

BATENKO, V.F., inzh.; GVOZDEV, V.F., inzh.; VAKHLER, V.A., inzh.; PIL'SHCHIKOV,  
A.P., inzh.; ROGATSKIN, B.S., inzh.; BELYAKOVA, L.F., inzh.; KATKOV,  
G.S., inzh.

Ion-exchange filters with compound operation in power blocks with  
300 Mw. ratings. Elek. sta. 36 no.10:8-15 0 '65.

(MIRA 18:10)

BELYAKOVA, L.I.

Influence of single doses of hexamidine on the higher nervous  
activity in epileptic children. Trudy Inst. vys. nerv. deiat.  
Ser. patofiziol. 7:232-244 '60. (MIRA 14:4)  
(BENZAMIDINE) (EPILEPTICS) (CONDITIONED RESPONSE)

PETROVSKIY, B.V., prof. (Moskva, ul. Gor'kogo, d.56, kv.100); RABKIN, I.Kh.;  
BELYAKOVA, L.I.; ZARETSKIY V.V.; KOZLOV, I.Z.

X-ray diagnosis of cardiac aneurysms. Vest.rent.i rad. 36 no.3:3-9  
My-Je '61. (MIRA 14:5)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (dir. - deystvitel'nyy chlen  
AMN SSSR prof. B.V.Petrovskiy) I Moskovskogo ordena Lenina meditsinskogo  
institutu (dir. - chlen-korrespondent AMN SSSR prof. V.V.Kovanov);  
(CARDIAC ANEURYSMS)

BELYAKOVA, L. I.

Disorders of the higher nervous activity in children with epilepsy.  
Trudy Inst. vys. nerv. deiat. Ser. psstofiziol. 8:103-108 '61.

(MIRA 15:2)

(NERVOUS SYSTEM)

(EPILEPTICS)

KANSHIN, N.N.; RABKIN, I.Kh.; MUSAROVA, A.V.; BELYAKOVA, L.I.; ARAELINSKIY,  
V.M.

X-ray diagnosis of hiatal hernia. Grudn. khir. 5 no.4:67-74  
Jl-Ag'63 (MIRA 17:1)

1. Iz kafedry gospital'noy khirurgii ( zav. - prof. B.V.Pet-  
rovskiy) lechebnogo fakul'teta I Moskovskogo ordena Lenina  
meditsinskogo instituta imeni I.M.Sechenova.

PETROVSKIY, B.V.; RAEKIN, I.Kh.; MUSAROVA, A.V.; BELYAKOVA, L.I.

Roentgenocinematographic study in some surgical diseases of the  
esophagus. Vop.onk. 7 no.12:38-41 '61. (MIRA 15:1)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (dir. - deystvitel'-  
nyy chlen AMN SSSR prof. B.V. Petrovskiy) I Moskovskogo ordena  
Lenina meditsinskogo instituta imeni I.M. Sechenova.  
(ESOPHAGUS—DISEASES) (CINEFLUOROGRAPHY)

BELYAKOVA, L.T.; MAREYEVA, Z.I.; POLYAKOVA, O.P., nauchnyy red.; NEMANOVA,  
G.F., red. izd-va; IYERUSALIMSKAYA, Ye.S., tekhn. red.

[Industry's requirements as to the quality of mineral raw materials]  
Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spra-  
vochnik dlia geologov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po  
geol. i okhrane neдр. No.44. [Arsenic] Mysh'iak. Nauch.red.O.P.Polia-  
kova. izd.2., perer. 1961. 30 p. (MIRA 14:11)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya.

(Arsenic)

BELYAKOV, L.N.; BELYAKOVA, L.T.

Some geological characteristics of the convergence region of the  
Urals and Pay-Khoy. Mat.po geol.i pol.iskop.Sev.-Vost.Evrop.-  
chasti SSSR no.1:55-60 '61. (MIRA 14:11)  
(Ural Mountains--Geology)



BELYAKOVA, L.T.; MAREYEVA, Z.I.

New sources of beryllium ores in capitalist countries. Razved. i  
okh. nedr 28 no. 1:56-57 Ja '62. (MIRA 15:3)

1. Tsentralizovannaya poiskovo-revizionnaya ekspeditsiya.  
(United States--Beryllium)

BELYAKOVA, M.A.

Case of spontaneous expulsion of a splinter from pulmonary  
tissue. Sbor.nauch.-prak.rab.Poliklin.im.F.E.Dzerzh. no.2:  
91-93 '61. (MIRA 16:4)

(LUNGS--FOREIGN BODIES)

ACC-NR: AT6036495

SOURCE CODE: UR/0000/66/000/000/0060/0061

AUTHOR: Belyakova, M. I.

ORG: none

TITLE: The effect of spaceflight factors on the amount of 17-oxycorticosteroids excreted in the urine [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 60-61

TOPIC TAGS: manned space flight, space physiology, space medicine, 17 oxycorticosteroid, adrenal gland, biologic secretion, biologic acceleration effect, weightlessness

ABSTRACT: A study of the effects of acceleration on the function of the adrenal cortex was performed on three subjects under laboratory conditions.

The experiment established that acceleration increased the excretion of both free and bonded 17-oxycorticosteroids. The degree of increase was directly proportional to the magnitude of the acceleration. The greatest excretion of 17-oxycorticosteroids was observed during the first hour after acceleration. After exposure to weak accelerations, the increased excretion of 17-oxycorticosteroids quickly returned to initial levels. After greater accelerations, a sharp increase in excretion of 17-oxycorticosteroids was followed by a drop in their concentration to below the initial level. After exposure to the whole series of accelera-

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L 11372-67

ACC NR: AT6036495

tions (5 exposures during 10 days) the excretion of 17-oxycorticosteroids remains elevated during the entire duration of the experiment (17 days).

Excretion of 17-oxycorticosteroids was investigated in the cosmonauts Titov, Bykovskiy, and Tereshkova during the postflight period. All cosmonauts showed an increase in excretion of 17-oxycorticosteroids during the first hours after landing. During the night hours of the first day after landing, the excretion of 17-oxycorticosteroids dropped sharply in comparison to preflight levels. This can be regarded as a compensatory restoration of functions of the adrenal cortex after significant strain. During the next two or three days the excretion of 17-oxycorticosteroids remained somewhat elevated. After 15—17 days the excretion of 17-oxycorticosteroids became normal in Bykovskiy and Tereshkova.

From the data obtained it is evident that spaceflight does not induce greater changes in the functions of the adrenal cortex than laboratory experiments on the centrifuge. The normalization of excretion of 17-oxycorticosteroids in a relatively short time after significant increase or decrease indicates that these stresses do not exceed the physiological capabilities of the adrenal cortex. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM. DATE: 00May66

Card 2/2 *pd*

KRAVCHENKO, A.T.; RODIN, I.M.; SHCHTYEV, L.A.; BELYAKOVA, M.I.; SERGEYEV,  
N.N.; TARASOV, V.V.

Preparation and purification of immune serums against tick-borne  
and Japanese encephalitis. Vop.med.virus. no.8:106-113 '63.  
(MIRA 17:10)

BELYAKOVA, M.M.

Three cases of myelomic diseases treated with sarcolysin. Sov.  
med. 24 no. 2:2-5 F '60. (MIRA 14r2)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. -dotsent  
F.I. Zenchenko) Ryazanskogo meditsinskogo instituta imeni I.P.  
Pavlova (direktor - prof. L.S. Sutulov).  
(MARROW—TUMORS) (ALANINE)

ACC NR: AP7005754

(N)

SOURCE CODE: UR/0126/67/023/001/0101/0105

AUTHOR: Belyakova, M. N.; Borimskaya, S. T.; Zasimchuk, Ye. E.; Larikov, L. N.

