ALEKSANDROV, P. S.

"Topologichekiye Prostranstva"

report Submitted for Symposium on General Topology and its relations to modern Analysis and Algebra, Prague, 1-8 Sep 61

ALEKSANDROV, P.S.; FINIKOV, S.P.

Eduard Cech; obituary. Usp. mat. nauk 16 no.1:119-126 Ja-F '61. (MIRA 14:6)

(Cech, Eduard, 1893-1960)

S/043/61/016/003/005/005
C111/C444

AUTHORS: Aleksandrov P. S., Myshkis A. D., Oleynik O. A.,

TITLE: Ivan Georgiyevich Petrovskiy (on the occasion of his sixtieth birthday).

PERIODICAL: Uspekhi matematicheskikh nauk, v.16, no.3, 1961, 219-238.

TEXT: The authors give a survey on the most important scientific results of the jubilar and some short biographical dates. I. G. Petrovskiy dedicated himself to the following questions:
1.) correctness of the Cauchy problem.

$$\frac{\partial^{N_i} u_i}{\partial t^{N_i}} = \sum_{j=1}^{M} \sum_{k_1+\dots+k_s=M} A_{ij}^{k_1,\dots,k_s}(t) \frac{\partial^{k_1+\dots+k_s} u_j}{\partial x_1^{k_1} \dots \partial x_s^{k_s}} + f_i(t, x_1, \dots, x_s) \qquad (1)$$

$$\left.\frac{\partial^k u_i}{\partial t^k}\right|_{t=0} = \varphi_i^k(x_1, \dots, x_s) \qquad (2)$$

$(i = 1, \dots, N;\ k = 0, \dots, N_i - 1)$

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Ivan Georgiyevich ...

where $A(t)$, $f(t,x)$ and $\varphi(x)$ is sufficiently smooth, but usually not analytic. The problem was treated by aid of Fourier transformation of (1) - (2) and led to a statement of sufficient and necessary conditions ("condition A" of Petrovskiy) for the uniform correctness of the problem (1) - (2). It was especially stated, that the condition A is satisfied for hyperbolic systems. Further the conception of parabolic (in the Petrovskiy sense) systems was established, and it was shown that the Cauchy problem is always correct for them. On the elliptic (in the Petrovskiy sense) system it was proved that all sufficiently smooth solutions are analytic, if the equations are analytic in all arguments.

2.) The dependence of the solution of the Cauchy problem for hyperbolic systems on initial conditions (in connection with the so-called wave-diffusion). For linear homogeneous systems with constant coefficients necessary and sufficient conditions for the existence of "stable" (i.e. not vanishing under small changes of the coefficients) gaps were given.

3.) Conditions for the solubility of the first boundary value problem for the heat equation (by aid of the method of "superfunctions" of

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Perron).

1.) Behaviour of the solutions of the Cauchy problem for

$$\frac{\partial x}{\partial t} = a^2 \frac{\partial^2 x}{\partial x^2} + F(a) \text{ for } t \to \infty .$$

5.) Sufficient conditions for the fact that near the origin the integral curves of

$$\frac{dx_i}{dt} = \sum_{k=1}^{n} a_{ik} x_k + O\left(\sum |x_k|\right) \qquad (i = 1, \ldots, n;\ a_{ik} = \text{const}), \quad (8)$$

behave like the integral curves of the corresponding linear system (without $O(\sum)$).

6.) Researche of the number of limit-cycles of

$$\frac{dy}{dx} = \frac{P(x,y)}{Q(x,y)} , \quad (9)$$

where P and Q are polynomials. By extension of the complex and application of the methods of algebraic geometry, an upper bound for the

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number of limit cycles is obtained, e.g. for P and Q of second degree there exist at most three limit cycles.
7.) A few papers in the field of real functions, probability theory, algebraic geometry.

After the description of his scientific merits, the accomplishments as a pedagogue and organisator are honoured. Petrovskiy was dean of the Mechanical - Mathematical Faculty of the M G N (Moscow State University) during 1940 - 44 and is now rector since 1951. Since 1953 he is a member of the Presidency of the Academy of Sciences.

Biographic dates: He was born January 18, 1901, passed the high school in Sevsk, studied mathematics in Moscow since 1922, since 1925 in the seminary of D. F. Yegorov, since 1929 he taught at the Moscow University.
There is a portrait of the jubilar added to the article as well as a list of his publications (1928-1959) with 47 titles.
The author mentions: I. M. Gel'fand, G. Ye. Shilov, S. N. Bernshteyn, L. A. Lynsternik, A. N. Kolmogorov, N. S. Piskunov, L. A. Chudov, Ye. M. Landis, N. N. Bautin, O. A. Oleynik, A. Ya. Khinchin, S. L. Sobolev, A. N. Tikhonov.

Card 4/4

ALEKSANDROV, P.S., red.; BOL'SHEV, L.N., red.; VLADIMIROV, V.S., red.; KUDRYAVTSEV, L.D., red.; LEONT'YEV, A.F., red.; NIKOL'SKIY, S.N., red.; POSTNIKOV, M.M., red.; SOLOMENTSEV, Ye.D., red.; SHAFAREVICH, I.R., red.; GRIBOVA, M.P., tekhn. red.

[English-Russian mathematical dictionary]Anglo-russkii slovar' matematicheskikh terminov. Red. kollegiia; P.S.Aleksandrov (predsedatel') i dr. Moskva, Izd-vo inostr. lit-ry, 1962. 369 p. (MIRA 15:11)

1. Akademiya nauk SSSR. Matematicheskiy institut.
(English language--Dictionaries--Russian)
(Mathematics--Dictionaries)

ALEKSANDROW, Pawel S., prof.

On some forms of cooperation of the Polish and Soviet mathematical schools in the fields of topology and theory of ensemble. Nauka polska 10 no.6:51-56 N-D '62.

1. Czlonek Rzeczywisty Akademii Nauk Zwiazku Socjalistycznych Republik Radzieckich, Moskwa, i czlonek zagraniczny Polskiej Akademii Nauk, Warszawa.

ALEKSANDROV, P.S.

International symposium on general topology. Analele mat 16 no.3: 200-202 Jl-S '62.

ALEKSANDROV, P.S.; PONOMAREV, V.I.

Completely regular spaces and their bicompact extensions.
Vest.Mosk.un.Ser.1:Mat., mekh. 17 no.2:37-43 Mr-Ap '62.
(MIRA 15:6)
1. Kafedra vysshey geometrii i topologii Moskovskogo universiteta.
(Spaces, Generalized) (Topology)

ALEKSANDROV, P.S.

International Symposium on General Topology. Usp.mat.nauk 17 no.3:215-220 My-Je '62. (MIRA 15:12)
(Topology--Congresses)

ALEKSANDROV, P.S., akademik

International symposium on general topology. Vest. AN SSSR 32 no.2:76-79 F '62. (MIRA 15:2)
(Topology--Congresses)

ALEKSANDROV, P.S., red.; MARKUSHEVICH, A.I., red.; KHINCHIN, A.Ya., red.[deceased]; BOLTYANSKIY, V.G., red.; YAGLOM, I.M., red.; SHIROKOVA, S.A., red.

[Encyclopedia of elementary mathematics] Entsiklopediia elementarnoi matematiki. Moskva, Fizmatgiz. Book 4. [Geometry] Geometriia. 1963. 567 p. (MIRA 17:4)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow.

