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NR REF SOV: 007 OTHER: 000

Card 3/3

GEL'FAND, I.M.; GRAYEV, M.I.

Finite-dimensional irreducible representations of a unitary and complete linear group and the special functions related to them. Izv. AN SSSR Ser. mat. 29 no. 6:1329-1356 '65
(MIRA 19:1)

1. Submitted December 28, 1964.

ACC NR: AP7003067 SOURCE CODE: UR/0020/66/168/006/1236/1238

GEL'FAND, I. M., (Corresponding Member, USSR Academy of Sciences); GRAYEV, M. I.; SHAPIRO, Z. Ya.

ORG: none

"Integral Geometry on Manifolds of k-Dimensional Planes"

Moscow, Doklady Akademii Nauk SSSR (Proceedings Acad. Sci. USSR), Vol. 168, No. 6, 1966, pp 1236-1238

TOPIC TAGS: function, geometry

Abstract: A set of k-dimensional planes of an n-dimensional complex space is examined, assuming that f(x) is an infinitely differentiable and rapidly decreasing function of the space. The equation

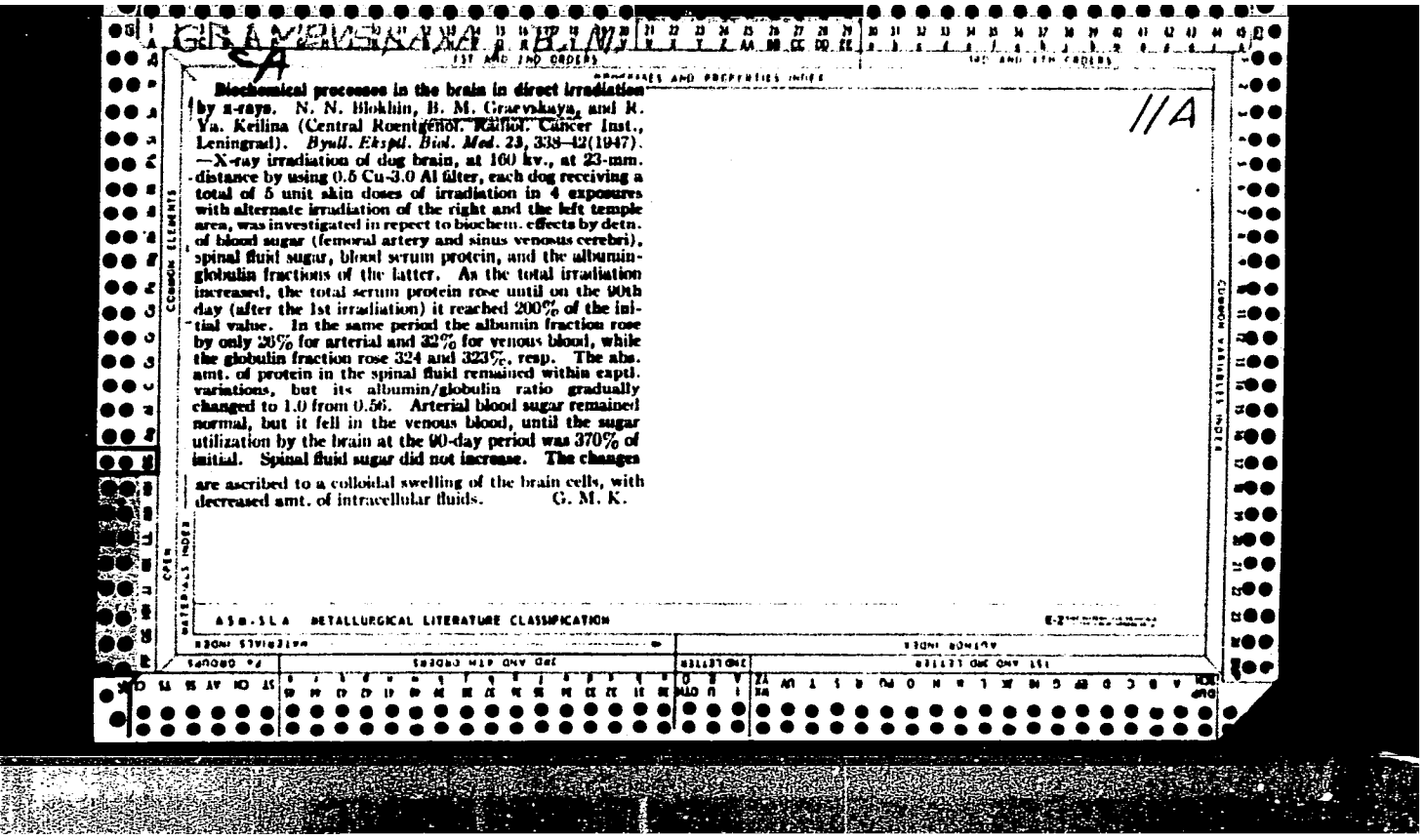
$$\varphi(h) = \int_h f(x)\, d\mu_h \qquad (1)$$

relates a certain function of plane $\varphi(h)$ to each function f(x). The purpose of the paper is to invert equation (1) and to define the class of functions on the set of planes that is determined by equation (1). An inverse equation is derived. Orig. art. has: 2 formulas. [JPRS: 39,008]

SUB CODE: 12 / SUBM DATE: 25Mar66 / ORIG REF: 002

UDC: 517.948.5

Card 1/1



Biochemical processes in the brain in direct irradiation by x-rays. N. N. Blokhin, B. M. Gracvskaya, and R. Ya. Keilina (Central Roentgenol. Radiol. Cancer Inst., Leningrad). *Byull. Eksptl. Biol. Med.* 23, 338–42(1947). —X-ray irradiation of dog brain, at 160 kv., at 23-mm. distance by using 0.5 Cu-3.0 Al filter, each dog receiving a total of 5 unit skin doses of irradiation in 4 exposures with alternate irradiation of the right and the left temple area, was investigated in repect to biochem. effects by detn. of blood sugar (femoral artery and sinus venosus cerebri), spinal fluid sugar, blood serum protein, and the albumin-globulin fractions of the latter. As the total irradiation increased, the total serum protein rose until on the 90th day (after the 1st irradiation) it reached 200% of the initial value. In the same period the albumin fraction rose by only 20% for arterial and 32% for venous blood, while the globulin fraction rose 324 and 323%, resp. The abs. amt. of protein in the spinal fluid remained within exptl. variations, but its albumin/globulin ratio gradually changed to 1.0 from 0.56. Arterial blood sugar remained normal, but it fell in the venous blood, until the sugar utilization by the brain at the 90-day period was 370% of initial. Spinal fluid sugar did not increase. The changes are ascribed to a colloidal swelling of the brain cells, with decreased amt. of intracellular fluids. G. M. K.

Grayevskaya, B.M.

BLOKHIN, N.N.; GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Biochemical functional test in certain forms of hypertension. (MIRA 11:4)
Vop.med.khim. 3:52-57 '51.

1. Otdel biokhimii TSentral'nogo rentgenologicheskogo, radiologicheskogo i rakovogo instituta, Leningrad.
(HYPERTENSION)

GRAYEVSKAYA, B.M.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Biological Chemistry

Some changes in protein metabolism in animal organism after local and general x-ray irradiation. B. M. Graevskaya (Central Roentgenol.-Radiol. Inst., Ministry Health, Moscow). *Vestnik Rentgenol. i Radiol.* 1953, No. 5, 9–14.—Local x-irradiation of either translocated kidney (1400-r. dosage) or seminal gland (40–150 r. dosage) in dogs, regardless of the mode of radiation (single or multiple exposures), led to certain definite metabolic changes. The dry matter of the blood (arterial and that flowing from the brain) drops for 5–7 days, then rises to normal level. Serum protein rises with a max. at 7–16 days, in the arterial blood; in the effluent blood from the brain a brief rise in serum protein is followed by a decline after 5–7 days. General irradiation (300–1000 r. dose) was tried, but animals with 1000 r. dosage died and the results were estd. from specimens receiving lower dosage. After 48 hrs. there is a rise of total N in the blood remaining at high level for 50 days; usually the N of the venous blood is more affected than that of arterial blood, indicating protein breakdown in the muscle tissues. At 300 r. dosage the protein level drops to normal in 25 days; at 500 r. dosage a brief drop in residual N is observed, followed by a rise with a max. at 25 days, returning to normal in 50 days. If the animal is irradiated with screening of the head, the urea level rises in 1–2 days by 300%, remains high for 20–1 days, then slowly returns to normal. The total solids of the blood also rise and do not return to normal for nearly 100 days. The ash content of the blood declines, then rises to supernormal limits and continues to rise even after 100 days. A 1000-r. dosage (lethal after 50 days) causes a drop in total N after 25 days, followed by a rise to normal level by the 50th day when death ensues. Urea declines at first, slightly, and the decline persists for 24 days, and is followed by a slow rise. G. M. Kosolapoff

GRAYEVSKAYA, B. M.

USSR/Medicine - Radiation Effects Nov/Dec 53

"Effects of Aneurin (Vitamin B_1) on the Glycogen Formation Function of Liver of Rats During General Exposure to Various Doses of X-Rays," B. M. Grayevskaya, R. Ya. Keylina, and S. E. Manoylov, Dept of Biochem, Central Roentgenologic and Cancer Inst, Min of Health USSR

Vest Rentgen i Radiol, No 6, pp 22-25

Expts conducted on 15 rats showed that the glycogen formation function of the liver may be partially restored if vitamin B_1 is given after rats have been exposed to X-rays. Enough evidence was collected to justify the assumption that the quality of biochem changes in the organism of rats depends upon the extent of exposure to X-rays: small doses (500 r) of X-rays suppress the oxidation systems of the whole organism: larger doses (1,000 and 2,000 r) also cause breakdown of the substances that oxidize. It is possible that interference with the synthesis of the dehydrogenase coenzyme takes place and that vitamin B_1 loses its capacity to combine with phosphoric acid. This follows from a reduction of the restorative effect of vitamin B_1 on the liver.

275T31

GRAYEVSKAYA, B. M.

"Concerning the Problems of the Comparative Evaluation of the Effect of Gamma-Radiation of Radioactive Cobalt and Roentgen Rays on Certain Aspects of Protein Metabolism of the Liver of Rats," by B. M. Grayevskaya, Lechebnoye Primeneniye Radioaktivnogo Kobalta (Therapeutic Use of Radioactive Cobalt), Moscow, Medgiz, 1955, pp 36-37 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 16, 25 Aug 56, Abstract No 15779)

It was proved that total irradiation of rats by 500 r decreases the activity of proteinases (rise of NH_2 - N after 4-hour incubation at 37° C and pH 4), by 60% after 2 days' incubation of the homogenate, and by 35% after 4 days of incubation, as compared with the nonirradiated controls.

The same dose of gamma rays of Co^{60} activated autolysis by 22% in 2 days and 73% in 4 days.

Sum 1258

GRAYEVSKAYA, B.M.; KONONENKO, A.M.; MANOYLOV, S.E.

Distribution of radium in the body of a rat and its excretion rate.
Vest.rent. i rad. no.2:10-16 Mr-Ap '55. (MLRA 8:5)

1. Iz biokhimicheskogo otdeleniya (zav.--prof. S.Ye.Manoylov) i radiologicheskogo otdeleniya (zav. A.A.Bashilov) Tsentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta (dir.--prof. M.N.Pobedinskiy) Ministerstva zdravookhraneniya SSSR.
(RADIUM, metabolism,
distribution & excretion rate in rats)

GRAEVSKAYA, B. M.

GRAEVSKAYA, B. M.

