

BABENKOV K.F.

BABENKOV, K.F.; TARASOV, S.P.

Rural mobile ambulatorium. Sov. zdav. 13 no.3:36-37 My-Je '54.  
(MLRA 7:8)

1. Iz Kuybyshevskogo meditsinskogo instituta.  
(OUTPATIENT SERVICES,  
\*mobile units)

5(1,3)

AUTHORS:

Kharitonova, V. P., Babenkov, L. N., SOV/153-2-2-21/31  
Pakshver, A. B.

TITLE:

The Influence of the Contents of Combined Acetic Acid in the Acetyl Cellulose on the Filtrating- and Spinning Property of the Production Solutions (Vliyaniye sodержaniya svyazannoy uksusnoy kisloty v atsetiltsellyuloze na fil'truyemost' i pryadomost' proizvodstvennykh rastvorov)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 2, pp 254-257 (USSR)

ABSTRACT:

During the production of acetate rayon considerable variations often occur between individual batches of acetylcellulose with regard to the filtrating- and spinning-property of the spinning solutions. The bad quality of the latter results in the breaking of the fibres during weaving. Therefore the authors made it their task to prepare quality indices of the spinning solutions, characterizing the filtrating- and spinning-property. These two properties depend on the interaction between the macro-molecules in the solution. This interaction depends in its turn on:  
1) the physical and chemical heterogeneity of

Card 1/4

The Influence of the Contents of Combined Acetic Acid SOV/153-2-2-21/31  
in the Acetyl Cellulose on the Filtrating- and Spinning Property of the  
Production Solutions

acetyl-cellulose; 2) the homogeneity of the solution itself - the existence of gel grains. Investigated were: 1) a batch with good and one with bad spinning properties; 2) acetyl-cellulose with varying content of combined acetic acid, which were obtained by saponifying an equivalent batch of the primary acetate. Acetone, acetone-alcohol-, and acetone-water-mixtures were used as solvents. The retardation of the filtration (Table 1) was calculated from the determined filtrating property of the solution (Ref 1). The retardation of the filtration (Table 1) was calculated. Furthermore, the spinning property of the solution (its elasticity) is being calculated from the formula:

$$A = \left( \frac{v - v_1}{v} \right) \cdot 100 \% \text{ (Ref 2), with } A \text{ being the elasticity of}$$

the jet in %;  $v$  - the top speed for the winding of the filament onto the bobbin, at which the breaking of the filament occurs in m/sec. Results are summarized in the table (p 255). A special laboratory device (Fig 1) was designed to

Card 2/4

The Influence of the Contents of Combined Acetic Acid SOV/153-2-2-21/31  
in the Acetyl Cellulose on the Filtrating- and Spinning Property of the  
Production Solutions

determine the spinning property of the solutions. It was proved already previously (Refs 4,5) that the properties of the diluted acetyl-cellulose-solutions depend on their contents of combined acetic-acid. The quality of the solution deteriorates with the increase of fractions with a low content of acetyl groups in the acetyl cellulose. In this case the filtrating- and spinning-properties of the production-solutions (Ref 5) must apparently also be subject to a deterioration (confirmed in table, p 255). When the content of combined acetic-acid in the acetyl-cellulose decreases until below 55 %, the retardation of the filtration  $\tau$  increases and the elasticity of the jet of solution A drops, which means a deterioration of the spinning property. Acetyl-cellulose with 55.3-56.3 % of combined acetic-acid shows the best qualities. Different solvents solvate the acetyl-celluloses of different esterifying degrees (Ref 5) in a different way. Consequently, the interaction between the macro-molecular chains in concentrated solutions must also be different and the stronger, the weaker the solvating

Card 3/4

The Influence of the Contents of Combined Acetic Acid SOV/153-2-2-21/31  
in the Acetyl Cellulose on the Filtrating- and Spinning Property of the  
Production Solutions

action of the solvent, The ketone group of acetone favors solvating, by linking the dipol-groups of the acetones through the acetyl-cellulose. The solvating degree drops with a decrease in the number of acetyl-groups and with an increase of hydroxyl-groups in the acetyl-cellulose. At the same time the reciprocal action between the chains goes up and the possibility of forming gel grains increases. S. S. Frolov, Docent, gave valuable advice. There are 2 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskii institut i Vsesoyuznyy zaochnyy institut legkoy i tekstil'noy promyshlennosti (Ivanovo Chemical-technological Institute and All-Union Correspondence-institute for Light- and Textile Industry)

SUBMITTED: March 12, 1958

Card 4/4

L 33406-66 EWT(m)

ACC NR: APG015316

(A, N)

SOURCE CODE: UR/0057/66/036/005/0931/0936

AUTHOR: Bobykin, B.V.; Babenkov, M.I.

ORG: none

TITLE: A Svartholm-Siegbahn type beta spectrometer with adjustable angular separation between source and detector

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 5, 1966, 931-936

TOPIC TAGS: beta spectroscopy, beta spectrometer, magnetic analyzer, magnetic field, nonlinear effect

ABSTRACT: The authors discuss the performance of a double focusing magnetic beta spectrometer with iron pole pieces in which the approximately  $\pi/2$  angular separation between the source and the detector was made adjustable to compensate for the deviation of the magnetic field from the ideal distribution and the variation of field distribution with field strength due to the nonlinear magnetic properties of the pole pieces. The instrument was a modified version of a spectrometer that has been described elsewhere by B.V.Bobykin and K.M.Novik (Izv. AN SSSR, ser. fiz. 21, 1556, 1957). The radius of the electron-optical axis was 24.3 cm, and the position on this axis of the detector, consisting of two Geiger-Müller counters in coincidence, could be varied through an angle of about  $10^\circ$  by means of a micrometer screw working through

Card 1/2

UDC: 539.107

L 33406-66

ACC NR: AP6015316

a Wilson vacuum joint. The instrument was operated with the detector at the position of best radial focus, the consequent deterioration of vertical focusing being compensated by lengthening the entrance slit to the detector. The optimum position of the detector for each magnetic field strength (electron energy) was determined by repeatedly measuring the width of a conversion line in the corresponding energy region with the detector in different positions. The optimum angle decreased by about  $4^\circ$  as the  $H\phi$  value was increased from 700 to 1100 Oe cm and remained nearly constant with further increase of  $H\phi$  to 3500 Oe cm. The optimum angle also depended appreciably on the magnetic history of the pole pieces, but the relation between optimum angle and electron energy was adequately reproducible when the pole pieces were suitably prepared between measurements. The measured full width at half-maximum of the 74.9 keV conversion line from  $1 \times 20$  mm  $\text{Eu}^{152, 154}$  source was 0.15 % when the  $1.2 \times 20$  mm entrance slit to the detector was at the optimum position. Shifting the detector position by  $3^\circ$  to either side of the optimum position increased the measured half-width to 0.17 %. Relative intensities of conversion lines were correctly measured even when the position of the detector was as much as  $8-10^\circ$  from the optimum position. The authors thank Academician of the AN Kaz. SSR Professor V.M.Kel'man for valuable advice and discussion of the results. Orig. art. has: 4 formulas and 4 figures.

SUB CODE: 20/

SUM DATE: 22May65/

ORIG REF: 005/

OTH REF: 002

Card 2/2 JS

BPE 17

AUTHORS: Kozyrin, A. K., Babenkov, V. Ye. 132-58-3-5/15

TITLE: Apparent and Real Resistances of Mineral Rock Deposits According to Results Received by Electrical Core-Sampling (Kaznusnchiesya i istinnyye soprotivleniya porod rudnykh mestorozhdeniy po dannym karotazha)

PERIODICAL: Razvedka i Okhrana Nedr, 1958, Nr 3, p 27-36 (USSR)

ABSTRACT: The measurements of the resistance of minerals in the bore holes are very seldom made, because of a wide-spread opinion of the ineffectiveness and difficulties of using the multi-electrode sounds in the bore holes on the one hand, and the acceptability of the method of sliding contacts on the other hand. The authors demonstrate how the utilization of the sliding contacts method can give the correct picture of different mineral layers found in each bore hole. The use of the results of electrical core sampling and the designing of structural maps is widely used in the oil industry, but very seldom in mineral prospecting operations. A complex analysis of results obtained from electrical core sampling (Figure 4) executed by different methods, makes it possible to determine all the components in a bore-hole and to define their importance. There are 8 figures and 2 tables, and 4 Soviet references.

Card 1/2



132-58-3-5/15

Apparent and Real Resistances of Mineral Rock Deposits According to Results  
Received by Electrical Core-Sampling

ASSOCIATION: Sverdlovskiy gornyy institut imeni Vakhrusheva (Sverdlovsk  
Mining Institute imeni Vakhrushev)

AVAILABLE: Library of Congress

Card 2/2 1. Minerals-Resistivity-Measurement

BABENKO, Ye.A.

