SHIKHOBALOVA, N.P.; RYZHIKOV, K.M.

Biology of syngamus skrjabinomorpha Ryjikov, 1948. Trudy Gel'm. lab. 8:267-277 '56. (MLRA 9:8)
(Cestoda)

VASIL'KOVA, Z.G.; SHIKHOBALOVA, N.P.

Brief news. Med.paraz. i paraz.bol. 25 no.2:186-190 Ap-Je '56.
(HELMINTHOLOGY) (MLRA 9:8)

VASIL'KOVA, Zinaida Grigor'yevna; SHIKHOBALOVA, Nadezhda Pavlovna

[Helminthic diseases in man and their control] Glistnye zabolevaniia cheloveka i bor'ba s nimi. Izd.5., ispr. i dop. Moskva, In-t sanitarnogo prosv.M-va zdravookhraneniia SSSR, 1957. 29 p. (MIRA 13:7)
(WORMS, INTESTINAL AND PARASITIC)

SKRYABIN, K.I.; SHIKHOBALOVA, N.P.; ORLOV, I.V.; RYZHIKOV, K.M., redaktor izdatel'stva; MOSKVICHEVA, N.I., tekhnicheskiy redaktor.

[Trichocephalidae and Capillariidae and diseases caused by them in animals and man]. Trikhotsefalidy i kapilliariidy zhivotnykh i cheloveka i vyzyvaemye imi zabolevaniia. Moskva, Izd-vo Akademii nauk SSSR, 1957. 587 p. (Osnovy nematodologii, vol.6). (MLRA 10:6) (Nematoda)

USSR / General Biology. Individual Development. Embryonic B
Development.

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14374

Author : Shikhobalova, N. P.; Shekhtman, Ys. L., Karmanova, Ye.

Inst : All-Union Institute of Helminthology

Title : The Study of the Effect of Ionized Radiation Upon the Larvae of Trichinella

Orig Pub : Byul. nauchno-tekhn. inform. Vses. in-ta gel' mintol., 1957, No 23-26

Abstract : Approximately 3 times fewer sexually mature individuals develop from the larvae of the Trichinella irradiated by a 2000-5000 r dose than from controls. From larvae irradiated with 6000-8000 r, some single individuals de-

Card 1/3

USSR / General Biology. Individual Development. Embryonic B
Development.

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14374

velop to full sexual maturity and with a higher dose, intestinal forms which began to develop from the organism before the 8th day after contamination. Intestinal Trichinellae irradiated with 2000 r developed in 1.5-2 smaller numbers than in the control. When irradiation doses of 1000 and 2000 r are used the amount of females exceeds approximately 2 times the amount of males and when 4000-6000 r doses are used by 3 and even by 5 times. The females developed from the irradiated larvae are often sterile and the nonsterile ones bear considerably fewer embryos than controls. In mice contaminated with irradiated larvae the number of muscular Trichinellae decreases

Card 2/3

SHIKHOBALOVA, N.P., professor.

The founder of Soviet helminthology. Priroda 46 no.7:51-54 Jl '57. (MLRA 10:9)

1. Laboratoriya gel'mintologii Akademii nauk SSSR, Moskva.
(Skriabin, Konstantin Ivanovich, 1878-)
(Helminthology)

GUSHANSKAYA, L.Kh., red.; PARAMONOV, A.A., red.; PETROV, A.M., red.; POD'YAPOL'SKAYA, V.P., red.; SPASSKIY, A.A., red.; SHIKHOBALOVA, N.P., red.; IVASHKIN, V.M., red. izd-va,; POLYAKOVA, T.V., tekhn. red.

[Papers on helminthology; on the 80th birthday of Academician K.I.Skriabin] Raboty po gel'mintologii; k 80-letiiu akademika K.I.Skriabina. Moskva, Izd-vo Akad. nauk SSSR, 1958. 415 p. (MIRA 11:12)

1. Vsesoyuznoye obshchestvo gel'mintologov.
(WORMS, INTESTINAL AND PARASITIC)

SHIKHOBALOVA, N.P., prof.

Helminths. Zdorov'e 4 no.8:18-20 Ag '58 (MIRA 11:7)
(WORMS, INTESTINAL AND PARASITIC)

SHIKHOBALOVA, M.P.; VASIL'KOVA, Z.G. [deceased]; SHEKHTMAN, Ya.L.

Studies on radio-sensitivity of eggs of Ascaris lumbricoides and Ascaris suum and the invasive capacity of the developing larvae [with summary in English]. Med.paraz. i paraz.bol. 27 no.5:566-571 S-O '58. (MIRA 12:1)

1. Iz gelmintologicheskoy laboratorii AN SSSR (dir laboratorii - akademik K.U.Skryabin) i Instituta malyarii, meditsinskoy parazitologii i gel'mintologii Ministerstva zdravookhraneniya SSSR (dir. instituta - prof. P.G. Sergiyev).

(ASCARIS,
lumbricoides & suum egg, eff. of radiations on larvae (Rus))
(RADIATIONS, eff.
on Ascaris lumbricoides & suum eggs, invasive capacity of larvae (Rus))

[illegible], N.N.; [illegible], V.[illegible].