Alterations in carbohydrate metabolism after x-ray irradiation of total animal organism. B. M. Graevskaya and R. Ya. Kellina. *Vestnik Rentgenol. i Radiol.* 1955, No. 4, 21-6.—Total-animal (dogs) irradiation causes disturbed liver function and disturbed responses to adrenaline and glucose. At sublethal (300-500 r.) and lethal (1000 r.) doses the glycemic curves after treatment with adrenaline and glucose are different: in the 1st instance they have shallow slopes with a hyperglycemic coeff. 1.1-1.2, while in the 2nd instance they have the diabetic character (coeff. 2.67-2.89). After such irradiation, there is at first a considerable drop of sugar utilization by the brain, while in later stages there occurs an actual elimination of sugar by the brain as found in the outflowing blood, which is never observed in normal animals. At the low-dose level the animals combat the injury and are restored in some 4 days; at high levels of irradiation the process is irreversible and the glycogen-forming function of the liver is impaired for life.

G. M. Kosolapoff

GRAYEVSKAYA, B. M.

Chronic action of radium salts on the animal organism. S. E. Manollov, B. M. Graevskaya, and K. B. Shimanovskaya (Central Sci. Research Roentgen-Radiol. Inst., Ministry Health U.S.S.R., Moscow). *Vestnik Rentgenol. i Radiol.* 1955, No. 6, 43-9.—Parenteral introduction of $RaBr_2$ at 10^{-4} c. dosage caused 100% mortality in rats, with characteristics of radiation sickness being evident. At 2×10^{-5} c. dosage, no mortalities took place, and intermediate doses gave corresponding expected results. P^{32} at 1.75×10^{-4} c. or higher dose is 100% lethal in 9-15 days. Sublethal and intermediate doses of $RaBr_2$ tend to produce increased levels of liver glycogen. Proteolytic activity of liver tissue at moderate exposure to $RaBr_2$ declines at first, then rises after some 44 days to 150% of normal. At high doses of P^{32} the liver glycogen drops markedly in 2-3 days; very high doses cause a very abrupt and severe drop. The proteolytic activity of the liver is only slightly affected by low doses and is lowered by high doses of P^{32}. Introduction of $RaBr_2$ (2×10^{-4} c.) into the bone cavity of a rat gave inconclusive results, but in a rabbit after some 15 months it was shown that a bone sarcoma had developed, with considerable metastasis. G. M. Kosolapoff

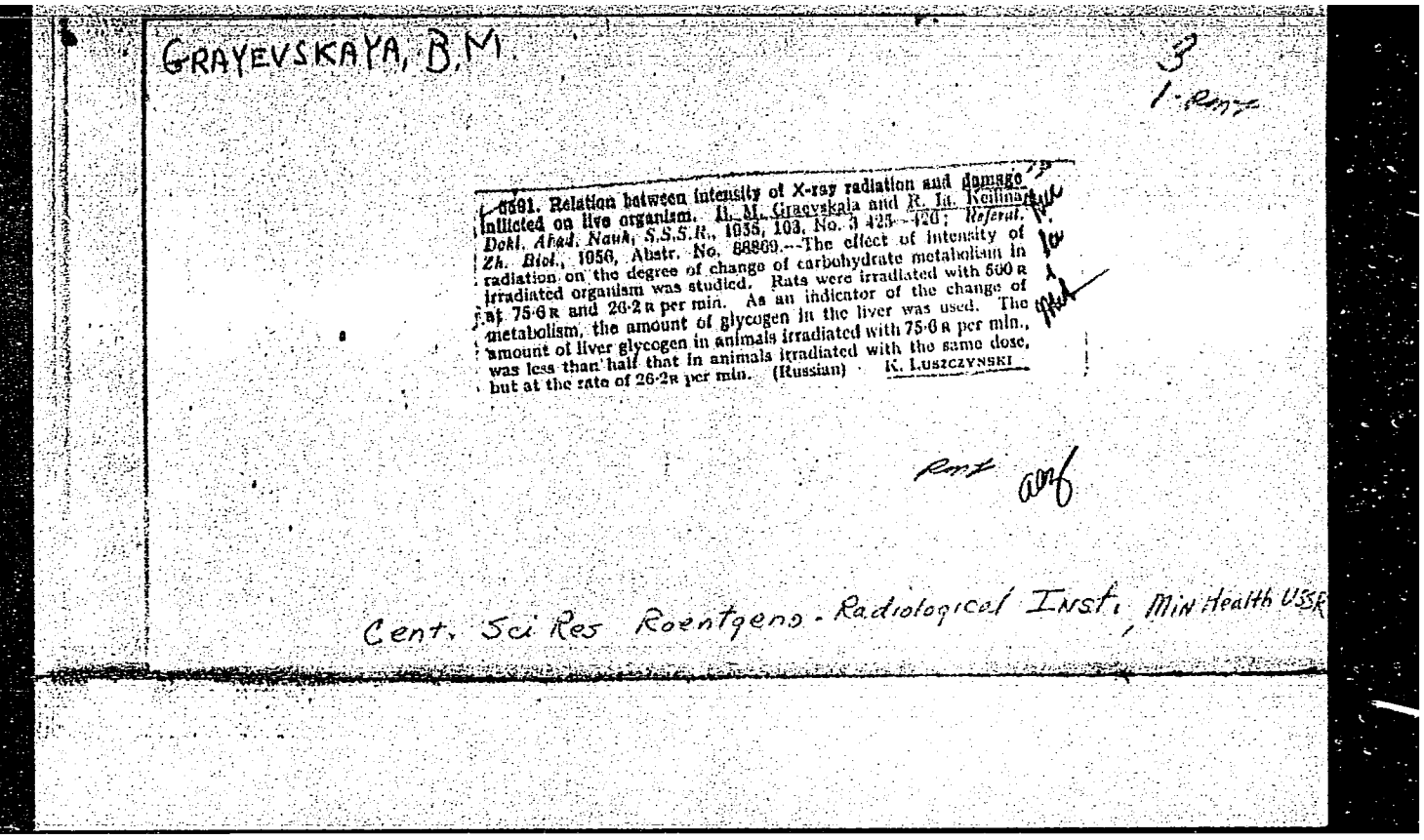
Dept. Biochem. & MD 2nd Diagnostic Clinic

(2)

GRAYEVSKAYA, B.M.

Action of ionizing radiation on certain phases of carbohydrate exchange in animal organism. B. M. Graevskaya and R. Ya. Kellina. *Uspekhi Sovremennoi Biol.* 40, "30-8 (1955).—A review with 67 references. J. A. Stekol

MD (62)



GRAYEVSKAYA, B.M.

3
1 Rpt

6591. Relation between intensity of X-ray radiation and damage inflicted on live organism. B. M. Graevskaia and R. Ia. Veilinan. *Dokl. Akad. Nauk, S.S.S.R.*, 1955, 103, No. 3 425–426; *Referat. Zh. Biol.*, 1956, Abstr. No. 68869.—The effect of intensity of radiation on the degree of change of carbohydrate metabolism in irradiated organism was studied. Rats were irradiated with 500 R at 75·6 R and 26·2 R per min. As an indicator of the change of metabolism, the amount of glycogen in the liver was used. The amount of liver glycogen in animals irradiated with 75·6 R per min., was less than half that in animals irradiated with the same dose, but at the rate of 26·2 R per min. (Russian) K. Luszczynski

Cent. Sci Res Roentgeno-Radiological Inst, Min Health USSR

GRAYEVSKAYA, B.M., KEYLINA, R. YA.

"Change of Carbohydrate Metabolism Due to Total Irradiation of an Animal Organism by X Rays," by B. M. Grayevskaya and R. Ya. Keymina, Voprosy Radiobiologii (Problems of Radiobiology), Leningrad, 1956, pp 352-356 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 24, 25 Dec 56, p 80, Abstract No 23449)

Subcutaneous injections of adrenalin to dogs who were subjected to total irradiations by 300 to 500 r did not cause increased blood glucose content. Liver glycogen content decreased 80% in 48 hours after irradiation.

Glucose administration caused no glycogen synthesis in the liver of rats who had been subjected to 500, 1,000, or 2,000 r.

SUM. 1287

GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Decrease in the sensitivity of animals to fatal doses of X rays following irradiation with nonfatal doses. Biofizika 1 no.3: 232-236 '56. (MLRA 9:9)

1. TSentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut Ministerstva zdravookhraneniya SSSR, Leningrad.
(X RAYS--PHYSIOLOGICAL EFFECT)

Glycemic curves of dogs irradiated with Röntgen rays while under narcosis. B. M. Gnevshaya and R. Ya. Kellina. *Med. Radiol.* 1, No. 5, 55-9(1956). There was a 60 mg. % rise in the blood sugar of dogs administered adrenaline and irradiated while under narcosis, as there was in the unirradiated controls. The hyperglycemic coeff. was 1.5–1.8 and the time of max. blood sugar increase 30–60 min. after the administration of the adrenaline. Thereafter the blood sugar level began to decrease; 2 hrs. later the level had descended to normal, and after 3 hrs. a hypoglycemia appeared. The results following the administration of glucose were practically the same. In the irradiated narcotized dogs the sugar-tolerance curves following the administration of adrenaline or glucose were normal up to 115 days; in the case of the non-narcotized dogs the sugar-tolerance curves from 6 to 115 days were nearly straight lines or greatly reduced increases in blood sugar originating in the vicinity of the origin of the normal curve. B. S. Levine

Dept. Biochem, Cent. Roentgeno-Radiological Sci. Res. Inst., Min Health USSR

GRAYEVSKAYA, B.M.

CARD 1 / 2 PA - 1336

SUBJECT USSR / PHYSICS
AUTHOR GRAEVSKAJA, B.M., ORLOV, B.A.
TITLE On the Premature Changes in the Serum of the Blood found to occur by the Method of Ultraviolet Spectrography in the Case of an Integral Effect Exercised by X-Rays.
PERIODICAL Dokl.Akad.Nauk, 108, fasc.4, 623-625 (1956)
Issued: 8 / 1956 reviewed: 10 / 1956

Parallel with spectroscopic investigations also the content of amino acid of thyrocine in the serum of the blood of the irradiated animals was determined. 30 white rats, 5 rabbits, and 12 dogs were examined, and the respective results were essentially in agreement. The animals were exposed to the integral effect of X-rays on the following conditions: 190 KV, 20 ma, filter 0,5 mm Cu and 1,0 mm Al. The dogs were irradiated with a skin-focus distance of from 80-100 cm with a dosage of 6,5-11r per minute. Radiation doses were: 130, 500 and 1000 r for dogs, 1000 r for rabbits, and 500 and 1000 r for mice.
In the course of the experiments undertaken with dogs, before and immediately after irradiation, as well as after 2, 7, 14, 21, 33-40 and 90 days after irradiation 3-5 ml blood was extracted from the femoralis artery. The serum obtained was diluted 8-fold in distilled water and spectrographed in the ultraviolet domain of the spectrum. The absorption maxima of the serum of normal animals is between 2800 and 2920 Å In the case of an irradiation with 1000 (or 500) r the absorption maximum is considerably (or noticeably) reduced at 2800 - 2920 Å immediately after irradiation. In the case of dogs irradiated with 130 r

no changes were noticeable immediately after irradiation, and only on the second day a certain decrease of the UV absorption of the serum was found within the domain of the maximum. After 33 days a certain increase of the optical density of the serum occurred, which was not noticed if larger doses were given. This increase is probably a compensation effect.
Parallel with spectrographic investigations a considerable reduction of the thyrocine content in the serum was found by the method developed by CUVERKALOV immediately after irradiation with 1000 or 500 r. With animals that remained alive (500 r), but not with animals that died (1000 r), the thyrocine content after some time again attains its normal level. In the case of relatively small doses (130 r) the thyrocine content decreased only after some days by about 10% and increased again after a period of 30 - 33 days after irradiation.
A certain parallelism between the modifications of the optical density and of the thyrocine content of the serum makes it appear probable that these modifications are connected with previous disintegrating processes in albumen metabolism. These results show that it is possible to use the spectrographic method for the detection of previous damage caused by irradiation.
The method discussed is of great importance for the timely diagnosis of radiation thickness.

