

USSR

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

BIKTIROVA, V. V., VUL', A. YA., POLYANSKAYA, T. A., SIKHARULIDZE, G. A.,
TURKEVICH, V. M., UKHANOV, YU. I., and SHMARTSEV, YU. V.

"Production and Electrical Properties of Semiconducting Compound $CdSnAs_2$ "

Tr. Leningr. politekhn. in-t (Works of Leningrad Polytechnic Institute), 1971,
No 325, pp 3-9 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1443 by authors)

Translation: The authors describe a method of growing large single crystals of the ternary semiconducting compound $CdSnAs_2$ by zonal recrystallization with seed under special temperature conditions. The existence of holes with high mobility is inferred from the investigation of the dependence of specific resistance and Hall coefficient on magnetic field induction in p-specimens. The dependence of magneto-resistance on the angle between current-density and magnetic-induction vectors in n-specimens confirms the assumption regarding the sphericity of isoenergetic surfaces in the conduction band.

1/1

- 33 -

Converters

UDC 681.142.6:681.142.53

USSR

SMOLOV, VLADIMIR BORISOVICH; CHERNYAVSKIY, YEVSENIY ALEKSANDROVICH; POLYANSKAYA, TAT'YANA IVANOVNA; KURDIKOV, BORIS ALEKSANDROVICH

"All-Purpose Electronic Information Converter"

Universal'nyye elektronnyye preobrazovateli informatsii (cf English above), Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 5/4 ref. 1 r 28 k

Abstract: In the book the theoretical prerequisites are considered which lie at the base of planning of electronic information converters; an account is presented of the basic elements and units fulfilled by semiconductor elements. Great importance is allotted to problems of conversion of the normalized amplitude of a-c voltage into binary code; the possibility is shown of fulfillment of mathematical operations with coding of the d-c and a-c voltages; and problems are considered of the evaluation of information reliability of voltage conversion. The book is intended for engineers concerned with problems of the construction of up-to-date systems of monitoring and control, both in the field of contemporary machine-building and in other branches of technology which use digital and combined computing devices. It will be useful also for students and graduate students of higher educational institutions who are connected with the development of devices for computing, control, and information-measuring techniques.

1/6

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

TABLE OF CONTENTS

Foreword	3
Chapter I. General Theoretical Problems And Principles Of Construction Of General-Purpose Electronic Information Converters	5
I.1 Perspective development of electronic information converters	5
I.2 Classification of general-purpose electronic information converters	7
I.3 Principal characteristics of signals and channels	10
I.4 Shaping of information	17
I.5 Transmission of information	20
I.6 Conversion of information	24
I.7 Processing of information	34
I.8 Storage of information	39
I.9 Distribution of information	43

2/6

- 40 -

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

I.10 Peculiarities of construction of multichannel converters of voltage into code	45
Chapter II. Principal Elements Of Information Converters And Their Technical Characteristics	57
II.1 Switching elements	57
II.2 Shaper of standard d-c and a-c	67
II.3 Comparators	86
II.4 Commutators	100
II.5 Commutating devices with detachment of nonselected channels	109
II.6 Commutating devices with short circuiting of nonselected channels	121
II.7 Commutating devices of combined type	126
II.8 Comparative evaluation of commutating devices and determination of their dynamic characteristics	136

3/6

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

II.9 Choice of generalized criteria for evaluation of the quality of operation of commutating devices	143
II.10 Particular indices of operation of commutating devices	145
II.11 Reliability of characteristics of commutating devices	155
II.12 Evaluation of efficiency of commutating devices	163
II.13 Discrete-controlled phase shifter	178
Chapter III. Converter Of A-C Voltage Into Binary Code	181
III.1 Peculiarities of construction and use of PNK [? Converter of voltage to code]--(U _~ -K)	183
III.2 Counter PNK--(U _~ -N)	183
III.3 Discharge PNK--(U _~ -N) with formation of one discharge per period of standard voltage	192
III.4 Discharge PNK--(U _~ -N) with formation of one reading per half period of standard voltage	196

4/6

- 41 -

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

III.5 Discharge PNC--(U~ -N) with formation of several readings in each half period of standard voltage	201
III.6 MPNK [? Multiple Converter Of Voltage To Code]-- (U~ -N) with maximum structural carrying capacity	203
III.7 MPNK, general purpose with respect to type of current	206
III.8 Discharge-follow PNC--(U~ -N)	206
III.9 Evaluation of errors of PNC--(U~ -N) resulting from phase shifts in balancing loop	214
III.10 PNC--(U~ -N) with corrections of phase shifts	223
Chapter IV. Construction Of Combined Computing Devices Based On Information Converters	229
IV.1 Peculiarities of construction of combined computing devices	229
IV.2 Combined computing devices of passive type	231
IV.3 Combined computing devices of active type	241
IV.4 Combined computing devices with program fulfillment of mathematical operations based on a-c	248

5/6

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

IV.5 Inductive-resistance combined computing device of disconnected type	256
IV.6 Inductive-resistance combined computing device of compensating type	263
IV.7 Inductive-resistance combined computing device with program control	272
Chapter V. Evaluation Of Information Reliability Of Coding Of Voltages	277
V.1 Generalized parameters of efficiency and reliability of information converters	277
V.2 Determination of the indices of information reliability	279
V.3 Equipment methods of evaluation of information reliability	284
V.4 Determination and evaluation of noise characteristics and shifts of the quantization scale	295
V.5 Methods of evaluation of information reliability	301
Bibliography	307
6/6	

USSR

UDC 548.31

POLYANSKAYA, T. M., BORISOV, S. V., BELOV, N. V., Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences of the USSR

"The Key Role of Analysis of Intercation Distances in Oxygen Compounds With Heavy Cations (High Atomic Numbers)"

Moscow, Kristallografiya, Vol 18, No 6, Nov/Dec 73, pp 1141-1156

Abstract: This is a survey and critical analysis of experimental data on the intercationic distances E-E in the structures of oxygen compounds -- tungstates and molybdates -- with the participation of cations of groups I-V of the periodic table, as well as an analysis of distances E-R and R-R (E=W⁶⁺, Mo⁶⁺, and R represents rare-earth elements and Y) in a number of rare-earth compounds. The paper demonstrates the use of "tabular" intercationic distances for determining the anion part in structures with heavy and multiply charged cations.

1/1

172 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--WORK ORGANIZATION IN X RAY DIAGNOSTIC WARDS AND UNITS IN URBAN
THERAPEUTIC PROPHYLACTIC INSTITUTIONS -U-
AUTHOR--POLYANSKAYA, Z.M.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 2, 1970,
SUBMITTED 12 AUGUST 1969, PP 27-31
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIOLOGY, DIAGNOSTIC METHODS, MEDICAL PERSONNEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0715

STEP NO--UR/0753/70/000/002/0027/0031

CIRC ACCESSION NO--AP0132817

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 018

CIRC ACCESSION NO--AP0132817

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

ABSTRACT. IMPROVEMENTS IN WORK OF THE X RAY
DIAGNOSTIC SERVICE AND INTRODUCTION OF THE SCIENTIFIC ORGANIZATION OF
LABOR INTO THE ROUTINE OF ITS MEDICAL PERSONNEL ARE LARGELY DEPENDENT ON
STUDY OF WORK EXPENDITURES ON DIFFERENT FORMS OF ACTIVITY BY SPECIALISTS
IN X RAY UNITS AND WARDS.
FACILITY: ALL UNION SCIENTIFIC
RESEARCH INSTITUTE OF SOCIAL HYGIENE AND ORGANIZATION OF PUBLIC HEALTH
SERVICES IMENI N. A. SEMASHKO.

UNCLASSIFIED

1/3 034 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--WORK EXPENDITURES OF ROENTGENOLOGISTS ON SOME EXAMINATIONS -U-
AUTHOR--(03)--YAKHNICH, I.M., GENKIN, A.G., POLYANSKAYA, Z.M. *P*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 2, 1970,
SUBMITTED 25 JULY 1969, PP 31-35
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOLOGY, INDUSTRIAL HYGIENE, MEDICAL EXAMINATION, X RAY
EQUIPMENT, DIAGNOSTIC METHODS, DIGESTIVE SYSTEM, RADIATION PROTECTION

CONTROL MARKING--NC RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0699

STEP NO--UR/0753/70/000/002/0031/0035

CIRC ACCESSION NO--AP0132809

UNCLASSIFIED

2/3 034

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING RECENT YEARS THERE HAS BEEN A CONSIDERABLE CHANGE IN THE VOLUME AND NATURE OF WORK IN X RAY DIAGNOSTIC DIVISIONS AND OFFICES. MANY NEW RESEARCH METHODS HAVE BEEN INTRODUCED AND THERE IS EXTENSIVE USE OF SUCH SPECIAL INVESTIGATIONS AS BRONCHO, TOMO, ANGIOPULMON, ANGIOCARDIO AND ELECTROKYMOGRAPHY AND MANY OTHER TECHNIQUES AND NEW EQUIPMENT IS BEING USED. AT THE SAME TIME, THE SUPPLY OF PROTECTIVE EQUIPMENT FOR THERAPEUTIC INSTITUTIONS HAS IMPROVED. THE INCREASE IN VOLUME AND COMPLICATION OF THE WORK OF X RAY OFFICES ARE REFLECTED TO A CONSIDERABLE DEGREE IN THE NATURE OF THE WORK DONE BY THEIR SPECIALISTS. THESE FACTORS ALSO EXERT A CONSIDERABLE EFFECT ON THE WORK EXPENDITURES OF MEDICAL PERSONNEL. IT CAN THEREFORE BE CONCLUDED THAT TIME SPENT ON ROENTGENOSCOPIC EXAMINATION OF ORGANS OF THE CHEST CAVITY AND DIGESTIVE TRACT DURING OPERATION OF THE X RAY TUBE AND ON THE EXAMINATION AS A WHOLE DIFFERS AT INSTITUTIONS OF DIFFERENT TYPES. ACCORDINGLY, EXISTING WORK LOAD STANDARDS FOR ROENTGENOLOGISTS REQUIRE REVISION. IN FORMULATING DIFFERENTIAL WORK LOAD STANDARDS FOR IMPORTANT TYPES OF EXAMINATIONS IT IS NECESSARY TO TAKE INTO ACCOUNT THE TYPE OF INSTITUTION WHERE THEY ARE MADE, THE SPECIFIC TYPE OF EXAMINATION AND THE GROUP OF EXAMINED PATIENTS. THE FORMULATION AND ADOPTION OF DIFFERENTIATED WORK LOAD STANDARDS FOR ROENTGENOLOGISTS WILL FURTHER IMPROVE THE X RAY DIAGNOSTIC SERVICE. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF SOCIAL HYGIENE AND ORGANIZATION OF PUBLIC HEALTH SERVICES IMENI N. A. SEMASHKO, MOSCOW. FACILITY: MOSCCW SCIENTIFIC RESEARCH X RAY RADIOLOGICAL INSTITUTE.

UNCLASSIFIED

3/3 034
CIRC ACCESSION NO--AP0132809

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--FACILITY: HEALTH MINISTRY RUSSIAN SOVIET FEDERATIVE
SOCIALIST REPUBLIC.