"Modern state of the problem of immunity to [illegible] diseases and means of further studies in the USSR."

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

SHIKHOBALOVA, N.P.

Experimental data on heterakid infestations of domestic fowl.
Trudy Gel'm. lab. 9:377-383 '59. (MIRA 13:3)
(Nematoda) (Parasites--Poultry)

SHIKHOBALOVA, N.P.

Interspecific hybridization of parasitic nematodes. Trudy Gel'm. lab. 9:384-388 '59. (MIRA 13:3)
(Nematoda) (Hybridization)

SKRYABIN, K.I., akademik; SHIKHOBALOVA, N.P.; LAGODOVSKAYA, Ye.A.; IVASHKIN, V.M., red. izd-va; MAKUNI, Ye.V., tekhn.red.

[Oxyurata of animals and man] Oksiuraty zhivotnykh i cheloveka. Pt. 1. Moskva, Izd-vo Akad.nauk SSSR, 1960. 557 p. (Akademiia nauk SSSR. Gel'mintologicheskaia laboratoriia. Osnovy nematodologii, vol. 8) (MIRA 14:2)
(Oxyuris)

SHIKHOBALOVA, N.P., PARUZHINSKAYA, L.S.

Studying the effect of ionizing radiation (X rays) on the eggs of Trichocephalus muris Schrank, 1788. Trudy Gel'm. lab. 10:248-253 '60. (MIRA 13:7)

(X rays--Physiological effect) (Nematoda)

POTTER, Kh.I.; SHIKHOBALOVA, N.P., doktor med.nauk; ALIYEV, M.M., akademik

Scientific bonds with foreign countries. Vest.AN SSSR 31 no.3:101-104 Mr '61. (MIRA 14:3)

1. AN AzerSSR (for Aliyev).
(Science--Congresses)

LEYKINA, Ye.S.; SHIKHOBALOVA, N.P.; MOZGOVOY, A.A.

Antigenic properties of ascarids. Trudy Gel'm.lab. 11:153-158 '61. (MIRA 15:12)

(Antigens and antibodies) (Ascarids and Ascariasis)

SKRYABIN, K.I.; SHIKHOBALOVA, N.P.

New horizons of the helminthological science and practice in Rumania. Trudy Gel'm.lab. 11:228-233 '61. (MIRA 15:12)
(Rumania--Helminthology)

SKRYABIN, K.I.; SHIKHOBALOVA, N.P.

Complex measures for controlling helminthiases of mand and farm animlas in the Bulgarian People's Republic. Trudy Gel'm. 11:234-241 '61. (MIRA 15:12)

(Bulgaria--Helminthology)

SHIKHOBALOVA, N.P.

The problem of immunity in the epidemiology of ascariasis. Trudy Gel'm.lab. 11:322-331 '61. (MIRA 15:12)
(Ascarids and ascariasis) (Immunity)

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Variation in the radiosensitivity of eggs separated from individual females of Ascaris and Ascaridia. Trudy Gel'm.lab. 11:337-339 '61. (MIRA 15:12)

(Ascarids and Ascariasis)
(Radiation—Physiological effect)
(Worms—Eggs)

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Radiosensitivity of the eggs of whipworms irradiated during the invasion stage of the larvae. Trudy Gel'm.lab. 11:332-336 '61. (MIRA 15:12)

(Trichocephalus)
(Radiation—Physiological effect)
(Worms—Eggs)

SKRYABIN, K.I., akademik; SHIKHOBALOVA, N.P.; LAGODOVSKAYA, Ye.A.; IVASHKIN, V.M., red.izd-va; MAKUNI, Ye.V., tekhn.red.

[Oxyurata of animals and man] Oksiuraty zhivotnykh i cheloveka. Moskva, Izd-vo Akad.nauk SSSR, 1961. 499 p. (Akademiia nauk SSSR. Gel'mintologicheskaia laboratoriia. Osnovy nematodologii, vol.10)
(Oxyuroidea)

SHIKHOBALOVA, N. P., prof.

This is in our power. Zdorov'e 8 no.11:12-13 N '62.
(MIRA 15:10)

PARASITOLOGY

SKRYABIN, K.I., akad., Geroy Sotsialisticheskogo truda, Laureat Leninskoy i Gosudarstvennykh premiy; SHIKHOBALOVA, N.P.; PETROV, A.M.; LEVASHOV, M.M.; GUSHANSKAYA, L.Kh., red. izd-va; NOVICHKOVA, N.D., tekhn. red.; LAUR, V.G., tekhn. red.

