, I. I., IL'INSKAYA, T. N., PEREL'SON, M. Ye., KUZOVKOV, A. D., All-Union Scientific Research Institute of Medicinal Plants

"Structure of Delavaine, an Alkaloid from Stephania Delovayi"

Abstract: Nuclear magnetic resonance spectra data are presented for delavaine and its derivatives. These spectra and the data of far spin-spin interaction in delavaine confirm the following structure for delavaine:

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USSR

A conversion diagram, experimental procedures, yields and some physical and chemical characteristics are presented for delavaine, D-delavaine, delavaine methiodide, the des-base of delavaine, acetoxymethylenedioxyphenanthrene, dimethoxymethylenedioxyphenanthrene, dimethylenedelavaine, and diacetyl-demethylenedelavaine.

2/2

- 7 -

USSR   UDC 547.92

IL'INSKAYA, T. N., FESENKO, D. A., FADEYEVA, L. I., PEREL'SON, M. Ye., and
TOLKACHEV, O.N., All-Union Scientific Research Institute of Medicinal Sub-
stances

"Stephania Hernandifolia Alkaloids. VII. Hernandin"

Abstract: The chloroform mother liquors of the Stephania hernandifolia
extracts left after the removal of hernandifolin was evaporated in vacuum.
The tarry residue was treated repeatedly with 10% HCl solution, the com-
bined acid extracts were thoroughly reextracted with chloroform, washed
with 10% ammonia solution and water, dried and evaporated. The residue
was crystallized from ethanol to yield harnandin, m.p. 197-199°, $[\alpha]_D^{20} =$
-33°. IR, NMR, and mass spectra were studied in an attempt to discover
the structure of this product.

1/1

UDC 547.92

USSR

IL'INSKAYA, T. N., FESENKO, D. A., FADEYEVA, I. I., PEREL'SON, M. Ye., and TOLKACHEV, O.N., All-Union Scientific Research Institute of Medicinal Substances

"Stephania Hernandifolia Alkaloids. VII. Hernandin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 180-184

Abstract: The chloroform mother liquors of the Stephania hernandifolia extracts left after the removal of hernandifolin was evaporated in vacuum. The tarry residue was treated repeatedly with 10% HCl solution, the combined acid extracts were thoroughly reextracted with chloroform, washed with 10% ammonia solution and water, dried and evaporated. The residue was crystallized from ethanol to yield harnandin, m.p. 197-199°, $[\alpha]_D^{20}$ = -33°. IR, NMR, and mass spectra were studied in an attempt to discover the structure of this product.

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USSR

FESENKO, D. A., FADEYEVA, I. I., IL'INSKAYA, T. N., PEREL'SON, M. Ye., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants

"Stephania Hernandifolia Alkaloids. VI. Hernandifolin"

Abstract: 10 kg of dry Stephania hernandifolia grass was immersed in 10% ammonia, and after decantation extracted with dichloroethane. The extract was treated with 10% sulfuric acid, neutralized with ammonia and extracted with ether, made alkaline (pH 9), and reextracted with chloroform. The extract was dried, concentrated and chromatographed on an alumina column. A mixture of three alkaloids was obtained from the chloroform eluate, and after a triple recrystallization from chloroform 1.2 g of hernandifolin (I) was obtained in the form of an addition product with chloroform, m.p. 227-227.5°.; treatment of this material with ether followed by ammonia gave free (I), m.p. 128-229°, $[\alpha]_D = -25°$. Reacting (I) with acetic anhydride in pyridine, followed by chromatography over alumina produced diacetyl-nernandifolin, m.p. 171-171.5° eluted with methanol. N-Methylhernandifolin was obtained by reacting (I) with methyl iodide. Hydrolysis of (I) in

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USSR

FESENKO, D. A., et al., Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 158-164

alcoholic NaOH followed by treatment with sulfuric acid and finally with ammonia gave hesperitic acid, m.p. 228-229°. The structure assignment was based on the analysis of NMR, IR and mass spectral data.

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1/2   008   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--SPECTROPHOTOMETRIC DETERMINATION OF PEUCEDANIN -U-

AUTHOR-(02)-KRIVUT, B.A., PERELSON, M.YE.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 3-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, CHROMATOGRAPHIC SEPARATION,
SPECTROPHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1989   STEP NO--UR/0393/70/006/001/0003/0006

CIRC ACCESSION NO--AP0137168
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0137168
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE DETN. OF PEUCEDANIN (I)
(M. 109DEGREES) IN CRYST. POWDER, DISSOLVE 1 MG I IN 25 ML ETOH. ADD 10
ML ETOH TO 2 ML OF THIS SOLN. AND MEASURE THE ABSORBANCE IN 1 CM QUARTZ
CELL AT 298 MMU. E PRIME1PERCENT SUB1CM FOR PURE I WAS 401 PLUS OR
MINUS 1.5. TO DET. I IN THE ROOTS OF PEUCEDANUM MORISONI: EXT. 1 G
CRUSHED ROOTS IN SOXHLET APP. 3-3.5 HR WITH MEOH. EVAP. THE EXT. TO THE
DRYNESS AND DISSOLVE AGAIN IN 10 ML MEOH. CHROMATOGRAPH 0.01-0.03 ML OF
THIS SOLN. ON THE SILICA GEL KSK-THIN LAYER IN PETROLEUM,ETHER,ET SUB2 O
(1:2). EXT. THE SILICA GEL LAYER CONTG. I (R SUBF 0.49) 12 HR IN 10 ML
ETOH. MEASURE THIS SOLN. AFTER FILTRATION IN 1 CM CELL AT 298 MMU. USE
THE ELUATE OF PURE SILICA GEL LAYER AS THE BLANK. THE MEAN REL. ERROR
OF THE DETN. WAS SMALLER THAN 2PERCENT.   FACILITY: VSES.
NAUCH.-ISSLED. INST. LEK. RAST., BITTSA, USSR.

UNCLASSIFIED

1/2   010   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--STRUCTURE OF THE ALKALOID DELAVAINE -U-

AUTHOR-(04)-FADEYEVA, I.I., ILINSKAYA, T.N., PERELSON, M.YE., KUZOVKOV,
A.D.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 140-1

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, NUCLEAR MAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0465   STEP NO--UR/0393/70/006/001/0140/0141

CIRC ACCESSION NO--AP0132680
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0132680
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DELAVAINE, M. 149-50DEGREES
  (ETOH), (ALPHA) SUBD MINUS 240DEGREES, HCL SALT M. 203-3.50DEGREES
  (ETOH), METHIODIDE M. 190-2DEGREES, WAS ISOLATED FROM GRASS OF STEPHANIA
  DELAVAYI. TWO POSSIBLE STRUCTURES, I ((R PRIME1 R PRIME2 EQUALS) CH
  SUB2, R PRIME3 EQUALS ME) AND I (R PRIME1 EQUALS ME, (R PRIME2 R PRIME3
  EQUALS)CH SUB2) WERE USGGESTED ON THE BASIS OF NMR SPECTROSCOPY,
  FUNCTIONAL GROUPS ANAL., AND HOFMANN DEGRADATION.   FACILITY:
  VSES. NAUCH.-ISSLED. INST. LEK. RAST., BITTSA, USSR.

UNCLASSIFIED

IL'INSKAYA, T. N., PEREL'SON, M. YE., FADEYEVA, I. I., FESENKO, D. A., and TOLKACHEV, O. N., AII Union Scientific Research Institute of Medicinal Plants

"Stephania Delovayi Alkaloids.   II.   16-Ketodelavaine"

Abstract: A   new alkaloid was isolated from the Stephania Delovayi Diels (Menispermaceae) grass, with mp 221-222°, $[\alpha]_D$ -180°. This compound showed a positive reaction for the dioxymethylene group. On the basis of UV, IR, and NMR spectroscopic analysis, this compound was claimed to be 16-ketodelavaine.