A difficult test. Transp. stroi. 14 no.9:10-12 S '64  
(MIRA 18:1)

1. Glavnyy inzh. stroitel'no-montazhnogo poyezda No.162 tresta  
Sevkavtransstroy.

BLUVSHTEYN, M.M., inzh.; BABENKOV, Ye.D., inzh.

Operation of large-diameter clarifiers. Vod.i san.tekh. no.10;  
15-18 0 '62. (MIRA 15:12)

(Water--Purification)

BABENKOV, Ye.D., inzh.

Influence of the pH medium on the properties of coagulated  
suspensions. Vod. i san. tekhn. no.10:24-26 0 '65.

(MIRA 18:11)

SOV/49-59-6-19/21

AUTHOR: Babenkov, Ye. F.

TITLE: Recording From a Ship the Equilibrium Components of Radiation.

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 6, pp 930-932 (USSR)

ABSTRACT: A method is described where the recording apparatus are distributed on a ship, as shown in Fig 1, where I - IV - measuring gauges,  $O'M_1$  - potentiometer. The formulae expressing the relationship of recorded radiation are defined as Eqs (1) to (4), where  $h$  - height of the sun,  $I$  - intensity of the sun's radiation,  $D$  - intensity of the sky's radiation,  $A$  - intensity of the sea's radiation. The equilibrium equation in relation to the horizontal plane is defined as Eq (5). The formulae (3) and (4) can be simplified for the conditions when  $\alpha = 45$  (the coefficients  $a$ ,  $b$  and  $c$  become infinitely great) and when  $h \ll 90^\circ$ . Then Eq (6) can be obtained. The experimental verification of the above calculations is to be published. There is 1 figure.

ASSOCIATION: Glavnoye upravleniye gidrometeorologicheskoy sluzhby (Main Administration, Hydro-Meteorological Service)

SUBMITTED: October 3, 1958.

LEBEDEV, Ye.S.

Possible method for a quantitative characterization of the continental  
features of a climate. Izv. Vses. geogr. ob-va 93 no. 1:61-74, 1967  
'61. (M.A. 34:2)

(Climatology)

BABENKOV, Ye.F.

Basic regularity in the temperature distribution over oceans and  
continents. Okeanologia 2 no.5:789-795 '62. (MIRA 15:11)

1. Gosudarstvennyy okeanograficheskiy institut.  
(Atmospheric temperature)

ACCESSION NR: AT4026437

S/3082/63/000/008/0003/0026

AUTHOR: Babenkov, Ye. F.

TITLE: Physical origin of climatic characteristics of the general circulation of the atmosphere

SOURCE: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby\*. Sbornik rabot po regional'noy sinoptike (Collection of works on regional forecasting), no. 8, 1963, 3-26

TOPIC TAGS: climatology, climate, meteorology, atmospheric general circulation, atmospheric temperature, atmospheric pressure, atmospheric advective heat exchange, tropopause

ABSTRACT: The author applies the methods of mathematical climatology developed by M. Milankovich (Matematicheskaya klimatologiya i astronomicheskaya teoriya kolebaniy klimata, M.-L. 1939) to the field of atmospheric pressure in an effort to solve the fundamental problems of general circulation of the atmosphere. The study, which involved tabulation and analysis of a great mass of climatological data, is divided into four principal sections: principal patterns in the world distribution of surface temperature, principal patterns in the vertical distribution of temperature, principal patterns in the world distribution of surface pres-  
Card 1/4



ACCESSION NR: AT4026437

sure and principal patterns in the formation of high-level temperature-pressure fields. The scope of the paper can be judged from the figures and tables. Figure 1 -- Dependence of the coefficient of absorption of long-wave radiation by water vapor on temperature; Figure 2 -- Dependence of the coefficient of absorption of solar radiation by the atmosphere on surface pressure; Figure 3 -- Dependence of mean height of tropopause on mean values of surface temperature and surface pressure; Figure 4 -- Dependence of mean temperature of tropopause on surface temperature and surface pressure; Figure 5 -- Dependence of climatic mean vertical temperature gradient on climatic mean temperature; Figure 6 -- Actual and computed distribution of pressure along axial line of Atlantic Ocean; Figure 7 -- Actual and computed distribution of pressure along axial line of the Afro-Eurasian land mass; Figure 8 -- Computed and actual latitude distribution of temperatures at different heights; Table 1 -- Latitude distribution of  $Q$ ,  $q$  and  $T_s$ ; Table 2 -- Coordinates for axial lines of the oceans and continents; Table 3 -- Distribution of mean annual temperatures on the oceans and continents by latitude; Table 5 -- Dependence of height of tropopause on  $T_0$  and  $P_0$ ; Table 5 -- Dependence of mean temperature of the tropopause on mean values of  $T_0$  and  $P_0$ ; Table 6 -- Dependence of mean vertical temperature gradient on long-term mean annual values of  $T_0$  and  $P_0$ ; Table 7 -- Mean temperatures of parallels of the northern and southern hemisphere and the earth as a whole; Table 8 -- Latitude distribution

Card 2/4

ACCESSION NR: AT4026437

of deviations of pressure from mean; Table 9 -- Latitude distribution of mean pressure by parallels; Table 10 -- Distribution of pressure along axial lines of the continents and oceans; Table 11 -- Actual and computed position and intensity of principal world high- and low-pressure centers; Table 12 -- Latitude distribution of mean height and temperature of the tropopause along the axial lines of the continents and oceans; Table 13 -- Latitude distribution of absolute heights of isobaric surfaces along axial lines of the continents and oceans. The patterns of distribution of pressure and temperature defined on the basis of the analyses in the text, characterizing the climatic peculiarities of the general circulation of the atmosphere, have a single explanation -- the essential fact that the coefficient of advective heat exchange over the oceans is four times greater than the coefficient of advective heat exchange over the continents. Along the axial lines of the oceans and continents in the low latitudes the oceans are 2-4° colder than the continents and in the high latitudes are 9-10° warmer than the continents. The positions of the centers of cooling and warming coincide precisely with the positions of the climatic centers of high and low pressure over the oceans and continents. It is shown that the described patterns of distribution of temperature over the oceans and continents are the decisive factor in formation of the mean surface pressure field. Orig. art. has: 36 formulas, 8 figures and 13 tables.

ASSOCIATION: Glavnoye upravleniye gidrometeorologicheskoy sluzhby\* (Main  
Card 3/4

ACCESSION NR: AT4026437

Administration of the Hydrometeorological Service)

SUBMITTED: 00

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: AS

NO REF SOV: 012

OTHER: 000

Card 4/4

BABENKOV, E.F. [Babankov, Ye. F.]

Main laws of the repartition of air temperature over the oceans  
and continents. Analele geol geogr 17 no.3:100-107 J1-S '63.

ACCESSION NR: AT4017176

S/2546/63/000/128/0150/0154

AUTHOR: Babenkov, Ye. F.

TITLE: Calculation of the surface layer wind from the pressure field

SOURCE: Moscow. Tsentral'ny\*y institut prognozov. Trudy\*, no. 128, 1963. Voprosy\* kratkosrochny\*kh prognozov pogody\* (Problems of short-range weather forecasting), 150-154

TOPIC TAGS: meteorology, atmospheric surface layer, atmospheric pressure gradient, atmospheric turbulent viscosity, Coriolis force, weather forecasting

ABSTRACT: Wind determination on the assumption of geostrophic movement leads to errors in computation of wind vorticity, especially in the surface layer, where turbulent viscosity plays an important role in addition to the pressure gradient and the Coriolis force. Turbulent viscosity also must be taken into account in computing wind velocity divergence. Formulas have been derived for taking all these forces into account, making it possible to compute wind velocity and direction and therefore vorticity and divergence at different latitudes by using the pressure gradient and curvature of the isobars.