[Development of theoretical and practical helminthology in the U.S.S.R.] Stroitel'stvo gel'mintologicheskoi nauki i praktiki v SSSR. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. 1962. 295 p. (MIRA 15:5)

(Helminthology)

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Studying the radiosensitivity of eggs of Syngamus, parasites of domestic birds. Trudy Gel'm. lab. 12:317-324 '62. (MIRA 15:7)
(Parasites--Poultry) (Nematoda)
(X rays--Physiological effect)

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Studying the radiosensitivity of eggs of Trichocephalus, irradiated at various stages of development. Trudy Gel'm. lab. 12: 325-330 '62. (MIRA 15:7)
(Nematoda) (X rays--Physiological effect)

SKRYABIN, Konstantin Ivanovich, akademik; SHIKHOBALOVA, Nadezhda Pavlovna; PETROV, Aleksandr Mikhaylovich; LEVASHOV, Mikhail Mikhaylovich; GUSHANSKAYA, L.Kh., red.; BROVKINA, Ye.T., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Development of helminthological science and practice in the U.S.S.R.] Stroitel'stvo gel'mintologicheskoi nauki i praktiki v SSSR. Moskva, Izd-vo AN SSSR, Vol.2. 1963. 415 p. (MIRA 16:11)

(Helminthological research)

SHIKHOBALOVA, N.P.; LEYKINA, Ye.S.

Some problems of immunity in helminthology. Izv. AN SSSR Ser. biol. 28 no.4:504-513 Jl-Ag'63 (MIRA 16-11)

1. Helminthological Laboratory, Academy of Sciences of the U.S.S.R., Moscow.

*

SHIKHOBALOVA, N. P.; LEYKINA, Ye. S.

"The role of immunity in the epidemiology of helminthiases."

report submitted for 1st Intl Cong, Parasitology, Rome, 21-26 Sep 1964.

Inst of Helminthology, Moscow.

PARAMONOV, A.A.; SHIKHOBALOVA, N.P.

Konstantin Ivanovich Skriabin. Izv. AN SSSR Ser. biol. no.2: 332-334 Mr-Ap'64 (MIRA 17:3)

SKRYABIN, K.I.; SHIKHOBALOVA, N.P.

Twenty years of the activity of the Helminthological Laboratory of the Academy of Sciences of the U.S.S.R. Trudy Gel'm. lab. 14:5-49 '64. (MIRA 17:10)

SHIKHOBALOVA, N.P.

Present state of the problem of the possibility of active animal immunization by the larvae of helminths, inactivated by ionizing radiation. Trudy Gel'm. lab. 14:273-284 '64. (MIRA 17:10)

SKRYABIN, Konstantin Ivanovich, akademik; SHIKHOBALOVA, Nadezhda Pavlovna; LAGODOVSKAYA, Yelena Arkad'yevna

[Oxyurata of animals and man.] Oksiuraty zhivotnykh i cheloveka. Moskva, Nauka. Pt.3 1964. 466p. (Akademiia nauk SSSR. Gel'mintologicheskaia laboratoriia. Osnovy nematodologii, vol.13) (MIRA 18:4)

SHIKHOBALOVA, N.P.; LEYKINA, Ye.S.

Parasitism of helminth larvae in abnormal hosts. Trudy Gel'm. lab. 15:206-222 '65 (MIRA 19:1)

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Immunization of laboratory animals with Trichocephalus larvae inactivated by ionizing radiation. Trudy Gel'm. lab. 15:223-231 '65 (MIRA 19:1)

COUNTRY :USSR
CATEGORY :General Problems of Pathology. Inflammation

ABS. JOUR. : RZBiol., No. 12 1958, No. 56176

AUTHOR :Shikhodyrov, V.V.
INST.
TITLE The Course of Inflammation in Acute Radiation Sickness

ORIG. PUB. Tr. Vses. Konferentsii po Med. Radiol. Eksperim. Med. Radiol., Moscow, Medgiz, 1957, 170-174

ABSTRACT Rats were subjected to single X-irradiation and inflammation (I) was induced 1 to 7 days later by the injection of 0.1 ml viscous celloidin into the subcutaneous tissues of the back. Upon irradiation with 900 r, the celloidin caused the development of necrotic-hemorrhagic I distinguished by the absence of leukocytes and of proliferation of cellular elements and by a small amount of edema. With 600 r exudative-hemorrhagic I developed. Diapedesis of leukocytes was less pronounced, polyblasts and macrophages did not appear, but there was more edema. With 300 r, an exudative-hemorrhagic I dev-

CARD: 1/2

SHIKHODYROV, V.V.

IVANOV, A.Ye.; SHIKHODYROV, V.V.

Pathological changes produced by ionizing radiations. Itogi nauki. Biol.nauki no.1:189-213 '57. (MIRA 11:3)
(RADIATION SICKNESS)

PA - 2270

AUTHOR: SHIKHODYROV,V.V.

TITLE: The Remote Consequences of Damage caused by Ionized Radiation. (Otdalennyyw posledstviya porazheniy, vyzvannykh ioniziruyushchey radiatsiyey, Russian).

PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 2, pp 188-189 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: A conference was held on this topic at Moscow on November 20th and 21st; more than 20 scientific lectures were held on that occasion. D. I. ZAKUTINSKIJ, in his general survey reported on the results obtained by Soviet research workers in the course of recent years. ZAKUTINSKIJ paid special attention to the influence of radiation energy on the progeny of animals that had taken radioactive substances. The new data given by the lecturer showed the destruction of the sensitiveness of the animals treated in this way to a number of medical preparations. The major part of the lecture dealt with the problem of the detrimental effects on growth exercised by radioactive substances. - Some lectures dealt with the condition of the blood-forming organs a long time after they had recovered from acute or chronic radiation diseases; many new results were discussed. Among others, the following topics formed the subjects of reports: In the case of rabbits which, from 6 to 12 months previously, had been irradiated by strong doses of fast neutrons, the process of blood regeneration took 2-6 months where erythocytes, and up to 1,5 years where leucocytes were concerned. Acute radiation disease caused dogs' hairs to turn grey, while further consequences were loss

Card 1/3

PA - 2270

The Remote Consequences of Damage caused by Ionized Radiation.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress

Card 3/3

EXCERPTA MEDICA Sec 5 Vol,11/8 Gen.Pathology Aug 58

1942. CHANGES IN THE MAST CELLS IN ACUTE AND CHRONIC RADIATION SICKNESS (Russian text) - Shikhodirov V. V. - ARKH. PATOL. 1957, 19/9 (35-42) Illus. 4

Experiments on 70 dogs, 180 rats and 100 mice. Acute radiation sickness was caused by whole-body radiation with X-rays or by the introduction (i.v. in dogs, intra-abdominally in rats) of Sr^{89} and Sr^{90} (0.8 to 1.6 mc./kg.). To obtain a condition of chronic intoxication only 0.4 to 0.2 mc./kg. of radioactive Sr were administered. The mast cells were studied from patch preparations of back or thigh. Breakdown of the mast cells with release of the enlarged granula was observed after a few hours in dogs, in the first 2 days in rats and mice. In the next few days the number of mast cells clearly decreased and their cytoplasm became degranulated. A solution of cysteine (1 mg./g. body weight) injected intraperitoneally into a number of rats before the radiation (600 r.) caused a decreased breakdown of mast cells. The same result could be obtained by the 3-fold injection of myelocytotoxic serum (0.1 ml. of an 0.02% solution); this was regarded as to be due to a stimulation of the connective tissue, because it also caused a regeneration of the mast cells. In cases of chronic radiation sickness there was an increase of the mast cells with increased granulation during the first 3 to 4 months; afterwards decompensation occurred and the phenomena appeared as described for acute radiation sickness.

Brandt - Berlin (V, 14, 16)

SHIKHODYROV, V. V.

"The Role of Autoallergia in the Development of Haemorrhagic Phenomena in Organisms Affected with Radiation Disease", by N. N. Klemparskaya, and V. V. Shikhodyrov.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958.

PETROVA, N.D.; POLIKARPOVA, L.I.; SBITNEVA, M.F.; TUTOCHKINA, L.T.; SHIKHODYROV, V.V.

Protective effect of chondroitinsulfate in lethal-dose x-irradiation [with summary in English]. Med.rad. 3 no.4:34-41 Jl-Ag '58. (MIRA 12:3)

(CHONDROITIN SULFATE, effects,
in x-ray lethal-dose irradiated animals (Rus))
(ROENTGEN RAYS, effects,
lethal-dose, eff. of chondroitin sulfate in animals (Rus))

EXCERPTA MEDICA Sec 16 Vol 7/10 Cancer October 59

4198. **Changes in the loose connective tissue after irradiation with large doses of γ-rays (Russian text)** SHIKHODYROV V. V. *Arkh. Patol.* 1958, 20/12 (56–63) Tables 1 Illus. 5

Twelve dogs were irradiated with a cobalt bomb (554 r./min.); after various intervals (from directly after the irradiation to 9 hr. later) patch preparations were made from the upper part of the hind leg and subjected to the usual connective tissue staining. Even immediately after the irradiation, disintegration of macrophages, mast cells and young fibroblasts can be seen; the last-mentioned show an excessively rapid maturation. The pericytes disappear, the collagenous fibres swell and dissolve, the argyrophile fibres disintegrate. The interstitial substance shows intensive metachromatic staining. The animals died 15-27 hr. after the irradiation; at that time all the macrophages and fibroblasts had disintegrated, with only shrivelled nuclei remaining of the latter. The mast cells showed a marked decrease, the collagenous and argyrophile fibres and the ground substance presented the same alterations as described above. There was also a congestive hyperaemia with stasis and peripheral leucocytosis.

Brandt – Berlin

KLEMPARSKAYA, N.N.; KRAYEVSKIY, N.A.; SHIKHODYROV, V.V. (Moskva).