INSTITUTION: Central Radiological and Cancer Institute of the Ministry for Health in the USSR.

USSR / Human and Animal Physiology. Effect of Physical Factors. T-13

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3968

Author : Grayevskaya, B. M.; Keylina, R. Ya.
Inst : Not given
Title : The Decrease of Sensitivity of Animals to the Effect of Roentgen Rays in a Lethal Dose by Their Preliminary Irradiation with Non-Lethal Doses

Orig Pub : Tr. Vses. konferentsii po med. radiol. Eksperim. med. radiol. M., Medgiz, 1957, 183-185

Abstract : The survival of animals subjected to a total irradiation of 1000 r (lethal dose) constituted respectively 50 and 100% 150 days (34 rats) and 120 - 150 days (8 dogs) after preliminary irradiation with a dose of 500 r. Repeated action, as differentiated from a single action in the same dose, was accompanied by a less severe symptomatology and did not lead to a decrease of Hb content

Card 1/2

USSR / Human and Animal Physiology. Effect of Physical Factors. T-13

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3968

and ESR. The change of the glycemic curve of glucose content according to the diabetic type was less than in a single irradiation with the same dose. Prior to repeated irradiation, hyperglycemic effect on load content lesser than that before the first irradiation effect and a greater content of total and residual N and urea in blood was discovered. -- O. Ya. Toreshchenko

Card 2/2

GRAYEVSKAYA, B.M.

Effect of total body irradiation on autolytic processes in the liver and spleen of rats. Vop.radiobiol. 2:114-121 '57. (MIRA 12:6)

1. Sotrudnik TSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR.
(AUTOLYSIS) (VISCERA) (RADIATION--PHYSIOLOGICAL EFFECT)

MANOYLOV, S.Ye.; GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Use of some biological preparations (campolonum, vitamin B_1 and adenosinetriphosphoric acid) as prophylactic and therapeutic drugs in radiation sickness. Vop.radiobiol. 2:426-430 '57. (MIRA 12:6)

1. Sotrudniki TSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR. (VITAMINS--B) (RADIATION SICKNESS) (ADENOSINETRIPHOSPHORIC ACID)

GRAYEVSKAYA, B.M., KEYLINA R.YA.

With regard to I.G. Krasnykh and S.P. IArmonenko's letter published in "Biofizika". Biofizika 3 no.4:527-528 '58 (MIRA 11:8)
(X RAYS--PHYSIOLOGICAL EFFECT)

GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Role of the adrenals in certain metabolic disorders in irradiated organisms. Med. rad. 4 no.3:21-25 Mr '59. (MIRA 12:7)

1. Iz otdela biokhimii (zav. - prof. S.Ye. Manoylov) Tsentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR.

(ROENTGEN RAYS, effects,
on carbohydrate & protein metab., eff. of adrenalectomy (Rus))
(CARBOHYDRATE, metab.
eff. of x-rays in adrenalectomized animals (Rus))
(PROTEIN, metab.
same)
(ADRENALECTOMY, effects,
on carbohydrate & protein metab. responses to x-rays (Rus))

24(0)
AUTHOR: Grayevskaya, B. M.

SOV/2o-124-1-58/69

TITLE: On the Way the Content of Glycogen in the Liver is Affected by Ionizing Radiation (O mekhanizme vliyaniya ioniziruyushchey radiatsii na soderzhaniye glikogena v pecheni)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 2o2 - 2o4 (USSR)

ABSTRACT: One of the most marked and soon occurring reactions of organism upon ionizing radiation is a disturbance of the carbohydrate metabolism. This refers in particular to changes of the glycogen content in the liver. The nature of these changes has remained unclarified and the individual research workers are of contradictory opinions. The author wanted to find whether: a) this is due to neurohumoral effects (Refs 1,2), or b) to the fact that the experimental animals had to suffer hunger in consequence of a more difficult absorption of nutritive substances from the intestines and reduced food intake (Ref 6) or finally c) to a direct effection of irradiation of the liver tissue. For this purpose the changes of the glycogen content in the

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On the Way the Content of Glycogen in the Liver is Affected by Ionizing Radiation

SOV/2o-124-1-58/69

liver were investigated at: I) X-ray total irradiation, II) Local irradiation of the liver region and III) A screening off of the liver region of the mice (3 mm lead plates were used as screens) during total irradiation. Survival changes in weight and the amount of leucocytes were observed during 30 days after irradiation. Group IV served as a control group. 4 days after irradiation the animals were killed and the glycogen content in the liver was determined according to Pflüger (Pflyuger). The experimental results are given (Table 1). I) After total irradiation (600 r) the glycogen content drops more than 50%. II) Also a local irradiation of the liver results in a marked decrease of the glycogen content. III) The screening off of the liver region did not bring about any real changes of the glycogen content. Total irradiation with 600 r caused the death of 50% of the animals after 30 days. Among the animals with a locally irradiated liver and those exposed to total irradiation with screened off liver were no fatal cases. The changes in weight and the peripheral blood count show (Fig 2) that total irradiation has the most serious effect upon the

Card 2/3

animals. In the cases where the liver was screened off the damage was less serious. The least damage suffered those mice that were irradiated in the liver region only. The most striking changes of the glycogen content are, however, observed in the case of total and local irradiation of the liver. Thus it can be said that the author did not observe a clear relationship between the glycogen content in the liver and the state of the irradiated organism as a whole. This permits the conclusion that the changes of the glycogen content in the liver of irradiated animals are widely determined by a direct effect of radiation upon the liver tissue. There are 2 figures, 1 table, and 6 references, 2 of which are Soviet.

ASSOCIATION: Institut genetiki Akademii nauk SSSR (Institute of Genetics, Academy of Sciences, USSR)

PRESENTED: August 2, 1958, by T. D. Lysenko, Academician
SUBMITTED: August 1, 1958

17 (1), 21 (3)

AUTHOR: Grayevskaya, B. M. SOV/20-126-4-51/62

TITLE: Relaxation of Glycogen-content Alterations in the Liver Owing to Ionizing Radiation During the Irradiation of Animals in a Carbon-oxide Atmosphere (Oslableniye izmeneniy soderzhaniya glikogena v pecheni, vyzvannykh ioniziruyushchey radiatsiyey, pri obluchenii zhivotnykh v atmosfere s okis'yu ugleroda)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 4, pp 874-875 (USSR)

ABSTRACT: As is known, the mortality of mammals is much reduced under the influence of the radiation mentioned in the title in a CO-containing atmosphere (Refs 1-3): a) The systems affected by the radiation regenerate earlier; b) their initial damage is much reduced (Ref 2). In mammals, the disturbances of the carbohydrate exchange belong to the most distinct reactions to radiation damages. Particularly the glycogen content is slightly raised soon after the action of lethal radiation doses, while afterwards it decreases rapidly (Refs 4-8). The mechanism of these alterations remains unclarified. The present paper investigates the problem as to whether CO can prevent the mentioned alterations of the glycogen content. 195 white mice were used for the experiments. One group

of the animals was treated once with 600 r of X-rays, another group received the same dosis in an air containing 0.5 % by volume of CO. A third group of mice was kept in the said CO-atmosphere, but not exposed to rays. A 4th group served as a control, and was not treated. Some of the mice were killed after 24, 48, 96 and 168 hours. The glycogen in their liver was determined according to Pflüger. The mortality of the 1st group was 96.9 % within a period of 28 days, but only 24 % with the CO-protection (2nd group). Table 1 shows that the stay of the animals in the CO-containing atmosphere has no great influence on the glycogen content in the liver tissue. Under the influence of radiation, the glycogen content rises slightly within the first 48 hours, subsequently (within 168 hours) it decreases considerably. In animals irradiated in a CO-containing atmosphere, no increase nor decrease in this content was observed. Thus, the CO present at the moment of irradiation does not only raise the survival of the mice but also prevents the alterations of the glycogen content usual in irradiated animals. As to the mechanism of the protective action of the CO, it should be particularly pointed

out that this action is apparently not connected with a better maintenance of the endocrine function of the suprarenal glands; this refers particularly to the state of their medullary substance and to the content of adrenochromes [adrenokhrom] in it. The above explanations speak in favor of the opinion that the alterations of the glycogen content in the liver of animals are mainly conditioned by the damage of the liver cells. The irradiation of the animals in a CO-containing atmosphere apparently weakens the functional disturbances of the liver owing to the resulting hypoxic [gipoksicheskikh] conditions. There are 1 table and 9 references, 3 of which are Soviet.

PRESENTED: March 11, 1959, by T. D. Lysenko, Academician

SUBMITTED: February 26, 1959

GRAYEVSKAYA, B.M., SHCHEDRINA, R.N., (USSR)

"Investigation of Disturbances Produced in the Adrenals by Ionizing Radiations."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961.

GRAYEVSKAYA, B.M.; SHCHEDRINA, R.N.

Nature of some structural changes in adrenal glands induced by ionizing radiation. Dokl.AN SSSR 138 no.4:941-944 Je '61. (MIRA 14:5)

1. Institut genetiki AN SSSR. Predstavleno akademikom T.D.Lysenko.
(ADRENAL GLANDS) (X-RAY--PHYSIOLOGICAL EFFECT)

44908
S/872/62/000/000/003/006
B183/B144

27.1220

AUTHOR: Grayevskaya, B. M.

TITLE: The role of hormones of the medulla of the suprarenal gland in disorders of the carbohydrate metabolism due to the influence of ionizing radiation

SOURCE: Deystviye ioniziruyushchikh izlucheniy na organizm. Inst. genetiki AN SSSR. Ed. by N. I. Nuzhdin. Moscow, Izd-vo AN SSSR, 1962, 157-161

TEXT: An endeavor is made to clarify the dependence of the carbohydrate metabolism (glycogen and blood sugar) of the irradiated organism on the content of total adrenalins. Male white mice were whole-body irradiated with 600 r or 2000 r. In an interval t after irradiation blood sugar, glycogen and catecholamine content of the suprarenal gland were determined. Results:

Card 1/3

The role of hormones of the ...

t (hrs)	600 r			2000 r		
	total adrenalins (8%)	glycogen (mg%)	sugar (mg%)	total adrenalins (8%)	glycogen (mg%)	sugar (mg%)
Controls	175	2241	183	175	2241	183
2	130	2251	201	205	1471	221
24	150	2181	223	110	2651	209
48	400	2501	169	-	-	-
72	-	-	-	148	1901	177
96	215	1261	150	-	-	-
192	379	673	167	-	-	-

In the case of 2000 r the animals died before the fourth day after irradiation. In both experimental series an increase of the total adrenalin content of the suprarenal glands is accompanied by a reduction of the glycogen level, and vice versa. No simple relation with the fluctuations of blood sugar level could be found. It may be assumed that the glycogen content of the liver after irradiation depends on the adrenalin level

Card 2/3

S/872/62/000/000/003/006
B183/B144

The role of hormones of the ...

changed by the radiation effect. There are 2 figures.

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S/020/62/143/004/027/027
B144/B138

27.1220

AUTHORS: Nushdin, N. I., Corresponding Member AS USSR, Nechayev, I. A., Grayevskaya, B. M., and Shchedrina, R. N.