Card 1/3

ACCESSION NR: AT4017178

equation (1):

$$\left. \begin{aligned} V &= \frac{G}{\rho k_1} \cos \varepsilon \\ \operatorname{tg} \varepsilon &= \frac{G \sin 2\varepsilon}{2\rho r k_1^2} = \frac{l + k_2}{k_1} \end{aligned} \right\} \quad (1)$$

where  $G$  is the modulus of the pressure gradient,  $\varepsilon$  is the angle of deviation of wind direction from the direction of the pressure gradient,  $r$  is the radius of curvature of the isobars,  $V$  is the wind velocity modulus,  $k_1$  is the component of the friction coefficient along the wind direction,  $k_2$  is the component of the friction coefficient normal to the wind direction,  $l = 2w \sin \varphi$  is the Coriolis force. The second of equations (1) for given values  $k_1$  and  $k_2$  makes it possible to compute the value of the angle  $\varepsilon$  as a function of the ratio  $G/\rho r$  (where  $\rho$  is air density) and the latitude of the place. The first of formulas (1) then can be used to compute wind velocity  $V$  as a function of the ratio  $G/\rho$  and the angle  $\varepsilon$ . Construction of appropriate curves facilitates the computations. Formulas (1), taking into account surface friction, make it possible to compute wind parameters over an underlying surface with considerably greater accuracy. Formulas (4) can be a more reliable basis for analysis of wind vorticity than the geostrophic approximation and the use of the formula can be useful in analysis of wind velocity divergence. The formulas for determination of vorticity

Card 2/3

ACCESSION NR: AT4017176

( $\Omega$ ) and divergence of wind velocity on the basis of the surface pressure field have the following form:

$$\left. \begin{aligned} \Omega &= \frac{\partial v}{\partial x} - \frac{\partial u}{\partial y} = \frac{\partial}{\partial x}(V \cos \gamma) - \frac{\partial}{\partial y}(V \sin \gamma) \\ D &= \frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = \frac{\partial}{\partial x}(V \sin \gamma) + \frac{\partial}{\partial y}(V \cos \gamma) \end{aligned} \right\} \quad (2)$$

where  $\gamma = \alpha + \epsilon$  is the angle between the direction of the Y-axis and the direction of wind velocity;  $\alpha$  is the angle between the direction of the Y-axis and the direction of the pressure gradient. The values  $V$  and  $\epsilon$  can be computed using formula (1). The angle  $\alpha$ , as well as the values  $G$  and  $r$  entering into formula (4) are read from a synoptic chart. Orig. art. has: 15 formulas.

ASSOCIATION: Tsentral'nyy institut prognozov (Central Institute of Forecasts)

SUBMITTED: 00

DATE ACQ: 24Feb64

ENCL: 00

SUB CODE: AS

NO REF SOV: 001

OTHER: 000

Card 3/3

BABENKOV, Ye.F.

Basic regularity in the distribution of atmospheric pressure  
over oceans and continents. Okeanologia 5 no.5:779-792 '65.  
(MIRA 18:11)

1. Gosudarstvennyy okeanograficheskiy institut.



L 21642-66 EWT(1) GW

ACC NR: AT6006529

(N)

SOURCE CODE: UR/2634/65/000/084/0132/0170

AUTHOR: Babenkov, Ye. F.

14  
BH

ORG: State Institute of Oceanography, Moscow (Gosudarstvennyy okeanograficheskiy institut)

TITLE: The role of advection in thermal interaction of sea and atmosphere

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 84, 1965. Voprosy morskoy meteorologii i okeanografii (Problems in marine meteorology and oceanography), 132-170

TOPIC TAGS: atmospheric interaction, advection, ocean property, heat exchange

ABSTRACT: The basic principles and effect of advective latitudinal heat exchange over oceans and continents were analyzed and determined. Emphasis is given to the coefficient of the advective heat exchange which is several times greater over oceans than the advective heat exchange over continents. Orig. art. has: 12 figures, 51 formulas, and 11 tables. [Based on author's abstract.] [NT]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 033/ OTH REF: 004/

Card 1/1 ULR

40015-66 EWT(1) GW

ACC NR: AP6C05988

SOURCE CODE: UR/0213/65/005/005/0779/0792

23  
B

AUTHOR: Babenkov, Ye. F.

ORG: State Oceanographic Institute (Gosudarstvennyy okeanograficheskiy institut)

TITLE: Basic laws of distribution of the atmospheric pressures over oceans and continents

SOURCE: Okeanologiya, v. 5, no. 5, 1965, 779-792

TOPIC TAGS: atmospheric circulation, atmospheric pressure, air mass, atmospheric temperature, meteorologic observation, marine meteorology

ABSTRACT: The balance of the air masses was investigated as a function of the mean temperature of a single atmospheric column, in order to check the validity of a postulate formulated by Babenkov in 1962; the postulate states that the coefficient of the advective heat exchange over oceans ( $\lambda_0$ ) is four times greater than that over continents. Because the seasonal distribution of the air masses takes place in the limit of the whole earth, as it was shown by Shuleykin (1953), the reserve of the total energy, neglecting the earth's rotation, present in a single atmospheric column were evaluated in an integral form giving a solution for the mean temperature of a single atmospheric column. This solution, as a consequence of the first law of thermodynamics, shows that the advective changes of the mean temperature of an air column invariably lead to the corresponding changes of its mass. After computing seasonal

Card 1/2

UDC: 551.465.7 : 551.542

L 40015-66

ACC NR: AP6005988

temperatures, the mean vertical temperature gradients, the mean temperatures of the broad belts of latitude, various coefficients, and pressures over the earth, the calculated and actual distribution of pressure over the earth's sphere were plotted and compared. The data show that the atmospheric pressures over the oceans and at low latitudes are considerably higher than those over the continents. The mean atmospheric pressure over a field of maximum water (40°-60°, S' latitude in the Southern Hemisphere) is considerably less than the mean pressure over a field of maximum land (40°-60° N of latitude of the Northern Hemisphere); the equatorial latitudes, however, exhibit relatively low atmospheric pressures. Orig. art. has: 6 figures, 9 tables, and 21 formulas.

SUB CODE: 08/ SUBM DATE: 21Oct63/ ORIG REF: 010/ OTH REF: 000

*ms*  
Card 2/2

SHCHUKINA, M.; BABENKOVA, K.; SHARONOV, V.

Let's align with the best. Okhr. truda i sots. strakh. 5 no.8:20-21  
Ag '62. (MIRA 15:7)

1. Strakhovyye delegaty chasovogo zavoda, g. Orel.  
(Orel—Clockmaking and watchmaking—Hygienic aspects)

POPOVA, N.M.; GORODISKIY, D.V.; BABENKOVA, L.V.; MANESHEV, R.

Hydrogenation of cottonseed oil on nickel-kieselguhr and nickel-chromium catalysts over coal in absolute ethyl alcohol. Izv. AN SSSR, Ser. khim. nauk 15 no.2:59-64 Ap-Je '65 (MIRA 18:9)

BABENKOVA, S. V.

"Functional Disturbances of the Skin Analyzer During Certain Neurodegenerations." Cand Mod Sci, Acad Mod Sci, Moscow, 1953. (RZhBiol, No 6, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

BARENKOVA, S.V.; ZHIRMUNSKAYA, Ye.A.; SYROYECHKOVSKAYA, M.Ye.; TSUKER,  
M.B.; YUSEVICH, Yu.S. (Moskva)

The nervous system in Urov's disease. Klin.med., 33 no.11:48-54  
N '55. (MLRA 9:7)

1. Iz Instituta nevrologii AMN SSSR (dir.-deystvitel'nyy chlen  
AMN SSSR prof. N.V.Konevalov)  
(OSTEOARTHRITIS,  
deformans endemica, nervous system in)  
(NERVOUS SYSTEM, in various diseases,  
osteoarthritis deformans endemica)

BABENKOVA, S.V.

Disorders of adequacy of perception in the cutaneous analyzer.  
Zhur. nevr. i psikh. 55 no.12:908-911 '55. (MLRA 9:2)

1. Institut nevrologii (dir. - prof. N.V. Konovalov) AMN SSSR,  
Moskva.

(SKIN, diseases,  
disord. of perception in cutaneous analyzers)



BARENKOVA, S.V.

Disorders of cutaneous sensitivity in lateral amyotrophic sclerosis and in hepatolenticular degeneration. Zhur.nevr. i psikh. 56 no.8: 645-653 '56. (MLRA 9:11)

1. Institut neurologii (dir. - prof. N.V.Kononov) AMN SSSR, Moskva.  
(HEPATOLENTICULAR DEGENERATION, complications, sensory disord. (Rus))  
(AMYOTROPHIC LATERAL SCLEROSIS, complications, sensory disord. (Rus))  
(SENSATION, disord. in amyotrophic lateral sclerosis & hepatolenticular degen. (Rus))

EXCERPTA MEDICA Sec 8 Vol 12/12 Neurology Dec 59

5997. RECONSTITUTION OF THE CUTANEOUS AND DEEP SENSATION AFTER CEREBRAL BLOOD CIRCULATION DISTURBANCES (Russian text) - Babenkova S. V. - Zh. NEVROPAT. PSIKHIAT. 1958, 58/1 (21-28) Graphs 8

On the basis of an examination of 128 patients with vascular disorders of the brain, it is considered possible to observe certain stages of the process of reconstitution. Immediately after the attack, a constant and high threshold of excitability can be observed; subsequently, a transitory stage of pathologic lability and finally a complete reconstitution of sensation.

Herman - Lodd

~~BARENKOVA, S.V.~~

Features of skin capillary blood supply in patients during various periods after cerebral hemorrhage. Zhur. nerv. i psikh. 60 no. 12:1580-1587 '60. (MIRA 14:4)

1. Institut nevrologii (dir.- prof. N.V. Konovalov) AMN SSSR, Moskva.

(BRAIN—HEMORRHAGE) (SKIN—BLOOD SUPPLY)

BABENKOVA, S.V.