Local tests as a method for detecting autosensitization in the irradiated orgsnism. Biul. eksp. biol. i med. 46 no.12:28-32 D '58. (MIRA 12:1)

1. Predstavlena deystvitel'nym chlenom AMN SSSR N.N. Zhukovym-Verezhnikovym.

(ALLERGY, experimental,
auto-sensitization reaction in x-irradiated animals (Rus))
(ROENTGEN RAYS, effects,
same)

21(4); 17(0) PHASE I BOOK EXPLOITATION SOV/2608

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958

Doklady sovetskikh uchenykh; radiobiologiya i radiatsionnaya meditsina (Reports of Soviet Scientists; Radiobiology and Radiation Medicine) Moscow, Izd-vo Glav. upr. po ispol'zovaniyu atomnoy energii pri Sovete Ministrov SSSR, 1959. 429 p. 8,000 copies printed. (Series: Vtoraya Mezhdunarodnaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Trudy, tom 5)

General Ed.: A.V. Lebedinskiy, Corresponding Member, USSR Academy of Medical Sciences; Ed.: Z.S. Shirokova; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This book is intended for physicians, scientists, and engineers as well as for professors and students at vtuzes where radiobiology and radiation medicine are taught.

COVERAGE: This is Volume 5 of a 6-volume set of reports delivered by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held on September 1-13, 1958, in Geneva. Volume 5 contains 32 reports edited by Candidates of Medical Sciences S.V. Levinskiy and V.V. Sedov. The reports cover problems of the biological effects of ionizing radiation, future consequences of radiation in small doses, genetic effects of radiation, treatment of radiation sickness, uses of radioactive isotopes in medical and biological research, uses of atomic energy for diagnostic and therapeutic purposes, soil absorption of uranium fission products, their intake by plants, and their storage in plants and foodstuffs. References accompany each report.

Reports of Soviet Scientists (Cont.) SOV/2608

Card 4/7

PETROV, R.V.; SHIKHODYROV, V.V.

Morphological changes in experimental leptospirosis in irradiated guinea pigs. Med. rad. 4 no.5:20-23 My '59. (MIRA 12:7)

(LEPTOSPIROSIS, exper.
eff. of x-irradiation on morphol. changes in guinea pigs (Rus))

(ROENTGEN RAYS, eff.
on morphol. changes in exper. leptospirosis in guinea pigs (Rus))

SHIKHODIROV, V.V. [Shykhodyrov, V.V.]

Electron microscope study of fibrous structures of the areolar connective tissue in acute radiation sickness. Fiziol.zhur. 6 no.1:118-124 Ja-F '60. (MIRA 13:5)
(CONNECTIVE TISSUE) (RADIATION SICKNESS)

SHIKHODYROV, V.V.; PETROV, R.V.; SBITNEVA, M.F.

Signs of porous connective tissue sensitization in acute radiation sickness. Pat. fiziol. i eksp. terap. 5 no.5: 66-70 '61 (MIRA 17:4)

KLEMPARSKAYA, N.N.; SHIKHODIROV, V.V.

Role of the sensitization with tissue antigens in the reactivity changes in irradiated organisms. Radiobiologiia 3 no.2:230-239 '63 (MIRA 17:1)

VASIL'YEVA, N.N., kand.med.nauk; LAPIN, S.K., kand.med.nauk; SEROV, V.V., kand.med.nauk; SHIKHODYROV, V.V., kand.med.nauk; PETROVA, A.S., kand. med.nauk (Moskva).

Third All-Union Congress of Pathoanatomists. Arkh.pat. 21 no.10: 85-94 '59. (MIRA 14:8)

(ANATOMY, PATHOLOGICAL—CONGRESSES)

SHIKHODYROV, V. V.

AID Nr. 996-3 24 June

EFFECT OF SENSITIZATION ON THE REACTIVITY OF AN IRRADIATED ORGANISM (USSR)

Klemparskaya, N. N., and V. V. Shikhodyrov. Radiobiologiya, v. 3, no. 2, 1963, 230-239. S/205/63/003/002/013/024

Suspensions of homologous tissues were injected into healthy animals to produce pathological symptoms characteristic of radiation sickness without subjecting them to irradiation. Preparations of intestinal mucosa, and of spleen, liver, and kidney tissues were used for single injections in combination with a sterilized BCG suspension (stimulant). Minimum immunizing doses of microbic antigens were given to the test animals. Experiments were conducted with 15 rabbits weighing 2.5 to 3.0 kg, 51 guinea pigs weighing 250 to 300 g, and 343 white mice weighing 10 to 20 g. Pathological symptoms caused by autosensitization were manifested within the first 2 to 3 weeks (3 to 5% loss of weight and leucocytosis). No other pathological symptoms

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AID Nr. 996-3 24 June

EFFECT OF SENSITIZATION OF THE REACTIVITY [Cont'd] S/205/63/003/002/013/024

were observed in rabbits vaccinated with a BCG suspension after sensitization. In non-vaccinated rabbits additional loss of weight (16 to 25%), paralysis or lesion of the hind legs, leucocytosis (25,000 to 30,000 leucocytes per 1 mm^3 blood) and pulmonary hemorrhage were observed 41 days after sensitization. The rate of formation of antibodies depends on the time interval between autosensitization and vaccination. The lowest values were obtained when the rabbits were vaccinated on the 8th or 21st day after sensitization. The pathological symptoms can be alleviated by injection of microbic antigens within a week after sensitization. In guinea pigs, in addition to leucocytosis, a significant drop in the leucocyte count (to 1800 to 2000 cells per 1 mm^3 blood) was also observed. The autopsy of the animals revealed intestinal and pulmonary hemorrhages. None of the vaccinated guinea pigs expired during the observation period and the number of cases of leucopenia was appreciably reduced when the animals were vaccinated either before, or 7 days after sensitization.