UNCLASSIFIED

USSR

UDC 612.017:615.831.7-001.2-07:546.16-015

POLYANSKIY, A. A., Kiev Medical Institute, Kiev

"Effect of Fluorine on the Immunobiological Reactivity of Organisms Subjected to Ultraviolet Radiation"

Kiev, Vrachebnoye Delo, No 3, 1972, pp 133-136

Abstract: Ten groups of rats were given fluorine from 0.1 (control group) to 1 mg/kg body weight for 4-5 months. At the same time some of the rats were irradiated with 1/8 to 1 dose of UV light. The safest dose of fluorine which did not cause any changes in the animal organism was 0.1 mg/kg. Larger doses (0.35-1 mg/kg) decreased the immunobiological reactivity of the animal organism, changed the concentration of fluorine in bones and teeth, and of calcium and phosphorus in the blood serum, and of glycogen in the liver. These and other disturbances were characteristic for the early stages of fluorosis. Irradiation of rats with 1/8 erythema dose (ED) of UV light per day eliminated completely in some cases and decreased the harmful effect of fluorine (0.35 mg/kg doses) in others. The UV radiations was less effective in the case of 1 mg/kg doses of fluorine. The protective effect of the UV radiation against fluorosis is explained by changes in fluorine metabolism which results in the elimination of it from the animal

1/2

USSR

POLYANSKIY, A. A., Vrachebnoye Delo, No 3, 1972, pp 133-136

organism. At the same time the UV radiation strengthens or reactivates other immunobiological processes which mobilize defensive mechanisms in the animal organism.

2/2

- 29 -

AA0043571

P

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243862 ULTRASONIC FLAW DETECTION is based on two channel emission and absorption of semi-continuous ultrasonic vibrations and on defining the phase difference. To compensate possible errors, ultrasonic vibrations are absorbed and selected, isolating the resulting impulses, proportionally to their phase differences and in accordance with the duration of amplitude the medium is detected.

2/70

29.6.67 as 1168165/18-10. N.I. BRAZHNIKOV & A.A. POLYANSKIY (1.10.69) Bul 17/14.5.69. Class 42e.
Zit. Int.Cl.G Olf, G Olr.

gc

1/1

18

19762034

USSR

UDC 533.697

POLYANSKIY, A. F.

"Laminar Flow of a Viscous Gas in Narrow Channels of Constant and Variable Cross Section With Movable Walls"

Sb. nauch. tr. po teploobmenu i gidrodinam. Ch. 2 (Collection of Scientific Works on Heat Exchange and Hydrodynamics. Part 2), Krasnoyarsk, 1972, pp 69-84 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B400)

Translation: The steady-state motion of a viscous gas in plane narrow channels of both constant and variable cross sections is discussed; both walls can move with constant velocity v_1 and v_2 . The gas flow can occur both due to a pressure drop and due to the presence of the moving walls. The method of integral relationships is used to obtain an approximate solution for this problem and it yields a system of equations for given initial conditions completely solving the problem of the laminar flow of a viscous compressible gas in narrow channels with movable walls. V. I. Bogomazov.

1/1

AA0101179

POLYANSKIY A.F.
UR 0482

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

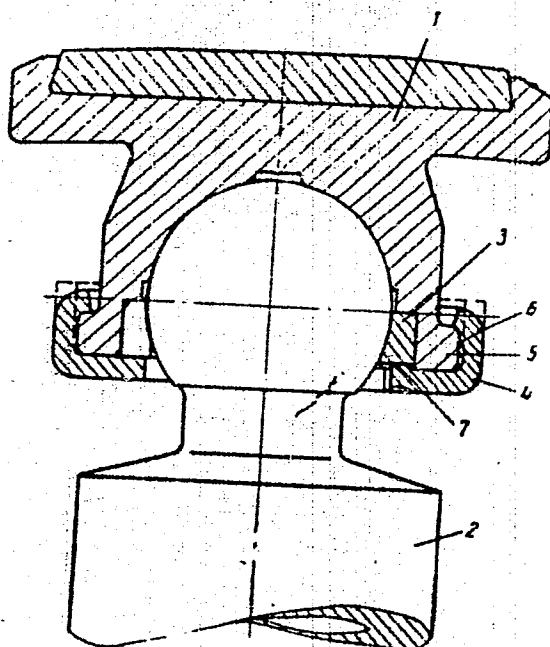
242606 PLUNGER e.g. for fuel pump with spherical head, carrying a footstep bearing in the neck of which is a bracing ring, differing in the bearing having a shoulder to which is fastened a horseshoe-shaped frame of plastic to hold the ring. The ring and shoulder may have shaped slots for the frame to be pressed in. This gives a more reliable fixing of the footstep bearing. Footstep bearing 1 is connected to plunger 2 by bracing ring 3, fixed by frame 4. The material of the wall of the frame is crimped around shoulder 5 on the footstep bearing and pressed into slots 6 and 7 on the endface surface of ring 3 and shoulder 5.
2.1.68 as 1207319/24-6. POLYANSKIY A.F. et al. (10.9.69)
Bul 15/25.4.69. Class 46f, 59a. Int.Cl.F 02c, F 05b.

1/3

19850834

// //

AA0101179



1/3

300

19850835

AA0101179

AUTHORS: Polyanskiy, A. F.; Kontorovich, B. M.; Koblik, L. M.;
Gusakov, V. I.; Tokarev, N. N.; Khlopin, A. N.; Borovik, S. A.

3/3

19850836

1/2 022

UNCLASSIFIED
TITLE--INFLUENCE OF PHASE MODULATED OSCILLATIONS ON A NONLINEARITY AND A
FILTER -U- PROCESSING DATE--16OCT70

AUTHOR--(02)--GOLYANITSKIY, I.A., POLYANSKIY, A.S.

P

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELECTRONIKA, VOL. 15, APR. 1970, P. 841-845

DATE PUBLISHED---APR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PHASE MODULATION, ELECTRIC FILTER, CORRELATION FUNCTION,
NONLINEAR SYSTEM, CIRCUIT ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1996/1078

STEP NO--UR/0109/70/015/000/0841/0845

CIRC ACCESSION NO--AP0118228

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118228

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF EXPRESSIONS FOR THE CORRELATION FUNCTIONS OF PROCESSES APPEARING AT THE OUTPUT OF NONLINEAR FOUR TERMINAL NETWORKS HAVING A TUNED LOAD IN THE FORM OF A HIGH Q OSCILLATORY CIRCUIT, IN THE CASE WHERE A PHASE MODULATED SIGNAL ACTS ON THE SYSTEM. THE OUTPUT CORRELATION FUNCTION OF A NONLINEARITY FILTER SYSTEM IS DETERMINED AS A FUNCTION OF THE PARAMETERS OF THE FILTER AND THE PHASE MODULATED PROCESS FOR A SPECIFIC CASE WHERE THE NONLINEARITY IS A RIGID LIMITER.

UNCLASSIFIED

Acc. Nr:

AP0045153

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR0109

A70-23159 # Correlation functions of processes at the output of nonlinearities with odd amplitude characteristics during the transmission of modulated oscillations (Korrelatsionnye funktsii protsessov na vykhode nelineinosti s nechetnymi amplitudnymi kharakteristikami pri prokhozhenii modulirovannykh kolebani). I. A. Golianitskii and A. S. Polianskii. *Radjotekhnika i Elektronika*, vol. 15, Feb. 1970, p. 316-321. In Russian.

Derivation of expressions for the mixed second-order moment of a process at the output of an inertialess nonlinear quadrupole during the transmission of an arbitrary amplitude- and phase-modulated oscillation and an oscillation frequency-modulated by a normal noise. In obtaining these expressions, the amplitude characteristic of the inertialess nonlinear quadrupole is approximated by an odd linearly broken curve. Examples of the application of these expressions are considered.

A.B.K.

MT

1/1

REEL/FRAME
19780053

21

172 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--EFFECT OF THE CONFIGURATION OF THE CONTACT SURFACE OF THE LARGE BELL ON THE OPERATION OF A BLAST FURNACE -U-

AUTHOR--KUDDYAROV, M.S., ZHIGULEV, P.G., POLYANSKIY, D.S., KORNEV, V.B., GORBACHEV, V.P.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 12-15

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, METALLURGIC FURNACE, COMPONENT LIFE EXPECTANCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0142

CIRC ACCESSION NO--AP0103821

STEP NO--UR/0133/70/030/001/0012/0015

UNCLASSIFIED

P

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103821

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHORTENED LIFE OF LARGE BELLS CAUSED BY EXCESSIVE LEAKAGE WHEN THE TOP PRESSURE IS SIMILAR TO 1 ATM SUGGESTED REPLACING THE CONICAL CONTACT SURFACE OF A 53DEGREES LARGE BELL WITH A SPHERICAL ONE. THE POSSIBILITY WAS INVESTIGATED ON A 1:25 SCALE TRANSPARENT FURNACE TOP MODEL, AND NEW BELLS WERE INSTALLED ON 2 FURNACES. THEIR PERFORMANCE IS DESCRIBED. A SPHERICAL CONTACT SURFACE LEADS TO A TIGHTER JOINT AND THEREFORE TO A LONGER LIFE, RENDERS THE CHARGE TRAJECTORY STEEPER, LOWERING ITS IMPACT POINT ON THE THROAT ARMOR BY 300-320 MM, AND TENDS TO INCREASE THE PERIPHERAL GAS STREAM.

UNCLASSIFIED

USSR

Ion Exchange Phenomena

UDC 541.183.12

TULYPOV, P. YE., and POLYANSKIY, N. G., Physical Chemistry Institute imeni
L. Ya. Karpova, Moscow and Tambovskiy Institute of Chemical Instrumentation

"Thermal Stability of Anion Exchange Resins"

Moscow, Uspekhi Khimii, No 9, Vol 42, 1973, pp 1650-1680

Abstract: The increasing use of exchange resins at various temperatures and pressures requires that the behavior of the resins under these conditions be known. Methods for calculating the efficiency and ion exchange capacity of resins at higher temperatures are given. Reactions such as deamination and dehydration which tend to degrade the resin when it is heated in air, water, aqueous solutions, organic solvents, and mixed media are discussed. The Cl^- , OH^- and other forms of the anion exchange resin are considered. Finally, the mechanisms and kinetics of the degradation of the resins are examined at length and such parameters as energies of activation and rate constants are calculated. (112 references).

1/1

USSR

UDC 541.183.24:661.183

POLYANSKIY, N. G., and TULUPOV, P. YE., Tambovsk Institute of Chemical Machine Building, Scientific Physico-Chemical Research Institute imeni L. Ya. Karpov
Moscow

"Thermal Stability of Cation Exchange Resins"

Moscow, Uspekhi Khimii, Vol 40, No 12, Dec 71, pp 2250-2279

Abstract: - A review with 235 references. For the first time the available data on thermal stability of cation exchange resins in air, water, in some aqueous solutions and in organic media have been summarized. Conclusions were reached on the effect of various factors on the thermal stability of the cation exchange resins and on the nature of processes responsible for the decrease of their exchange capacity. A special note was taken of the existence of an internal connection between the thermal stability and catalytic activity of the ion exchange materials. The review covers the following sections: methodology used in the stability studies of the ion exchange materials; thermal stability of the cation exchange resins in gaseous and vaporous media; thermal stability of the cations in water and in aqueous solutions; and thermal stability of the sulfo-cations exchange resins in organic media.

