"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

An Apparatus for Measuring the Intensity Distribution in an Expanded γ-ray Pulse from a Synchrotron

the time scale either by hand using a time delay circuit, or the whole pulse is split into n sections and the instrument automatically covers the whole time interval using a step-by-step switch. The circuits of the two channels are shown in Fig 2 and the time delay circuit is shown in Fig 3. The step-by-step switch is shown in Fig 4. The apparatus has been used in studying elastic scattering of γ quanta on protons (Ref 4), photo-production of π^0-mesons (Ref 3) and electron distributions associated with radial-phase oscillations.

There are 4 figures and 4 Soviet references.

ASSOCIATION: Fizicheskiy Institut AN SSSR (Physical Institute of the Academy of Sciences of the USSR)

SUBMITTED: March 31, 1958

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

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0.0000

78336
SOV/89-8-3-21/32

AUTHORS: Ado, Yu. M., Belovintsev, K. A.

TITLE: All-Union Intercollege Conference on Electron Accelerators

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 3, pp 268-269 (USSR)

ABSTRACT: The conference, in which scientists from universities, colleges, scientific research institutes, and industry took part, was held in September 1959 in Tomsk and discussed theoretical and technical matters, control, stabilization, and accessories to electron accelerators, and their application in metallurgy, machine construction, geology, geophysics, and medicine. The transactions of the conference are scheduled for publication by the Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).

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33964
S/089/62/012/003/001/013
B102/B108

24.6720
26.2357

AUTHORS: Ado, Yu. M., Belovintsev, K. A., Stolyarov, S. N.

TITLE: Bremsstrahlung spectrum of 260-Mev electrons

PERIODICAL: Atomnaya energiya, v. 12, no. 3, 1962, 193 - 197

TEXT: The bremsstrahlung spectrum of 260-Mev electrons from the synchrotron of the FIAN was measured on a simple arrangement with a 15-channel gamma pair spectrometer of a total dispersion of $3.3 \cdot 10^{-2}$. The efficiency of gamma-quantum recording was $8.25 \cdot 10^{-6}$, radiation intensity was equal to $1.2 \cdot 10^{7}$ Mev/cm^{2} ·sec. Experimental error was 5%. The experimental results were compared with the calculated number of photons $N^{\gamma}(t,k)$ of energy k at a depth t in the target, which in first approximation (error 2 - 3%) is

Card 1/1 3

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B102/B108

Bremsstrahlung spectrum of...

$$N^{\gamma}(t,k)\simeq N_0(0,E_0)\sigma_T(k,E_0)\,k\,e^{-\alpha t}\left\{1+\right.$$
$$+t\left[0{,}5\alpha-0{,}305+0{,}722I_1(\eta)+\right.$$
$$\left.\left.+0{,}722\frac{k}{E_0}\left(\left(1+\ln\frac{E_0}{k}\right)\ln\ln\frac{E_0}{k}+1\right)\right]\right\}, \quad (3)$$

where $I_1(\eta)=\int_0^{\eta}\xi\ln\xi\,e^{-k\xi}\,d\xi$.

(3).

The bremsstrahlung cross section $\sigma_T(E,k)\simeq 1/k$; $\eta = \ln(E_0/k)$; $n_0^{\gamma}(t,\eta)$ $= \int_0^t e^{\alpha t'}W(t',\eta)dt'$. E_0 is the energy of the primary electrons. When multiple photon emission is taken into account, agreement between theory and experiment is improved. The spectrum distortion owing to the collimator effect does not exceed 2%. The material (foil, air, window) through which the gamma ray passes has an influence on the spectrum only in the low-energy range. The discrepancy between experiment and Schiff's theory (Phys. Rev., 83, 252 (1951)) is due to multiple phonon emission from one electron. Professor P. A. Cherenkov is thanked for discussions, Engineer M. P. Piskov and Technician Yu. I. Krutov for help. There are 3 figures

Card 2/2 3

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33964
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B102/B108

Bremsstrahlung spectrum of...

and 14 references: 4 Soviet and 10 non-Soviet. The four most recent references to English-language publications read as follows: J. Lawson Nucleonics, 10, 61 (1952); R. O'Rourke, A. Anderson. Phys. Rev., 99, 1484 (1955); L. Eyges. Phys. Rev., 81, 982 (1951); R. Wilson. Proc. Phys. Soc., A66, 638 (1953).

SUBMITTED: July 14, 1961

Fig. 2. Experimental results compared with results from Schiff's theory and Eq. (3) (curve 2). For curve 1 a correction was made for spectrometer dispersion only, for curve 2 multiple phonon emission was taken into account. E_0 = 260 Mev, target (tungsten) thickness 0.15 radiation units. Abscissa: E_γ, Mev, ordinate: radiation intensity, arbitrary units.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

S/089/63/014/004/003/019
A066/A126

AUTHORS: Belovintsev, K.A., Belyak, A.Ya., Gromov, A.M., Moroz, Ye.M., Cherenkov, P.A.

TITLE: A 6.5 Mev microtron for electron injection into a synchrotron

PERIODICAL: Atomnaya energiya, v. 14, no. 4, 1963, 359 - 363

TEXT: It is first pointed out that the relatively high intensity of the electron beam attained in conventional microtrons, the simple design of the device, the escape of a relatively large amount of electrons from the accelerator, the great similarity of the electron energies, the small divergence angle of the electrons, and other facts indicate that the microtron may also serve as a synchrotron injector. These assumptions were checked by the authors on the 280 Mev synchrotron of the Fizicheskiy institut im. P.N. Lebedeva AN SSSR (Institute of Physics imeni P.N. Lebedev, AS USSR) with the aid of their 6.5 Mev microtron. The number of electrons retained during acceleration when a magnetron is used as a synchrotron injector is estimated at about $2.5 \cdot 10^{10}$. It is thus proved that modern accelerators of this type are very efficient already now, and further de-

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A 6.5 Mev m[illegible]otron for electron injection ....

velopm[illegible]ll make magnetrons even more suitable for this purpose. The magnetic pol[illegible] the sheets are made of Ст.3 (St.3) steel. The magnetic poles are 600 mm [illegible] diameter, and the diameter of the operating area is 500 mm approximately. The magnet requires 450 w, and the supply of energy is stabilized with an erro[illegible] of about 0.03%. The pressure in the chamber is about $2 \cdot 10^{-6}$ mm Hg. There are 3 figures.

SUBMITTED: June 27, 1962

Card 2/[illegible]

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

L 11297-63 EWT(m)/BDS/ES(w)-2--AFFTC/ASD/ESD-3/SSD--Pab-4--DM
ACCESSION NR: AP3003978 S/0089/63/015/001/0062/0062

AUTHOR: Belovintsev, K. A.; Belyak, A. Ya.; Gridasov, V. I.; Cherenkov, P. A.

TITLE: On new possibilities of increasing the efficiency of a microtron

SOURCE: Atomnaya energiya, v. 15, no. 1, 1963, 62

TOPIC TAGS: microtron, ferrite isolator, magnetron, automatic bias

ABSTRACT: A ferrite isolator, serving as a matching and decoupling element between a magnetron oscillator and an accelerating resonator was substituted for the conventional water-load system and the phase shifter in a microtron. As a result of this improvement, the power loss in the microtron waveguide was reduced, microtron efficiency was increased by a factor of approximately two and the stability of the h-f channel was increased markedly due to decoupling between the magnetron oscillator and the load. Through reduction of waveguide length and the number of joints in the waveguide it was possible to make the system hermetic, thus increasing considerably its electric strength. Since the ferrite isolator functions simultaneously as a matching element, attenuator, and phase shifter, the adjustment procedure and control of the microtron were considerably simplified.

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ACCESSION NR: AP3003978

A further increase in efficiency can be obtained by increasing coefficient k, which is the ratio of the number of electrons in the beam to the number of injected electrons. The k can be increased by applying a positive bias to the microtron injected cathode. Smooth adjustment of the bias is effected by changing the internal resistance of the high-voltage triode located between the microtron cathode and the ground. It was shown in experiments, that k is a linear function of the positive bias in the first approximation. The value of the linearity coefficient depends on the dimensions of the resonator injector aperture and on the location of the cathode. Thus, it was possible to increase k by 10% at a positive bias of approximately 2—3 kv, and to increase the pulsed current of accelerated electrons in the microtron up to approximately 110 mamp at an energy of 6.5 Mev. Orig. art. has: 1 formula.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva, AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 250ct62 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: SD NO REF SOV: 002 OTHER: 000

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

ACCESSION NR: AP4029697 S/0089/64/016/004/0353/0354

AUTHOR: Belovintsev, K. A.; Denisov, F. P.

TITLE: The possibility of generating and accelerating positrons in a microtron

SOURCE: Atomnaya energiya, v. 16, no. 4, 1964, 353-354

TOPIC TAGS: positron, microtron, gamma radiation, storing device, electron positron beam, bremsstrahlung, electron positron pair, relativistic positron, annihilation radiation, electron cyclotron

ABSTRACT: The use of a microtron is proposed for the production of accelerated positrons. The latest achievements in the development of highly efficient microtrons justify the hope that the proposed method will facilitate production of much more intensive positron beams, compared to those in current production, and reduced overall equipment costs. Under the new scheme, the electrons emitted from an injector are accelerated by the electric field of a high-frequency resonator to the maximum energy level achievable in the given

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ACCESSION NR: AP4029697

microtron. In view of the high intensity of the high-frequency electric field ($\mathcal{E}\approx 380$ kv/cm), a considerable portion of the positrons with an initial energy of about zero will be captured by the microtron acceleration system. A further acceleration of the positrons occurs simultaneously with the following bunches of electrons, and most of the orbits coincide spatially. In their last orbit the positrons are automatically deflected by a system of magnetic canals, and can be removed from the microtron for the purpose of generating monochromatic annihilation gamma-radiation or for accelerating to higher energy levels. The above outlined method of generating and accelerating positrons was experimentally tested at the photomeson laboratory of the SSSR Academy of Sciences. Orig. art. has: 1 figure and 1 formula.

ASSOCIATION: None

SUBMITTED: 08May63 ATD PRESS: 3048 ENCL: 00

SUB CODE: NP NO REF SOV: 004 OTHER: 003

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

L 16158-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-7/Pab-10 IJP(c) OS

ACCESSION NR: AT5007923 S/0000/64/000/000/0355/0357

AUTHOR: Ado, Yu. M.; Belovintsev, K. A.; Belyak, A. Ya.; Bessonov, Ye. G.; Dem'yanovskiy, O. B.; Skorik, V. A.; Cherenkov, P. A.; Shirchenko, V. S.

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49
B+1

TITLE: Storage of particles in a synchrotron 19

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 355-357

TOPIC TAGS: high energy accelerator, charged particle beam, particle physics, synchrotron

ABSTRACT: Synchrotron-type accelerators of several 100 Mev and higher can be employed for particle storage [Yu. M. Ado, "Atomnaya Energiya, 12, 54 (1962)]. In the case of simultaneous storage of electrons and positrons in an accelerator, one can obtain colliding electron-positron beams. In order for a synchrotron to operate in the storage state, the constant component of the driving magnetic field must be larger than the amplitude of the variable component. In particular, if the variable component is a sinusoidal function of time, the driving magnetic field H must have a specified shape. In this case, the accelerating hf potential is step-shaped.

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ACCESSION NR: AT5007923

i.e. remains switched on continuously in contrast to the synchrotron's operation in the usual state. The injection of particles is effected at moments of time t_1, t_2, t_3,..., which correspond to intersections of the ascending curve H-versus-t with the constant ordinate H_1. The particles captured in the synchrotron state of the storage device, which are accelerated during the rising portion of the magnetic field H and slowed down when the magnetic field is decreasing, remain in the accelerator chamber for a period that is determined mainly by the scattering processes and by the bremsstrahlung on the atoms of the residual gas. During each period of the driving magnetic field H close to maximum H there exists considerable radiation damping of the amplitudes of betatron and synchrotron oscillations. As a result, the phase volume occupied by the particles decreases. This permits the onset of amplitude modulation of the specified hf-potential without loss of the particles captured earlier. In this case, the injection of particles will proceed into the phase space between the separatrices which are defined by the amplitudes of hf-potential U (maximum step value) and $U - \Delta U$ (modulation decrement due to H being less than H_1 for the brief periods just before t_1, t_2, t_3,...). The admissible depth of modulation ΔH is larger the larger the magnitude of radiation damping of the oscillations. The effectiveness of the injection into the synchrotron state of storage during onset of amplitude modulation of the hf-potential is ten times the effectiveness of injection directly into the steady-state separatrix. In the case

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ACCESSION NR: AT5007923

of particle storage in a synchrotron, injection is effected into the variable magnetic field during the low energy of the injected particles which is typical for the given accelerator. Consequently the problem of particle injection is essentially simplified in comparison with injection into storage rings. Moreover, the small injection energy simplifies the problem of obtaining positrons. These properties permit attainment of a comparatively high rate of storage and thus a lowering of the requirements made on the degree of vacuum. To verify the possibility in principle of realizing the method of particle storage in a synchrotron, experiments were carried out on a 280-Mev synchrotron under specific conditions of particle energy (170 Mev for maximum H and 7 Mev for minimum H), amplitude U of hf-potential (1.8 kv), modulation depth ΔU (0.36 kv), rate of growth of driving magnetic field at moment of injection ($1.5 \cdot 10^5$ oersteds/sec), pressure of residual gas in vacuum chamber ($5 \cdot 10^{-6}$ mm/Hg). The source of electrons is an 8-Mev microtron [K. A. Belovintsev, A. Ya. Belyak, A. M. Gromov, Ye. M. Moroz, P. A. Cherenkov, "Atomnaya Energiya, 14, 359 (1963)]. Finally as shown by tests conducted on electron storage in a synchrotron, it is possible to carry out simultaneous storage of both electrons and positrons in quantities sufficient for setting up experiments on colliding beams if the pressure in the vacuum chamber is lowered to 10^{-8} mm/Hg and the conditions for particle capture are suitably improved. Orig. art. has 4 figures.

