ORLOWSKI, Witold J.

200 cataract operations with neuroplegic premedication. Klin. oczna 31 no.2:169-183 '61.

1. Z oddzialu chorob oczu 1 W.S.O. Ordynator: dr med. W.J.Orlowski.
(CATARACT EXTRACTION anesth & analg)
(HIBERNATION ARTIFICIAL)

ORLOWSKI, Witold J.

Cataract expulsion in the condition of enzymatic zonulysis.
Klin. oczna 31 no.3:215-227 '61.

1. Z oddzialu chorob oczu Ordynator: Doc. dr med. W.J.Orlowski.
(CATARACT EXTRACTION) (CHYMOTRYPSIN)

ORLOWSKI, Witold

Some notes on the problem of therapy. Polski tygod. lek. 17 no 24: 969-970 11 Je '62.

(THERAPEUTICS)

ORLOWSKI, Witold J.

External dacryocystorhinostomy under general hypotension. Klin. oczna 32 no.1:13-24 '62.

1. Z Oddzialu Chorob Oczu Ordynator: doc. dr med.W.J.Orlowski.
(LACRIMAL APPARATUS surg) (HYPOTENSION CONTROLLED)

ORLOWSKI, Witold J.; WOJTOWICZ, Stanislaw

The outcome of paralysis of the oculomotor system in the electromyographic picture. Klin. oczna 32 no.4:313-326 '62.

1. Z Oddzialu Chorob Oczu w Warszawie. Ordynator: doc. dr med. W.J. Orlowski.

(OCULOMOTOR PARALYSIS) (ELECTROMYOGRAPHY)

POLAND

ORLOWSKI, Witold J., ZWIERZCHOWSKI, Ryszard, and STEPNIAK, Roman; Division of Ophthalmology (Oddzial Okulistyczny) (Ordynator: Docent, Dr. med. W. J. ORLOWSKI), Division of Laryngology (Oddzial Laryngologiczny) (Ordynator: Dr. R. ZWIERZCHOWSKI), and Division of Dermatology (Oddzial Dermatologiczny) (Ordynator: Dr. M. ZAJFEN) [Institution not given] in Warsaw

"Asher Syndrome. Case Report."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 22, 27 May 63, pp 795-797

Abstract: [Authors' English summary] Authors describe a case (28th in world literature and 2nd in Poland) of Asher syndrome with blepharochalasis of the Fuchs type, double lip, and struma without any signs of Basedov's disease. They are of the opinion that surgical treatment of the lip may be effective if performed after puberty, but that surgical treatment of the eyelids may be only of transient cosmetic effect because of the progressive atrophy of the skin. There are 25 references, one Polish, 9 German, and 15 Western.
1/1

WOJTOWICZ, Stanislaw; ORLOWSKI, Witold.J.

The principle of electromyography of the external muscles of the eye. Pol. tyg. lek. 18 no.47:1775-1779 18 N'63.

1. Z Oddzialu Chorob Oczu w Warszawie; kierownik: doc.dr. med. Witold J.Orlowski.

*

ORLOWSKI, Witold J.; WOJTOWICZ, Stanislaw

Electromyography in clinical ophthalmology. Pol. tyg.lek. 18
48:1789-1794 25 N'63

1. Z Oddzialu Chorob Oczu w Warszawie; ordynator: doc.dr.med.
Witold J.Orlowski).

ORLOWSKI, Witold J.; WOJTOWICZ, Stanislaw

The problem of the symptoms of internuclear ophthalmoplegia. Notes on a case examined with electromyography. Klin. oczna 33 no.1:36-48 '63.

1. Z oddzialu chorob oczu w Warszawie Ordynator: doc. dr med. W.J. Orlowski.
(OCULOMOTOR PARALYSIS) (ELECTROMYOGRAPHY)

ORLOWSKI, Witold J.; WOJTOWICZ, Stanislaw

Electromyographic studies in paralysis of the oculomotor nerve. Klin. oczna 33 no.2:147-166 '63.

1. Z Oddzialu Chorob Oczu w Warszawie Ordynator: doc. dr med. W.J. Orlowski.
(OCULOMOTOR PARALYSIS) (ELECTROMYOGRAPHY)

ORLOWSKI, Witold J.

Marcus Gunn's synkinesis. Klin. oczna 34 no.1:47-55 '64

1. Z Oddzialu Chorob Oczu w Warszawie: ordynator: doc.dr. med. W.J.Orlowski.

*

ORLOWSKI, Witold J.; ZWIERZCHOWSKI, Ryszard; STEPNIAK, Roman

A case of Ascher's syndrome. Pol. tyg. lek. 18 no.22:795-797 27 My '63.

1. Z Oddzialu Okulistycznego; ordynator: doc. dr med. W.J. Orlowski, z Oddzialu Laryngologicznego; ordynator: dr R. Zwierzchowski i z Oddzialu Dermatologicznego w Warszawie; ordynator: dr M. Zajfen.
(EYELIDS) (GOITER) (LIPS) (DISEASES)

ORLOWSKI, [illegible] (Warszawa)

[illegible] following a short [illegible] 29 [illegible].

ORLOWSKI, Witold J.

Conservative therapy of primary glaucoma. I. Pharmacology of glaucoma. Klin. oczna 34 no. 3:341-361 '64.

1. Farmakologia Jaskry.

PIATKOWSKA, Barbara; GWOZDZ, Eugeniusz; ORLOWSKI, Witold,J., doc. dr. mod.

Modern methods of treatment in herpetic keratitis. I. Methods of idoxuridine application in the light of experimental studies. Klin. oczna 35 no.1:1-6 '65.

1. Z Oddzialu Chorob Oczu WSO w Warszawie (Ordynator: doc. dr. med. W.J. Orlowski).

OKLOWSKI, Witold, J.

The medical management of primary glaucoma. II. Therapeutic principles. Klin. oczna 35 no.2:153-160 '65.

ORLOWSKI, Z.

Anemia in workers of dye industry and therapy in the health-resort Duszniki-Zdroj. Med.pracy 5 no.6:407-413 1954.

1. Z Osrodka klinicznego w Duszznikach-Zdroju II Kliniki chorob wewnetrznych A.M. w Lodzi; dyr. prof. dr J.Jakubowski.

(ANEMIA
occup. in dye indust. workers, ther., mineral waters of Duszniki-Zdroj)
(OCCUPATIONAL DISEASES
anemia in workers of dye indust., ther., mineral waters of Duszniki-Zdroj)
(MINERAL WATERS, ther. use
anemia, occup. in workers of dye indust.)

MONSIORSKI, Jerzy; ORLOWSKI, Zbigniew

Hormonal therapy of a case of female genital cancer of multiple metastases. Polski tygod. lek. 11 no.17:746-748 23 Apr 56.

1. Z Zakladu Poloznictwa i Ginekologii Bydogoskiego Oddzialu Inst. Doskonalenia i Specj. Kadr Lekarskich przy. Szpitalu Wojewodzkim A. Jurasza w Bydogoszcy; kier. Zakladu: dr. med. Jerzy Monsiorski, Bydgoszcz, ul. Dworcowa 22.

(UTERUS, neoplasms,
ther., androgens with nitrogen mustard in case with multiple metastases (Pol))
(ANDROGENS, therapeuticuse,
cancer of uterus with multiple metastases, with nitrogen mustards (Pol))
(NITROGEN MUSTARDS, therapeutic use,
cancer of uterus with multiple metastases, with androgens (Pol))

ORLOWSKI, Z.

Cardiac rhythm in myocardial infarction and its prognostic value. Kardiol. pol. 5 no.4:305-321 '62.

1. Z II Kliniki Chorob Wewnetrznych AM w Lodzi. Kierownik: prof. dr J. Jakubowski.

(MYOCARDIAL INFARCT) (ARRTHYTHMIA)

ORLOWSKI, Zbigniew; KRYKOWSKI, Edward; KRAUZE-JAWORSKA, Helena

The gamma globulin level in the blood serum and some immunological manifestations in patients with chronic lymphatic leukemia. Pol. med. wewnet. 32 no.7:697-700 '62.

1. Z II Kliniki Chorob Wewnetrznych AM w Lodzi Kierownik: prof. dr med. J. Jakubowski.
(LEUKEMIA LYMPHOCYTIC) (SERUM GLOBULIN)

ORLOZOROV, S.

Green light to automation. NTO no.9:9-10 S '59.
(MIRA 13:1)

1. Predsedatel' soveta pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva na Uralvagonzavode.
(Sverdlovsk--Automation)

ORLOZOROVA, Yu.L.

Using low-nickel and nickel-free steel for heavily loaded tractor gears. Metalloved. i term. obr. met. no.11:26-27 N '65. (MIRA 18:12)

1. Khar'kovskiy traktornyy zavod.

18 1210

Z/032/61/011/009/009/009
E073/E535

AUTHOR: Orlt, R.