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AID Nr. 996-3 24 June

EFFECT OF SENSITIZATION (Cont.) S/205/63/003/002/013/024

But when vaccinated 35 days after sensitization, 50% of the animals succumbed within 7 to 10 days. A more detailed study of histological changes in the tissues of a sensitized organism, the significance of age and body weight, the role of the "stimulant" (BCG cells), and the method of administration of the tissue suspensions was conducted with mice. Pathological symptoms (death within 8 to 10 days, weight loss, development of leucopenia, and autoinfection) occurred under the following experimental conditions: intracutaneous injection, body weight 15 to 17 g, dose of tissue suspension 0.5 ml. The number of the symptoms was reduced by the addition of a sterilized BCG suspension. Intraperitoneal injection of large doses (2 ml) of tissue suspension resulted in the death of 50% of the animals during the first 48 hrs. Histological studies of the tissue and organs 8 to 10 days after sensitization showed a significant inhibition of lymphogenesis, protein dystrophy of the parenchymatous organs, formation of a large number of plasma cells, and acinous hemoptysis. A proliferation of

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AID Nr. 996-3 24 June

EFFECT OF SENSITIZATION OF THE REACTIVITY [Cont'd] S/205/63/003/002/013/024

Kupffer's cells in the liver and erythrophagia in the lymph nodes were also observed. Innoculating animals with B. breslaviensis 7 days after sensitization, and with three doses of the live culture two weeks later, significantly reduced the survival rate. Thus, autosensitization inhibits formation of antibodies and lowers the resistance to infection with live pathogenic microorganisms. When innoculated with the microbic vaccine before autosensitization, no pathological symptoms were produced. The data obtained indicate the significance of autosensitization in radiation sickness. [SGM]

Card 4/4

ACCESSION NR: AP4038940 S/0241/64/000/005/0029/0034

AUTHOR: Shikhody*rov, V. V.; Klemparskaya, N. N.

TITLE: Reaction of spleen, lymph nodes and loose connective tissue to antigen stimulation in irradiated animals

SOURCE: Meditsinskaya radiologiya, no. 5, 1964, 29-34

TOPIC TAGS: antibody producing organ, spleen, lymph node, loose connective tissue, cellular change, Salmonella breslau, vaccine induced cellular change, radiation induced cellular change, acute radiation sickness, antigen stimulation

ABSTRACT: Cellular changes in the antibody-producing organs were studied in 3 test series of white mice: immunized, irradiated, and immunized and irradiated animals. The animals received warmed paratyphus breslau vaccine; immunization was determined 1 month later with a live culture. The LD_{50} for immunized and non-immunized mice was found at 66 million and 42,000 microbial bodies respectively. A 500 r dose was administered for irradiation. The animals' tissues were studied 2, 6, 24 hours and 2, 3, 5, 7, 10, 15 and 20 days after the respective treatment. In the first series vaccine introduction caused structural changes in the above

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ACCESSION NR: AP4038940

tissues. After 5-10 days spleen and lymph nodes showed a larger number of dividing lymphocyte and plasma cells, hemocytoblasts and megakanocytes, higher RNA content in the protoplasm of the reticular cells. In the connective tissue an increased number of new fibroblasts and macrophages with RNA accumulation in the protoplasm was seen. In the second series, irradiation caused spleen and lymph node changes leading to degeneration of the lymphocytes, decrease of macrophages, dystrophy of reticular cells and polyemia of the organs. The loose connective tissue also showed dystrophic changes, with a decreased number of cambial cells in the young fibroblasts and in macrophages, and a simultaneous increase of mature and late forms of fibroblasts and disintegrating cells. Mice irradiated 20 days after immunization showed less pronounced morphologic changes of these organs and faster return to normal structure. The loose connective tissue showed more active macrophage reaction, less cell disintegration at the climax of the radiation sickness and earlier restoration. The difference was most pronounced in the macrophages which decreased by 5% on the 3-5th day in the immunized animals and started to increase with the 7th day, while the non-immunized mice reacted with almost complete disintegration of these cells, restoration starting only with the 10-15th day. Orig. art. has: 7 figures.

Card 2/3

ACCESSION NR: AP4038940

ASSOCIATION: None

SUBMITTED: 22Feb63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: LS NO REF SOV: 016 OTHER: 003

Card 3/3

GRAYEVSKIY, E.Ya.; KOROGODIN, V.I.; KUZIN, A.M., ; MOSKALEV, Yu.I.; SMIRNOV, K.V.; STREL'TSOVA, V.N.; SHAPIRO, N.I., doktor biol. nauk; SHIKHODYROV, V.V.; EYDUS, L.Kh.; ALEKSAKHIN, R.M., red.