ORG: Institute of Metal Physics, AN UkrSSR (Institut metallofiziki AN UkrSSR)

TITLE: Kinetics of primary, cumulative and secondary recrystallization in molybdenum foil

SOURCE: Fizika metallöv i metallovedeniye, v. 23, no. 1, 1967, 101-105

TOPIC TAGS: metal recrystallization, metal deformation, molybdenum, x ray diffraction analysis, crystal orientation / SRS type scintillation counter

ABSTRACT: The investigation was performed on Mo foil containing ~0.5% Ti and subjected to prior 80% deformation by rolling. The pole figure of the foil in deformed state (Fig. 1) was subjected to x-ray diffraction analysis, with hard radiation being recorded by means of a SRS type scintillation counter. Structure of the foil was examined with the aid of electropolishing in a mixture of methyl alcohol and sulfuric acid in the presence of a current density of 6 a/cm<sup>2</sup> with subsequent etching of the surface with a solution consisting of 1 part HNO<sub>3</sub> + 1 part HCl. The texture of the deformed foil is chiefly described by the orientation (100) [011] as well as (112) [110] with rotation through 4-6° with respect to the direction of rolling

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UDC: 669.28:548.5

ACC NR: AP7005754

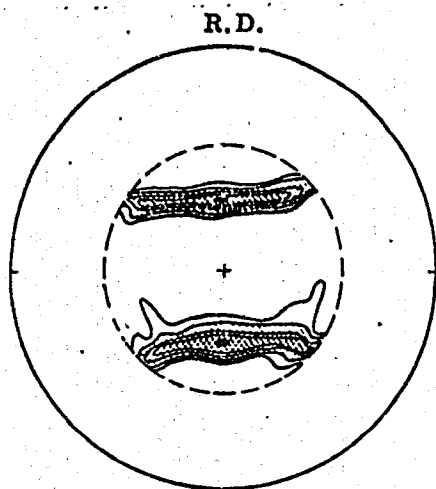


Fig. 1. Pole figure of molybdenum foil in deformed condition

about the axis perpendicular to the rolling plane. The temperature dependence of the growth rate of nuclei of primary recrystallization was investigated at 1050-1150°C. Subsequent annealing of the recrystallized foil at >2000°C led to its cumulative recrystallization -- gradual en-

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ACC NR: AP7005754

largement of grains. The texture of primary recrystallization is described by the same orientations as the texture of deformation (Fig. 2) and is obtained from the texture of deformation by

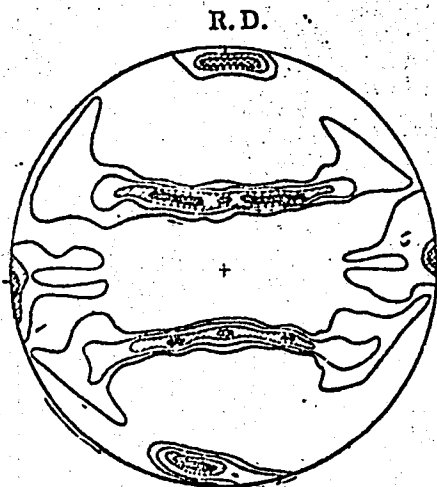


Fig. 2. Pole figure of molybdenum foil in recrystallized condition

rotation through 12-15° relative to the direction of rolling about the axis perpendicular to the plane of the foil. The kinetics of the formation and growth of anomalous grains in the foil

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ACC NR: AP7005754

greatly resembles the kinetics of formation and growth of nuclei of primary recrystallization in polycrystalline material. The texture of secondary recrystallization is described by the orientation (100) [001] or (110) [001] depending on the annealing atmosphere. The shape of the anomalous grains arising on annealing of molybdenum foil is evidently associated with the original metallographic texture of the deformed foil and with the characteristic distribution of impurities along the boundaries of the extended grains, such that grain growth in the direction perpendicular to the direction of rolling is impeded. In thicker specimens which had not been subjected to prior deformation by rolling the shape of anomalous grains was equiaxial.

Orig. art. has: 7 figures, 4 formulas.

SUB CODE: 20, <sup>11</sup>13/ SUBM DATE: 20Apr66/ ORIG REF: 008/ OTH REF: 008

Card 4/4

KOGAN, M.I. [deceased]; BELYAKOVA, M.S.; SAVOST'YANOV, G.I.; KOGAN, R.M.;  
RADETSKAYA, N.V.

Biochemical oxidation of *d*-sorbitol in *l*-sorbose in a continuous  
disc-column fermenter. Trudy VNIIV 8:22-35 '61. (MIRA 14:9)  
(Sorbitol) (Sorbose)

ACC NR: AP7000343 (A) SOURCE CODE: UR/0413/66/000/022/0106/0106

INVENTOR: Babintsev, V. F.; Belyakova, M. V.

ORG: None

TITLE: A reflector-refractor objective lens. Class 42, No. 188706

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 106

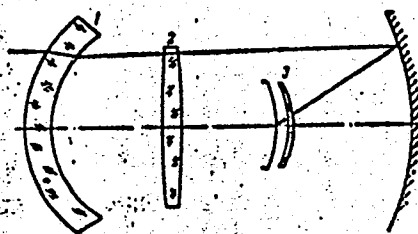
TOPIC TAGS: light reflection, light refraction, optic lens, light aberration

ABSTRACT: This Author's Certificate introduces: 1. A reflector-refractor objective lens containing a concentric meniscus, spherical mirror and aspherical compensator. The lens is designed for improved aberration correction in the wavelength interval from the visible to the infrared spectral regions. The concentric meniscus and aspherical compensator are made from the same material, with the compensator located behind the meniscus. The lens powers of these two elements are equal within an order of magnitude. 2. A modification of this objective lens in which the residual aberration of astigmatism is corrected by placing a convex-concave lens in direct proximity to the surface image, with a power of the order of 25% that of the entire objective.

Card 1/2

UDC: 771.351.7  
0930 2464

ACC NR: AP7000343



1--meniscus; 2--compensator; 3--convexo-concave lens

SUB CODE: 20/ SUBM DATE: 06Aug65

Card 2/2

BELYAKOVA, N.

CHUKHAR'KO, Z.; KOPTEV, K.; SHEKHTMAN, Kh.; SHEPER, G.; BELYAKOVA, N.

For an effective network of permanent grain procurement stations.  
Muk.-slev.prom.23 no.8:18-21 Ag '57. (MIRA 10:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov  
yego pererabotki.

(Grain trade)

BELYAKOVA, N. A.

"Experimental-Theoretical Investigation of the Elastic Work of a Beam Casing." Cand Tech Sci, Khar'kov Construction Engineering Inst, Khar'kov, 1953. (RZhMekh, Sep 54)

SO; Sum 432, 29 Mar 55

BELYAKOVA, N.A., kand.tekhn.nauk, dots.

Using the ultimate equilibrium method for determining the loading  
capacity of beams on elastic bases. Trudy KHIIT no.28:144-152  
' 58. (MIRA 12:3)

(Girders)



*BELYAKOVA, N.B.*

GURVICH, I.B., kandidat tekhnicheskikh nauk; BELYAKOVA, N.B.; ~~KHODOV~~, S.I.

Purpose of surface smoothness of parts used in automobile engines.  
Vest.mash. 37 no.9:33-40 S '57. (MLRA 10:9)  
(Surfaces (Technology)) (Automobiles--Engines)

GURVICH, I.B., kand.tekhn.nauk; MAY, L.A.; BELYAKOVA, N.B.; KRYMOV, S.I.

Macrogeometry and wear of engine parts. Avt.prom. 30 no.2:  
38-41 F '64. (MIRA 17:4)

1. Gor'kovskiy avtomobil'nyy zavod i Nauchno-issledovatel'skiy  
tehnologicheskiy institut avtomobil'noy promyshlennosti.

SOKOLOVA, I.Kh.; BELYAKOVA, N.F.

Experience in the prophylactic work of the First Polyclinical  
Division of the N.F. Filatov Consolidated Pediatric Hospital in  
Petrograd District, Leningrad. Vop. okhr. mat. 1 det. 6  
no. 1:84-86 Ja '61. (MIRA 14:4)

1. Glavnyy vrach 1-go poliklinicheskogo otdeleniya Ob'yedinennoy  
detskoy bol'nitsy imeni N.F. Filatova petrogradskogo rayona  
Leningrada (for Sokolova). 2. Zamestitel' glavnogo vracha po  
poliklinicheskomu otdeleniya Ob'yedinennoy detskoy bol'nitsy  
imeni N.F. Filatova petrogradskogo rayona Leningrada (for  
Belyakova).

(LENINGRAD--PRENATAL CARE)

MAGNITSKIY, Konstantin Pavlovich. Prinimali uchastiye: GOSUDAREVA, A.G.; PANITKIN, V.A.; BELYAKOVA, N.G.; KAPUSTYANSKIY, A.H.; ZHUKOV, S.N.; NIKULINA, F.F.; BALABANOV, B.G.; VISHNYAKOVA, Ye., red.; KUZNETSOVA, A., tekhn. red.

[Control of the nutrition of field and vegetable crops] Kontrol' pitaniya polevykh i ovoshchnykh kul'tur. Moskva, Mosk. rabochii, 1964. 302 p. (MIRA 17:2)

1. Nauchnyye sotrudniki laboratorii kaliya Nauchnogo instituta po udobreniyam i insektofungitsidam (for Gosudareva, Panitkin, Belyakova, Kapustyanskiy, Zhukov, Nikulina, Balabanov).

MAGNITSKIY, K.P., doktor sel'skokhoz. nauk; DOSPEKHOV, B.A., kand.  
sel'skokhoz. nauk, dotsent; VASIL'YEVA, D.V., kand. sel'skokhoz.  
nauk; GOSUDAREVA, A.G., nauchnyy sotrudnik; BELYAKOVA, N.G.,  
nauchnyy sotrudnik

Diagnosis of the conditions of plant nutrition in a continuous  
field experiment. Izv. TSKHA no.6:151-161 '63. (MIRA 17:8)

BELYAKOVA, N.V.; ZAYONCHKOVSKIY, A.D.; OVCHINNIKOV, S.I.

