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~~5(2), 5(4)~~

67913

SOV/20-129-5-20/64.

AUTHORS:

Baranov, V. I., Khristianov, V. K., Karasev, B. V.

TITLE:

Photoneutronic Method of Determining the Concentration of Deuterium in Natural Water

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 1035 - 1037 (USSR)

ABSTRACT:

The usual method of determining the deuterium concentration in water exhibits certain difficulties. They can be eliminated by the here described method, when making use of the photocleavage of heavy water (Refs 2,3). The deuterium concentration can be easily and quickly determined in water within an accuracy of $\pm 1\%$ by combining an adequately strong γ -radiation source with an efficient method of neutron moderation and recording. The water sample is irradiated by a γ -quanta beam from Na^{24} . The neutron resulting due to the reaction $\text{D}^2 (\gamma, n) \text{H}^1$ is recorded by appropriate counters. The threshold of this reaction is 2.22 Mev, its cross section being $1.2 \cdot 10^{-27} \text{ cm}^2$ (Ref 4). Under standard conditions of measurement the number of emitted neutrons is proportional to deuterium concentration in water. By determining the counting rate of

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of Deuterium in Natural Water

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both a standard sample of water and the sample to be investigated, the deuterium concentration in the latter can be easily calculated. The above method was experimentally checked by the authors. Na^{24} served as γ -radiation source. With its γ -radiation energy (2.76 Mev), element Be only is capable of emitting neutrons under the action of hard γ -quanta. The (γ, n) -reaction cross sections are approximately the same for D_2O and Be. Figure 1 shows the arrangement in which the measurements were made. It consists of a cylindrical lead block 1 which is bedded in a paraffin reflector 2. In the middle of the block there is a roughly spherical container 3 with three tubes 4,5,6. 20 proportional counters 7 with B^{10} -concentrated boron fluoride are arranged in an annular spacing of the lead. The radiation source 8 is situated in the center of container 3. Due to the short lifetime of Na^{24} the authors were forced to content themselves with the accuracy of $\pm 2.5 \div 1.5\%$ determined by a single calculation. Up to a D_2O concentration of 0.1784% a linear dependence of the counting rate on the deuterium content was determined (Fig 2,I). The error due to water contamination was determined. Such elements

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as B, Cd, Cl are apt to distort the determination result. Figure 2, II, shows the results of such an experiment. Thus Cl³⁷ in an amount of 0.24% causes the determination result of D₂O to appear lower by 1%. Apart from Na²⁴, Y⁸⁸ might be used for the above purpose (T=105 days), but the required amount should be larger by dozens of times as compared to Na²⁴. Natural isotope ThC'' (T_{1/2} 1208) seems to be promising. Its ancestors RaTh (Th²²⁸) and MsTh₁ (Ra²²⁸) have half-lives of 1.9 and 6.7 years respectively. The authors investigated the applicability of RaTh. The preparation generates neutrons itself. Chemical purification reduced this emission to about 1/5. Another possibility would be that of preparing metallic 99.9 ÷ 99.99% pure thorium enriched by radio thorium. By preliminary experiments the authors confirmed on principle the determinability of deuterium in natural water within a high accuracy. There are 2 figures and 6 references, 3 of which are Soviet.

PRESENTED: July 17, 1959, by A. P. Vinogradov, Academician

SUBMITTED: July 14, 1959
Card 3/3

4

STARIK, I.Ye., otv.red.; SHCHERBAKOV, D.I., akademik, zamostitel' otv.red.;
BARANOV, V.I., prof., zamostitel' otv.red.; SHATSKIY, N.S., aka-
demik, red.; POLKANOV, A.A., akademik, red.; VINOGRADOV, A.P.,
akademik, red.; AFANAS'YEV, S.D., red.; GERLING, E.K., prof., red.;
PEKARSKAYA, T.B., kand.geologo-mineral.nauk, red.; IVANOV, B.V.,
red.izd-va [deceased]; GUSEVA, A.P., tekhn.red.

[Transactions of the sixth session of the Committee on the Deter-
mination of the Absolute Chronology of Geological Formations,
May 22-27, 1957] Trudy shestoi sessii komissii po opredeleniiu
absoliutnogo vozrasta geologicheskikh formatsii; 22-27 maia 1957 g.
Moskva, 1960. 306 p. (MIRA 13:7)

1. Akademiya nauk SSSR. Komissiya po opredeleniyu absolyutnogo
vozrasta geologicheskikh formatsiy.
(Geological time)

STARIK, I.Ye., otv.red.; SHCHERBAKOV, D.I., akademik, zamestitel' otv. red.; BARANOV, V.I., prof., zamestitel' otv.red.; VINOGRADOV, A.P., akademik, red.; POLKANOV, A.A., akademik, red.; SHATSKIY, N.S., akademik, red.; AFANAS'YEV, G.D.; GERLING, E.K., prof., red.; PEKARSKAYA, T.B., kand.geol.-miner.nauk, red.; SIMKIN, S.M., red. izd-va; MAKUNI, Ye.V., tekhn.red.

[Transactions of the Seventh Commission on the Determination of the Absolute Chronology of Geological Formations] Trudy Sed'moi sessii Komissii po opredeleniiu absolutnogo vozrasta geologicheskikh formatsii, 8-12 maia 1958 g. Moskva, 1960. 432 p. (MIRA 13:6)

1. Akademiya nauk SSSR. Komissiya po opredeleniyu absolutnogo vozrasta geologicheskikh formatsiy. 2. Chleny-korrespondenty AN SSSR (for Starik, Afanas'yev).
(Geology, Stratigraphic)

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S/007/60/000/006/001/010
B002/B067

21.7.100

AUTHORS: Baranov, V. I., Khristianov, V. K., Karasev, B. V.,
Korobov, S. S.

TITLE: Neutron-borometric Profiling 19

PERIODICAL: Geokhimiya, 1960, No. 6, pp 490 - 497

TEXT: At the radiogeokhimicheskaya laboratoriya Instituta geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR (Radiogeochemical Laboratory of the Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR) an instrument for neutron-borometric profiling was developed in the course of the last years. In principle it consists of a sleigh (Fig.1) carrying a 5 cm thick paraffin reflector layer (3), a moderator (7) with the neutron source (8) and detectors with oriented action for neutrons and gamma quanta. The first one (9) is a proportionality counter in a boron-cadmium screen (11), the second (4) is a packet of CTC-6 (STS-6) Halogen counters protected by a lead coating (6). A small cadmium metal foil is placed between the counters. The detectors are arranged symmetrically to the radiation source at a

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Neutron-boremetric Profiling

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B002/B067

distance of 38 cm. The apparatus is drawn by a car at a speed of 6-8 km/h; the car carries the C^{14} (SG-14) recorder. With a polonium-beryllium source with $0.8 \cdot 10^7$ n/sec 200 to 300 Imp/sec could be counted. The sensitivity was experimentally examined between 0.01 and 0.15% B_2O_3 . The range of detection reaches to about 15-20 cm. Chlorine is recorded as anomaly by the n,n probe, i.e., 0.6% NaCl correspond to the effect of 0.01% B_2O_3 . The limit of boron detection is 6% NaCl. X

Disturbances due to uneven ground are unimportant and may be easily corrected. The practical testing of the instrument proved its superiority over recordings by means of individual tests. There are 7 figures and 10 Soviet references.

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

SUBMITTED: April 7, 1960

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BARANOV, V.I.; KHRISTIANOVA, L.A.

Concerning the notes by S.M. Grashchenko and others on V.I. Baranov and L.A. Khristianova's article "Radioactivity of waters in the Indian Ocean." Geokhimiia no.7:651-652 '60. (MIRA 13:11)

(Indian Ocean--Radioactive substances)
(Grashchenko, S.M.)

BARANOV, V.I.; KNORRE, K.G.

The first Soviet geochronological scale. Geokhimiia no.7:661
'60. (MIR: 13:11)
(Geological time)

S/169/62/000/007/092/143
D228/D307

AUTHORS: Baranov, V. I. and Vachnadze, Yu. A.