[Principles of radiobiology] Osnovy radiatsionnoi biologii. Moskva, Nauka, 1964. 402 p. (MIRA 18:1)

1. Akademiya nauk SSSR. Institut biologicheskoy fiziki.
2. Chlen-korrespondent AN SSSR (for Kuzin).

YEGOROV, L.S.;GOL'DBURT, T.L.;SHIKHORINA, K.M.

Form and mechanism of the formation of the Gulya intrusion.
Trudy NIIGA 107:3-12 '59 (MIRA 13:3)
(Kotuy Valley--Geology, Structural)
(Maymecha Valley--Geology, Structural)

SHIKHORINA, K.M.

Alkali and alkali-ultrabasic rocks of the Sedete intrusion (Maymecha-Kotuy region). Trudy NIIGA 121:186-198 '62. (MIRA 15:9)

(Maymecha Valley--Rocks, Igneous)
(Kotuy Valley--Rocks, Igneous)

MIKHAYLOV, S.; SHIKHOV, B.

The new GAZ-53F motortruck. Avt.transp. 40 no.5:39-44 My '62. (MIRA 15:5)

1. Gor'kovskiy avtomobil'nyy zavod.
(Motortrucks)

SHIKHOV, B.

The GAZ-53F motortruck. Za rul. 20 no.7:14-15 Jl '62. (MIRA 15:7)

1. Vedushchiy konstruktor Gor'kovskogo avtomobil'nogo zavoda.
(Gorkiy—Motortrucks)

SHIKHOV, B.A. [Shykhov, B.A.]

Thermographic unit with simultaneous recording of the pressure of the system. Khim.prom. [Ukr.] no.2:78-79 Ap-Je '65.

(MIRA 18:6)

SHIKHOV B.O.

S/102/60/000/002/008/008/XX
D251/D304

AUTHORS: Koval's'kyy, M.V., Krementulo, Yu. V., Reuts'kyy, V. Yu., and Shihov, B.O.

TITLE: A system of digital programming control of a milling machine with power step motors

PERIODICAL: Avtomatyka, no. 2, 1960, 81-83

TEXT: The article describes a bi-coordinate system of digital programming control for power step motors which was constructed in the Instytut elektrotekhniky AN URSR (Electrotechnical Institute of the AS UkrSSR). Details of the motor are given by B.O. Sihov (Ref. 1: Avtomatyka, no. 1, 1959). The program was written on punched type and is read off by a transmitter which works in synchronism with a linear interpolator. In the program are indicated the sign and quantity of the displacement with respect to the coordinates. The working of the system is possible both as an interpolator and as an intermediate memory. The programming scheme is constructed in the form of two separate blocs. In the first bloc

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D251/D304

A system of digital ...

are the reading device, a ferrite-transistor computor and its feed. The overall dimensions of the bloc are 300x300x500 mm. In the second bloc is the power scheme of computation of the step motor; the overall dimensions being 300x500x800 mm. There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Instytut elektrotekhniky AN URSR (Electrotechnical Institute of the AS UkrSSR)

SUBMITTED: February 25, 1960

Card 2/2

SHIKHOV, B.V., polkovnik, voyennyy letchik 1-go klassa; KISHCHENKO, G.D., mayor, voyennyy letchik pervogo klassa

Training on a YAK-18A is quite possible. Vest.Vozd.Fl. no.2:84 F '60. (MIRA 13:7)
(Flight training)

SHIKHOV, G.

SHIKHOV, G.

We get ready for tourist hikes. Prof.-tekh. obr. 12 no.6:29 Je '55. (MLRA 8:9)

1. Zamestitel' direktora po uchebno-proizvodstvennoy chasti spetsial'nogo remeslennogo uchilishcha no.5 (g. Kirov)
(Tourism)

SHIKHOV, G. (g. Kirov).

Candid talk. Prof.-tekhn.obr. 13 no.3:23 Mr '56. (MIRA 9:7)

1.Direktor remeslennogo uchilishcha po mekhanizatsii sel'skogo khozyaystva No.5.
(Communist education)

SHIKHOV, G.

Resolutions of the Kirovo Province workers. Mest.prom.i khud. promys. 3 no.7:7 Jl '62. (MIRA 15:8)

1. Predsedatel' Kirovskogo oblastnogo komiteta professional'nykh soyuzov.
(Kirov Province--Trade unions) (Efficiency, Industrial)

M

COUNTRY : USSR
CATEGORY : Cultivated Plants.
Potatoes. Vegetables. Cucurbits.

ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10971

AUTHOR : Shikhov, L. I.
INST. : Siberian Scientific Research Institute of Agriculture.
TITLE : The Direct Method (without transplanting) of Growing Tomatoes.