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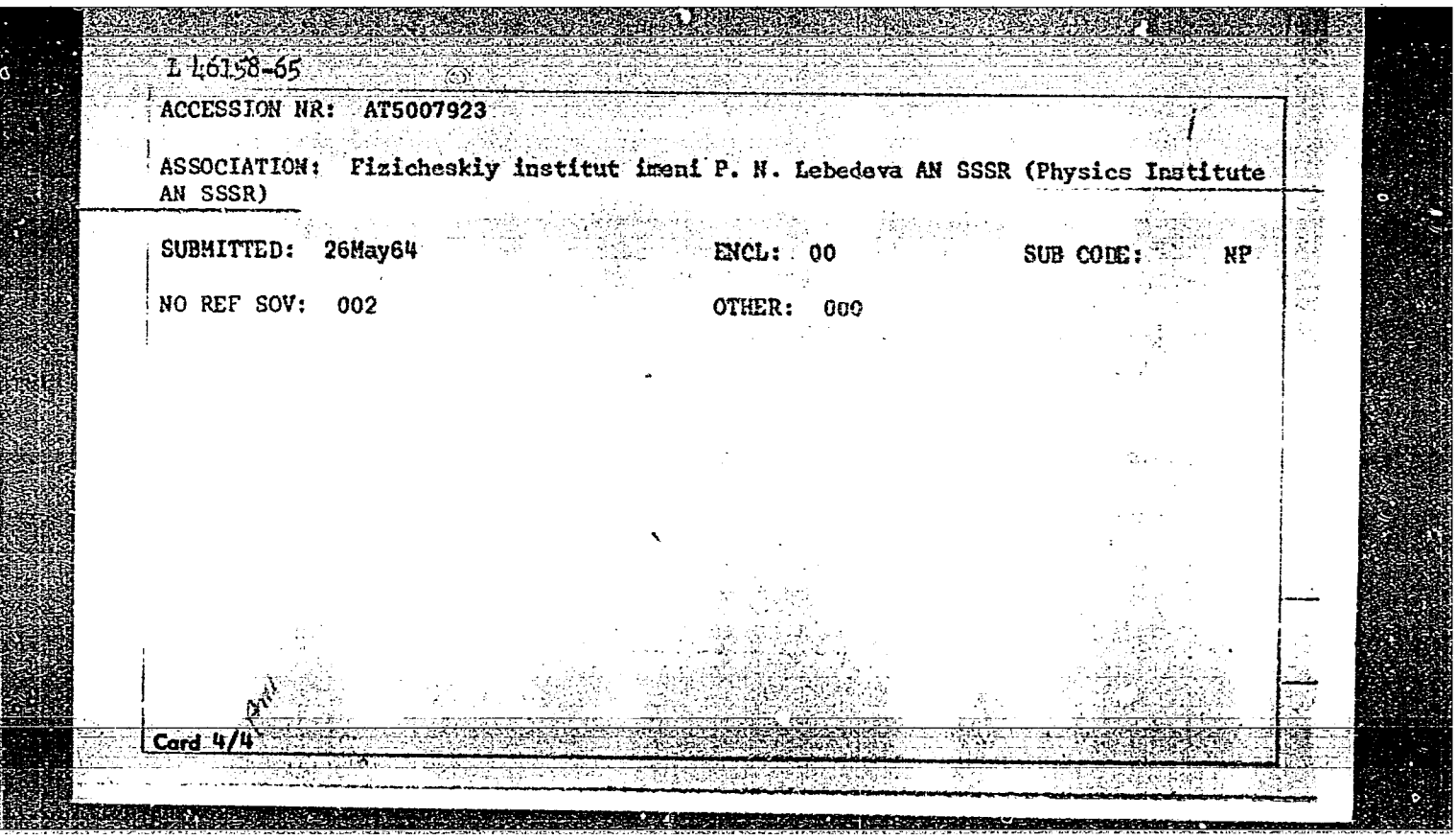

L 46158-65

ACCESSION NR: AT5007923

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva AN SSSR (Physics Institute AN SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

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Card 4/4

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

L 28820-65 EWI(m) IJP(c) GD

ACC NR: AT6013168 SOURCE CODE: UR/0000/65/000/000/0118/0125

AUTHOR: Belovintsev, K. A.; Cherenkov, P. A. 29 B+1

ORG: Physics Institute im. P. N. Lebedev AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: A positron microtron 19

SOURCE: AN SSSR. Mikrotron (Microtron); sbornik statey, 1944-1965 gg. Moscow, VINITI, 1965, 118-125

TOPIC TAGS: particle accelerator, electron accelerator, positron, synchrotron

ABSTRACT: The authors consider the possibility of using a microtron as a general-purpose injector for a synchrotron storage ring. Methods for producing, accelerating, and extracting positrons from the microtron are discussed. If a beam of electrons from the last orbit is directed at the positron converter K located on the wall of resonator P of the microtron (see Fig. 1), the angular coefficient for capture of positrons leaving the converter with low energies will be considerably higher than in the case of direct conversion on the storage ring target due to the high electric field strength in the resonator (about 400 kv/cm). Spatial displacement of the electron beam toward the converter is accomplished by using two magnetic channels l_1 and l_2 with a difference in length which determines the amount of displacement Δl. An approximate expression is given for determining the length of the magnetic channels.

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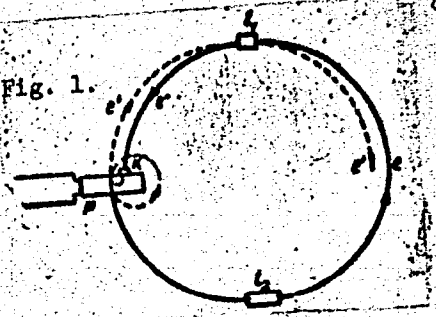
ACC NR: AT6013168

Diagrams are given showing the regions of positron capture for various initial velocities and phases in the horizontal and vertical planes. The proposed method for positron acceleration was checked out on the microtron at the photomeson laboratory in the Physics Institute im. P. N. Lebedev AN SSSR with an electron-to-positron beam conversion coefficient of 10^{-5} to 10^{-6}. Experimental work on improving the method is still in progress. A second method is proposed for positron emission in a microtron where the converter is placed at the edge of the resonator opening. Insufficient data on the important parameters which characterize this method make it difficult to compare it with the first method. A design is proposed for a universal microtron injector with two electron injectors and a positron converter. This system uses a single magnetic channel for simultaneously directing the electron beam to the converter and deflecting the positron beam. The installation may be easily adjusted for production of two electron beams when necessary. Orig. art. has: 4 figures. [14]

Fig. 1.



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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

1. BELOVINTSEVA, M. F.

2. USSR 600

4. Muscles - Diseases

7. Muscular chronaxy in man in hypofunction of the adrenal glands, Nauch. biul. Len un., No. 30, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M. F.

Muscle

Change in the skeletal muscles of a frog after adrenalectomy.
Vest. Len. un. 7 no. 7, 1952

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.; SHALYAPINA, V.G.

Insulin inactivating capacity of the hepatic tissue of rats in experimental pancreatic diabetes. Pat. fiziol. i eksp. terap. 8 no.6:55-57 N-D '64. (MIRA 18:6)

1. Laboratoriya fiziologii zhelez vnutrenney sekretsii Instituta fiziologii imeni Pavlova AN SSSR, Leningrad.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

Belovintseva, M. F.

USSR/ Medicine - Physiology

Card 1/1 Pub. 22 - 56/59

Authors : Belovintseva, M. F.

Title : Characteristics of singular muscular systoles of frogs after removal of the suprarenal glands

Periodical : Dok. AN SSSR 102/2, 403-404, May 11, 1955

Abstract : The changes occurring in singular muscular systoles of frogs immediately after the removal of the suprarenal glands were investigated. Results are given. Eleven references: 7 USSR and 4 German (1927-1950). Graphs.

Institution : Acad. of Sc., USSR, Inst. of Physiology im. I. P. Pavlov

Presented by : Academician K. M. Bykov January 17, 1955

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.

BELOVINTSEVA, M.F. (Leningrad)

Influence of the way by which insulin reaches the portal circulation of liver on its barrier function. Report No.1. Functional state of liver after ligation of the duodenopancreatic vein [with summary in English, p.123]. Probl.endok. i gorm. 3 no.2:3-5 Mr-Ap '57. (MIRA 10:10)

1. Iz laboratorii fiziologii zhelez vnutrennoy sekretsii (zav. - prof. Ye.N.Speranskaya) Instituta fiziologii imeni I.P.Pavlova (dir. - akad. K.M.Bykov) AN SSSR.

(LIVER, physiol.
eff. of ligation of duodenopancreatic vein (Rus))
(VEINS, PORTAL SYSTEM, surg.
ligation of duodenopancreatic vein, eff. on liver funct. (Rus))

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.

BELOVINTSEVA, M.F. (Leningrad)

Significance of the pathway of discharge of insulin into the portal circulation in its barrier function. Report No.2: Level of blood sugar following a change in pancreatic venous circulation [with summary in English, p.126] Probl.endok. i gorm. 3 no.3:35-39 My-Je '57. (MIRA 10:10)

1. Iz laboratorii fiziologii zheles vnutrenney sekretsii (zav. - prof. Ye.N.Speranskaya) Instituta fiziologii imeni I.P.Pavlova (dir.- akad. K.M.Bykov) AN SSSR.

(PANCREAS, blood supply,
venous circ., eff. of ligation on blood sugar in animals (Rus))
(BLOOD SUGAR, physiology,
eff. of ligation of pancreatic venous circ. (Rus))

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.

Change in the quantity of insulin in the peripheral blood of animals with carbohydrate loads in disorders of the venous blood flow from the pancreas. Nauch. soob. Inst. fiziol. AN SSSR no.1:117-119 '59. (MIRA 14:11)

1. Laboratoriya fiziologii zhelez vnutrenney sekretsii (zav. - Ye.N.Speranskaya) Instituta fiziologii imeni Pavlova AN SSSR.
(INSULIN) (PANCREAS--DISEASES)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.

Insulin content of the peripheral blood when its entry into the portal vein is modified. Trudy Inst.fiziol. 8:236-239 '59.
(MIRA 13:5)

1. Laboratoriya fiziologii zheloz vnutrennoy sekretsii (zaveduyushchaya - Ye.N. Speranskaya) Instituta fiziologii im. I.P. Pavlova AN SSSR.
(INSULIN) (PORTAL VEIN)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.; SAVINA, N.V.

Restoration of glycogen reserves in the liver in white mice following muscle effort after ligation of the pancreaticoduodenal vein. Biul. eksp.biol. i med. 48 no.10:40-43 O '59. (MIRA 13:2)

1. Iz laboratorii fiziologii zhelez vnutrenney sekretsii (zav. - chlen-korrespondent AMN SSSR Ye.N. Speranskaya) Instituta fiziologii imeni I.P. Pavlova (dir. - akademik K.M. Bykov [deceased] AN SSSR, Leningrad. Predstavlena akademikom K.M. Bykovym [deceased].
(PANCREAS blood supply)
(DUODENUM blood supply)
(LIVER metab.)
(GLYCOGEN metab.)
(FATIGUE eff.)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVINTSEVA, M.F.

Secretion of insulin in disorders of liver function. Fiziol. zhur. 47 no.12:1484-1489 D '61. (MIRA 15:1)

1. From the Laboratory of Glands of Internal Secretion, I.P.Pavlov Institute of Physiology, Leningrad.
(LIVER--DISEASES) (INSULIN)

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BELOVITSKIY, M. M.

Abbreviation proper(alphabet) USSR (The Chemical Industry of the USSR)
Moscow, Goskhimizdat, 1959. 457 p. Errata slip inserted. 4,100 copies printed.

Sponsoring Agency: USSR. Gosudarstvennyy nauchno-tekhnicheskiy komitet.

Ed.: P. P. Pomi; Tech. Ed.: P. Y. Popelkin; Editorial Board: A. P. Vinogradov, A. I. Volfkovich, K. M. Gavrenov, V. N. Ivanov, V. N. Kimlev, I. A. Lamchenkova (Scientific Secretary), B. D. Markevich, N. D. Melnikov, A. E. Plasovskiy, A. Ya. Rybenko (Chief Ed.), and A. V. Topchiyev.

PURPOSE: This book is intended for the personnel of the chemical industry. It will be of interest to the general reader interested in the development and structure of the Soviet chemical industry.