Potentialities in the manufacture of microporous soles in the  
"Iskoz" Combine. Kozh.-obuv.prom. 4 no.2:21-23 F '62.  
(MIRA 15:4)

(Kalinin--Boots and shoes, Rubber)

BELYAKOVA, N. T., KOROL', V. M., FEL'DT, A. M., KRUKHAYEVA, D. V., ANISIMOVA, V.V.

"On the prevention of deformation of the spinal column in school children."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

✓  
BELYAKOVA, O.M.

Some characteristics of the distribution of horizontal and vertical temperature gradients in the northern part of the Atlantic Ocean. Trudy Mor. gidrofiz. inst. AN URSR 30:46-54 '64. (MIRA 17:11)



SOV/96-59-10-12/22

AUTHORS: Sirota, A.M. (Cand.Tech.Sci.) and  
Belyakova, P.Ye. (Engineer)

TITLE: The Calorific Properties of Water at Pressures up to  
500 kg/cm<sup>2</sup> and Temperatures up to 300 °C.

PERIODICAL: Teploenergetika, 1959, Nr 10, pp 67-70 (USSR)

ABSTRACT: In this article new experimental values for the specific heat of water at constant pressure are compared with published results and with results calculated from p-v-T data. The enthalpy of water is calculated for pressures up to 500 kg/cm<sup>2</sup> and temperatures up to 300 °C. Previous work in this field is first briefly reviewed. New determinations of the specific heat of water at constant pressure were made in 1959 at the All-Union Thermo-Technical Institute. Specific heat values calculated from p-v-T data of various authors and from Koch's empirical formula are given in Table 1. At room temperature there is good agreement between the data of various authors and Koch's experimental data. Previous experimental data of the present authors are rounded off and interpolated for convenient values of pressure and temperature in Table 2. The results are sufficiently

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SOV/96-59-10-12/22

The Calorific Properties of Water at Pressures up to 500 kg/cm<sup>2</sup> and Temperatures up to 300 °C.

accurate, as the scatter of the experimental points did not exceed 0.1%. Fig 1 compared the rounded data of the All-Union Thermo-Technical Institute with calculated data. Agreement is good at low pressures, but at higher pressures there are appreciable differences between data of the All-Union Thermo-Technical Institute and values of the specific heat at constant pressure calculated by Koch's empirical formula. The differences are not great within the range that Koch studied experimentally, but are greater where he extrapolated, reaching 1.5% at a pressure of 500 kg/cm<sup>2</sup>. Other discussions of Koch's results and conclusions are given, and isotherms for the specific heat of water are compared graphically in Fig 2. The work of certain American authors is used to verify the values for the specific heat of water at constant pressure obtained by extrapolation of experimental data on isotherms to the saturation pressure: values for the specific heat of water on the saturation curve are given in Table 3. The calculated values agree with the experimental data of the All-Union Thermo-Technical Institute to within 0.15%.

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SOV/96-59-10-12/22

The Calorific Properties of Water at Pressures up to 500 kg/cm<sup>2</sup>  
and Temperatures up to 300 °C

Table 4 gives calculated enthalpy values for water. These new enthalpy values are in rather better agreement with published American tables than are other published works. Thus, as a result of the new investigations of the All-Union Thermo-Technical Institute, there is better thermo-dynamic agreement between the thermal and calorific values.

Card  
3/3

There are 2 figures, 4 tables and 18 references, of which 7 are Soviet, 4 are German and 7 are English.

ASSOCIATION: All-Union Thermo-Technical Institute (Vsesoyuznyy  
teplotekhnicheskiy institut)

SIROTA, A.M., kand.tekhn.nauk; MAI'TSEV, B.K., kand.tekhn.nauk;  
BELYAKOVA, P.Ye., inzh.

Maximum heat capacity  $c_p$  of water. Teploenergetika 7 no.7:  
16-23 J1 '60. (MIRA 13:7)

1. Vsesoyuznyy teplotekhnicheskii institut.  
(Heat capacity)  
(Water--Thermal properties)

ACCESSION NR: AR4034484

S/0058/64/000/003/E066/E066

SOURCE: Ref. zh. Fiz., Abs. 3E527

AUTHOR: Andreyev, I. S.; Arzumanyan, G. B.; Belyalova, R. F.

TITLE: Optical and electric characteristics of photoresistances based on CdS

CITED SOURCE: Nauchn. tr. Tashkentsk. un-t, vy\*p. 221, 1963, 45-52

TOPIC TAGS: cadmium sulfide, photoresistance, electroluminescence, light amplifier, integral sensitivity, dark current

TRANSLATION: Photoresistances made of powdered CdS, suitable for electroluminescent light amplifiers and for the registration of weak light fluxes, but with better characteristics than the commercial photoresistances, were produced and investigated. The photoresistances have a large integral sensitivity, large dark resistance, large

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ACCESSION NR: AR4034484

ratio of light to dark resistances, a broad spectral sensitivity, and a lower inertia than the commercial photoresistances. The light characteristics are nonlinear; the voltage-current characteristics in previously illuminated specimens have a relaxation character, while in those kept in darkness they are almost linear, these singularities being independent of the rate of growth of the field and of the spectral composition of the light. L. Gudy\*menko.

DATE ACQ: 10Apr64

SUB CODE: GE, PH

ENCL: 00

Card

2/2

BELYAKOVA, R.I., kand. sel'skokhozyaystvennykh nauk.

Clover and timothy proportions in mixed grass crops. Zemledelie 6  
no.7:61-63 JI '58. (MIRA 11:6)

(Clover) (Timothy grass)

36336  
S/580/61/000/000/015/016  
A057/A126

√ 3300  
AUTHORS:

Pecherskaya, K.A.; Belyakova, R.I.

TITLE:

Reactivity of  $\Delta$ -3- and  $\Delta$ -2-p-menthenes with maleic anhydride and azodicarboxylic ester in relation to their autoxidation capacity

SOURCE:

Yerofeyev, B.V. and Tishchenko, I.G., eds. Zhidkofaznoye okisleniye nepredel'nykh organicheskikh soyedineniy, Minsk, 1961, 145 - 150

TEXT:

Substitutional addition in the allyl position was effected by preparing new adducts of maleic anhydride and the azodicarboxylic ethyl ester with the  $\sigma$ - $\pi$ -conjugated systems of  $\Delta$ -3- and  $\Delta$ -2-menthenes. These experiments were of interest in connection to prior studies on autoxidation of the last mentioned systems with molecular oxygen, and for comparison with similar rigid allyl systems (bornylene, camphene, fenchene), or systems without the  $\sigma$ - $\pi$ -conjugation. Structural formulae are presented for the synthesized adducts, and the following procedures were applied: 0.12 mole  $\Delta$ -2-p-menthene, respectively, 0.07 mole  $\Delta$ -2-p-menthene were heated with 0.12, respectively, 0.07 mole maleic acid anhydride for 8 h at 170 - 180°C, respectively, 150 - 160°C and oily yellowish liquids with the following characteristics were obtained: boiling point 158 - 164°C/0.09 mm,

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Reactivity of  $\Delta$ -3- and  $\Delta$ -2-p-menthenes ....

S/580/61/000/000/015/016  
A057/A126

$n_D^{20} = 1.4950$ ,  $d_4^{20} = 1.0873$ , or 178 - 180°C/0.25 mm,  $n_D^{20} = 1.4928$ ,  $d_4^{20} = 1.1055$ , respectively. The adducts with azodicarboxylic ethyl ester were prepared without heating by having stand at room temperature for 48 h a mixture of 0.07 mole  $\Delta$ -3-p-menthene, respectively, 0.02 mole  $\Delta$ -2-p-menthene and 0.07 mole, respectively, 0.02 mole azodicarboxylic ethyl ester and boiling the fraction at 157 - 160°C/0.06 mm  $n_D^{20} 1.4746$ ,  $d_4^{20} 1.055$  with 30% yield, respectively, 132°C/0.14 mm,  $n_D^{20} 1.4750$ ,  $d_4^{20} 1.0458$  separated. No adducts could be obtained with bornylene, and camphene under same conditions. Thus an analogy was observed between observations made with molecular oxygen and maleic anhydride or azodicarboxylic ester, respectively, and reactions of substitutional addition to alkenes with different configuration.

Y

Card 2/2

BELENKOVA, S.V.

Frothron in content in blood in various phases of hypertension.  
Klin. med. 30, no. 2, February 1952

BELIYAKOVA, S.V.

Thrombocytes level in prolonged therapy of hypertension with  
potassium thiocyanate. Klin. med., Moskva 30 no.2:76-77 Feb 1952.

(GLML 22:1)

1. Of the Hospital Therapeutic Clinic (Director -- Prof. V. F.  
Zelenin, Active Member AMS USSR), Second Moscow Medical Institute imeni  
I. V. Stalin.

BEIYAKOVA, S.V.