TITLE: Fatigue limit of dural type aluminium alloys as a function of the surface treatment

PERIODICAL: Strojírenství, 1961, Vol.11, No.9, p.713

TEXT: The fatigue strength values of rods from various heats of dural type aluminium alloys (ČSN 42 4201) and superdural type alloys (ČSN 42 4205) were determined. The test durations were up to 10^8 cycles; the difference between the results of the tests was much greater than anticipated, particularly in the case of rough machined surfaces. In the case of parts which are subjected to alternating stresses, the use of dural is preferable to that of superdural.

1961, Prague: SVÚMT Z-60 951.

[Abstractor's Note: Complete translation.]

/B

Card 1/1

ORITOVA, A.; SCHREIBER, V.; KMENTOVA, V.; SONKOVA, L.

Dynamics of the effect of hypoglycemic sulfonamides. Cesk. fysiol. 6 no.4:507-510 Nov 57.

1. Laborator pro endokrinologii a metabolismus pri III. interni klinice fakulty vseobecneho lekarstvi Karlovy university, Praha.

(ANTIDIABETICS, effects,
carbutamide, on blood sugar in normal & adrenalectomized animals & on adrenal vitamin C (Cz))
(ADRENALECTOMY, effects,
on blood sugar response to carbutamide (Cz))
(ADRENAL CORTEX, metabolism,
vitamin C, eff. of carbutamide (Cz))
(VITAMIN C, metabolism,
adrenal cortex, eff. of carbutamide (Cz))

DAVYDOV, A.; KUNIAVSKIY, M.; MALEVICH, L.; PROSHLYAKOV, V.P. Prinimali uchastiye: SHAPPO, A.F.; CHERVYAKOV, P.Ya.; OKLYANCHIK, M.P., starshiy inzh.; REVUTSKIY, F.A., starshiy pochvoved; GUSKL'NIKOVA, O.I., inzh.; GORN, Ye.R., tekhnik; MORKOVINA, T.N., tekhnik. BONDARENKO, M., red.; BAKHTIYAROV, A., tekhn.red.

[General plan for organizing the territory of the Golodnaya Steppe] General'naia skhema organizatsii territorii Golodnoi stepi. Tashkent, Gos.izd-vo Uzbekskoi SSR, 1958. 189 p.
(MIRA 14:3)

(Golodnaya Steppe--Agriculture)

ORLYANKIN, N. M.

TIMCHENKO, A.I., inzhener; ORLYANKIN, N.M., laureat Stalinskoy premii; BOGDANOV, B.N., nauchnyy redaktor.

[Brick walls with facing panels hung over an intervening air space] Kirpichnye steny s plitami na otnose. Moskva, Gos.izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 33 p. (MLRA 7:3)
(Walls)

SKRAMTAYEV, B.G., professor; SHISHKIN, A.A., kandidat tekhnicheskikh nauk; ORLYANKIN, N.M., inzhener; BUDILOV, A.A., inzhener.

Use of coarsely porous concrete for building walls under winter conditions. Stroi.prom. vol. 31 no.9:20-21 S '53. (MLRA 6:9)
(Concrete construction--Cold weather conditions)

ORLYANKIN, N.M.

SKRAMTAYEV, B.G., professor, laureat Stalinskoy premii; POPOV, N.S., laureat Stalinskoy premii; ORLYANKIN, N.M., laureat Stalinskoy premii; KONOPLEV, F.N., laureat Stalinskoy premii.

Activation of cement by preliminary wet grinding in concrete mixers. Rats.i izobr.predl.v stroi. no.55:12-13 '53. (MLRA 7:3)
(Cement) (Mixing machinery)

ORLYANKIN, N.M.; KARDO-SYSOYEV, F.N., inzh., nauchnnyy red.; ZELENYAKVA, N.N., red. izd-va; STEPANOVA, E.S., tekhn. red.

[Lightweight walls according to the system of N.S. Popov, N.M. Orliankin and R.N. Popova] Oblegchennye steny sistem N.S. Popova, N.M. Orliankina i R.N. Popovoi. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 93 p. (MIRA 11:7)
(Walls)

ORLYANKIN, N.M., inzh.; RABINOVICH, R.L., inzh.

Using the M11-200 machine tool in making large lightweight brick blocks. Transp. stroi. 8 no.3:9-10 Mr '58. (MIRA 11:4)
(Brickmaking machinery)

ORLYANKIN, N.M.; RABINOVICH, R.L.

Using concrete with organic aggregates in lightweight construction. Transp.stroi. 9 no.2:58 F '59. (MIRA 12:5)
(Concrete construction)
(Walls)

ORLYANKIN, V.N.

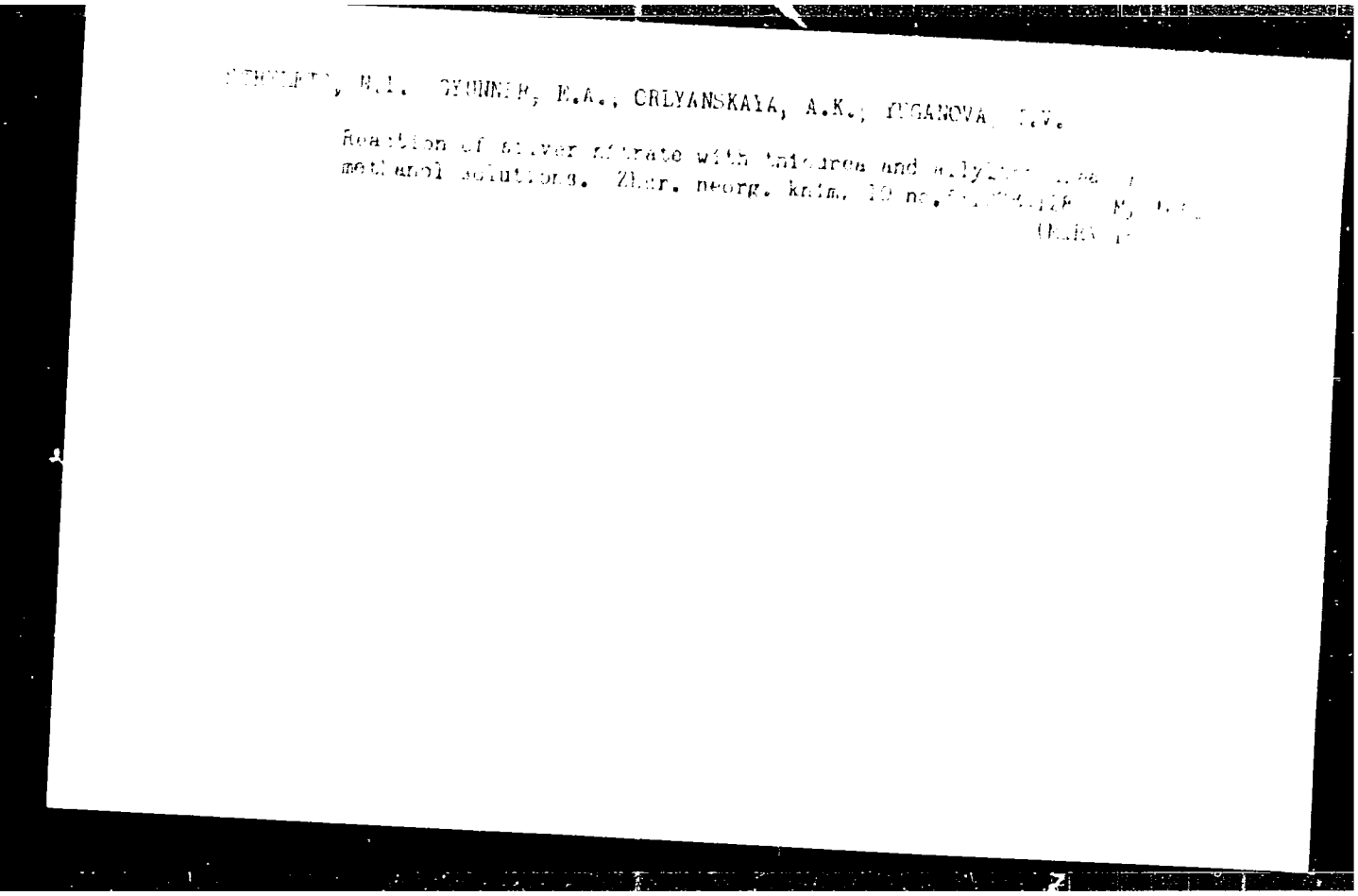
Interpretation of aerial photographs when studying placer deposits.
Trudy VAGT no.8:150-154 '62. (MIRA 15:11)
(Siberian Platform--Placer deposits) (Aerial photogrammetry)

ORLYANKIN, V.N.

Determination of the thickness of fluvial alluvium by aerial photographs of fans in meandering rivers. Vop. geog. no.63: 112-125 '63. (MIRA 17:3)

LILIYENBERG, D.A.; CRLYANKIN, V.N.