COVERAGE: This book contains 18 articles on various aspects of the Soviet chemical industry. Among the developments in the production of raw materials for the manufacture of chemical products discussed are: 1) the use of raw materials synthesized from natural gas and petroleum to replace food products in the production of synthetic rubber, alcohol, detergents, etc.; 2) the production of acetylene from natural and petroleum gases for the synthesis of vinyl chloride, acrylonitrile, chloroprene, trichloroethylene, 1, 4-butanediene, and other organic substances, based on methods developed by M. G. Kucherov, L.Ya. Pavovskiy and others; 3) the production of acetylene from saturated hydrocarbons by cracking methane (and its homologs) at 1500° in an electric arc between two special electrodes in a gas reactor, by pyrolysis (thermal oxidation) of methane in an improved furnace designed by B. B. Grigorenko, by high-temperature pyrolysis of propane and butane in tubular furnaces, or by other methods of producing acetylene for the production of synthetic rubber, ethyl alcohol, and other organic substances; 4) the synthesis of halogen derivatives of aliphatic hydrocarbons for the production of solvents, surfactants, pharmaceutical products, etc., and 5) the production of rubber-like elastomers from nitrogen-containing aliphatic hydrocarbons. The history of and products of plants as well as the names of outstanding personalities in the field are given. The technical level and prospects for further development of different branches of the plastics industries are also discussed.

Along with methods of manufacturing plastic articles, A special appartus designed by M. M. Bogdanovskiy and designated "V-1" which permits preparation of viscose solution in one operation is discussed. It is being used to replace the complex, conventional equipment with great savings in space. Current trends in the technology of synthetic fiber production are also discussed. A historical review of synthetic rubber production and the achievements of outstanding Soviet scientists in this field are given as well as names, locations and products of synthetic rubber plants. Rubber fabrication and the manufacture of rubber goods are similarly reviewed. Additional data and information on the development of the rubber, paint and lacquer, mineral fertilizers, insecticides and fungicides, glycerin, acids, soda, mineral salts, radioactive and stable isotopes, and chemical reagents industries are given. Catalytic processes and automation and automatic devices used in the chemical industry are also discussed. Thirty-eight photographs included in the book show outside and interior views of some Soviet chemical industry plants, as well as their manufacturing, material-handling and laboratory equipment. Numerous personalities and facilities are identified in the body of the text.

References accompany individual articles.

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AVAILABLE: Library of Congress

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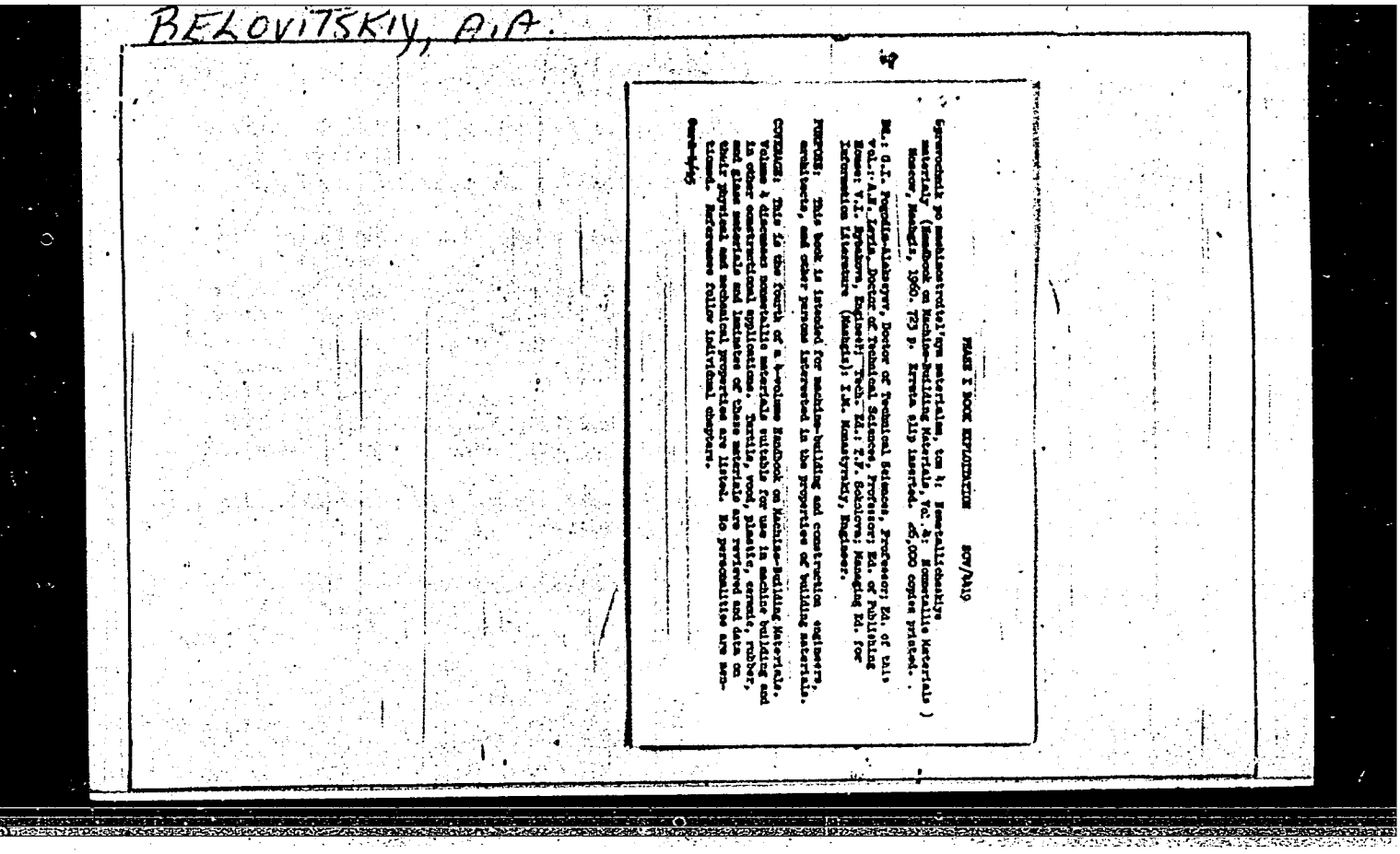

BELOVITSKIY, A.A.

PHASE I BOOK EXPLOITATION SOV/4419

Spravochnik po mashinostroitel'nym materialam, tom 4: Nemetallicheskiye materialy (Handbook on Machine-Building Materials, Vol. 4: Nonmetallic Materials) Moscow, Mashgiz, 1960. 723 p. Errata slip inserted. 26,000 copies printed.

Ed.: G.I. Pogodin-Alekseyev, Doctor of Technical Sciences, Professor; Ed. of this vol.: A.N. Levin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V.I. Rybakova, Engineer; Tech. Ed.: T.F. Sokolova; Managing Ed. for Information Literature (Mashgiz): I.M. Monastyrskiy, Engineer.

PURPOSE: This book is intended for machine-building and construction engineers, architects, and other persons interested in the properties of building materials.

COVERAGE: This is the fourth of a 4-volume Handbook on Machine-Building Materials. Volume 4 discusses nonmetallic materials suitable for use in machine building and in other constructional applications. Textile, wood, plastic, ceramic, rubber, and glass materials and laminates of these materials are reviewed and data on their physical and mechanical properties are listed. No personalities are mentioned. References follow individual chapters.

Card 1/15

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.

"Organic coating technology" by H.F.Payne [translated from the English]. Reviewed by A.A. Belovitskii. Lakokras.mat. i ikh prim. no.4:88-90 '60. (MIRA 13:10)

(Protective coatings) (Payne, H.F.)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.; SERB-SERBIN, P.V.; GERSHMAN, D.Ya.

Conference on Pigments for the Paint and Varnish Industry.
Zhur. VKHO 7 no.6:684-686 '62. (MIRA 15:12)
(Pigments--Congresses)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.; GERSHMAN, D.Ya.

All-Union Scientific and Technical Conference on the present state and prospects for the development of lacquer condensation resins. Lakokras.mat.i ikh prim. no.1:87 '63. (MIRA 16:2)
(Paint materials)
(Resins, Synthetic—Congresses)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.; SERB-SERBIN, P.V.; GERSHMAN, D. Ya.

All-Union conference on pigments for the paint industry.
Lakokras.mat. i ikh.prim. no.4:1-5 '62. (MIRA 16:11)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.

Development of the manufacture of new pigments. Lakokras.mat. i ikh prim. no.4:76-79 '62. (MIRA 16:11)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, A.A.; GERSHMAN, D.Ya.

Scientific and technical conference on lacquer resins in Yaroslavl. Zhur. VKHO 8 no.5:570-571 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G. YE.

PA 11/49T87

USSR/Nuclear Physics - Cosmic Radiation Jul 48
Nuclear Physics - Particles, Charged - Trajectories

"Photographing the Background of Trajectories Made by Charged Particles in an Emulsion by the Rapid Photoregression Method," G. Ye. Belovitskiy, L. V. Sukhov, 1 p

"Dok Ak Nauk SSSR" Vol LXI, No 2, p. 243

Rapid acceleration of regression of trajectories of protons and alpha particles under conditions of increased moisture and temperature was used to photograph background of radioactive charges and cosmic rays which is invariably present in photographic plates. Submitted 13 May 48.

11/49T87

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G. YE.

USSR/Nuclear Physics - Cosmic Radiation Sep 48
Nuclear Physics - Mesotrons

"The Influence of Altitude on Heavy Particles Caused by Cosmic Rays," G. Ye. Belovitskiy, L. V. Sukhov, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 2, pp 207-210

Gives results of 1946-1947 Pamir expeditions. Photographic method was used to determine number of heavy particles. Curves and tables show that number of heavy particles increases directly with altitude. Obtained curves for films located

36/49T65

USSR/Nuclear Physics - Cosmic Radiation (Contd) Sep 48

In a vacuum and films located in open air, with former showing greatest number of heavy particles. Wilhelm's data for the same phenomenon was shown to be very low, probably due to prolonged exposure of the film. Submitted by Acad S. I. Vavilov, 13 Jul 48.

36/49T65

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G.Ye

USSR/Nuclear Physics - Cosmic Rays Oct 48
Particles

"Relation Between the Formation of Heavy Particles and the Absorption of the Component Generating Them at a Height of 3,860 Meters Above Sea Level," G. Ye. Belovitskiy, L. V. Sukhov, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXII, No 6, pp 757-759

Using thick photofilms, plotted the curve of absorption in lead for the component that generates heavy particles at 3,860-meter elevation and explained the dependence of their formation on the

60/49T9

USSR/Nuclear Physics - Cosmic Rays (Contd) Oct 48

material (lead, glass). Results were generally in agreement with those of Heitler. Submitted by S. I. Vavilov 13 Jul 48.

60/49T9Z

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G, YE.

USSR/Nuclear Physics - Cosmic Rays 21 Nov 49
Nuclear Fission

"Decay of Cosmic Ray Particles Causing Nuclear Fission," G. Ye. Belovitskiy, N. V. Maslennikova, V. F. Smirnov, L. V. Sukhov, Phys Inst imeni Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 3

Considers problem of nature and properties of particles entering into composition of that component of cosmic rays which causes "star-forming" nuclear fissions ("stars"). Unstable particles causing "stars" are subject of present experiments, designed to clarify their existence. Submitted 17 Aug 49 by Acad D. V. Skobel'tsyn.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G. Ye.

USSR/Nuclear Physics - Fission of U by negative pi-mesons

FD-2349

Card 1/2 Pub. 146 - 14/34

Author : Belovitskiy, G. Ye.; Romanova, T. A.; Sukhov, L. V.; and Frank, I. M.

Title : Fission of uranium nuclei under the action of slow negative pi-mesons and high-energy particles

Periodical : Zhur. eksp. i teor. fiz. 28, 729-732, Jun 1955

Abstract : In this work the authors investigate the fission of uranium nuclei by slow negative pi-mesons (G. Ye. Belovitskiy, et alii, Otchet FIAN*, April 1950, June 1950, March 1951), by fast neutrons, with energies up to 460 Mev, and by gamma-rays with energies up to 250 Mev (G. Ye. Belovitskiy et alii, ibid., Dec 1952). For the recording of the fission of uranium nuclei they used photoplates with emulsion layer 100 microns thick with uranyl acetate (T. A. Romanova and G. Ye. Belovitskiy, ibid., June 1951), which plates permitted the observation of protons with energies up to 30 Mev. The irradiation of the plates by slow negative pi-mesons and fast neutrons was carried out in the synchrocyclotron of the Institute of Nuclear Problems. Academy of Sciences USSR; the irradiation by gamma-rays was by the synchrotron of FIAN*. They note that the energy spectrum of neutrons from "overcharging" (perezaryadka) of

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670-Mev protons on beryllium was measured by V. B. Flyagin. They present 5 photographs of indicated fission. They thank Prof. M. G. Meshcheryakov, G. P. Dzhelepov, and Ye. Grigor'yev for aid in experiments with negative pi-mesons and fast neutrons, and also thank Prof. V. I. Veksler and Yu. S. Ivanov for aid in experiments with gamma-rays of high energy. They state that a more detailed report on the results obtained will be published in this journal. They conclude that the distinguishing peculiarity of the process of fission of uranium nuclei at high energies of excitation is the significant probability of the emission of fast protons and alphaparticles; these particles bear only a comparatively small part of energy obtained by the uranium nucleus from the primary particle. Thirteen references.

Institution : Physical Institute imeni P. N. Lebedev, Acad. Sci. USSR (FIAN*)

Submitted : March 9, 1955

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G. Ye

USSR/Nuclear Physics.- Fission of U-nuclei FD-3329

Card 1/1 Pub. 146 - 1/28

Author : Belovitskiy, G. Ye., Romanova, T. A., Sukhov, L. V. and Frank, I. M.