Blood prothrombin in various phases of hypertension. *Klin. med.*,  
Moskva 30 no.2:78 Feb 1952. (GIML 22:1)

1. Of the Hospital Therapeutic Clinic (Director -- Prof. V. F.  
Zelenin, Active Member AMS USSR), Second Moscow Medical Institute, imeni  
I. V. Stalin.

"The Fuchsin-Mercuric Chloride Reaction in Brucellosis Patients,"  
by A. V. Burmakin and S. V. Belyakova, Laboratornoye Delo, Vol  
3, Jan/Feb 57, pp 14-16

This article describes a method of applying the Takata-Ara (fuchsin-mercuric chloride) reaction in investigating the blood serum of brucellosis patients. It refers to work of Ye. N. Popova (1945) on the use of this reaction in brucellosis.

The article gives proportions of the various reagents used in the Takata-Ara test as employed in this capacity. Reactions with blood serum were considered to be sharply positive, or weakly positive depending on how soon after the addition of reagents precipitation was evident in the test tubes. Serum from 110 brucellosis patients, 10 patients with other diseases, and 5 healthy persons was tested. One case history involving the septic-metastatic form of brucellosis is presented.

Results of testing in all these cases are discussed. It is concluded in general that the fuchsin-mercuric chloride reactions affords less stable results in chronic brucellosis than in acute brucellosis during the septic and septic-metastatic phase. The following specific conclusions are also given:

54M.1374

DEKHTKOVA, S. V.

"1. As a result of disturbance in the function of the liver in regulating protein metabolism in brucellosis, and the related disturbance of the albumin-globulin equilibrium, the fuchsin-mercuric chloride test with blood serum of brucellosis patients was consistently positive.

"2. In the acute form of brucellosis accompanied by acute sepsis and a hepatolienal syndrome, the Takata-Ara reaction was positive in all cases.

"3. The Takata-Ara reaction yielded positive results in approximately two thirds of all chronic brucellosis cases characterized by all the signs of chronic sepsis and by an intermittent hepatolienal syndrome.

"4. Despite the fact that the fuchsin-mercuric chloride test (Takata-Ara reaction) is not in itself specific for brucellosis, it should be included in the total complex of laboratory investigations for diagnosing brucellosis." (U)

S4M.1374

БЕЛЯКОВА, С. В.,  
BELYAKOVA, S.V. (Leningrad)

Protein and protein fraction level in hypertension. Klin.med. 35  
[i.e.34] no.1 Supplement:3 Ja '57. (MIRA 11:2)

1. Iz Leningradskogo stomatologicheskogo meditsinskogo instituta  
(dir. - prof. R.I.Gavrilov) i gospital'noy terapevticheskoy kliniki  
2-go Moskovskogo meditsinskogo instituta imeni I.V.Stalina.  
(HYPERTENSION) (BLOOD PROTEINS)

SMETNEV, A. S.; BELYAKOVA, T. I.

Wolff-Parkinson-White clinical electrocardiographic syndrome in a patient with myocardial infarction. Terap. arkh. no.9:110-112 '61. (MIRA 15:2)

1. Iz fakul'tetskoy terapevticheskoy kliniki (dir. - deystvitel'nyy chlen AMN SSSR V. N. Vinogradov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova.

(HEART--INFARCTION) (WOLFF-PARKINSON-WHITE SYNDROME)



POPOV, V.G.; BELYAKOVA, T.I.

Prognosis in recurrent myocardial infarct. Ter. arkh. 35 no.7:  
28-35 JI '63 (MIRA 17:1)

1. Iz kafedry fakul'tetskoy terapii ( zav. - deystvitel'nyy  
chlen AMN SSSR prof. V.N.Vinogradov) I Moskovskogo ordena  
Lenina meditsinskogo instituta imeni I.M.Sechenova.

BELYAKOVA, V.I., kand.sel'skokhoyaystvennykh nauk

Work of the experimental network of the Northern Scientific Research  
Institute of Hydraulic Engineering and Reclamation. Trudy SevNIIGiM  
no.14:153-158 '58. (MIRA 13:6)  
(Drainage research)

BELYAKOVA, V.I.; LISOGORSKAYA, A.S.; POYELUYEVA, A.P., red.;  
POTAPOVA, N.A., tekhn. red.

[Surface-dyeing of artificial fur] Verkhovoe krashenie iskus-  
stvennogo mekha. Moskva, 1962. 28 p. (MIRA 16:4)

1. Tsentral'nyy institut nauchno-tekhnicheskoy informatsii  
legkoy promyshlennosti.  
(Artificial fur) (Dyes and dyeing)

PANYUKIN, I.I., kand tekhn. nauk [deceased]; LISOGORSKAYA, A.S., mladshiy  
nauchnyy sotrudnik; BELYAKOVA, V.I., mladshiy nachnyy sotrudnik

Use of vat-dyes for dyeing artificial fur with a knit base.  
Tekst. prom. 23 no.10:32-35 O '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut mekhovoy promyshlennosti  
(NIIMP).

PANYUKIN, I.I., kand. tekhn. nauk, nauchnyy sotrudnik [deceased];  
BELYAKOVA, V.I., inzh., nauchnyy sotrudnik; LISOGORSKAYA,  
A.S., inzh., nauchnyy sotrudnik

Use of oxidizing (ursol) dyes for dyeing artificial fur  
with a knit base. Tekst. prom. no. 12:52-55 D '63.  
(MIRA 17:1)

1. Nauchno-issledovatel'skiy institut mekhovoy promyshlen-  
nosti (NIIMP).

BELIYAKOVA, V. K.

"Certain Problems of the Stability of Viscous Liquid Motion." Sub 27  
Jun 47, Moscow Order of Lenin State U imeni M. V. Lomonosov

Dissertations presented for degrees in science and engineering in  
Moscow in 1947

SO: Sum No. 457, 18 Apr 55

Белякова, В. К.

2000

**Belyakova, V. K. Concerning the stability of the motion**  
~~of a viscous fluid in a straight circular tube.~~ **AKH N 10**  
 SSSR Dokl. Mat. Mekh. 12: 105-110 (1980). 6 refs.  
 Ce problème a déjà été traité par Serezhnikov [ibid. 1978, 84: 189]. Les auteurs trouvent que la solution est stable pour  
 des perturbations aux amplitudes suffisamment petites. Ils  
 obtiennent la solution en supprimant des conditions aux limites  
 qui ne sont pas remplies dans la réalité. L'auteur reformule  
 le problème en se posant les conditions aux limites correctes.  
 Elle obtient pour des nombres de Ray assez suffisamment  
 grands une solution approchée qui permet de déterminer le  
 domaine de la stabilité du mouvement.

M. A. Krasovskiy, Paris

Mathematical Reviews

Vol. 11 No. 10

EMW

BELYAKOVA, V. K.

USSR/Physics - Hydraulics  
Viscosity

Jan/Feb 50

"Problem of Stability of Motion of a Viscous Liquid  
in a Straight Circular Pipe," V. K. Belyakova,  
Moscow, 6 pp

PA 157189

"Pril Matemat 1 Mekh," Vol XIV, No 1 195-110

Problem of stability of motion of viscous liquid in  
straight circular pipe using method of small varia-  
tions was first considered by Seshi ("Uber dreidimen-  
sionale Störungen der Poiseuillesche Stromung," in  
Annalen der Physik, "1927). He concluded that mo-  
tion was stable with respect to disturbances of suf-  
ficiently small amplitude. His solution assumed  
157189

USSR/Physics - Hydraulics  
(Contd)

Jan/Feb 50

Fulfillment of boundary conditions which do not  
actually exist. Author solves problems for ac-  
curate boundary conditions. Submitted 5 Jul 49.

157189



BELYAKOVA, V. K.

USSR/Mathematics - Wave Equations Jul/Aug 51

"Vibrations of Plate Under Free Surface Taking  
Into Account Small Terms of the Second Order,"  
V. K. Belyakova, Moscow

"Prikl Matemat i Mekh" Vol XV, No 4, pp 504-510

Author analyzes soln of 2-dimensional problem of  
wave motion originating in heavy liquid, first  
given by N. Ya. Kochin (cf. "Iz Ak Nauk SSSR,  
Tekh Ser" No 4, 1939) and improves results by not  
neglecting terms of the 2d order. Submitted  
4 Jul 50.

187147

Belyakova, V. K. Oscillations of a flat plate under a free surface taking account of small quantities of the second order. Akad. Nauk SSSR. Prikl. Mat. Meh. 15, 504-510 (1951). (Russian)

N. E. Kočîn [Izvestiya Akad. Nauk SSSR. Otd. Tehn. Nauk. 1939, 37-62 (1939)] in a paper on the two-dimensional problem of oscillations under a free surface obtained on the basis of the linearized theory the anomalous result that a horizontal flat plate oscillating in a vertical direction will, for certain critical values of the frequency, experience a vertical force but generate no waves. By retaining terms through the second order, the author of the paper under review shows that in addition to the waves predicted by the linearized theory there are also other waves of half their period and one fourth their wave length which do not vanish at these critical frequencies. J. V. Wehausen.