TITLE: Some physiological and biochemical peculiarities of mice with different congenital radiosensitivity

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 4, 1962, 997-1000

TEXT: The radiosensitivity of the following three strains was studied: CC_{57}-brown and BALB/c from the breeding station in Stolbovaya, CH_3 with 2 sublines from Stolbovaya near Moscow (m) and Rappolovo near Leningrad (l); and of a mixed population (MP) of mice from the breeding station at Kryukovo. The body weight, the weights of liver, spleen, suprarenal glands, thyroid, and testes, the catecholamine (CA) content in the suprarenal glands and the glycogen content in the liver were determined after whole-body irradiation with 350 ÷ 650 r. The $LD_{50/30}$ was much higher for MP and CC_{57} than for CH_3 and BALB/c. This was consistent with

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Some physiological and...

the significant weight increase of liver and spleen found in the former two groups, whose thyroids were equally heavier; whereas no relation could be established between the weight of suprarenal glands or testes and radiosensitivity. Histochemical and quantitative studies revealed that MP had the lowest CA content. CH_3 sublines m and l had different CA levels. Radiosensitivity changed in the same order. Although this parallelism is no proof of a direct interrelation between CA metabolism and radiosensitivity, it may be assumed that adrenalin is an important mediator between radiation perception and reaction. The glycogen level in the liver showed the reverse order and is probably dependent on the CA level in the suprarenal glands. There are 2 figures and 1 table.

SUBMITTED: January 5, 1962

X

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GRAYEVSKAYA, B. M.

(e)

Some Physiological and Biochemical Peculiarities of Mice with Differing Inborn Radiosensitivity

B. M. Grayevskaya, N. I. Nuzhdin, I. A. Nechayev and R. N. Schedrina

Investigations on the radiosensitivity of different strains of animals do not, as a rule, involve the analysis of physiological, metabolic or anatomic peculiarities defining the given strains. In contrast, studies of physiological and biochemical differences between strains are generally carried out without relation to radiosensitivity.

A comparison was made of the body weight and weight of liver, spleen, suprarenal glands, thymus and testicles, and of the level of adrenal and carbohydrate metabolism, between three strains in a normal state (BALB/c, C_3H and CC_{57}-Br) and one population (albino) of mice characterized by differing radiosensitivity as defined by the LD 50/30 dose.

It has been shown that radioresistant strains of mice (CC_{57}-Br and albino population), as compared with radiosensitive ones (BALB/c and C_3H) have greater weights of liver, spleen and thymus, a higher content of catecholamines in the suprarenal glands, and a reduced glycogen level in the liver tissue. The latter phenomenon appears to be of a secondary order and depends to a considerable extent on the intensity of the catecholamine metabolism in the suprarenal glands.

Institute of Genetics, USSR Academy of Sciences, Moscow

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

L 17045-63 EWT(m)/BDS AFFTC/ASD/AFWL S/205/63/003/002/003/024
AR/K

AUTHORS: Grayevskaya, B. M., and Shchedrina, R. N.

TITLE: The nature of X-ray effect on the tissue proteinases

PERIODICAL: Radiobiologiya, v. 3, no. 2, 1963, 168-173

TEXT: The article makes an attempt to clarify whether the radioactivation of proteolysis can really be the cause of cell destruction in radioactivity-sensitive systems. A comparative study has been carried out on the effect of x-rays on the activity of proteinases in radiation-sensitive (spleen) and relatively more resistant organs (liver). The nature of the occurring changes and their connection to necrobiotectic processes. The experiments were conducted with white male mice 8-9 months old weighing 22-27 g. The extracts from spleen and liver homogeneate totally irradiated in the dose of 600 r show increased fermentative activity (on splitting casein) which reaches maximum in spleen after 24 hours and in liver 4 days after irradiation. The indicated increase in proteolytic processes was observed only after general irradiation of the animal. It is absent during local irradiation of the spleen or in the case of its screening and irradiation of the remaining parts of the body. Thus in the development of this process, distant effects play a significant role. Radiation increase of proteolytic processes is not related directly to mass destruction

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The nature of x-ray .....

S/205/63/003/002/003/024

of cells. These processes do not coincide in time and activation of proteolysis in tissues occurs independently of necrobiotectic changes. The article contains 2 tables, 2 figures and a 5-item bibliography.

ASSOCIATION: Institut genetiki AN SSSR (Institute of Genetics, Academy of Sciences USSR), Moscow

SUBMITTED: July 7, 1962

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GRAYEVSKAYA, B.N.; SHCHEDRINA, R.N.

Examination of the effect of X-ray irradiation on the adrenal medulla and its hormones. Radiobiologiia 2 no.1 54-61 Je '62
(MIRA 18:1)

L 8238-66 EWT(m)

ACC NR: AT5024245 SOURCE CODE: UR/2670/65/000/032/0094/0118

AUTHOR: Grayevskaya, B. M.

ORG: Institute of Genetics, Academy of Sciences SSSR (Institut genetiki, Akademiya nauk SSSR)

TITLE: Some features of protein metabolism distrubances in the animal organism under the influence of ionizing radiation

SOURCE: AN SSSR. Institut genetiki. Trudy, no. 32, 1965. Deystviye ioniziruyushchikh izlucheniy na rastitel'nyy i zhivotnyy organizmy (Effect of ionizing radiation on plant and animal organisms), 94-118

TOPIC TAGS: animal physiology, biologic metabolism, radiation biologic effect, mouse, protein metabolism, radiosensitivity

ABSTRACT: Whole-body irradiation of mice with 600 rad of x-rays increases the activity of proteases isolated from the spleen and liver 24 hr and 96 hr after irradiation, respectively. Proteinase activity is gauged by the ability of extracts from these tissues to break down casein. No increase in proteolytic activity was observed in extracts from the spleen irradiated locally, shielded during total irradiation, and irradiated outside the body. The dose used did not cause noticeable changes in the substrate on which proteinases act. No difference was noted in the ability of trypsin to hydrolyze proteins extracted from tissues of an intact animal or from ir-

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radiated tissue. No direct connection was found between the intensification of proteolysis and necrobiotic changes in the spleen due to irradiation. AET and MEA (monoethanolamine) lessen the radiation-caused increase in the activity of tissue proteinases, while carbon monoxide is ineffective in this respect. Experimental results showed that the activity of tissue proteinases in intact animals of different species and strains has a correlation with their radiosensitivity. The radiosensitivity of the experimental animals decreased as the activity of proteinases isolated from their tissues diminished (see Table 1). Orig. art. has: 7 figures and 12 tables. [JS]

Table 1. Radiosensitivity of animals of various species and strains and the caseolytic activity of proteinases isolated from their spleens and livers

Species or strain	Coefficient of proteinase activity after 240 min of incubation		$LD_{50/30}$
	Spleen	Liver	
Hamsters	1.22	0.95	531
Rats	1.09	1.23	600
Mice			
Strain 1	1.26	1.16	563
Strain 2	1.59	1.37	536
Strain 3	1.42	1.49	442
Guinea pigs	1.93	1.70	400

L 8238-66
ACC NR: AT5024245

SUB CODE: LS/ SUBM DATE: none/ ORIG REF: 027/ OTH REF: 061/

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L 5137-66 EWT(m)

ACC NR: AT5024246 SOURCE CODE: UR/2670/65/000/032/0119/0135

AUTHOR: Nuzhdin, N. I. (Corresponding member AN SSSR); Grayevskaya, B. M.

ORG: Institute of Genetics, Academy of Sciences, SSSR (Institut genetiki, Akademiya nauk SSSR)

TITLE: The biochemical characteristics and radiosensitivity of different strains and species of mammals

SOURCE: AN SSSR. Institut genetiki. Trudy, no. 32, 1965. Deystviye ioniziruyushchikh izlucheniy na rastitel'nyy i zhivotnyy organizmy (Effect of ionizing radiation on plant and animal organisms), 119-135

TOPIC TAGS: animal physiology, radiation biologic effect, radiosensitivity, biologic metabolism, rat, mouse, rabbit, guinea pig, hamster

ABSTRACT: Experiments were conducted with different species of mammals and different strains of the same species to compare their radiosensitivity and metabolic characteristics. Male rabbits, golden hamsters, guinea pigs, rats, and mice (4 different strains) aged 2—2.5 months were used. After x-ray irradiation with dose power of 47—52 rad/min, the $LD_{50/30}$ of each experimental animal was determined, and they were arranged in order of increasing radiosensitivity as follows: rabbits

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L 5137-66

ACC NR: AT5024246

(750--830 rad); rats (600 rad); mice, Kryukowskaya strain (563 rad); mice, $CC_{57}Br$ strain (536 rad); golden hamsters (531 rad); mice, BALB/c strain (442 rad); and guinea pigs (400 rad). Experiments showed a higher level of catechol amines in the adrenals of more radioresistant species and strains. (This difference was more evident in individual species.) More radioresistant strains of mice also have a lower glycogen content in liver tissue and a lower blood-sugar level than do less radioresistant strains. Furthermore, there is a distinct difference in the character of blood-sugar changes when adrenaline hydrochloride is administered. In more radioresistant mice, the blood-sugar level increase is less marked upon introduction of adrenaline hydrochloride. Irradiation of radioresistant mice intensifies changes in the blood-sugar in response to adrenaline, whereas in radiosensitive mice irradiation first depresses this reaction and then intensifies it. In the spleen and liver of more radioresistant strains and species, proteolytic processes proceed more slowly. The ability of proteinases isolated from these organs to break down casein diminishes gradually with increased natural radioresistance of animals. The reasons for the correlations observed are discussed, together with the possibility of using these biochemical differences to assess the relative radiosensitivity of mammals. Orig. art. has: 4 figures and 10 tables. [TS]

SUB CODE: LS/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 007

OC 2/2

L 8234-66 EWT(m)

ACC NR: AT5024254 SOURCE CODE: UR/2670/65/000/032/0223/0228

AUTHOR: Grayevskaya, B. M.

ORG: Institute of Genetics, Academy of Sciences SSSR (Institut genetiki, Akademiya nauk SSSR)

TITLE: The influence of estrogens on adrenal catechol amine metabolism under normal conditions and after exposure to ionizing radiation

SOURCE: AN SSSR. Institut genetiki. Trudy, no. 32, 1965. Deystviye ioniziruyushchikh izlucheniy na rastitel'nyy i zhivotnyy organizmy (Effect of ionizing radiation on plant and animal organisms), 223-228

TOPIC TAGS: radiation biologic effect, animal physiology, biologic metabolism, adrenal gland, diethylstilbestrol, catechol amine, mouse

ABSTRACT: Experiments were conducted to determine the influence of diethylstilbestrol on the level of catechol amines in the adrenal glands and on changes in this level under the influence of general x-ray irradiation. Male mice 2--2.5 months old, of the radiosensitive BALB/c strain, were used. Animals with and without an injection of diethylstilbestrol (0.2 mg in 0.2 ml of olive oil) were subjected to x-ray irradiation in a dose of 600 rad with dose power of 30--35 rad/min. Animals were killed 2, 4, 7, and 14 days after irradiation. It was

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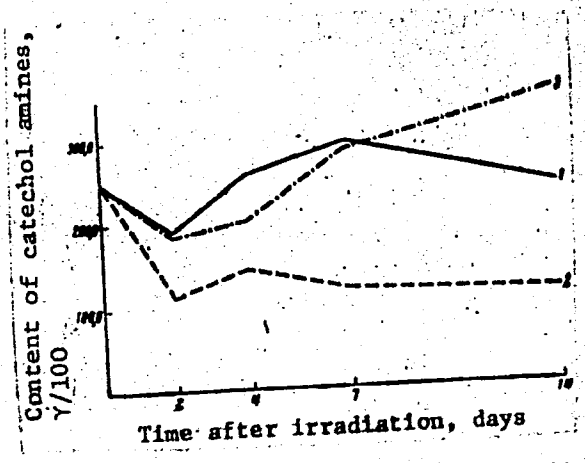

Fig. 1. Change in the general catechol amine level in the adrenals of mice of BALB/c strain irradiated with a dose of 600 rad with and without the administration of diethylstilbestrol.