Disorders of sensitivity in multiple sclerosis. Zhur. nevr. i psikh.  
60 no.11:1444-1452 '60. (MIRA 14:5)

1. Iz Instituta neurologii (dir. - prof. N.V.Kononov) AMN SSSR,  
Moskva.

(MULTIPLE SCLEROSIS) (SENSES AND SENSATION)

LUR'YE, Z.L., prof.; BABENKOVA, S.V., ~~and~~ med.nauk

Disorder of the blood circulation in the brain. Zdorov'ie 7 no.9:  
18-19 S '61. (MIRA 1/:9)

(BRAIN--BLOOD SUPPLY)

PABENKOVA, S.V.; NIKOLAYEVA, I.F.

Disorders of the body image in localization of the focus in the  
left cerebral hemisphere. Zhur. nevr. i psikh. 61 no.5:696-704  
'61. (MIRA 14:7)

1. Institut neurologii (dir. - prof. N.V.Konovalev) AMN SSSR,  
Moskva.

(PERCEPTION, DISORDERS OF)

BABENKOVA, S.V.

Pathogenesis of pseudopolymelia. Zhur. nevr. i psikh. 61 no.6:843-  
847 '61. (MIRA 15:2)

1. Institut nevrologii (dir. - prof. N.V.Konovalev) AMN SSSR, Moskva.  
(AGNOSIA)

BABENKOVA, S.V.

Difference in the symptoms of lesions of the right and left hemispheres of the brain. Zhur. nevr. i psikh. 63 no.8:1153-1161 '63.  
(MIRA 17:10)

1. Institut nevrologii (dir. - prof. N.V. Konovalov) AMN SSSR.



BABENKOVA, S. V.

Automatized movements (parakineses). Zhur.nevr. i psikh. 63  
no.12:1761-1766 '63. (MIRA 18:1)

1. Institut nevrologii (direktor -- prof. N.V.Kononov) AMN SSSR,  
Moskva.

BABENKOVA, S.V.; VOLKOV, V.N.

"Pure" alexia, its relation to other cortical functions and its dynamics during the process of restorative learning. Zhur. nevr. i psikh. 64 no.2:166-171 '64. (MIRA 17:5)

1. Institut neurologii (direktor - prof. N.V. Konovalov)  
AMN SSSR, Moskva.

БЕВЕРКОВА, С.В.; КАРПИНСКАЯ, В.А.

Anticoagulant treatment of patients in an acute stage of brain  
infarct. Zhur. nevr. i psikh. 64 no.11:1653-1660 '64.

(ИИНА 18:6)

1. Institut nevrologii (direktor - prof. N.V. Konovalov) AMN SSSR,  
Moskva.

BABENKOVA, V. A. -

"Transformation Phases of the Asiatic Locust and Conditions of Their Reciprocal Transition." Cand Biol Sci, Saratov U, Saratov, 1954. (RZhBiol, No 4, Feb 55)

SO: SUM. No. 631, 26 Aug 55- Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

L 65133-65 EWT(m)/EPP(c)/EWP(v)/EWP(j)/T 491/RM

ACCESSION NR: AP5021597

UR/0286/65/000/013/0070/0070

AUTHORS: Shtraykhman, O. A.; Babenkova, Ye. A.

TITLE: A method for obtaining epoxy compounds. Class 30, No. 172486

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 70

TOPIC TAGS: epoxy, adhesive material, bonding, protective coating, hardening

ABSTRACT: This Author Certificate presents a method for obtaining epoxy compounds, for, say, adhesives, protective coating, and bonding. Oligomers containing tertiary aminogroups are used as hardeners. To improve the technical

ASSOCIATION: Institut vysokomolekulyarnykh soedineniy (Institute of High-Molecular Weight Compounds)

SUBMITTED: 11Jul64

41:55

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 1/1

BABENKOVOVA, J.A.

Organization of industrial hygiene for miners in the Donbas. Cesk.  
zdravot. 6 no.12:686-690 Dec 58.

1. Vedouci zdravotnickeho odboru Stalinske oblasti Ukrajinske SSR.  
(INDUSTRIAL HYGIENE,  
in Russia, organiz. for miners (Cz))  
(MINING  
in Russia, organiz. of indust. hyg. (Cz))

BARBENSKAS, Marijonas, K.

Analysis of certain methods of control of fascioliasis in the Lithuanian Republic. Wiadomosci parazyt., Warsz. 4 no.5-6:437-438; Engl. transl. 438 1958.

1. Z Laboratorium Parazytologii Instytutu Biologii Akad. Nauk Litewskiej SSSR w Wilnie.

(DISTOMIASIS, prev. & control,  
in Lithuania (Pol))



BARBENSKAS, M.

Control of distomiasis in Lithuania. Wiadomosci parazyt., Waresz  
5 no.4-5:341-344 1959  
(DISTOMIASIS, veterinary)

BAIBENTSOVA, A.A.

Trophic disorders in joint tuberculosis. Ortop., travn.  
i protez. no.8:38-46 '62. (MirA 17:10)

1. Iz Leningradakogo instituta khirurgicheskogo tuberkuleza  
(dir.- prof. D.K. Khokhlov) nauchnyy rukovoditel'. deyst-  
vitel'nyy chlen AMN SSSR prof P.G. Kornev).

ANTONOV, G.I.; BABENTSEV, N.A.; BERMAN, Sh.M.; SHAIPOVALOV, E.V.

Useful life of the checkerwork in 600-ton open-hearth furnaces. Met.  
i gornorud. prom. no.3:32-34 My-Je '63. (MIRA 17:1)

BABENYSHEV, M.A.; SAZONOV, D.N.

Packing the brickwork of the bottom of large capacity  
open-hearth furnaces. Met. i gornovud. prom. no.3:76-77  
My-Je '65. (MIRA 18:11)

BAFENYSHEV, M.A.; KOLGANOV, G.S.

Using oxygen to blow the bath of 600-ton open-hearth furnaces.  
Met. i gornorud. prom. no.6:14-15 N-D '65. (MIRA 18:12)

KOBEZA, I.I.; BELOKUROV, E.S.; CHERNYAVSKIY, V.G.; POGOREL'YY, V.P.;  
KORKOSHKO, N.M.; VORONOV, Yu.F.; PRON'KIN, V.Ye.; BABENYCHEV, M.A.

Heating a 600-ton (mega-gram) single channel open-hearth furnace  
with self-carbureting natural gas. Stal' 25 no.12:1139-1143  
D '65. (MIRA 18:12)

BABENYSHV, V. P.

IA 2/4570

USSR/Medicine - Deer  
Medicine - Environment

Jun 48

"Saiga in the Steppes of the Eastern Pre-Caucasus,"  
V. P. Babenyshev, 1 p

"Priroda" No 6

Describes conditions surrounding the discovery of  
Saiga tatarica L. in subject steppes.

2/49780

BABENYSHEV, V.P.; GLUSHKO, N.V.

On the change in the distribution of the lesser suslik in Stavropol Territory [with English summary in insert]. Zool.zhur.35 no.5:770-773 My '56. (MLRA 9:9)

1.Nauchno-issledovatel'skiy institut Kavkaza i Zakavkaz'ya Ministerstva zdavookhraneniya SSSR.  
(Stavropol Territory--Suslike)



BABENYSHEV, V.P.

"Bozdag Hill region as a natural focus of plague (Azerbaijan)"  
by I.U.M. Rall', R.B. Kosminskii, R.S. Karandina. Reviewed by V.P.  
Babenyshev. Zhur. mikrobiol. epid. i immun. 31 no. 11: 164-165 N '60.  
(MIRA 14:6)

(AZERBAIJAN--PLAGUE)  
(KISMINSKII, R.B.)

(RALL, I.U.M.)  
(KARANDINA, R.S.)

TER-VARTANOV, V.N.; LABUNETS, N.F.; BOCHARNIKOV, O.N.; BABENYSHEV, V.P.

Notes on the abstracts of the report by A.A. Lavrovskii and  
IA. F. Shatas, "Analysis of the modern groupings of animals  
of the Sulak-Terek plain and the factors which caused the  
penetration of plaque epizooty in Daghestan." Trudy Nauch.-  
issl. protivochum. inst. Kav. i Zakav. no.5:301-304 '61.  
(MIRA 17:1)

BARKER, A.S., starshiy leytenant meditsinskoy sluzhby

Combined apparatus for studying the vestibular apparatus and training  
of flyers. Voen.-med.zhur. no.5: 73-75 My '56. (MLRA 9:9)  
(PHYSIOLOGICAL APPARATUS) (LINK TRAINERS)

BARER, A. S. Cand Med Sci -- (diss) "Effect of  $\overset{n}{\wedge}$  centripetal accelerations upon the content of adrenalin-like substances, acetylcholine, sodium, and potassium in the blood of animals (Experimental study)." Mos, 1958. 11 pp (Central Inst for the Advanced Training of Physicians and Military Med Order of Lenin Acad im S. M. Kirov), 200 copies (KL, 36-58, 114)

BAREH, A.S.