Source: Mathematical Reviews,

Vol 13 No.3

*SMW*

BELYAKOVA, V.K.

Mathematical Reviews  
Vol. 15 No. 1  
Jan. 1954  
Mechanics

Belyakova, V. K. The plane problem of the variation of the form of the free surface of ground water taking account of infiltration. Akad. Nauk SSSR. Prikl. Mat. Meh. 17, 373-376 (1953). (Russian)

Ground water is assumed initially to occupy the space below the free surface  $y = \delta(x, 0) = f(x)$ , and water is added at this surface at the rate  $\epsilon(x, t)$  per unit area. The velocity potential,  $\phi(x, y, t)$ , is found for this case, and in addition when there is an impermeable layer at  $y = -H$ , with  $f(x)$  and  $\epsilon(x, t)$  assumed periodic in  $x$ . The problem is solved by splitting into two problems, each with only one nonhomogeneous condition, solving each and then combining results. Answers for  $\phi(x, y, t)$  and  $\delta(x, t)$  are given in Fourier integral form. The author fails to include the differential equation in her statement of the first boundary-value problem, and states it incorrectly in the second. R. E. Gaskell.

*Belyakova, V. K.*

*12*  
Belyakova, V. K. Unsteady flow of ground water to a  
horizontal drain. *Prikl. Mat. Mekh.* 19. 1966. 224-226  
(Russian)

The author studies the problem of the unsteady motion  
of ground water in the presence of one or more drains,  
homogeneous or inhomogeneous grounds. The analysis  
proceeds along well-known lines. She reduces the problem  
to a study of the second-order Volterra integral equation.  
Graphs are plotted for the free-surface function for differ-  
ent values of the parameters.

*100 mg*

ДЕЛЯКОВА, В. К.

3129. *Беликова, В. К.* Unsteady inflow of underground water to wells (in Russian), *Pril. Mat. Mezh. 20, 1, 169-171, Jan. 1976*

*Abstracts of papers presented at the 1975 International Conference on the Theory of Groundwater Flow, Moscow, U.S.S.R., 1975. The papers are arranged in 10 sections. The first 9 sections are investigated theoretically: (1) Seepage into strata of unlimited thickness. (2) Inflow of underground water to drain wells installed over water table. (3) Inflow in nonhomogeneous ground. (4) Wells in homogeneous ground. (5) Wells in homogeneous strata of limited thickness. (6) Polivka. 1975*

MT

~~BELIAKOVA, V.K.~~

Correction to the article of V.K. Beliakova "Plane problem for the  
change of form of a free surface of underground water with the  
calculation of infiltration." Prikl. mat. i mekh. vol.16, no.3, 1953.  
Prikl. mat. i mekh 20 no.6:772-773 N-D '56. (MIRA 10:8)  
(Soil percolation)

BELYAKOVA, Ye.

Use of radioisotopes in metallurgy; proceedings of the  
Moscow Conference on experimental techniques and high-  
temperature research. Atom. energ. no.5:151-152 '56.

(MLRA 10:2)

(Radioisotopes--Industrial applications)  
(Metallurgy)

BELYAKOVA, Ye. M.

"Determination of the Concentration of Influenza Virus by the Method of Microelectrophoresis and the Hemagglutination and Complement Fixation Reactions," by Ye. M. Belyakova, Kiev Institute of Epidemiology and Microbiology, Voprosy Virusologii, Vol 1, No 5, Sep/Oct 56, pp 15-20 ✓

The advantages of the electrophoretic method for the early diagnosis of influenza were studied in comparison with hemagglutination and complement fixation reactions. Data collected in these investigations are presented in the following tables: (1) Concentration of influenza virus in a suspension of the lungs of white mice, determined by the hemagglutination reaction and the method of microelectrophoresis; (2) Appearance of influenza virus in a suspension of the lungs of mice and in the allantoic fluid of chick embryos determined by the hemagglutination reaction, the complement fixation reaction, and the method of microelectrophoresis; and (3) The effect of type specific serums on the decrease in the electrokinetic potential of erythrocytes caused by influenza virus.



On the basis of these investigations, it was concluded that the method of microelectrophoresis was distinguished by considerable sensitivity and could be used to determine concentrations of influenza virus not detected by the other methods. The method of determining decrease in the electrokinetic potential of erythrocytes was specific; the effect of the decrease was neutralized by anti-influenza serum of the corresponding type. Determination of influenza virus in a suspension of the lungs of white mice and in the allantoic fluid of chick embryos subjected to refrigeration showed that the decrease in erythrocyte electrokinetic potential proceeded more slowly in this case. Upon investigation of naso-pharyngeal washings from influenza patients, the greatest number of positive results were obtained by the electrophoretic method, somewhat fewer by the complement fixation reaction, and the least by the hemagglutination reaction. Further testing of the microelectrophoretic method for the early laboratory diagnosis of influenza is recommended.

Sum 1239

BELYAKOVA, Ye.M.

Detection of influenza virus in the nasopharyngeal washings of patients by the hemagglutination test, complement fixation test, and microelectrophoresis. Vop.virus 3 no.3:174 My-Je '58 (MIRA 11:7)

1. Institut epidemiologii i mikrobiologii, Kiyev.

(NASOPHARYNX, microbiology

influenza viruses in nasopharyngeal washings, method for detection of viruses (Rus))

(INFLUENZA VIRUSES,

detection in nasopharyngeal washings, methods (Rus))

BELYAKOVA, Ye.M. [Beliakova, IE.M.]

Use of virusoscopy in the early diagnosis of influenza. Mikrobiol.  
zhur. 23 no.2:38-41 '61. (MIRA 14:7)

1. Kiyevskiy institut epidemiologii i mikrobiologii.  
(INFLUENZA)

DANILEYCHENKO, O. A.; BELIAKOVA, Ye. M.; KABANOVA, T. A.; PRIMAK, D. O.

Study of the effectiveness of antipoliomyelitis vaccination in  
the city of Kiev. Mikrobiol. zhur. 24 no.1:10-15 '62.

(MIRA 15:7)

1. Kiyevskiy nauchno-issledovatel'skiy institut epidemiologii  
i mikrobiologii i Kiyevskaya gorodskaya sanitarno-epidemiolo-  
gicheskaya stantsiya.

(~~KIEV--POLIO~~MYELITIS--PREVENTIVE INOCULATION)

PROCESSES AND PROPERTIES INDEX

9

CA

Investigations of the reduction of the oxides of titanium in connection with the blast-furnace smelting of high-titanium mixtures. V. V. Mikhailov and E. P. Belyakova: *Ural. Metallurg* 1939, No. 4-5, 11-10; *Khim. Referat. Zhur.* 1939, No. 11, 78. — The conditions for the formation of oxides and carbides of Ti in connection with the difficulties in blast-furnace smelting of Ti ores were investigated. The heat of formation of  $Ti_2O_3$  and the heat of oxidation of  $Ti_2O_3$  to  $TiO_2$  were calculated. Reduction of  $TiO_2$  by solid C begins at  $927^\circ$ . TiC is formed on reduction of  $TiO_2$  at  $900-1000^\circ$ .  $H_2$  begins to reduce  $TiO_2$  at  $900^\circ$ ; its max. effect (25.3%) is at  $1300^\circ$ . CO reduces  $TiO_2$  less energetically and at  $1300^\circ$  the amt. of the reduction is 7.0% (a mixt. of  $TiO_2$  and  $Ti_2O_3$  is formed). Pure TiC was obtained from a mixt. of  $TiO_2$  and C after 2 hrs. of heating at  $1850-1900^\circ$ .  
W. R. Hunt

ASS. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

62

6304 02-179

RELEASING OFFICE

PROCEDURES AND PROPERTIES INDEX

3

5

**X-Ray Study of the Products of Reduction of Titanium Dioxide.**  
 E. Helyakova, A. Komar and V. Mikhailov. (Metallurg, 1939, No. 4-6, pp. 23-25). (In Russian). This study was undertaken in connection with a general investigation of the behaviour of titanium ores in the blast-furnace. The deleterious effect of such ores is the increase in viscosity of the sludge caused by the titanium dioxide. In the experiments the titanium dioxide was reduced with hydrogen at 1200°, 1300°, 1400° and 1500° C. and with charcoal at 1100° to 1600° C. The products of the reduction were cooled under reducing conditions and examined by the Debye method. Reduction with hydrogen resulted in the formation of Ti<sub>2</sub>O<sub>3</sub> and of some TiO above 1500° C. Regarding the products of the reduction of titanium dioxide with carbon, it is concluded that they consist of solid solutions of TiC and TiO.