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USSR

UDC 547.944/945

FADEYEVA, I. I., PEREL'SON, M. YE., TOLKACHEV, O. N., IL'INSKAYA, T. N., and FESENKO, D. A., All Union Scientific Research Institute of Medicinal Plants

"Stephania Hernandifolia Alkaloids. IX. 3-O-Dimethylhernandifolin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 130-132

Abstract: A compound was isolated from the methanol fraction of the chromatographic separation on an alumina column of a mixture of alkaloids obtained from Stephania Hernandifolia grass. This compound had mp $148-149^\circ$ and in contrast to hernandifolin, hernandine and methylhernandine showed a color reaction characteristic of o-diphenols. On the basis of IR and NMR spectroscopic data, it was assigned the structure of 3-O-dimethylhernandifolin.

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UDC 547-94

USSR

YAKHONTOVA , L. D., KOMAROVA, M. N., PEREL'SON, M. YE., BLINOVA, K. F., and TOLKACHEV, O. N.,   All Union Scientific Research Institute of Medicinal Plants, Leningrad Chemical-Pharmaceutical Institute

"Hypecoum Erectum Alkaloids. Structure of Hypecorine and Hypecorinine"

Abstract: Two new alkaloids were isolated from the Hypecoum erectum L. grass -- hypecorine, m.p. 154-156° and hypecorinine, m.p. 197-198°. The structures of these compounds were determined on the basis of their chemical reactions and IR, UV, NMR, and mass-spectroscopic data. Hypecorine was assigned the structure of 7-methyl-2,3,11,12-dimethylenedioxy-9-oxahomospirobenzyl-tetrahydroisoquinoline, and hypecorinine was identified as 7-methyl-2,3,11,12-dimethylenedioxy-15-keto-9-oxahomospirobenzyltetrahydroisoquinoline. Both compounds are optically inactive, probably due to the ease of the racemization stemming from their spiroaminoketal structures.

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USSR

PEREL'TSVAYG, Yu. M.

"Group Statistical Estimates of the Parameters of a Random Set"

Tr. XVII Nauch. konf. Mosk. fiz.-tekhn. in-ta, 1971. Ser. Aerofiz. i
prikl. mat. [Works of Seventeenth Scientific Conference of Moscow Insti-
tute of Physics and Technology, 1971, "Aerophysics and Applied Mathematics"
Series], Dolgoprudnyy, 1972, pp 101-111 (Translated from Referativnyy
Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V139 by the author)

Translation: The problem is studied of estimation of the parameters
$\{a_j, \sigma_j^2\}$, $j=1, \ldots, m$, of a set of independent random complex quantities
ξ_j, $j=1,2,\ldots, m$, on the basis of the results of repeated observations of
this set as a whole (group observations). The absence of information on
the agreement of individual points in any two observations makes it
necessary to limit oneself to estimates which are invariant relative to
arbitrary permutations of the points in each observation. In the works of
Sidorov and Bernshteyn (RZHMat, 1973, 4V186), a method was suggested for
production of consistent estimates of the set of means $\{a_1, a_2, \ldots, a_m\}$
based on the use of statistics which are symmetrical homogeneous polynomials
of the results of observation. In this work, a method is suggested for

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consistent estimation of the disperson $\sigma_j^2, j=1,2,\ldots,m$, of the random set. A criterion of invariance of group estimates of the parameters $\{a_j, \sigma_j^2\}$, $j=1,\ldots, m$, relative to the arbitrary linear transforms of the complex plane is concluded. In the class of consistent and invariant group estimates of parameters, one estimate is indicated which has the property of detection of points in the set observed without errors (selectivity).

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USSR

PERELYGIN, A. I., ORESHKIN, P. T. (Ryazan' Radio Engineering Institute)

"Production and Investigation of Local Inhomogeneities in Oxide Semiconductors"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, February 1970, pp 16-18

Abstract: The introduction of impurities into oxide semiconductors by a method of electron transfer is described. It is shown that in electron transfer it is possible to produce local inhomogeneities in the samples. Several physical properties of the samples are studied, and it is found that electron transfer leads to a change in these properties.

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MEDICAL / Scientific Activities

. 30 Dec 71

USSR

SEIGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, P)

colchicine propitylene ointment, and the anticoagulant ic- hedge nettle, ZORK, colchicine propitylene ointment, and the anticoagulant ic- hedge nettle, widely used in childrenal institutions in and outside

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30 Dec 71

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USSR

SEYGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, p 3

Involving the problem of national concern, nine problems in the USSR Ministry of Health plan, and 6 subjects in the Kirkiz SSR economic plan.

The Directive of the 24th CPSU Congress state that improvement of environmental health conditions is a major problem. Therefore, one of the first areas of scientific study in the Ninth Five-Year Plan will be to determine possible carcinogenic effects of various chemicals used in the food industry, agriculture, and some sectors of the national economy, and to develop methods for the treatment of malignant tumors. Steps will also be taken to prevent occupational diseases among workers at tobacco plantations.

Work conditions at sheep shearing points, enterprises for the initial processing of wool, and carding and fulling combines in Frunze are a main focus of research attention.

Extensive industrial growth, and the development of new regions in our nation are planned during the Ninth Five-Year Plan. In particular, mountain regions will be widely developed. The second area of scientific research, therefore, will involve determination of optimal high mountain regions with regard to human activity, and determination of the therapeutic-prophylactic effects of high mountain adaptation for a 5/7

USSR

SEYGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, p 3

number of cardiovascular and blood diseases. The Kirkiz Medical Institute and a number of national and republic scientific research Institutes will participate in an interested approach to the problems of high mountain physiology and pathology.

It is also planned to continue research on distribution patterns of diseases common in Kirgiziya and to determine the possibilities of using them for treatment purposes. Studies will be made of adaptation mechanisms in the republic's middle and high altitude mountain zone, and scientifically-based methods will be developed to treatment hypertonic disease, arteriosclerosis, chronic nonspecific polyarthritis, radiculitis, and chronic gynecological diseases, with consideration given to specific conditions at spas.

During 1971-1975 it is planned to increase the efficiency of immunization against tuberculosis, develop methods of determining the resistance of tuberculosis bacilli to antibiotics, determine the types and non-typical forms of bacilli, and improve the methods of functional and clinical diagnosis of this disease.

Scientific research and medical Institutes are preparing to perform these tasks, but little attention is being given to the systematization of this work. This problem is now on the agenda of the day.

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USSR

UDC 612.017.1.014.46:615.28

PERELYGIN, V. M., Professor, SHPIRT, M. B., ARIPOV, O. A., and YERSHOVA, V. I., Kirgiz Institute of Epidemiology, Microbiology and Hygiene, Frunze

"The Effect of Some Pesticides on Immunological Reactivity"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 29-33

Abstract: Various immunological indexes (agglutinin titers, phagocytosis, peripheral blood, cholinesterase activity, skin test with morphine, protein spectrum, changes in weight, and so forth) were studied dynamically in rabbits and mice poisoned with DDT, TMTD (tetrathion), sevin, or zineb daily for 6 months. Three doses were used: (i) permissible residual amount or dose insufficient to elicit changes, (ii) dose sufficient to detect physiological and biochemical changes, and (iii) toxic dose. Immunobiological reactivity proved to be a fairly sensitive indicator of the effect of pesticides. Changes occurred even after permissible residual amounts, although they were not persistent. After a brief and slight decrease or increase in reactivity, there was a tendency toward normalization. Doses sufficient to cause initial toxic symptoms resulted in decreased phagocytosis of leukocytes and sharp reduction in antibody titers and immunogenic properties of blood serum. Large (toxic) doses usually caused early decompensation and

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USSR

PERELYGIN, V. M., et al., Gigiyena i Sanitariya, No 12, 1971, pp 29-33

immunological reactivity diminished steadily. These changes preceded the
appearance of symptoms of specific pathology. The agglutinin titer, pro-
tective serum antibodies, leukocytic phagocytosis, and skin test with
morphine are the most sensitive indexes of immunological reactivity.