Discussion about the content of geomorphology. Vop. geog. no.63:168-179 '63. (MIRA 17:3)



[illegible], N.I., ZYUMMER, E.A., CRLYANSKAYA, A.K., YUGANOVA, I.V.

Reaction of silver nitrate with chlorine and [illegible] methanol solutions. Zhur. neorg. khim. 10 no. [illegible] (MIRA [illegible])

STRELETS, N.L., ORLYANSKAYA, A.K.

Refractometric study of the formation of zinc cobalt and nickel oxalates. Zhur. neorg. khim. 10 no. 12 2764-2765 D '65.
(MIRA 18:11)

1. Krymskiy pedagogicheskiy institut imeni Frunze. Submitted Sept. 23, 1965.

ACCESSION NR: AT4042722 S/0000/63/000/000/0510/0514

AUTHOR: Yarmonenko, S. P.; Kurlyandskaya, Z. B.; Avrunina, G. A.; Gaydova, Ye.S.; Govorun, R. D.; Orlyanskaya, R. L.; Paly*ga, G. F.; Ponomareva, V. L.; Fedorova, V. I.; Shmakova, N. L.

TITLE: Reactions to radiation an chemical protection of animals subjected to the effects of high-energy protons

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy* konferentsii. Moscow, 1963, 510-514

TOPIC TAGS: corpuscular radiation, high energy proton, synchrocyclotron, gamma ray, radiation effect, radioprotective agent, RBE

ABSTRACT: Experiments were performed to determine the immediate and the delayed effects of high-energy protons and their RBE on animal organisms. High-energy protons of 660 Mev were generated on a syncrocyclotron. Comparative tests using gamma rays from a Co^{60} source were used in establishing the RBE. Nonpure strain mice and rats were used, in addition to mice of the BALB and C-57Bl strains.

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ACCESSION NR: AT4042722

All materials were subjected to statistical analysis. In comparative experiments performed on rats subjected to a dose of 500 rad, the degree of injury to hemopoietic organs by protons was considerably less than injury caused by gamma radiation. The depression of hemopoiesis in the bone marrow and the spleens of animals irradiated by protons was less profound and less prolonged, and regenerative processes began earlier than in injuries produced by produced by gamma rays. This difference of effect was particularly clear in the dynamics of the peripheral blood. After exposure to gamma irradiation, a profound and prolonged anemia developed, accompanied by a loss of 44% of the erythrocytes and 51% of the hemoglobin. An equivalent dose of protons caused only insignificant lowering of these indices. Similar effects were observed in the white blood corpuscles, particularly in respect to neutrophiles. The results obtained confirm that the condition of peripheral blood does not reflect the true depth of radiation damage to hemopoiesis. In experiments with white mice, a study was made of early destructive changes in the brain marrow, the dynamics of mitotic activity, and the kinetics of cells with chromosomal injuries. Exposure to protons induced typical radiation degeneration of cells of the bone marrow, a slowing down of mitotic activity, and injuries to the chromosomes. A strong linear relationship of injury-to-dose was

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ACCESSION NR: AT4042722

observed in all three indices within the 250--1000 rad range. Exposure to equivalent doses of gamma rays produced more pronounced changes, indicating that the RBE of protons is equivalent to 0.5--0.7. Preliminary administration of radioprotective agents -- AET (S,β-aminoethylisothioronium), MEA (mercaptoethylamine), and 5-MOT(5-methoxytryptamine) -- diminished the number of degenerating and aberrant cells in the bone marrow in proportion to the effect of the indicated drugs on survival. The most effective appeared to be a combination of MEA and 5-MOT, whose use assured the survival of 50% of the mice when irradiated by doses of 1900 rad. If irradiation is fractionated, the protective effect of the drugs is reduced sharply, or it disappears altogether. In experiments on male mice of the BALB strain subjected to doses of 500 and 700 rad, reversible changes were observed in the weight of testicles. The change of weight and its subsequent recovery was due to the death and the subsequent regeneration of germ cells. Protons have a typical sterilizing effect on the genitalia, but their RBE, in comparison with gamma rays, lies between 0.6 and 0.7. The use of antiradiation drugs did not prevent the sterilizing action of protons, but it caused a somewhat smaller loss of weight of the testicles and produced a shorter period of sterility. White male mice which had been protected by AET, MEA, 5-MOT, and cystamine from the effects of proton doses of 1300--1600 rad recovered their generative functions

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ACCESSION NR: AT4042722

almost completely four to seven months after irradiation. The development of the first generation of 290 mice obtained by crossing the protected and irradiated males with intact females took place without visible somatic injuries. The relative effectiveness of protons and gamma rays in causing somatic mutations was studied on livers of white rats who were subjected to doses of 150 rad. Regeneration of the liver was induced by removing the large left and the front right lobes of the liver. The operation was performed 24 hours after irradiation. The animals were killed 30 hours after the operation, i. e., during the first wave of the increase of mitotic activity. Control animals had 6.9% of aberrant cells, while after irradiation by protons and gamma rays, the number of aberrant cells was 20% and 29%, respectively. This indicates that the RBE of protons in respect to somatic mutations is around 0.7. New data were obtained on the blastomogenic effect of protons. Out of 85 irradiated rats, tumors were found in 39. Twenty-five of them had multiple tumors in various locations. In experiments on non-pure strain white mice, it was possible to show that antiradiation drugs, while increasing the ratio resistance of the animals, do not prevent subsequent development of new growth. Out of 65 irradiated mice who died at various periods after exposure to protons in doses from 1300 to 1500 rad (after having previously received antiradiation protection), fourteen had leucosis and four had sarcoma.

Card 4/5 Submitted: 27 Sept 63

ZAKHAROV, N.V.; ORLYANSKAYA, R.L.

Metabolism of phosphorus compounds and proteins in the brain of rats during excitation and confulsions produced by cordiamine. Vop. med. khim. 6 no.3:249-253 My-Je '60. (MIRA 14:3)

1. Moskovskiy oblastnoy nauchno-issledovatel'skiy klinicheskiy institut imeni M.F.Vladimirskogo.
(NIKETHAMIDE) (BRAIN) (PHOSPHORUS METABOLISM)
(PROTEIN METABOLISM) (CONVULSIONS)

L 3640-66 EWT(m)
ACCESSION NR: AP5025916

UR/0205/65/005/005/0656/0658
577.391;539.125.4

37
38
B

AUTHOR: Govorun, R. D.; Orlyanskaya, R. L.

TITLE: Change in the protein fractions of the blood plasma of rats irradiated with 660-Mev protons

SOURCE: Radiobiologiya, v. 5, no. 5, 1965, 656-658

TOPIC TAGS: radiation biologic effect, animal physiology, blood plasma, gamma globulin

ABSTRACT: The object of this work was to study the effect of the radiation dose and the length of time after irradiation on changes in the blood protein fractions of proton-irradiated animals. It was found that irradiation of rats with 660-Mev protons (doses 500, 800, 1000, and 1350 rad) causes significant changes in the amount of protein fractions in the blood. These changes are most clearly expressed in the first ten days after irradiation and have a phase character: maximum deviations occur on the 1st day and the 6th—10th days after irradiation. Normalization tendencies are observed on the 3rd day and after the 20th day. Differences between irradiated protein fractions and control samples were found to increase as the radia-

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tion dose increased. The most characteristic changes in blood plasma, a considerable decrease in the albumin content and an increase in the amount of α- and β-globulins, were observed in the first ten days after irradiation with doses of 800—1350 rad. By the end of the 30-day observation period, complete restoration of blood protein fractions to initial levels was not observed. It is of interest that the types of changes are qualitatively identical during irradiation with both 660-Mev protons and other types of radiation. Orig. art. has: 2 tables. [JS]

ASSOCIATION: Institut gigiyeny truda i profzabolevaniy AMN SSSR, Moscow (Institute of Industrial Hygiene and Occupational Diseases, AMN SSSR)

SUBMITTED: 18Sep63	ENCL: 00	SUB CODE: LS
NO REF SOV: 007	OTHER: 007	ATD PRESS: 4116

BVK.

Card 2/2

[illegible].17[illegible]

[illegible] 30/[illegible]

AUTHORS: [illegible], L. A., [illegible], [illegible] N., Opi[illegible]ski[illegible], A. D.