Title : Fission of uranium nuclei under action of slow π^- mesons, fast neutrons and γ-rays up to 250 Mev energy

Periodical : Zhur. Eksp. i Teor. Fiz., 29, No 5 (11), 537-550, 1955

Abstract : Fission of U-nuclei by slow π^- mesons, fast neutrons and high energy γ -rays was studied on thick emulsion photographic plates. The probability of U-nuclei fission at π^- capture proved to be high. It is evaluated around 0.5. Under high excitation energy the fission is probably accompanied by charged particles emission, i.e. protons and α particles. Energy spectra and angular distributions of particles were obtained and plotted. These data were used for discussion of the mechanism of U nuclei fission at high excitation energy. Indebted for help to M. G. Meshcheryakov, V. P. Dzhelepov, Ye. P. Grigor'yev, V. I. Veksler, Yu. S. Ivanov, A. N. Kuznetsov, Yu. N. Lizunov and I. L. Nesmelova. Thirty one references, including 21 foreign.

Institution : Physics Institute im. Lebedev, Acad. Sci. USSR

Submitted : March 9, 1955

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G.Ye.; GOLOVIN, V.N.; SUKHOV, L.V.

Spring board used in recording multiple scattering of particles in photographic emulsions. Prib. i tekh. eksp. no.1:102-105 Jl-Ag '56. (MLRA 10:2)

1. Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR.
(Photomicrography) (Photography, Particle track)

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BELOY ITSKIY, G. YE.

USSR/Nuclear Physics - Installations and Instruments. Methods of Measurement and Research. C-2

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8599

Author : Belovitskiy, G.Ye., Golovin, V.N., Sukhov, L.V.
Inst : Physics Institute, Academy of Sciences, USSR.
Title : Spring Stage for Measuring Multiple Scattering of Particles in a Photographic Emulsion.

Orig Pub : Pribory i tekhn. eksperimenta, 1956, No 1, 162-165.

Abstract : Description of the construction of a spring stage, having very low noise level ($\sim$ 0.01 -- 0.03μ). The noise measurement occurring during vertical displacement of the objective is carried out, as is the measurement of thermal noise due to non-uniform heating of various parts of the microscope. Steps that permit substantial reduction of the thermal noise are proposed.

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BELOVITSKIY, G. E.

BELOVITSKIY, G. E., ROMANOVA, T. A. and TIKHOMIROV, F. A.

"Uranium Fission Induced by Slow μ -Mesons."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 58.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

24(5)

AUTHOR: Belovitskiy, G. Ye.

SOV/56-35-4-2/52

TITLE: Inelastic Scattering of Positive and Negative π-Mesons With Energies of 300 MeV on the Nuclei of Photoemulsions (Neuprugoye rasseyaniye polozhitel'nykh i otritsatel'nykh π-mezonov s energiyey 300 MeV na yadrakh fotoemul'siy)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 838-844 (USSR)

ABSTRACT: The author reports on investigations of the inelastic scattering of 300 ± 15 MeV π^- and π^+ mesons on emulsion nuclei. He uses photographic plates of the types NIKFI and Ilford G-5 (400μ). The number of nuclei per cm^3 of the first-mentioned type (without hydrogen) is $\sim 7.5 \cdot 10^{22}$. In the following, the results obtained by the analysis of 5000 "stars" are published. 1. Determination of the inelastic scattering cross section (Ref 8). Investigations were carried out of: π^-:1622-stars, π^+:1377-stars on NIKFI, further of 286 π^--stars on G-5; rate of percentage of cases of inelastic scattering: π^-:(45 ± 2)%, π^+:(40 ± 2)% (NIKFI) and π^-:(38 ± 4)% in (G-5);

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inelastic scattering cross sections: π^-: 200 ± 32 mb, π^+: 185 ± 33 mb.

2. Angular distribution in inelastic π^- - and π^+ -scattering. Two measurement series: E > 60 MeV - (Fig 1) and E > 10 MeV (Fig 2). Ratio of the number of mesons with a scattering angle of $<90^\circ$ (and $>90^\circ$) (the values for $\Delta>90^\circ$ are in brackets):

π^+ : 1.48 ± 0.14 (1.5 ± 0.33); π^- : 1.15 ± 0.1 (1.19 ± 0.23)

3. The energy spectrum of inelastically scattered π^+ - and π^- -mesons (Fig 3). For π^- the maximum is about 50 - 100 MeV, for π^+ it is shifted towards higher energies.

Average energy values:

	0 - 60°	60 - 120°	120 - 180° (scattering angle)
π^+-300 MeV	186	163	152
π^--300 MeV	194	103	95

4. Determination of the cross section of exchange scattering:

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Inelastic Scattering of Positive and Negative π-Mesons With Energies of 300 MeV on the Nuclei of Photoemulsions

SOV/56-35-4-2/52

In the course of the investigation of 5000 stars 3 electron pairs were found which originated from the decay:

$$\pi^0 \rightarrow e^+ + e^- + \gamma \quad , \text{ with the cross section}$$

$$\sigma_{\pi^\pm \rightarrow \pi^0} \approx \left(\frac{3 \cdot 80}{5000}\right) \cdot 450 \approx (20 \pm 12) \text{ mb} .$$

In the 5th and last chapter results are discussed. The author thanks I. M. Frank for his advice, and A. P. Lagerand O. N. Pavlova for their help in carrying out measurements. There are 4 figures, 1 table, and 14 references, 7 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: March 29, 1958

Card 3/3

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

SOV/120-59-2-25/50

AUTHORS: Belovitskiy, G.Ye., Korablev, L.N., Sukhov, L.V. and Shtranikh, I.V.

TITLE: An Apparatus for the Automatic Meaurement of Multiple Scattering of Particles (Ustanovka dlya avtomatizatsii izmereniy mnogokratnogo rasseyaniya chastits)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 2, pp 86-90 (USSR)

ABSTRACT: The instrument may be used to carry out both measuring and computing operations on multiple Coulomb scattering. It can also be used to measure lengths. The table of the microscope can be moved repeatedly through fixed intervals (50, 100, 250 and 500 μ). The second coordinate which gives the deviation of the track from the x-axis is transformed into electrical pulses by means of a photoelectric device in the micrometer eyepiece. These pulses are transmitted to the computing part of the apparatus and the number of pulses given by the photoelectric device in each measurement of the y-coordinate is proportional to the magnitude of the first difference in the coordinates. The instrument is not fully automatic since an observer must place the track manually in a standard position. The apparatus was checked

Card 1/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

An Apparatus for the Automatic Measurement of Multiple Scattering of Particles

against an observer and the average percentage difference between the semi-automatic machine and an observer working with an ordinary microscope is 1-5%. The use of this machine cuts down the scanning time by a factor of 5 and increases the accuracy because it eliminates any possible arithmetical errors committed by the observer. The instrument can also be used with bubble chambers and Wilson cloud chambers. A.V. Shileiko and M.I.Tret'yakova are thanked for their help.

Card 2/2 There are 4 figures, 1 table and 7 references, 1 of which is Swedish, 1 Italian and 5 are Soviet.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the Academy of Sciences of the USSR)

SUBMITTED: March 31, 1957

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G.Ye.; KASHCHUKEYEV, N.T.; MUKHUL, A.; PETRASHKU, M.G.; ROMANOVA, T.A.; TIKHOMIROV, F.A.

Mechanism of uranium fission induced by slow μ^--mesons. Zhur.eksp.i teor.fiz. 38 no.2:404-408 F '60. (MIRA 14:5)

1. Ob"yedinennyy institut yadernykh issledovaniy i Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR.
(Uranium--Isotopes) (Mesons) (Nuclear fission)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVITSKIY, G. YE.

S/056/60/038/02/57/061
B006/B014

24.6600

AUTHOR: Belovitskiy, G. Ye.

TITLE: Application of the "Z-Law" by Fermi and Teller to a Photoemulsion Containing Uranium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 2, pp. 658-660

TEXT: It has been found that, contrary to Fermi's and Teller's theoretical predictions, the relative capture probability of slow μ^--mesons by various atoms in chemical compounds is not proportional to Z, but depends on the number of atoms of the respective element in the molecule of the compound. Calculations of the uranium-fission probability P_f have usually been based on the assumption that the Z-law holds for the pion-capture probability of various atoms in the gelatin of the photoemulsion. In the present "Letter to the Editor" the writer studies the question as to what extent this assumption is justified. The writer intends to verify values of P_f so far obtained (P_f was between 0.18 and 0.5), for

Card 1/3

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

Application of the "Z-Law" by Fermi and Teller to a Photoemulsion Containing Uranium

S/056/60/038/02/57/061
B006/B014

which purpose repeated experiments were made on uranium fission by slow π^--mesons. Nuclear emulsion plates of the type НИКФИ-Р (NIKFI-R)28 impregnated with uranyl acetate were used (200 μ thick). The uranium nuclei contained in the layer were determined by alpha-counting. The plates were bombarded with a beam of slow π^--mesons on the synchro-cyclotron of the OIYaI (Joint Institute of Nuclear Research); the μ^--admixture was 20%, the portion of fissions released by them was 3% and is taken into account. Experimental data are compiled in a table. Calculations of P_f based on the following assumptions: 1) U is completely adsorbed on gelatin (according to O. V. Lozhkin and V. P. Shamov); 2) the π^--capture probability of the various elements in gelatin is calculated (except for hydrogen) in which a) the π^--capture is proportional to Z, and b) the π^--capture is proportional to the number of atoms of the respective element in gelatin. In the first case $P_f \approx 0.4$, in the second $P_f \approx 6$. The second case was neglected with regard to gelatin + uranium investigation. An experiment on Th^{232} fission by 10- to 340-Mev protons revealed that P_f rapidly increased

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82035

Application of the "Z-Law" by Fermi and Teller to a Photoemulsion Containing Uranium

S/056/60/038/02/57/061
B006/B014

with energy, attains 0.45 ± 0.07 at ~ 50 Mev, after which it remains constant. Also $P_f(Pa^{238})$ was equal to ≤ 0.45. $0.35 < P_f \leq 0.45$ resulted for excitation energies of 25-45 Mev. When $P_f \approx 0.35$, the capture probability is proportional to Z^n with $n = 1.25$. Thus, it may be assumed for the gelatin-uranium medium that the capture probability is proportional to Z rather than to the number of atoms. There are 1 table and 7 references: 2 Soviet, 2 Italian, and 3 American.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: July 30, 1959

Card 3/3

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BELOVITSKIY, G.Ye.

Excitation of nuclear rotational levels in μ-mesonic atom transitions. Zhur.eksp.i teor.fiz. 41 no.1:66-70 Jl '61. (MIRA 14:7)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSS.
(Nuclear fission) (Mesons--Capture)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BOGOMOLOV, K.S., red.; PERFILOV, N.A., red.; BELOVITSKIY, G.Ye., red.; DOBROSERDOVA, Ye.P., red.; ZHDANOV, G.B., red.; KARTUZHANSKIY, A.L., red.; LYUBOMILOV, S.I., red.; MINERVINA, Z.V., red.; RAZORENOVA, I.F., red.; ROMANOVSKAYA, K.M., red.; SAMOYLOVICH, D.M., red.; STARININ, K.V., red.; TRET'YAKOVA, M.I., red.; UVAROVA, V.M., red.; SHUR, L.I., red.; POPOVA, A.K., red.; VEPRIK, Ya.M., red.; VERES, L.F., red. izd-va; KUZNETSOVA, Ye.B., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[Nuclear photography; transactions] IAdernaia fotografiia; trudy tret'ego Mezhdunarodnogo soveshchaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 474 p. (MIRA 15:6)

1. Colloque International de Photographie Corpusculaire. 3d, Moscow, 1960. 2. Nauchno-issledovatel'skiy kinofotoinstitut, Moskva (for Bogomolov, Uvarova, Romanovskaya, Starinin). 3. Predsedatel' Organizatsionnogo komiteta Tret'yego Mezhdunarodnogo soveshchaniya po yadernoy fotografii. 1960, Moskva (for Bogomolov). 4. Zamestitel' predsedatelya Organizatsionnogo komiteta Tre'yego Mezhdunarodnogo soveshchaniya po yadernoy fotografii. 1960, Moskva (for Perfilov). 5. Radiyevyy institut im. V.G.Khlopina Akademii nauk, Leningrad (for Shur, Perfilov). 6. Institut sovetskoy torgovli im. F.Engel'sa (for Kartuzhanskiy). 7. Ob"yedinennyy institut yadernykh issledovaniy, Dubna (for Lyubomilov). 8. Institut atomnoy energii im. I.V.Kurchatova Akademii nauk SSSR, Moskva (for Samoylovich).

(Photography, Particle track)

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BELOVITSKIY, V. inzh.

Erecting large-panel buildings by the assembly-line method. Znil. stroi. no.5:4-5 '64 (MIRA 17:7)

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BELOVITSKIY, V. Ye.

PHASE I BOOK EXPLOITATION SOV/5245

Ministerstvo svyazi SSSR. Tekhnicheskoye upravleniye

Novyye razrabotki v oblasti radiosvyazi i radioveshchaniya; informatsionnyy sbornik (New Developments in the Field of Radio Communication and Radio Broadcasting; Informational Collection) Moscow, Svyaz'izdat, 1959. 80 p. 11,500 copies printed. (Series: Tekhnika svyazi)

Resp. Ed.: A. S. Vladimirov; Ed.: V. I. Bashur; Tech. Ed.: G. I. Shefer.