1/1

- 50 -

1/2 018
UNCLASSIFIED
TITLE--RECENT ADVANCES IN ION EXCHANGE CATALYSIS --U-- PROCESSING DATE--30OCT70
AUTHOR--POLYANSKIY, N.G. P
COUNTRY OF INFO--USSR
SOURCE--USP. KHIM. 1970, 39(3), 504-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ION EXCHANGE, CATALYSIS, HYDRATION, POLYMERIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1975
CIRC ACCESSION NO--AP0125564
STEP NO--UR/0074/70/039/003/0504/0530
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125564
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A REVIEW WITH 254 REFS. THROUGH
PART OF 1969, COVERING THEORETICAL ASPECTS OF ION EXCHANGE CATALYSIS OF
ORG. REACTIONS AND ITS USE IN SYNTHETIC ORG. CHEMISTRY, INCLUDING
HYDRATION, HYDROLYSIS, DEHYDRATION, ESTER FORMATION, ALKYLATION,
POLYMN., AND ISCHERIZATION CONDENSATION REACTIONS.
INST. KHIM. MASHINOSTR., TAMBOV, USSR.

FACILITY:

UNCLASSIFIED

1/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--SYNTHESIS OF SORBIC ACID FROM KETENE AND CROTONALDEHYDE. VIII.
THERMAL ISOMERIZATION OF A POLYESTER OF 3-HYDROXYHEXENOIC ACID AND ITS
AUTHOR--(04)--POLYANSKIY, N.G., UTKIN, B.N., KOZCVA, G.YA., BALAKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--Zh. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1095-100

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMERIZATION, POLYESTER RESIN, DEPOLYMERIZATION, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1955

STEP NO--UR/0080/70/043/005/1095/1100

CIRC ACCESSION NO--AP0132216

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPOLYMN. OF THE TITLE
POLYESTER (H. G. POLYANSKII ET AL., 1966) OVER NaOH, KOH, OR Ba(OH) SUB2
AT SIMILAR TO 180DEGREES GAVE GREATER THAN OR EQUAL TO 69PERCENT
TRANS-TRANS-ISOMER OF MECH:CHCH:CHCO SUB2 H (I). THE REACTION MIXT.
ALSO CONTAINED ACOH, PIPERYLENE, ACETONE, CROTONALDEHYDE, AND CO SUB2.
AL SUB2 O SUB3, NA SUB2 SO SUB4, OR K SUB3 (FE(CN) SUB6) WERE NOT ACTIVE
AS THE CATALYSTS.

UNCLASSIFIED

UDC: 629.78.015:533.6.011.55

USSR

POLYANSKIY, O. YU.

"Effect of Nonequilibrium Processes on Gas Dynamics Parameters in Hypersonic Assemblies and at the Critical Point of a Blunt Body"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aero-hydrodynamics Institute), 1971, 2, No 5, pp 17-25 (from RZh-41. Raketostroyeniye, Moscow, No 3, Mar 1972, Abstract No 3.41.147)

Translation: Simple formulas are given for evaluating the effect of nonequilibrium processes on the gas dynamics parameters in the nozzles of hypersonic aerodynamic assemblies and at the critical point of blunt bodies streamlined by a hypersonic nonequilibrium flow. It is shown that the coefficients of air temperature and air pressure at the critical point very weakly depend on the degree of nonequilibrium of the on-coming flow and on the physico-chemical process rates in the shock layer, while the distance of the departure of the shock wave is sufficiently strong. The results obtained attest also to the qualitative difference in the asymptotic (at $M \rightarrow \infty$) behavior of the gas dynamics parameters in nozzles with the oscillating degrees of freedom quenched and with the recombination processes quenched. Original article: 12 bibliographic entries. Resume.

1/1

- 22 -

USSR

POLYANSKIY, O. Yu.

"Influence of Non-equilibrium Processes on Gas-Dynamic Parameters in Hypersonic Installations and at the Critical Point of a Blunt Body"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta [Scientific Writings of Central Aero-Hydrodynamic Institute], Vol 2, No 5, 1971, pp 17-25, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B218 from the Resume).

Translation: Simple formulas are presented for estimation of the influence of non-equilibrium processes on gas dynamic parameters in the nozzles of hypersonic wind tunnels and at the critical point of blunted bodies around which hypersonic non-equilibrium streams flow. It is shown, in particular, that the pressure coefficient and air temperature at the critical point depend very little on the unevenness of the incident stream and the rates of occurrence of physical-chemical processes in the shock layer, while the separation distance of the shockwave depends rather strongly on these factors. The results produced also indicate qualitative differences between asymptotic behavior of gas dynamic parameters in nozzles (as $M \rightarrow \infty$) with freezing of oscillating degrees of freedom and freezing of recombination processes. 12 Biblio. Refs.

1/1

USSR

POLYANSKIY, S. V.

"The Traveling Salesman Problem and PBIB(2)-Systems"

Kombinator. Analiz. [Combinatorial Analysis -- Collection of Works], No 2, Moscow, 1972, pp 46-49 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V339, by S. Rukova).

Translation: The traveling salesman problem is as follows: there are n cities $\{1, 2, \dots, n\}$ and matrix $\|c_{ij}\|$ ($i, j = 1, \dots, n$) is known, determining the distance between each pair of cities. The problem is to find a closed path of minimum length passing through all n cities (once through each city). The properties of the set of paths retained with all possible distances between cities are also studied (in other words, the parameters of the set which are invariant relative to the elements of matrix $\|c_{ij}\|$).

The author studies matrices $\|(i, j)\|$, defining the set of sectors of which the paths are constructed. The traveling salesman problem is called symmetrical if matrix $\|(i, j)\|$ is symmetrical, and asymmetrical if $(i, j) \neq (j, i)$ for any $i, j = 1, \dots, n, i \neq j$. It is shown that if the set of paths is taken

1/2

USSR

↳ Polyanskiy, S. V., *Kombinator. Analiz.*, No 2, Moscow, 1972, pp 46-49.

as the set of elements of a block diagram, the set of paths of the symmetrical traveling salesman problem is a PBIB(2) plan with parameters $v = n(n - 1)/2$, $b = (n - 1)!/2$, $k = n$, $r = (n - 2)!$, $\lambda_1 = (n - 3)!$, $\lambda_2 = 2(n - 3)!$; in the asymmetrical case, it is a PBIB(2) plan with parameters $v = n(n - 1)$, $b = (n - 1)!$, $k = n$, $r = (n - 2)!$, $\lambda_1 = 0$, $\lambda_2 = (n - 3)!$.

USSR

P
POLYANSKIY, V., and TAMBIYEV, A., Candidates of Biological Sciences

"Gatekeeper of the Brain"

Moscow, Nauka i Religiya, No 2, 1970, pp 20-23

Abstract: The importance of inhibition in all aspects of physical and mental endeavor is discussed. The mechanism of inhibition is discussed from the physiological point of view. The interplay and rhythm of excitation and inhibition are discussed. The special inhibitory cells in the brain are described. The importance of inhibition in defining the limits and outline of a subject and in the simplest abstractions is discussed. The concept of inhibition is also carried over to seances and "spiritual" experiences. The role of inhibition in memory, sleep, exercise of the will, and so on is noted. Further study of this phenomenon is urged.

1/1

USSR

UDC 533.951

GOGOSOV, V. V. and POLYANSKIY, V. A.

"Weak Waves, Characteristics, and the Problem of Flow Past a Thin Profile in Electrohydrodynamics"

Moscow, Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 137-146

Abstract: An investigation is made of the propagation of weak waves, in electrohydrodynamics, with respect to an inhomogeneous unperturbed state. Consideration is given to waves with a wavelength smaller than the size of the inhomogeneities. Change of amplitudes of the wave at lengths comparable to the wavelength is disregarded. A detailed analysis is given of the dispersion equation in the cases where the wave propagates only on the basis of ions, while the neutrals are at rest, when the flow is isentropic (the mobility coefficient $b = 0$) and when the mobility coefficient $b \neq 0$. It is shown that in the electrohydrodynamic formulation, two phase velocities of the propagation of small perturbations exists in a medium that on the whole is quiescent,

$$u_0 = \pm a_0, u_1 = bE_0.$$

1/2

USSR

GOGOSOV, V. V. and POLYANSKIY, V. A., *Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza*, No 3, 1972, pp 137-146

Phase velocity u_0 is the conventional velocity of sound in gas dynamics, velocity u_1 coincides with the velocity of the ion component. In waves propagating at velocity u_1 , generally speaking the charge density and the electrical field change, while waves propagating at velocity u_0 , the gas-dynamic parameters of the medium also change. Consideration is given to the propagation of high-frequency waves, for which the general equation system of electrohydrodynamics is inapplicable and it is necessary to use the complete system of Maxwell equations. An investigation is made of the characteristics of the electrohydrodynamics equations; the problem of flow by an electrohydrodynamic flux is discussed. It is shown that with a specific direction and intensity of the electrical field, perturbations from the profile can propagate upstream along a supersonic flux. 8 references.

2/2

USSR

GOGOSOV, V. V., POLYANSKIY, V. A., Moscow

"Discontinuity in Magnetohydrodynamics"

Moscow, Prikladnaya matematika i mekhanika, No. 5, Sep/Oct 71, pp 761-772

Abstract: A system of relationships at a discontinuity in electrohydrodynamics, when the dielectric and magnetic permeabilities of the medium are equal to unity, is investigated. Relationships describing the gasdynamic and electromagnetic characteristics on different sides of a discontinuity surface were previously described by Sedov (Mekhanika sploshnoy sredy, Vol. 1, Moscow, "Nauka", 1970). It is shown that it is not sufficient to assign the values of all parameters before the discontinuity and the rate of the propagation of the discontinuity in order to determine the parameters behind the shock wave front, since the intensity of the accumulated surface charge σ at the discontinuity and the associated value of the normal component of the electric field E_{n2} behind the discontinuity front remain indeterminate. The required relationships closing the system of equations at the shock wave front are written from an analysis of the wave structure. The form of these formulas and consequently

1/2

USSR

UDC 669.18:669.046.5

MELEZHNIK, V. D., PETRICHENKO, A. G., KHITRIK, S. I., LYSENKO, I. V., and
POLYANSKIY, V. I.

"Investigation of Ferrosilicon From Kaolins for Deoxidation of Pipe Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-
Oct 70, pp 15-16

Abstract: Data are given on the use of ferrosilicon from kaolin for the deoxidation of low-carbon pipe steels. The procedure for the production of ferrosilicon from secondary kaolins from the Cherkassk region of the Ukrainian SSR, and experimental meltings in 300-ton-capacity Martin furnaces using ferrosilicon for preliminary deoxidation reduce the expenditure of carbon ferromanganese and 45% ferrosilicon, thus reducing the cost of melting steel. In spite of the high phosphorus content in kaolin ferrosilicon (0.3%), its use does not increase the phosphorus content in the metal. Steel deoxidation by kaolin ferrosilicon does not involve additional contamination by nonmetallic impurities.

1/1

USSR

UDC 535.36

POLYANSKIY, V. K., KOVAL'SKIY, L. V.

"Scattering of Coherent Radiation by a Rough Surface".

Leningrad, Optika i Spektroskopiya, Vol 31, No 5, 1971, pp 784-787

Abstract: Although a good deal of work has been devoted to the optical characteristics of rough surfaces, it has considered those characteristics for light with a low coherence factor. In view of the development of coherent optics in general and holography in particular, research of the type done in this paper, involving the use of coherent light on rough surfaces, is important. The authors develop a formula to describe the structure of the field of the scattered radiation in a scalar approximation, without taking polarization into account. The result of the theory is compared with the experimental results. It is asserted that the results obtained can be used as a guide for planning holographic experiments. The article is illustrated with photos of the structure of the field formed by the scattering of coherent light when passed through frosted glass.