TITLE: Observations of Meteors With Radar With Two Receivers of Different Sensitivity

PERIODICAL: Astronomicheskiy [illegible], [illegible], Vol [illegible], Nr 1, pp [illegible] (USSR)

ABSTRACT: [illegible] R. Kai[illegible] [illegible] the relation between the numbers of observed meteors and the parameters of two radar transmitters of different sensitivity. Using this relation, the authors derive the expression for the [illegible] the [illegible] of meteors [illegible]:

$$S = 1 + 2\,\frac{\log \frac{N_1}{N_2}}{\log \left| \frac{P_1 [illegible]}{P_2 [illegible]} \right|} \qquad (3)$$

Here, N is hourly number of meteors; P, peak intensity

Card 1/[illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00123

of radar signal; λ, wavelength; ε, threshold intensity of signal; indices 1 and 2 refer to the two transmitters. The standard radar transmitter of the Institute of Applied Geophysics of the Academy of Sciences, USSR, has a peak power of P = 80 kw and uses the wavelength λ = [illegible] m. It was modified by the latter two authors by adding another transmitter such that $\varepsilon_2 / \varepsilon_1$ = [illegible], and an attachment for registering the number of meters photographically. With this equipment the stream of Quadrantids was observed for many [illegible], between the hours of [illegible] t (local time). The quantity S did not remain constant but reached a maximum value of [illegible] on January [illegible]; the authors explain it by increase in the number of small meteors. If t_1 and t_2 are the durations of the radio echo of one and the same meteor trail for the two radar transmitters, then it is possible to determine the coefficient of diffusion:

$$D = \frac{\lambda^2}{32\pi^2(t_2 - t_1)} \ln \frac{\varepsilon_1}{\varepsilon_2} \qquad (6)$$

Observation of Me[illegible]
Two Penel[illegible] of Differe[illegible]

[illegible] and [illegible] participated in observation [illegible] tables: [illegible] references [illegible]

ASSOCIATION: Institute of A[illegible] Sciences, [illegible]

SUBMITTED: A[illegible]

Card [illegible]

86654

3.9000 (1041, 1109, 1327)

S/034/60/000/210/001/002
E032/E114

AUTHORS: Korpusov, V.N., and Orlyanskiy, A.D.

TITLE: Radar Observations of Lyrids in 1959

PERIODICAL: Astronomicheskiy tsirkulyar, 1960, No. 210, pp. 26-27

TEXT: The observations were carried out between 21st and 24th April 1959, near Moscow, using standard radar apparatus working on a wavelength of $\lambda = 4.1$ m, pulse repetition frequency of 50 pps/sec and power per pulse of 80 kW. The aerial of the locator was a "wave channel" with a single reflector, a wave dipole and five directors. The reflected pulses were recorded photographically, using two receivers. The ratio of the true receiver sensitivities was 9.3. The high sensitivity receiver recorded 384 meteors in 24.3 hours, while the lower sensitivity receiver recorded 78 meteors in the same time. Hourly rates N_h for the meteors are shown in the following table (the number of meteors is shown in brackets):

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S/034/60/000/210/001/002
E032/E114

Radar Observations of Lyrids in 1959

Table 1

N_h \ Date	21/IV	22/IV	23/IV	24/IV
receiver I	21.0(101)	17.8(121)	12.9(99)	12.6(63)
receiver II	3.3 (16)	4.1 (28)	2.9(22)	2.4(12)

According to the above table, the average value of the exponent S in the mass distribution of meteor bodies is 2.50. Table 2 gives the distribution of the meteors with range R. The range was determined by interpolation between the corresponding range markers on the film. The results are given in the form of fractions in which the numerators represent the number of observations and the denominators the average value of the range.

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S/034/60/000/210/001/002
E032/E114

Radar Observations of Lyrids in 1959

Table 2

R, km	N/R av.	R	N/R av.
100 ≤ R < 150	17/125	400 ≤ R < 450	25/420
150 ≤ R < 200	52/175	450 ≤ R < 500	20/470
200 ≤ R < 250	24/220	500 ≤ R < 550	9/520
250 ≤ R < 300	29/275	550 ≤ R < 600	4/570
300 ≤ R < 350	51/330		
350 ≤ R < 400	45/370	800 < R < 850	2/825

Table 3 shows the distribution of durations of the radio echoes from meteor trails (numerators = number of observations, denominator = average duration).

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S/034/60/000/210/001/002
E032/E114

Radar Observations of Lyrids in 1959

Table 3

N / τ sec, τ av.	τ<0.2	0.2≤τ<0.4	0.4≤τ<1.0	1≤τ<5	5≤τ<10	τ≥10
21 April	82/0.10	11/0.24	5/0.51	2/1.57	1/5.00	
22 "	71/0.09	18/0.26	12/0.61	9/2.05	2/5.50	
23 "	53/0.10	16/0.27	14/0.50	7/1.92	3/6.70	2/24.?
24 "	39/0.10	13/0.24	4/0.50	3/1.57	1/5.12	

The following persons took part in the observations: V.N. Korpusov, A.D. Orlyanskiy, G.N. Solov'yev, and B.F. Chernyayev.

ASSOCIATION: Institut prikladnoy geofiziki AN SSSR
(Institute of Applied Geophysics, AS USSR)

SUBMITTED: August 30, 1959

Card 4/4

ACC NR: AP7003025 SOURCE CODE: UR/0203/66/006/004/0703/0706

AUTHOR: Aref'yeva, A. V.; Korpusov, V. N.; Lysenko, I. A.; Orlyanskiy, A. D.; Ryabchikov, A. N.; Shuvarikova, N. F.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Results of a study of the wind regime in the meteor zone by the radar method

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 4, 1966, 703-706

TOPIC TAGS: atmospheric wind, meteorologic radar, signal to noise ratio

ABSTRACT: The method and results are presented of a study of wind circulation in the upper atmosphere conducted during the first half of 1964 near Moscow (56° N). The wind circulation was measured by radar tracking of meteor trail drifts at altitudes of 85—110 km.

The radar equipment used in the measurements had a coherent pulse output modulating a 33-Mc carrier. The pulse duration, repetition frequency, and power were 10 μsec, 500 cps, and approximately 100 kw, respectively. A form of coding was used in which every fifth pulse was distinct. A two stack transmitting antenna consisting of four 5-element Yagi antennas was employed. The receiver antenna had only one 5-element section. The

Card 1/4 UDC: 523.53:551.510.53

receiver sensitivity thus achieved was 2—3 μv at a signal-to-noise ratio of two. The display and recording equipment was triggered by the received pulses and was protected from spurious noise by 1) utilization of the coincidence of two consecutive marker pulses for correlating purposes, 2) preselection by repetition frequency discrimination, and 3) spurious signal suppression using a special detuned noise receiver. The displayed frames were filmed. Each frame contained information on the distance from the point of reflection of the transmitted pulse, the meteor echo diffraction pattern, the Doppler shift pattern, the date and time, and the antenna direction.

The horizontal component of the unit velocity of meteor trail movement was obtained from direct readings of the radial trail velocity components as recorded by the Doppler shifts. The direction of meteor trail movements was determined from the Doppler shift phase difference obtained at the outputs of two phase detectors in which the reference signals were approximately in quadrature.

The drift velocity readings had considerable fluctuations and, for this reason, were averaged on an hourly basis. The averages were used to study diurnal wind pattern changes. In order to secure meaningful averages using the equipment at hand (based on at least 50 measurements/hr),

measurements were made alternately, first in the NS and then in the EW directions. The results obtained at the same time of day but for different days were combined. Thus, about 7000—9000 individual readings were recorded during one 5—7 day measurement session.

On the basis of the observation results, it was established that the magnitude and direction of winds varied from day to day and from month to month. The experimental curves of wind velocities were anlayzed by Fourier series. i. e., they were reduced to a constant component and three harmonics (corresponding to 24-, 12-, and 8-hour variations). The second harmonic was predominant. The velocities of the zonal wind components attained maximum values of 20—30 m/sec in April and June. These velocities were lowest during January and March (1—5 m/sec); during February and May they were 12—15 m/sec. The direction varied from easterly during February and March to westerly during the April—May period, and again to easterly in June. The meridian wind components were directed to the south during every month except March. The magnitudes of these components varied from 5 to 18 m/sec; the maximum was observed in March.

Comparison of these results with the published data from similar studies at Manchester and Khar'kov established that similarities exist in

ACC NR: AP7003025

the monthly variations and that in all three cases the wind velocities decrease during spring and summer. The curves of the meridian wind components exhibit certain similarities, but the zonal component curves show closer agreenment. The data are different when the relative magnitudes of the wind velocities for the three locations are considered. Both wind components at Manchester were weaker than those studied in the USSR. This is attributed to the different climatological conditions at the points of observation and to the different times of observation with respect to the 11-year solar activity cycle. Orig. art. has: 3 figures. [FSB: v. 2, no. 10]

SUB CODE: 04,07 / SUBM DATE: 29Mar65 / ORIG REF: 004 / OTH REF: 003

Card 4/4

ORLYANSKIY, G. (Sverdlovsk)

Wings. Grazhd. av. 17 no. 11:30 N '60. (MIRA 13:12)
(Airplanes--Wings)

ORLYANSKIY, Ya.G.; TSAREVSKIY, B.V.; POPEL' S.I.