2/2

1/2   010   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--HYDROSELECTION (IN ALCOHOL RECTIFICATION) -U-

AUTHOR--PERELYGIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--FERMENT. SPIRT. PROM. 1970, 36(1), 7-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHANOL, DISTILLATION, METHANOL, WATER, CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS·

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1200   STEP NO--UR/0071/70/036/001/0007/0011

CIRC ACCESSION NO--AP0104566
                            UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104566
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN AQ. ETOH IS RECTIFIED THE
FEED IS INTRODUCED EITHER AT THE TOP PLATE OF THE COLUMN OR AT A CERTAIN
FEED PLATE. MATH. ANAL. OF THE FATE OF THE HEATING STEAM WHICH, AFTER
ENTERING THE COLUMN, BREAKS UP INTO REFLUX AND DISTILLATE, SHOWS THAT
THE ENRICHMENT OF THE IMPURITIES (ETOAC, MEOAC, MEOH, ACROLEIN, ETC.) IS
A FUNCTION OF THE AMT. OF H SUB2 O ADDED TO THE TOP PLATE AND THE FLOW
RATE OF THE HEATING STEAM. THE VARIOUS IMPURITIES BEHAVE DIFFERENTLY.
AN ADDN. OF H SUB2 O THAT LEADS TO ENRICHMENT OF THE IMPURITIES, CAUSES
LOSSES OF MEOH, WHICH BECOMES MORE EVENLY DISTRIBUTED THROUGH THE ETOH
AND BECAOMES PARTICALLY UNREMOVABLE. ADDN. OF H SUB2 O REQUIRES
RAISING THE STEAM FLOW RATE TO ROUGHLY TWICE THE RATE REQUIRED FOR THE
COMMON TYPE OF DISTN.

UNCLASSIFIED

1/2   015
UNCLASSIFIED
TITLE--LIQUID VAPOR PHASE EQUILIBRIUM IN WATER FURFURAL AND ETHANOL
  FURFURAL SYSTEMS -U-
PROCESSING DATE--11SEP70

AUTHOR--KHARIN, S.YE., PERELYGIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(2) 15-16

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, FURFURAL, WATER, ETHANOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0209
STEP NO--UR/0328/70/023/002/0015/0016
CIRC ACCESSION NO--AP0106865
UNCLASSIFIED

CIRC ACCESSION NO--AP0106865
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIQ. VAPOR EQUIL. IN THE 2 TITLE
   SYSTEMS WAS CONDUCTED BY THE METHOD DESCRIBED IN AN EARLIER REPORT (K.,
   P., AND REMIZOV, 1967), AT 50, 65, AND 80DEGREES AND AT THE B.P. (760
   MM). THE SOLNS. WERE PREPD. FROM REDISTD. WATER, ABS. ETOH, AND
   FURFURAL (I).   THE COMPN. OF THE EQUIL. PHASES WAS DETD. BY ANAL. FOR I
   BY THE OXIMATION METHOD. IN THE DISTN. OF THE WATER I SYSTEM WITH A LOW
   CONTENT OF I (SOLNS. OF I IN WATER), I CONSTITUTES THE HEAD FRACTION;
   WHILE AT HIGH I CONTENTS (SOLNS. OF WATER IN I), IT CONSTITUTES THE TAIL
   FRACTION. IN THE SYSTEM ETOH-I, I IS THE TAIL FRACTION WITHIN THE WHOLE
   RANGE OF THE BINARY SYSTEM COMPN. IN BOTH SYSTEMS, THE VOLATILITY OF I
   IS HIGHER AT HIGHER TEMPS. EQUATIONS ARE DERVIED FOR THE CALCN. OF THE
   COMPN. OF THE EQUIL. VAPOR IN BOTH SYSTEMS AS A FUNCTION OF THEIR COMPN.
   AT 50-80DEGREES AND AT B.P. (760 MM).

1/2   018   UNCLASSIFIED   PROCESSING DATE--11SEP70

TITLE--EFFECT OF TEMPERATURE ON A LIQUID VAPOR EQUILIBRIUM IN AN ETHANOL WATER PROPONAL SYSTEM -U-

AUTHOR--PERELYGIN, V.M., REMIZOV, G.P., KHARIN, S.YE.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 122-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, ETHANOL, WATER, PROPANOL, VAPORIZATION, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1554   STEP NO--UR/0322/70/000/001/0122/0126

CIRC ACCESSION NO--AT0107974
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UNCLASSIFIED   PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0107974
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   SEVERAL FORMULAS ARE GIVEN FOR
CALCG. LIQ. VAPOR EQUIL. IN AN ETOH-H SUB2 O-PROH SYSTEM AT
50-130DEGREES. THE NOMOGRAMS PRESENTED CAN BE USED FOR THE RAPID DETN.
OF VAPORIZATION AND RECTIFICATION COEFFS. FOR THE COMPONENTS OF THIS
SYSTEM AS A FUNCTION OF COMPN. AND TEMP.

UNCLASSIFIED

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USSR   UDC 615.28:632.95].099.015.44

PERELYGIN, V. M., SHPIRT, M. B., and GENIS, V. I., Kirgiz Institute of
Epidemiology, Microbiology, and Hygiene, Frunze

"Cytotoxicity of Combination of Pesticides"

Abstract: The organochlorine pesticides most widely used in Kirghizia --
metaphos, methylmercaptophos, chlorophos, phosphamide, sevin, DDT, and
lindane -- were isolated from food products of animal and plant origin,
tobacco, water, air, mother's milk, and fatty tissue at or below the maximum
permissible levels. In experiments with human embryonal fibroblasts in vitro
the addition of the individual chemical agents to the cultures in amounts
actually present in people in Kirghizia had little cytotoxic effect (judged by
the number of degenerated cells) compared to the control. However, the effect
was pronounced when a mixture of all the pesticides was added. The authors
caution that the results of in vitro experiments cannot be compared to the
effects in vivo because of the antitoxic barriers and mechanisms of detoxifica-
tion that function in the intact organism.

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FLEROV, G. N., PERELYGIN, V. P., and OTGONSUREN, O.

"The Origin of Fission Fragment Traces in Lead Glass"

Translation: An investigation is made of the origin of fission
fragment traces detected during the chemical etching of old lead
glass. By using the method of recording rare events of nuclear fis-
sion, the authors established from the coincidence of the traces in
two layers of polymer film that the effect observed earlier in two
lead glass specimens is explained by the fission of the lead nuclei
by cosmic radiation if it is assumed that these glasses are in con-
tainers covered with concrete no greater than 10 cm thick. The
probability of the fission of the lead by these particles at sea
level with no absorbers is found to be 15 ± 4 fissions per gram
per year ($\lambda = 56°$ N. Lat.).

Investigation of the sensitivity of the glass to heavy Ne^{22},
S^{32}, Cl^{35}, Ar^{40}, and Zn^{66} ions allowed the conclusion that in
glass without impurities of elements heavier than tungsten, cosmic
radiation does not lead to the appearance of background traces.
In connection with the fact that the conditions for preservation
of the investigated glass are not known, the result obtained ear-
lier with lead glass is only an indirect indication of the exist-
ence in nature of long-lived, spontaneously fissioning nuclides.
(Four illustrations, 20 bibliographic titles.)