1/1

1/2 044 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INVESTIGATION OF THE POSSIBILITY OF USING THE HOLOGRAPHY METHOD
WITHOUT A REFERENCE BEAM -U-
AUTHOR--(02)-KOVALSKIY, L.V., POLYANSKIY, V.K.
COUNTRY OF INFO--USSR
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, FEB. 1970, P. 338-341
DATE PUBLISHED----FEB70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HOLOGRAM, LASER BEAM, COHERENT LIGHT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1481 STEP NO--UR/0051/70/028/000/0338/0341
CIRC ACCESSION NO--AP0112475
UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0112475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL AND EXPERIMENTAL INVESTIGATION OF THE POSSIBILITY OF OBTAINING A HOLOGRAM GENERATED IMAGE OF AN ARBITRARY OBJECT, IN THE CASE WHERE THE HOLOGRAM IS FORMED WITHOUT MAKING USE OF A REFERENCE BEAM BY ILLUMINATING THE TRANSPARENCY BY COHERENT LASER LIGHT. THE PROCESS OF FORMATION OF A HOLOGRAM WITHOUT THE USE OF A REFERENCE BEAM IS ANALYZED, AND THE THEORETICAL CONSIDERATIONS ARE FOUND TO BE CONFIRMED BY HOLOGRAMS OBTAINED FOR CONTINUOUS OBJECTS (TRANSPARENCIES) AND OBJECTS CONSISTING OF SEVERAL POINTS. HOLOGRAMS OBTAINED WITHOUT A REFERENCE BEAM, HOWEVER, CANNOT COMPETE WITH RESPECT TO BRIGHTNESS WITH CONVENTIONAL HOLOGRAMS. THEIR USE IS INDICATED ONLY WHEN A REFERENCE BEAM IS NOT AVAILABLE.

UNCLASSIFIED

USSR

UDC 621.791:669.419.4:669.046.552.5 2

POLYANSKIY, V. M., Candidate of Technical Sciences, PODGORSKIY, B. N., Engineer, and MAKAROVETS, O. D., Engineer

"Diffusion Processes in the Zones of the Bimetal Ti-Nb and the Trimetal Ti-Nb-Ti

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 71, pp 9-10

Abstract: Metallographic and X-ray structural methods are used to establish that diffusion of niobium into titanium occurs in the Ti-Nb system, particularly in bi-metals. The concentration dependence of the mutual diffusion factor in the Ti-Nb system is determined. It is demonstrated that the maximum value of D is 7% niobium. Within the framework of the hypothesis of the circular mechanism of diffusion of metals with the body-centered cubic structure, experimental results on the preferential diffusion of niobium into titanium and the concentration dependence of D are explained by the temperature and concentration dependences of the shear modulus in the Ti-Nb system. Quantitative characteristics of the diffusion zone in Ti-Nb-Ti are produced as functions of heat treatment, as well as data on the distribution of niobium in welded seams of this material. It is demonstrated that the method of X-ray structural analysis is effective for selection of a welding method, providing good quality welded joints in the trimetal.

1/1

USSR

UDC 669.295:620.187

VARAKINA, L. P., POLYANSKIY, V. M. and SHAMALO, V. V.

"A Method of Producing VT3-1 Titanium Alloy Foil for Electron Microscopy Studies"

Moscow, Zavodskaya laboratoriya, Vol. 38, No 4, 1972, pp 462-464

Abstract: Microstructure examinations of metals and alloys by transmission electron microscopes require fine foil of the test material. The study described here deals with methods of preparing the test specimens as well as with structural changes occurring in the material in the process of electrospark cutting. Involved here were thin sections of VT3-1 titanium alloy. Following electrospark cutting, the specimen's surface layer over a depth of 0.2-0.3 mm showed β -phase and TiC formations with crystal lattice periods of 3.25 and 4.28 Å, respectively. Below the 0.2-mm depth, the α -phase crystal lattice periods of the material become constant. This means a thickness requirement of 0.5 mm on electrospark-cut test blanks for making test foil. The VT3-1 alloy for the initial blanks was heat treated under two procedures: 1) hardening from 850°C, holding for 30 min, cooling in water; 2) hardening as above and subsequent aging at 600°C for 4 hrs. (2 illustrations)

2

USSR

UDC 621.791:669.419.4:669.046.552.5

POLYANSKIY, V. M., Candidate of Technical Sciences, PODGORSKIY, B. N., Engineer, and MAKAROVETS, O. D., Engineer

"Diffusion Processes in the Zones of the Bimetal Ti-Nb and the Trimetal Ti-Nb-Ti

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 71, pp 9-10

Abstract: Metallographic and X-ray structural methods are used to establish that diffusion of niobium into titanium occurs in the Ti-Nb system, particularly in bi-metals. The concentration dependence of the mutual diffusion factor in the Ti-Nb system is determined. It is demonstrated that the maximum value of D is 7% niobium. Within the framework of the hypothesis of the circular mechanism of diffusion of metals with the body-centered cubic structure, experimental results on the preferential diffusion of niobium into titanium and the concentration dependence of D are explained by the temperature and concentration dependences of the shear modulus in the Ti-Nb system. Quantitative characteristics of the diffusion zone in Ti-Nb-Ti are produced as functions of heat treatment, as well as data on the distribution of niobium in welded seams of this material. It is demonstrated that the method of X-ray structural analysis is effective for selection of a welding method, providing good quality welded joints in the trimetal.

1/1

USSR

UDC 621.791.052.001.5:669-419.4.669.14.018.
8+669.71

PODGORSKIY, B. N., Engineer, and POLYANSKIY, V. M., Candidate
of Technical Sciences

"Peculiarities of the Structure of the Transition Zone of
Stainless Steel-Aluminum Alloy Bimatsls"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 71, pp 15-16

Abstract: The specifics of the distribution of the copper con-
tained in an aluminum alloy were studied in the transition
zone of bimetals consisting of Kh18N10T steel with aluminum
with from 1 to 5% Cu. The bimetallic specimens were produced
by friction welding and consisted of bars 30 mm in diameter.
Aluminum alloys containing 1, 3 and 5% copper were preliminarily
forged and homogenized. It was established that the copper
content increased significantly exceeding the concentration in
the alloy, and that copper decreases the growth rate of the
intermetallide layers.

1/1

- 88 -

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--D,P REACTIONS ON SOME TITANIUM AND CHROMIUM ISOTOPES -U-

AUTHOR--(05)-ALEKSEYEV, V.V., POLYANSKIY, V.N., TERENTSKIY, K.O.,
TOKAREVSKIY, V.V., SHCHERBIN, V.N.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 194-200

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--TITANIUM ISOTOPE, CHROMIUM ISOTOPE, DIFFERENTIAL CROSS
SECTION, EXCITED NUCLEUS, DEUTERON BOMBARDMENT, PROTON SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0275

STEP NO--UR/0048/70/034/001/0194/0200

CIRC ACCESSION NO--AP0105349

UNCLASSIFIED

Z/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105349

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE (D,P) REACTION WAS STUDIED FOR ENRICHED ISOTOPES OF PRIME48 TI(97.8PERCENT), PRIME49 TI(72.5PERCENT), PRIME50 CR(90.0PERCENT), AND PRIME52 CR(83.7PERCENT) AT A D ENERGY OF 13.6 MEV. THE DIFFERENTIAL CROSS SECTIONS ARE MEASURED FOR TRANSITIONS TO THE GROUND, AND TO THE 1ST EXCITED STATE. THEORETICAL PREDICTIONS ARE COMPARED WITH THE EXPTL. DATA. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 621.372.82

POLYANSKIY, Yu. A.

"Methods of Investigating Nonuniformities in Waveguide Radio Relay Lines With Probing Signals"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) 1970, No. 2, pp. 34-41 (from RZh-Radiotekhnika, March 71, Abstract No. 3B112)

Translation: Methods are considered for investigating nonuniformities in radio relay line waveguides, based on the use of shortwave probing pulses and a continuous FM signal.

1/1

USSR

UDC: 621.396.6-181.5(088.8)

MUKHIN, V. G., POSPELOV, V. M., POLYANTSEV, S. I.

"A Flux"

USSR Author's Certificate No 270850, filed 26 Feb 69, published 18 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V174 P)

Translation: A flux based on organic acids is proposed for tinning the elements of micromodules. For complete removal of the flux residue from the surface of the micromodule, the acids are used in a glycerin solution in the following percentage weight ratios: glycerin 58-97, organic acid 3-42.

1/1

- 93 -

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEHYDRATION AND DESALTING OF PETROLEUM -U-

AUTHOR--(04)-SMIRNOV, YU.S., PETROV, A.A., LEZOV, D.F., POLYANTSEV, V.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,795

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL-PATENT, PETROLEUM DESALTING, PETROLEUM DEHYDRATION,
BLOCK COPOLYMER, ETHYLENE OXIDE, ALIPHATIC AMINE, PROPYLENE OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0886

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

CIRC ACCESSION NO--AA0132976

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132976

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PETROLEUM IS DEHYDRATED AND
DESALTED BY INTRODUCING A CATION ACTIVE DEMULSIFIER, E.G., A HIGHER
ALIPHATIC PRIMARY AMINE HYDROCHLORIDE, AND A NONIONIC SURFACTANT, E.G.,
BLOCK COPOLYMER OF ETHYLENE OXIDE AND PROPYLENE OXIDE. THE RATIO OF THE
FIRST COMPONENT TO THE SECOND IS 3:1 TO 5:1.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AUTOMATIC STRAIGHTENING AND CUTTING MACHINE -U-

AUTHOR--(05)-BLINOV, V.P., YASINSKIY, YU.G., PDLYARIN, YU.N., CHEREPANOV,
YU.B., NAZAROV, V.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 238517
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI NO 10
DATE PUBLISHED--31JUL70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--PATENT, AUTOMATIC CONTROL SYSTEM, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0836 STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--AA0114932

UNCLASSIFIED

2/2 013
CIRC ACCESSION NO--AA0114932

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMATIC STRAIGHTENING AND CUTTING MACHINE CONTAINS CUTTING MECHANISMS 1 AND 2 WITH MOBILE BLADES, MECHANISMS FOR STRAIGHTENING, ROD DELIVERY AND REMOVAL OF CUT OFF DETAILS. IN ORDER TO INCREASE EFFICIENCY WHEN FIXING IT AFTER THE PRESS WHICH PERFORMS SIMULTANEOUS PRESSING OF A ROW OF PARALLEL RODS, THE MACHINE HAS SEVERAL MECHANISMS FOR STRAIGHTENING, DELIVERY, CUTTING AND REMOVAL OF CUT OFF DETAILS, SITUATED IN PARALLEL. THE MECHANISMS ENABLE THE MOVEMENT OF THE DETAILS TO A VIBROPLATFORM (16) WHICH IS SITUATED UNDER THE MECHANISMS. THE VIBRO PLATFORM HAS A DEBALANCING DRIVE (18) AND HAS TWO PAIRS OF INCLINED GUIDES WHICH ARE SITUATED ONE ABOVE THE OTHER. IN THE CLEARANCE BETWEEN THE UPPER GUIDES WHICH FORM A HOPPER, A TURNING SLIDE IS FIXED. THE SLIDE HAS TWO FIXED POSITIONS AND DIVIDES THE DETAILS INTO TWO STREAMS WITH THE HELP OF THE LOWER GUIDES. THE MOBILE BLADE (17) OF THE CUTTING MECHANISM (1) IS FIXED ON A COUPLING ROD (11) WHICH PERFORMS REVERSE FORWARD MOTION AND IS AFFECTED BY A SPRING (12). THE SPRING CREATES ADDITIONAL EFFORT DURING CUTTING AND PROVIDES A REDUCTION IN INERTIAL FORCES DURING THE REVERSE STROKE.
FACILITY: TSENTRAL'NYI NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TARY I UPAKOVKI.