ALEKSANDROW, P.S. [Aleksandrov, P.S.] (Moskwa)

Certain phenomena of cooperation of Polish and Soviet mathematics schools in topology and theory of sets. Roczn wiad matem 6 no.2:175-180 '63.

ALEKSANDROV, P.S.

Andrei Nikolaevich Kolmogorov; on his 60th birthday. Vest. Mosk.un.Ser. 1: Mat., mekh. 18 no.3:3-6 My-Je '63.
(MIRA 16:6)
(Kolmogorov, Andrei Nikolaevich, 1913-)

ALEKSANDROV, P.S.; GNEDENKO, B.V.

A.N.Kolmogorov as a teacher. Usp. mat. nauk 18 no.5:115-120 S-O '63. (MIRA 16:12)

ALEKSANDROV, P.S.

Study of a model phototestereograph. Geod. i kart. no.6:30-32 Je '63.
(MIRA 16:9)
(Aerial photogrammetry—Equipment and supplies)

ALEKSANDROV, P.S.; PONOMAREV, V.I.

Projective spectra and canonical coverings. Usp. mat. nauk 18 no.5:125-132 S-O '63. (MIRA 16:12)

ALEKSANDROV, P.S.; KOLMOGOROV, A.N.

Lev Abramovich Tumarkin, 1904- ; on his 60th birthday. Usp. mat. nauk 19 no.4:219-221 '64. (MIRA 17:10)

ALEKSANDROV, P.S.

Rectifying aerial photographs on a photostereograph. Geod. i kart. no.7:46-48 Jl '64. (MIRA 17:12)

L 00539-66 EWT(d) IJP(c)
ACCESSION NR: AP5023874 UR/0042/64/019/006/0003/0046

AUTHOR: Aleksandrov, P. S. (Bolshevo-Komarovka) 44,55

17
B

TITLE: Some basic trends in general topology

SOURCE: Uspekhi matematicheskikh nauk, v. 19, no. 6, 1964, 3-46

TOPIC TAGS: topology, mathematic space, dimension analysis 16,44,55

ABSTRACT: Academician ALEKSANDROV delivered a lecture at the general meeting of the mathematics section of the USSR Academy of Sciences, of which this article is a report. The article is a resume of work and contributions to general topology in Euclidean spaces, applications of homological and cohomological methods in algebraic topology, a theory of topological spaces, and various problems arising in the theory of dimensions. Recommendations and indications concerning the nature of future work are given.
Orig. art. has: 21 formulas.

ASSOCIATION: none

SUBMITTED: 27Jun64 ENCL: 00 SUB CODE: MA

NR REF SOV: 106 OTHER: 034 JPRS

Card 1/1

ALEKSANDROV, P.S.

Some fundamental trends in general topology. Usp. mat. nauk 19 no.6:5-46 N-D '64 (MIRA 18:2)

ALEKSANDROV, P.S.

Opening address delivered at the grand meeting of the Moscow Mathematical Society on October 20, 1964. Usp. mat. nauk 20 no.3:4-9 My-Je '65. (MIRA 18:6)

L 22099-66 EWT(d) IJP(c)

ACC NR: AP6012662 SOURCE CODE: UR/0020/65/161/002/0263/0266

AUTHOR: Aleksandrov, P. S. (Academician) 17 B

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Ponomarev's theory of absolutes of topological spaces 12, 41

SOURCE: AN SSSR. Doklady, v. 161, no. 2, 1965, 263-266

TOPIC TAGS: topology, mathematics

ABSTRACT: V. Ponomarev defined the absolute of a paracompactum as the limit of a zero-dimensional projection spectrum -- the "complete weakening" of the maximal spectrum of the given paracompactum. The purpose of the present article is to give a direct definition of a class of so-called "absolute" zero-dimensional spectra which is broad enough to take in all PONOMAREV absolutes as the limit spaces of the spectra that enter into the class. A zero-dimensional projection spectrum $S = (|\alpha|, \omega_{\alpha}^{\alpha'})$ is said to be absolute if it meets the following conditions: 1) the spectrum S is complete; 2) it has no ordinal strengthening different from it; 3) it does not have equivalent indices; 4) it is not the subspectrum of any spectrum different from it which meets the first three conditions.

Two theorems are given. Theorem 1: If space X_0 is the absolute of some paracompactum X (and, hence, its own proper absolute), it is the space of a certain

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L 22099-66

ACC NR: AP6012662 O

(and unique) absolute spectrum. Theorem 2: Space $\tilde{S}_0$ of an absolute spectrum $S_0 = (a, \omega_a a')$ is its own proper absolute (a completely regular space). It is noted that all paracompacta are the spaces of spectra resulting from the strengthening (in PONOMAREV's sence) of absolute spectra. However, the strengthening of absolute spectra may also result in spectra whose spaces are not Hausdorff T_1-spaces. The author notes that it would be interesting to find out what kind of spaces these are. Orig. art. has: 1 formula. [JPRS]

SUB CODE: 12 / SUBM DATE: 23Dec64 / ORIG REF: 008 / OTH REF: 002

Card 2/2 BLG

grains. Elimination of the maximum of molybdenum at 1200C and of tungsten at 1700C is explained by coincidence of the first and second relaxation processes. The relaxation activation energy of tungsten was 115 Cal/g-atom at 1400C and 153 Cal/g-atom at 1950C; for molybdenum, the values were 87 Cal/g-atom at 1000C and 118 Cal/g-atom at 1450C. These values are close to the recrystallization activation energy. Internal friction was measured in recrystallized tungsten samples after cooling to 100C (from 2400C). However, quantitative measurements could not be made due to the high mobility of vacancies. The dislocation density was determined in tungsten by the level of internal friction, using X-rays. The logarithmic curves of internal friction depending on the logarithm of time for tungsten show two stages of stress relaxation at 600-900C, while at 1100-2000C there are three stages. When annealing is performed above 1600C the first change in internal friction is not detected due to a sharp increase in the vacancy shifting rate. As the temperature increases, the process of dislocation shifting becomes more intense, increasing the total relaxation process activation energy. Comparison of the obtained data with earlier publications shows that at temperatures from 500 to 900C stress relaxation is first caused by shifting of double and larger accumulations of vacancies, then by shifting of individual vacancies and some

L 15000-65

ACCESSION NR: AT4048137

2

dislocations. In the interval between 1100 and 1500C, stress relaxation is probably caused by double and individual vacancies, and only at temperatures above 1600C are the shifting dislocations of any importance. Measurement of relaxation of samples with given concentrations of vacancies and dislocations will result in proper estimation of the importance of these vacancies and dislocations for the recrystallization process. Orig. art. has: 7 figures, 2 tables and 2 formulas.

ASSOCIATION: Mordovskiy gosudarstvenny*y universitet (Mordovian State University)

SUBMITTED: 10Nov63 ENCL: 00 SUB CODE: MM

NO REF SOV: 008 OTHER: 003

Card 3/3

ALEKSANDROV, P. V.

USSR/Biology
Plants
Parasites

Nov/Dec 48

"The Problem of Egyptian Broom Rape (Orobanche Aegyptiaca Pers.), Parasitic on Weedlike Plants of Turkmen SSR." V. V. Nikitin, M. A. Andreyev, P. V. Aleksandrov (Deceases), Turkmen Affiliate, Acad Sci USSR, Ashkhabad, 3 pp

"Botan Zhur" Vol XXXIII, No 6

Egyptian broom rape has been spreading widely in Turkmen SSR recently, particularly in the Ashkhabad region, and has become one of the most prevalent and harmful parasites of melon and garden crops. Lists weedlike plants which Eguptian broom rape attacks. Notes that cultimated crops are much more susceptible to its ravages than are weedy plants of the same family. Submitted 20 Nov 47.