Effect of deoxidizers on the suface finish of carbon steel castings. Lit. proizv. no.10:4-5 O '63. (MIRA 16:12)

ORLYGINA-CHURSINA, T.M., vrach

Uterine rupture of three months' duration. Zdrav. Turk. 3 no.4: 30-31 Jl-Ag '59. (MIRA 13:2)

1. Iz kafedry akusherstva i ginekologii (zaveduyushchiy - prof. A.B. Preyeman) Turkmenskogo gosudarstvennogo meditsinskogo instituta im. I.V. Stalina.
(UTERUS--RUPTURE)

ORLYGINA-CHURSINA, T.M., assistent

Course of labor with untimely escape of fluids. Zdrav.Turk. 5 no.2:25-27 Mr-Ap '61. (MIRA 14:5)

1. Iz kafedry akusherstva i ginekologii (zav. - dotsent M.S. Seyradov) Turkmenskogo gosudarstvennogo meditsinskogo instituta imeni I.V.Stalina.

(LABOR, COMPLICATED)

ORLYUK, S.

VARVARENKO, N.; ORLYUK, S.; ANUKHIN, I.

Improving the quality of auditing in enterprises. Bukhg.uchet 14 no.7:41-47 Jl '57. (MLRA 10:7)

1. Revizor tresta "Kavsantekhmontazh," Rostov-na-Donu (for Varvarenko), 2. Revizor Ministerstva stroitel'stva Ukrainskoy SSR, Kiyev (for Orlyuk). 3. Trest "Lenryba," Leningrad (for Anukhin).
(Auditing)

Orlyuk, S

ORLYUK, S.

Auditor's notes. Bukhg. uchet. 14 [i. e. 16] no.12:27-29
D '57.

(Auditing) (MIRA 11:1)

ORLYUK, S.

Financial condition of building organizations has improved.
Fin. SSSR 19 no.4:48-49 Ap '58. (MIRA 11:4)

1.Nachal'nik finansovogo otdela Upravleniya stroitel'stva i promstroy-materialov Kiyevskogo sovnarkhoza.
(Kiev Economic Region--Construction industry--Finance)

ORLYUK, S.

What is accomplished through the analysis of construction and installation costs. Fin. SSSR 20 no.7:56-57 Jl '59.
(MIRA 12:11)

1.Nachal'nik finansovogo otdela Upravleniya stroitel'stva Kiyevskogo sovnarkhoza.
(Kiev Economic Region--Construction industry--Costs)

ORLYUK, S.; YATSENKO, S.

Determine available working capital correctly. Fin. SSSR 23 no.2:68-70 F '62. (MIRA 15:2)

1. Zamestitel' nachal'nika finansovogo otdela i tsentral'noy bukhgalterii upravleniya stroitel'stva Kiyevskogo sovnarkhoza (for Orlyuk). 2. Zamestitel' glavnogo bukhgaltera Kiyevskogo sovnarkhoza (for Yatsenko).

(Kiev Province--Construction industry--Finance)

ORLYUK, Stepan Yakovlevich; MOLOFAY, Grigoriy Grigor'yevich; VOROBKOVA, L., red.

[Comprehensive audits of construction and assembly organizations] Kompleksnye revizii stroitel'no-montazhnykh organizatsii. Kiev, Budivel'nyk, 1964. 127 p. (MIRA 17:8)

ORM, G.F.

The AOE-5 asynchronous electric motors. Biul.tekh.-ekon.inform. no.12:48-49 '61. (MIRA 14:12)
(Electric motors, Induction)

ORMA, B.

Improving the rationalizers' movement in flour mills, bakeries, and feed production plants. p. 125.

TECHNIKA VUYUPU, MLYNARSTVI A PEKARSTVI. (Ministerstvo potravinarskeho prumyslu a vykupu zemedlskych vurobku a Sdruzeni mlynu a pekaren) Paraha, Czechoslovia, Vol. 5, no. 3, Mar. 1959.

Monthly List of East European Accessions (EEAI), LC Vol. 9, no. 2, Feb. 1960.

Uncl.

ORMAI, Laszlo, dr.

Mechanical data-processing system of the Hungarian Statistical Office. Stat szemle 40 no.12:1262-1264 D '62.

1. Kozponti Statisztikai Hivatal osztalyvezetoje.

ZIMANYI, Istvan; PROHASZKA, Margit; SZONDY, Maria; ORMAI, Sandor

Arterial hypertension after poliomyelitis. Orv. hetil. 100 no.16: 573-577 19 Apr 59.

1. A Fovarosi Tanacs VB. Heine-Medin Utokezelo Korhaza es Rendelointezetenek (igazgato-foorvos: Lukacs Laszlo dr.) kozlemenye.
(POLIOMYELITIS, compl.
hypertension, arterial (Hun))
(HYPERTENSION, etiol. & pathogen.
polio. in etiol. of arterial hypertension (Hun))

GRNAI,S.

Statements concerning the pathogenesis of [illegible] years.
Acta med. Acad. sci. Hung. vol. [illegible]

1. Abteilung für Pathophysiologie (Direktor: Prof. Dr. I.Kurczynski), Forschungsinstitut für experimentelle Medizin der ungarischen Akademie der Wissenschaften, Budapest.

ORMAI, Vera

"Tanitokepzo Intezetek Tudomanyos Kozlemenyei," no.1. Reviewed by Vera Ormai. Magy pszichol szemle 21 no.2:298-300 '64.

ORMAI, Vera

"Thought and the level of knowledge of children from 10 to 14 years of age" by [Dr.] Laszlo Kelemen. Reviewed by Vera Ormai. Magy pszichol szemle 21 no.3:473-476 '64.

OKMAN, B.

Stork-CWL. 1-90 long tons, a crane for construction.

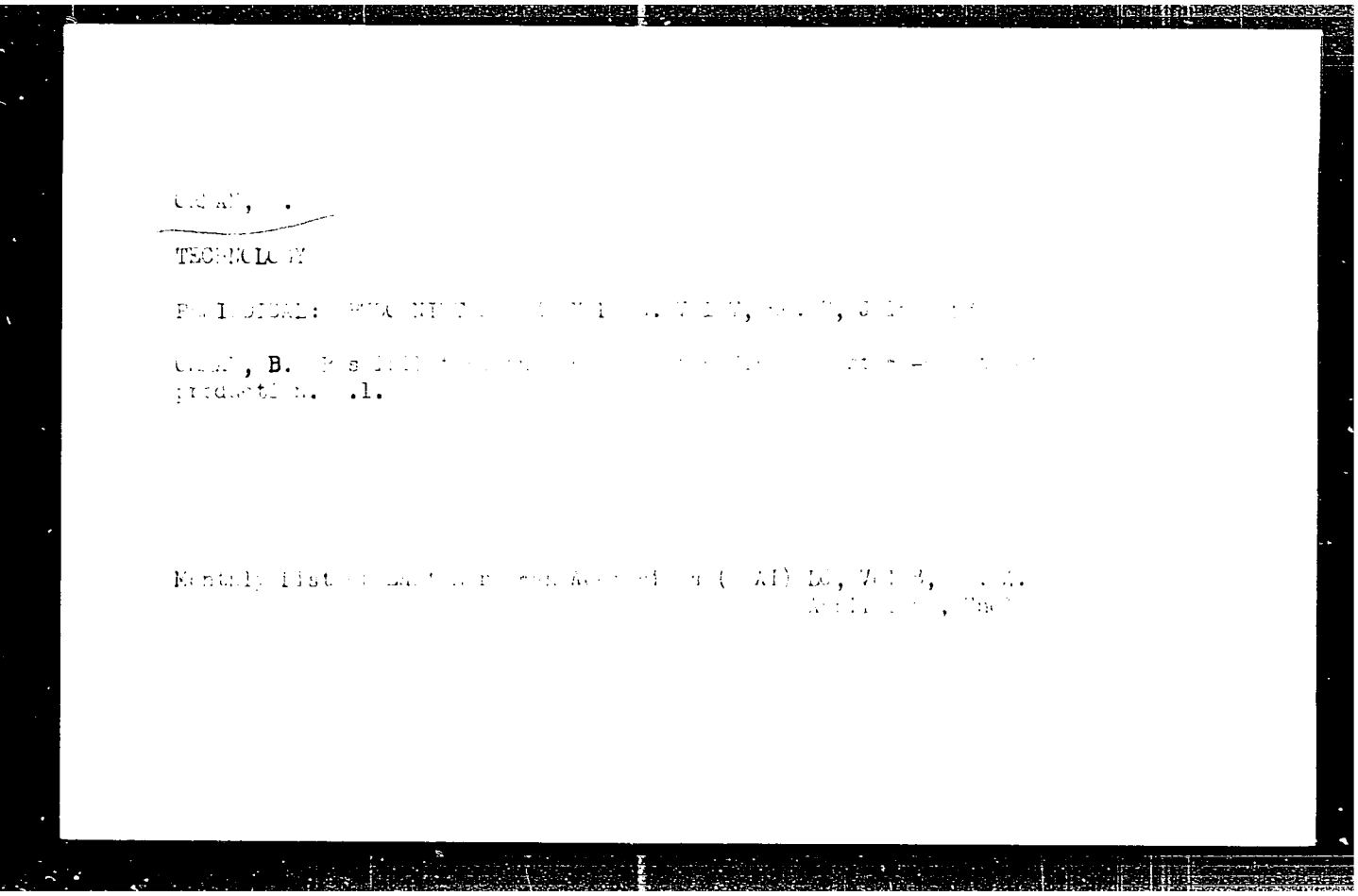
p. 8 (Budownictwo Przemyslowe) Vol. 4, no. 9, Sept. 1955, Warszawa, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

ORMAN, R.