1/2   023   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--POSSIBILITY OF STUDYING THE FINE STRUCTURE OF THE IONOSPHERE FROM
  SIGNAL BROADENING ON IONOGRAMS -U-
AUTHOR--PERELYGIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL 10, NO. 1 1970, P 158-160

DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION, ATMOSPHERIC SCIENCES

TOPIC TAGS--IONOSPHERE, IONOGRAM, RADIO WAVE SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0790   STEP NO--UR/0203/70/010/001/0158/0160

CIRC ACCESSION NO--AP0102753
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0102753
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE POSSIBILITY
  OF STUDYING THE FINE STRUCTURE OF THE IONOSPHERE FROM MEASUREMENTS OF
  SIGNAL BROADENING DIRECTLY ON IONOGRAMS. IT IS NOTED THAT, IN
  DETERMINING THE PARAMETERS OF A RADIO WAVE SCATTERING REGION, IT IS
  NECESSARY TO DETERMINE THE REAL RECORDING LEVEL, SINCE THIS IS THE MAIN
  FACTOR GOVERNING INVARIABILITY OF THE RECORDING APPARATUS. IT IS SHOWN
  THAT, WHEN DETERMINING THIS LEVEL FROM REAL RECORDINGS, IT IS POSSIBLE
  TO ELIMINATE SIGNAL BROADENING DUE TO THE DISPERSIVE PROPERTIES OF THE
  MEDIUM. AN ALGORITHM FOR CALCULATING THE PARAMETERS OF A SCATTERING
  REGION IS PROPOSED.

UNCLASSIFIED

USSR   UDC 577.3

ABDULLAYEV, G. B., MAMEDOV, Sh. V., DZHAFAROV, A. I., and PERELYGIN, V. V.,
Institute of Physics and Institute of Physiology

"Inhibition of Free Radicals in the Retina by Selenium"

Abstract: The electron paramagnetic resonance spectrum was studied in the
enucleated eyes of rabbits two days after they received parenteral injections
of sodium selenite. At room temperature, both the control and experimental
preparations of the retina and pigment epithelium showed an almost symmetri-
cal singlet with $g = 2.0035 \pm .005$ and $\Delta H_m = 6 \pm .5$ oe. The only difference was
in the intensity of the signal. The signals were more intense in the pigment
epithelium. At the temperature of liquid nitrogen, all the parameters of the
line were almost unchanged, but there was a substantial decrease in intensity
of the signal. After the specimens were thawed at room temperature, the in-
tensity of the signal was completely restored. In specimens from animals
treated with selenium, the shape, g-factor, and width of the line remained
unchanged, although there was a significant decrease in concentration of the
paramagnetic centers compared to the control.
1/1

1/2   015   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--STUDY OF COMPOUNDS OF TIN WITH GROUP IV ELEMENTS BY THE NUCLEAR
  GAMMA RESONANCE METHOD -U-
AUTHOR-(04)-PEREPECH, K.V., SEREGIN, P.P., SHIPATOV, V.T., BOLTAKS, B.I.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. AKAD. NAUK SSSR, NEORG. MATERIALY, APR. 1970, 6, (4),
  818-819
DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GAMMA RADIATION, TIN COMPOUND, CHEMICAL BONDING, SPECTROSCOPIC
  ANALYSIS, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1448   STEP NO--UR/0363/70/006/004/0818/0819

CIRC ACCESSION NO--AP0130381
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0130381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NUCLEAR GAMMA RESONANCE SPECTRA OF A NUMBER OF COMPOUNDS OF SN WITH GROUP IV ELEMENTS (SNSE, SNTE, ETC.) WERE STUDIED AND INTERPRETED IN TERMS OF THE CHEMICAL SHIFT AND QUADRUPOLE SPLITTING OF THE CORRESPONDING MATERIALS. THUS IN THE CASE OF THE DICHALCOGENIDES THE CHEMICAL SHIFT DIMINISHED WITH INCREASING IONICITY OF THE CHEMICAL BOND, AS PREDICTED BY THEORY. NO TRACE OF THE COMPOUND SN SUB2 SE SUB3 WAS FOUND, ONLY A SUPERPOSITION OF THE SPECTRA OF SNSE AND SNSE SUB2.

UNCLASSIFIED

USSR   UDC 621.314.14

ZHARKOV, S. A., VASIL'YEV, I. M., PEREPECHAYEV, V. V., SIDORENKO, A. V., and KHOKHLOVA, M. M., Leningrad Institute of Aircraft Instrument Building

"A Wide-Band Instrument for Converting the Current of Semiconductor Nuclear Emission Detectors to a Pulse Train"

Abstract: The authors describe a wide-band circuit for converting the current of semiconductor detectors of nuclear emission to a pulse train. The circuit is based on the equivalent of a four-layer diode. Stabilization of the bias on the control electrode made it possible to extend the dynamic range of data conversion by a factor of approximately 20, as well as to reduce the number of circuit elements and the required electrical energy. The device is simple, low in cost, has small overall dimensions and low weight (volume of no more than 100 cc, weight less than 50 g), and is highly shock resistant. The small number of elements ensures high circuit reliability, and enables accommodation in a hermetically sealed casing along with the power supply. The power for the entire converter can be supplied by low-voltage batteries (12-16 V). A distinguishing feature of the device is that the electrical energy requirement is proportional to the emission dose rate. In the absence
1/2

USSR

ZHARKOV, S. A., et al., Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71,
pp 101-103

of radiation, the circuit takes practically no electrical energy. At a dose
rate of 10^4 r/hr, the power consumption is 0.08 W, while the corresponding
figure for 1 r/hr is 0.005 W -- 1.5-2 orders of magnitude less than the most
economic conventional pickups. The prf is a nearly linear function of dose
rate in the range from 10 to 10^4 r/hr. The circuit has excellent operational
stability. Drift of the frequency emitted by the circuit when the detector
was replaced by an equivalent resistor at constant temperature was no more
than +0.02% in five days of operation.

2/2

USSR

UDC 528.482

PEREPECHKIN, A. A.; Dnepropetrovsk Engineering-Construction Institute

"Foundation Subsidence of the 800,000 kw Turbogenerator of the Slavyansk GRES Now Under Construction"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geod. i Aerofotos'yemka, No 4, 72, pp 91-98

Abstract: The Kopi 007 precision level was used to measure subsidence in the foundation of the turbogenerator of the new Slvyansk GRES. Measurements were taken in four series, spaced at intervals of several months. All data were processed by the methods of mathematical statistics, with the utmost attention being given to instrumental error.
    Subsidence was found to be uneven over the surface of the foundation, with the maximum occurring in the middle portion. Mean-square error of the measurements was calculated to be +0.08 mm.
    It is believed that the suty will serve as a model for subsidence determinations of the same general type.

1/1

USSR

UDC 678.004.14:663.63

PEREPECHKIN, L. P., and DUBYAGA, V. P.

"Semipermeable Membranes for Desalination and Purification of Water"

Plasticheskiye Massy, No 4, Apr 71, pp 49-52

Abstract: A commonly used material for the production of membranes for
desalination of water is cellulose acetate. These materials display unique
and favorable properties in comparison with membranes made of other polymers.
The article describes the formation of semipermeable membranes from the melt
and from solutions via the dry and the wet methods. In the production of
membranes acetate is obtained by a multistage process. During the acety-
lation of cellulose by the homogenious method a viscous concentrated so-
lution is obtained from which subsequently cellulose acetate is precipitated
in the form of solid white particles. In principal there is no reason why
the syrup cannot be directly formed into membranes. This would significantly
shorten the production cycle and consequently the cost of the membrane. It
was found that heat treatment of the membranes, particularly during the
first 15 minutes has a significant effect on the properties of the membranes.
As a result of heat treatment the coefficient of water permeability increases
1/2

USSR

PEREPECHKIN, L. P., and DUBYAGA, V. P., Plasticheskiye Massy, No 4, Apr 71, pp 49-52

significantly, while the salt permeability decreases and the selectivity of the membranes, characterized by α/K ratio, increases. As the temperature of the formation of the membrane is increased the selectivity of the membrane decreases. The conclusion is made that the temperature of the precipitation bath has a significant effect on the structure and properties of the membrane. In order to improve the selectivity of membranes and increase their efficiency pore formers are introduced into the solution from which the polymer is precipitated. A mechanism is proposed for the effects of pore formers on the structure and permeability of the membranes.