58/49T11

ALEKSANDROV, P.V.; MOROZKOV, S.G.

A more precise reduction of horizontal parallaxes to suit the Central Scientific Research Institute of Geodesy, Aerial Photography and Cartography. Sbor.st.po geod.no.1:72-75 '51.
(Parallax) (Aerial photogrammetry) (MIRA 9:7)

ALEKSANDROV, P.V., kand.tekhn.nauk

Using reinforced concrete longitudinal ties in France. Biul. stroi. tekh. 15 no.8:32-33 Ag '58. (MIRA 11:9)
(France--Railroads--Ties, Concrete)

ALEKSANDROV, P.V.

Prevention of suppuration of postoperative wounds in various forms of acute appendicitis. Khirurgiia 34 no.4:47-49 Ap'58 (MIRA 11:7)
(APPENDIX, surgery
postop.wound suppuration, prev. (Rus))

ALEKSANDROV, P.V.; LEPEKHIN, N.M.

Perforating thoracoabdominal gunshot wound. Khirurgiia, Moskva 34 no.11:133 N '58. (MIRA 12:1)
(GUNSHOT WOUNDS)

ALEKSANDROV, P.V., kand.tekhn.nauk

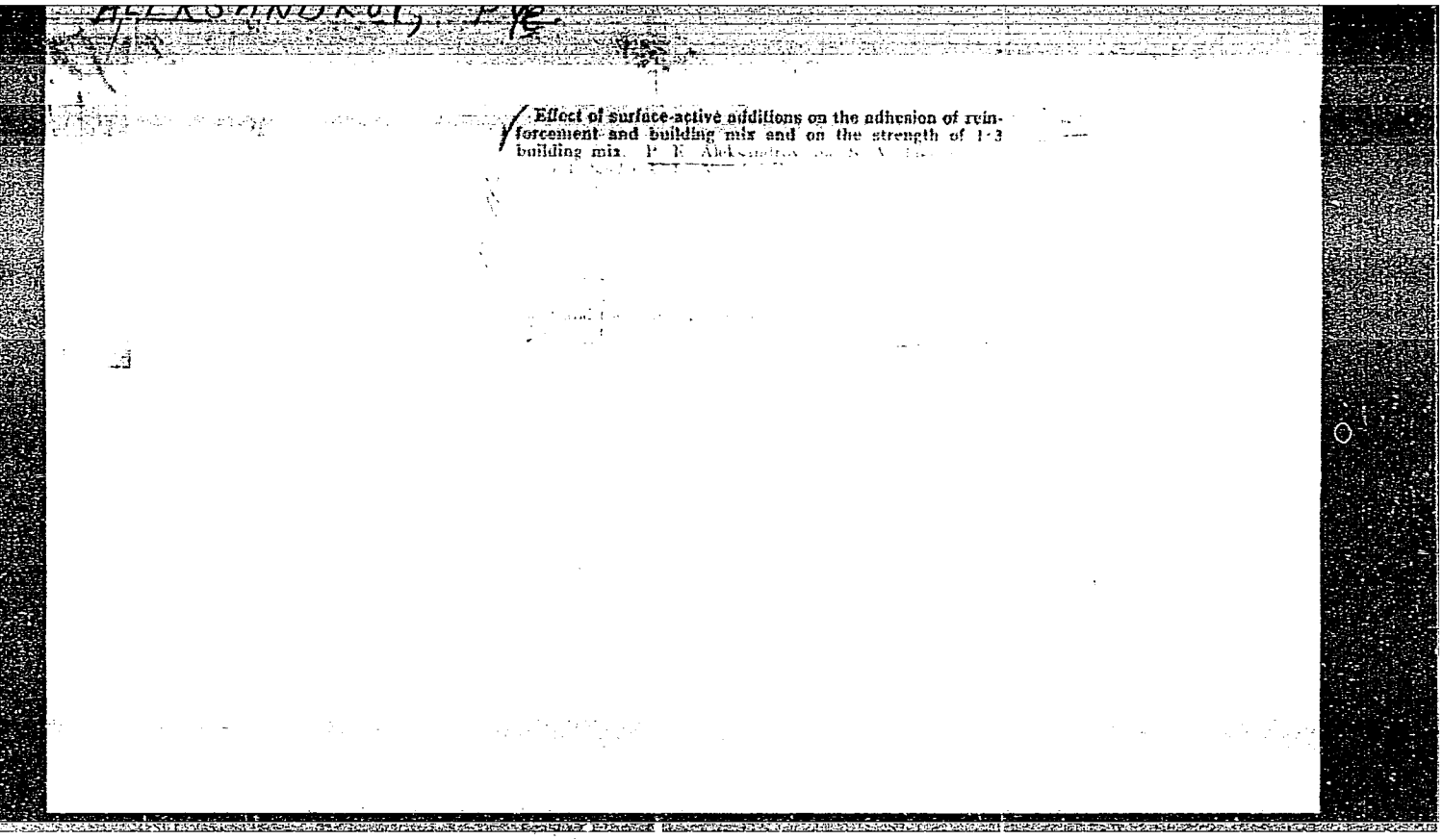
Assembling an air-supported steel dome. Mont. i spets.rab.v stroi 22 no.11:31-32 N'60. (MIRA 13:10)
(United States--Domes)

ALEKSANDROV, P.V.

Air-filled structural elements. Prom. stroi. 39 no.4:56-61 '61.
(MIRA 14:6)
(Building, Plastic)

ALEKSANDROV, P.V., kapitan meditsinskoy sluzhby

Prevention of postoperative complications in various forms of appendicitis. Voen.-med.zhur. no.9:77 S '61. (MIRA 15:10)
(APPENDICITIS)



Effect of surface-active additions on the adhesion of reinforcement and building mix and on the strength of 1:3 building mix. P. E. Alek[illegible]

KUNTSEVICH, O.V.; ALEKSANDROV, P.Ye.; RATINOV, V.B.; ROSENBERG, T.I.; BOGAUTDINOVA, G.G.

Theory of setting of gypsum cements. Dokl.AN SSSR 104 no.4:587-588 O '55. (MLRA 9:2)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut zhelezobetonnykh izdeliy i nerudnykh materialov i Leningradskiy institut inzhenerov zheleznodorozhnogo transporta imeni V.N.Obraztsova. Predstavleno akademikom P.A.Rebinderem.
(Gypsum)

SOV/124-57-9-11132

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 9, p 173 (USSR)

AUTHORS: Kuntsevich, O. V., Aleksandrov, P. Ye.

TITLE: The Effect of the Dissolution of the Cement Component of a Concrete by Running Water on the Freezing Stability of the Concrete (Vliyaniye rastvoreniya tsementnogo kamnya protochnymi vodami na morozostoy-kost' betona)

PERIODICAL: V sb.: 15-ya nauchn. konferentsiya Leningr, inzh.-stroit in-ta. Leningrad, 1957, pp 427-428

ABSTRACT: Bibliographic entry

Card 1/1

SATALKIN, A.V., prof.; KUNTSEVICH, O.V., dots.; ALEKSANDROV, P.Ye., inzh.; SOKOLOVSKIY, V.T., inzh.