The 500-ton-meter Derrick building crane. p. 19. (Budownictwo Przemysłowe. Vol. 5, No. 7/8, July/Aug 1956, Warsaw, Poland)

SO: Monthly List of East European Accessions (EE/L) LC, Vol. 6, No. 9, Aug 1957. Uncl.



ORMAN, I.B., inzh.

Develop the manufacture of skis made of plywood. Der.prom. 8 no.1:15-16 Ja '59. (MIRA 12:1)
(Skis and skiing) (Plywood)

ARSEN'YEV, K.K., kand.tekhn.nauk; ORMAN, I.B., inzh.

Basic problems in the expansion of ski manufacture. Der.prom. 11 no.2:1-2 F '62. (MIRA 15:1)
(Skis and skiing) (Woodworking industries)

ORMAN, M.L. (Moskva)

Study of the functional state of the cardiovascular system and respiration in patients with epidemic hepatitis and problems of oxygen therapy. Vop.med.virus. no.9:218-229 '64.
(MIRA 18:4)

P.T.A.

metallurgy

669.721.5 : 549.12(083.7)

317

[illegible] M. Magnesium Alloys.

„Stopy magnezu" Katowice, 1948, Centr. Zarz. Przem. Hutn., 8°, pp. 118, 7 figs.

General notes. Preparation of metallographic surfaces of specimens of magnesium and magnesium alloys. Binary magnesium alloys containing antimony, arsenic, barium, beryllium, bismuth, cerium, [illegible], tin, zinc, aluminium, cadmium, cobalt, silicon, manganese, [illegible], copper, nickel, lead, potassium, sodium, silver, calcium, iron. Ternary magnesium alloys with aluminium and bismuth, aluminium and cadmium, aluminium and silicon, aluminium and zinc. Multicomponent [illegible] alloys. Classification of m-alloys. American and British standards for [illegible]

Metallurgy and metallography
9

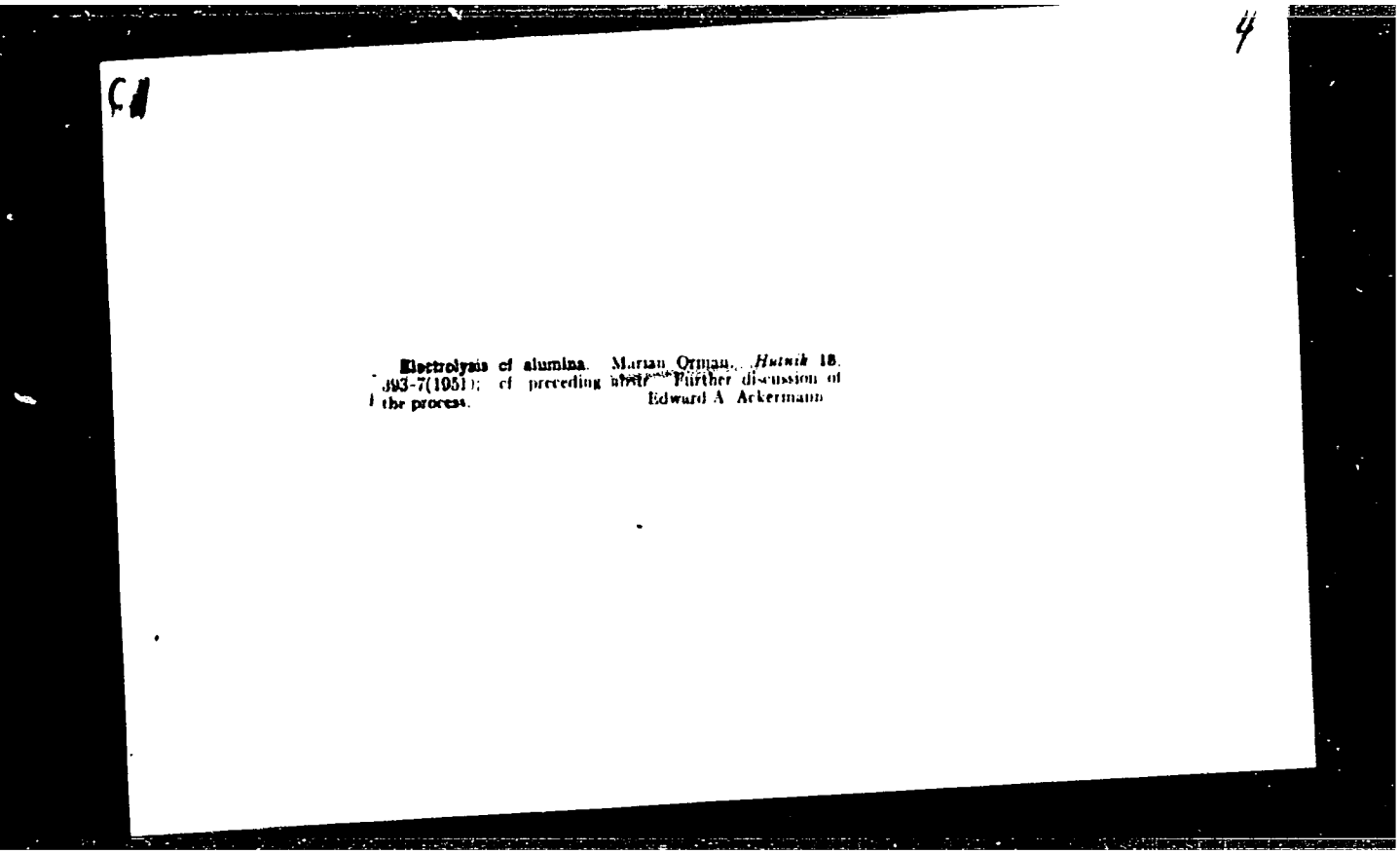
C. A.
1951

Corrosion of copper, aluminum, and magnesium and their alloys. M. Orman and E. Zalesiński. *Hutnik* 18, 99–101(1951).—A description of different types of corrosion of Cu and Cu-alloys. Most frequent types of corrosion are characterized as uniform, local, and strain corrosion. Such factors as the influence of chem. compn. and protective coatings are discussed. O. and Z. give a review of different Al, Mg alloys. The properties of these alloys are tabulated and the corrosion of the other light alloys is discussed.
Adam J. Piker

CA

Y

Aluminum production by electrolysis of alumina Marian Orman. *Hutnik* 18, 365-70(1951).—A review.
Edward A. Ackermann



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C-1

Electrolysis of alumina. Marian Orman. *Hutnik* 18, 393-7(1951); cf. preceding abstr. Further discussion of the process.
Edward A. Ackermann

ORMAN, M.

Polish Technical Abstracts
No. 4, 1953
Chemistry and Chemical
Technology

2444 ✓ 549.464 1.002.63 : 631 846 : 666 763 4

Orman M. **Production of Magnesium Oxide from Carnallite Mother Lyes.**

„O'rzymywanie tlenku magnezu z ługów pokarnalitowych" (Prace Inst. Metalurgii No. 4), Katowice, 1952, PWT, 8 pp., 6 figs., 0 tabs.

According to data published in Soviet, German and American journals, mother lyes from crystallization, obtained as a by-product during the treatment of carnallite in order to get potassium salts, contain about 300 grams of $MgCl_2$ per litre. This liquor is used for the production of magnesium oxide on an industrial scale and at a further stage for the production of magnesite refractory bricks. In this paper are reported the results of laboratory scale investigations over the production process of synthetic magnesite from carnallite mother lyes. The mother lyes were produced from home carnallites. By means of roasted and calcinated dolomites, magnesium hydroxide was precipitated and after roasting, it became a good raw material (SiO_2—0.7%, CaO—4.1%, Al_2O_3—2.1%, Fe_2O_3—3.9%, MgO—70.7%) for magnesite brick manufacturing. Technological factors of the process obtained on a laboratory scale are given.

MF 4-26-9

ORMAN, M.

Metallurgical Abst.
Vol. 21 Apr. 1954
Properties of Metals

°Technology of Metallic Barium Production. M. Orman and E. Zembala (*Prace Inst. Met.*, 1952, 4, (6), 437–445).—(In Polish). Apparatus for the prodn. of metallic Ba by the reaction $4BaO + 2Al = BaO.Al_2O_3 + 3Ba$ is described. The reaction begins at ~700° C. and at a pressure ~10^{-4} mm. Hg. the Ba distilling over and condensing in the cooler part of the reaction retort. Optimum operating conditions are: temp. 1160°–1180° C. (steel retort), pressure 10^{-4} mm. Hg or lower, BaO : Al ratio 10 : 1 with BaO_2 content >0·3%. The metal obtained is 99·9% pure and the yield 65% of the theoretical.—S. K. L.