PURPOSE: This collection of articles is intended for technical personnel concerned with the development and operation of radio communication and radio broadcasting.

COVERAGE: The book contains, according to the Foreword, information on new developments realized at the Gosudarstvennyy nauchno-issledovatel'skiy institut Ministerstva svyazi SSSR (State Scientific Research Institute of the Ministry of Communication USSR). Radio communication and radio broadcasting apparatus are described. Several articles are concerned with the development of new checking and measuring instruments. No personalities are mentioned. There are no references.

Prokhorov, A. M. Instrument for Measuring Group Delay Time in Superhigh-Frequency Range 49

Bobrov, A. I. Generator of GS-R-60-Type Signals With Calibrated Output Level 59

Rabinovich, G. I. Heterodyne Wave Meter 65

Fomin, M. V. Installation for Calibrating Superhigh-Frequency Attenuators 69

Gurevich, M. S., V. Ye. Belovitskiy, and N. V. Deryugin. Electronic Copying Device for Reproducing Electric Pulses of Arbitrary Shape From a Drawing 75

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOD, Andrey Karpovich; MYAGKOV, M.M., redaktor; KIRSNAOVA, N.A., tekhnicheskiy redaktor

[The state farm on the upswing] Sovkhoz na pod"eme. [Moskva] Izd-vo VTsSPS Profizdat, 1956. 78 p. (MLRA 9:11)

1. Predsedatel' rabochego komiteta sovkhoza "Sovetskoye runo", Stavropol'skogo kraya. (for Belovod)
(State farms)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

KISLYAKOV, L.D.; BELOVOD, R.N.; EPEL'MAN, L.L.; SINEL'SHCHIKOVA, Ye.N.

Adopting the use of hydraulic cyclones at the Krasnoural'sk Ore Dressing Plant. Trudy Uralmekhanobra no.5:11-30 '59. (MIRA 15:1)

1. Ural'skiy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki poleznykh iskopayemykh (for Kislyakov, Belovod).
2. Krasnoural'skaya obogatitel'naya fabrika (for Epel'man, Sinel'shchikova).

(Krasnoural'sk—Ore dressing)
(Separators (Machines))

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BELOVODCHENKO, A.I.

Water-glass mixtures for making casting molds. Mashinostroitel' no.2:33-34 F '62. (MIRA 15:2)
(Molding (Founding)—Equipment and supplies)

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BELOVODENKO, A.I.; MEZHENINOV, M.Yu.

Measures for preventing wash water from getting into boiler furnaces. Obm.tekh.opyt. [MLP] no.27:33-34 '56. (MIRA 11:11)
(Boilers--Safety measures)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVODENKO, A.I.; MEZHENINOV, M.Yu.

Improved rolling-out of watertubes for boilers. Obm.tekh.opyt. [MLP] no.27:35-36 '56. (MIRA 11:11)
(Rolling (Metalwork)) (Boilers, Watertube)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVODSKAYA, Ya.Ye.

Aseptic experimental keratitis in rabbits. Uch.zap. UEIGB 5: 224-229 '62 (MIRA 16:11)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

SHEVALEV, A. Ye.; BELOVODSKAYA, Ye. Ye.

Klastotonometric examinations in Urov disease. Uch. zap. UEIGB 5:91-95 '62 (MIRA 16:11)

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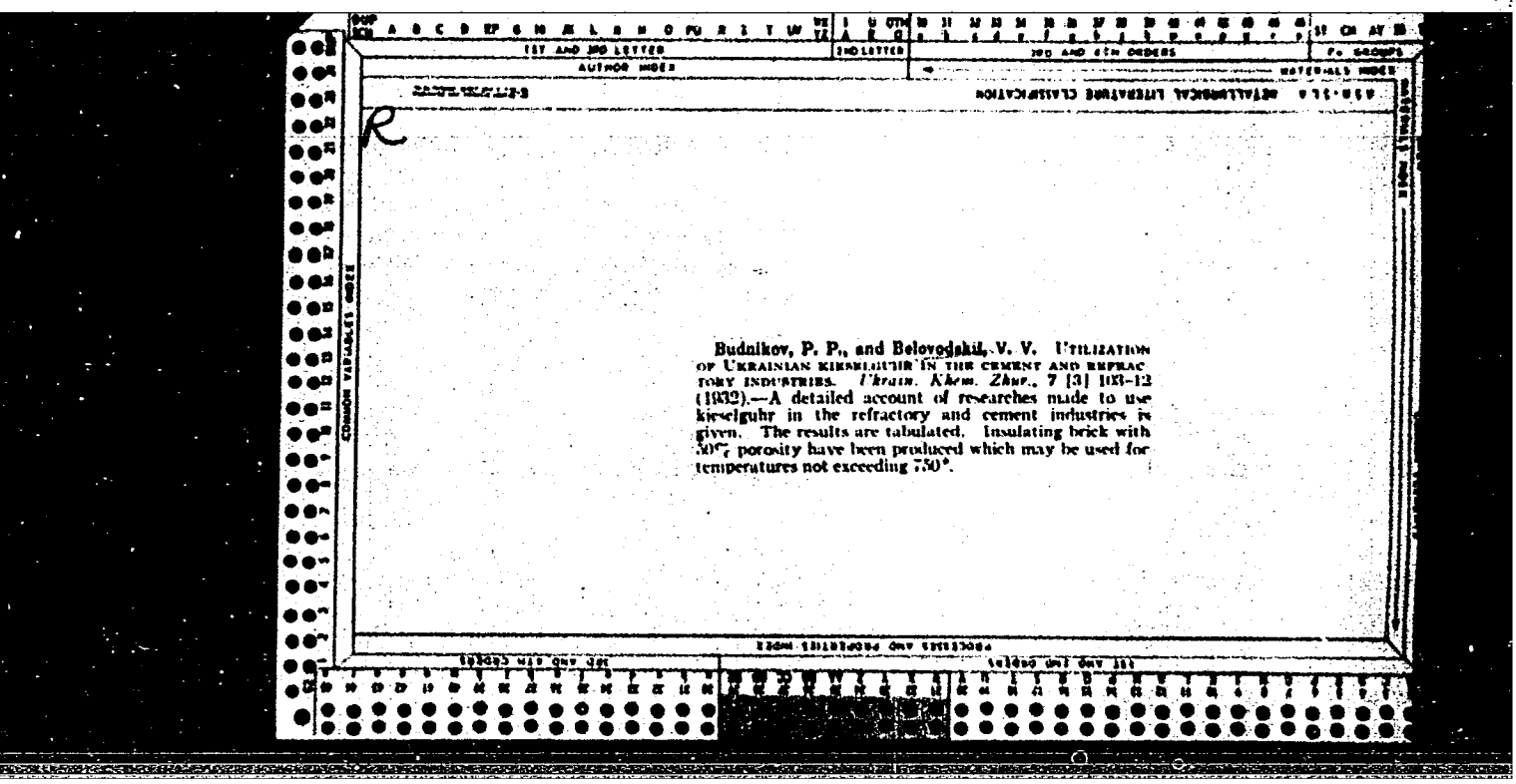

Budnikov, P. P., and Belovodskii, V. V. UTILIZATION OF UKRAINIAN KIESELGUHR IN THE CEMENT AND REFRACTORY INDUSTRIES. *Ukrain. Khem. Zhur.*, 7 [3] 103–12 (1932).—A detailed account of researches made to use kieselguhr in the refractory and cement industries is given. The results are tabulated. Insulating brick with 30% porosity have been produced which may be used for temperatures not exceeding 750°.

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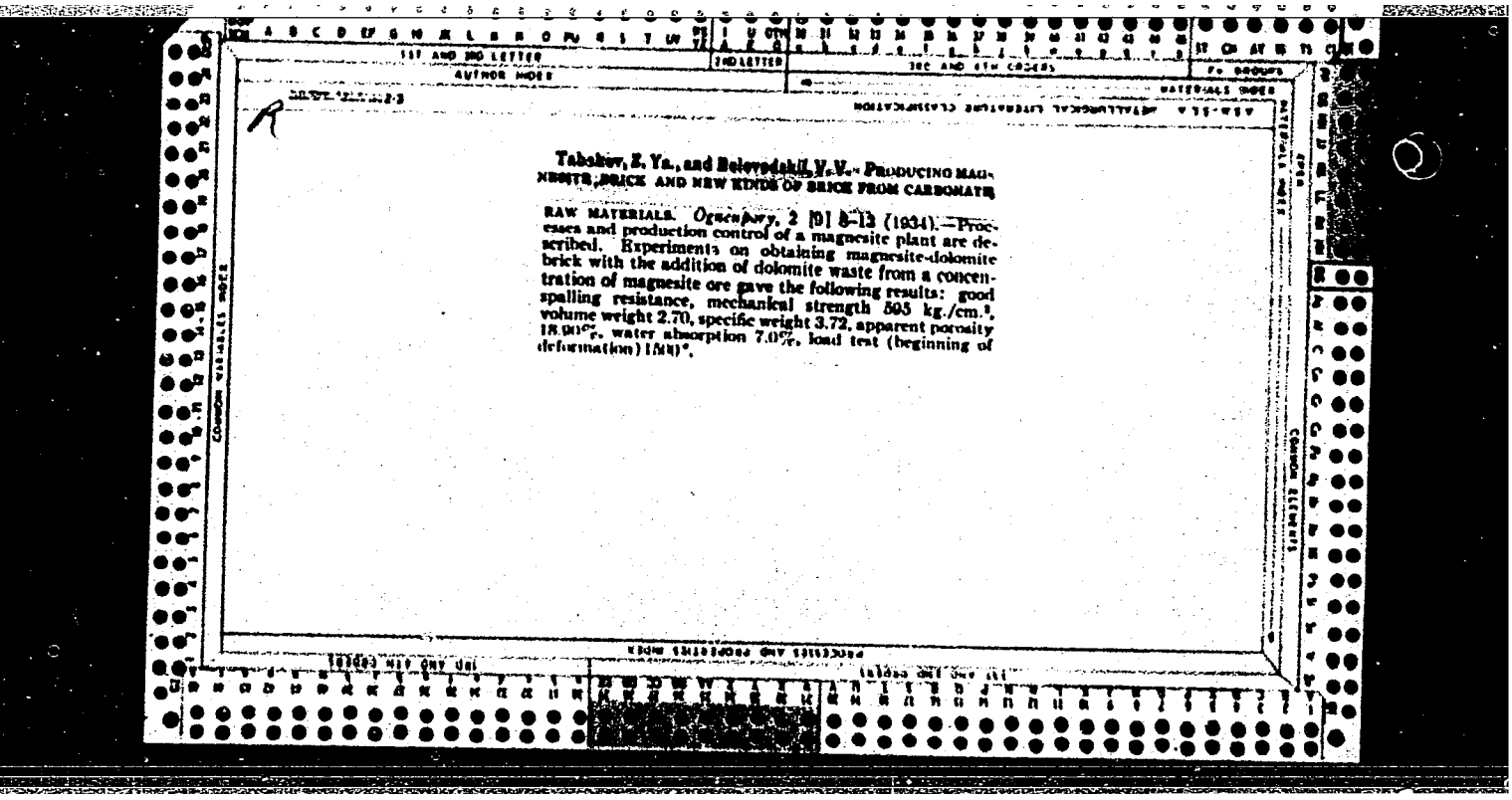

Tabolov, Z. Ya., and Belovodskii, V. V. — PRODUCING MAGNESITE BRICK AND NEW KINDS OF BRICK FROM CARBONATE RAW MATERIALS. *Ogneupory*, 2 [9] 8-13 (1934).—Processes and production control of a magnesite plant are described. Experiments on obtaining magnesite-dolomite brick with the addition of dolomite waste from a concentration of magnesite ore gave the following results: good spalling resistance, mechanical strength 505 kg./cm.², volume weight 2.70, specific weight 3.72, apparent porosity 18.01%, water absorption 7.0%, load test (beginning of deformation) 1500°.