POLYASHCHUK, L. V.

JPRS 56102
12 FEBRUARY 1973

UFG 612,477,510,1-02

CHANGES IN PERMEABILITY OF HEMATO-ENCEPHALIC BARRIERS
UNDER THE EFFECT OF MICROWAVES

(Presented by E. B. Babitsky, Member Academy of Sciences Ukrainian SSR)

Article by L. V. Polyashchuk, Kiev, Institute of Neurophysiology, Ukrainian Academy of Sciences, Kiev, 1972, in paper "Neurophysiology of the Brain", No. 6, 1972, in press. 5 March 1973, pp. 7-12.

For the last few years microwaves have been used in treatment of various organs of the nervous system, digestive organs, and sensory systems (1-4). Microwaves are used successfully in the treatment of various diseases of the musculoskeletal system (10-11).

The effect of the microwaves on the permeability of organisms had not been studied until now. The literature contains only scattered data on the effect of microwaves on the permeability of the epineuric barrier.

The effect of microwaves on the permeability of the hemato-encephalic and hemato-lymphatic barriers has not been investigated. In connection with this, we decided to do an investigative study on the effect of high-frequency electromagnetic fields in the centimeter range (microwaves) of different power and duration of action on the permeability of the hemato-encephalic and hemato-lymphatic barriers of the organism.

The experiments were conducted on 32 rabbits. For the study of permeability of the hemato-encephalic and hemato-lymphatic barriers, we used the method of radioactive indication. Radioactive phosphorus in the form of a diisobutyl phosphate salt was injected into the experimental rabbits intraperitoneally from a theoretical head of the experimental rabbit into the right thigh. Sixty minutes after the injection of the concentration of radioactive phosphorus, the rabbits were killed by electric current; batches of animals were taken from cerebellum (vermis), cerebral hemisphere, kidney and white matter of the cerebellum, optic chiasm, long scissure, olfactory bulb, medulla oblongata, epiphyseal and hypophyseal, various parts of the spinal cord (cervical, thoracic, and lumbar), and also from the femoral and thoracic muscles of the paracymbiontous organs. The radioactivity of the tissues studied was determined by apparatus PR-16. Microwaves were generated by a high-frequency apparatus with a frequency of 2307 megacycles and electromagnetic wave length of 13.3 cm.

USSR

UDC 546.661

P
MIRONOV, N. N., and POLYASHOV, I. M., Department of Inorganic Chemistry and Scientific Research Institute of Chemistry, Gor'kiy, Gor'kiy State University

"Reaction of Europium Hydroxide Formation"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol XV, No 1, 1970, pp 3-4

Abstract: A study was made of the formation of europium hydroxide in sulfuric acid, nitric acid, and chloride solutions by methods of solubility residual concentration, measurement of pH and electroconductivity of equilibrium solutions, and apparent precipitation volume. Influence of the salt anion on the formation of europium hydroxide was shown. In all the investigated systems formation of basic salts preceded formation of the hydroxide.

1/1

Acc. Nr:

AP0034111

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

UR 0078

P

71294w Europium hydroxide formation reaction. Mironov,

N. N.; Polvashov, I. M. (Kafedra Neorg. Khim., Gor'k. Univ., Gorki, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 3-4 (Russ).

The formation of Eu hydroxide in $\text{Eu}_2(\text{SO}_4)_3\text{-NaOH-H}_2\text{O}$, $\text{EuCl}_3\text{-NaOH-H}_2\text{O}$, and $\text{Eu}(\text{NO}_3)_3\text{-NaOH-H}_2\text{O}$ systems was detd. by measuring soly., pH, and elec. cond. of the equil. solns. at 25° and by detn. the apparent vol. of the ppt. In all investigated systems basic salts ($\text{Eu}(\text{OH})_{2.4}(\text{SO}_4)_{0.4}$, $\text{Eu}(\text{OH})_{2.7}\text{Cl}_{0.3}$, and $\text{Eu}(\text{OH})_{2.5}(\text{NO}_3)_{0.5}$) formed prior to the formation of Eu hydroxide. The nature of the anion affected the process of hydroxide formation.

HMJR

+

18

REEL/FRAME

19710754

USSR

UDC 621.771.23.001.5

POLUKHIN, V. P., ZAUGOL'NIKOV, D. N., and POLYASHOV, V. S.

"A Method for Comprehensive Study of Cold Rolling Parameters on a Continuous, Four-Stand 1,700 Mill With Established and Transient Processes"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 266-271

Translation: The article considers questions of the precision of measuring speed parameters of continuous rolling. It is only possible to measure the speed of a strip on tensometric rollers with established processes. Decreasing the flywheel mass of the roller which contacts the strip increases the precision of measurements and makes them possible with unsettled processes. An evaluation of the precision of measurements was made by comparing the amount of lead received by the graduation line method and the value received from the relationship of strip speed and the rolls. The monitor of roll revolutions (speed) must be installed directly on the roll neck; if the monitor is installed on the spindle and shaft of the tachogenerator, the error of measurement grows. In determining the other rolling parameters, measuring devices permanently installed on the mill were used. Five figures and two bibliographic entries.

1/1

USSR

UDC 612.215.5.014.424

POLYASHUK, L. V., Department of Pathological Physiology, Odessa Agricultural Institute

"Permeability of the Blood-Brain Barrier After Exposure to Ultrasound"

Kiev, Fiziologichnyi Zhurnal, No 3, 1971, pp 409-415

Abstract: Radiophosphorus was used to study the permeability of the blood-brain and histoemetic barriers in rabbits exposed to ultrasound at intensities of 0.3, 0.6, 1.6, and 1.6 w/cm² for 5 and 10 minutes in the head and epigastric regions. The content of P³² injected intraperitoneally (44 μ /kg) was studied in brain, spinal, lung, and thoracic and femoral muscle tissues. The permeability of the two barriers to radiophosphorus was increased by ultrasound, the degree and direction of the changes varying with the intensity and duration of the exposure. Maximum increases followed the use of low doses (0.3 to 0.5 w/cm²) for 5 minutes. High doses of ultrasound (1.0 to 1.6 w/cm²) and 10-minute exposure, on the other hand, tended to lower the permeability of the blood-brain barrier. High doses are apparently a stress factor.

1/1

- 76 -

USSR

UDC 532.526.4

POLYAYEV, V. M., BASHMAKOV, I. V., GERASIMOV, I. M., and VIASOV, D. I.

"Spectral Measurements in a Turbulent Boundary Layer of a Permeable Plate in Blasting"

Minsk, Inzhenerno-fizicheskiy zhurnal, No 6, 1973, pp 1109-1113

Abstract: Investigation of the turbulence structure in a boundary layer under blasting is important in connection with developing efficient methods of thermal protection. This paper describes detailed experiments in thermoanemometric measurements of the averaged and pulsation characteristics of a boundary layer in a flat model 2.5 m long and 400 mm wide with a blast flow velocity of 10 m/s. Instruments included an A-10 aerodynamic tube of the Moscow State University Institute of Mechanics, a constant-temperature thermoanemometer of the "DISA" type, and a spectrum analyzer. Results of the measurements and a description of the experimental apparatus and method are given in earlier papers by most of the authors named above (e. g., Polyayev, V. M., et al, Termoanemometricheskiye issledovaniya turbulentnogo nozranichnogo slova na pre-nitsayemoy plastine pri vduve -- Thermoanemometric investigation of

1/2

USSR

POLYAYEV, V. M., et al, Inzhenerno-fizicheskiy zhurnal, No 6, 1973, pp 1109-1113

of a Turbulent Boundary Layer in a Permeable Plate Under Blasting -- in the collection Trudy IV Vsesoyuznogo soveshchaniya no teplo- i massopereenosu, vol 1, Minsk, 1972). In these experiments, data was obtained on the intensity distribution of longitudinal, transverse, and sidewise velocity pulsations under the blasting, and of turbulent tangential stresses on the layer. The latter indicate vortical distortions in the layer.

2/2

USSR

UDC 532.517.4

POLYAYEV, V. M., BASHMAKOV, I. V., and VLASOV, D. I., Moscow
Higher Technical School imeni N. E. Bauman

"The Measuring of Velocity Profiles in the Turbulent Boundary
Layer on a Permeable Plate"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 2,
Mar-Apr 72, pp 342--346

Abstract: The results of the investigation of velocity profiles in the turbulent boundary layer on a permeable plate in a subsonic wind tunnel by 10 m/sec flow velocity and relative blast velocities from 0.0038 to 0.0538 are discussed. A constant temperature hot-wire anemometer ("DISA") in a set with single-thread-type pick-ups was used for measuring the velocity profiles. The tungsten thread with platinum coating was 5μ thick and 1 mm long. The measuring method and the processing of experimental data are described. The velocity profile by transverse blast can be characterized with the help of a known logarithmic rule, if an interpolation dependence discounting for the blast effect on the outer region of the vortex wake is considered. The measurements confirm the structural conservatism of the forced back turbulent kernel and, at the same time, also the notable deformation of the velocity profile in the outer region of the boundary layer. Six illustr., four formulas, two biblio. refs.

1/1

12

USSR

UDC 621.762

BELOV, S. V., Candidate of Technical Sciences, Docent, KARTUYESOV, O. C.,
Engineer, POLYAYEV, V. H., Candidate of Technical Sciences, Docent

"Concerning the Limit of Applicability of the Law of Laminar Filtration in
Porous Metals"

Moscow, Izvestiya Vysshkikh Uchebnykh Zavedeniy -- Mashinostroyeniye,
No 2, 1971, pp 79-83

Abstract: The article deals with the question of the upper limit of applicability of the law of laminar filtration in porous metals made of spherical particles (bronze, molybdenum, tungsten, copper, iron) and of arbitrarily shaped particles (nichrome, iron). Comparison of the experimental data with the works of other authors made it possible to establish that infraction of the law of laminar filtration depends upon the Reynolds number of the flow in the pores, the state of the particle surface, and the degree of change of the pore cross section with respect to the direction of filtration. An empirical relationship is obtained for taking into account the influence of the pore dimensions upon the critical Reynolds number in porous materials consisting of spherical particles. Data are presented concerning the critical Reynolds numbers of porous materials made of spherical and rounded particles. One figure, 1 table, 15 bibliographic entries.