TITLE: Correlation of natural radioactive emanations in the air in relation to geologic conditions in the example of areas of certain crystalline and sedimentary rocks

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 18-19, abstract 7B99 (Tr. In-ta geofiz. AN Gruz SSR, 19, 1960, 151-158)

TEXT: The content of the decay products of radon and thoron in the air at a height of 1 and 4 m was measured over surfaces with a diverse lithologic composition. The method of measurement was to expose a negatively charged wire, 10 m in length, for 2 hours at the same time of day. The γ -radiation of the ground surface was determined simultaneously by means of a $P\eta-1$ (RP-1) device. Seven points were investigated in all. It was established as a result that the concentration of thoron decay products correlates well with the radioactivity of rocks in the measurement area. There is

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Correlation of natural ...

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D228/D307

no such correlation for the decay products of radon. It is impossible to use the applied method to estimate the nature of the soil radioactivity, since the concentration of the radon decay products is averaged for an area that cannot be compared to the area giving off thoron. [Abstracter's note: Complete translation.]

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BARANOV, V. I.; NOVITSKAYA, A. P.

Effect of moisture on emanation. Radiokhimiia 2 no. 4:485-490
'60. (MIRA 13:9)
(Radon) (Radioactive substances)

20622

S/067/60/005/005/011/021
A051/A029

55500

AUTHORS: Baranov, V.I., Professor, Buzikov, Yu. A., Chernov, G.M.,
Yakovlev, Yu.V.

TITLE: Radioactivation Analysis of Pure Materials and Prospects of Its
Development

PERIODICAL: Zhurnal Vsesoyuznogo Khim. Obshch. Obshch. Khim. D.I.
Mendeleyeva, 1960, No. 5, Vol. 5, pp. 570-573

TEXT: The radioactivation analysis method is used for the determination of pure materials in the semiconductor and reactor-building industries. It is highly sensitive, depending on the magnitude of the flux of bombarding particles and the cross-section of the activation of a given element, i.e., its specificity. There is no need for a quantitative separation of the traces of the elements. Correcting for the count rate (Ref. 7-10). In the more recent application of the method gamma-ray spectroscopy is used (Ref. 13-15) which reduces the number of chemical separations of the analyzed

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A011/A009

Radioactivation Analysis of Piro-Materials and Phosphate of Ice Development

samples. By applying gamma spectroscopy a complete check of the accuracy and purity of the chemical operations can be carried out, contrary to the usual calculation of the β -activity. A study of the spectrum obtained leads to an estimation of the grade of purity of the separated sample according to the energies of the characteristic gamma rays. The amount of admixture present in the sample is determined from the areas of the spectra sections corresponding to the activated groups of this admixture. The measurement of the area of the photopeak is done by approximation of the photopeak contour of the Gaussian error curves. If the sample under investigation does not emit gamma-rays, or if its half-life is so slight that it completely decays by the time the measurements are made, then the gamma-scintillation spectrometer introduces new possibilities for coping with this problem. Reference is made to a number of publications dedicated to the application of gamma-spectroscopy [Ref. 1-3]. The authors of this article conducted a radioactivation analysis of admixtures in materials used in the semiconductor-manufacturing industry and list the obtained results. Ad-

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Radioactivation Analysis of Pure Materials and Prospects of Its Development

mixture detection in silicon was carried out using a 50-channel scintillation spectrometer. A 40 x 40 mm NaI(Tl) crystal served as the emission detector and the $\Phi 9 \times 6$ (FEU-S) photomultiplier was used. The detector was surrounded by a lead shield. The impulses from the photomultiplier reached the 50-channel amplitude analyzer through the linear amplifier and discriminator. The analyzer is based on the principle of transformation of the pulses in time, combined with the memory device of an ordinary electrostatic cathode-ray tube. Recording of the signals on the analyzer tape renders it possible to obtain the spectrum trace on a great scale with an unlimited channel capacity. The resolution of the gamma-spectrometer measured by ^{60}Co is 9%. The estimated Zn content was $1 \cdot 10^{-7}\%$, arsenic $1.2 \cdot 10^{-11}\%$, copper and gallium $2 \cdot 3 \cdot 10^{-7}\%$. Fig. 1 shows the gamma-spectrum of the activated silicon sample. Further work was carried out on the same gamma-spectrometer without chemical processing of the sample being analyzed for determining mixtures of Mn, Zn, Cu, As and Sb in several samples of thallium metal. A weighed batch (about 0.5 g) of the sample and standards in the form of micro-particles of

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8/063/60/005/005/011/021
A0511/A053

Radioactivation Analysis of Pipe Materials and Prospects of Its Development

salts of the elements being determined were placed into quartzite containers previously processed with hot aqua regia and then rinsed with water, alcohol and ether. The containers were wrapped in aluminum foil, placed into aluminum cases and irradiated in a neutron flux of about 10^{15} neutrons per $\text{cm}^2 \cdot \text{sec}$ for 24-28 hours. After a chemical purification from impurities, primarily Na, the standards and samples were measured in the gamma-spectrometer. In analyzing thallium on the gamma-spectrometer a difficulty arises: although Tl^{204} formed in the reactor is a β -emitter with a transition to the main level, about 30% of its decay is due to K-captures. Thus a characteristic X-ray emission with an energy of about 75 Kev occurs, which renders the analysis difficult for small quantities of admixtures. Fig. 2 shows the spectra of two investigated samples of thallium. The decay curve of the photopeak of As+Sb showed that it is mainly due to As^{76} ($T_{1/2} = 26$ hours). Table 1 shows the result of the determination of Mn, Cu, Zn, Sb and As admixtures in the thallium sample. The quantitative analysis of the admixtures was carried out by comparing the areas or the photopeak heights of the

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A051/A029

Radioactivation Analysis of Pure Materials and Prospects of its Development

sample being analysed and the standards relative to one moment of time. Correction for the geometry was not introduced, since the samples and standards were measured under similar conditions. The admixture content (in %) was estimated after calculating the absolute mass of the admixture. Table 2 gives the results of the analysis of several samples of graphite, also carried out on the gamma-spectrometer without chemical separation. In discussing the future prospects of developing the radioactivation method of analysis the authors point out some of the difficulties in applying it. The main difficulty is given as being the fact that most substances when activated with neutrons become gamma-emitters themselves. Germanium is given as an example. Another difficulty lies in the processing of the gamma-spectrum obtained in the spectrometer due to the occurring Compton electrons which give a continuous distribution of the pulses on the spectrum. A third difficulty is the detection of admixtures with a small yield, giving photopeaks which are weak in their intensity. The authors further state that one of the main problems which lie ahead in this connection is the development of

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Radioactivation Analysis of Pure Materials and Prospects of Its Development

new effective methods of chemical purification of ultra-small quantities of admixtures from the basic component having gamma-activity. The chemical purification in this case must not take up too much time, since the decay of the short-living activity lowers the sensitivity of the activation analysis. By developing the described methods, gamma-spectroscopy will become applicable for analyzing materials, which, when activated, become intensive gamma-emitters themselves. It is further recommended to decrease the Compton background by using more perfected spectroscopic apparatus. The authors have developed a one-channel double-crystal counting gamma-spectrometer with automatic recording of the spectra (Ref. 23). It is based on the principle of the simultaneous recording of the gamma-spectrum by two different crystals with subsequent counting of the obtained spectra in a corresponding difference scheme. A third aspect is the application of the double-crystal spectrometer for significantly increasing the sensitivity of the method without lessening the effectiveness and resolving power. The authors point out the necessity of developing an activation method for the analysis of short-lived

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S/063/60/005/005/011/021
A051/A029

Radioactivation Analysis of Pure Materials and Prospects of Its Development

isotopes. When investigating the admixtures of short-lived radioactivity, the activation analysis should be carried out near the reactor for this reason. The radio-chemical operations should be eliminated. Finally, the authors suggest that in order to detect certain elements by the activation method, it would be most feasible to use fast neutron fluxes. In the case of detecting Al and Mg admixtures, for example, the reaction on fast neutrons should be used: $Al^{27}(n,\alpha)Na^{24}$ and $Mg^{24}(n,p)Na^{24}$. The reaction on neutrons in the resonance energy field might also prove useful in this connection. A significant increase in the monochromatic neutron flux would then be necessary. The activation analysis method should be developed toward a constant minimum loss in its performance and toward increasing its productivity. Automation of measurements is suggested, as well as of the result processing, yielding a complete analytical chart of the sample. This can be facilitated by introducing into industry the activation method of analysis of elements by the computing technique. There are 3 figures, 2 tables and 23 references: 9 Soviet, 14 English.