Using high-strength lime-quartz materials in subway construction. Transp.stroi. 9 no.2:43-45 F '59. (MIRA 12:5)
(Leningrad--Subways) (Silicates)

[illegible]CH, E. Ya., [illegible]

Frost resistance of silicalcites. Sbor. LIIZHT [illegible]

(MIRA [illegible])

(Concrete, Frost resistant—Testing)

ALEKSANDROV, P.Ye., inzh.; KUNTSEVICH, O.V., kand.tekhn.nauk, dotsent

The problem of corrosion of the reinforcement in concrete with additions of salt. Sbor. trud. LIIZHT no.174:177-184 '60.
(MIRA 15:11)

(Concrete reinforcement--Corrosion)

KUNTSEVICH, O.V., kand.tekhn.nauk, dotsent; ALEKSANDROV, P.Ye., inzh.

The effect of surface-active substances on cement stone, mortar and concrete. Sbor. trud. LIIZHT no.174:185-200 '60. (MIRA 15:11)
(Surface-active agents)
(Frost resistant concrete)

KUNTSEVICH, O.V.; ALEKSANDROV, P.Ye.

Effect of the composition of concrete on its resistance to frost. Sbor. trud. LIIZHT no.192:91-109 '62. (MIRA 16:9)

ALEKSANDROV, R.G.; BARBASHINA, Ye.G.; BAS'KO, K.P.; VARTAN'YAN, A.S.; VASILEVSKIY, P.F.; GLAGOLEVA, L.A.; DUBININ, N.P., prof., doktor tekhn. nauk; KONSTANTINOV, L.S.; KOROTKOV, A.I.; LESNICHENKO, V.L.; PANFILOV, Ye.A.; TRUBITSYN, N.A.; TUCHKEVICH, N.M.; FADEYEV, A.D.; FOKIN, G.F.; MARTENS, S.L., inzh., red.; SOKOLOVA, T.F., tekhn. red.

[Steel casting; foundrymen's handbook] Stal'noe lit'e; spravochnik dlia masterov liteinogo proizvodstva. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 887 p. (MIRA 14:8)
(Founding)

ALEKSANDROV, S., inzhener.

How to determine and control the play of radial bearings of a compressor crankshaft. Mias. ind. SSSR 27 no.4:53 '56.
(MLRA 9:10)

(Compressors)

ALEKSANDROV, S.

Waterproofing

Impermeable ashes. Mol. kolkh. 19 No. 8, 1952

Monthly List of Russian Accessions. Library of Congress October 1952 UNCLASSIFIED

GUROV, S.; ALEKSANDROV, A.; TRAKCHUK, R. (Minsk); KHLYSTOV, I.; YUN'YEV, I.; ALEKSANDROV, S.; GIRUTSKAYA, A.; KURBANOV, G. (Baku)

Letters to the editors. Sov.profsoiuzy 16 no.10:50-54 '60. (MIRA 13:6)

1. Zamestitel' predsedatelya zavkoma Dneprodzerzhinskogo metallurgicheskogo zavoda imeni Dzerzhinskogo (for Gurov). 2. Deystvitel'nyy chlen Vsesoyuznogo geograficheskogo obshchestva pri AN SSSR (for Yun'yev). 3. Tekhnicheskiy inspektor Estonskogo soveta profsoyuzov, Tallinn (for Girutskaya).
(Efficiency, Industrial) (Labor and laboring classes)

ALEKSANDROV, S.

Those who make flights possible. Tyl i snab. Sov. Voor. Sil. 21 no.8:69-71 Ag '61. (MIRA 14:12)
(Airplanes, Military--Maintenance and repair)

ALEKSANDROV, S.

Beacon lights in the Dnepropetrovsk region. Okhr. truda i sots. strakh. 5 no.9:5-6 S '62. (MIRA 16:5)
(Dnepropetrovsk--Tires, Rubber)

ALEKSANDROV, S.

From border to border. Okhr. truda i sots. strakh. no.4:24-25 Ap '63. (MIRA 16:4)

(Ufa--Petroleum industry--Hygienic aspects)

ALEKSANDROV, S.

One out of 66 millions. Okhr. truda i sots. strakh. 6 no.3:13 Mr '63. (MIRA 16:4)

(Gur'yev—Industrial hygiene)

ALEKSANDROV, S.A.

Role of the twist on itself as a twisting and centrifugal mechanism in cocoon reeling. Tekst.prom. 16 no.7:11-15 Jl '56.(MLRA 9:8)
(Reels (Textile machinery))

ALEKSANDROV, S.A.

Geometry of raw silk thread. Izv.vys.ucheb. zav.; tekh.tekst.prom. no.2:52-55 '58. (MIRA 11:5)

1. Srednaziatskiy politekhnicheskiy institut.
(Silk thread)

KHODCHENKO, Leonid Pavlovich; RYABUKHA, Nikolay Ivanovich; ALEKSANDROV, S.A., otvetstvennyy za vypusk.

[Apparatus for measuring linear deformations; informational report] Pribor dlia izmereniia lineinykh deformatsii; informatsionnoe soobshchenie. Kiev, 1958. 6 p. (MIRA 11:10)
(Deformations (Mechanics)) (Measuring instruments)

ALEKSANDROV, S. A.

Cand Tech Sci - (diss) "Study of the mechanism of intertwining /perevivka/ in the process of forming complex raw silk thread." Tashkent, 1961. 15 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Textile Inst); 200 copies; price not given; (KL, 7-61 sup, 231)

ACC NR: AP7004987 (A) SOURCE CODE: UR/0048/66/030/009/1509/1510

AUTHOR: Kundzin', A.P.; Aleksandrov,S.B.; Zakis,Yu.R.

ORG: none

TITLE: Concerning the mechanism of electroluminescence of thin cadmium sulfide films /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1966, 1509-1510

TOPIC TAGS: electroluminescence, cadmium sulfide, semiconducting film, photo emf

ABSTRACT: The authors investigated the electroluminescence of 1 mm^2 "sandwich" structures consisting of the following elements successively vacuum deposited onto glass substrates: a semitransparent gold film electrode; an approximately 1 micron thick film of cadmium sulfide into which no particular activator impurity had been introduced, and a 200 micron thick indium film electrode. The indium-phosphor contact was practically ohmic, but rectification was found to take place at the gold-phosphor contact. The temperature dependence of the current-voltage characteristic revealed the presence of a 0.6-0.7 eV Schottky barrier. The current-voltage characteristics had approximately the same shape at 90° K as at room temperature, but the currents were some four orders of magnitude smaller at the lower temperature. The rapid rise of the current in the forward direction (with the gold positive) set in at a potential

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ACC NR: AP7004987

somewhat below 1 V. The electroluminescence threshold potential was somewhat higher than 1 V, and the luminescence brightness increased very rapidly with increasing voltage. The luminescence spectrum showed a broad band in the 600-700 mμ region and a weak edge emission band. Photo-emf's (with the gold electrode positive) reaching 0.45 V at room temperature were observed. The photo-emf excitation curve had a peak at 620 mμ and in the 500-400 mμ region it was rising monotonically with increasing photon energy. It is concluded that the low-voltage stationary electroluminescence of the investigated systems in a dc field is due to double injection of carriers, i.e., to the simultaneous injection of electrons and holes. The authors thank Yu.R.Berkovich for measuring the height of the barrier and V.L.Shteynberg for determining the photo-emf excitation curve. Orig. art. has: 1 figure.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 006 OTH REF: 011

Card 2/2

ALEKSANDROV, S. F.