METALLURGICAL LITERATURE CLASSIFICATION

GROUP	CLASS	SECTION	SUBSECTION	DETAILED INDEX	ALPHABETIC INDEX
1	2	3	4	5	6

9

CA

**The effect of the oxides of titanium on the fluidity of blast-furnace slags.** V. V. Mikhailov and E. P. Bel'yakova. *Ural. Met.* 1939, No. 6, 7-9; *Khim. Referat. Zhur.* 1939, No. 11, 83-4. -- Eapth. acid slags contained  $SiO_2$  19.20,  $TiO_2$  0.10-23.05,  $Al_2O_3$  18.17-20.2 and  $CaO$  20.7-30.12%; basic slags,  $SiO_2$  0.54-8.0,  $TiO_2$  0.70-21.22,  $Al_2O_3$  17.8 and  $CaO$  37.5-40.72%. The fluidity was measured by the ratio of the length of the stream in mm. to the wt. of the poured slag in g. The slags were heated in magnesite crucibles in Cryptol furnaces.  $TiO_2$  decreases the viscosity of acid slags and increases the viscosity of basic slags.  $Ti_2O_3$  and  $TiC$ , which is formed in larger amounts in basic slags than in acid slags, considerably increases the viscosity of both acid and basic slags.  $FeO$  decomposes  $TiC$  and thus improves the fluidity of the high-Ti blast-furnace slags. In the blast-furnace smelting of the high-Ti ores with slags low in  $FeO$  and  $MnO$ , this Ti passes into the slag in the form of  $Ti_2O_3$  and  $TiO$ ; this decreases the fluidity of the slag. Higher temps. cause the formation of  $TiC$ . Low-temp. smelting facilitates the preservation of  $FeO$  and  $MnO$  in the slag and retards the formation of  $TiC$ . Mixts. contg. little Ti (agglomerates, primary Ural titanomagnesites) should be smelted with basic slags. W. R. Henn

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

3

*M*

**ANALYSIS Investigation of Nitrides and Carbonitrides of Titanium.** E. P. Ilyakova, A. Komar, and V. V. Mikhalkov (*Metallurg.* 1940, (4), 58; *Akim. Referr. Zhur.*, 1941, 4, (1), 96; *C. Abn.*, 1943, 27, 1358).—[In Russian.] The Debye X-ray method indicated that at 1400°–1500° C. the reduction of TiO<sub>2</sub> by a mixture of hydrogen and nitrogen forms Ti<sub>3</sub>N<sub>4</sub> and TiO. At 1700° C. and higher, some titanium nitride is formed, as shown by chemical analysis; the lines of titanium nitride are not observed on X ray photographs, owing to its transformation into a solid solution with TiO. Reduction by solid carbon in nitrogen at 1400°–1500° C. produces neither the free nitride nor the free carbide of titanium. At 1800° C., TiO<sub>2</sub> is completely reduced in 3 hr. to the nitride and carbide, which form a solid solution.

METALLURGICAL LITERATURE CLASSIFICATION

7



10-63-45

Common elements

PROCESSES AND PROPERTIES INDEX

Effect of magnesium on the viscosity of aluminum silicate slags. B. P. BRUYKOVYA. *Sov. 11* [3-3] 33-34 (1941); *Chem. Zvest.*, 1942, 1, 3130; *Chem. Abstracts*, 37, 8032 (1943).—Investigation of synthetic slags containing  $SiO_2$  13 to 20,  $Al_2O_3$  27 to 40,  $CaO$  36 to 53,  $MgO$  0 to 8, and  $FeO$  0.2 to 0.65% shows that slags containing up to 5%  $MgO$  are more viscous than slags with no  $MgO$  or slags with high  $Al_2O_3$  content but are less viscous than blast-furnace slags. During smelting of Fe bauxites, the presence of 4 to 6%  $MgO$  lowers the melting point of the slag, decreases thermal requirements, and assures normal furnace operation. Al silicate slags containing  $MgO$  are slow-setting cements, and 5%  $MgO$  makes them superior to  $MgO$ -free Al silicates.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

110000 804100

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110000 804100

BELYAKOVA, E. P.

② Met

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Metallurgy and Metallography

Powdery nickel ores and aggregated products as raw material for the production of nickel-bearing pig iron. E. P. Belyakova. *Trudy Inst. Chernoi Met., Akad. Nauk Ukr. S.S.R., Otdel. Tekh. Nauk* No. 4, 81-79(1950).—A lab. investigation of 3 types of Ni ore in natural, briquetted, and sintered state showed that difficulties encountered in blast-furnace smelting of Ni ores are due to (1) fineness of ore, (2) low bulking d. (0.88-0.99 metric tons per cu.m.), (3) high content of combined H<sub>2</sub>O, (4) catalytic action of Ni in decompn. of CO to C and CO<sub>2</sub>, and (5) low content of easily reduced Fe oxides. These difficulties can be largely eliminated by sintering the ores. H. W. Rathmann

BELYAKOVA, Ye. P.

137-1958-3-4738

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 38 (USSR)

AUTHORS: Lugovtsov, M. V., Belyakova, Ye. P., Strashnikov, I. B.

TITLE: Reducibility of Krivoy Rog Ore and of Its Sinter as a Function of the Particle Size (Vosstanovimost' krivorozhskoy rudy i aglomerata iz neye v zavisimosti ot velichiny kuskov)

PERIODICAL: V sb.: Issled. domennogo protsessa. Moscow, AN SSSR, 1957, pp 33-48

ABSTRACT: The processes of heating and reduction were investigated on different-sized pieces of Krivoy Rog ore and sinter. It is established that relatively large pieces (up to 75 mm in diameter) are completely heated within 30 or 40 minutes, when the surrounding atmosphere is at a temperature of 300°. Reduction experiments, carried out at gradually increasing temperatures on ball-shaped specimens, as well as on fine-ground ore (composed of 40 percent CO, 5 percent H<sub>2</sub>, 0.5 percent CH<sub>4</sub>, and 55 percent N<sub>2</sub>), have demonstrated that, under conditions of blast furnace smelting, the following quantities of O<sub>2</sub> are removed from Krivoy Rog ores by means of indirect reduction:

Card 1/2

137-1958-3-4738

Reducibility of Krivoy Rog Ore and of its Sinter (cont.)

from small fractions:	>75 percent
" pieces 25 mm in diameter:	approximately 45 percent
" " 38 mm " " :	" 30 percent
" " 50 mm " " :	" 25 percent
" " 75 mm " " :	" 20 percent

It is noted that, owing to the greater porousness of sinter, the extent of its reduction is not as much influenced by the size of its individual particles as is the case with ore. Results of a mineralographic investigation of the reduction process of a single piece of ore are also shown.

Ye. V.

Card 2/2

~~BELYAKOVA, E~~ BELYAKOVA, E.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1762  
AUTHOR BELJAKOVA, E.  
TITLE Problems of the Application of Radioactive Isotopes in Metallurgy.  
(Moscow Congress on the Experimental Technology and the Investigation Methods at High Temperatures).  
PERIODICAL Atomnaja Energija, 1, fasc.5, 151-152 (1956)  
Issued: 1 / 1957

This congress was held from June 26th to June 30th 1956 at the Institute for Metallurgy of the Academy of Science in the USSR. An important part of the works dealt with the use of "marked" atoms in metallurgy. Reviews of the following lectures were made: V.ŠIHOV and O.ESIN:

Application of  $P^{32}$  and  $S^{35}$  on the occasion of the investigation of the kinetics of the dephosphorization and the desulphurization of metals by slag. The advantages offered by this method are its high sensitivity as well as the great exactitude and relative rapidity of analysis. The following radioactive admixtures to the metals were used: Ferro phosphorus and pulverized sulphur iron. N.BIGDANOVA, P.GRUZIN, G.ERMOLAEV, I.NIKULINSKIJ (KUSNECK'S Metallurgical Combine). The investigation of the motion of metal and the distribution of the alloying elements in martensite ovens of various capacities with the help of radioactive isotopes ( $Co^{60}$ ,  $Cr^{51}$ ). By means of this method it was possible to find out that mixing of metal is brought about by the motion of this metal in turbulent and convectionlike flows at velocities of from 1 - 5 m/min.

137-58-5-8987

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 34 (USSR)

AUTHORS: Lugovtsov, M. V., Belyakova, Ye. P., Strashnikov, I. B.

TITLE: How the Lump Size Affects the Decomposition of Limestone under Continuous Heating (Razlozheniye izvestnyaka v zavisimosti ot velichiny kuskov pri nepreryvnom nagrevanii)

PERIODICAL: V sb.: Issled. domennogo protsessa. Moscow, AN SSSR, 1957, pp 49-54

ABSTRACT: The process of decomposition of Karakuba limestone was investigated on spherical specimens of this material (25, 38, and 50 mm in diameter) which were gradually heated in a stream of air to a temperature of 1200-1250°C. The specimens were placed into a furnace preheated to 300°; the temperature was then increased at a rate of 150°/hr. Complete decomposition of a 25 mm sphere was already observed at 1050°, a temperature achieved within a period of 140 minutes of heating. In the case of the 38-mm and the 50-mm specimens analogous conditions were reached at 1125° and 1225° (170 and 210 minutes), respectively. At temperatures up to 1000° only 45% of the total CO<sub>2</sub> content escaped from the 50 mm specimens. Thus, under condi-

Card 1/2

137-58-5-8987

How the Lump Size Affects (cont.)

tions of blast furnace operation, the greater portion of CO<sub>2</sub> escapes from the limestone at temperatures in excess of 1000°. The relationship between the temperature and the linear decomposition rate of the limestone was investigated. Also studied was the relationship between the central and peripheral temperatures of the specimens and the temperature of the working space of the furnace in the course of the experiment.