2/2

USSR

UDC 534.121.2:661.7

_3_

APEL'TSIN, I. E., KARELIN, F. N., LISHNEVSKIY, V. A., DUBYAGA, V. P., PEREPECHKIN, L. P., MIRONOVA, L. V., and ZAYCHUKOVA, N. A.

"Acetylcellulose Membranes for Desalination of Water by Hyperfiltration"

Moscow, Vodosnabzheniye i Sanitarnaya Teknika, No 6, 1971, pp 18-19

Abstract: Three types of membranes are reported suitable for water desalination. One prepared from an acetone solution of acetylcellulose "Etrol B" with a small quantity of water and magnesium perchlorate was deposited on glass at -12°C, kept in air for 3.5 min, the membrane was separated from glass and kept in water at 80° for 70 min. Such a membrane gave a 84-88% desalination with 500 $1/m^2 \cdot$day of water passage at 50 atm pressure. Using the same "Etrol B" acetyl cellulose in acetone and formamide, the membrane was formed on glass at 18°C, then treated at 80°C for 30 min. This membrane gave a 83-85% desalination with 800 $1/m^2 \cdot$day passage capacity at 50 atm pressure. Acetyl cellulose membranes prepared from acetic acid solution containing triethanolamine acetate and sulfate admixtures gave a 90-91% desalination with 300 $1/m^2 \cdot$day passage of water at 65 atm pressure.

1/1

USSR   UDC 615.373.612.112].015.4:612.014.3-085.2

PROTASOVA, O. V., PEREPECHKINA, N. P., and MATS, A. N., Institute of Vaccines
and Sera imeni Mechnikov

"The Action of Antileukocyte Sera on Heterogeneous Cell Populations"

Abstract: Suspensions of mouse spleen cells were drawn into capillary tubes,
these were placed in nutrient media without serum (control) and with anti-
leukocyte sera obtained from rabbits and, 24 hrs later, the extent of migra-
tion of the cells through the medium was determined. Approximately similar
inhibition of migration was induced by sera specific to thymocytes, lympho-
cytes, and macrophages, while sera containing antibodies to myeloid cells
inhibited the migration of the spleen cells to the greatest degree. Since
administration of antimyeloid serum to mice receiving skin grafts did not
prolong the survival of the grafts, it is concluded that the beneficial
effects exerted by antileukocyte sera on transplants are due to the action
of antilymphocyte, antithymocyte, and antimacrophage antibodies present in
those sera.
1/1

USSR   UDC: 632.95

MEDVEDEV, V. I., PEREPECHKINA, Ye. A.

"Results of a Laboratory Check on the Concentration of Residual
Quantities of Organochlorine Pesticides in Food Crops and Fodder
According to Materials of the Vil'nyus Sanitation and Epidemio-
logical Station"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika
otravl. (Pesticides -- Safety Measures in Using, Toxicology,
and the Poison Clinic--collection of works), vyp. 9, Kiev,
1971, pp 71-77 (from RZh-Khimiya, No 7, Apr 72, Abstract No
7N581)

Translation: In 1967-1970, analyses were made of 274 samples of fodder and
699 samples of food products (meat, eggs, milk and dairy products, vegetables,
fruits, grain, flour and groats) for residues of DDT, and of 270 samples of
fodder and 693 samples of food products for residues of hexachlorocyclohexane.
The percentage of positive samples (at least 0.01-0.02 mg/kg for DDT, and
0.07-0.1 mg/kg for hexachlorocyclohexane) in analyses for DDT was a 2.6% in
green fodder, 2.3% in rough fodder, and 5.0% in concentrated fodder. In
analyses for hexachlorocyclohexane, the corresponding figures were 6.4% in
1/2

USSR

MEDVEDEV, V. I. and PERSPECHKINA, Ye. A., Gigiyena primeneniya, tokoikol. pesi-itsidov i klinika otravl., 1971, pp 71-77

green fodder and 4.0% in concentrated fodder. No hexachlorocyclohexane was detected in rough fodder. In cow's milk in 1968, up to 0.3 mg/liter of DDT was found in 41% of the cases, and up to 0.6 mg of hexachlorocyclohexane was found in 15% of the cases. The percentage of the samples of other food products contaminated with DDT or hexachlorocyclohexane fluctuated from 5 to 17%. In 1970, no DDT or hexachlorocyclohexane was detected in food products. DDT in quantities of 0.02 mg/liter was detected in breast milk in 33% of the mothers examined, even though none had come into contact with pesticides in their work, and none had lots close to farms. A. I. Volkov.

1/2   024   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--ORIENTATION AND CRYSTALLINITY OF POLY(ETHYLENE TEREPHTHALATE)
  STUDIED BY AN ACOUSTICAL METHOD -U-
AUTHOR-(05)-PEREPECHKO, I.I., GRECHISHKIN, V.A., KAZARYAN, L.G.,
  VASILENKO, ZH.G., BERESTNEV, V.A.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 438-42

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTALLINE POLYMER, AMORPHOUS POLYMER, POLYETHYLENE
  TEREPHTHALATE, X RAY DIFFRACTION ANALYSIS, ULTRASONIC VELOCITY, POLYMER
  STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0246   STEP NO--UR/0459/70/012/002/0438/0442

CIRC ACCESSION NO--AP0106902
                       UNCLASSIFIED

CIRC ACCESSION NO--AP0106902
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE ORIENTATION FACTOR (ALPHA) (W.
MOSELEY, 1960) OF POLY(ETHYLENE TEREPHTHALATE) I CONTG. BOTH CRYST. AND
AMORPHOUS REGIONS WAS DETD. BY X RAY DIFFRACTOMETRY. IT WAS
DEMONSTRATED THAT MOSELEY'S FORMULA ALPHA SIMILAR TO 1 MINUS (C PRIME2
SUB02-C PRIME2) (C SUB02 AND C ARE THE ULTRASOUND VELOCITIES IN
100PERCENT ISOTROPIC MATERIAL AND IN THE SAMPLE, RESP.) MUST BE REPLACED
BY ALPHA EQUALS (1 MINUS(C PRIME2 SUB02-C PRIME2)-(1 MINUS (C PRIME2
SUB02-C PRIME2 SUB01), WHERE C SUB01 IS THE ULTRASOUND VELOCITY IN
100PERCENT CRYST. MATERIAL. C SUB01 OF I WAS ESTD. FROM THE
DIFFRACTOMETRY DATA AND C SUB02 WAS DETD. EXPTL. USING A FULLY AMORPHOUS
I SAMPLE.

UNCLASSIFIED

1/2   023   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ANOMALOUS INCREASE IN THE STRENGTH OF PLASTICIZED POLY,VINYL
CHLORIDE -U-
AUTHOR-(02)-PEREPECHKO, I.I., TREPELKOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 40-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PLASTICIZER, MECHANICAL STRENGTH, POLYVINYL CHLORIDE,
SYNTHETIC RUBBER, MOLECULAR STRUCTURE, THERMAL EFFECT/(U)SKN40 SYNTHETIC
RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1705   STEP NO--UR/0191/70/000/002/0040/0041

CIRC ACCESSION NO--AP0112699
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0112699
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(VINYL CHLORIDE) (I)
PLASTICIZED WITH SKN-40 RUBBER TEMPS. NEAR THE GLASS TRANSITION TEMP. (T
SUBG) EXHIBITED INCREASED TENSILE STRENGTH (SIGMA). AT T LARGER THAN T
SUBG THE PLASTICIZED I HAD A LOWER SIGMA THAN THE PURE I. THE ANOMALOUS
INCREASE IN SIGMA MAY BE OBSD. IN NUMEROUS RIGID AND POLAR POLYMERS AT T
SIMILAR TO T SUBG, PRESUMABLY DUE TO A MORE EFFECTIVE MOL. INTERACTION
OF POLYMER CHAINS IN THE GLASS TRANSITION STATE.