16.3200

77448
SOV/133-60-1-9/30

AUTHORS: Filatov, V. P., Semenenko, P.P. (Engineers), Kokarev, N. I. (Candidate of Technical Sciences), and Kapichev, A. G., Aleksandrov, S. F. (Engineers)

TITLE: Smelting High-Quality Open-Hearth Steels Using Moderate and High-Sulfur-Content Mazut

PERIODICAL: Stal', 1960, Nr 1, pp 36-39 (USSR)

ABSTRACT: This is a report concerning the experience of substituting blast furnace gas in open-hearth process by the comparatively cheap high-sulfur-content mazut (Russian petroleum residue used as fuel oil)of Ural-Volga origin. It was established that the successful combustion of high-sulfur-content mazut requires conditions assisting the transition of the sulfur of the fuel into sulfurous anhydride (which is considerably more stable than H_2S, CS_2, and COS) directly at the root of the flame. This can be achieved by careful mixing of air and atomized mazut,

Card 1/9

ALEKSANDROV, S.A.; KLENOV, V.B.; RAYZER, Yu.P.

Studying the hydrodynamic characteristics of bobbins as radial filters. Izv. vys. ucheb. zav.; tekh. teks. prom. no.6:105-110 '65. (MIRA 19:1)

1. Odesskiy tekhnologicheskiy institut imeni M.V. Lomonosova. Submitted September 20, 1965.

ALEKSANDROV, S.A., kand. tekhn. nauk

Some problems of the yarn ballooning process. Tekst. prom. 25 no.12:28-31 D '65. (MIRA 19:1)

1. Zaveduyushchiy kafedroy mekhaniki i mekhanicheskoy tekhnologii voloknistykh materialov Odesskogo tekhnologicheskogo instituta imeni M.V. Lomonosova.

KOKAREV, N.I.; KAPICHEV, A.G.; KITAYEV, B.I.; SEMENENKO, P.P.; ALEKSANDROV, S.F.; POPOV, Ye.S.

Use of compressed air for the acceleration of thermal processes in open-hearth furnaces. Trudy Inst. met. i obog. AN Kazakh. SSR 5:149-154 '62. (MIRA 15:11)

1. Ural'skiy politekhnicheskiy institut i Metallurgicheskiy kombinat im. A.K. Serova.
(Open-hearth furnaces) (Heat--Transmission)

ALEKSANDROV, S.G.

Construction of the Kamensk Pilot Station, first "Podzemgaz" installation on the Don. Podzem. gaz. ugl. no.3:3-8 '58.
(MIRA 11:10)

1. Kamenskaya opytno-promyshlennaya stantsiya "Podzemgaz."
(Donets Basin--Coal gasification, Undergraound)

29(0) PHASE I BOOK EXPLOITATION SOV/2189

Aleksandrov, S. G., and R. Ye. Fedorov

Sovetskiye sputniki i kosmicheskaya raketa (Soviet Sputniks and the Space Rocket) Moscow, Izd-vo AN SSSR, 1959. 231 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Redkollegiya nauchno-populyarnoy literatury.

Eds.: V. I. Kravtsov, and T. K. Mikhaylov; Ed. of Publishing House: N. B. Prokof'yeva; Tech. Ed.: T. P. Polenova.

PURPOSE: This book is intended to acquaint the general reader with basic problems in the construction of artificial earth satellites and space rockets.

COVERAGE: Detailed information is given on the Soviet artificial satellites, on the results of scientific investigations performed with them and their significance in the solution of problems of interplanetary flight. The authors describe methods of scientific experimentation in the upper layers of the atmosphere and in cosmic space. In writing this book the authors used materials published

Card 1/9

of tracking-out satellites into orbit are of fundamental importance and are illustrated by means of basic motion equations of multistage probes. The relationship between parameters and number of stages, and the ratio of weights are presented. Major problems associated with interplanetary flights, satellite structure and instrumentation are discussed in this chapter including energy sources, sealing, meteorite hazards, cosmic rays, etc. Chapter 2 deals with methods of scientific investigation of the upper atmosphere and interplanetary space. Operation of scientific equipment installed in sputniks is covered. Measurement of pressure, density, temperature, and composition of the upper atmosphere are included in the discussion and the concentration of positive ions and other items shown in the table of contents are described. Sketches, diagrams, block diagrams and photos of instruments accompany the text. Chapter 3 describes the first, second, and third sputniks and their equipment. Some information on the radio transmitter "Mayak" installed in the third sputnik is given. The orbits of the sputniks and radio-optical observations are described. Photographs of the

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100830007-2"

following equipment are included:

1. Astronomical tube AT-1
2. Magnetic manometer
3. Ionization manometer
4. Apparatus for measuring positive ion concentration
5. Magnetometer
6. Electrostatic fluxmeter
7. Apparatus for registration of meteorite shock
8. Equipment for measuring cosmic ray intensity
9. Equipment for measuring the number of heavy nuclei in cosmic radiation
10. Apparatus for investigation of solar corpuscular radiation.

Chapter 4 reproduces in its entirety the material printed in "Pravda" on January 12, 1959 describing the Soviet cosmic multistage rocket launched toward the moon on January 2, 1959. There are 18 references: 10 Soviet, 6 translations into Russian, and 2 English.

TABLE OF CONTENTS:

Soviet Sputniks (Cont.) SOV/2189

in periodicals and in scientific and technical literature. The subject matter is presented in semitechnical form and does not present informational advances beyond similar data already publicized in Soviet and American publications. The mathematical tools necessary for explaining certain problems are given in the appendixes at the end of the book. In the preface the authors review Soviet scientific achievements in the field of space probes and give general data (weight, payload, time, distances, etc.) on the three sputniks and the space rocket launched toward the moon on January 2, 1959. These data have previously appeared in the periodical press. The authors glorify the Soviet communist government for the progress made by Soviet technology and ironically mention the unsuccessful American attempt to launch a moon probe. Chapter 1 gives the laws of motion of artificial satellites and describes satellites as bodies moving on an orbit around the Earth in accordance with the laws of celestial mechanics. Variation of velocity in an elliptical orbit and orbital elements are defined. Resistance of the upper atmosphere is said to cause secular variations in the shape of orbit. Ablateness of the earth's gravitational field causes perturbations of the orbit which are basically precessional motions of the orbit. Determination of projections of the satellite's track on the Earth are thoroughly discussed. Problems

Card 2/9

ALEKSANDROV, S. G.

Soviet Satellites and Cosmic Rocket, By S.G. Aleksandrov and R. Ye. Fedorov. Wright-Patterson Air Force Base, Techincal Information Center, 1960.
VI, 245 p. illus., diagrs., graphs, tables. (MCL -418/V)
Translated from the original Russian: Sovetskiye Sputniki I Kosmicheskaya Raketa, Moscow, 1959.
Bibliogtaphy, P. 241-242.

ALEKSANDROV, S.G.; FEDOROV, R.Ye.; KRAVTSOV, V.I., otv. red.; MIKHAYLOV, T.K., otv. red.; PROKOF'YEVA, N.B., red. izd-va; POLENOVA, T.P., tekhn. red.; GUSEVA, A.P., tekhn. red.