Ye. V.

1. Calcite--Decomposition
2. Calcite--Temperature factors

Card 2/2

BEIYAKOVA, Yevgeniya Pavlova [Bieliakova, I.E.P.]; FRANTSEVICH, Ivan  
Nikitovich [Frantsevych, I.M.]; DOBROKHOTOV, M.M., akademik,  
otv.red.; REMENNIK, T.K., red.izd-va; LABINOVA, N.M.,  
red.izd-va; SKLYAROVA, V.Ye., tekhn.red.

Maksym Vlasovych Luhovtsov. Kyiv, Vyd-vo Akad.nauk URSR,  
1958. 35 p. (MIRA 15:4)

1. AN USSR (for Dobrokhotov).  
(Luhovtsov, Maksym Vlasovych, 1885-1956)



BELYAKOVA, Ye.P.; DVERNYAKOVA, A.A.

Decomposition of ilmenite concentrate by hydrochloric acid. Report  
No.2. Ukr.khim.zhur. 29 no.6:633-636 '63. (MIRA 16:9)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.  
(Ilmenite) (Hydrochloric acid)

BELYAKOVA, Ye. F.; DVERNYAKOVA, A.A.

Extraction of vanadium from a hydrochloric acid solution of iron.  
Report No.4. Ukr. khim. zhur. 31 no.6:626-628 '65. (MIRA 18:7)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

BELYAKOVA, Ye.P.; Prinimali uchastiye: DVORNYAKOVA, A.S.; BARANOVA, V.T.

Method of processing ilmenite concentrates for the production  
of titanium dioxide. Titan i ego splavy no.5:289-294 '61.

(MIRA 15:2)

(Ilmenite)

(Titanium oxide)

S/073/61/027/001/001/002  
B103/B216

AUTHORS: Markov, B. F., Gibman, Ye. B., and Belyakova, Ye. P.

TITLE: Electrolysis of titanium tetrachloride in fused salts.  
Stepwise cathodic reduction

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 27, no. 1, 1961, 39-43

TEXT: The authors applied several methods to investigate the cathodic reduction of  $TiCl_4$ ,  $TiCl_3$  and  $TiCl_2$  in fused salts (KCl - NaCl), i.e by taking the current voltage curves, 1 b) by recording the same curves in the ЭПП-09 (EPP-09) recording potentiometer, 2) electrolysis by controlled potential and 3) emf measurement of voltaic cells. Electrolysis under these conditions involves various processes: a)  $TiCl_4$  may be reduced to  $TiCl_3$  and  $TiCl_2$ , which dissolve in the electrolyte melt with formation of a complex compound; b) apart from electrochemical processes, the reduction products of  $TiCl_4$  react chemically with each other. The following heterogeneous equilibriums must be taken into account:  $2TiCl_3$  (melt) + Ti

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(solid)  $\rightleftharpoons$   $3\text{TiCl}_2$  (melt) and  $\text{TiCl}_2$  (melt) +  $\text{TiCl}_4 \rightleftharpoons 2\text{TiCl}_3$  (melt) which have partially been studied previously by other researchers. To 1): The authors passed  $\text{TiCl}_4$  vapor mixed with argon over the KCl-NaCl melts in electrolyzers of various designs. Fig. 1 represents a typical curve with 3 reduction potentials at  $720^\circ\text{C}$ , i.e. I, slightly above 1 v; II, approximately 2 v and III, approximately 3 v. III corresponds to background reduction, namely reduction of sodium ion. At potential II titanium chlorides are reduced to metal. Potential I corresponds to the reduction of  $\text{TiCl}_4$  to  $\text{TiCl}_2$ . To 1b): A cell with separate electrode compartments was used applying a silver anode with an anolyte containing silver chloride. The authors draw the following conclusions from the test series performed: Two reduction potentials were observed during cathodic reduction of a mixture of chlorides of di- and trivalent titanium, the lower one being the reduction potential of the system  $\text{Ti}^{+2}/\text{Ti}^{+3}$ , and the higher one the potential corresponding to reduction of  $\text{TiCl}_4$  to metal. To 2):  $\text{TiCl}_4$  was electrolyzed between graphite and tungsten electrodes

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separated by a diaphragm. A controlled potential was applied to the electrodes. Fig. 2 shows the results from which it is apparent that  $TiCl_4$  is reduced mainly to  $TiCl_2$  after electrolysis for 6-8 hr at a constant low voltage (1.2-1.4 v). At a voltage of 2.2-2.4 v, the titanium in the melt is mainly in the  $Ti^{3+}$  form. Cathodic reduction of titanium chloride to metal sets in at 1.8 v. To 3): The authors studied the behavior of a KCl - NaCl melt containing  $TiCl_2$  and  $TiCl_3$  at  $700^\circ C$  in order to determine the redox potential, measuring the emf of the cell  $Pt|Ti^{2+}, Ti^{3+}, KCl-NaCl$  diaphragm  $|KCl-NaCl, AgCl|Ag$ . The redox potentials obtained in this manner were reduced to the potential of a chlorine electrode by adding the emf value (from published data) of the cell  $Ag|AgCl, KCl-NaCl|Cl_2$  to the measured values. The authors mention publications by M. V. Kamenetskiy and M. V. Smirnov. There are 5 figures, 1 table, and 21 references: 8 Soviet-bloc and 13 non-Soviet-bloc. The 2 references to English language publications read as follows: M. B. Alpert et al., J. Electrochem. Soc., 104, 555 (1957) and 106, 142 (1959), Ref. 18.

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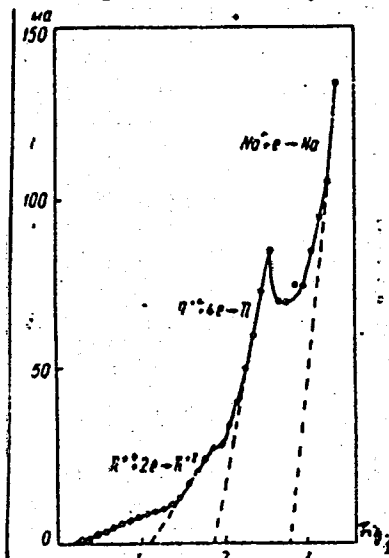
Electrolysis of titanium...

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ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR  
(Institute of General and Inorganic Chemistry, UkrSSR)

SUBMITTED: June 26, 1959

Legend to Fig. 1: Current  
voltage curve at 720°C:  
abscissa - volts.



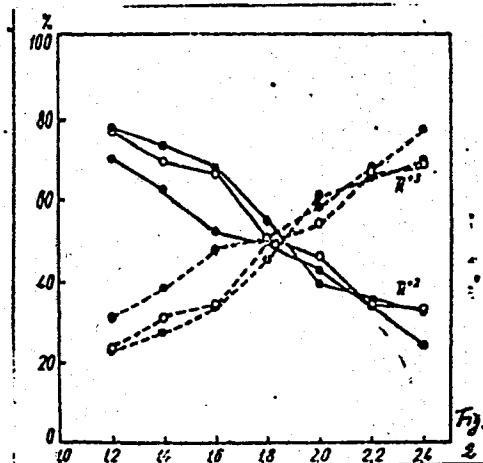
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Electrolysis of titanium...

Legend to Fig. 2: The composition of the reaction products of  $TiCl_4$  as a function of the voltage during electrolysis. Blank circle - KCl-NaCl, black circle -  $MgCl_2$ , both at  $780^\circ C$ , circle with cross: NaCl -  $CaCl_2$  -  $BaCl_2$  at  $700^\circ C$ , abscissae - volts.