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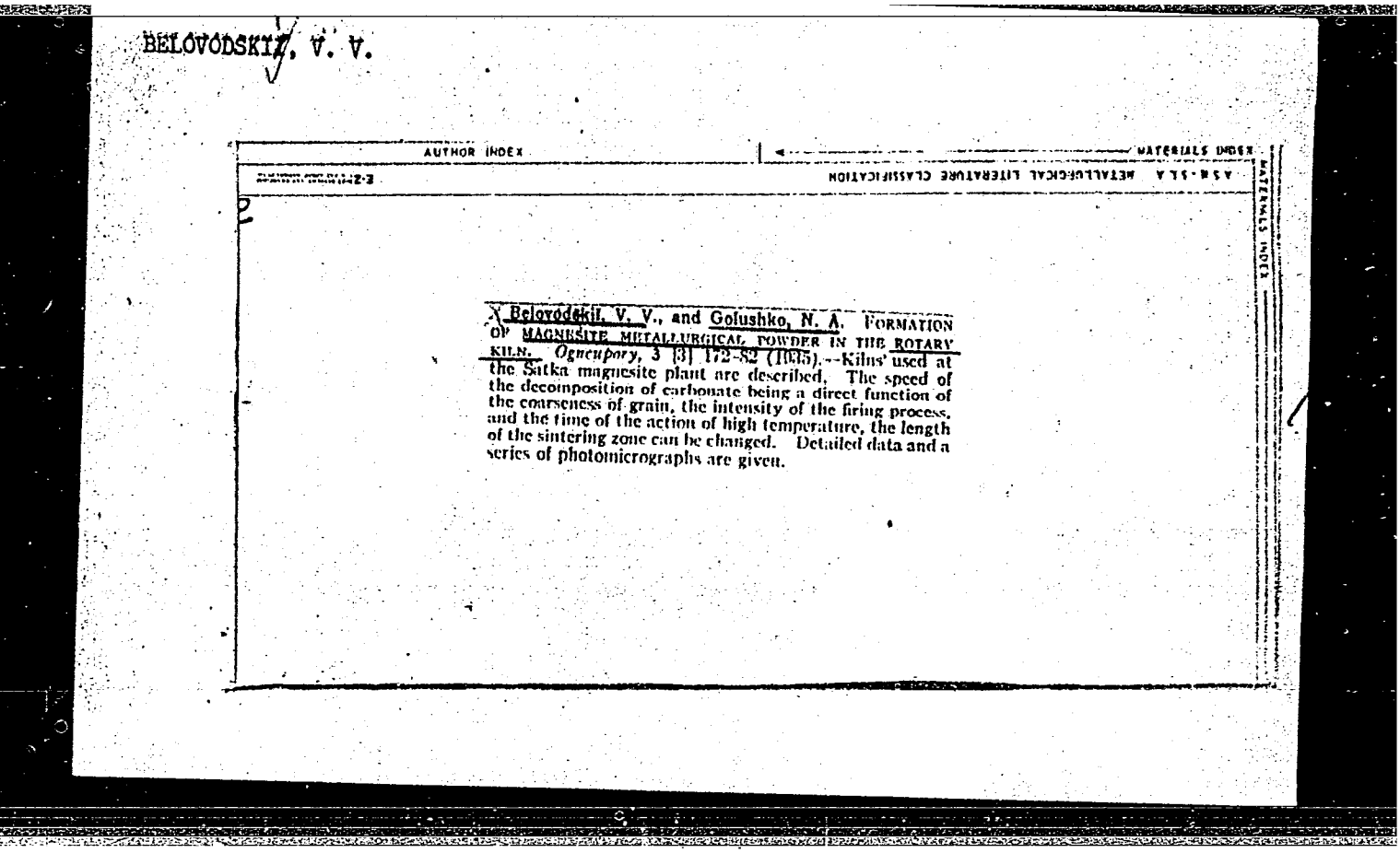

BELOVODSKIY, V. V.

AUTHOR INDEX

METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

Belovodskii, V. V., and Golushko, N. A. FORMATION OF MAGNESITE METALLURGICAL POWDER IN THE ROTARY KILN. *Ogneupory*, 3 [3] 172-82 (1935).--Kilns used at the Satka magnesite plant are described. The speed of the decomposition of carbonate being a direct function of the coarseness of grain, the intensity of the firing process, and the time of the action of high temperature, the length of the sintering zone can be changed. Detailed data and a series of photomicrographs are given.

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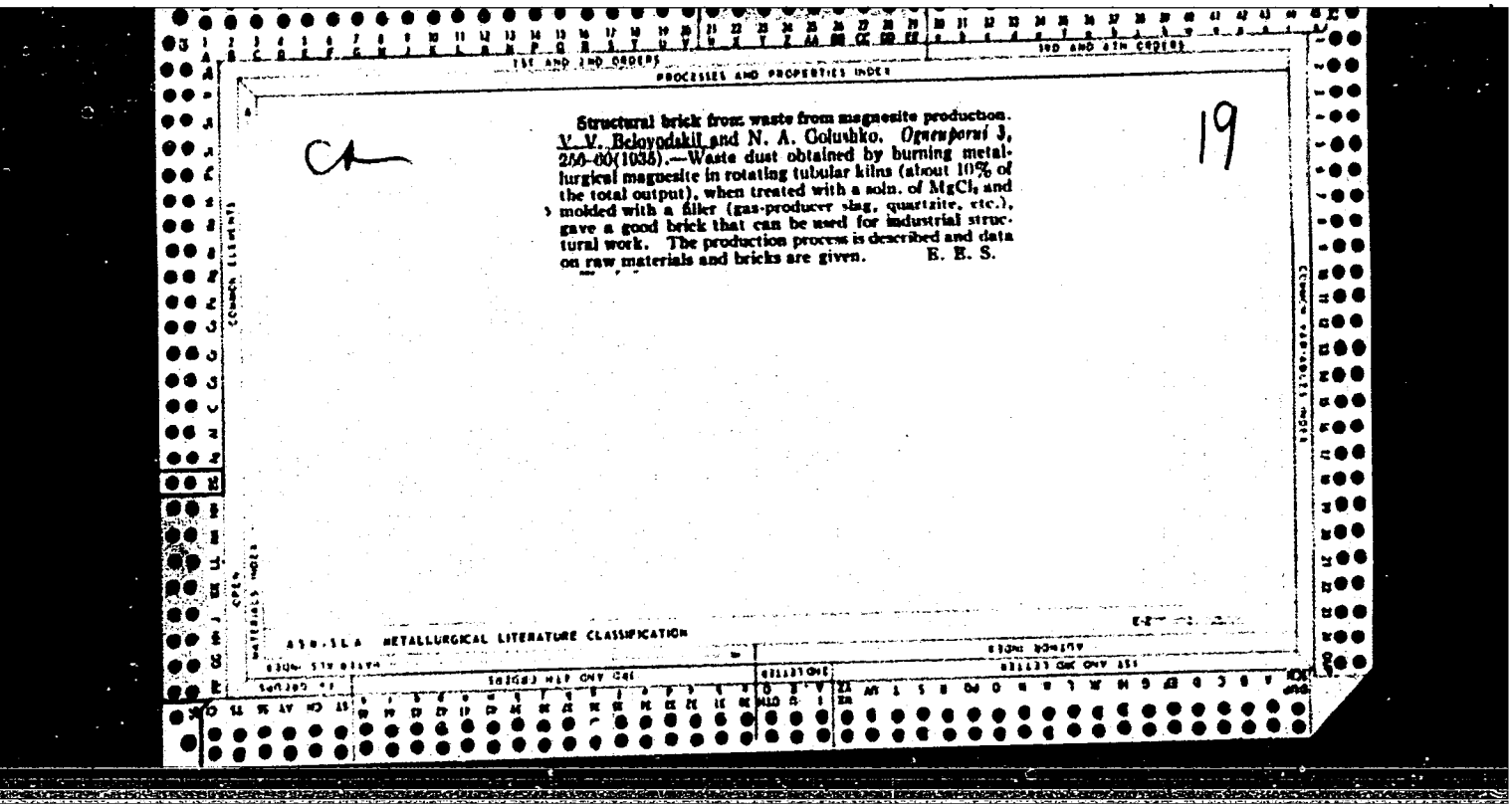

PROCESSES AND PROPERTIES INDEX

Structural brick from waste from magnesite production. V. V. Belovodskiĭ and N. A. Golushko. *Ogneupory* 3, 256–60(1938).—Waste dust obtained by burning metallurgical magnesite in rotating tubular kilns (about 10% of the total output), when treated with a soln. of $MgCl_2$ and molded with a filler (gas-producer slag, quartzite, etc.), gave a good brick that can be used for industrial structural work. The production process is described and data on raw materials and bricks are given. E. E. S.

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A50.SLA METALLURGICAL LITERATURE CLASSIFICATION

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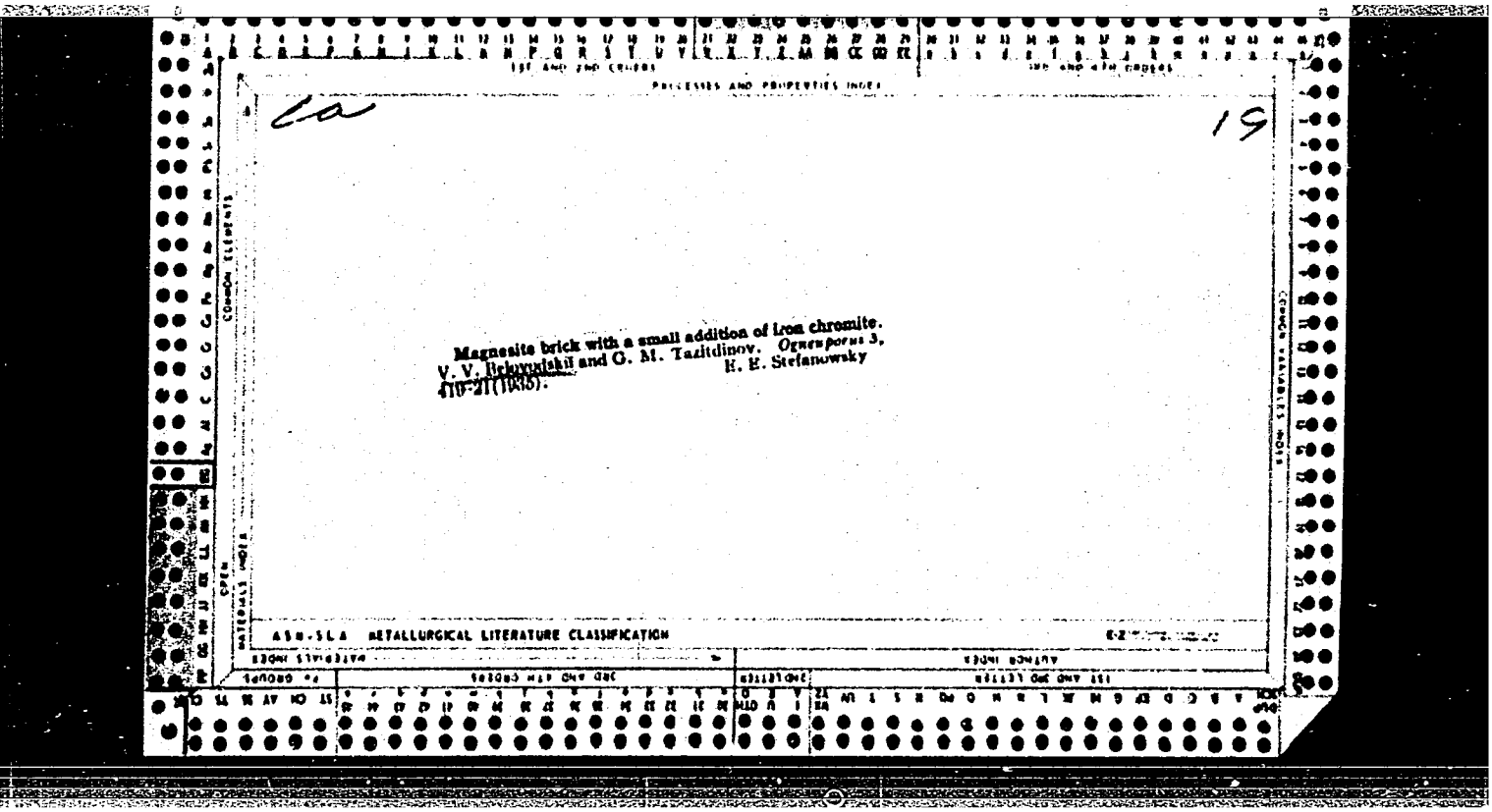
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Ca

19



Magnesite brick with a small addition of iron chromite. V. V. Belovodskii and G. M. Tazitdinov. *Ogneuporus* 3, 419-21(1935). E. E. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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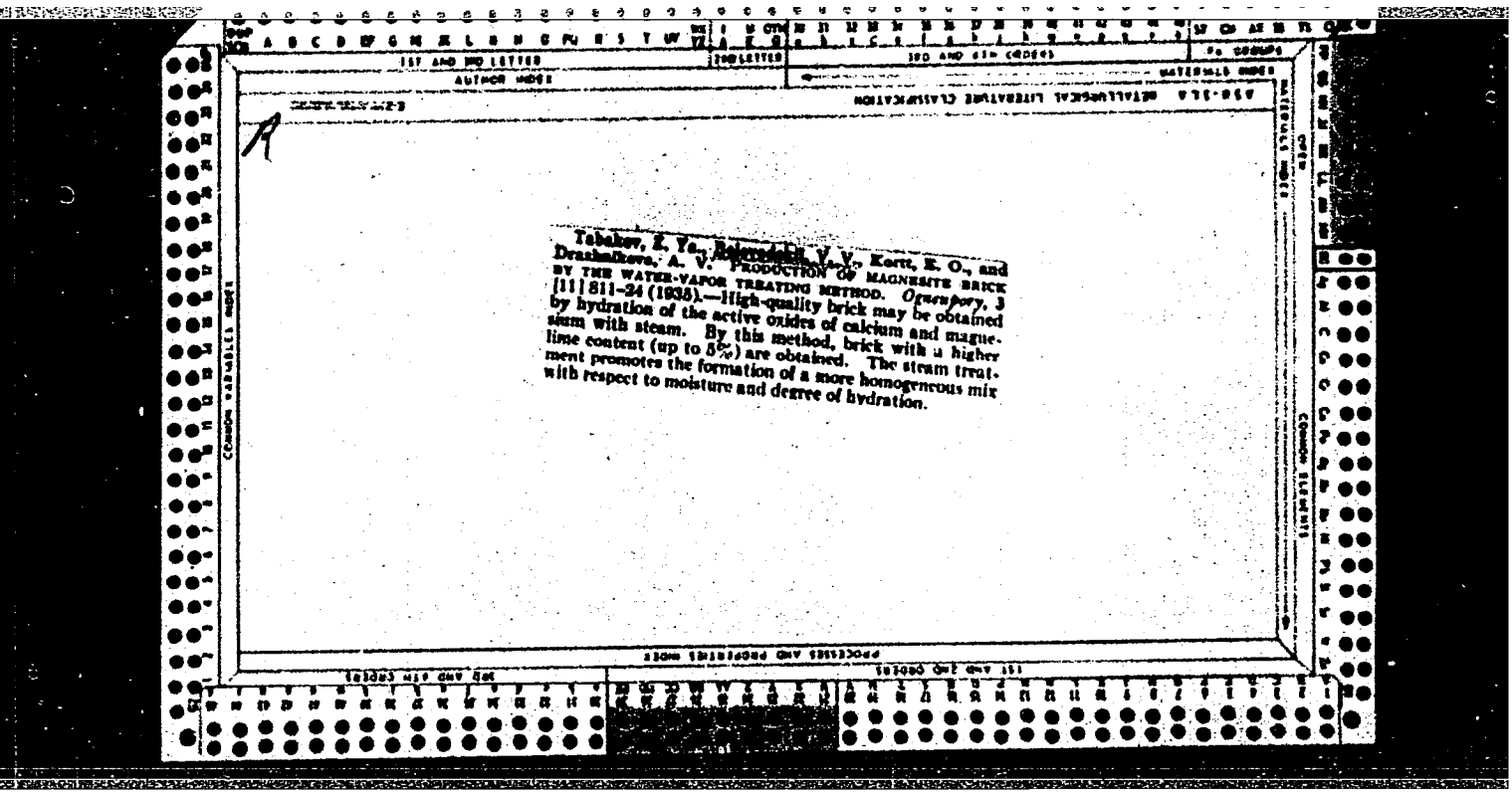