[Soviet satellites and spaceships] Sovetskie sputniki i kosmicheskie korabli. Izd.2., dop. i perer. Moskva, Izd-vo Akad. nauk SSSR, 1961. 439 p. (MIRA 14:8)
(Artificial satellites) (Spaceships)

PHASE I BOOK EXPLOITATION SOV/5807

Aleksandrov, S. G., and R. Ye. Fedorov

Sovetskiye sputniki i kosmicheskiye korabli (Soviet Satellites and Spaceships) 2d. ed., enl. and rev. Moscow, Izd-vo AN SSSR, 1961. 439 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) Errata slip inserted. 30,000 copies printed.

Resp. Eds.: V. I. Kravtsov and T. K. Mikhaylov; Ed. of Publishing House: N. B. Prokof'yeva; Tech. Eds.: T. P. Polenova and A. P. Guseva.

PURPOSE: This book is intended for the general reader interested in the achievements of Soviet science and technology in the realm of rocketry, artificial satellites, and space flight.

COVERAGE: The most important concepts and facts about space flight apparatus and problems of space flight are discussed. Methods for conducting scientific investigations of the upper atmosphere and in space and the results of these investigations are included. Material for the book was drawn from "Pravda" and from scientific and technical journals and periodicals.

Card 1/8

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32481
S/044/61/000/010/047/051
C111/C222

AUTHOR: Aleksandrov, S.I.

TITLE: On an approximate method of multiple integration

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1961, 45, abstract 10 V 264. ("Uch. zap. Glazovsk. gos. ped. in-t", 1959, vyp. 6, 3 - 11)

TEXT: With the weight $p(x,y) = 1$ on the square $(-1, 1 ; -1, 1)$ the author orthogonalizes the sequence of linearly independent functions of two variables $\{(x-y)^n\}$ $(n = 0,1,2,\ldots)$, and obtains the sequence of orthogonal polynomials

$$P_n(x,y) = \sum_{k=o}^{n} p_k (x-y)^k \quad ,$$

where p_k are coefficients. The mentioned square is intersected by n straight lines $x-y = b_i$ $(i = 1,2,\ldots,n)$ (the author calls them "root lines") so that

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$$P_n(y + b_i, y) \equiv 0 .$$

It is asserted that all "root lines" of the polynomial P_n are real and simple and that neighboring polynomials have no common root lines. For the function $f(x,y)$ continuous in the given square the author constructs the interpolation function

$$L(x,y) = \sum_{k=1}^{n} f(y + b_k, y) l_k(x - y) ,$$

where

$$l_k(x-y) = \frac{(x-y-b_1)\ldots(x-y-b_{k-1})(x-y-b_{k+1})\ldots(x-y-b_n)}{(b_k-b_1)\ldots(b_k-b_{k-1})(b_k-b_{k+1})\ldots(b_k-b_n)}$$

so that it holds

$$L(y+b_i, y) = f(y+b_i, y) \quad (i = 1,2,\ldots, n) .$$

The interpolation formula of Lagrange for an n times continuously

differentiable function $f(x,y)$ on the rectangle $(-2, 2 ; -1, 1)$

$$f(x,y) = L(x,y) + R_n ,$$

$$|R_n| = \left| \frac{f_x^{(n)}(\xi, y)}{n!} \right| \leq M_n \cdot \frac{4^n}{n!} \quad (-2 < \xi < 2) ,$$

$$(M_n = \max |f_x^{(n)}(x,y)|)$$

is used for the approximate multiple integration ; the equality sign is valid if $f(x,y)$ is a polynomial of degree $\leq n - 1$ with respect to x and y. An example is solved.

[Abstracter's note : Complete translation.]

Card 3/3

ALEKSANDROV, S.I.

Antifriction ball bushings. Stan.i instr. 30 no.3:23 Mr '59.
(MIRA 12:3)

(Ball bearings)

2808
10.9230 1418, 1573

S/032/61/027/003/016/025
B101/B203

AUTHORS: Razov, I. A., Aleksandrov, S. I., and Yefimov, A. V.

TITLE: Character of the size effect

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 3, 1961, 323-326

TEXT: The authors mention the explanation of the size effect on the basis of the statistical distribution of defects in the material, and on the basis of the energetic theory which explains the size effect by the influence exerted by the elasticity energy accumulated in the loaded system on the destruction process. In a previous paper, they studied the influence of the elasticity energy on the limit of plasticity at the beginning and the end of destruction of specimens of different sizes. The results given in Fig. 1 confirm the energetic explanation of the size effect. The statistical factor, however, also plays a certain role. The following experiments were made to confirm the energetic theory: Flat specimens with the cross section 6 • 250 mm, length 1.5 - 4 m, were provided with a central notch, and subjected to a tensile test. Fig. 2 shows that the tension (σ), which corresponds to the formation of the

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Character of the size effect

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B101/B203

primary crack in the notch does not depend on the length of specimen. On the other hand, the tension (x) required for a complete destruction of the specimen decreases with the length of specimen. The experiments were made with AMg5B (AMg5V) alloy. Similar results were obtained with steel. Contrary to statements by Ya. B. Fridman and T. A. Volodina (Ref. 7: Doklady AN SSSR, v. 55, 8, 721 (1947)), the high sensitiveness of highly solid alloys to notches observed by these researchers is explained by the high absolute temporary resistance and the high stock of potential energy of the loaded system. [Abstracter's note: The statements made by Fridman and Volodina are not given.] Further, the authors discuss data found by I. M. Roytman and Ya. B. Fridman (Ref. 8: Mikromekhanicheskiy metod issledovaniya metallov, M., Oborongiz (1950)) for the dependence of temporary resistance and real resistance on size on the basis of the energetic theory, and explain the data found by B. B. Chechulin (Ref. 9: Sb. "Metallovedeniye", 3, Sudpromgiz, 158, (1959)), which contradict the energetic theory, with experimental errors. In conclusion, it is stated that the energetic factor of the size effect plays the major part, whereas the statistical factor plays an inferior part. The following is suggested to determine the sensitiveness of

Character of the size effect

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B101/B203

material to the size effect: bending test of specimens 5 • 5 • 27.5 mm and 20 • 20 • 110 mm, notch ρ of 1.5 and 6 mm, respectively, and comparison of the limit of plasticity, of the deformation curve in tough fracture, or of the strength in brittle fracture. Ye. M. Shevandin, I. L. Shimelevich, V. V. Lavrov, G. M. Bartenev, and L. P. Tsepkov are mentioned. There are 3 figures and 11 references: 9 Soviet-bloc and 2 non-Soviet-bloc.