1 - total-body irradiation; 2 - with administration of diethylstilbestrol; 3 - total-body irradiation with administration of diethylstilbestrol

found that the introduction of diethylstilbestrol causes a prolonged decrease in the content of catechol amines in the adrenal glands, which may indicate their ejection from the adrenals or the depression of their

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ACC NR: AT5024254

synthesis. When the chemical is introduced 10 days prior to irradiation, it has a radioprotective effect, i.e., it prevents any increase in the content of catechol amines in the glands ws was observed 4--7 days after irradiation in mice not protected with the hormone (see Fig. 1.). [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 006

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L 8236-66 EWT(m) DIAAP

ACC NR: AT5024256 SOURCE CODE: UR/2670/65/000/032/0238/0243

AUTHOR: Grayevskaya, B. M.; Shchedrina, R. N.

ORG: Institute of Genetics, Academy of Sciences SSSR (Institut genetiki, Akademiya nauk SSSR

TITLE: The functional state of the adrenal cortex under the influence of ionizing radiation

SOURCE: AN SSSR. Institut genetiki. Trudy. no. 32, 1965, Deystviye ioniziruyushchikh izlucheniy na rastitel'nyy i zhivotnyy organizmy (Effect of ionizing radiation on plant and animal organisms), 238-243

TOPIC TAGS: radiation biologic effect, mouse, adrenal gland, adrenal cortex, lipid

ABSTRACT: Experiments were conducted to determine the effect of irradiation in lethal and superlethal doses on the activity of the adrenal cortex in different periods after irradiation. Male white mice 8—10 weeks old were subjected to x-ray irradiation in doses of 600 and 2000 rad with dose power of 30—35 rad/min. With irradiation of 600 rad, mice were killed after 2 hr and 1, 2, 4, 8, and 30 days, and with a dose of 2000 rad, after 2, 24, and 72 hr. Experimental results showed that irradiation in a dose of 600 rad causes an increase in the weight and dimensions of the adrenal glands, accompanied by a gradual accumulation of lipids in the cortex (especially in the glomerular zone). Thirty days after irradiation, complete normalization of these changes

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ACC NR: AT5024256

was not yet observed. Irradiation with 2000 rad, however, caused a decrease in the weight and dimensions of the adrenals, which is accompanied by a sharp increase in the lipid content in all three cortical zones. The observed changes in the weight and dimensions of the adrenal glands with a dose of 600 rad are probably connected with accumulation of lipids and excess water in the gland, whereas with a dose of 2000 rad, changes are probably associated with severe depletion of the cortical substance. Orig. art. has: 4 figures. [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 020/

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GRAYEVSKAYA, B.M.; SHCHEDRINA, R.N.

Effect of estrogens on catechol amine metabolism in the adrenal glands under normal conditions and following ionizing radiation. Trudy Inst. gen. no.32:223-228 '65.

Functional state of the adrenal cortex following ionizing irradiation. Ibid.:238-243 (MIRA 18:10)

AUTHOR: Grayevskaya, I.K., Engineer SOV-28-58-4-6/35

TITLE: New Types of Synthetic Rubber (Novyye tipy sinteticheskogo kauchuka)

PERIODICAL: Standartizatsiya, 1958, Nr 4, pp 23 - 25 (USSR)

ABSTRACT: Information is presented on rubber production in the Soviet Union, including the following types: isoprene for tires, chloroprene for conveyer belts, butyl for tubeless tires and special rubber types. These include: butadiene-nitrile ("SKN"), poly-isobutylene, butadiene-styrol, butadiene-methyl-styrol (SKMS-10, SKMS-50, thicoles and a new type of special chloroprene rubber ("Nairit-NT"). Together with an increase in the production of the existing types the production of new special rubber types is planned. They include: brombutyl; butadiene-methyl-vinyl-pyridine; butyl-acrilate; poly-ether-urethan; copolymer chloroprene rubbers, etc. The most used types have to be standardized, as well as test methods and methods of determining their special

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properties. Standardization of synthetic rubber will form a part of the State Stadardization Plan for 1959-1965.

ASSOCIATION: Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (State Committee for Chemistry of the USSR Council of Ministers)

1. Synthetic rubber--Production 2. Synthetic rubber--Standards

AUTHOR: Grayevskaya, I. M. SOV/138-59-2-21/24

TITLE: All-Union Conference on Synthetic Rubber (Vsesoyuznoye soveshchaniye po sinteticheskomu kauchuku)

PERIODICAL: Kauchuk i rezina, 1959, Nr 2, p 59 (USSR)

ABSTRACT: This meeting was held from December 15 to 18, 1958 in Voronezh at which representatives of synthetic rubber factories, research organisations, Sovnarkhozes (Council of National Economy), Goskhimkomitet, Gosplan USSR and TsK Trade Unions were present. The Conference heard the following reports: Chief Engineer for the Synthetic Rubber Industry and Petroleum Chemistry of the Goskhimkomietet M. D. Gordin on "Tasks of the Synthetic Rubber Industry as Laid Down by the Party Congress and Development of the National Economy of the USSR planned for 1959-1965"; the Deputy Chairman of the VNIISK and Corresponding Member of the Academy of Sciences of the USSR, B. A. Dolgoplosk, on "Investigations on the Synthesis of New Types of Rubber and Theoretical Aspects on the Synthesis of Rubbers with Specific Properties"; the Head of the Laboratory of VNIISK, I. I. Radchenko, Candidate of Chemical Sciences, on "Comparative Analysis

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of the Quality of Industrial Butadiene-Styrene and Butadiene-Methyl Styrene Rubbers and Ways of Further Improving Their Properties"; Chief Engineer of Giprokauchuk, B. S. Korotkevich, on "Plant Requirements During the Manufacture of Synthetic Rubber". Further reports dealt with contact catalytic processes, the separation and purification of monomers, the polymerisation and separation of rubber, the mechanisation of processes and retread-mechanisation processes. Technical personnel as well as specialists of the VNIISK, NIISS, Giprokauchuk and the Institut monomerov (Institute for Monomers) discussed topics in research work; these included a report by N. F. Nesterova on "Improvements in the No.4 Workshop of the Yaroslavl' Factory", by K. V. Kuznetsova and V. Ya. Mymrikov.

SOV/64-59-3-1/24

5(1) 15(9)

AUTHOR: Grayevskaya, I. M.

TITLE: Industrial Tasks Regarding Synthetic Rubber, in the Years 1959 - 1965 (Zadachi promyshlennosti sinteticheskogo kauchuka v 1959-1965 gg.)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 3, pp 1-5 (USSR)

ABSTRACT: An increase in the production of synthetic rubber (SR) to 3.4 times of the present output has been provided for the new Seven-year Plan in the USSR. New types of rubber are planned to be produced, and the quality of the existing types is to be improved. For 1965 the durability of rubber tires is planned to be 1.5 times that of 1958. Therefore the large-scale production of poly-isoprene rubber (SRI) is started among other things, and the production of sodium butadiene rubber (SRB) will be increased. A considerable improvement of the quality of emulsion rubber is expected, due to the suggestion of the working group of VNIISK (B. A. Dolgoplosk, V. N. Reykh et al) for the production of ternary copolymers of divinyl, methyl styrene with small amounts of methacrylic acid (products called "carboxylate" rubber). The industrial production of

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(SRI) shall be carried out according to A. A. Korotkov et al's method. The production of a new type of chloroprene rubber - nairit NT - is planned to replace natural gutta-percha for glues. The production of heat-resisting types of rubber and of poly-siloxane rubber (SRT) is also planned to be increased. The production capacity of (SR) based on rawmaterials of food industry, is planned to be adapted to the utilization of waste gases of the petroleum industry, and the capacity of producing rubber of synthetic alcohol is planned to be doubled until 1965, and the production of rubber of sulfite alcohol and hydrolysis alcohol is planned to be 1,5 times as high, on the other hand it is planned to establish a large-scale production of divinyl according to the method of n-butane dehydration. The Gosudarstvennyy komitet po khimii (State Committee for Chemistry) has to take the necessary measures for a timely supply with the necessary papers for planning the various projects. The amount of the projecting material is said to be three times as high in 1959 as it was in 1957, and the projection of new objects for the (SR) production is said to be doubled in 1959 compared to 1958. The subject plans of the tsentral'nyye nauchno-issle-

dovatel'skiye laboratorii zavodov SK (TsNIL)(Central Scientific Research Laboratory of the works for (SR)(TsNIL)) are planned to be worked out in co-operation with the State Committee for Chemistry. The Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka (VNIISK) (All-Union Scientific Research Institute for Synthetic Rubber (VNIISK)) which opened new branch establishments in Voronezh and Yerevan; the Nauchno-issledovatel'skiy institut monomerov, dlya SK (Scientific Research Institute for Monomers, for SR), established in Yaroslavl', a number of institutes of the AS and others. As the experiment of the Voronezhskiy zavod SK (Voronezh Works for SR) in developing a method for producing soft rubber and colophonium gum showed that it is appropriate to carry out preliminary experiments in the existing works, before a new production is started. In order to guarantee that the projected plans are carried out, the number of staff of the Voronezh and Novokuybyshevsk branch establishments of the Giprokauchuk was increased, and new branch establishments were founded in Ufa and Kazan'. Suggestions regarding the reconstruction of the SR production, made by the works in Voronezh and Sumgait are of special interest. The

obligations of the Kuybyshevgidrostroy Collective and of the young constructors and mechanics in Azerbaydzhan are also worth mentioning. It happened that in some of the Sovnarkhozes (for instance Krasnoyarsk) the funds provided for the reconstruction were used for other purposes. The competent Sovnarkhozy, the areas of which are meant to serve for experiments or research work of competent organisations, should support these organisations, but at present, this is not the case (for instance the Yaroslavl' Sovnarkhoz).

GRAYEVSKAYA, N. A.

"Differential Serodiagnosis of Epidemic and Rat Typhus."

Thesis for degree for Cand. Medical Sci., Sub. 16 Nov. 50, Acad Sci USSR

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

GRAYEVSKAYA, N.A.

Thymol turbidity test of donors with increased serum bilirubin. N. A. Graevskaya (Moscow Municipal Blood Transfusion Sta.). *Laboratornoe Delo* 11, No. 2, 12-14(1956).—No parallelism was found between serum bilirubin and thymol turbidity levels. Of 670 persons, 112 had a higher than normal serum bilirubin and were rejected as donors, yet only 4 of these had a weakly abnormal thymol turbidity—5 units. A. S. Mirkin

Med L

AGOL, V.I.; GRAYEVSKAYA, N.A.

Mechanism of the action of antiserums on the metabolism of tumor cells. Dokl. AN SSSR 136 no.2:479-482 '61. (MIRA 14:1)

1. Institut po izucheniyu poliomiyelita Akademii meditsinskikh nauk SSSR. Predstavleno akademikom V.A. Engel'gardtom.
(SERUM THERAPY) (CANCER) (METABOLISM)

GRAYEVSKAYA, N.A.; ROMANOVA, L.N.; BELYAYEV, A.L.

Comparative study of methods for producing type-specific and polyvalent diagnostic poliomyelitis sera. Vop. virus. 6 no.5:620-623 S-O '61. (MIRA 15:1)

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR, Moskva.
(POLIOMYELITIS immunol.)