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B101/B208

**AUTHORS:** Markov, B. F. and Belyakova, Ye. P.

**TITLE:** Equilibrium between the products of electrolytic reduction of titanium tetrachloride

**PERIODICAL:** Ukrainskiy khimicheskiy zhurnal, v. 27, no. 2, 1961, 146-151

**TEXT:** In the electrolysis of  $TiCl_4$  in molten chlorides,  $TiCl_4$  is gradually reduced to bivalent and trivalent titanium compounds before the metallic titanium is separated. The purpose of the present study was to determine the equilibria of these steps in various melts: 1) equimolecular mixture of NaCl and KCl; 2) eutectic mixture of  $CaCl_2$ ,  $BaCl_2$ , and NaCl; 3)  $MgCl_2$ ; and 4) CsCl. The melt containing an admixture of pure titanium metal and  $TiCl_4$  was protected from oxidation by argon.  $TiCl_2$  and  $TiCl_3$  were obtained by electrolysis of the melt at 1.8 v in quartz ampuls. The melt was heated at  $720^\circ C$  for 3.5-4 hr. Then, samples were taken from the melt in a  $CO_2$  atmosphere. In one portion of the sample, the suspended  $TiCl_2$  was filtered, and  $TiCl_3$  titrated with  $KMnO_4$ . The other portion was mixed with iron ammonium

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Equilibrium between ...

sulfate acidified with  $H_2SO_4$ , and the resultant  $Fe^{2+}$  equivalent to the oxidation of  $Ti^{2+}$  and  $Ti^{3+}$  was titrated. The equilibria obtained for the individual melts are presented in Tables 1-4. It may be seen therefrom that the ratio between the lower titanium chlorides depends on the medium of the melt. This is indicated in Table 5, and compared with data obtained by other research workers. These equilibria are established in the electrolyte layer adjacent to the titanium metal. There is another equilibrium at the interface electrolyte -  $TiCl_4$  vapor. This was studied at  $780^\circ C$  with an equimolar KCl-NaCl melt prepared in an argon atmosphere, which contained  $TiCl_2$ , and through which  $TiCl_4$  vapor was bubbled for 3.5 hr. It was found in preliminary experiments that equilibrium is established already after two hr. Results are given in Table 6:

Initial ratio [ $Ti^{2+}/(Ti^{2+}+Ti^{3+})$ ] .100%	Total Ti content in the melt, wt%	Equilibrium ratio [ $Ti^{2+}/(Ti^{2+}+Ti^{3+})$ ] .100%	Number of analyses
92	1.21	35.5	4
90	2.52	36.5	3
92	4.83	37.9	4
100	20.58	40.3	4

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It may be seen from the equilibrium constants  $K_1$  and  $K_2$  in Tables 1-4 that a satisfactory constancy ( $K_2$ ) is obtained if the molar portion of bivalent titanium is calculated as  $Ti_2Cl_4$ . There are 6 tables and 3 references:

1 Soviet-bloc and 2 non-Soviet-bloc. The 2 references to English-language publications read as follows: 1) S. Mellgren, W. Opie, J. Metals, 9, 266 (1957); 2) W. Kreye, H. Kellog, J. Electroch. Soc., 104, no. 8, (1957).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry, AS UkrSSR)

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Table 1. Equilibrium between  $TiCl_2$ ,  $TiCl_3$ , and Ti in KCl-NaCl melt at 720°C

Legend: 1) Total Ti content of the melt; 2) equilibrium ratio; 3) equilibrium constant.

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Table 1

(1) Общее со- держание титана в рас- плаве, вес. %	(2) Равновесное отношение $\frac{Ti^{2+}}{Ti^{2+} + Ti^{3+}} \cdot 100\%$	(3) Константа равновесия $\times 10^3$ $2TiCl_3 + Ti \rightleftharpoons 3TiCl_2$ $K_1 = \frac{N_{TiCl_2}^3}{N_{TiCl_3}^2}$	$2TiCl_3 + Ti \rightleftharpoons \frac{3}{2}Ti_2Cl_4$ $K_2 = \frac{N_{TiCl_2}^3}{N_{Ti_2Cl_4}^{\frac{3}{2}}}$
1,06	80,18	5,96	0,665
1,09	80,00	5,81	0,632
1,22	80,33	4,38	0,608
1,52	82,89	2,59	0,512
3,32	83,55	0,40	0,282
3,66	88,76	0,36	0,32
3,83	89,55	0,31	0,303
4,70	90,42	0,29	0,254

Table 2

(1) Общее со- держание титана в расплаве, вес. %	(2) Равновесное отношение $\frac{Ti^{2+}}{Ti^{2+} + Ti^{3+}} \cdot 100\%$	(3) Константа равновесия $\times 10^3$ $2TiCl_3 + Ti \rightleftharpoons 3TiCl_2$ $K_1 = \frac{N_{TiCl_2}^3}{N_{TiCl_3}^2}$	$2TiCl_3 + Ti \rightleftharpoons \frac{3}{2}Ti_2Cl_4$ $K_2 = \frac{N_{TiCl_2}^3}{N_{Ti_2Cl_4}^{\frac{3}{2}}}$
0,10	60,00	0,337	1,45
0,48	62,50	0,061	2,61
0,91	67,03	0,018	2,51

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Table 2. Equilibrium between  $TiCl_2$ ,  $TiCl_3$ , and Ti in  $CaCl_2$ - $BaCl_2$ - $NaCl$  at  $720^\circ C$ .

Legend as in Table 1.

① Общее со- держание титана в расплаве, вес. %	② Равновесное отношение $\frac{Ti^{2+}}{Ti^{2+} + Ti^{3+}} \cdot 100\%$	③ Константа равновесия $\times 10^3$	
		$2TiCl_3 + Ti \rightleftharpoons 3TiCl_2$ $K_1 = \frac{N_{TiCl_2}^3}{N_{TiCl_3}^2}$	$2TiCl_3 + Ti \rightleftharpoons \frac{3}{2}Ti_2Cl_4$ $K_2 = \frac{N_{TiCl_3}^2}{N_{Ti_2Cl_4}^{\frac{3}{2}}}$
0.13	46.15	1.14	4.2
0.12	45.55	0.51	4.0
0.15	48.27	0.29	4.21
0.17	48.48	0.31	5.09
0.18	48.56	0.29	5.20
0.24	50.00	0.21	5.21

Table 3. Equilibrium between  $TiCl_2$ ,  $TiCl_3$ , and Ti in  $MgCl_2$  melt at  $760^\circ C$ .  
Legend as in Table 1.

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Equilibrium between ...

① Общее со- держание титана в расп. азе, вес. %	② Равновесное отношение $\frac{Ti^{2+}}{Ti^{2+} + Ti^{3+}} \cdot 100\%$	③ Константа равновесия $\times 10^3$ $2TiCl_3 + Ti = 3TiCl_2$ $K_1 = \frac{N_{TiCl_2}^3}{N_{TiCl_3}^2}$	$2TiCl_3 + Ti = \frac{3}{2}Ti_2Cl_4$ $K_2 = \frac{N_{TiCl_2}^3}{N_{Ti_2Cl_4}^{\frac{3}{2}}}$
0.46	63.04	31.6	3.10
1.20	66.66	8.9	3.74
1.48	70.03	4.9	3.00
1.75	71.42	3.7	3.01
2.39	72.80	1.9	2.99

Table 4. Equilibrium between  $TiCl_2$ ,  $TiCl_3$ , and  $Ti$  in  $CsCl$  melt at  $720^\circ C$ .  
Legend as in Table 1.

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① Расплавленная среда	② Температура, °C	③ Общее со- держание титана в расп. аве. вс. %	④ Равновесное отношение $\frac{Ti^{2+}}{Ti^{2+} + Ti^{3+}} \cdot 100\%$	⑤ Автор
KCl — NaCl	720	1—4.7	80—90	⑥ Наши данные
KCl — NaCl	700	1.8—8.5	87—91	⑦ Крей и Келлог [2]
NaCl — SrCl <sub>2</sub>	700—850	1.6—4.9	78—93	⑧ Меллгрен и Опий [1]
NaCl—CaCl <sub>2</sub> —BaCl <sub>2</sub>	720	0.1—0.9	60—67	⑥ Наши данные
MgCl <sub>2</sub>	760	0.1—0.5	46—50	, ,
CsCl	720	0.4—2.4	63—73	, ,

Table 5. Shift of equilibrium between  $TiCl_2$ ,  $TiCl_3$ , and Ti under the action of the medium of the melt. ✓

Legend: 1) melt; 2) temperature; 3) total Ti content of the melt; 4) equivalent ratio; 5) references; 6) data of the authors; 7) W. Kreye, H. Kellog, Ref. 2 (see below); 8) S. Mellgren, W. Opie, Ref. 1 (see below).

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BELYAKOVA, Ye.P.; DVERNYAKOVA, A.A.

Decomposition of ilmenite concentrates by hydrochloric acid.  
Report No. 1. Ukr. khim. zhur. 29 no.2:220-225 '63.

(MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.  
(Ilmenite)



BELYAKOVA, Ye.P.

Free energy of the reaction between ilmenite and hydrogen chloride at elevated temperatures. Ukr. khim. zhur. 29 no.7: 773-774 '63. (MIRA 16:8)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.  
(Ilmenite) (Hydrochloric acid)

BELYAKOVA, Ye.P.; DVERNYAKOVA, A.A.

Extraction of iron and chromium from ilmenite concentrates.  
Report No.3. Ukr. khim. zhur. 30 no.8:880-883 '64.

(MIRA 17:11)

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univ., 1961. 211 p. (MIRA 14:11)  
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