Card 3/5

L 60136-65 EWT(d)/EPA(s)-2/EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(b)/EWA(c) Pf-4 MJW/JD/HM/GS

ACCESSION NR: AT5017712 UR/0000/65/000/000/0393/0401

AUTHORS: Aleksandrov, S. I. (Leningrad); Razov, I. A. (Leningrad) 42 87

TITLE: Evaluation of the strength reserve of welded structures under conditions of transition from the ductile to the brittle state

SOURCE: AN UkrSSR. Institut elektrosvarki. Proyektirovaniye svarnykh konstruktsii (Design of welded structures). Kiev, Naukova dumka, 1965, 393-401

TOPIC TAGS: crack propagation, brittle state, steel fracture, stress load, temperature effect, tensile stress, welded structure/ MUG 500 tension machine, St 4 dead melt steel, SKHL 4 steel

ABSTRACT: Five types of steel were studied to determine the effect of temperature and the elastic energy margin on the level of the average stresses responsible for the initiation and propagation of fissures in the region of brittle and semibrittle failures. The relationship of the ultimate stresses to the temperature was determined, the strength reserve of welded structures in transition from the ductile to the brittle state was evaluated, and a method for designing welded structures is proposed. The tests closely approximated working conditions. A hole was drilled in the center of a wide plate, and a 4-mm slit starting at this hole and terminating in a sharp edge was cut across one fourth of the specimen width. After removing the

Card 1/2

L 50136-65

ACCESSION NR: AT5017712

internal residual stresses from the plate, the specimen was mounted in a tension machine MUG-500 by a flexible clamp. The tests (conducted at -50 to +20C) were carried out in two ways: 1) a static load was increased up to complete rupture; 2) a given stress was established and a transverse impact near the cut was applied. In static tests the rupture occurred with average stresses $\geq$ the yield point, and the number of filaments in the break decreased with decreasing temperature. The impact tests simulated brief localized stresses causing fissures without forming a plastic zone, and thus making it possible to estimate the stresses necessary for propagating the brittle fissures. In conclusion, the authors evaluate their findings on the interaction of stresses and temperatures and compare them with the results obtained in testing specimens of other sizes and types. Orig. art. has: 2 figures and 4 tables.

ASSOCIATION: none

SUBMITTED: 13Jan65 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 007

Card 2/2

L 47165-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c)

ACC NR: AR6000440 SOURCE CODE: UR/0137/65/000/009/E005/E005

JD/HM/HW/EM

AUTHORS: Aleksandrov, S. I.; Razov, I. A.

42

B

TITLE: Estimation of the safety factor of welded construction under conditions of transition from the viscous to the brittle state

SOURCE: Ref. zh. Metallurgiya, Abs. 9E35

REF SOURCE: Sb. Proyektir. svarn. konstruktsiy. Kiyev, Nauk. dumka, 1965, 393-401

TOPIC TAGS: steel, sheet metal, metal test / St 4 steel, SKhL-4 steel

ABSTRACT: The critical brittleness temperature of steels St 4 and SKhL-4 was determined on large plates having interior notches of limited sharpness. The amount of fibers at the break served as the measuring criterion. The level of stresses at which brittle cracks are propagated in plate constructions at temperatures lower than the critical brittleness temperature is: for St 4 and SKhL-4 for 10--20 mm thick sheets ~ 0.25--0.30 σ s respectively and does not depend on further decreases in temperature and change in the magnitude of the stored elastic energy. Increasing the sheet thickness and stored elastic energy leads to a displacement of the curve for dependence of rupturing stresses on the temperature to higher temperatures. At temperatures equal to and higher than the critical brittleness temperature, cracks may propagate in sheet constructions at stresses equal to 0.9 σ s. M. Frolova [Translation of abstract]

Card 1/1 SUB CODE: 11, 13 UDC: 621.791.001.4

ALEKSANDROV, Stanislav Konstantinovich, inzh.; LIFSHITS, Yuliya Lazarevna, inzh.; VAL, Grigoriy Aleksandrovich,, inzh.; KREYNDLIN, A.N., nauchn. red.; TELINGATER, L.A., red.

[Advanced methods of prefabrication and assembly of large panel buildings] Peredovye metody zavodskogo izgotovleniia i montazha krupnopanel'nykh zdanii. Moskva, Vysshaia shkola, 1965. 65 p. (MIRA 18:7)

ALEKSANDROV, Sergey Lavrent'yevich; LIVSHITS, Ya.L., red.; ATROSHCHENKO, L.Ie., tekhn.red.

[Fifteenth anniversary of the Bulgarian People's Republic] 15 let Narodnoi Respubliki Bolgarii. Moskva, Izd-vo "Znanie," 1959. 30 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.7. Mezhdunarodnaia, no.19) (MIRA 12:9)
(Bulgaria--Economic conditions)
(Bulgaria--Politics and government)

BROVKIN, A.A.; ALEKSANDROV, S.M.; NEKRASOV, I.Ya.

X-ray analysis of minerals in the ludwigite-vonsenite series.
Rent.min.syr. no.3:16-34 '63. (MIRA 17:4)

1. Yakutskiy filial Sibirskogo otdeleniya AN SSSR.

ALEKSANDROV, S.M.

Abrasion arcs of Sakhalin Island. Vest. Mosk. un. Ser 5: Geog. 18 no.6:40-44 N-D '63. (MIRA 16:11)

1. Kafedra geomorfologii Moskovskogo universiteta.

ALEKSANDROV, S.M.

All-Union Conference on the Geochemistry of Supergenesis. Geokhimiia no.5:633 My '65. (MIRA 18:9)

ALEKSANDROV, S.M.

Role of geological structure and recent tectonics in the relief formation of the West-Sakhalin Mountains in southern Sakhalin. Vest.Mosk. un. Ser. 5: Geog. 17 nc.2:55-60 Mr-Ap '62. (MIRA 15:5)

1. Kafedra geomorfologii Moskovskogo universiteta.
(West-Sakhalin Mountains--Geomorphology)

3(8), 14(5) SOV/7-59-2-12/14

AUTHOR: Aleksandrov, S. M.

TITLE: Geochemical Peculiarities of Secondary Changes in Ludwigite Ores (Geokhimicheskiye osobennosti vtorichnykh izmeneniy lyudvigitovykh rud)

PERIODICAL: Geokhimiya, 1959, Nr 2, pp 171-177 (USSR)

ABSTRACT: An investigation was made of the magnesium-iron-borate deposit Zheleznyy Kryazh in East Zabaykal'ye. Ludwigite is strongly ascharitized under endogenous conditions; the pseudomorphs consist of a fine-grained set of ascharite, magnetite, and some hematite (Figs 1, 2). Ascharite and magnetite are produced from sulfidic ludwigite ores (Figs 3, 4). During the hydrothermal process ascharite is replaced by antigorite serpentine, magnesium chlorite of the leuchtenbergite type, brucite, and calcite, while boron is removed. Ludwigite and ascharite ores are not stable in the oxidation zone, and ferric hydroxide and calcite are formed. Boron is absorbed by ferric hydroxides (Table 2). An analysis of ludwigite (Table 1) was carried out by N. N. Deryugina, the determination of the boron content of ferric hydroxide (Table 2) was made by N. N. Deryugina and G. Ye. Kuril'chikova at the

Card 1/2

Geochemical Peculiarities of Secondary Changes in Ludwigite Ores

author's institute. The author thanks V. V. Shcherbina, V. L. Barsukov and N. N. Deryugina for assistance in the work. There are 4 figures, 2 tables and 8 Soviet references.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva
(Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR, Moscow)

SUBMITTED: June 9, 1958

ALEKSANDROV, S.M.

Some geochemical characteristics of the ascharitization of magnesian-ferruginous borates [w.s.i.E.]. Gdokhimiia no.6:493-499 '61. (MIRA 14:6)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences U.S.S.R., Moscow.
(Szaibelyite) (Ludwigite)

ALEKSANDROV, S.M.

Features of the recent tectonics and morphostructure of Sakhalin.
Sov.geol. 5 no.2:129-134 F '62. (MIRA 15:2)

1. Ministerstvo geologii i okhrany nedr SSSR.
(Sakhalin—Geology, Structrual)

PERTSEV, N.N.; ALEKSANDROV, S.M.