[redacted]

[redacted]KAYA, N.A.

Cytological and immunological reaction of lymphoid organs on the intravenous introduction of enterovirus antigen. Biul. eksp. biol. i med. 59 no.6:73-76 Je '65. (MIRA 18:6)

1. Institut poliomiyelita i virusnykh entsefalitov (dir. - deystvitel'nyy chlen AMN SSSR M.P. Chumakov) AMN SSSR, Moskva.

[redacted]

GRAYEVSKAYA, N. D.

"The Question of the Effect of Sports on the Heart (Experimental Investigations)." Sub 16 Oct 51, Central Inst for the Advanced Training of Physicians.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

LETUNOV, S.P., GRAZHEVSKAYA, N.D.

Studying the peculiarities of the higher nervous activity of athletes. Probl.vrach.kontr. no.3:58-86 '55. (MIRA 12:9)
(ATHLETES) (NERVOUS SYSTEM) (CONDITIONED RESPONSE)

GRAYEVSKAYA, N.D.

Significance of anamnesis for determining the function and typological peculiarities of the higher nervous activity of athletes. Probl.vrach.kontr. no.3:87-100 '55. (MIRA 12:9)
(ATHLETES) (NERVOUS SYSTEM)

LETUNOV, S.P., kandidat meditsinskikh nauk, dotsent; GRAYEVSKAYA, N.D., kandidat meditsinskikh nauk

Method of investigating higher nervous activity in athletes. Teor. i prak.fizk l'. 18 no.5:353-365 '55. (MIRA 8:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut fizicheskoy kul'tury.

(ATHLETICS, physiology,
higher nervous funct. tests, technics)
(CENTRAL NERVOUS SYSTEM, physiology,
higher nervous funct. test in athletes, technics)
(REFLEX, CONDITIONED,
higher nervous funct. tests in athletes, technics)

GRAYEVSKAYA, N.D.; SHAFEYEVA, M.G.

Problem of the distribution of training loads for soccer players during intervals between games based on medical examinations. Probl.vrach.kontr. no.4:5-17 '58. (MIRA 12:9)
(SOCCER--HYGIENIC ASPECTS)

GRAYEVSKAYA, N.D.; SHAFEYEVA, M.G.

Change in the adaptability of the body to high-speed exercises in soccer with relation to varying training methods. Probl. vrach.kontr. no.4:18-37 '58. (MIRA 12:9)
(EXERCISE) (SOCCER--HYGIENIC ASPECTS)

GRAYEVSKAYA, N.D.; MATOV, V.V.; GONCHAROVA, G.A.

Comparative data on the adaptability of athletes' bodies to various high-speed exercises. Probl. vrach kontr. no.5:176-189 '60. (MIRA 14:3)

(EXERCISE)

GRAYEVSKAYA, N.D.; SHAFEYEVA, M.G.[deceased]

Dynamics of training and indications of athletic form as revealed by data from medical observations over a period of years. Probl. vrach kontr. no.5:22-43 '60. (MIRA 14:3)
(RUGBY FOOTBALL)

GRAYEVSKAYA, N.D.

Change in the roentgenogram of the heart following physical exertion in athletes with varying conditions of the cardiovascular system. Probl. vrach kontr. no.5:344-362 '60. (MIRA 14:3)
(HEART—RADIOGRAPHY) (EXERCISE)

LETUNOV, Serafim Petrovich, prof.; MOTYLYANSKAYA, Rakhil' Yefimovna; GRAYEVSKAYA, Nina Danilovna; VELIKOVSKAYA, P.A., red.; SHPEKTOROVA, Ye.I., tekhn.red.

[Methods for the observation of athletes in connection with the training of doctors; a textbook for doctors] Metodika vrachebno-pedagogicheskikh nabliudenii za sportsmenami; posobie dlia vrachei. Pod obshchei red. S.P.Letunova. Moskva, Izd-vo "Fizkul'tura i sport," 1962. 399 p. (MIRA 15:5)

(SPORTS MEDICINE)

LETUNOV, S.P., prof., otv. red.; GRAYEVSKAYA, N.D., red.; DEMBO, A.G., red.; SOKOLOV, A.A., red.; BUNKIN, N.A., spets. red. BERZIN, A.A., red.; DOTSENKO, A.A., tekhn.red.

[Medical observations on sportsmen in the process of training] Vrachebnye nabliudeniia za sportsmenami v protsesse trenirovki. Red. koll. S.P.Letunov i dr. Moskva, Izd-vo "Fizkul'tura i sport," 1963. 303 p. (MIRA 16:10)
(SPORTS MEDICINE)

137-58-6-11883

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 100 (USSR)

AUTHOR: Grayevskaya, O.N.

TITLE: Production and Consumption of Copper in the Capitalist Countries in 1955-56 (Proizvodstvo i potrebleniye medi v kapitalisticheskikh stranakh v 1955-1956 gg.)

PERIODICAL: Byul. Tsentr. in-t inform. M-va tsvetn. metallurgii SSSR, 1957, Nr 4, pp 27-32

ABSTRACT: The maximum Cu output attained in the capitalist countries during the war (2, 536, 300 t) (measured in ore) was attained in 1943. In the postwar year of 1946 Cu production dropped to 1, 671, 900 t; in 1950 it rose to 2, 227, 800 t, and only in 1955 did it exceed the wartime maximum, reaching 2, 672, 700. Of this total, 84% was obtained in 5 countries: the US, Canada, Chile, the Belgian Congo, and Northern Rhodesia. The volume of production in other capitalist countries, year by year, is also indicated. Data are also presented on the production of crude primary and refined Cu in the major capitalist countries, year by year, and the scale of production of secondary Cu in the USA, England, the German Federal Republic, and Japan for

Card 1/2

Production and Consumption (cont.)

1953-1955 is indicated. Since 1950, with the onset of the war in Korea, a deficit of Cu has been noted in the capitalist countries. The great monopolies did not wish to risk the investment of capital in the copper industry, since they had no confidence in a long-term market for Cu. As a consequence, the government of the USA extended heavy subsidies to the copper monopolies, granted them major tax benefits, guaranteed the prices, etc., with the result that major construction was undertaken, and as many as 20 new mines with a total annual capacity of over 450, 000 of Cu in the ore were opened. In addition, copper smelters were built at San Manuel, White Pine, and Hayden in the U.S.A., the Gaspé plant in Canada, a metallurgical plant at Chuquicamata (Chile) and in other countries. The total annual consumption in the individual capitalist countries for 1950-1955 is presented, as is the structure of the consumption in the USA.

A.P.

1. Copper--Production 2. Copper--Consumption 3. Industrial plants--Development

Card 2/2

GRAYEVSKAYA, O.N.

137-58-5-9237

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 67 (USSR)

AUTHOR: Grayevskaya, O.N.

TITLE: Production of Primary Nonferrous Metals in the Capitalistic World During 1955 and 1956 (Proizvodstvo pervichnykh tsvetnykh metallov v kapitalisticheskikh stranakh v 1955 i 1956 gg.)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 9, pp 34-36

ABSTRACT: The author presents statistical data on the production of primary nonferrous metals, Cu, Pb, Zn, Sn, Ni, Al, Mg, and Ti, in capitalistic countries during 1955 and 1956. Production of raw Cu had increased considerably (by approximately 10%); the greatest increases in output occurred in Canada, Chile, and Northern Rhodesia (13-14%), and the U.S.A. (9%). The increase (approximately 6%) in output of refined Cu (including secondary Cu as well) is primarily accounted for by Northern Rhodesia, Canada, and the U.S.A. According to preliminary data, the production of Al in capitalistic countries has increased by 8%. The output of Al increased in the U.S.A. (by 100,000 tons), as well as in Canada, the German Federal Republic, Norway, and other countries. In 1956 a new Australian plant produced approximately 10,000 tons of Al.

Card 1/1 1. Metals--Production G.S.
2. Industrial production--Effectiveness

GRAYEVSKAYA O.N.

137-1958-3-4894

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 63 (USSR)

AUTHOR: Grayevskaya, O. N.

TITLE: Titanium Plants in the USA, England, and Japan (According to Data for IV. 1. 1957). Production of Non-compacted Titanium (Titanivyye zavody SShA, Anglii i Yaponii (po dannym na 1. IV 1957 g.) Proizvodstvo nekompaktnogo titana)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 14, pp 38-39

ABSTRACT: Information concerning the deposits, capacities, and technology employed by plants of the USA, England, and Japan in the manufacture of Ti sponge. Bibliography: 21 references.

B. Z.

Card 1/1

137-58-6-11876

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 99 (USSR)

AUTHOR: Grayevskaya, O.N.

TITLE: The Productive Capacity of Aluminum Plants in the Capitalist Countries and Their Growth Possibilities by 1960 or 1961 (Proizvodstvennaya moshchnost' alyuminiyevykh zavodov kapitalisticheskikh stran i perspektivy rosta yeye do 1960-1961 gg.)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 17, pp 28-30

ABSTRACT: A presentation is made of the productive capacities of the aluminum plants of the largest companies (Alcoa, Kaiser, Reynolds) of the U.S. in 1957 (total 1, 611, 000 t), of Canada (total 691, 000 t), and of other countries, and of the design capacities for 1960-61 in the U.S. (2, 404, 000 t total), Canada (1, 019, 000 t total), and other countries. The capacity of the entire capitalist world in 1957 was 3, 096, 000 t and is planned to be 4, 545, 000 t by 1960-61.

1. Aluminum--Economic aspects 2. Aluminum--Production 3. Industrial plants--Performance

A.P.

Card 1/1

Statistika SSSR

BESOLOV, M.F.; GRAYEVSKAYA, O.N.; KOZLOV, V.A.

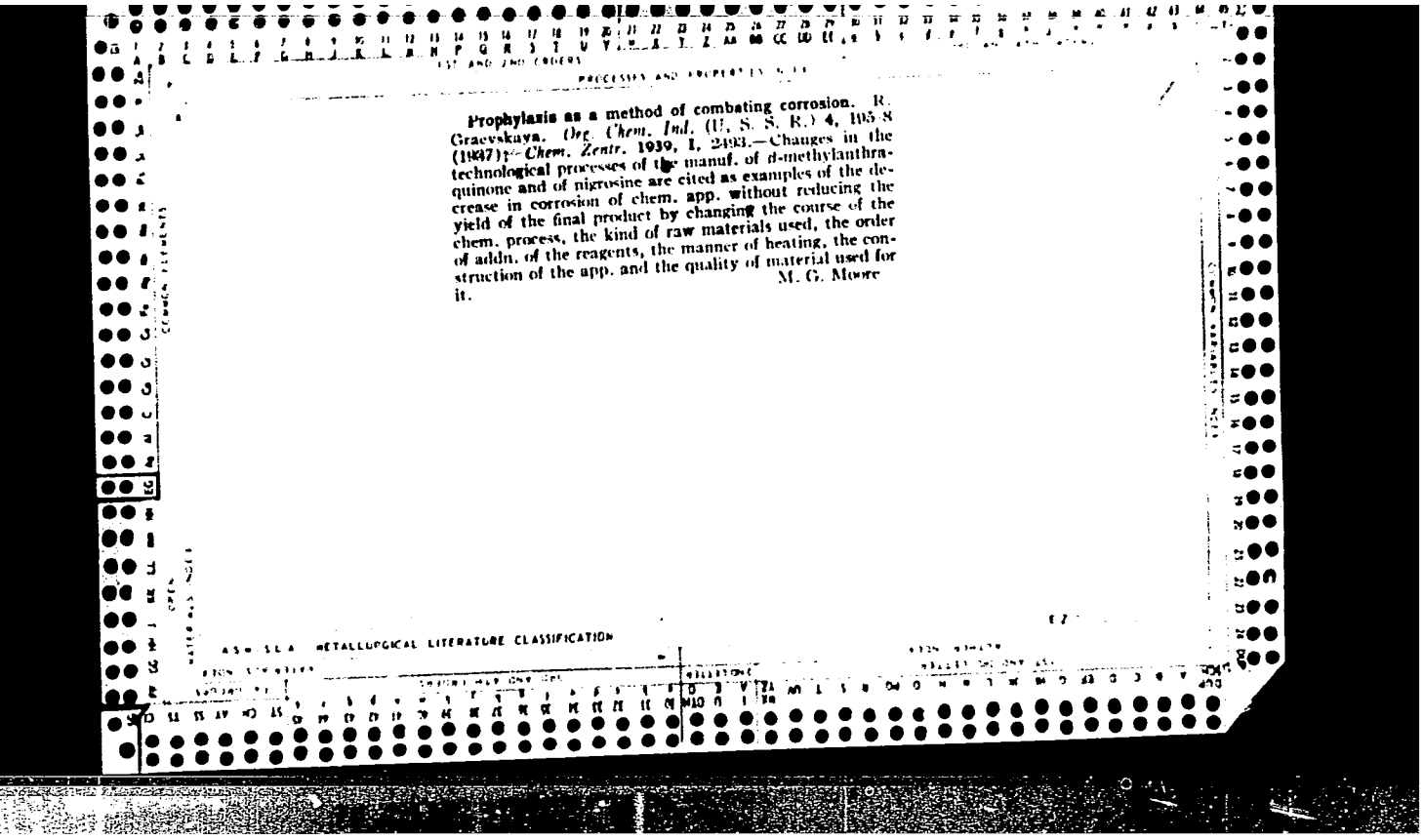
Consumption of nickel, zinc, lead, and tin in the United States (from "Yearbook of the American Bureau of Metal Statistics" 1953). Biul. TSIIN tsvet. met. no.4:35-36 '58. (MIRA 11:5)
(United States--Nonferrous metals)