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A051/A029

Radioactivation Analysis of Pure Materials and Prospects of Its Development

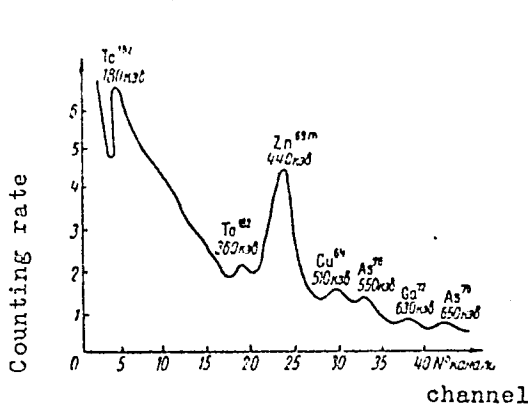


Figure 1: Gamma-spectrum of an activated sample of silicon.
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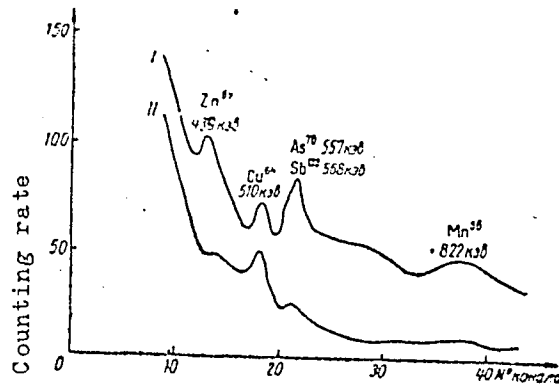


Figure 2: Gamma-spectrum of two activated samples of thallium

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 S/063/60/005/011/021
 A057/A029

Radioactivation Analysis of Pure Materials and Properties of Its Development

Table 1: Results of analysis of highly-purified thallium

Sample No.	Admixtures being determined, in %				
	Mn	Pb	Zn	Sr	As
1	$2,9 \cdot 10^{-7}$	$3 \cdot 10^{-7}$	-	$\leq 4 \cdot 10^{-5}$	$2 \cdot 10^{-6}$
2	$1,3 \cdot 10^{-7}$	$1 \cdot 10^{-7}$	$4 \cdot 10^{-5}$	$\leq 9 \cdot 10^{-6}$	$5 \cdot 10^{-6}$
3	$< 4 \cdot 10^{-8}$	$1,8 \cdot 10^{-7}$	$1 \cdot 10^{-5}$	$\leq 3 \cdot 10^{-6}$	$1 \cdot 10^{-6}$
4	$\leq 4 \cdot 10^{-8}$	$\leq 1 \cdot 10^{-7}$	-	$< 2 \cdot 10^{-6}$	$1 \cdot 10^{-6}$

X

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A051/A029

Radioactivation Analysis of Pure Materials and Preprints of Its Development

Table 2: Results of analysis of highly-purified graphite

Sample No.	Admixtures being determined, in %		
	Br	Am	W
1	$1,2 \cdot 10^{-4}$	none	none
2	$5 \cdot 10^{-4}$	$2,3 \cdot 10^{-8}$	none
3	$3,4 \cdot 10^{-4}$	$1,1 \cdot 10^{-7}$	$2 \cdot 10^{-5}$
4	none	none	$6, \cdot 10^{-4}$
5	$2,6 \cdot 10^{-4}$	none	$5 \cdot 10^{-5}$

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BARANOV, V.I.; GORBUSHINA, L.V.

Quantitative determination of lead and bismuth radioisotopes
in the air of mines. Atom.energ. 9 no.1:56-57 J1 '60.
(MIRA 13:7)

(Lead--Isotopes) (Bismuth--Isotopes)
(Mine gases)

BARANOV, V.I.; CHEN' YUY-VEY [CH'en Yü-wei]

Isolating radioactive calcium from mica for isotopic analysis.
Zhur.anal.khim. 15 no.2:163-165 Mr-Ap '60. (MIRA 13:7)

1. Institut geokhimi i analiticheskoy khimii im. V.I.Vernadskogo
AN SSSR; Moskva.
(Calcium--Isotopes) (MICA)

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S/048/60/024/009/004/015
B013/B063

24,6720

AUTHORS: Baranov, V. I., Gromov, K. Ya., Dzhelapov, B. S., Zyong Chong
Bay, Malysheva, T. V., Morozov, V. A., Khotin, B. A.,
Chumin, V. G.

TITLE: The New Isotopes Ir¹⁸⁴ and Pt¹⁸⁷

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
Vol. 24, No. 9, pp. 1079 - 1082

TEXT: The spectrum of the conversion electrons of the iridium fraction was analyzed by means of a β -spectrometer of the type Danish. This fraction is formed during the disintegration of gold bombarded with 660-Mev protons. Radiochemically pure iridium without carriers was separated from a bombarded gold plate weighing 1 ÷ 2 g (Ref. 1). The spectrum of the Ir conversion electrons showed some lines with a half-life of 3.1 ± 0.3 hours. These were identified as L-120; M-120; K-264; L-264; M-264; K-391 and L-391 transitions. Experimental data on these lines are collected in Table 1. The measured iridium spectrum (Series I) is shown in Fig. 1a, part of which is shown in a higher resolution in Fig. 1b. In addition, the L-, M-, and N-lines of the

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The New Isotopes Ir¹⁸⁴ and Pt¹⁸⁷

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120-keV gamma transition were studied by means of a β^- -spectrometer with double focusing (of the type π (2) and increased resolution (Ref. 2). The data obtained are given in Table 2. They indicate that the observed gamma transitions take place in the even-even osmium nucleus (Figs. 2 and 3). On the strength of the data obtained, the authors suggest a decay scheme for Ir¹⁸⁴ (Fig. 4). In addition to the above-mentioned lines, the iridium fraction contained numerous lines that belonged to other Ir isotopes: Ir¹⁸⁶, Ir¹⁸⁵, and Ir¹⁸⁸. Next, the determination of the half-life of Pt¹⁸⁷ is described. The half-life of this isotope was found to be 2.0 ± 0.4 hours. For comparison, the half-life of the well-known isotope Pt¹⁸⁶ was determined. Its half-life of 2.5 ± 0.3 hours is in good agreement with the results of Ref. 7. There are 4 figures, 2 tables, and 7 references: 3 Soviet.

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The New Isotopes Ir¹⁸⁴ and Pt¹⁸⁷

S/048/60/024/009/004/015
B013/B063

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I.
Vernadskogo Akademii nauk SSSR (Institute of Geochemistry and
Analytical Chemistry imeni V. I. Vernadskiy of the Academy of
Sciences USSR)
Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute
of Nuclear Research)

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Card 3/3

BARANOV, V.I.; KNORRE, K.G.

First Soviet geochronological scale. Vent. AN SSSR 30 no.9:
102-103 S '60. (MIRA 13:9)
(Geological time)

ZAYTSEVA, L.L., kand. khim. nauk; LEVSHIN, B.V.; BARANOV, V.I., red.;
KHLOPIN, N.G., red.; KNYAZEV, G.A., otv. red.; ARON, G.M., red.
izd-va; BOCHEVER, V.T., tekhn. red.

[Letters from V.G.Khlopin to V.I.Vernadskii; 1916-1943] Pis'ma V.G.
Khlopina k V.I.Vernadskomu, 1916-1943. Sost. L.L.Zait'seva i B.V.Lev-
shin. Pod obshchei red. V.I.Baranova i N.G.Khlopina, 1961. 88 p.
(MIRA 14:8)

1. Akademiya nauk SSSR. Arkhiv.
(Khlopin, Vitalii Grigor'evich, 1890-1950)

KHLOPIN, Vitaliy Georgiyevich (1890-1950); ZAYTSEVA, L.L.;
LEVSHIN, B.V., KNYAZEV, G.A., otv. red.; BARANOV, V.I.,
red.