1ST AND 2ND LETTER

AUTHOR INDEX

2ND LETTER

3RD AND 4TH ORDERS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

R

Tabakov, Z. Ya., Bejevodskii, V. V., Kortt, E. O., and Drazhnikova, A. V. PRODUCTION OF MAGNESITE BRICK BY THE WATER-VAPOR TREATING METHOD. *Ogneupory*, 3 [11] 811-24 (1935).—High-quality brick may be obtained by hydration of the active oxides of calcium and magnesium with steam. By this method, brick with a higher lime content (up to 5%) are obtained. The steam treatment promotes the formation of a more homogeneous mix with respect to moisture and degree of hydration.

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COMMON ELEMENTS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

1ST AND 2ND ORDERS

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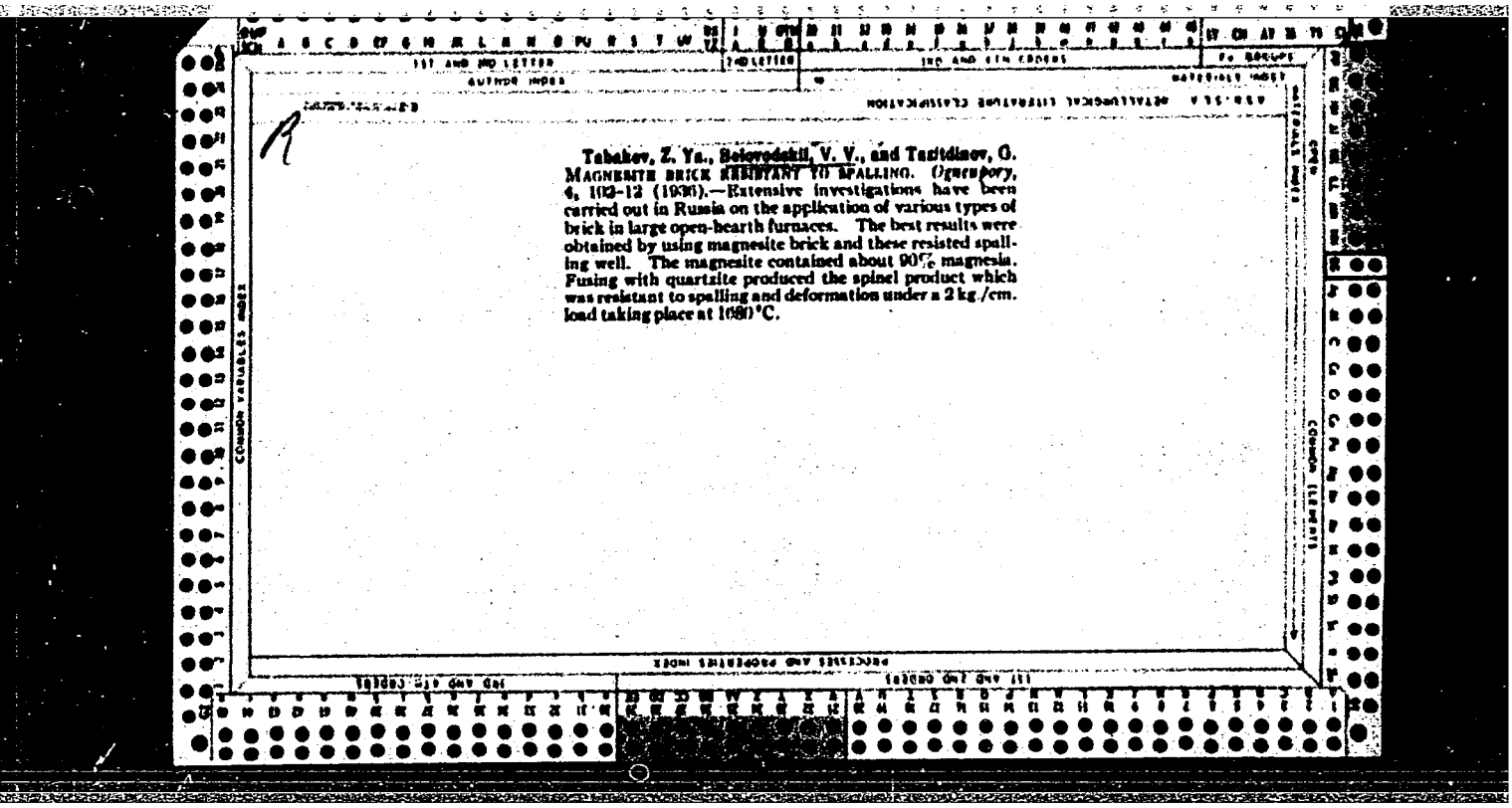

Tabakov, Z. Ya., Belovodskii, V. V., and Tazitdinov, G. MAGNESITE BRICK RESISTANT TO SPALLING. *Ogneupory*, 4, 109–12 (1936).—Extensive investigations have been carried out in Russia on the application of various types of brick in large open-hearth furnaces. The best results were obtained by using magnesite brick and these resisted spalling well. The magnesite contained about 90% magnesia. Fusing with quartzite produced the spinel product which was resistant to spalling and deformation under a 2 kg./cm. load taking place at 1680°C.

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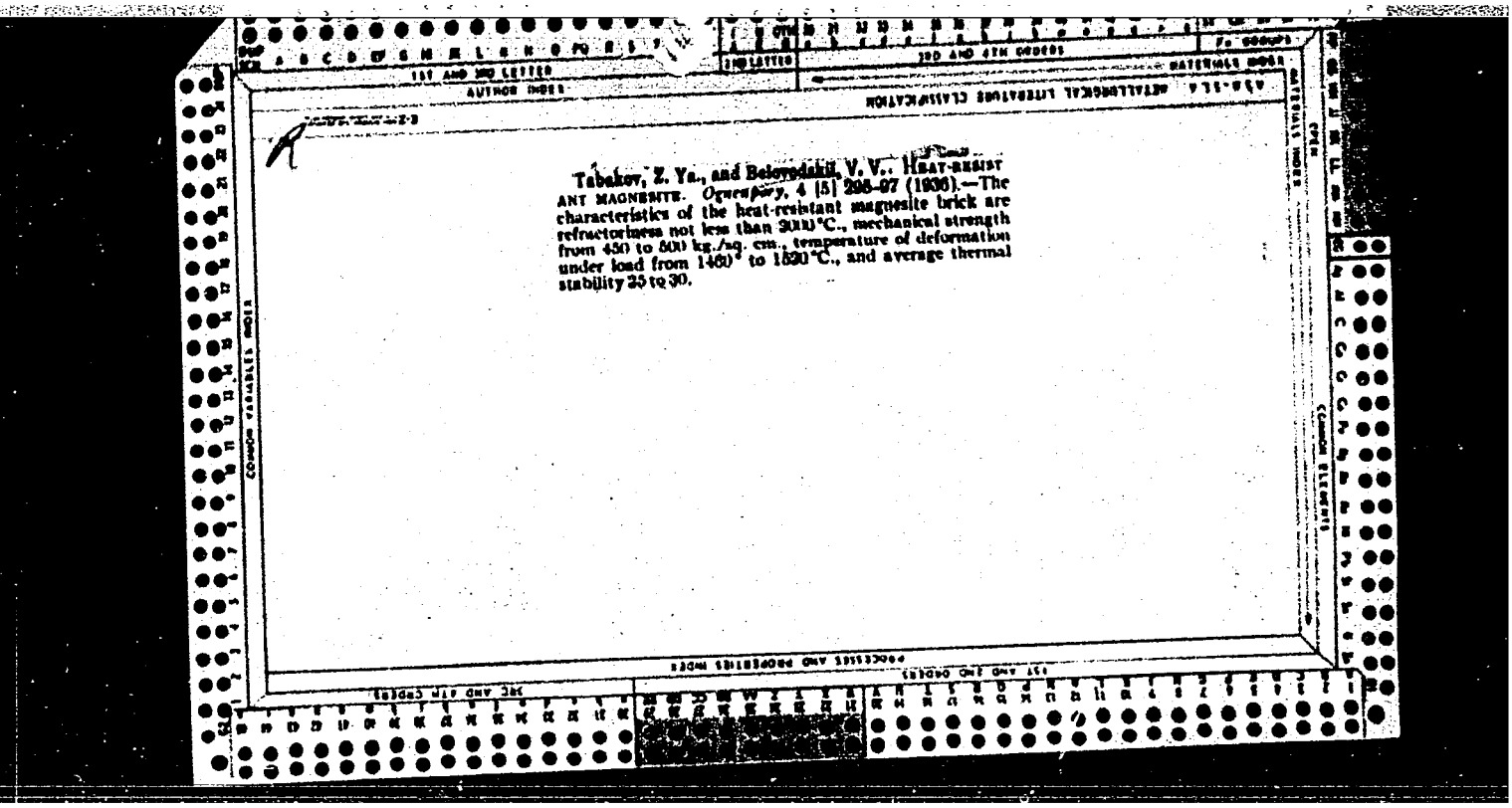

Tabakov, Z. Ya., and Belovodskii, V. V.: HEAT-RESISTANT MAGNESITE. *Ogneupory*, 4 [5] 208–07 (1936).—The characteristics of the heat-resistant magnesite brick are refractoriness not less than 2000°C., mechanical strength from 450 to 500 kg./sq. cm., temperature of deformation under load from 1460° to 1530°C., and average thermal stability 25 to 30.

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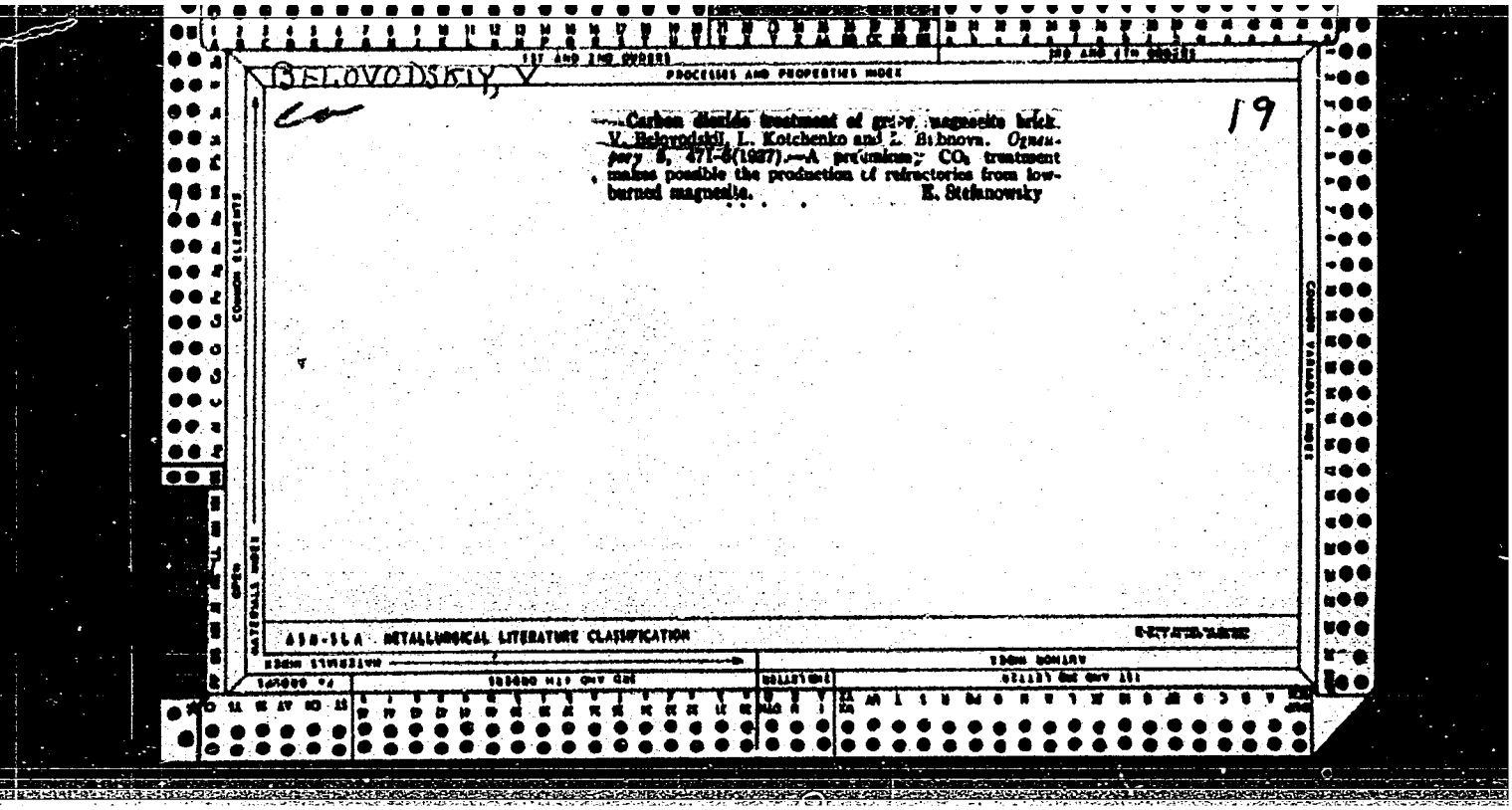

BELOVODSKIY, V

19

——Carbon dioxide treatment of grey magnesite brick. V. Belovodskii, L. Kotchenko and Z. Bibnova. *Ogneupory* 8, 471-5(1937).—A preliminary CO_2 treatment makes possible the production of refractories from low-burned magnesite. E. Stefanowsky

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, A.