GRAINVSKAYA, O.N., referent.

Prices of nonferrous metals in the United States (from "Engineering and Mining Journal" no.1, 1956, no.6, 1957; "Mining World" no.12, 1957). Biul. TSIIN tsvet. met. no.4:37 '58. (MIRA 11:5)
(United States--Nonferrous metals)

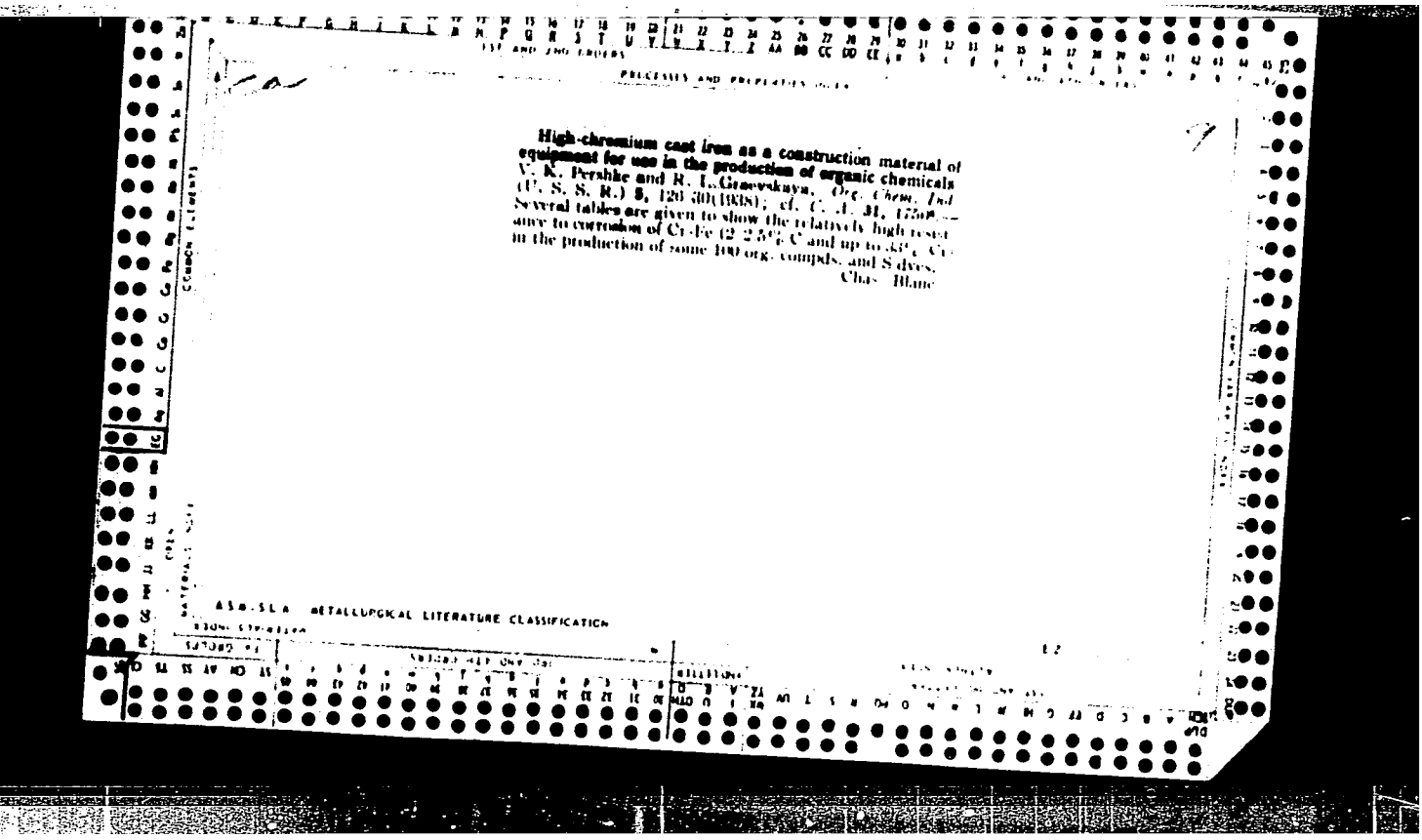
GRAYEVSKAYA, O.N.

Production of nonferrous metals in capitalist countries in 1957.
Biul. TSIIN tsvet. met. no.9:31-36 '58. (MIRA 11:6)
(Nonferrous metals--Statistics)



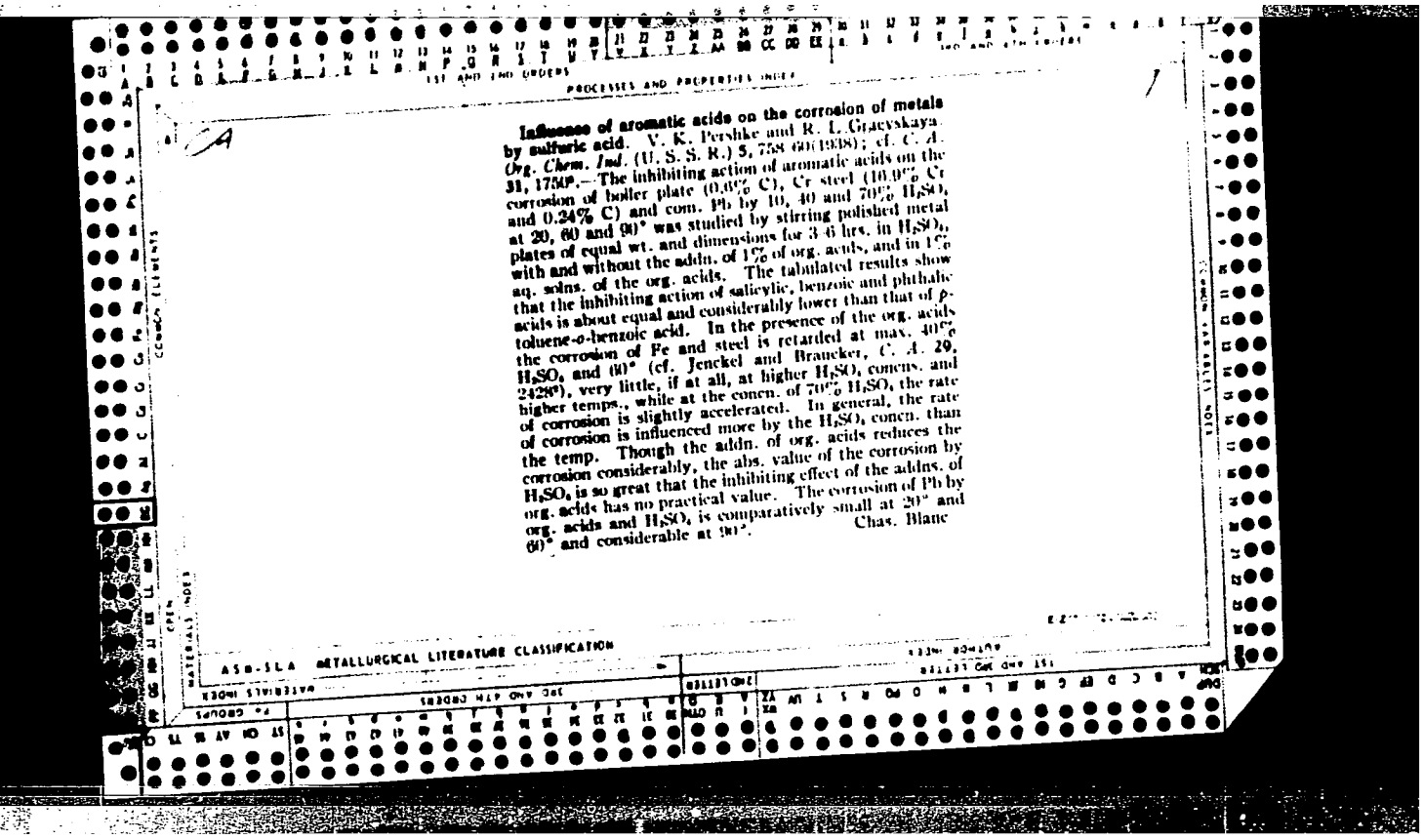
Prophylaxis as a method of combating corrosion. R. Graevskaya. *Org. Chem. Ind.* (U. S. S. R.) 4, 105-8 (1937).—*Chem. Zentr.* 1939, I, 2493.—Changes in the technological processes of the manuf. of β-methylanthraquinone and of nigrosine are cited as examples of the decrease in corrosion of chem. app. without reducing the yield of the final product by changing the course of the chem. process, the kind of raw materials used, the order of addn. of the reagents, the manner of heating, the construction of the app. and the quality of material used for it.

M. G. Moore



High-chromium cast iron as a construction material of equipment for use in the production of organic chemicals
V. K. Pershke and R. L. Granovskaya. *Org. Chem. Ind.* (U. S. S. R.) **5**, 120-30(1938); cf. *C. A.* **31**, 1750⁸.
Several tables are given to show the relatively high resist ance to corrosion of Cr-Fe (2-25% C and up to 35% Cr in the production of some 100 org. compds. and S dyes.
Chas. Blanc

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



Influence of aromatic acids on the corrosion of metals by sulfuric acid. V. K. Pershke and R. L. Gracyskaya. *Org. Chem. Ind.* (U. S. S. R.) 5, 758-60(1938); cf. C. A. 31, 1750⁹.—The inhibiting action of aromatic acids on the corrosion of boiler plate (0.4% C), Cr steel (10.9% Cr and 0.24% C) and com. Pb by 10, 40 and 70% H_2SO_4 at 20, 60 and 90° was studied by stirring polished metal plates of equal wt. and dimensions for 3-6 hrs. in H_2SO_4 with and without the addn. of 1% of org. acids, and in 1% aq. solns. of the org. acids. The tabulated results show that the inhibiting action of salicylic, benzoic and phthalic acids is about equal and considerably lower than that of *p*-toluene-*o*-benzoic acid. In the presence of the org. acids the corrosion of Fe and steel is retarded at max. 40% H_2SO_4 and 60° (cf. Jenckel and Braucker, C. A. 29, 2428⁹), very little, if at all, at higher H_2SO_4 concns. and higher temps., while at the concn. of 70% H_2SO_4 the rate of corrosion is slightly accelerated. In general, the rate of corrosion is influenced more by the H_2SO_4 concn. than the temp. Though the addn. of org. acids reduces the corrosion considerably, the abs. value of the corrosion by H_2SO_4 is so great that the inhibiting effect of the addns. of org. acids has no practical value. The corrosion of Pb by org. acids and H_2SO_4 is comparatively small at 20° and 60° and considerable at 90°. Chas. Blanc

GRIEVAYA, R. I.