Effect of centrifugal acceleration on amount of acetylcholine, adrenaline, adrenalinlike substances, potassium and sodium in the blood [with summary in English]. Biul.eksp.biol. i med. 46 no.7:56-59 Je '58 (MIRA 11:7)

1. Iz Tsentralnogo instituta usovershenstvovaniya vrachey (dir. V.P. Lebedeva), Moskva, Predstavlena deystvitel'nym chlenom AMN SSSR. V.N. Chernigovskim.

(ACCELERATION, effects,  
on blood acetylcholine, epinephrine, sympathomimetics  
potassium & sodium (Rus))

(BLOOD,  
chem. eff. of acceleration (Rus))

BARER, A.S.; NAYDENOVA, Z.N.

Working with the flame photometer. Lab. delo 6 no.5:14-16 S-0 '60.  
(MIRA 13:9)

1. Voyennaya kafedra Tsentral'nogo instituta usovershenstvovaniya  
vrachey (dir. V.P. Lebedeva).  
(PHOTOMETRY)

BARER, A.S.; IAKOVLEVA, E.V.

Effect of centrifugal acceleration on the amount of sodium and potassium ions in urine and saliva. Vop. med. khim. 6 no. 6:615-618 N-D '60.

(MIRA 14:4)

(ACCELERATION—PHYSIOLOGICAL EFFECT) (POTASSIUM METABOLISM)  
(SODIUM METABOLISM)

BARER, A.S.; Primalni uchastiye: GOLOV, G.A.; ZUBAVIN, V.B.; TIKHOMIROV,  
Ye.P.

Limit of human resistance to transverse acceleration and the  
physiological reactions of the organism. Probl.kosm.kol.  
2:255-272 '62. (MIRA 16:4)  
(ACCELERATION--PHYSIOLOGICAL EFFECT)



25 1 15 1960

39237

S/247/62/012/002/004/004  
1015/1215

AUTHOR: Barer, A. S.

TITLE: After-effect of single and repeated centripetal accelerations on the higher nervous activity of animals

PERIODICAL: Zhurnal vysshey nervnoy deyatel'nosti, v. 12, no. 2, 1962, 332-337

TEXT: The experiments were carried out on 91 white female rats, weighing 120-180 g. One hundred and twenty experiments were performed. For the study of the higher nervous activity, the motor-food technique of L. I. Kotlyarevskiy was applied. A definite pattern of changes in the cortical activity was established, as a result of varying magnitudes and directions of single and repeated accelerations. In the case of single accelerations the deepest changes were recorded in the head-pelvis direction. The degree of disorder in the conditioned activity depended both on the magnitude and on the direction of the single acceleration. Phenomena of adaptation were recorded at certain stages of repeated accelerations. A further increase in the total number of accelerations caused renewed severe disorders in the cortical activity. The experimental findings are discussed on the basis of Pavlov's classical theory about the leading regulatory role of the higher levels of CNS, even in a state of severe functional disorder of the organism. There are 2 figures.

ASSOCIATION: Voyennaya kafedra Tsentral'nogo instituta usovershenstvovaniya vrachey, Moskva (Military chair, Central Institute for the Advanced Training of Physicians, Moscow)

SUBMITTED: April 7, 1960

Card 1/1

BARER, A.S.; YAKOVLEVA, E.V.

Change in the content of sodium and potassium ions in human urine and saliva during "elevations" to altitudes of 5,000 and 6,000 m. in a pressure chamber. Biul. eksp. biol. i med. 53 no.1:63-65 Ja '62. (MIRA 15:3)

1. Predstavlena deystvitel'nym chlenom AMN SSSR S.Ye. Severinym.

(ALTITUDE, INFLUENCE OF)  
(SALIVA)  
(URINE--ANALYSIS AND PATHOLOGY)

I. 20792-65 EMB(j)/ENG(r)/EWT(1)/FS(v)-3/ENG(v)/ENG(a)/ENG(c) Pa-5/Pa-4/Pb-4  
ASD(a)-5//AFMDC(a)/AFWL/AFMDC/AFETR/AMD DD  
ACCESSION NR: AR1046194 S/0299/64/000/016/A013/A013

SOURCE: Ref. zh. Biologiya. Svodnyy tom, Abs. 16A107

AUTHOR: Khazen, I. M.; Kogan, E. M.; Barer, A. S. B

TITLE. Histophysiological changes in animals during acceleration. 2

CITED SOURCE: Sb. Aviats. i kosmich. meditsina. M., 1963, 469-472

TOPIC TAGS: rat, acceleration, biological effect, brain, blood, vascular system, histology, pathology

TRANSLATION: The effect of 10 g acceleration was investigated in rats for 1 min a day followed by 7 days interval for a period of 8 weeks. Other animals were subjected to 10 g acceleration for 1 min 4 times a day with 30 min intervals. In the 3rd series overloading consisted of 5 g for a period of 20 min. Mild symptoms of stasis were found in rat organ preparations of the 1st series. In animals of the 2nd series brain vessels were dilated and engorged with blood with perivascular and intercellular edema. Plethora of vessels and intercellular edema were found in the lungs and liver. Lack of lipids in

Card 1/2

L 20733-65

ACCESSION NR: AR4046194

the cortex layer of the adrenal gland were noted. These changes increased with repeated acceleration. Proliferation of connective tissue was observed. Dystrophy symptoms were found in the lungs, myocardium, and kidneys after 24 exposures to acceleration action. Degeneration of brain tissue was found after 120 exposures to acceleration action with vacuolar degeneration of nerve cells and cells in various stages of amitotic division. Vascular wall permeability damage is one of the foremost characteristic effects of acceleration action. Diapedesis of form elements is also characteristic and is also found in acute hypoxia.

SUB CODE: IS

ENCL: 00

Card 2/2

L 18079-63 EWT(1)/BDS/ES(a)/ES(j)/ES(c)/ES(k) AMD/AFPTC/AFMDC Pb-1  
ACCESSION NR: AP3005652 A/DD 8/0219/63/056/007/0021/0029 65

AUTHOR: Barer, A. S.; Golov, G. A.; Zubavin, V. B.; Tikhomirov, Ye. P.

TITLE: Physiological body reactions of the human organism during action of maximal (in time and value) acceleration directed along the back-chest axis. Report 1: Tolerance limits and basic trend of physiological reactions

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny\*, v. 56, no. 7, 1963, 24-29.

TOPIC TAGS: acceleration, physiological body reaction, maximum tolerance, cardiovascular system, respiratory system

ABSTRACT: To determine the maximum tolerances to accelerations acting along the back-chest axis at an angle of 65°, 45 men aged 24-34 in a series of 203 experiments were subjected to accelerations ranging from 4 to 15 g on a large centrifuge radius. The following were studied: cardiovascular system, external respiratory system, coordination of movements, bioelectric activity of the brain, bioelectric activity of skeletal muscles, and subjective sensations of the sub-  
Card 1/2

L 18079-63

ACCESSION NR: AP3005652

jects. Television and movies were used during the experiments. Reactions of the subjects to the mean acceleration values of 6-10 g can be divided into 4 stages. 1. Adaptation to external environment, characterized by significant increases in all systems and functions under study. 2. Resistance as the functional level of the systems decreases and the energetic level of response reactions becomes exhausted (gradual voltage decrease in the electromyograms and ECG and EEG shifts). 3. Adaptation collapse and functional discoordination. 4. Recovery, starting from the moment the centrifuge stops. For higher accelerations the highest functional levels of the systems are evoked and these in turn lead to exhaustion and the collapse of compensatory reactions. The limiting factors for high acceleration rates (12 to 15 g) are cardiovascular and external respiratory functional disturbances. The maximum tolerance for 6 g is 653 seconds, for 8 g 186 seconds, for 10 g 58 secs, for 12 g 28 secs, for 14 g 18 secs, and for 15 g 10 secs. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 16Aug62

DATE ACQ: 21Aug63

ENCL: 00

Card 2/2 SUB CODE: AM NO REF SOV: 004

OTHER: 005

BARER, A.S.; GOLOV, G.A.; SOROKINA, Ye.I.

Physiological reaction of the human body during the action of maximum accelerations in time and intensity, directed along the spinal-thoracic axis. Change in the system of external respiration. *Biul. eksp. biol. i med.* 56 no.8:33-37 Ag '63.

(MIRA 17:7)

1. Predstavleno deystvitel'nym chlenom AMN SSSR V.V. Parinym.

BARER, A. S.; GOLOV, G. A.; FURAVIN, V. B.; METRAIGOVSKIY, K. I.; SCROKINA, Ye. I.; ROBIN,  
S. A.; TIKHOMIROV, Ye. P.

"Physiological reactions of the human organism to transverse accelerations and  
some means of raising the resistance to such probes."

report submitted to 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.