[Letters written to V.I.Vernadskii, 1916-1943] Pis'ma k V.I.
Vernadskomu, 1916-1943. Sost.: L.L.Zaitseva i B.V.Levshin.
Pod obshchei red. V.I.Baranova i N.G.Khlopina. Moskva,
Akad. nauk 1961. 88 p. (MIRA 15:9)
(Vernadskii, Vladimir Ivanovich, 1863-1945)

S/007/61/000/002/001/004
B107/B217

AUTHORS: Baranov, V. I., Titayeva, N. A.

TITLE: Content of uranium, thorium, radium, and ionium in the Quaternary deposits of the valley of the Lena river

PERIODICAL: Geokhimiya, no. 2, 1961, 110-114

TEXT: The content of uranium, thorium, radium, and ionium (Th^{232}) in young and recent continental deposits at the Lena river was studied. The purpose of the work was to clarify the migration of these elements and the problem as to whether an absolute age determination with the aid of radioactive methods is possible. In 1958, 25 samples of peat, recent mud, and sandy loam have been collected; the larger part of the samples was from long frozen soil. The investigation of the samples was conducted jointly by the kafedra geokhimii (Department of Geochemistry) and the kafedra merzlotovedeniya (Department of Permafrost Study); K. I. Smirnova took part in the chemical analyses. Uranium was determined by luminescence analysis according to L. L. Leonova (Geokhimiya, no. 8, 1956), ionium according to L. A. Khristianova, and radium and thorium were radiochemically determined. SiO_2 , CaO ,
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Content of uranium ...

S/007/61/000/002/001/004
B107/B217

Fe₂O₃, MnO, CO₂, and the humus content were determined in the spektrokhimicheskaya laboratoriya (Spectrochemical Laboratory). On the strength of these analytical values, the samples can be divided into two groups: (1) samples with more than 10% humus (11 samples): uranium 4.0 - 15.0 10⁻⁶ g/g (average 9 10⁻⁶ g/g); thorium 0.1 - 1.2 10⁻⁵ g/g (average 0.5 10⁻⁵ g/g); ionium 0.5 - 4.1 10⁻⁶ (in equilibrium units) (average 1.5 10⁻⁶ g/g); radium 0.3 - 2.3 10⁻⁶ g/g (in equilibrium units) (average 1.2 10⁻⁶ g/g); mean ratio Th/U = 0.5; U/Jo = 6; U/Ra = 8; Jo/Ra = 1.2. (II) Samples with lower humus content (14 samples): uranium 1.6 - 7.1 10⁻⁶ g/g (average 2.9 10⁻⁶ g/g); thorium 0.7 - 1.4 10⁻⁵ g/g (average 1.0 10⁻⁵ g/g); ionium 1.6 - 3.9 10⁻⁶ g/g (in equilibrium units) (average 3.1 10⁻⁶ g/g); radium 2.0 - 3.9 10⁻⁶ g/g (in equilibrium units) (average 2.8 10⁻⁶ g/g); mean ratio Th/U = 3.4; U/Io = 0.95; U/Ra = 1.05; Io/Ra = 1.2. Summing up: The first group with more than 10% humus is enriched in uranium but poor in thorium, ionium, and radium;

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Content of uranium ...

S/007/61/000/002/001/004
B107/B217

the radioactive equilibrium is considerably disturbed. The second group with less than 10% humus has a content of uranium, thorium, ionium, and radium that is about as high as the average content in sediments and soils; the radioactive ratio between uranium and radium is, independently of the age of the samples, not disturbed in contrast to the ratio uranium/ionium. The parallel behavior of radium, thorium, and ionium indicates a joint migration, most probably together with clastic and colloidal material. This is also confirmed by the correlation to the silicon and calcium content. A correlation to the iron and manganese content was not established. The sediments studied may, in principle, be used for the absolute age determination by the ionium method, but further studies would be required. Professor V. A. Kudryavtsev is thanked for his help in field and laboratory work. There are 1 figure, 1 table, and 14 references: 12 Soviet-bloc. The two references to English language publications read as follows K. M. Strom, Nature 162, no. 4128, 1948; R. F. Flint, Glacial and Pleistocene Geology, N. Y., 1947. ✓

Card 3/4

Content of uranium ...

S/007/61/000/002/001/004
B107/B217

ASSOCIATION: Kafedra geokhimii Geologicheskogo fakul'teta Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Department of Geochemistry of the Geological Division of Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 14, 1960

Card 4/4

BARANOV, V.I.; DU LE-TYAN' [Tu Lieh-t'ien]

Geochemistry of uranium and thorium in granite rocks of the
Kyzyltau Massif (central Kazakhstan). Geokhimiia no.12:1059-1067
'61. (MIRA 15:3)

1. Chair of Geochemistry, Lomonosov State University, Moscow.
(Kazakhstan--Uranium) (Kazakhstan--Thorium)

BARANOV, V.I.; KNORRE, K.G.

Age and evolution of meteoritic and terrestrial matter in the
light of recent research. Meteoritika no.21:15-31 '61. (MIRA 14:11)
(Meteorites--Age) (Earth--Age)

BARANOV, V.I.: KNORRE, K.G.

New development in determining the absolute geological age. Vest.
AN SSSR 31 no.10:131-132 0 '61. (MIRA 14:9)
(Geological time--Congresses)

BARANOV, Vladimir Il'ich; GORBUSHINA, Lyudmila Valentinovna; VORONOVA,
A.I., red.; POPOVA, S.M., tekhn. red.

[Safety measures in uranium mines] Voprosy bezopasnosti v urano-
vykh rudnikakh. Moskva, Gosatomizdat, 1962. 185 p.

(MIRA 15:7)

(Uranium mines and mining--Safety measures)

S/169/62/000/011/003/077
D228/D307

AUTHOR: Baranov, V.I.

TITLE: The age of the Earth

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 9,
abstract 11A42 (Byul. Komis. po opredeleniyu absol-
yutn. vozrasta geol. formatsiy, AN SSSR, no. 5,
1962, 7)

TEXT: According to the data of O.Yu. Shmidt the primary
condensation took place 7 billion years ago. According to the data
of lead and other methods the age of the Earth is ~ 4.5 billion
years, i.e. the Earth must have been formed in the period between
4.5 billion years ago and the time of nucleogenesis. The author
recommends that this circumstance should be taken into account when
formulating a theory for the Earth's formation. The advantage of
considering jointly both the formation of chemical elements and of
the solar system is also noted. When determining the scale of rock
ages, it is recommended that those figures which do not require the
Card 1/2

The age of the Earth

S/169/62/000/011/003/077
D228/D307

introduction of serious errors, based as a rule on hypotheses, should be taken into account. The practice of reckoning discordant figures to be rejects and of not taking them into account is, in the author's opinion, incorrect. A.I. Tugarinov is working on the use of these figures for the purpose of exposing the causes of their discrepancy.

[Abstracter's note: Complete translation]

Card 2/2

БАБАКОВ, В.И. И РАХИМОВ [Рахметов, Лен]; РАХИМОВ, В.И.

Geochemistry of uranium and thorium in granite rocks of the Kyzyltau massif (central Kazakhstan). Report No.2: Occurrence form of radioactive elements in granite rocks. Geokhimiia no.5:418-419 '61.
(MIRA 15 '61)

1. Chair of geochemistry and chair of radiochemistry, Moscow State University.

(Kyzyltau Region--Radioactive substances)
(Kyzyltau Region--Granite)

BARANOV, V.I.; VILENSKIY, V.D.

Determination of long-lived beta-particle radiators in
atmospheric fallout. Radiokhimiya 4 no.4:486-492 '62.
(MIRA 15:11)

(Radioactive fallout)
(Beta rays)

11179

S/186/62/004/004/004/004

E071/E333

21.7/200

AUTHORS: Baranov, V.I. and Vilenskiy, V.D.

TITLE: Precipitation of Pb²¹⁰ from the atmosphere

PERIODICAL: Radiokhimiya, v. 4, no. 4, 1962, 493 - 496

TEXT: A determination of the intensity of the precipitation

of Pb²¹⁰ from the atmosphere was carried out using two vessels containing some distilled water, situated about 3 m apart. In addition, the concentration of Pb²²⁰ in a number of samples of rain and snow and samples of ice on aeroplanes, collected from various points of the USSR, was determined. The method used for the separation of Pb²¹⁰ before its determination will be described in a later communication. It was found that the intensity of precipitation varied greatly but the mean values were close to those calculated for a uniform distribution over the northern hemisphere, or somewhat higher. The data obtained indicated that Pb²¹⁰ could be an important component of the natural radioactive background of the Earth surface. On the basis of data on the content of Pb²¹⁰ in cloud droplets an

Card 1/2

✓

Precipitation of

S/186/62/004/004/004/004
E071/E333

approximate estimation of the efficiency of the removal of Pb²¹⁰ from air by cloud droplets was carried out. This indicated that cloud droplets absorbed a considerable proportion of Pb²¹⁰ from the surrounding air. There are 4 tables

SUBMITTED: October 26, 1961

Card 2/2

BARANOV, V.I., prof.