ORMAN, M.

Metallurgical Abst.
Vol. 21 Apr. 1954
Properties of Metals

Production of Metallic Calcium. M. Orman (*Prace Inst. Minist. Hutn.*, 1953, 5, (3), 129-134). (In Polish). A method for the prodn. of metallic Ca by reduction of CaO (97·2% pure) by Al (98·99%) at 1200° C. and 10^{-3} 10^{-4} mm. Hg, is described. The Ca obtained is 99·9% pure and contains 0·02% Al and 0·07% Fe. The charge is prepared by mixing thoroughly and briquetting CaO (200 mesh) with Al powder (at least 20 mesh). The best yields (1 kg. Ca from 2 kg. Al) are obtained using a CaO : Al ratio of 4 : 3. S. K. I.

ORMAN, M

Polish Technical Abst.
No. 1 1954
Metallurgy

2578

(2) Met

Orman M., Zembala E. Technology of Metallic Barium Production. 669.093.2

„Technologia produkcji metalicznego baru". (Prace Inst. Metalurgii No. 6), Katowice, 1953, PWT, 7.5 pp., 7 figs., 3 tabs.

Development of the technology of the production of metallic barium. The application of metallic barium as an absorber, and methods of producing it. A description of an apparatus designed by the authors for the production of barium, and of the establishment of the optimal conditions of production. In the apparatus described, metallic barium, 99.9% pure, was obtained; the efficiency of the process is 35 to 40 per cent.

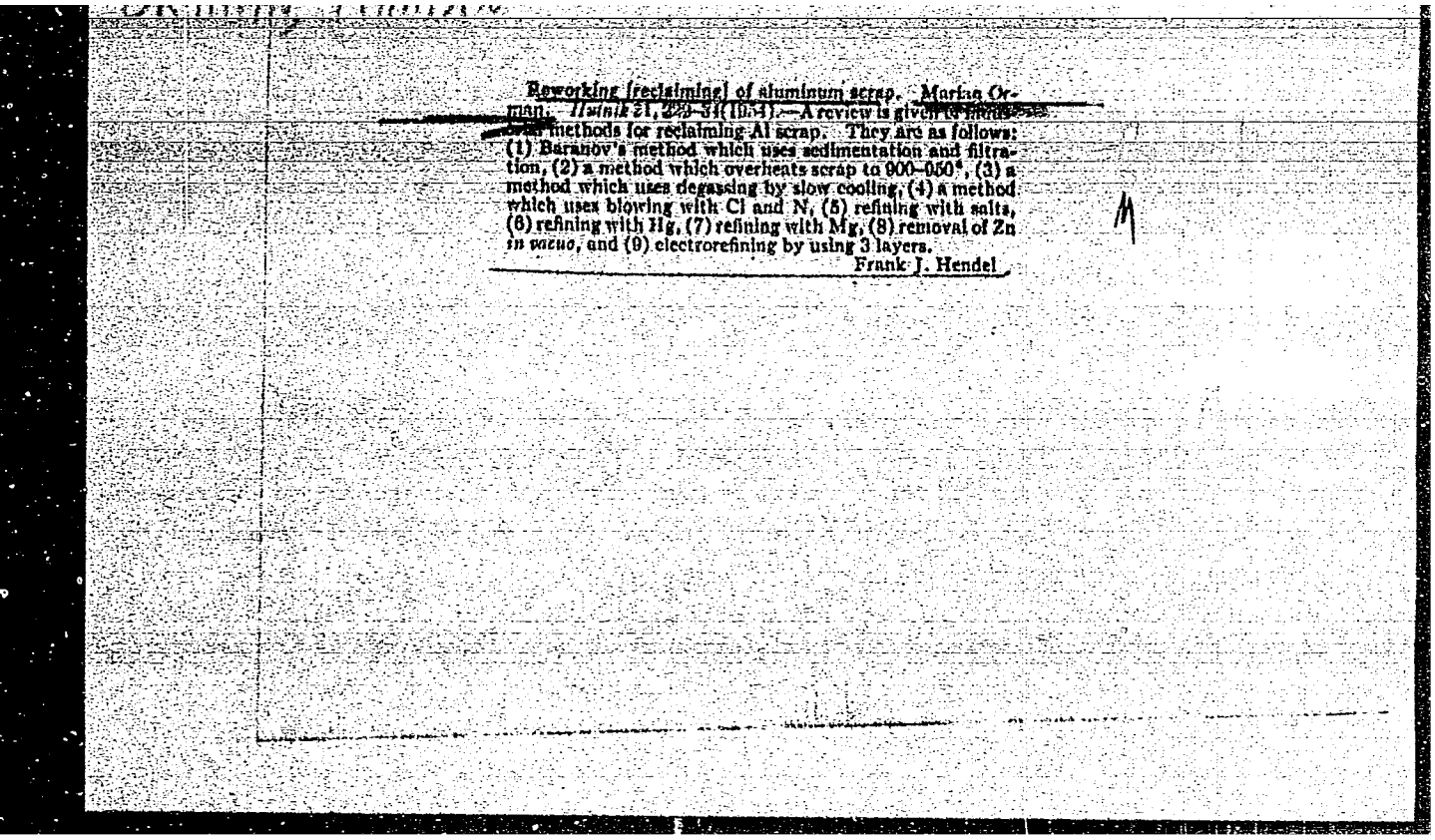
ORMAN, M.

"Alloys of Magnesium, Zirconium and Other Elements from Thin Soil." p. 210 "Professor Stanislaw Zygmuntowicz." p. 216 (HUTNIK, Vol. 20, No. 6, June 1952) Warszawa

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 10 October 1953. Unclassified.

ORMAN, M

*Remelting of Aircraft Scrap into Duralumin-Type Alloys. R. Zembaty and M. Orman [*Prace Inst. Mineral. Hutn.*, 1954, 6, (5), 239–246).—[In Polish.] Experiments on the possibility of using aircraft scrap for the prodn. of Dural-type alloys were conducted on pilot-plant and indust. scales. Methods of sorting the scrap and melting procedures are given, with the particular aim of keeping Zn, Si, and Fe within specification limits. Preliminary tests showed that these limits were not attainable in alloys produced by directly remelting the scrap and that addn. of Al and Mg were necessary. The amount of these elements was calculated after analysis of ingots obtained by direct melting of scrap, and they were added during a second melting operation. Ingots from this melt were cast semi-continuously, and worked and heat-treated according to the same procedures as those used for alloys prepared from pure metals. The mech. properties of alloys produced from scrap met the specification, and it is considered that high-quality Dural-type alloys can be produced on an indust. scale.—W. E.