1/1

- 45 -

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ENERGY BAND STRUCTURE OF TERNARY DIAMOND LIKE A PRIME2 B PRIME4 C
PRIME5 SUB2 TYPE SEMICONDUCTORS --U-
AUTHOR--(C4)-GORJUNOVA, N.A., POPLAVNOI, A.S., POLYGALOV, YU.I.,
CHALDYSHEV, V.A. *P*
COUNTRY OF INFO--USSR
SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 1, PP 9-17
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ENERGY BAND STRUCTURE, SEMICONDUCTOR MATERIAL, SEMICONDUCTOR
DEVICE, DIAMOND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1731 STEP NO--GE/0030/70/039/001/0009/0017
CIRC ACCESSIGN NO--AP0112723
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SUMMARY, THE CALCULATIONS OF THE BAND STRUCTURE PARAMETERS AND THE COMPARISON WITH THE EXPERIMENTAL DATA HAVE SHOWN THAT IN THE COMPOUNDS OF THE A PRIME² B PRIME⁴ C PRIME⁵ SUB² TYPE A COMPLICATED CONDUCTION BAND STRUCTURE EXISTS (FOR EXAMPLE, IN ZNGEP SUB², ZNSIAS SUB², CDSIP SUB²). IN PAPER (37) THE INFLUENCE OF THIS STRUCTURE ON THE PHYSICAL PROPERTIES HAS BEEN ALREADY DISCUSSED. THE CALCULATIONS HAVE SHOWN THAT IN ALL COMPOUNDS THE TOP OF THE VALENCE BAND CORRESPONDS TO THE T SUB⁴ REPRESENTATION (LIGHT HOLES). HOWEVER, IN THE CASES WHEN DELTA SUBER IS SMALL THIS RESULT CANNOT BE CONSIDERED AS UNAMBIGUOUS, AND T SUB⁵ (HEAVY HOLES) CAN LIE HIGHER THAN T SUB⁴, WHICH IS JUST OBSERVED IN A NUMBER OF EXPERIMENTS. THE COMPLICATED BAND STRUCTURE AND A VARIETY OF ITS PARAMETERS PERMIT TO THINK THAT THE TERNARY A PRIME² B PRIME⁴ C PRIME⁵ SUB² COMPOUNDS WILL PROVE TO BE SUITABLE MATERIALS FOR CREATING NEW SEMICONDUCTOR DEVICES WITH A WIDE RANGE OF PROPERTIES. IT IS HOPED THAT THE RESULTS GIVEN IN THIS WORK WILL AID IN A BETTER UNDERSTANDING OF EXPERIMENTS AND WILL HELP TO APPRECIATE CLEARLY POSSIBLE DIRECTIONS OF FURTHER INVESTIGATIONS.

FACILITY: A. F. IOFFE PHYSICO-TECHNICAL INSTITUTE, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD. FACILITY: V. D. KUZNETSOV SIBERIAN PHYSICO-TECHNICAL INSTITUTE, TOMSK.

UNCLASSIFIED

USSR

UDC 539.1.01

POPLAVNOY, A. S., ~~POLYGALOV, Yu. I.~~^P, and CHALDYSHEV, V. S., Siberian Physicotechnical Institute imeni V. D. Kuznetsov attached to Tomsk State University

"Energy Band Structure of Semiconductors With Chalcopyrite Lattice. III. $ZnSnP_2$, $CdSnP_2$, $ZnGeAs_2$, $CdGeAs_2$, $ZnSnAs_2$, $CdGeP_2$, $CdSiAs_2$ "

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 17-22

Abstract: Previous articles by the authors developed a pseudopotential method for calculating the band structure of semiconductors with a chalcopyrite lattice and gave calculations for some compounds of the type $A^{II}B^{IV}C^V_2$. The present article calculates the band structure of a new group of compounds of the type $A^{II}B^{IV}C^V_2$; viz., $ZnSnP_2$, $ZnGeAs_2$, $ZnSnAs_2$, $CdSnP_2$, $CdGeAs_2$, $CdGeP_2$, $CdSiAs_2$. The calculations are performed at the most important symmetric Brillouin zone points Γ , T,

1/2

USSR

POPLAVNOY, A. S., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy --
Fizika, No 7, 1970, pp 17-22

N, P. The top of the valence band and the bottom of the conduction
band are found to correspond to the point Γ . The dispersion law in
the neighborhood of Γ is approximately given by Kane's formulas.

2/2

USSR

UDC 621.771.8

POLYKHIN, P. I., BERKOVSKIY, V. S., ZHADAN, V. T., FEDOSOV, B. M., STEISENKO, N. V., OSALCHYI, N. A., AVRUNIN, P. M., and KOVTANYUK, Yu. P.

"Developing New Technology for Rolling the PSh-20 Section from Kh18N10T Steel on the 550 Mill"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No. 64, 1970, pp 106-113

Translation: A brief description is given of the technology for rolling the shaped sections being studied. An analysis is made of the existing rolled pass design and deformation parameters by templates, and data are given from an investigation of the power parameters of rolling. On the basis of an analysis of the data received and the technical-economic indicators, a new technology for the process of rolling the sections under study is developed. Eleven illustrations and one table.

1/1

UNCLASSIFIED

PROCESSING DATE--11SEP70

1/2 015

TITLE--CRYSTAL STRUCTURE OF POTASSIUM ALUMINUM ETHYLENEDIAMINETETRAACETATE

DIHYDRATE -U-
AUTHOR--POLYNOVA, I. N., BELSKAYA, N. P., MARTYNYENKO, I. I.,

TURKDEGARCIBANUS, D., PORAYKOSHITS, M. A.
COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 164-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, COMPLEX COMPOUND, POTASSIUM COMPLEX,
ALUMINUM COMPLEX, X RAY STUDY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0445

STEP NO--UR/0192/70/011/001/0164/0165

CIRC ACCESSION NO--AP0104058

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104058

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF THE TITLE COMPD., KALEDTA.2H SUB2 b, WAS DETD. BY SINGLE CRYSTAL X RAY METHODS. THE ORTHORHOMBIC LATTICE PARAMETERS ARE A 22.89, B 10.18, AND C 6.53 ANGSTROM; Z EQUAL 4; AND THE SPACE GROUP IS P2 SUB 1 2 SUB 1 2 SUB 1. THE COMPD. IS ISOSTRUCTURAL WITH NH SUB4 COEDTA.2H SUB2 O AND RBCOEDTA.2H SUB2 O. THE AL ATOM IS 6 COORDINATE, BEING SURROUNDED BY 4 O ATOMS AND 2 N ATOMS FROM THE EDTA ION (AL-O EQUAL 1.92-2.01 ANGSTROM, AL-N EQUAL 2.03-2.04 ANGSTROM). THE H SUB2 O MOLS. ARE NOT COORDINATED. MARY FRANCES RICHARDSON.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CONCERNING THE STATE OF FATTY LIPID METABOLISM IN ATHEROSCLEROTIC
PARKINSONISM OF OLD AGE, CLINICO BIOCHEMICAL CORRELATIONS -U-
AUTHOR-(03)-VAYNSHTOK, A.B., POLYUKHOV, A.M., OLEYNIK, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURANL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 6, PP 828-834
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NERVOUS SYSTEM DISEASE, LIPID METABOLISM, ATHEROSCLEROSIS,
GERIATRICS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0232

STEP NO--UR/0246/70/070/006/0828/0834

CIRC ACCESSION NO--AP0126013

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126013

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE FATTY LIPID METABOLISM IN PATIENTS WITH ATHEROSCLEROTIC PARKINSONISM IN OLD AGE (60-74 YEARS). FOR COMPARATIVE PURPOSES THE FOLLOWING GROUPS OF INDIVIDUALS WERE STUDIED AS WELL: YOUNG NORMALS FROM 20-30 YEARS, OLD, PRACTICALLY NORMAL PEOPLE FROM 60-74 YEARS, PATIENTS WITH PARKINSONISM OF A NONATHEROSCLEROTIC NATURE OF THE SAME AGE, PATIENTS WITH ATHEROSCLEROTIC PARKINSONISM OLDER THAN 80 YEARS. THE BIOCHEMICAL STUDIES WERE RELATED TO THE DETERMINATION OF THE GENERAL LIPIDS IN THE BLOOD SERUM, THE GENERAL CHOLESTEROL AND ITS FRACTIONS, LECITHIN, TRIGLYCERIDES, NONESTERIFIED FATTY ACIDS, THEIR REACTION TO THE INTRODUCTION OF HEPARIN, THE ACTIVITY OF THE LIPOPROTEID LIPASE, BETA LIPOPROTEIDS, CHOLESTEROL CONNECTED WITH BETA LIPOPROTEIDS. THE AUTHORS STUDIED THE CORRELATIONS BETWEEN DISORDERS OF THE FATTY LIPID AND CARBOHYDRATE METABOLISM IN ATHEROSCLEROTIC PARKINSONISM AND THE DYNAMICS OF THESE INDICES AFTER A SUGAR LOADING. IT WAS POSSIBLE TO DISPLAY DISTURBANCES OF THE FATTY LIPID METABOLISM IN PATIENTS OF OLD AGE WITH ATHEROSCLEROTIC PARKINSONISM, AS WELL AS THEIR CONNECTION WITH THE PATHOLOGY OF THE CARBOHYDRATE METABOLISM. THE MOST EXPRESSED CHANGES WERE IN THE CONTENT OF THE NONESTERIFIED FATTY ACIDS AND TRIGLYCERIDES. THERE WERE CERTAIN CORRELATIONS BETWEEN THE DISTRIBUTION OF CEREBRAL ATHEROSCLEROSIS, THE DEGREE OF ITS EXPRESSION AND THE STATE OF THE FATTY LIPID METABOLISM. FACILITY: INSTITUTA GERONTOLOGII, AMN SSSR, KIYEV.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--GANGLIONARY BLOCKADE IN ANESTHESIOLOGY -U-
AUTHOR--POLYUKHOV, S.M. P
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR. 3, PP
88-92
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SURGERY, GANGLIONIC BLOCKING AGENT, ANESTHESIA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/0626 STEP NO--UR/0589/70/104/003/0088/0092
CIRC ACCESSION NO--AP0102612
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102612

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESCRIPTION OF A RATIONAL
TECHNIC OF GANGLIONARY BLOCKADE WITHOUT HYPOTENSION AS AN ADJUNCT TO
ANESTHESIA IN POOR SURGICAL RISK PATIENTS IS GIVEN.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SURFACE GRAPHITIZATION OF CEMENTITE -U-
AUTHOR--(03)-SALLI, I.V., FOMICHEV, O.I., POLYUSHKIN, N.I. P
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 155-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--GRAPHITIZATION, CAST IRON, X RAY DIFFRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1220 STEP NO--UR/0148/70/013/004/0155/0157
CIRC ACCESSION NO--AT0133217
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 017

CIRC ACCESSION NO--AT0133217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILITY OF CEMENTITE WAS STUDIED. SAMPLES OF HYPEREUTECTIC CAST IRON WERE SUBJECTED TO QUENCHING FROM HIGH TEMPS., WHEREUPON THEY WERE ISOTHERMALLY ANNEALED IN VACUUM AT TEMPS. BELOW THE QUENCHING TEMP. AFTER ISOTHERMAL HOLDING, PPTS. OF THE FE SOLID SOLN. APPEARED ON THE POLISHED SURFACE OF THE CEMENTITE CRYSTALS, THE AMT. OF WHICH DEPENDED ON THE PRIOR QUENCHING TEMP. WITH DECREASING DIFFERENCE BETWEEN THE QUENCHING TEMP. AND THE ISOTHERMAL HOLDING TEMP. THE AMT. OF THE PPTS. ON THE SURFACE OF THE CEMENTITE CRYSTALS DECREASED. X RAY DIFFRACTION INVESTIGATION OF SAMPLES OF HYPEREUTECTIC CAST IRON CONTG. C 5, MN 3.5, AND CR 0.5PERCENT WAS ALSO PERFORMED. THE CAST IRON SAMPLES WERE HELD AT 873-1273DEGREESK, WHEREUPON THEY WERE QUENCHED IN WATER. THE POLISHED QUENCHED SAMPLES WERE INVESTIGATED BY THE RECIPROCAL LATTICE TECHNIQUE. ON THE BASIS OF THE INVESTIGATIONS PERFORMED, DIRECT GRAPHITIZATION OF CEMENTITE IS POSSIBLE. FACILITY: DNEPROPETROVSK. GOS. UNIV., DNEPROPETROVSK, USSR.