GOL'DENFUND, Iosif Semenovich; VOLOVICH, David Yakovlevich; BABER, Isaak  
~~Samuilovich~~; KOMAROVSKIY, M.F., red.; FREGER, D.P., red. izd-va;  
GVIRT'S, V.L., tekhn. red.

[Propane and butane are a substitute for acetylene for cutting metal  
in construction] Propan-butan - zamenitel' atsetilena dlia rezki metal-  
la v stroitel'stve. Leningrad, 1961. 16 p. (Leningradskii Dom nauchno-  
tekhnicheskoi propagandy. Obmen peredovym opytom. Seriya: Stroitel'naiia  
promyshlennost', no.11) (MIRA 14:7)  
(Gas cutting and welding) (Propane) (Butane)

BABERAD, Ladislav

Vibration measurement of electric machines. Elektrotechnik 19  
no.5:135-136 My '64.

1. VVJEST, Brno.

Миркин, В.А., инж.

Operating the conveyor system of refuse removal in Sverdlovsk.  
Nov. tekhn.zh.dl.-kom.khoz y Klagoustr. gor. no. 2x4-8 '62.

(MIRA 17x6)

FILE  
BABERTSYAN, A.S.

SEROV, Aleksandr Vladimirovich, kand.tekhn.nauk; BABERTSYAN, A.S., red.;  
SUKHAREVA, R.A., tekhn.red.

[Operational qualities of oils used in automobiles and tractor engines]  
Ob ekspluatatsionnykh kachestvakh masel dlia avtotraktornykh dvigatelei.  
Moskva, Mosk. dom nauchno-tekhn.propagandy im.F.E.Dzerzhinskogo, 1957.  
26 p. (MIRA 10:12)

(Lubrication and lubricants)

BABERKIN, A. S., Master Chem Sci — (USSR) "Chemical Action of  $C^{60}$  Gamma-radiation  
On the Solid Crystalline Oxygen-Containing Salts  $KNO_3$ ,  $KClO_3$ ,  $KClO_4$  and water solutions  
Potassium Chlorate and Perchlorate." Moscow, 1957. 10 pp. (Min Chem Industry USSR.

L. Ya. Karpov Sci-Res Phys-Chem Inst), 110 copes

(KI, No 39, 1957, p. 94)

BIBLIOGRAPHY

in collection of articles -

Effect of Ionizing Radiation (~~Chem.~~) on Inorganic and Organic Systems, Moscow, Izd-vo AN SSSR, 416pp. 1958 (most works a continuation of Sb rabot po radiat. Khim, 1955)  
Bol'shun, Ye.V., Pshezhetskiy, S.Ya., Myasnikov, I.A. Formation of Hydrazine in Liquid Ammonia Due to Fast Electrons 182

The formation of hydrazine due to fast electrons leads to a stationary hydrazine concentration conditioned by the balancing of the rates of direct and inverse reactions. The reaction efficiency is 1 - 1.2 molecules of hydrazine per 100 ev. There are 2 tables, 1 figure, and 6 references of which 3 are Soviet and 3 English.

Baberkin, A.S., Proskurnin, M.A., Orekhov, V.D. The Effect of  $\gamma$ -Radiation on Solid Potassium Nitrate 186

The  $\gamma$ -irradiation of potassium nitrate leads to evolution of gas and nitrite formation. The irradiated salt shows a sharp increase of gas evolution when heated to  $\sim 129^\circ$ . A decrease in the amount of initially formed nitrite is observed when the temperature rises above  $122^\circ$  (temperature of lattice destruction for  $KNO_3$ ). The decrease in the nitrite yield is connected with the inverse reaction of nitrate formation which occurs due to the presence of atomic oxygen or free radicals in the irradiated salt.

Card ~~17/51~~

1/2

## Effect of Ionizing Radiation (Cont.)

790

There are 4 figures and 12 references of which 2 are Soviet, 9 English, and 1 German.

Baberkin, A.S., Proskurnin, M.A., Orekhov, V.D. Effect of  $\gamma$ -Radiation on Solid Potassium Perchlorate and Chlorate

193

Potassium perchlorate and chlorate powders were subjected to the effect of  $Co^{60}$   $\gamma$ -radiation in doses up to 10 megaröntgens per 1 g of the salt. It was established that the conversion of  $KClO_4$  at temperatures up to  $100^\circ$  yielded  $\sim 1.1$  molecules of  $KClO_3$  /100 ev and no other products. At temperatures up to  $200^\circ$  the yield of the chlorate drops, the chloride appears and gas evolution occurs. At temperatures above  $320^\circ$  the yield of the chlorate drops to 0.7, and the amount of the other products increases. The irradiated  $KClO_3$  yields 0.4 molecules of KCl and 1.2 molecules of  $KClO_2$  per 100 ev. At elevated temperatures the yield of the chlorite drops to zero. It is assumed that the thermal decomposition of irradiated salts has a radical character facilitating the conversion of the intermediate products:  $ClO_4$ ,  $ClO_3$ , O, and K. Doses not exceeding 10 megaröntgens per 1 g cause coloration of the salts. This is connected with the formation of coloration centers in the crystal lattice which disappear at temperatures above  $100^\circ$ .

Card ~~10/5~~<sup>2/2</sup> 1

21(7)

AUTHORS: Baberkin, A. S., Proskurnin, M. A. SOV/20-121-3-27/47

TITLE: The Influence of the  $\gamma$ -Radiation of  $\text{Co}^{60}$  on  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$   
(Deystviye  $\gamma$ -izlucheniya  $\text{Co}^{60}$  na  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ )

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 3,  
pp 492 - 494 (USSR)

ABSTRACT: First, the authors report on some previous papers dealing with this subject. In order to investigate the principal peculiarities of the behavior of the crystal hydrates of inorganic salts under the influence of radiation, the authors carried out some experimental series on solid potassium nitrate -  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ . The results of these investigations were compared with those for anhydrous salts and concentrated solutions. The chemically pure salts were irradiated in a vacuum at  $25^\circ$ . An experimental series was carried out on melts of potassium nitrate. The authors report in a few lines on the quantitative determination of the gaseous decomposition products of the salt. Under the action of a  $\gamma$ -radiation aqueous potassium nitrate

Card 1/3



The Influence of the  $\gamma$ -Radiation of  $\text{Co}^{60}$  on  
 $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$

SOV/20-121-3-27/47

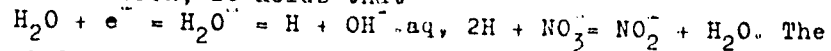
is decomposed with generation of nitrate and oxygen. In analogy to the irradiation of solid anhydrous nitrates, the greater part of the oxygen generated by the irradiation process remains within the crystals. The quantity of the generated nitrate increases according to a linear scale if the irradiation dose is increased. A table gives data on the yields of nitrate and oxygen for 100 eV. The primary process of the interaction of the ionizing particle with the investigated substance consists of the transfer of part of the energy to one of the electrons of the molecules. It may be assumed that approximately one half of the energy of the ionizing particle is necessary for ionization, and the other half - for the excitation of the molecules. The further behavior of the ionized and of the excited molecules depends in a high degree on the state of aggregation and on the physicochemical properties of the medium. The following principal conversion processes may be assumed in anhydrous nitrates:  $\text{NO}_3^- \xrightarrow{\gamma} \text{NO}_3^{\cdot-} + e^-$  (1),  $\text{NO}_3^- \xrightarrow{\gamma} \text{NO}_3^{\cdot-} \rightarrow \text{NO}_2 + \text{O}$  (2). The possible existence of the inverse reaction was investigated in a previous paper (Ref 7)

Card 2/3

The Influence of the  $\gamma$ -Radiation of  $\text{Co}^{60}$  on  
 $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$

SOV/2e-121-3-27/47

for the example of potassium nitrate. In the case of crystal hydrates, the water molecules may be considered as an admixture which may also be ionized and capture electrons. The above mentioned 2 processes may occur also in crystal hydrates. If the water molecule is able to capture an electron, it holds that



The whole complex of these data may explain the fact that the nitrate yield is higher in a crystal hydrate than in an anhydrous salt. The following main result was obtained: With increasing concentration the distribution of the ions in the solution approaches the distribution which is characteristic of the crystal hydrates. There are 2 figures, 1 table, and 9 references, 2 of which are Soviet.

PRESENTED: March 21, 1958, by V.A. Kargin, Academician

SUBMITTED: March 27, 1958  
Card 3/3

BABERKIN, A.S.

Radiochemical effect in solid inorganic salts. Probl.fiz.  
khim. no.2:163-168 '59. (MIRA 13:7)

1. Laboratoriya radiatsionnoy khimii Nauchno-issledovatel'skogo  
fiziko-khimicheskogo instituta imeni L.Ya.Karpova.  
(Salts) (Solids, Effect of radiation on)

5(4)

SOV/20-126-3-37/69

AUTHOR: Baberkin, A. S.