UNCLASSIFIED

PEREPELITSA, A.A.

MEDICINE

by

Lieutenant Colonel of Medical Service
A.A. Perepelitsa

For ten years we studied many case histories of diseases and ailments in personnel of flight personnel who were declined unfit and limitedly fit to flight after ENT ailments. The main sheet the percentage distribution of flight personnel by age.

Age	Pilot	Navigator	Other crew members
20-25 years old	5.4	2.5	
26-30 years old	7.7	0.9	
31-35 years old	11.7	4.5	
36-40 years old	9.6	3.5	
Over 40 years old	6.3	2.9	
TOTAL	40.2	19.1	6.6

Among the unfit for flight there were: pilots 18.8%, navigators 19.0%, other crew members 10.0%. Among these of limited fitness there were pilots 22%, and navigators 6.4%.

The ailments which resulted in disqualification of flight personnel are distributed as follows: increased sensitivity to vestibular stimulations 28%, per diseases with various degrees of deafness 29.8%, paranasal sinus ailments and disturbances of their barofunction 18.3%, increased sensitivity to drops in barometric pressure (disturbance of the barofunction of ears) 10.6%, various ear ailments 6.3%.

Among the persons who had increased sensitivity to vestibular stimulations 64% were in the 20-25 year age group, and 10.7% was older than 40 years. In this group runners, radiomen, wireless radio operators and others accompanied with neurasthenia, chronic gastritis, maxillary sinus inflammation, and with other ailments.

The detection of increased sensitivity to vestibular stimulation, chiefly in young people, could be to some extent explained by the not sufficiently careful selection in the admission to the school of young aviation specialists and to their schools, and with the weak training during instruction and in the first months and years of staying in units. However, by conducting observations over the evolution of vestibular disorders as a cause of disqualification, we could establish that recent years show a tendency that the specific weight of vestibular disorders decreases.

At the analysis of the second group of ailments it was noted that about 40% of them happen to have cochlear neuritis, while in the group of increased sensitivity to vestibular disorders the majority was composed of young people, in this group with cochlear neuritis about 70% of the people was older than 30 years.

In 80% who were disqualified for deafness, the longevity of service was over 10 years. Among them, 93% served in fighter bomber aviation. The obtained findings make it possible to suppose a...

hearing in flight personnel (mass audiometry with the aid of
electroacoustic apparatus), and also the various sanitary hygienic
and therapeutic preventive measures are necessary which are aimed
at the prevention of lesions from noise and barotrauma.

Analysis of the causes of flight personnel disqualification
helps to observe the evolution of morbidity rate, to evaluate the
selection system, to make more precise the expert requirements
for health condition, and, first of all, to work out therapeutic
preventive measures aimed at the maintenance of health and of
flight working capacity.

J-9453

102

Inorganic Compounds

GOLUB, A. M., PEREPELITSA, A. P., MAKSIN, V. I., AGANIYAZOV, K., Department of Inorganic Chemistry, Kiev State University imeni T. G. Shevchenko

"Dimolybdates of Rare Earth Elements and Alkali Metals"

Abstract: By measuring pH, electrical conductivity and solubility, the authors studied the ternary system $R(NO_3)_3-K_2MoO_4-H_2O$ where R is yttrium and scandium. It is found that two compounds are formed: $R_2(MoO_4)_3$ and $KR(MoO_4)_2$. Dimolybdates with the general formula $MR(MoO_4)_2$, where M is K and Rb, and R is Sc, Y, Tb and Er were synthesized from aqueous solutions for the first time. The thermographic behavior of these compounds was studied (the melting point and temperature of crystallization of x-ray amorphous residues were determined). Debye powder patterns were used for determining the interplanar spacing of $KY(MoO_4)_2$.

1/1

USSR

GIMADI, E. KH and PEREPELITSA, V. A.

"Statistically Effective Algorithm for Separation of a Hamiltonian
Contour (Cycle)"

Diskretn. Analiz. [Discrete Analysis -- Collection of Works], No 22,
Novosibirsk, 1973, pp 15-28 (Translated from Referativnyy Zhurnal Kiber-
netika, No 10, 1973, Abstract No 10V350)

Translation: A statistically effective algorithm is described for de-
termination of the Hamiltonian contour (cycle) in an n-point probability
(or incomplete) graph. It is proven that with probability $p \geqslant (1+\varepsilon)\sqrt{\frac{\ln n}{2n}}, \varepsilon \approx$
$\sqrt{\frac{\ln \ln n}{\ln n}}$ of appearance of a line, the algorithm almost always separates
Hamiltonian contours in the graph, expending $\sim n^2$ memory locations and
$\sim \frac{n^2}{\ln n}$ comparison-type operations. It is also shown that in the case
of weighted graphs, when the lines are equally probably assigned an in-
teger from sector [a, b], the algorithm almost always separates the
minimum Hamiltonian contour if the number of integer points on [a, b]
is not over $(1-\varepsilon)\sqrt{\frac{2n}{\ln n}}$. The same results are produced in the case of
nonoriented graphs. 11 Biblio. Refs.   Author's view

USSR   UDC 631.547:634.8

SMIRNOV, K. V., and PEREPELITSINA, YE. P., Samarkand Section of the Horti-
culture, Viticulture, and Viniculture Scientific-Research Institute Imeni
R. R. Shreder

"The Action and Aftereffect of Gibberellin on Grape Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 12, Dec 70, pp 53-55

Abstract: Treatment of grape plants with gibberellin in concentration of
100 mg/l increased by 1.5-2 times the weight of the berries and of clusters;
optimal schedule called for treating the plants towards the end of their
blooming or 3-5 days after the termination of blooming. It was also found
that the fewer clusters treated with gibberellin, the greater was the weight
of individual berries: treatment of 5% of the bloom increased the cluster
weight by 202.4%, while a 100% treatment gave only a 125.3% increase. The
weight increase was accompanied by a drop in the content of sugar. It was
found that gibberellin treatment has no detrimental effect on the yield in
subsequent years following the treatment; the plants were not weakened.

1/1

1/2   011   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--INFLUENCE OF ROTATION SPEED OF A DISK CONTACTOR DURING THE REFINING
OF OILS WITH FURFURAL -U-
AUTHOR-(03)-PEREPELITSKIY, B.B., MIRZOYEV, S.D., DAVIDYAN, L.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(1), 63-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LUBRICATING OIL, FURFURAL, LUBRICANT REFINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1637   STEP NO--UR/0152/70/013/001/0063/0064

CIRC ACCESSION NO--AT0118616
                     UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118616
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR REFINING AUTOMOBILE OILS OF D
PRIME20 0.9143-0.9192, KINEMATIC VISCOSITY OF 100DEGREES 6.52-10.35 CST,
AT INTAKE VELOCITY 0.6 M PRIME3-M PRIME2-HR AND FURFURAL INTAKE STOCK
WT. RATIO 0.9-1.2:1, THE TITLE DISK SPEED WAS 250-300 RPM. FOR DIESEL
OIL DISTILLATE OF D PRIME30 0.924, VISCOSITY 12.27 CST, INTAKE 0.5 M
PRIME3-M PRIME2-HR, AND WT. RATIO 1.8DEGREES1, THE SPEED WAS 300-400
RPM.   FACILITY: AZERB. INST. NEFTI KHIM, IM. AZIZBEKOVA, BAKU,
USSR.

UNCLASSIFIED

TITLE--RESISTANCE OF GROG, DINAS, AND SILICEOUS REFRACTORIES TO THE ACTION
OF BASIC OPEN HEARTH SLAGS -U-

AUTHOR-(03)-FLYAGIN, V.G., RUTMAN, D.S., PEREPELITSYN, V.A.