USSR/Chemistry-Amines Dec 48

"Analysis of High-Molecular Amines of the Aliphatic Series," R. I. Grayevskaya, O. K. Smirnov, Sci Res Inst of Org Intermediate Products and Dyes, 3½ pp

"Zavod Lab" Vol XIV, No 12

Explains disadvantages of existing method of amine analysis. Describes own modification. Apparatus used is practically same as that required for Van-Slayk method.

[redacted] 49/49T20

GRAYEVSKAYA, Ya. I.

Cosmic Rays

S.A.

Sect. A

537.591.1

3875. **Ionization spectrum of particles of the soft and hard component of cosmic radiation.** N. A. Dobrotin, Ya. I. Grayevskaya, N. L. Grigorov, S. I. Nikol'skiy and I. D. Rappoport. Transl. in *Guide Russ. Sci. Period. Lit., Brookhaven*, 4 (*No.* 11) 335-8 (*Nov.*, 1951).

Full translation of article abstracted in Abstr. 8813 (1951).

C.A. GRAYEVSKAYA. Ya. I.

Ionization spectrum of particles of the soft and rigid components of cosmic radiation. N. A. Dobrotin, Ya. I. Grayevskaya, N. L. Grigorov, S. I. Nikol'skii, and I. D. Rapoport (M. V. Lomonosov Moscow State Univ.). *Doklady Akad. Nauk S.S.S.R.* 77, 569–572(1951).—In order to det. the presence of particles with intermediate masses (between those of the meson and the proton) the ionization spectrum of particles of the soft and rigid components was detd. These were detd. at altitude intervals of 3–4, 5–6, and 6–7 km. The results of this expt. show that the previous conclusions about the existence, at an altitude of 3200 m. of a large no. of particles of intermediate mass are erroneous.

J. R. Leach

GRAYEVSKAYA, YA, I,

USSR / Solid State Physics - Structural Crystallography E-4

Abs Jour : Ref Zhur - Fizika, No. 5, 1957 #11606.

Author : Grayevskaya, Ya. I., Iveronova, V.I., Tarasova, V.P.

Inst : Moscow University, USSR.

Title : Specialized Setup for the Determination of the Intensities of X-ray Reflections with the Aid of Geiger Counters.

Orig Pub : Kristallografiya, 1956, 1, No.4, 442 - 445.

Abstract : Description of the operation of a simplified setup for the measurement of the integral intensities of X-ray diffraction reflections. The setup is assembled out of standard instruments: X-ray apparatus type URS-55, PS-64 electronic counting circuit, Geiger counters and mechanical counters. The high voltage and the plate currents are not stabilized. To fix the intensities of the primary X-ray beam, a Geiger

Card: 1/2

S/188/60/000/004/017/018/XX
B006/B067

AUTHORS: Grayevskaya, Ya. I., Iveronova, V. I., Tarasova, V. P.

TITLE: The Dependence of the Characteristic Temperature Determined by X-Ray Analysis on the Tin Concentration in Solid Cu-Sn Solutions

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, 1960, No. 4, pp. 52 - 58

TEXT: The authors report on measurements of the characteristic temperature Θ_p in Cu-Sn alloys within a wide concentration range. These alloys were chosen because their modulus of elasticity ΔE varies considerably with concentration ($\Delta E/\Delta C$ = 500 kg/mm^2 per at% Sn). The characteristic temperatures were determined by X-ray analysis from the intensity ratios of the CuK(133) line at room temperature and at -196°C. For these measurements the authors chose copper-tin alloys in the α-phase with 2.35 at% tin (2 samples), 4.73 at% (2 samples), and 7.1 at% Sn (3 samples). The samples were produced from electrolytic copper and high-

purity tin, and were annealed for 24 - 48 hours at about 50°C. The degree of homogeneity was determined from the distinctness of the (133-024) doublet of X-ray powder patterns. A Geiger counter was used for the measurements. A curved quartz crystal served as a monochromator. The intensity of the monochromatic beam was checked by a monitor counter. Fig. 1 illustrates the concentration dependence of Θ_p. With increasing tin concentration, Θ_p rapidly decreases. The same holds for the quantity $m\Theta_p^2$ which is proportional to the modulus of elasticity of the binding forces of the atoms (Fig. 2). Θ_p and E are connected by the relation $\Theta = \frac{h\sqrt{3}}{k}\left(\frac{3N}{4\pi}\right)^{1/3}\frac{E^{1/2}}{M^{1/3}\varrho^{1/6}f^{1/2}(\sigma)}$ (h - Planck's constant, k - Boltzmann constant, N - Avogadro constant, M - atomic weight, ϱ - density, $f(\sigma)$ - function of the Poisson ratio). At low tin concentrations, also the relation $\Theta = K\sqrt{E}$ may be used, which leads to $\frac{\Delta\Theta_p}{\Delta c\Theta_p} = \frac{1}{2}\frac{\Delta E}{\Delta cE} \cdot 2.0 \cdot 10^{-2}$ or

$1.8 \cdot 10^{-2}$ per at% Sn are obtained, whether 500 (Ref. 14) or 450 kg/mm^2 are assumed for $\Delta E/\Delta C$ per at% Sn (Ref. 15). Fig. 3 shows $\theta^2 = f(a)$ and Fig. 4 $\Delta E/\Delta C = f(\Delta T/\Delta C)$. The root-mean-square error of the determination of θ_p was ~1%. The authors thank N. Ye. Kravchenko for his help in the measurements. There are 4 figures and 15 references: 11 Soviet, 2 US, and 1 German.

ASSOCIATION: Kafedra obshchey fiziki dlya fizikov (Chair of General Physics for Physicists)

SUBMITTED: February 22, 1960

GRAYEVSKAYA, Ya.I., IVERONOVA, V.I.; TARASOVA, V.P.

Effect of the concentration of tin in Cu-Sn solid solutions on the determination of characteristic temperature by X ray. Vest.Mosk.un. Ser.3:Fiz.,astron. 15 no.4:52-58 '60. (MIRA 13:9)

1. Kafedra obshchey fiziki dlya fizikov Moskovskogo universiteta.
(Copper-tin alloys--Thermal properties)
(Heat capacity)

L 58530-65 EWT(m)/EWP(b)/EWP(t) IJP(c) JD

ACCESSION NR: AP5012539 UR/0181/65/007/005/1342/1348

AUTHOR: Grayevskaya, Ya. I.; Iveronova, V. I.; Tarasova, V. P.

TITLE: Characteristic temperature of copper and of Cu-Sn alloys as determined from measurements of the temperature factor of x-ray scattering

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1342-1348

TOPIC TAGS: characteristic temperature, copper tin alloy, Debye temperature, x ray scattering

ABSTRACT: This is a continuation of earlier work by the authors (Vestn. MGU No. 4, 52, 1960) in which the authors measured the Debye temperature Θ_r by x-ray diffraction methods and compared it with the change in Young's modulus in Cu-Sn alloys of various concentrations. In view of the observed dependence of Θ_r on the temperature and on the annealing time, the authors continued the measurements and studied the dependence on the annealing time and annealing temperature for alloys with concentrations 2.35, 4.73, and 7.1 at.% Sn, and also pure copper. The values of Θ_r were determined from diffraction measurements by the same method as in the earlier work. The samples were prepared from filings obtained at room temperature. The

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ACCESSION NR: AP5012539

annealing temperature ranged from 385 to 500C. The samples were plastically deformed and isothermically annealed. The results are tabulated. They show that during the course of annealing the x-ray-scattering temperature factor goes through a maximum, and consequently the Debye temperature calculated by the Debye-Waller formula goes to a minimum. Although the variation of Θ_r is unquestionably established, the causes of the variation need further explanation. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 09Oct64 ENCL: 00 SUB CODE: SS, NP

NR REF SOV: 006 OTHER: 000

Card 2/2

20-119-1-27/52

AUTHORS: Grayevskiy, A. I., Shchegol', Sh. S., Smolyan, Z. S.

TITLE: The Physical and Chemical Investigation of Several Systems Containing Triethyl-Aluminum and Its Derivatives (Fiziko-khimicheskoye issledovaniye nekotorykh sistem, soderzhashchikh trietilalyuminiy i yego proizvodnyye)

PERIODICAL: Doklady Akademii Nauk SSSR,1958,Vol.119,Nr 1,pp.101-103(USSR)

ABSTRACT: Pure triethyl-aluminum, diethyl-aluminum-hydride, diethyl-aluminum-bromide and ethoxy-diethyl-aluminum were dissolved in cyclohexane and potentiometrically titrated by quinoline in a cell with a silver electrode and a platinum electrode or conductometrically in a cell with non-platinized plate-like platinum electrodes. The titration took place in a rare gas atmosphere. The character of the curves of the conductometric titration of the different substances mentioned above becomes evident from a diagram and shows the following: Quinoline with triethyl-aluminum forms the electrically conducting complex $Al(C_2H_5)_3.C_9H_7N$, with diethyl-aluminum-bromide the electrically conducting complex $Al(C_2H_5)_2Br.C_9H_7N$, with diethyl-aluminum-hydride the electrically nonconducting

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The Physical and Chemical Investigation of Several Systems Containing Triethyl-Aluminum and Its Derivatives

complex $Al(C_2H_5)_2H.C_9H_7N$ and the complex $Al(C_2H_5)_2H.2C_2H_7N$ with considerable electric conducting power. Ethoxy-diethyl-aluminum does not form complexes with quinoline. In the course of the investigation also the complex compound $Al(C_2H_5)_2Br.C_9H_7N$ not described as yet was eliminated. The potentiometric titration confirmed the results obtained potentiometrically, the sudden modification of the electromotive force in the singular points being remarkably more distinctly marked here than the peaks of the electric conductivity. Two diagrams show the curves of the conductometric and potentiometric titration of a mixture of $Al(C_2H_5)_3$, $Al(C_2H_5)_2Br$, $Al(C_2H_5)_2H$ and $Al(C_2H_5)_2OC_2H_5$. The course of these curves is briefly explained. In the titration of the equimolecular mixture $Al(C_2H_5)_2Cl + AlC_2H_5Cl_2$ a conductometric investigation of this mixture was impossible. The present paper is also important from the point of view of an eventually possible quick and reliable determination of the active triethyl-aluminum for the estimation of the relation between catalyst and the second catalyst in the production of the polyalkanes.

The Physical and Chemical Investigation of Several Systems Containing Tri-ethyl-Aluminum and Its Derivatives 20-119-1-27/52

There are 4 figures and 9 references, 0 of which are Soviet.

PRESENTED: August 5, 1957, by A. V. Topchiyev, Member, Academy of Sciences, USSR

SUBMITTED: August 5, 1957

Card 3/3