Modernizing automatic cutlet cutters. Mias.ind.SSSR 32 no.2:44 '61.
(MIRA 14:7)

1. Poltavskiy zavod "Prodmash."
(Poltava—Meat) (Automatic control)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

ROMENSKIY, V.; BELOVOL, A.

MP-1-160 rotating chopper. Mias. ind. SSSR 32 no.4:18-19 '61. (MIRA 14:9).

1. Poltavskiy zavod "Prodmash".
(Meat grinders)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

PARAMONOV, V.A. [Paramonov, V.O.]; BELOVOL, A.A. [Bilovol, A.A.]

Manufacture of a new mechanized continuous production line for ready-to-cook hamburgers. Khar. prom. no.3:16-17 Jl-S '65. (MIRA 18:9)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, A.M.; KHATSINSKAYA, A.P.

Workers of the Korenovskaya Sugar Factory are well prepared for the busy season. Sakh. prom. 35 no.12:11-12 D '61. (MIRA 15:1)

1. Korenovskiy sakharnyy zavod.
(Korenovskaya—Sugar industry)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, N.

POLYAKOV, N., polkovnik; BELOVOL, N., podpolkovnik; ASANOV, N., kapitan.

Training of tank crews. Tankist no.2:39-41 F '58. (MIRA 11:3)
(Tanks (Military science))

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, N., podpolkovnik

Individual approach to training tank troops. Voen.vest. 39 no.5: 84-87 My '60. (MIRA 14:2)

(Tank warfare)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, N.; podpolkovnik; MUTSYNOV, S., polkovnik; ROMANENKO, A., podpolkovnik

Demonstration lessons and exercises. Voen. vest. 40 no. 3:64-67 Mr '61. (MIRA 14:2)

(Military education)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

BELOVOL, N., podpolkovnik; MEL'NIK, N., podpolkovnik; TIKHOLAZ, I., mayor

"Individual evaluation"; discussion of the article published in No.4. Voen. vest. 43 no.9:51-53 S '63. (MIRA 16:10)

(Military education)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204520001-7

ACC NR: AP6027118 (A) SOURCE CODE: UR/0018/66/000/005/0113/0114

AUTHOR: Belovol, N. (Lieutenant colonel)

ORG: None

TITLE: Firing from a moving tank

SOURCE: Voyennyy vestnik, no. 5, 1966, 113-114

TOPIC TAGS: military tank, conventional warfare, gun sight

ABSTRACT: The estimation and selection of lead angles and time lags for aiming and firing from a moving tank is discussed with reference made to an article by Colonel Yu. Semenov published in "Voyennyy vestnik", no. 12, 1965. Colonel Semenov proposes that the lead taken be always equal to 1/3 of the sight mark swing or 2/3 of the amplitude. Approving this proposal, the author, however, thinks that such a method can be successfully used only on condition that the oscillation period is equal to one second, with the proper time lag of 0.16 sec. This lag of 0.15 to 0.16 sec is stipulated in the firing rules. In the author's opinion, such a quick response can be demonstrated only by well trained and experienced gunners. In general, the firing practice shows that the time lag lies within the limits of 0.15 to 0.25 sec. Consequently, the author presents the results of his calculations of the lead based on the time lag of 0.2 and 0.25 sec and various pitching movements of the tank. The calculations were made for various target heights

Card 1/2

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ACC NR: AP6027118

varying from 1 to 3 m. The results, summarized in a table, are analyzed and recommendations for firing are presented. In general, it is concluded that a greater lead is needed for a smaller target and a greater range as well as for an extended time lag and a higher angular velocity of the tank pitching movement. The importance of training for acquiring needed standards and habits for firing while moving is stressed. Orig. art. has: 1 table.

SUB CODE: 15/ SUBM DATE: None

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[Method for determining the economic effectiveness of metal supports in timbering steping faces] Metod opredeleniia ekonomicheskoi effektivnosti krepleniia metallom ochistnykh zaboev. Moskva, Ugletekhizdat, 1956. 109 p. (MLRA 9:6)
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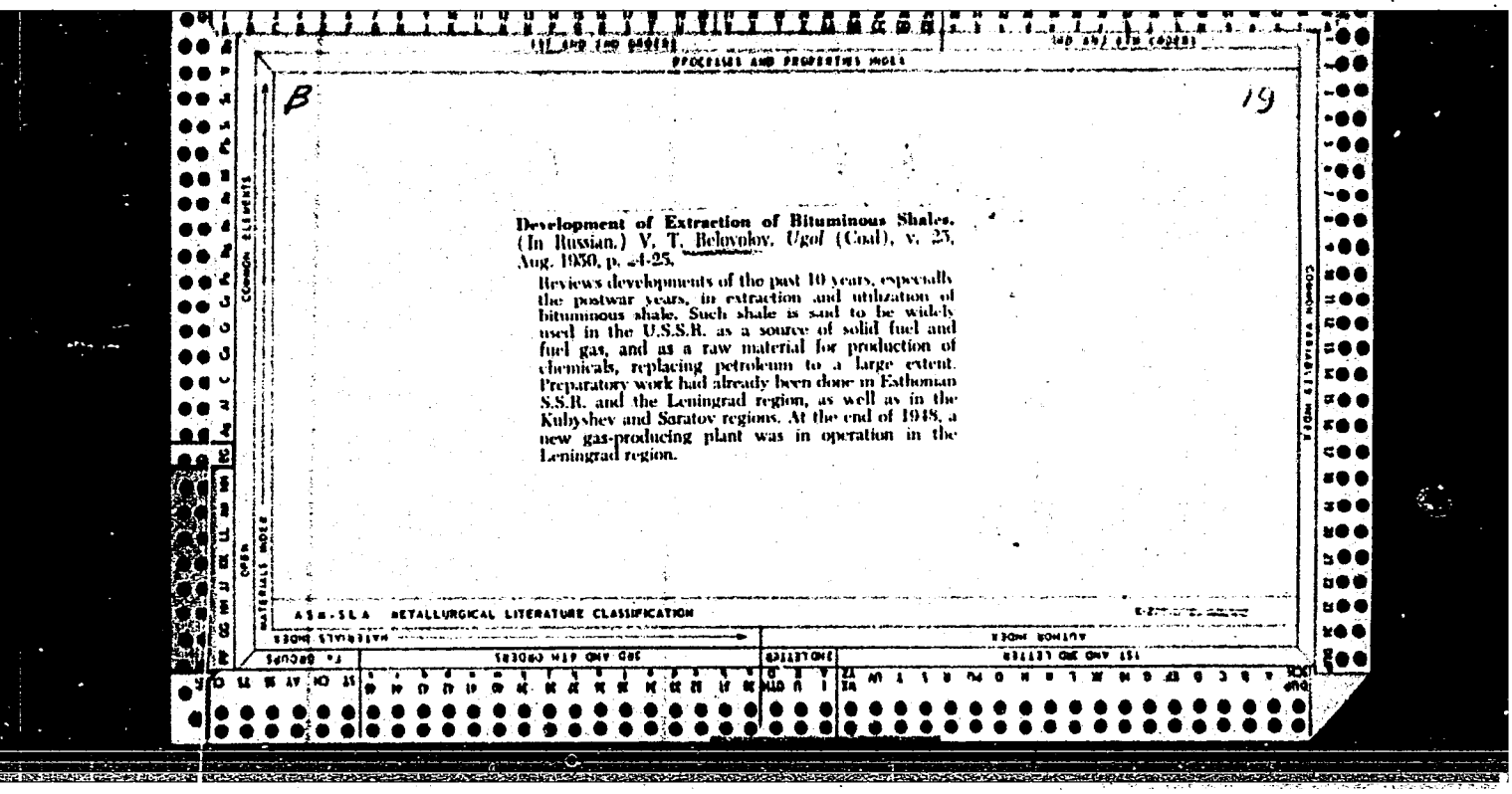

B

19

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ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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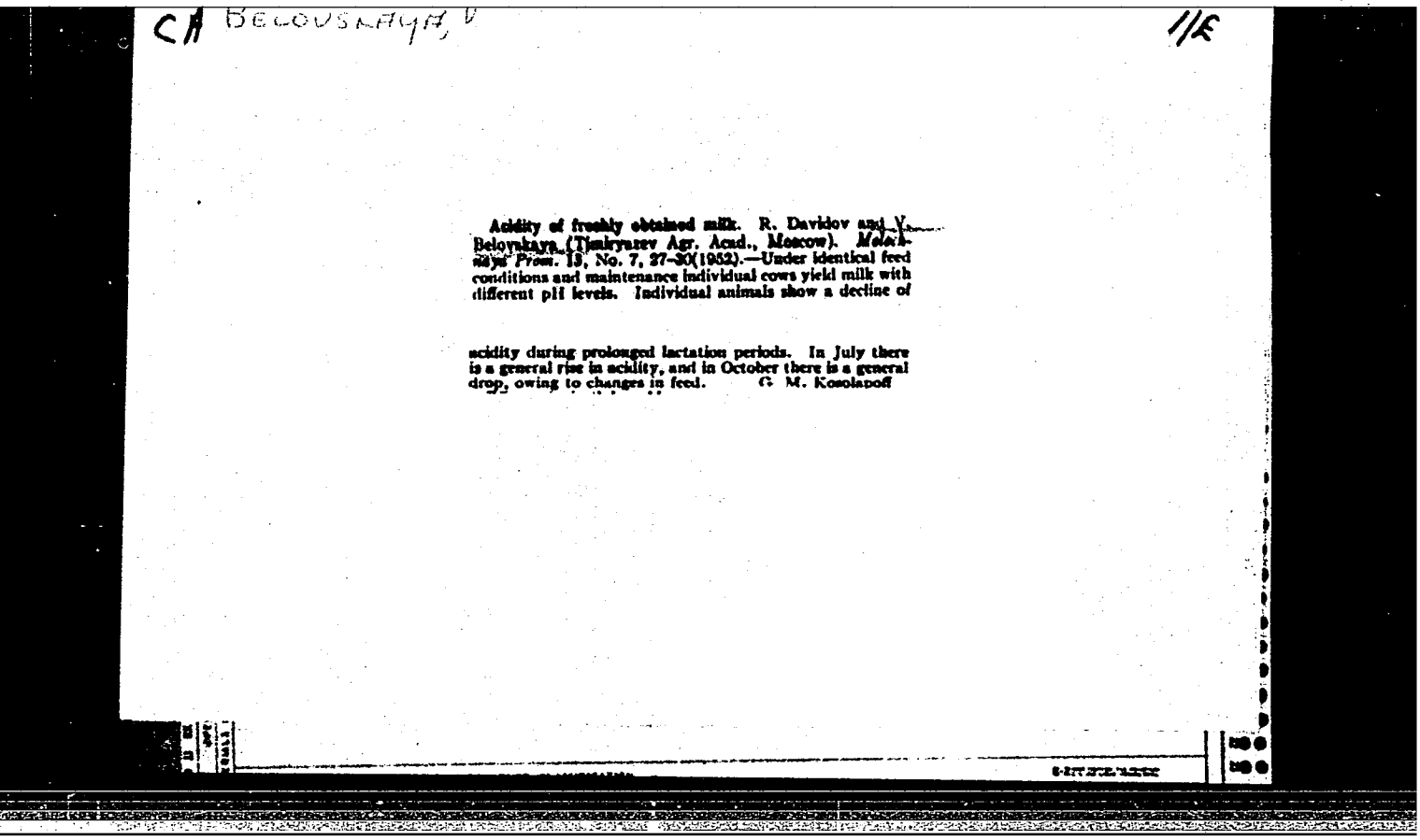

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