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(3), 32-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OPEN HEARTH FURNACE, SLAG, REFRACTORY MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0871   STEP NO--UR/0131/70/035/003/0032/0037

CIRC ACCESSION NO--AP0118044
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0118044
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESISTANCE OF DIFFERENT
REFRACTORIES TO THE ACTION OF THE BASIC SLAG (SIO SUB2 17.58, AL SUB2 O
SUB3 4.80, FEO 10.50, CAO 46.12, MGO 15.60, AND MNO 5.38PERCENT) WAS
STUDIED. THE CONTENT OF 2CAO.SIO SUB2 DETD. BY PETROGRAPHIC ANAL. WAS
50PERCENT. THE SLAG RESISTANCES WERE EVALUATED ACCORDING TO
THERMODYNAMIC CONSTS. OF INTERACTIONS OF REFRACTORIES WITH SLAGS AND
ACCORDING TO SOLY. OF REFRACTORIES IN THE SLAG. THE SLAG RESISTIVITY OF
SIO SUB2 AND MULLITE AS MAIN PHASES OF SILICEOUS AND GROG REFRACTORIES
TO THE ACTION OF 2CAO.SIO SUB2 WAS CONSIDERED. THE CALCN. OF THE
ISOBARIC POTENTIAL AND EQUIL. CONST. WAS CARRIED OUT FOR VARIOUS
REACTIONS AT 1400, 1500, AND 1600DEGREES. THE EQUIL. CONST. K WAS
CALCD. ACCORDING TO THE FORMULA LOG K EQUALS MINUS (DELTA F T
DEGREES-4.575T), WHERE DELTAFT DEGREES IS THE ISOBARIC ISOTHERMAL
POTENTIAL, AND T IS TEMP. OF REACTION. FOR THE REACTION CORRESPONDING
TO FORMATION OF ANORTHITE AND CORUNDUM THE MAX. DELTAFT DEGREES WAS
FOUND. THEREFORE, ACCORDING TO THERMODYNAMIC CALCNS., SIO SUB2 IS MORE
STABLE THAN MULLITE TO THE ACTION OF BASIC SLAGS. EXPTL., THE SLAG
RESISTANCE OF THE DINAS, SILICEOUS, AND GROG REFRACTORIES WAS DETD. BY
THE CRUCIBLE METHOD (D. N. POLUBOYARINOV, 1952). CRUCIBLES WERE HEATED
TO 1500DEGREES WITH TEMP. INCREASE 250DEGREES-HR. THE DEGREE OF SOLY.
OF CRUCIBLES IN THE SLAG WAS DETD. CHEM. THE GROG REFRACTORIES SHOW A
LOW SLAG RESISTANCE. A HIGHRESISTANCE OF SILICEOUS REFRACTORIES IS
CONDITIONED BY THE PRESENCE OF CRISTOBALITE IN THE PHASE COMPH.
FACILITY: VOST. INST. OGNEUPOR., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

P

FLYAGIN, V. G., RUTMAN, D. S., PEREPELITSYN, V. A.

"Stability of Chamotte, Dinas, and Silica Refractories to the Action of Basic Open-Hearth Slags"

Moscow, Ogneupory, No 3, Mar 70, pp 32-37

Abstract: On the basis of the positive experience of the usage of semiacid bucket brick and silica rammed lining masses, the authors studied the slag resistance of chamotte, dinas, and silica refractories when exposed to basic open-hearth slag of the composition: 17.58% SiO_2, 4.80% Al_2O_3, 10.50% FeO, 46.12% CaO, 15.6% MgO, and 5.38% MnO. The thermodynamic parameters of the reaction between the refractory and the slag were calculated. Thermodynamic calculations showed that silica is apparently more resistant than mullite to the influence of basic slags rich in calcium silicate. The slag resistance of dinas, silica, and chamotte refractories was determined by measuring the concentration of the refractory in the slag melt by the crucible method. The zones of contact of slag and crucible were also studied microscopically. It was concluded that the increase slag resistance
1/2

USSR

FLYAGIN. V. G., et al., Ogneupory, No 3, Mar 70, pp 32-37

of silica refractories in comparison with chamotte refractories
is not only a result of the nature of the material, but also its
capability for disintegration, related to the polymorphic con-
versions of quartz upon heating. Lower disintegration of
products and higher slag resistance can be achieved by using
roasted quartzite. However, this approach is not technologically
suitable. Disintegration can be greatly decreased if the re-
fractory contains 3-7% aluminophosphate binder, giving the
product high density and strength.

USSR

SLYS', I. G., PEREPELKIN, A. V., and FEDORCHENKO, I. M., Institute Problems of
Material Science, Academy of Sciences Ukrainian SSR

UDC 669.018.95

"Structure and Properties of a Sintered Stainless Steel Containing
Molybdenum Disulfide"

Abstract: The structural and phase properties and the physical and mechanical
changes determined by them were studied when occurring in the sintering of
steel Kh23N18 which contained from 10 to 50 wt% MoS_2. It was established that
in sintering a composite in a medium which ensures high thermal stability of
MoS_2 (such as dry argon), intensive diffusion interaction of the alloy elements
and MoS_2 occurs with the formation of a heterogeneous structure consisting of
iron and chromium sulfides and intermetallides and carbides. It was observed
that a sharp change in the physical and mechanical properties of a sintered
composite, upon increasing the MoS_2 above 50 vol%, was associated with the
development of a new type structure in the material. It was established that,
although the method of dynamic hot pressing ensures preservation of a signifi-
cant amount of MoS_2 in the structure of the material, its hardness rises
sharply. 2 figures, 4 tables, 16 bibliographic references.
1/1

USSR   UDC 620.193.01

ARENSBURGER, D. S., KOPYLOVA, V. P., PEREPELKIN, A. V., Institute
of Problems of Material Science, Academy of Sciences UkrSSR

"Porous Metal-Ceramic Titanium-Based Alloys"

Abstract: Problems of the production and corrosion resistance of titanium
alloys with molybdenum, chromium, and palladium are studied. A preliminary
estimate is presented of the possibility of producing complexly alloyed
powders of these alloys by hydrogenation and grinding of the alloys. Metal
ceramic alloys such as Ti20Mo5CrO.2Pd, sintered at 1,400°C, have high resis-
tance to hot and concentrated solutions of hydrochloric and nitric acid and
can be used as a basis for the production of permeable materials. Hydrogena-
tion and subsequent dehydrogenation of sintered specimens of multicomponent
alloys of titanium allow the production of coarsely ground, complexly alloyed
powders.

1/1

USSR   UDC 621.762.5

KORKH, L. M., PUGINA, L. I., PEREPELKIN, A. V., and FEDORCHENKO, I. M.,
Institute of Problems of Material Science, Academy of Sciences Ukr SSR

"Processes Occurring During Sintering of Iron-Graphite Containing Zinc
Sulfide"

Kiev, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 18-22

Abstract: A study was made of the behavior of zinc sulfide -- one of the
basic components introduced into iron-graphite cermet materials to improve
their antifriction properties. The paper includes a study of the effect
of porosity on the variation in chemical composition of ZhGr3Tss4 materials
during sintering. The effect of temperature, isothermal holding time,
moisture of the protective environment, and its composition (argon, hydrogen)
on the intensity of weight loss of the zinc sulfide placed in the heating
zone in powdered form was also studied.