Radioactivity and geology. Vest. AN SSSR 32 no.2:17-22
F '62. (MIRA 15:2)

(Nuclear geophysics)

STARIK, I.Ye., otv. red.; SECHENBAROV, D.I., akademik, zam. otv. red.; BARANOV, V.I., prof., zar. otv. red.; VINOGRADOV, A.P., akademik, red.; POLKOV, A.A., akademik, red.; AFANAS'YEV, G.D., red.; GERLING, E.K., prof., red.; PEKARSKAYA, T.B., kand. geol.-miner. nauk, red.; ARON, G.M., red. izd-va; GALIGAROVA, L.M., tekhn. red.

[Transactions of the Tenth Session of the Commission on the Determination of the Absolute Age of Geological Formations, June 5-10, 1961] Trudy desiatoi sessii...; 5-10 iyunia 1961 g. Moskva, Izd-vo Akad. nauk SSSR, 1962. 379 p. (MIRA 15:11)

1. Akademiya nauk SSSR. Komissiya po opredeleniyu absolyutnogo vozrasta geologicheskikh formatsiy. 2. Chlen-korrespondent Akademii nauk SSSR (for Starik, Afanas'yev).
(Geological time)

V.I. BARANOV, L.I. KHRISTIANOVA (USSR)

"Radioactivity of oceanic sediments."

Report presented at the Conference on Chemistry of the Earth's Crust,
Moscow, 14-19 Mar 63.

LAVRUKHINA, Avgusta Konstantinovna; MALYSHEVA, Tanara Vladimirovna;
FAVLOTSKAYA, Fanni Il'ichna; BARANOV, V.I., prof., otv.
red.; DRAGUNOV, E.S., red.; GUSEVA, A.P., tekhn. red.

[Radiochemical analysis] Radiokhimicheskii analiz. Moskva,
Izd-vo AN SSSR, 1963. 219 p. (MIRA 16:12)
(Radiochemistry)

BARANOV, V.I., red.; KARUS, Ye.V., red.; KUZNETSOV, I.V., red.;
TIKHOMIROV, V.V., red.; TRUSOV, Yu.P., red.; SHCHERBAKOV,
D.I., red.; KONDAKOV, N.I., red.; MATYUKHINA, L.I., tekhn.red.

[Interaction of the sciences in the study of the earth]
Vzaimodeistvie nauk pri izuchenii zemli. Moskva, Izd-vo
AN SSSR, 1963 323 p. (MIRA 16:11)
(Geophysics)

VINGRADOV, A.P., akademik, otv. red.; BARANOV, V.I., red.; BARSUKOV,
V.L., red.; BEUS, A.A., red.; VALYASHKO, M.G., red.;
GERASIMOVSKIY, V.I., red.; KORZHINSKIY, D.S., red.; RONGV,
A.B., red.; TUGARINOV, A.I., red.; KHITAROV, N.I., red.;
SHCHERBINA, V.V., red.; TARASOV, I.S., red. izd-va; DOROKHINA,
I.N., tekhn. red.

[Chemistry of the earth's crust] Khimiia zemnoi kory; trudy.
Moskva, Izd-vo Akad.nauk. Vol.1. 1963. 430 p. (MIRA 16:3)

1. Geokhimicheskaya konferentsiya, posvyashchennaya stoletiyu
so dnya rozhdeniya akademika V.I.Vernadskogo, Moscow, 1963.
(Geochemistry)

BARANOV, V.I.; SERDYUKOVA, A.S.; GORBUSHINA, L.V.; NAZAROV, I.M.;
YEFIMKINA, Z.N.; PANASENKOVA, Ye.I., red.

[Laboratory work and problems in radiometry] Laboratornye
raboty i zadachi po radiometrii. Moskva, Atomizdat, 1964.
307 p. (MIRA 17:5)

AFANAS'YEV, G.D., otv. red.; BARANOV, V.I., prof., zam. otv. red.;
SHCHERBAKOV, D.I., akademik, red.; POLEANOV, A.A., akademik
red.[deceased]; STARIK, I.Ye., redaktor ;
VINOGRADOV, A.F., akademik, red.; GERLING, E.K., prof.,
red.; PEKARSKAYA, T.B., kand. geol.-miner. nauk, red.;
BORSUK, A.M., red.izd-va; SIMKINA, G.S., tekhn. red.

[Transactions of the 11th session of the Commission on the
Determination of the Absolute Age of Geological Formations,
May 12-27, 1963] Trudy odinnadtsatoi sessii...; 12-27 maia
1963 g. Moskva, Izd-vo AN SSSR, 1963. 390 p.
(MIRA 17:4)

1. Akademiya nauk SSSR. Komissiya po opredeleniyu absolyut-
nogo vozrasta geologicheskikh formatsiy. 2. Chlen-korrespon-
dent AN SSSR (for Afanas'yev, Starik).

BARANOV, V.I.; MOROZOVA, N.G.; KUNASHEVA, K.G.; GRIGOR'YEV, G.I.

Geochemistry of some natural radioactive elements in soils. Pochvo-
vedenie no.8:11-20 Ag '63. (MIRA 16:9)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo.

BARANOV, V.I., prof.

A conference on geological time held at Moscow. Vest. AN SSSR
33 no.9:89-90 S '63. (MIRA 16:9)
(Geological time)

BARANOV, V. I.; PAVLOTSKAYA, F. I.; TYURYUKANOVA, E. B.; et al

"Some Regularities of the Distribution and Migration of Radioactive Elements in the Soil Stratum."

report submitted for 2nd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug- 9 Sep 64.

BARANOV, V.I., doktor fiz.-matem. nauk, otv. red.; KHITROV, L.M.,
red.

[Radioactive contamination of seas and oceans] Radioak-
tivnaia zagriaznennost' morei i okeanov. Moskva, Izd-vo
"Nauka," 1964. 223 p. (MIRA 17:5)

1. Akaderiya nauk SSSR. Okeanograficheskaya komissiya.
2. Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo AN SSSR (for Baranov, Khitrov).

BARANOV, V.I.; KHRISTIANOV, V.K.; KARASEV, B.V.; PANOV, G.I.

Neutron-boronometric sampling of outcrops and mine workings.

Izv. AN SSSR. Ser. geofiz. no.3:349-353 Mr '64.

(MIRA 17:3)

1. Institut geokhimii i analiticheskoy khimii im. V.I.
Vernadskogo AN SSSR.

VEINAMANN, M. (ed.) *Travertin*. (Leningrad, 1954). 112 pp., 1000 rub.

[Chemical structure of the asph's kerogen and its surroundings] *Khimicheskoe stroenie i svoystva kerogenov*. Moskva, Nauka, 1971. 100 pp. (1971)

L 48994-65 EWT(m)/EWP(b)/EWP(t) Feb DIAAP/IJP(c) JD

ACCESSION NR: AP5014016

UR/0089/65/018/003/0246/0250 26
8

AUTHOR: Baranov, V. I.; Pavlotskaya, F. I.; Fedoseyev, G. A.; Tyuryukanova, E. B.;
Rodionova, L. M.; Babicheva, Ye. V.; Zatssepina, L. N.; Vostokova, T. A.