UNCLASSIFIED

AA0039788-

Polyvramy, I.K. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-4/80

236766 SMELTING OF ORES, CONCENTRATES AND WASTE PRODUCTS from production of non-ferrous metals in shaft Furnaces, is modified by feeding hot metal gases previously mixed with cold or hot air or oxygen-enriched air through nozzles or burners situated above the level of the tuyeres. This enables the costs of the process to be reduced and production capacity of the furnace to be increased. 1.2.64. as 881159/22-2. Yu.A. AGAPOV et al. Chimkent Sec. M.I. Kalinin Lead Works, Non-Ferrous Metals Res. Inst. and Metallurgy & Ore Enrichment Inst. Acad. Sciences Kazakh SSR. (10.6.69.) Bul.7/3.2.69. Class 40a. Int.Cl.C22b.

1/2

19741100

no 18

AA0039788

AUTHORS: Agapov, Yu. A.; Gayvoronskiy, A. G.; Yevdokimenko, A. I.; Yelyakov,
I. I.; Kovgan, P. A.; Malkin, Ya. Z.; Polyvyanny, I. R.;
Ponamarev, V. D.

Chimkentskiy Ordena Lenina Svintsovyy Zavod imeni M. I. Kalinina, Gosudarstvennyy
Nauchno-Issledovatel'skiy Institut Tsvetnykh Metallov i Institut Metallurgii
i Obogashcheniya AN Kazakhskoy SSR

2/2

19741101

USSR

UDC: 629.78.017.1

POLYVYANNYY, YE. P.

"Some Problems of Estimating Reliability and Control of Reconditioned Systems"

Tr. Kazan. aviats. in-ta (Transactions of Kazan Aviation Institute) 1971, vyp 138, pp 116-123 (from Referativnyy Zhurnal-Raketostroyeniye, No 7, 1972, Abstract No 7.41.218)

Translation: The problem is considered of estimating the reliability and service life of a reconditioned system, and also of its control in accordance with the reliability requirements and limitation of general operating expenses. The determination of complex system's reliability is conducted on condition that the system undergoes partial inspection and reconditioning. The service life of the system is estimated considering the reliability and limitation of general operating expenses. Expenses on preventive maintenance and possibility of the system failure are determined; losses due to the moral aging of the system during operation are taken into account. It is attempted to determine the optimum strategy

1/2

USSR

POLYVYANNYY, YE. P., Tr. Kazan. aviats. in-ta, 1971, vyp 138, pp 116-123

of preventive maintenance, resulting in maximum service life, within the limitations on total expenses and providing the required reliability. The control of the changes in operational reliability and life of the system is assured by the selected optimum strategy of preventive maintenance. An algorithm of search for solution is given (5 references, resume).

2/2

1/2 043 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--CAUSES OF THE BRITTLENESS OF HOT ROLLED TRANSFORMER STEEL -U-
 AUTHOR--(03)-DRUZHININ, V.V., CHERNIKOVA, N.V., POLZUNOVA, YE.V.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 333-5
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--TRANSFORMER STEEL, GRAPHITE, METAL BRITTLENESS, GRAIN SIZE,
 SHEET METAL, SURFACE ROUGHNESS, ALLOY DESIGNATION, HOT ROLLING, ALLOY
 COMPOSITION, PLASTIC DEFORMATION, SILICON STEEL/(U)E43 TRANSFORMER
 STEEL, (U)E42 TRANSFORMER STEEL
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--1997/1528 STEP NO--UR/0048/70/034/002/0333/0335
 CIRC ACCESSION NO--AP0120309
 UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120309

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE MELTS OF STEELS E42 AND E43
 CONTG. SI 4.15-4.25, C 0.08-0.09, AL 0.08-0.10, AND S 0.002-0.003PERCENT
 WERE STUDIED. OUT OF EACH MELT, 288 SAMPLES WERE TAKEN, AND THE NO. OF
 BENDS OF THE SAMPLES AS WELL AS THE THICKNESS OF THE METAL SHEET WERE
 DETD. THE GRAIN SIZE AND THE AMT. OF GRAPHITE WERE DETD. ON THE FRONT
 SECTIONS. THE EFFECT OF THE METHOD OF SCALE REMOVAL ON THE PLASTIC
 PROPERTIES WAS ALSO STUDIED BY: (A) ETCHING IN SOLNS. OF (200 G H SUB2
 SO SUB4 PLUS 40 G NAOL)-L., AND 120 G FE SUB2 (SO SUB4) SUB3.9 H SUB2
 O-L.; (B) THE MECH. METHOD, AND (C) POLISHING OF SAMPLES IN A SOLN. OF
 90 ML H SUB2 O SUB2 PLUS 10 ML H SUB3 PO SUB4 PLUS OXALIC ACID. THE
 FOLLOWING EQUATION WAS OBTAINED ON THE BASIS OF DETN. OF THE NO. OF
 BENDS N DEPENDING ON THE THICKNESS T, GRAIN SIZE Z, AMT. OF GRAPHITE G,
 AND THE SURFACE ROUGHNESS P: $N = 5.5 Z - 5.8 T - 0.086 G - 0.079 P$.

FACILITY: VERKH ISETSKII MET. ZAVOD, USSR.

UNCLASSIFIED

USSR

LINNIK, Yu. V., Deceased, POMANOVSKIY, I. V.

"Properties of Minimum Plans of First Entry for Multinomial Processes"

Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR [Writings of Scientific Seminars Leningrad Division Mathematics Institute, Academy of Sciences, USSR], 1972, Vol 29, pp 3-8 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V267 by L. Gal'chuk).

Translation: A number of facts are proven concerning successive estimation of a vector parameter for a multinomial distribution. Namely, conditions are presented under which the stop boundary of observations is restored on the basis of the mathematical expectation of the moment of stopping, as well as the condition of completeness of plans of estimation.

1/1

USSR

UDC 616.981.136-039:616.5-078

POMANSKAYA, L. A., and LAZAREVA, Z. S., Tul'skaya Oblast Sanitary Epidemiological Station, and Hospital No 1 imeni Semashko

"Isolation of Listeria Cultures from a Patient with Cutaneous Manifestations of Listeriosis by the Method of Bioassay on Suckling Mice"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1970, pp 40-42

Abstract: Listeria cultures were isolated from the pharynx of a patient with skin involvement by means of bioassay on suckling mice. The patient had been suffering from frequent tonsillitis, and had a history of two spontaneous abortions before the last normal birth. The onset of listeriosis was acute, with a rise in temperature to 40°C. On the fourth day an erythematous rash with pruritus appeared all over her body. She was hospitalized in serious condition with a diagnosis of lacunar angina and erythema nodosum. Pure listeria cultures were isolated only by inoculation of suckling mice with material from her pharynx, first cultured on broth. Repeated bacteriological examinations of the smears from the pharynx, nose, and blood gave negative results, which was due to the action of the antibiotics (penicillin and streptomycin) with which the patient was treated.

1/1

1/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--INTERRELATIONS BETWEEN THE CAUSATIVE AGENTS OF TULAREMIA AND
LISTERIOSIS ON NUTRIENT MEDIA AND IN THE ORGANISM OF ALBINO MICE -U-

AUTHOR--POMANSKAYA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIDLOGII, 1970, NR 4,
PP 36-42

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TULAREMIA, LISTERIOSIS, CULTURE METHOD, WHITE MOUSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/1521

STEP NO--UR/0016/70/000/004/0036/0042

CIRC ACCESSION NO--AP0109581

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109581

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED UNDER EXPERIMENTAL CONDITIONS THE INTERRELATIONS BETWEEN THE CAUSATIVE AGENTS OF TULAREMIA AND LISTERIOSIS IN VIVO. IN MIXED CULTIVATION IN A FLUID MEDIUM THE CAUSATIVE AGENT OF TULAREMIA PERISHED COMPLETELY IN 3 DAYS, THE GROWTH OF LISTERIA BEING PROFUSE; ON AGAR PLATES THE COLONIES OF F. TULARENSIS REDUCED IN SIZE AND DISAPPEARED COMPLETELY NEAR THE HEMOLYSIS AROUND THE LISTERIA COLONIES. WHEN ALBINO MICE WERE SIMULTANEOUSLY GIVEN A SUBCUTANEOUS INJECTION OF ONE LETHAL DOSE OF F. TULARENSIS AND VARIOUS DOSE OF LISTERIA THE INFECTION PROCESS WAS PROLONGED (THE MICE DIED ON THE 22ND-27ND DAY); THE EXTENT OF CONTAMINATION WITH F. TULARENSIS OF THE ORGANS AND THE BLOOD WAS REDUCED UP TO COMPLETE DISAPPEARANCE OF THE MICROBE. IT WAS DIFFICULT TO ISOLATE TULAREMIA CULTURES IN PROFUSE GROWTH OF LISTERIA. WHEN 1 MILLARD MICROBIAL CELLS OF LISTERIA AND 1 TO 100 MICROBIAL CELLS OF F. TULARENSIS WERE ADMINISTERED, ONLY LISTERIA WERE ISOLATED IN THE CULTURES OF MATERIAL OBTAINED FROM THE PERISHED MICE; WHEN THE DOSE OF F. TULARENSIS WAS INCREASED TO 1,000 AND MORE MICROBIAL CELLS, BOTH CULTURES GREW IN ABUNDANCE. INFECTED MICE DIED IN 3 TO 4 DAYS.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ISOLATION OF LISTERIA CULTURE FROM A PATIENT WITH CUTANEOUS
MANIFESTATIONS OF LISTERIOSIS BY THE METHOD OF BIOLOGICAL TEST ON
AUTHOR--(02)-POMANSKAYA, L.A., LAZAREVA, Z.S.
COUNTRY OF INFO--USSR. P
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 40-42
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LISTERIOSIS, MOUSE, CULTURE METHOD, PENICILLIN, STREPTOMYCIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0101 STEP NO--UR/0016/70/000/005/0040/0042
CIRC ACCESSION NO--AP0114497
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LISTERIA CULTURE WAS ISOLATED FROM THE PHARYNX OF A PATIENT WITH AFFECTION OF THE SKIN, BY MEANS OF A BIOLOGICAL TEST ON SUCKLING MICE. THE PATIENT WAS SUFFERING FROM FREQUENT TONSILLITIS, AND HAD AN AGGRAVATED OBSTETRICAL ANAMNESIS. THE ONSET OF THE PRESENT DISEASE WAS ACUTE WITH AN INCREASE OF TEMPERATURE TO 40DEGREESC. RASH OF ERYTHEMATOUS CHARACTER APPEARED ON THE FOURTH DAY ALL OVER THE BODY, WITH PRURITIS. SHE WAS HOSPITALIZED IN A SERIOUS CONDITION WITH A DIAGNOSIS OF LACUNAR ANGINA AND ERYTHEMA NODOSUM. PURE CULTURE OF LISTERIA WAS ISOLATED ONLY BY INOCULATION OF INFANT MICE WITH MATERIAL OBTAINED FROM THE PHARYNX AND FIRST GROWN ON BROTH. REPEATED BACTERIOLOGICAL EXAMINATION OF THE SMEARS FROM THE PHARYNX, NOSE AND BLOOD GAVE NEGATIVE RESULTS. THIS SHOULD BE ATTRIBUTED TO THE ACTION OF ANTIBIOTICS (PENICILLIN AND STREPTOMYCIN) WITH WHICH THE PATIENT WAS TREATED. FACILITY: TUL'SKAYA OBLASTNAYA SANITARNO-EPIDEMIOLOGICHESKAYA STANTSIYA AND BOL'NITSA NO 1 IM. SEMASHKU.