It was found that during heating in hydrogen, zinc sulfide can partially
decompose. With an increase in the hydrogen temperature and humidity the
decomposition intensity increases. During sintering of ZhGr3Tss4 in
1/2

USSR

KORKH, L. M., et al, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 18-22

hydrogen, the decomposition products of the zinc sulfide interact with the surface of the iron particles to form iron sulfide and their solid solution in zinc sulfide. At a sintering temperature above 975°C, a liquid phase is formed in the material -- a sulfide-carbide eutectic enveloping the surface of the iron particles -- which during sintering under pressure gives the material its fibrous structure. With a decrease in porosity, the content of sulfur and zinc in the sintered ZhGr3Tss4 material increases. Thus, the nonporous material contains twice as much sulfur and six times more zinc than the material with a porosity of 20 percent.

2/2

1/2   029   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--FLOW OF DYE PASTES OVER CYLINDRICAL CHANNELS -U-

AUTHOR-(03)-GORDIYEVSKIY, L.A., PEREPELKIN, L.B., VINOGRADOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 146-149

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUID FLOW, DYE, FLUID VISCOSITY, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1937   STEP NO--UR/0170/70/018/001/0146/0149

CIRC ACCESSION NO--AP0125526
                         UNCLASSIFIED

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIG. 1.   SCHEME OF EXPERIMENTAL
 INSTALLATION FOR STUDY OF PASTE FLOW OVER TUBES.   FIG. 2.   TRUE
 INVARIANT CURVES OF PASTE FLOW OF ACIDIC CLARET WITH DIFFERENT CONTENT
 OF DRY SUBSTANCES, D SUBR, SEC PRIME1 NEGATIVE, TAU R CYNE-CM PRIME2.
 FIG. 3. EFFECTIVE VISCOSITY OF DYE PASTES VERSUS CONTENT OF DRY
 SUBSTANCES. ETA, POISE; C, PERCENT.   SUMMARY.   THE STUDY OF AQUEOUS
 PASTES OF AZO DYES WITH ACIDIC CLARET AS AN EXAMPLE SHOWED THAT THESE
 ARE THE SYSTEMS WITH HIGHLY EXPRESSED VISCOSITY ANOMALY WHICH, HOWEVER,
 GIVE THE INVARIANT FLOW CURVES RELATIVE TO THE SIZES OF CAPILLARIES AND
 TUBES (DIAMETERS DIFFER BY 77 TIMES AND LENGTHS BY 87 TIMES).   THIS
 ALLOWS THE DATA ON VISCOSIMETRY TO BE USED FOR CALCULATION OF PASTE FLOW
 OVER TUBES. THE DEPENDENCE OF VISCOSITY OF AQUEOUS PASTES ON
 CONCENTRATION IS FOUND.

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"Effect of Alloying on the Thermal Expansion of Super Invar Alloy"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1972,
pp 62-64

Abstract: Advances in quantum electronics and superhigh-frequency tech-
niques (precision toolmaking, metrology) have created an ever-increasing
demand for alloys with extremely low thermal expansivity including Super
Invar alloy (31-33% Ni; 4-6% Co; the balance--iron). This study concerns
the effect of Ni, Co, Si, Mn, Cu, Mo, Nb, Re, Cr, and Ti on the coefficient
of linear thermal expansion (CLTE) of Super Invar alloy within 20-80°C. It
was found that Cu (up to 0.6%), Mo (up to 0.6%), Nb (up to 0.6%), Cr (up
to 0.2%), Mn (up to 0.9%), Re (up to 0.6%) raise the stability of the
phase and concurrently increase the CLTE of Super-Invar alloy. Minor
additions of silicon markedly increase the CLTE but lower the stability of
the γ-phase. As the silicon content is increased from 0.06 to 0.1%, CLTE
increases from $-2 \cdot 10^{-7}$ deg^{-1} to $21 \cdot 10^{-7}$ deg^{-1} at 20-80°C and the initial
$\gamma \rightarrow \alpha$ phase transformation temperature increases from -40 to 0°C. It is
suggested that Ni content in the Super Invar alloy be kept down to a
minimum. (3 illustrations, 1 table, 6 bibliographic references)
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"Polymer Coatings for the Treatment of Wounds and Burns (Survey of the Literature)"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 11, Nov 70, pp 5-11

Abstract: The article describes the state-of-the-art in the development of polymer coatings for the treatment of wounds and burns, in the USSR and abroad. A survey of the literature indicates the following two basic trends:

      1. Finished coatings, i. e. coatings preformed as film or foam. Film-type and especially foam-type synthetic finished polymer coatings have significant advantages over ordinary dressings, mainly because of the lack of adhesion to the wound surface. Finished polymer coatings also include biological films, such as the fibrin films suggested by A. N. FILATOV. The use of all finished

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coatings necessitates secondary fixing dressings, which limits their potential applications.

2. Film-forming composites. Foreign companies working on the problem of creating liquid dressings include Aktibolaget Bofors (Sweden) and Johnson and Johnson (U.S.). Interesting work has been done in the last few years in Hungary, Czechoslovakia, West Germany and other countries. Of this group of preparations, collodion and cleol are widely known in the USSR. However, coat-ings obtained with the use of these preparations possess low skin adhesion and are insufficiently elastic. In 1959 the Pharmaco-peic Committee of the Ministry of Health approved the preparation Furaplast based on chlorinated polyvinyl chloride resin with a plasticizer in a mixture of chloroform-acetone solvents. Compos-ites based on chlorinated polyvinyl chloride resin dissolved in butyl acetate (solution No. 1) and polyvinyl butyral dissolved in ethyl alcohol (solution No. 2) have been suggested. Methylene

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chloride has been added to accelerate drying and novocaine and
anesthesin have been used as anesthetics. However, coatings
based on these preparations are also insufficiently elastic,
crack and come off the skin in two days. The All-Union Scien-
tific Research Institute of Medical Polymers has developed film-
forming compositions -- SBV-14 (product of lacquer polymerization
of butyl methacrylate) and BMK-5 (solution of butyl methacrylate-
methacrylic acid copolymer in a mixture of chloroform with ace-
tone and the addition of a plasticizer). Coatings based on SBV-
14 and BMK-5 are strong, elastic, transparent, possess good skin
adhesion, do not impede the healing of covered wounds and stay on
the skin for over eight days. Clinical tests show that protec-
tive films based on these preparations can be successfully used
for the pre-operative preparation of the skin, as well as for
closing postoperative sutures, the skin around fistulas and mi-
nor skin injuries. However, the compositions cannot be applied
to wound or burn surfaces because of the presence of organic
solvents in them, which cause considerable pain on an open
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wound (burn), and such coatings possess negligible moisture per-
meability. These shortcomings make it impossible to use such
lacquer compositions for the closing of wounds and burns. The
foreign literature contains reports to the same effect.

The search for dressings possessing high film-forming prop-
erties and skin adhesion combined with painlessness of applica-
tion has led to aqueous film-forming compositions. The All-Union
Scientific Research Institute of Medical Polymers has done re-
search on film-forming compositions based on water dispersions of
polymers and aqueous solutions of polymers. Animal (rabbit) ex-
periments have shown that latex BK is fast-setting on a dried
wound surface and retains good adhesion during healing. How-
ever, when latex is applied to a burn surface under liberal
exudation, it has been found that the low moisture permeability
of the latex film prevents conditions for the runoff of the
exudate. The liquid being released accumulates under the film,
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which rules out the possibility of using latex films as liquid
surgical dressings. Little information exists on aqueous solu-
tions of film-forming polymer compositions. The film formation
in such polymers is based on the self-elimination of water (evap-
oration) by analogy with film formation based on lacquer solu-
tions of polymers. This stretches out the process of the forma-
tion of a protective film. The All-Union Scientific Research
Institute of Medical Polymers has developed a composition based
on alginic acid salts. Animal experiments have shown that algin-
ate compositions do not cause pain and form on a wound surface a
coating which coalesces in 24 hours with live tissue and remains
until complete epithelization and gives good protection to the
wound and young epidermis. The general healing pattern under an
alginate film indicates that alginate films have the same effect
as biological plates, while possessing distinct advantages over
the latter.

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