TITLE: Distribution of Sr^{90} over the ground layer in Soviet Union from 1959-1960

SOURCE: Atomnaya energiya, v. 18, no. 3, 1965, 246-250

TOPIC TAGS: strontium, isotope, soil, soil property

ABSTRACT: Data are given on the distribution of Sr^{90} in the Soviet Union during 1959-60. Observations indicated the tendency of Sr^{90} to latitudinal distribution with maximum concentration at 50 to 30° latitude. The mean content of Sr^{90} in the upper layer of the soil (5 and 15 cm in depth) was 14.1 and 17.8 $\mu C/km^3$ respectively. The amount of Sr^{90} in the soil did not increase during 1960. The migration of Sr^{90} in soil layer depends mainly on the terrain and geochemical conditions. Orig. art. has 2 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 06Feb64

ENCL: 00

SUB CODE: NP, ES

NO REF SOV: 006

OTHER: 014

NA

Card 1/1 MB

BARANOV, V.I.; BARANOV, V.I.; IVAN, Ya. V.; KULIKOV, G.K.;
SIRKOV, Yu. A.; *Neutron methods of research and analysis of boron*

[Neutron methods of research and analysis of boron
containing raw materials] Neutronnye metody i
analiza bournogo syr'ya [by V.I. Baranov i dr.]. Moskva:
Izd-vo "Nauka," 1974. 107 p. (MIRA 10-1)

ACCESSION NR: AP4030336

S/0049/64/000/003/0349/0353

AUTHORS: Baranov, V. I.; Khristianov, V. K.; Karasev, B. V.; Panov, G. I.

TITLE: Measuring boron by the neutron method in outcrops and mine workings

SOURCE: AN SSSR. Izv. Ser. geofiz., no. 3, 1964, 349-353

TOPIC TAGS: boron, neutron sonde, neutron logging, SNMO 5 counter

ABSTRACT: The authors describe a portable instrument used for boron detection and measurement by neutron bombardment and furnish results of field tests. To make the instrument portable it was necessary to reduce the weight of current devices and, consequently, to reduce the power of the neutron source. The neutron retarder and reflector were combined in a single block. Sondes near the inversion value were employed, and this required a minimal length of 40 cm. Shorter sondes were too insensitive. The first instrument constructed weighed 16.5 kg and was tested in the field in 1960. A later model, tested for the present study, weighs but 8 kg. The instrument has three parts: 1) a retarder-reflector of 5-liter capacity, immersed in water; 2) a cassette with two SNMO-5 counters in a P-shaped boron-cadmium shield; and 3) a panel with amplifier, discriminator, transmitter,

Card 1/2

ACCESSION NR: AP4030336

actuator, generator, and rate counter. Sensitivity was found to be 0.01% B_2O_3 for a 10% decline in counter rate. Results on surface rocks and in mine workings show the instrument to be satisfactory for rapid determination of boron mineralization without selection of rock samples. Results of profiling and of laboratory tests on the areas investigated are in good agreement. The instrument is suitable for exposed or slightly covered rocks. Either continuous or isolated readings may be made, and work may be carried out rapidly, permitting large areas to be covered quickly. Orig. art. has: 4 figures.

ASSOCIATION: Akademiya nauk SSSR Institute geokhimi i analiticheskoy khimii im. V. I. Vernadskogo (Academy of Sciences SSSR, Institute of Geochemistry and Analytical Chemistry)

SUBMITTED: 17Jul62

DATE ACQ: 29Apr64

ENCL: 00

SUB CODE: ES

NO REF SOV: 002

OTHER: 000

Card 2/2

L 61469-65 EWT(m) Feb DIAAP DM

ACCESSION NR: AF5020188

UR/0089/65/018/005/0503/0506

AUTHOR: Baranov, V. I.; Vilenskiy, V. D.

TITLE: Content of ²¹⁰Pb in the atmosphere and in atmospheric precipitations

SOURCE: Atomnaya energiya, v. 18, no. 5, 1965, 503-506

TOPIC TAGS: lead, radioactive fallout, troposphere, atmospheric radioactivity, radioisotope, atmospheric precipitation

ABSTRACT: Data are presented on the ²¹⁰Pb fallout in the Moscow region in 1961-1963. The mean ²¹⁰Pb concentration in the fallout was not related to the amount of precipitation and increased sharply only during drought periods. The intensity of ²¹⁰Pb fallout was practically static during spring, summer, and autumn and reduced by a factor of 2 to 2.5 during winter. The mean concentration of ²¹⁰Pb does not depend on the season. The mean yearly ²¹⁰Pb fallout intensity is ~2.8 nC/m³. The concentration of ²¹⁰Pb in the air over the Pacific and Indian Oceans fluctuated from (0.1 to 16.0) x 10⁻³ nC/m³. Variations in ²¹⁰Pb concentration in air over the ground and

Card 1/2

L 61469-65

ACCESSION NR: AP5020188

and the ocean could be used for studying meteorological factors inducing the transfer of radioisotopes in the troposphere and their fallout on the earth's surface.
Orig. art. has: 3 graphs, 2 tables.

ASSOCIATION: none

SUBMITTED: 14Aug63

ENCL: 00

SUB CODE: ES, NP

NR REF SOV: 004

OTHER: 002

NA

Card

9/2

ACC NR: AP6033173

SOURCE CODE: UR/0033/66/043/005/1074/1080

AUTHOR: Baranov, V. I.

ORG: none

TITLE: Age of the Earth, heavy elements, and meteorites

SOURCE: Astronomicheskii zhurnal, v. 43, no. 5, 1966, 1074-1080

TOPIC TAGS: meteorite, radioactive decay, earth, heavy elements, earth age, absolute age, uranium isotope, lead isotope

ABSTRACT: Results obtained on the absolute age of the Earth, the chemical elements, and meteorites, using radioactive decay methods, are discussed. The value of $4.5 \cdot 10^9$ years for the age of the Earth and the meteorites is considered accurate if it is assumed that both were formed at the same time and from the same protoplanetary material through the process of differentiation. The upper limit of the Earth's age is found to correspond to that of the heavy chemical elements; this was computed by comparing the present and initial ratios of uranium isotopes U^{235}/U^{238} . The initial ratio, estimated empirically, was found to be equal to not more than 1.64; this corresponds to a uranium age of $6.6 \cdot 10^9$

Card 1/2

UDC: 523.231

Card 010

BARANOV, V.I.; PAVLOTSKAYA, F.I.; FEDOSEYEV, G.A.; TYURYUKANOVA, E.B.;
RODIONOVA, L.M.; BABICHEVA, Ye.V.; ZATSEPINA, L.N.; VOSTOKOVA, T.A.;
Prinimali uchastiye: YEMEL'YANOV, V.V.; BELYAYENA, L.I.; LEVKINA, N.I.;
MOLCHANOVA, I.V.

Distribution of Sr⁹⁰ on the surface horizon of soils of the Soviet
Union during 1959-1960. Atom. energ. 18 no.3:246-250 Mr '65.
(MIRA 18:3)

BARANOV, V.I.; MORGEOVA, N.G.

Short-living radon disintegration products in atmospheric
precipitation. Meteor. issl. no.9:182-20. '66.
(MIRA 19:1)

ACC NR: AP6033173

SOURCE CODE: UR/0033/66/043/005/1074/1080

AUTHOR: Baranov, V. I.

ORG: none

TITLE: Age of the Earth, heavy elements, and meteorites

SOURCE: Astronomicheskii zhurnal, v. 43, no. 5, 1966, 1074-1080

TOPIC TAGS: meteorite, radioactive decay, earth, heavy elements, earth age, absolute age, uranium isotope, lead isotope

ABSTRACT: Results obtained on the absolute age of the Earth, the chemical elements, and meteorites, using radioactive decay methods, are discussed. The value of $4.5 \cdot 10^9$ years for the age of the Earth and the meteorites is considered accurate if it is assumed that both were formed at the same time and from the same protoplanetary material through the process of differentiation. The upper limit of the Earth's age is found to correspond to that of the heavy chemical elements; this was computed by comparing the present and initial ratios of uranium isotopes U^{235}/U^{238} . The initial ratio, estimated empirically, was found to be equal to not more than 1.64; this corresponds to a uranium age of $6.6 \cdot 10^9$

Card 1/2

UDC: 523.231

ACC NR: AP6033173

years. The upper limit of the age of the Earth's crust is estimated as the time necessary for radiogenic lead isotopes to reach their present concentration in the Earth's crust. This time depends on the lead-to-uranium ratio, which if taken as 33 (based on estimated abyssal rock age) indicates $7.5 \cdot 10^9$ years to be the upper limit of the age of the Earth's crust. Recent estimates of $6 \cdot 10^9$ years and over, therefore, for terrestrial rocks and meteorites are not considered unreasonable. Orig. art. has: 2 figures. [Author's abstract] [SP]

SUB CODE: 08/ SUBM DATE: 11Jan66/ ORIG REF: 006/ OTH REF: 001/

Card 2/2

BAFANOV, V.I., prof. (Moscow)

Great scientist; the 70th birthday of Academician A.M. Vinogradov.
Priroda 54 no.11:114-116 1968. (MIRA 18:11)

BARMAN, V.F.