Ludwigite with a high content of alumina. Zap. Vses. min. ob-va 93 no.1:13-20 '64 (MIRA 18:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR i Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR.

ALEKSANDROV, S.N., inzh; KEL'MAN, L.Ya., inzh; PLISAN, I.G., inzh; KAMENSKIY, S.K., inzh; RUVIMSKIY, I.M., inzh

Improving the feed-water tubing circuit. Elek.sta 29 no.9:58-64 S '58. (MIRA 11:11)

1. Pridneprovskaya gosudarstvennaya rayonnaya elektricheskaya stantsiya.

(BOILERS)

ALEKSANDROV, S.N.; GALKOVSKAYA, K.F.

Frequency of the occurrence of lymphosarcoma in mice subjected single or fractionated irradiation. Dokl. AN SSSR 146 no.5:1189-1192 O '62. (MIRA 15:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii.
(CANCER) (RADIATION--PHYSIOLOGICAL EFFECT)

ALEKSANDROV, S. N.

Whole-Body Irradiation

Friday Afternoon Session E—4—9 (Contd.)

(d)

The Nature of Long Term Effects of Radiation

S. Alexandrov

The damage produced in the organism by ionizing radiation can be divided into three categories: (1) short term injury which is fully repaired after the exposure; (2) injury which is only partly repaired; (3) irreparable damage. The correlation of these types of damage depends on the dose and the conditions of irradiation, the properties of the organism, and on post-irradiation conditions.

The partly-repaired and irreparable injuries are the principal causes of the long-term effects. They result in a decrease in the adaptive and protective mechanisms of the organism, and make themselves apparent in an increased sensitivity to various noxious agents. This accounts for the unusual character of the pathological processes, particularly the long term after effects. All this results in a further decrease of the adaptive potentialities of the organism, and leads, in the end, to a shortening of the life span.

Central Scientific Research Institute of Medical Radiology of the Ministry of Public Health of the USSR

report presented at the 2nd Intl. Congress of Radiation Research, Harrogate/Yorkshire, Gt. Brit. 5-11 Aug 1962

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100830007-2"

ALEKSANDROV, S. N.

USSR/Medicine - Muscles, Physiology Nov 48
Medicine - Wounds and Injuries

"The Rate of Spreading of an Injury in Muscular Fibers of Various Diameters," S. N. Aleksandrov, 4 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 3

Rate of spreading is directly related to the diameter (surface) of muscular fibers. This relationship is of a statistical character and its coefficient increases with time. Submitted by Acad L. A. Orbeli 28 Aug 48.

55/49T64

ALEKSANDROV, S. N.

PA 45/49T65

USSR/Medicine - Zoology Dec 48
Medicine - Muscles, Tonus

"Speed at Which Disturbances Are Propagated in the Muscles of Frogs of Various Ages," S. N. Aleksandrov, Leningrad State U, 4 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 4

Concludes that as animal's age increases and as differentiation level increases, width of muscular fibers, propagation speed of disturbance, and excitability of muscular elements increase. Speed of disturbance and increase in diameter of muscular fibers may be independent indexes of

45/49T65

USSR/Medicine - Zoology (Contd) Dec 48

increasing changes of the substrate during ontogenesis. Submitted by Acad L. A. Orbeli, 20 Sep 48.

45/49T65

ALEKSANDROV, S. N.

Apr 52

USSR/Medicine - Tumors

"Problem of the Liberation of Nucleic Acids Upon Injury of Normal and Tumor Tissues," S. N. Aleksandrov, S. Ye. Manoylov, B. A. Orlov, Cen X-Ray, Radiol, and Cancer Inst, Min of Pub Health USSR, Leningrad

"Dok Ak Nauk SSSR" Vol LXXXIII, No 5, pp 725-728

When the action of hypotonic Ringer solns or of heat leads to a reversible injury, ribonucleic acid is liberated by the cell proteins of tissue slices subsequently excised for examination; when the injury is irreversible (i.e., permanent), desoxyribonucleic acid is liberated.

218T41

ALEKSANDROV, S., dotsent.

Discussion on A.V.Anisimov's article "Ulcerative genitoanorectal elephantiasis. Akush.i gin. no.1:76-77 Ja-F '54. (MLRA 7:6)
(Lumphogranuloma venereum)

Aleksandrov, S.N.

Action of deoxyribonucleic acid depolymerase on live and dead cells in tissue cultures. S. N. Aleksandrov and M. A. Presnov. *Doklady Akad. Nauk S.S.S.R.* 77, 289-92(1951). —Specimens of deoxyribonucleic acid depolymerase isolated from cattle pancreas were incubated in Ringer soln. 0.2*M* borate, and 0.025*M* veronal buffer soln. with 0.003*M* $MgSO_4$ activator and 0.01% gelatin stabilizer for 1-20 hrs., after which the cultures were fixed and stained according to Feulgen; the tests were run with adenocarcinoma of mouse mammary glands and fibroblasts of chick embryo heart in mixts. of hen plasma and hen embryonic extract. The depolymerase under the exptl. conditions used displayed its specific activity on the nuclear nucleoproteins only in case of their denaturation. Of the various denaturing agents tried, the radiation from Rn was the only one which failed to destroy the link between protein and deoxyribonucleic acid; the rupture occurred only in autolysis under action of proteolytic enzymes. G. M. Kosolapoff

Cent. Roentgenological, Radiological and Cancer Inst.

ALEKSANDROV, S.N.

ALEKSANDROV, S.N.

USSR/ Medicine - Physiology

Card 1/1 : Pub. 22 - 45/49

Authors : Aleksandrov, S. N., and Leushina, L. I.

Title : Tonic reaction of relaxed muscular tissues of a frog to the effect acetylcholine

Periodical : Dok. AN SSSR 98/4, 677-679, Oct. 1, 1954

Abstract : Patho-physiological data on the tonic reaction of relaxed muscular tissues of a frog to the effect of acetylcholine ($CH_3CO.O.CH_2-CH_2.N(CH_3)_3$), normally present in many parts of the body and having important physiological functions, are presented. Four USSR references (1947-1953). Graphs.

Institution : Medical Stomatological Institute, Leningrad

Presented by : Academician L. A. Orbeli, May 29, 1954

ALEKSANDROV, S. N.

L—1858. Denaturation changes under the influence of X-rays on tumours. S. N. Alexandrov and E. A. Dikovenko *Bull. eksper. Biol. Med.*, 1955, No. 7, 64—68; *Referat. Zh. biol. Khim.*, 1956, Abstr. No. 15778.—The order of the various changes following localised irradiation of tumours in mice and rats was investigated. With a dose of 7,500—13,000 r there first occurred a suppression of mitotic activity (after 1 hr.); after 20 hr. there was a lowering of the staining power of the cytoplasm by pyronine, indicating a diminution of the quantity of RNA, and oedema and rarefaction of the tissue. After 45 hr. there was a diminution of DNA (as shown by the Feulgen reaction), an increase in size or pycnosis of the nuclei, and only after this was there a loss of granule formation on vital staining with Neutral Red, indicating a denaturation of the proteins. At doses of 500—3,600 r granule formation was even somewhat raised; general irradiation with 26,000 r led to the death of the animal in 1—2 hr., and a loss of granule formation was not seen in the tumour or in the animal's tissues. Denaturation of proteins is only the last stage of irradiation injury. (Russian)

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