UNCLASSIFIED

Epidemiology

USSR

5

DOBROKHOTOV, B. P., MESHCHERYAKOVA, I. S., DOLOTOVA, L. A., POMANSKAYA, L. A.,
ARSEN'YEV, V. P., LEVACHEVA, Z. A., PANINA, T. V., KATELINA, A. F. and
MYASNIKOV, Yu. A., Institute of Epidemiology, and Microbiology imeni Gamaleya,
Academy of Medical Sciences, and Tul'skaya Oblast Sanitary-Epidemiological
Station

"Application of a New Method of Detecting Tularemia Epizootics Under Practical
Conditions"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973,
pp 105-108

The timely detection, study, and prognostication of tularemia epizootics
occupy an important place in the work of divisions of especially dangerous
infections of sanitary-epidemiological stations inasmuch as this makes it pos-
sible to plan and carry out prophylactic measures against this infection
properly. However, methods employed at the present time for detecting epizoo-
tics in nature are extremely labor-consuming and require a great deal of time
both for the collection of field material and for its laboratory examination.
It is practically impossible to survey each year the entire territory serviced
by the station; therefore it is expedient to conduct a detailed study of cir-
cumstances in localities only after an approximate determination of the
1/10

(5)

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

probability of the presence of tularemia epizootics in any of their parts. For this preliminary estimate it was suggested that pellets of birds of prey be examined for the presence of the tularemia microbe antigen [1]. Results of the practical application of this method under the conditions of Tul'skaya Oblast are presented in this report.

On the given territory, located in the Central Russian highlands, foci of tularemia of the meadow-field type [2] are widely distributed, the principal carrier being the ordinary field mouse and the long-time preserver of the causative agent, the tick *D. pictus*. In spite of substantial changes which have taken place in the method of conducting agriculture, these foci continue to exist; although as a result of the mass vaccination of the population, instances of disease among the people are extremely rare [3].

During 1968 to 1971 regular organized zoologic-parasitological work was carried out in the Oblast. A total of 25,832 traps were set up in the fields by workers in the Division of Especially Dangerous Infections during the time indicated; 497 cubic meters of straw were displaced; 84 hectares of the control areas were dug up and as a result 2,199 ordinary field mice were caught.

In the autumn of 1968 a large number of ordinary field mice were observed in the southern rayons of the Oblast: more than 500 per hectare; and in the

2/10

5

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

north up to 1000-1500 in some places. This led to a concentration of small animals in the stacks (19 to 25% falling into the traps) and to the occurrence among them of tularemia epizootics. In December of 1968 and in January 1969 15 strains of the causative agent were isolated in Kurkinskiy and Shchekinskiy rayons of the Oblast: 5 from the carcasses of the field mice and 10 from the excrement. In the course of the entire year 1969 the number of field mice was low and the next increase was not registered until in the autumn of 1970: on isolated fields (clover) up to 2000, and in Shchekinskiy and Odoyevskiy rayons, up to 5000 per hectare. In 1971 the number of ordinary field mice in the entire Oblast was extremely low. During these years negative results were obtained in bacteriological investigations of small animals; only one culture of the tularemia microbe was isolated in June 1970 from the ticks *D. pictus* collected from cows in Suvorovskiy Rayon. Thus from 1968 to 1971 during an intensive inspection of the Oblast, the presence of tularemia was established by a bacteriological method in only three rayons -- Kurkinskiy, Shchekinskiy, and Suvorovskiy.

During 1969 to 1971, 1490 pellets of birds of prey were collected and examined in the Oblast. Their collection took place primarily in the spring

3/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

(5)

(April - May) at the time of three-to-four-day field trips by automobile; a certain number was collected incidentally while other zoological work was being carried out. The pellets were most frequently found near poles of electro-transmission and communications lines, on stacks, and near other structures on the landscape. During the entire time in the collection of pellets approximately 30 man-days were used which comprised an extremely insignificant part of the time expended by the division for inspecting the Oblast. Unfortunately in some of the 18 rayons covered by the collection, an insufficient number of pellets were found, which did not permit the positive determination of an epizootic condition of the rodent population in their territory (See Drawing). The number of pellets collected at any point was directly dependent on the number of ordinary field mice in a given locality: under an increased concentration of these rodents more birds of prey were observed and it was possible to find more pellets.

In the spring collections pellets (which had been preserved since autumn) of ordinary and rough-legged buzzards that winter in the territory predominated (more than 90%). A large portion of the pellets of the lesser falcons had disintegrated by this time. In 88 to 96% of the pellets the remains of ordinary

4/10

5

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

field mice were encountered; those of other kinds of mammals (mice of plowed land, field mice, grey hamsters, gophers, weasels, shrews) and birds were rarely encountered. During a selective examination in 1969, the remains of 128 small animals were detected in 85 pellets; in 1970, in 232 pellets, the remains of 356 small animals; and in 1971, the remains of 200 small animals in 140 pellets, giving an average of 1.5 small animal per pellet.

In this manner the 1490 pellets collected contained more small animals than those obtained in the fields during these years for investigation by all other methods. One should also keep in view that by consuming in nature primarily the weakened animals or their carcasses, birds of prey ensure the selection out of the animal population of precisely those individuals which are desirable for bacteriological investigation.

The presence of an antigen in the pellets positively confirmed the fact of an epizootic condition while through an analysis of the bone remains it was possible to determine the kinds of mammals involved in the epizootic process.

For the purpose of detecting the antigen the antibody neutralization reaction was employed. The material was prepared and the reaction carried out by the method described earlier [1].

5/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

(5)

The antigen of the tularemia microbe was detected in 173 pellets collected in the territory of 11 rayons of the Oblast. Only those results were considered positive in which there was a sharp delay in hemagglutination which was observed in titrations (from the initial dry weight of the pellet); 1:10 - 1:20 in 73 cases; 1:40 - 1:80 in 67 cases; 1:160 - 1:320 in 23 cases; 1:640 - 1:1280 in 12 cases (See Table).

The number of sites where pellets were found containing an antigen was significantly greater than the number of sites where cultures were formed -- 21 against 4. This made it possible to establish with far greater precision the boundaries of epizootics that had transpired, and it testified to the fact that an epizootic situation with respect to tularemia still exists in a significant part of the territory of Tul'skaya Oblast. Moreover, the presence of epizootics was successfully established for the years having a smaller number of ordinary field mice where it is impossible to detect the causative agent of tularemia by the usually applied methods.

In such torpid epizootics the tularemia microbe antigen is detected only in 1 to 1.5% of the pellets. Cultures of the tularemia microbe from rodents can be isolated only at the time of sufficiently intensive epizootics, and in 6/10

- 7 -

USSR

5

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

such places more than 20% of the collected pellets contained the tularemia microbe antigen.

In this way, results of an examination of pellets (by the antibody neutralization reaction) collected in early spring in meadow-field foci of tularemia can serve as a precise indication of the existence during the past winter of epizootic tularemia in the territory being surveyed and its magnitude. The revelation of this fact is extremely important in determining the enzooticity of the territory for the purpose of conducting prophylactic measures, the first and foremost being systematic vaccinations. Necessarily in a suspect territory a more thorough collection of material must be achieved for the purpose of isolating the causative agent of tularemia by ordinary bacteriological methods.

Conclusions

1. Examination of pellets of birds of prey collected in springtime in meadow-field foci of tularemia for the presence of the tularemia microbe antigen makes it possible quickly and with a small expenditure of work to establish the past winter's epizootics of this infection and their intensity over extensive areas.

7/10

USSR

(5)

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

2. In the course of the years 1969 to 1971, tularemia enzooticity was established by the indicated method in 11 rayons of Tul'skaya Oblast; whereas by the bacteriological method the causative agent was detected in only 3 rayons.

3. With a sufficient amount of research material (100 to 200 pellets from each point) it will be possible to successfully detect each year even torpid tularemia epizootics, given a reduced number of ordinary field mice per focus.

4. The suggested method is completely suitable for use in work of divisions of especially dangerous infections of sanitary-epidemiological stations.

BIBLIOGRAPHY

1. Dobrokhotov, B. P., Meshcheryakova, I. S., Zh. Mikrobiol. [Journal of Microbiology], 1969, No 12, p 38.
2. Myasnikov, Yu. A., Prirodnnye Ochagi Tulyaremi Srednerusskoy Vozvyshehnosti, ikh Epidemiologicheskiye Osobennosti i Profilaktika [Natural Tularemia Sites of Central Russian Highlands, Their Epidemiological Features and Prophylactics], Thesis for Doctor of M., 1963.
4. Olsuf'yev, N. G., Dobrokhotov, B. P. et al., Zh. Mikrobiol., 1971, No 6, p 117.

8/10

- 8 -

USSR

5

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

NUMBER OF PELLETS BY YEAR

RAYON	1969		1970		1971	
	Total	With Antigen	Total	With Antigen	Total	With Antigen
Kurkinskiy	149	33	24	--	22	1
Yefremovskiy	58	23	40	--	14	--
Kamenskiy	--	--	14	--	40	1
Chernskiy	--	--	8	--	117	--
Teplo-Orarevskiy	27	4	24	--	--	--
Kireyevskiy	--	--	30	--	166	2
Odoyevskiy	--	--	2	--	98	42
Dubenskiy	--	--	--	--	185	55
Leninskiy	--	--	22	--	168	5
Venevskiy	2	--	67	2	--	--
Yasnogorskiy	--	--	23	3	--	--
Zaokskiy	--	--	4	--	46	2
Aleksinskiy	--	--	12	--	36	--
Prochiye	8	--	50	--	32	--
Total	244	60	320	5	932	108

9/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobio-
logii, No 7, 1973, pp 105-108

5

Drawing

EXAMINATION OF PELLETS OF BIRDS OF PREY FOR
TULAREMIA MICROBE ANTIGEN CONTENT IN MEADOW-
FIELD FOCI OF TUL'SKAYA OBLAST

1. Sites of Formation of Cultures of Tularemia Microbe From the
Smaller Mammals, From Their Excrement and Ixodic Ticks
2. Collection Point of Pellets in 1969
3. Collection Point of Pellets in 1970
4. Collection Point of Pellets in 1971

Crosshatched symbols are points where the tularemia microbe antigen was
found in pellets; dotted symbols are points at which more than 5 pellets
were collected.

- Key:
- | | |
|---------------|--------------|
| 1. Yasnogorsk | 7. Kireyevsk |
| 2. Venev | 8. Odoyev |
| 3. Tula | 9. Teploye |
| 4. Dubna | 10. Kurkino |
| 5. Suvorov | 11. Yefremov |
| 6. Shchekino | |

10/10