BARMAN, V.F. "Pactisticheskiy Sbornik" (Sbornik Svedeniya). (Opisaniye
vospriyatelnosti k raznoobraznyim razvidam). Gruz. Izd. No. 30. 1971. 112 stranits.
opublikirovano, 1971. 112 s.

"Literaturny": p. 117-118.

Gruz. in English.

(Gruz. Sbornik a. Na cheloveka opytatsya razvidit' a. opytatsya razvidit'. Gruz. Izd. No. 30.
1 : 117-118)

OO: LA, Soviet Consulate, 1000 17th St. N.W. Washington, D.C.

BARANOV, V.I., professor; ARBUZOV, A.Ye., akademik, glavnyy redaktor; LIVANOV, N.A., professor, otvetstvennyy redaktor; BASSTRIGIN, M.A., tekhnicheskiy redaktor.

[Kuligash] Kuligash. Izd-vo Kazanskogo filiala Akademii nauk SSSR, 1948. 72 p. (Akademiya nauk SSSR. Kazanskiy filial, Kazan. Trudy. Seriya biologicheskikh i sel'skokhoziaistvennykh nauk, no.1)

(MLRA 10:2)

(Aktanysh District--Swamps)

BARANOV, V.I.
25440

Novye Makhrovki Eliotsenovoy Flory V Volzhskokamskoy Gora. Botan. Zhurnal, 1948,
No. 1, s. 90-92

SO: LETOPIS NO. 30, 1948

BARANOV, V.I.

[Faint, illegible text]

Forest history of the Volga-Kama region. Izv.Kazan.fil.AN SSSR.Ser.
biol.i sel'khoz.nauk no.1:37-61 '49. (MLRA 10:2)
(Volga Valley--Trees, Fossil)

BARANOV, V. I.
VINOGRADOV, A. P.

Preparation of the products of reduction of carbon dioxide, labelled with carbon 14 , by the chloroplasts outside a cell. A. P. Vinogradov, E. A. Boichenko, and V. I. Baranov, *Doklady Akad. Nauk S.S.S.R.* 78, 327-9(1951); cf. C.A. 44, 7937h.- Chloroplasts from white clover or primula, isolated from the cells, were examd. in CO_2 labelled with C^{14} in the presence of $2\% O$ by manometric technique. Control expts. with boiled chloroplasts gave no C^{14} activity in the exts., but active chloroplasts gave significant activity,^A and almost all activity was pptd. by Ba as a complex, which contains 0.6% P and is free of N, consisting largely of carbo-hydrate-like materials, giving uronic acid reaction, and other carboxylic acids. The latter increase in proportion on cloudy days, the former predominate in specimens taken on sunny days. In prolonged expts. some 70% of the retained C^{14} is extractable with EtOH, in the ketose fractions. Thus, the process of reduction proceeds via carboxylic acids which do not reduce Cu, then uronic acids, then ketoses.

G. M. Kosolapoff

BARANOV, V.I., professor; KIMBERG, V.A.: redaktor; KRASHENINNIKOVA, V.F.
rekhnicheskiy redaktor.

[What the Kamyshin sandstones and the Yargeni Hills sand tell us;
the history of vegetation in the lower Volga Valley] O chem
govoriat peschaniki Kamyshina i peski Ergenei; k istorii rastitel'-
nosti Nizhnego Povolozh'ia. Stalingrad, Oblastnoe knigoizdatel'stvo
1952. 46 p. (MLRA 8:8)
(Volga Valley--Paleontology)

BARANOV, V.I.; VASIL'YEVA, I.M.

On the way to the utilization and reorganization of the vegetation
resources of the Tatar A.S.S.R. Izv.Kazan.fil.AN SSSR. Ser.biol.1
sel'khoz.nauk no.3:23-48 '52. (MLBA 10:2)
(Tatar A.S.S.R.--Botany, Economic)

BARANOV, V. I.

"Steps in the Development of Flora and Vegetation of the USSR During the Tertiary Period," Reviewed by A. Khrishtofovich, Bot. Zhur., 37, No.4, 1952.

BARANOV, V.I.

BARANOV, V. I.

New fossil flora from ferruginous sandstone of the Yergeni series
discovered by V.A.Nikolaev. Izv.Kazan.fil.AN SSSR. Ser.geol.nauk
no.2:27-36 '54. (MLRA 8:11)
(Stalingrad Province--Paleobotany)

BARANOV, V.I. (Kazan')

History of flora in the works of Kazan botanists. Uch.zap.Kaz.un.
115 no.10:70 '55. (MLRA 10:5)
(Kazan--Botanical research)

BARANOV, V.I.; MOKSHINA, O.M.

~~BARANOV, V.I.; MOKSHINA, O.M.~~
New species of the Paleocene flora of Kamyshin. Uch.zap.Kaz.un.
116 no.1:183-185 '55. (MLRA 10:5)

1.Kafedra sistematiki rasteniy.
(Kamyshin district--Trees, Fossil)

BARANOV, V.I.

"Middle Miocene flora of Zalescy near Wisniowiec" [in Polish]. Hanna
Czeczottowa. Reviewed by V.I. Baranov. Bot. zhur. 41 no. 2: 280-281 F '56.
(MLRA 9:7)

1. Kazanskiy gosudarstvennyy universitet.
(Vishnevetskiy rayon--Paleobotany) (Czeczottowa, Hanna)

BARANOV, V.I.; NIKOLAYEVA, O.G.

Fossil wood from the Upper Cretaceous deposits of the Yenisei Ridge. Dokl.AN SSSR 107 no.1:125-127 Mr '56. (MLRA 9:7)

1.Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina. Predstavleno akademikom V.N.Sukachevym.
(Yenisei Ridge--Trees, Fossil)

BARANOV, V.I., professor.

Developmental stages of the flora and vegetation of the U.S.S.R.
in the Tertiary period. Pt.4: New materials on Tertiary flora.
Indexes of plant and animal names mentioned in the text. Uch.
zap.Kaz.un. 116 no.10:5-47 '56. (MLRA 10:3)
(Paleobotany, Stratigraphic)

BARANOV, V. I.

ALEKSEYEV, Aleksey Mikhaylovich; GUSEV, Nikolay Alekseyevich; BARANOV, V. I.,
doktor biologicheskikh nauk, otvetstvennyy redaktor; MAKAROVA, O. V.,
redaktor izdatel'stva; POLYAKOVA, T. V., tekhnicheskiiy redaktor

[Effect of mineral nourishment on the water balance of plants]
Vliianie mineral'nogo pitaniia na vodnyi rastenii. Moskva, Izd-vo
Akad.nauk SSSR, 1957. 223 p. (MLRA 10:8)
(Plants, Effect of minerals on)

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Photography and drawing in a botanist's work. Bot.zhur. 44
no.8:1117-1119 Ag '59. (MIRA 13:2)

1. Kazanskiy gosudarstvennyy universitet im. V.I.Ul'yanova-
Lenina.

(Botanical research)

BARANOV, V.I.; MIKHAYLOVA, L.N.

Palynological characteristics of Pliocene sediments of the
Ik River in Menzelinsk District, Tatar A.S.S.R. Uch. zap. Kaz.
un. 117 no.9:223-226 '57. (MIRA 13:1)

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Lenina. Kafedra sistematiki rasteniy.
(Ik Valley--Pollen, Fossil)

BARANOV, Vladimir Isaakiyevich, prof.; YAKUBOVSKAYA, T.A., red.;
SIDOROVA, V.I., red.izd-va; GRIGORCHUK, L.A., tekhn.red.