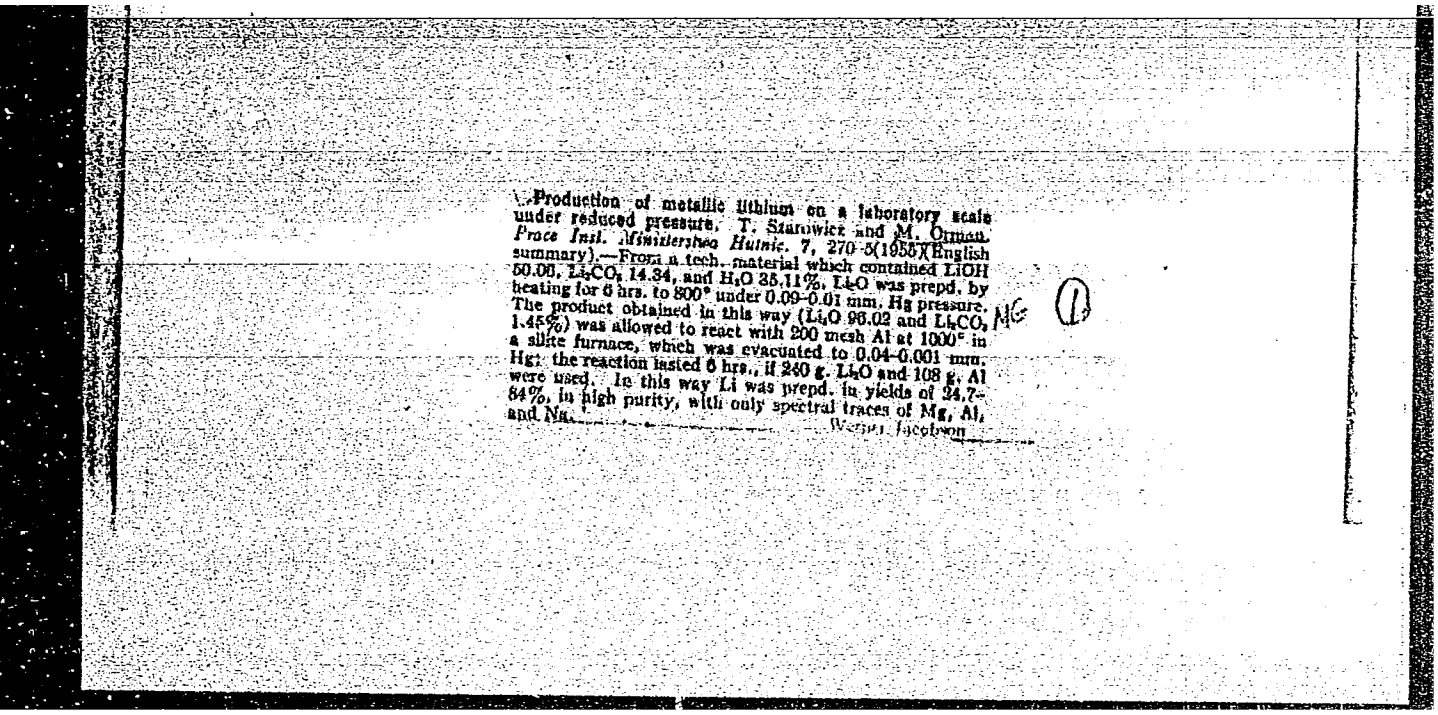


Reworking [reclaiming] of aluminum scrap. Marian Ormann. *Hutnik* 21, 223–31(1954).—A review is given of methods for reclaiming Al scrap. They are as follows: (1) Baranov's method which uses sedimentation and filtration, (2) a method which overheats scrap to 900–950°, (3) a method which uses degassing by slow cooling, (4) a method which uses blowing with Cl and N, (5) refining with salts, (6) refining with Hg, (7) refining with Mg, (8) removal of Zn *in vacuo*, and (9) electrorefining by using 3 layers.

Frank J. Hendel

SZAROWICZ, T. and ORMAN, M. POLAND

"Technology of the Production of Metallic Lithium Under Reduced Pressure," Prace Instytutow Ministerstwa Hutnictwa, No. 5-6, Ministry of the Metallurgical Industry, 1955.



Production of metallic lithium on a laboratory scale under reduced pressure. T. Stanowicz and M. Orman. *Prace Inst. Mineralnego Hutnic.* 7, 270-5(1955)(English summary).—From a tech. material which contained LiOH 50.00, Li_2CO_3 14.34, and H_2O 35.11%, Li_2O was prepd. by heating for 6 hrs. to 800° under 0.09-0.01 mm. Hg pressure. The product obtained in this way (Li_2O 96.02 and Li_2CO_3 1.45%) was allowed to react with 200 mesh Al at 1000° in a silite furnace, which was evacuated to 0.04-0.001 mm. Hg; the reaction lasted 6 hrs., if 240 g. Li_2O and 108 g. Al were used. In this way Li was prepd. in yields of 24.7-84%, in high purity, with only spectral traces of Mg, Al, and Na.

Werner Jacobson

ORMAN, M.

Production of very pure metallic calcium. p. 544.
Vol 10, no. 12, Dec. 1955. KOHASZATI LAPOK. Budapest, Hungary.

So. Eastern European Accession. Vol 5, no. 4, April 1956

ORMAN, M.; AMBRMAN, E.

Preparation of high purity calcium. In German. p. 179.
(ACTA TECHNICA. Vol. 15, no. 1/2, 1956. Hungary)

SC: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957. Uncl.

ORMAN, M., referent.

New open hearth plant in Hukingen (from "Stahl und Eisen" no.11, 1955, Stal' 16 no.12:1141-1142 D 56. (MLRA 10:0)
(Germany, West--Metallurgical plants)

POLAND/Chemical Technology - Chemical Products and Their Applications - Corrosion. Corrosion Protection. H.

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 36582

Author : Orman M.

Inst : Ministerstwo Hutn

Title : Corrosion of Aluminum Alloys in Shipbuilding.

Orig Pub : Prace Ministerstwa Hutn., 1957, 9, No 4, 167-171

Abstract : Given are data on long term actual service corrosion experiments (44 months) in sea water, sea atmosphere and river water, of the following alloys: Al -Mg (2.60%-5.35% Mg) and Al - Mn. (1.2%-1.3% Mn.) alloyed with Cr, Si, V and Ti, as well as on the effectiveness of anodic oxidation as corrosion protection.

Above alloys were subjected to surface and intercrystalline corrosions. The greatest resustance was shown

Card 1/2

ORMAN, M

ORMAN, M.

Z. Ratajczak's Boksyt i drogi rozwoju swiatowego hutnictwa aluminiowego (Bauzite and the Avenues of Development of the Aluminum Metallurgy in the World); a book review.

p. 155 (Wiadomosci Chemiczne) Vol. 11, no. 2, Feb. 1957, Wroclaw, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

OHMAN, M.Ye., referent.

Oxygen blast through open-hearth furnace crowns. Biul. TSNIICHM no.6:53-54 '58. (MIRA 11:5)
(Open-hearth furnaces)

ORMAN, M Ye.

BOYCHENKO, Mikhail Stepanovich; MILLER, Abram Isaakovich; MIKHAYLOV, Oleg Aleksandrovich, MYRTSYMOV, Aleksandr Fedorovich; NIKOLAYEV, Nikolay Alekseyevich; NETESIN, Aleksandr Yevgrafovich; ORMAN, Mikhail Yeremeyevich; RUTES, Viktor Savel'yevich; GORDON, L.M., red.; BEKKER, O.G., tekhn. red.

[Ferrous metallurgy of capitalist countries] Chernaia metallurgiia kapitalisticheskikh stran. Pt.3. [Steel smelting] Staleplavil'noe proizvodstvo. Boichenko, M.S., and others. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. 1958. 740 p. (MIRA 11:7)

1. Moscow. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Steel--Metallurgy)

214100

P/046/60/005/009/003/006
D241/D302

AUTHORS: Orman, Marian and Salanty, Adam

TITLE: Preparation of pure calcium

PERIODICAL: Nukleonika, v. 5, no. 9, 1960, 551 - 559

TEXT: A method is described of producing "nuclear quality" Ca (Fe, Si, Mg, Al $\leqslant$ 30, B $\leqslant$ 0.5, Li $\leqslant$ 6 and Cd $\leqslant$ 0.1 p.p.m.) by distillation under reduced pressure and fractional condensation, on a semi-industrial scale. The work is a continuation of the study of preparing pure Ca on a laboratory scale, completed successfully in 1955. The raw material consisted of imported Ca obtained from the Instytut badań jądrowych (Nuclear Research Institute). Tests were carried out on (a) 6[illegible] kg of lump Ca (99.6 - 99.[illegible]%) and (b) [illegible] kg. of Ca shavings of similar purity but contaminated with CaO, Na and K. During distillation under reduced pressure at 900°C, Ca, Sr, Li, Cr, Mg, Na and K are volatilized, while the heavy metal impurities remain in the crucible. With a gentle temperature gradient in the condenser (from ~ 50 to ~ 600°C) the metals condense in layers showing differences in the amount of

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Preparation of pure calcium P/046/60/005/009/003/006
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volatiles and in grain size; Thus Li appears chiefly in the fine grain fraction and Na and K, both element l and as nitrides, in the very fine grain fractions. It was found that on repeating the distillation of a coarse fraction, the loss of Li is given by $C_n = \frac{C_o}{n}$ where C_o is the mean concentration of Li in the starting material and C_n ditto after n distillations. The following conditions were determined for the distillation process: temperature 820 - 850°C, time [illegible] hours, pressure ≤ 0.07 torrs., temperature of condenser 550 - 600°C, load of raw material 6 - 7kg. The distillation apparatus is illustrated. Pressures of 10^{-3} torrs were achieved. The sample (lump Ca) was contained in an Armco iron boat and the apparatus was evacuated to 0.1 torrs before heating. After 7 hours at 900°C (temperature outside the retort) the furnace was turned off and the sample cooled to ~250°C with constant evacuation. The pumps were then cut off and, after leaking in small quantities of air to allow the slow [illegible]

Card 2/[illegible]

24132

Preparation of pure calcium

P/046/60/005/009/003/006
D241/D302

dition of Na and K nitrides, the retort was opened when the temperature fell below 100°C. Contents of the sample boat were weighed and analyzed for CaO. Coarse grained material, I, was collected for redistillation. The fine fraction ID was sealed into air-tight containers for remelting into a product designated Ca II, containing less impurities, especially Li, Na and K, than the original raw material, and no heavy metals. The coarse fractions were redistilled into II G (of the required purity) and II D, added to I D for remelting. Crystals of II G were partially pressed into bars 30 mm. diameter and ... mm long, at 100 ... 300°C. Shavings 6, 0 mm ... this material. It was found that the fine-grained condensate ignited spontaneously on opening the retort and the procedure of a 2-stage distillation had to be adopted. A large amount of the Na was removed by distilling for three hours at 400°C, after which the retort was cooled to 200°C and the distillation continued for ... hours at ... with a second, clean condenser. It is considered that the purification process is more favorable economically in the case of lumps than shavings. There are 5

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X

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238