TITLE: On the Effects of the Gamma-radiation of  $Co^{60}$  on Crystal Hydrates of Nitric Acid Salts (Deystviye Gamma-izlucheniya  $Co^{60}$  na kristallogidraty azotnokislykh soley)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 591 - 593 (USSR)

ABSTRACT: Solid nitrates decay under the influence of irradiation, forming nitrite and gaseous oxygen. The rate of this decay depends on their physico-chemical state. In the introduction to the present paper it is said that the radiation-chemical stability of the crystal hydrates of nitric salts has hitherto not been investigated, and some papers are mentioned in which crystal hydrates of lanthanum and calcium nitrates were investigated (Refs 1,2,3). Here the yield of products of the conversion of the crystal hydrate of nitric acid with bivalent cations is investigated. The samples, nitrates of calcium, cadmium, zinc, and magnesium, were enclosed in glass ampoules, and were exposed to the  $\gamma$ -radiation of  $Co^{60}$  at a temperature of 22°C

Card 1/3

On the Effects of the Gamma-radiation of  $\text{Co}^{60}$  on  
Crystal Hydrates of Nitric Acid Salts

SOV/20-126-3-37/69

in doses of from  $0.2 \cdot 10^{16}$  to  $4.1 \cdot 10^{16}$  ev/ml.sec. The decay was colorimetrically determined, and figures 1 and 2 show the results obtained by investigations carried out of  $\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  and  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$  in form of diagrams. The quantitative nitrite yield after a dose of  $7 \cdot 10^{19}$  ev/g at 6 different intensities is given by table 1 for the above-mentioned compounds and for  $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  and  $\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ . The results show a dependence of the nitrite yield on the number of water molecules ( 4 or 6) contained in the molecule. In the discussion of results it is shown that hitherto the part played by water in the conversion of critical hydrates has not been explained, but that the introduction of water molecules into the crystal lattice makes it possible to determine the size of the free space of the elemental cells, the energy of the crystal lattice, and other factors determining the dissolving rate of the salt. There are 2 figures, 1 table, and 7 references, 6 of which are Soviet.

Card 2/3

On the Effects of the Gamma-radiation of  $\text{Co}^{60}$  on  
Crystal Hydrates of Nitric Acid Salts

SOV/20-126-3-37/69

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im.  
L. Ya. Karpova (Scientific Physico-chemical Research Institute  
imeni L. Ya. Karpov)

PRESENTED: February 4, 1959, by S. S. Medvedev, Academician

SUBMITTED: January 31, 1959

Card 3/3

85872

24.7800 (1035, 1144)  
9.2180 (3203, 1162)

S/048/60/024/011/008/036  
B006/B056

AUTHORS: Yurin, V. A., Baberkin, A. S., Korniyenko, E. N.,  
Gavrilova, I. V.

TITLE: The Action of  $\gamma$ -Radiation Upon the Ferroelectric Properties  
of Triglycine Sulfate Crystals

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 11, pp. 1334 - 1336

TEXT: The present paper is a reproduction of a lecture delivered on the  
3rd Conference on Ferroelectricity, which took place in Moscow from  
January 25 to 30, 1960. The authors investigated the influences exerted  
by  $\gamma$ -radiation upon the properties of triglycine sulfate (TGS), taking  
special account of the stabilization of the single-domain state. TGS  
Y-cuts of different shape and size were investigated, upon which silver  
electrodes had been sputtered in vacuo. From the  $Co^{60}$  source the sample  
received a dose rate of 235 r/sec. From an observation of the hysteresis  
loops and their changes due to  $\gamma$ -radiation above and below Curie point,  
with and without external (variable or constant) electric field, the  
Card 1/4

8567z

The Action of  $\gamma$ -Radiation Upon the Ferro-  
electric Properties of Triglycine Sulfate  
Crystals

S/048/60/024/01/008/036  
B006/B056

following conclusions could be drawn: 1) Under the influence of gamma irradiation either stable polydomain states are formed in TGS crystals (to which the double hysteresis corresponds), or single stable domain states (to which the displaced hysteresis corresponds); this means that that form of domain structure is "solidified", which existed during irradiation and during holding time after irradiation at a temperature below Curie point. 2) The stability of domain structures is explained by the formation of "internal displacement fields" in the crystal, where in polydomain samples the signs of the "internal displacements" in neighboring antiparallel domains are reversed, and in single-domain samples these signs are then uniform in the whole sample. These displacements are not formed immediately during irradiation, but in the course of relaxation processes, above all during diffusion processes, due to which the radiolysis products in the lattice are deposited at the places of minimum energy. These places are interrelated with the existence of a spontaneous polarization in the crystal (as well as with their direction). This conception corresponds in ferromagnetic materials to an oriented ordering, which causes a uniaxial magnetic anisotropy, whose

Card 2/4



85872

The Action of  $\gamma$ -Radiation Upon the Ferro-  
electric Properties of Triglycine Sulfate  
Crystals

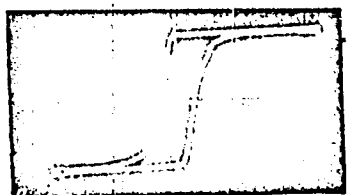
S/048/60/024/011/008/036  
BC06/B056

occurrence is explained as a perminvar effect or magnetic aftereffect.  
3) The results obtained by the authors and their explanations agree with  
the results obtained by the irradiation of TGS with X-ray- or ultra-  
violet irradiation. The authors thank I. S. Zheludev, M. A. Proskurnin,  
and I. S. Rez for their interest in this paper. There are 1 figure and  
7 references: 5 Soviet, 1 US, and 1 French.

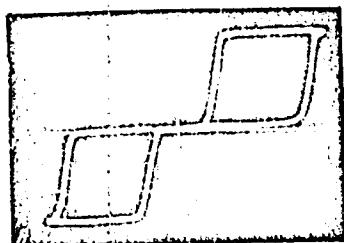
ASSOCIATION: Institut kristallografii Akademii nauk SSSR (Institute of  
Crystallography of the Academy of Sciences USSR)

✓

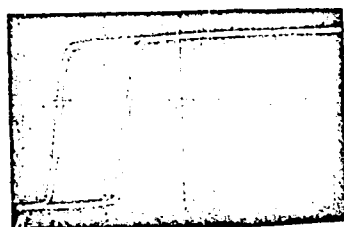
Card 3/4



a



b



c

85872

S/048/60/024/011/008/036  
B006/B056

Legend to the Figure:  
Hysteresis loop of TGS: a - before irradiation; b - after an irradiation with  $2 \cdot 10^6$  r; c - after irradiation with  $2 \cdot 10^6$  r, the irradiation taking place while a field  $+E_m > E_{sat}$  was applied.  $E_m$  was maximally 2 kv/cm at 50 cps;  $t = 20^\circ\text{C}$ .

✓

Figure

Card 4/4

81404

S/020/60/132/06/29/068  
B004/B005

21.6100

AUTHORS: Baberkin, A. S., Krushinskaya, N. P., Proskurnin, M. A.

TITLE: Influence of Solids on the Process of Decomposition of  $\text{CCl}_4$  in an Aqueous Solution Under the Action of Gamma Radiation

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 6, pp. 1329-1331

TEXT: The authors investigated whether the presence of solids accelerates the decomposition of organic substances by gamma radiation in the same way as had been found in Refs. 1-5 for inorganic substances. The experiments were made with a mixture  $\text{CCl}_4 + \text{H}_2\text{O} = 1 : 2$  with additions of 1.4-20% of coal, silica gel,  $\text{Al}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$  or  $\text{Cu}_2\text{O}$ . Radiation was effected by  $\text{Co}^{60}$  ( $4 \cdot 10^{16}$  ev/sec) at 8 - 10°C while it was possible to pass  $\text{O}_2$  or  $\text{N}_2$  through the mixture. After irradiation, the mixture was separated, the solid substance washed with  $\text{NH}_3$  2 or 3 times, and the concentration of the  $\text{Cl}^-$  ions

Card 1/3

81404

Influence of Solids on the Process of  
Decomposition of  $\text{CCl}_4$  in an Aqueous Solu-  
tion Under the Action of Gamma Radiation

S/020/60/132/06/29/068  
B004/B005

in water, and that of the ammonia solutions, determined potentiometrical-  
ly with  $\text{AgNO}_3$ . Fig. 1 shows the results for various additions of silica  
gel (and without addition). Already 1.4% of silica gel effects an increase  
in the concentration of  $\text{Cl}^-$  ions. Further additions increase the  $\text{Cl}^-$  con-  
centration, but not at a linear ratio. Similar results were obtained with  
other solids. The influence of the character of solids is shown in Fig. 2,  
which reproduces the data for a 7.7% addition of the various substances.  
According to the capacity of increasing the  $\text{Cl}^-$  yield, the order of sub-  
stances is as follows:  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{Fe}_2\text{O}_3$ , coal,  $\text{Cu}_2\text{O}$ . The data of Table 1 X  
on the experiments without solids but under bubbling with  $\text{O}_2$  or  $\text{N}_2$  show  
that  $\text{O}_2$  does not influence the  $\text{Cl}^-$  yield. The data of Table 2, however,  
show that  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{Fe}_2\text{O}_3$ , and coal increase the  $\text{Cl}^-$  yield in the presence  
of  $\text{O}_2$  only. In the presence of  $\text{N}_2$ , these substances act as a medium ab-  
sorbing the radiation energy but not passing it on to the  $\text{CCl}_4$ -water mix-  
ture. Only  $\text{Cu}_2\text{O}$  increases the  $\text{Cl}^-$  yield also in the presence of  $\text{N}_2$ . These  
Card 2/3