[Stages of the development of Tertiary flora and vegetation
in the U.S.S.R.] Etapy razvitiia flory i rastitel'nosti v
tretichnom periode na territorii SSSR. Moskva, Gos.izd-vo
"Vysshiaia shkola," 1959. 363 p. (MIRA 13:4)
(Paleobotany, Stratigraphic)

ARISKINA, Nina Petrovna; BARANOV, V.I., prof., red.; GAYFULLIN, Sh.A., red.; SEMENOV, Yu.P., tekh. red.

[Sedges of the Tatar A.S.S.R. (classification key)] Osoki Tatarskoi ASSR (opredelitei'); posobie dlia studentov universitetov, pedagogicheskikh i sel'skokhoziaistvennykh institutov, uchitelei i kraevedov-liubitelei. Kazan', Izd-vo Kazanskogo univ., 1961. 50 p.

(MIRA 15:6)

(Tatar A.S.S.R.—Sedges)

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New developments in the determination of absolute age.

Vest. AN SSSR 31 no.4:119-120 Ap '61.

(MIRA 14:4)

(Geological time)

ERSEN, V.I.; YATAYEV, L.M.

Recent find of upper Oligocene flora in western Kazakhstan.
Dokl. AN SSSR 136 no. 3:678-679 Jan '61. (MIRA 1:2)

1. Kazanskiy gosudarstvennyy universitet imeni V.I. Ul'yanova-Lenina. Predstavleno akademikom V.I. Gakhovym.
(Kustanay Province—Palaebotany, Stratigraphic)

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Development of flora and vegetation during the Kinel' time in the
lower Kama Valley. Probl. bot. 6:18-26 '62. (MIRA 16:5)
(Kama Valley--Paleobotany, Stratigraphic)

BARANOV, V.I.

Studies on paleofloristics and microphylogeny at the Department of
Plant Classification of the Kazan State University. Bot.zhur. 49
no.10:1524-1527 0 '64. (MIRA 18:1)

1. Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yancva-Lenina.

L 25798-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Fe-5 DD/MLK 31
ACCESSION NR: AT5003085 S/0000/64/000/000/0048/0059 24

AUTHOR: Gyurdzhian, A. A.; Apanasenko, Z. I.; Baranov, V. I.; Kuznetsova, M. A.;
Radkevich, L. A. BT 1

TITLE: Effects of prolonged accelerations on the growth of the organism and the
functional condition of certain systems

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye ioniziruyushchikh izlu-
cheniy i dinamicheskikh faktorov na funktsii tsentral'noy nervnoy sistemy; voprosy
kosmicheskoy fiziologii (Effect of ionizing radiation and dynamic factors on the
function of the central nervous system; problems in space physiology). Moscow, Izd-
vo Nauka, 1964, 48-59

TOPIC TAGS: prolonged acceleration, chronic acceleration, acceleration effect, or-
ganism growth, vestibular effect, defensive reflex, rat

ABSTRACT: Half litters of white laboratory rats with their mothers were subjected
to accelerations of 2 to 3 G for 4 or 5 hr per day (except Sundays) from the age of
2 to 6 days until the age of 2 to 3 months. The other halves of the litters, placed
with foster mothers, served as controls. In all cases the weight of the experi-
mental animals was found to be less than that of the controls. Motor activity was

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ACCESSION NR: AT5003085

higher in the experimental rats during special test rotation than in the control group. When 15 of the animals were subjected to lethal doses of acceleration (LD₅₀, 20 to 25 G for 5 min), no substantial difference was discerned in the effects on experimental and control animals. The effects of acceleration on the vestibular organ were measured by the bioelectric activity of the hind leg muscles. It was found that excitability of the vestibular organ diminished, the latent period was longer, while the duration of the aftereffect was shorter. The bioelectric activity of skeletal muscles in a state of rest was lower in the experimental animals than in the controls. The latent period of the unconditioned defense reflex was longer in the experimental rats than in the controls when the reflex was evoked by a weaker stimulus, and shorter in the experimental rats than in the controls when medium and strong stimuli were used. The pattern of the development of the vestibular and unconditioned reflexes indicates that compensatory adaptation of the voluntary nervous system to environmental conditions occurs in animals raised under conditions of chronic acceleration. Orig. art. has: 9 figures. [BM]

ASSOCIATION: none

SUBMITTED: 08Sep64

ENCL: 00

SUB CODE: PH, 15

NO REF SOV: 000
Card 2/2

OTHER: 000

ATD PRESS: 3183

REKOV, V.I. - BELIKOVA, I.A.

1. V.I. bottom sediments in the Pacific Ocean. Geokhimiya no.3:
277-290. Nr 165. (MIRA 18:7)

2. V.I. Vernadsky Institute of Geochemistry and Analytical
Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

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71120

S/216/62/000/006/002/002
A004/A127

AUTHORS: Gazenko, O.G., Limanskiy, Yu.P., Razumeyev, A.N., Izosimov, G.V.,
Baranov, V.I., Chichkin, V.A., Gaydamakin, N.A.

TITLE: Method of registering the action potentials of neurons of vestibular
nuclei upon adequate stimulation of vestibular receptors in the cat

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya biologicheskaya, no. 6,
1962, 925 - 928

TEXT: The studies carried out were aimed at registering the action poten-
tials of individual neurons of vestibular nuclei, particularly of the Deuters nu-
cleus, during a motionless position of the animal and the reaction of these neu-
rons on a stimulation of the vestibular apparatus during a vertical passive dis-
placement of the animal. The tests were conducted on 17 cats on which action po-
tentials of more than 500 neurons in the area of vestibular nuclei were regis-
tered. The authors describe the test conditions and the special test stand on
which the animals were placed. The data obtained are being analyzed at present.
Of the action potentials of 500 neurons registered, 6 groups of nerve cells were

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Method of registering the action potentials of

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A004/A127

separated, which were grouped according to the following symptoms: 1) Increase in the background rhythm in stimulating the receptors - 439 cells; 2) slowing down of the background rhythm - 20; 3) increase in the background rhythm when moving the platform downwards - 14; 4) increase in the background rhythm when moving the platform upwards - 7; 5) neurons detecting the restoration of the background rhythm after motion sickness - 70; 6) neurons not detecting the restoration of the background rhythm in the period after motion sickness - 397. 51 neurons did not show any response to the stimulation of receptors. There are 2 figures.

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ACCESSION NR: AT4042653

S/0000/63/000/000/0056/0060

AUTHOR: Baranov, V. I.; Gyurdzhian, A. A.; Lomova, M. A.; Radkevich, L. A.; Tutochkina, L. T.; Fedorova, T. A.; Furayeva, L. P.; Khn'chev, S. S.; Artem'yeva, N. S.

TITLE: The effect of gravity on the development of organisms

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 56-60

TOPIC TAGS: gravity, centrifuge, organism development, physiological function, rat, chronic centrifugation, blood composition, urine composition, Coriolis acceleration

ABSTRACT: In this investigation, Baranov and his co-workers designed a centrifuge for small animals with an arm radius of 135 cm which could be regulated to produce artificial gravitational fields of from 4 to 5 g. The centrifuge was arranged in such a way that the arms and cages at the end of the arms would simultaneously rotate around their axes producing Coriolis accelerations. A single control panel

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regulated the photography and illumination of cage interiors, automatic feeding of the animals, and the revolving rate of the centrifuge. It was possible to record five separate physiological functions from some specially prepared animals. Experiments were conducted on white rats, commencing on the first day after birth and continuing for 25 days. Litters consisting of 200 animals were divided into experimental and control groups. All animals were born at approximately the same time. Experimental animals were subjected to accelerations ranging from 1.5 to 3 g for periods of from 4 to 6 hours, 6 days per week. The weighing of all animals took place every three days as did biochemical assays of the blood and urine, tests of vestibular activity, and the determination of the time of sexual maturity in female animals. At the termination of the experiment, a comparative test of the response of both experimental and control animals to brief accelerations of 5, 10 and 20 g was conducted. After 20--25 days, the body weight of chronically centrifuged animals was 60--80% that of the controls. The composition of erythrocytes (89.6%), leukocytes (93.4%), and hemoglobin (99.1%) in the blood of experimental animals with respect to control animals reflected a slightly anemic condition. While blood albumin in experimental animals was somewhat lower than in the controls, serum mucoid composition was higher, indicating a change of dystrophic character. Urine assays of experimental animals showed that the levels of Diche-positive substance (48%), nitrogen (62%), creatine (31%),

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