81404

Influence of Solids on the Process of  
Decomposition of  $\text{CCl}_4$  in an Aqueous  
Solution Under the Action of Gamma  
Radiation

S/020/60/132/06/29/068  
B004/B005

reactions (apart from  $\text{Cu}_2\text{O}$ ) are explained by activation of oxygen on the surface of the solid substance. This surface reaction is probably dependent on the electric and adsorption properties of the respective substance. There are 2 figures, 2 tables, and 5 references: 4 Soviet and 1 French.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova  
(Physical-chemical Institute imeni L. Ya. Karpov)

PRESENTED: February 17, 1960, by S. S. Medvedev, Academician

SUBMITTED: February 10, 1960

Card 3/3

S/076/61/035/002/010/015  
B124/B201AUTHOR: Baberkin, A. S.

TITLE: Order of radiation stability of solid nitrates

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 2, 1961, 373-375

TEXT: The salts of nitric acid are variously decomposed to nitrite and oxygen under the action of radiation; the yield,  $G$ , of nitrite in the molecules, obtained per 100 ev of absorbed energy, is used to characterize the radiation stability. The order of radiation stability was determined by irradiating a number of anhydrous nitrates of cations of the second group of the periodic system with gamma rays. The radiation source was  $Co^{60}$  with a dose rate of  $0.810^{16}$  ev/ml·sec; the temperature was about  $20^{\circ}C$ . The table compares the nitrite yields with the cation radii, the structure of their electron shell, the polarization coefficient, and the crystal lattice energy; the free volumes of the elementary cell of the crystal are indicated. For the volume of the  $NO_3^-$  ion, a value of  $31.6 \text{ \AA}^3$  was found at  $r_{NO_3^-} = 1.96 \text{ \AA}$ , which agrees with the value of  $28.25 \text{ \AA}^3$  given

Card 1/5

Order of radiation stability...

S/076/61/035/002/010/015  
B124/B201

in Ref. 7 (B. V. Nekrasov, Kurs obshchey khimii, Goskhimizdat, 1955, p. 626), while the value given in Ref. 4 (J. Cunningham, H. G. Heal, Trans. Faraday Soc. 54, 1355, 1958) is too low. Since there are no precise data available concerning the parameters of the crystal lattice of cadmium- and zinc nitrate, it was necessary to calculate the volume of the elementary cell by approximation from equation  $n = \sigma NV/M$ , where  $\sigma$  is the specific gravity of the salt,  $N$  the Avogadro number,  $M$  the molecular weight of the salt,  $V$  the volume of the elementary cell of the crystal and  $n$  the number of the particles in the elementary cell; for  $n = 2$  and  $4$  there arises an anomalous change of the free volume of the elementary cell, which corresponds to the anomalous variations in the nitrite yield in these salts. The radiation stability of the nitrates drops in the order from Zn to Ba, i.e., with an increase of the size (or of the weakening of the field of force) of the cation (Table). The largest nitrite yield is obtained with barium nitrate, which among the salts investigated possesses the largest free volume of the elementary cell and the lowest crystal lattice energy. The radiochemical stability of the nitrates of cations with an 18-electron outer shell (subgroup of zinc) is somewhat lower than that of the nitrates of cations with similar

Card 2/5

Order of radiation stability...

S/076/61/035/002/010/015  
B124/B201

dimensions, but with an 8-electron outer shell. In the case of almost equal radii of Ca and Cd cations the nitrite yield is larger in cadmium nitrate, which probably is due to its larger free volume of the elementary cell, inasmuch as the probability of recombination of oxygen atoms to molecules is increased and that of the reversible reaction  $\text{NO}_2^- + \text{O} \rightarrow \text{NO}_3^-$ .

is diminished. The nitrates investigated can be divided into two groups as to their stability toward gamma rays: one being (in rising order of stability)  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ca}^{2+}$ , and the other,  $\text{Cd}^{2+}$ ,  $\text{Zn}^{2+}$ , with a certain relationship existing between the change in the nitrite yield and the change in the main parameters characterizing the cation or the crystal as a whole. There are 1 table and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova  
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: June 5, 1959

Card 3/5



Order of radiation stability...

S/076/61/035/002/010/015  
B124/B201

Катион	Заряд	Радиус, Å	Число электронов во внешней электронной оболочке	Свободный объем элементарной ячейки кристалла на ион NO-A*, по (4)	Свободный объем элементарной ячейки кристалла на ион NO. Å* (по расчету)	Коэффициент поглощения 10 <sup>21</sup> , см <sup>2</sup>	Энергия кристаллической решетки, ккал/моль	Электронная доля NO <sub>2</sub>	Выход средний метрита в молекулах на 100 eV
Ba <sup>2+</sup>	2	1,43	8	47,0	29,0	1,86	457,47	0,54	0,33
Sr <sup>2+</sup>	2	1,27	8	40,4	24,3	1,02	464,72	0,64	0,14
Ca <sup>2+</sup>	2	1,04	8	27,2	20,1	0,552	505,47	0,78	0,10
Cd <sup>2+</sup>	2	0,99	18	—	37,0*	—	522,12***	0,57	0,16
Zn <sup>2+</sup>	2	0,83	18	—	74,0**	—	522,12***	0,57	0,16
Zn <sup>2+</sup>	2	0,83	18	—	83,2*	—	568,32***	0,70	0,15
					66,4**			0,70	0,13

Card 4/5

Order of radiation stability...

S/076/61/035/002/010/015  
B124/B201

Legend to the table: 1) cation, 2) charge, 3) radius, 4) number of electrons in the outer electron shell, 5) free volume of the elementary cell of the crystal per ion, according to Ref. 4, 6) ditto, calculated, 7) polarization coefficient, 8) crystal lattice energy, kcal/mole, 9) electron part of, 10) mean nitrite yield in molecules per 100 ev.  
\*) for  $n = 2$ ; \*\*) for  $n = 4$ ; \*\*\*) calculated by means of the crystallo-chemical electronegativities according to A. F. Kanustinskiy.

Card 5/5

S/844/62/000/000/046/129  
D287/D307

AUTHORS: Proskurnin, M. A. (deceased), Baberkin, A. D. and Krushinskaya, N. P.

TITLE: The effect of solids on the decomposition of  $\text{CCl}_4$  mixed with water, under the effect of  $\gamma$  irradiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 274-278

TLXT: The present work was aimed at clarifying 1) the behavior of different solids in the same organic compound; 2) the effect of solids in an irradiated mixture on the decomposition of  $\text{CCl}_4$ ; 3) the effect of oxygen on the decomposition of  $\text{CCl}_4$ . Conditions of irradiation and the method for the determination of the concentration of  $\text{Cl}^-$  ions were identical to those used earlier (DAN SSSR, 132, 1329 (1960)).  $\text{CCl}_4 - \text{H}_2\text{O} - \text{N}_2$  and  $\text{CCl}_4 - \text{H}_2\text{O} - \text{O}_2$  systems, in the

Card 1/3

The effect of solids ...

S/844/62/000/000/046/129  
D237/D207

presence and absence of solids were irradiated to determine conditions under which solids increase the yield of  $\text{Cl}^-$  ions. Oxygen did not affect the decomposition of  $\text{CCl}_4$ . The following observations were made when the system  $\text{CCl}_4 - \text{H}_2\text{O} - \text{solid}$  was irradiated: in the presence of nitrogen the  $\text{Cl}^-$  ion concentration of all tested solids (except  $\text{CuO}_2$ ) was practically identical with that of irradiated analogous systems which did not contain a solid. The  $\text{Cl}^-$  ion concentration increased in the presence of  $\text{CuO}_2$ , owing to the specific structure of this compound. During the second part of the investigation 7.7% of various types of solids were tested; the yield of  $\text{Cl}^-$  ions increased in the following order in the presence of the listed solids:  $\text{Al}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$ , silica gel, C,  $\text{Cu}_2\text{O}$ . Processes occurring in pure  $\text{CCl}_4$  under various conditions or irradiation were also investigated.  $\text{Cl}_2$  and  $\text{C}_2\text{Cl}_6$  were the principal decomposition products of  $\text{CCl}_4$  in  $\text{N}_2$ -containing systems (3.4 and 2.8 mol/100 ev).

Card 2/3