ORIG. PUB. : Sad i ogorod, 1958, No. 3, 19-21

ABSTRACT : Tomato seeds were sown into the ground on the 27th of May at the Siberian Scientific Research Institute of Agriculture (in the city of Omsk) into planting holes spaced at the distance of 60 x 60 cm at the rate of 6-8 seeds to each planting hole. After two thinnings, two plants were left in the planting hole at the distance of 15 cm from each other. Up to four cultivations and weedings were done during the summer. The plants were formed into two two stems. The suckers were removed. The ripening began as follows: in the variety Altayskiy Gruntovoy 14, in

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CATEGORY :

ABS. JOUR. : RZhBiol., No. 1959, No. 10971

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : Volzhskiy Skorospelyy 24 and Gruntovoy Gribovskiy - on the 25th of August. When sowing the tomato seeds into open ground, the process of growth is severely retarded and the development of the plants is accelerated. The ripening of the fruits comes earlier than in tomatoes grown by transplanting the seedlings. -- V. D. Latkin--Turkov

CARD: 2/2

SHIKHOV, M. M., ed.

Sochi - the All-Union health resort; a popular science study. Izd. 3., perer. i dop. Krasnodar. Krasnodarskoe knizhnoe izd-vo, 1964. 105p.

SHIKHOV, M. M.

"Clinical Variants of Rheumatoid Arthritis and Comparative Effects of Different Therapeutic Methods," paper submitted at Ninth International Congress of International League Against Rheumatism, Toronto, Canada, 23-28 Jun 1957

C-3,800,141

KOPTEVA, Ye.G.; SHIKHOVA, N.M.; KAPLUN, S.Ya.; SHIKHOV, M.M. (Sochi) [redacted]

Experimental myocardial infarct and hydrogen sulfide baths [with summary in English]. Arkh.pat. 19 no.5:45-53 '57. (MLRA 10:8)

1. Iz fiziologicheskoy laboratorii (zav. - doktor biologicheskikh nauk S.Ya.Kaplun) i terapevticheskoy kliniki (zav. - prof. M.M.Shikhov) Nauchno-issledovatel'skogo bal'neologicheskogo instituta imeni I.V. Stalina (dir. - dotsent N.P.Vladimirov)

(MYOCARDIAL INFARCT, exper.
eff. of hydrogen sulfide baths in dogs)
(BALNEOLOGY, in various dis.
hydrogen sulfide baths in experimental myocardial infarct in dogs)

STRUKOV, A.I., prof. (Moskva); SHIKHOV, M.M., prof. (Sochi)

Ninth International Congress on Rheumatic Diseases. Klin.med. 35 no.12:139-146 D '57. (MIRA 11:2)

1. Chlen korrespondent AMN SSSR (for Strukov)
(TORONTO--RHEUMATISM--CONGRESSES)

V

Country : USSR
Category: Pharmacology. Toxicology. Anti-Infection Agents.

Abs Jour: RZhBiol., No 6, 1959, No 27848

Author : Kaplun, S.Ya.; Kopteva, Ye. G.; Shikhova, N.M.; Shikhov, M.M.

Inst : - Lab Experimental Pathology and Therapeutic Clinic, Sci Res Inst Rheumatism.

Title : The Influence of Salycilamide on Compensatory Processes Under the Conditions of Experimental Disruption of Coronary Circulation.

Orig Pub: Vrachebn. delo, 1958, No 4, 429-432

Abstract: The experiments were conducted on dogs with a ligated anterior descending branch of the left coronary artery. As controls, dogs without surgical interventions of the heart were utilized. The

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Country : USSR V
Category: Pharmacology. Toxicology. Anti-Infection Agents.

Abs Jour: RZhBiol., No 6, 1959, No 27848

orally three times daily in a dose of 0.3 g each. The disturbance of cardiac activity induced by II deepens temporarily with I. In accordance with the time of I intake, this influence sometimes weakens. - L.N. Lavrent'yev

Card : 3/3

SHIKHOV, M.M., prof.; ORZHESKHKOVSKIY, V.V., mladshiy nauchnyy sotrudnik

"Ankylosing spondyloarthritis" by N.L. Gladyrevskii. Reviewed by M.M. Shikhov, V.V. Orzheshkovskii. Zdravookhranenie 2 no.6:57-58 N-D '59. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut revmatizma Ministerstva zdravookhraneniya RSFSR, g.Sochi.
(SPINE--DISEASES)
(GLADYREVSKII, N.L.)

KAPLUN, S.Ya.; KOPTEVA, Ye.G.; SHIKHOVA, N.M.; SHIKHOV, M.M.

New data on the effect of hydrogen sulfide baths on animals with experimentally induced disorders of the cardiac blood supply. Vop. kur., fizioter. i lech. fiz. kul't. 25 no.4:304-309 Jl-Ag '60. (MIRA 13:9)

1. Iz Nauchno-issledovatel'skogo instituta revmatizma v Sochi (dir. - dotsent N.P. Vladimirov).
(HYDROGEN SULFIDE—PHYSIOLOGICAL EFFECT)
(CORONARY VESSELS)

SHIKHOV, M.M., prof.; SHIKHOVA, N.M., dotsent; KAPLUN, S.Ya., doktor biol. nauk; KOPTEVA, Ye.G., kand.med.nauk

Effect of salicylates on cardiac activity in experimental disturbance of the coronary circulation (electrocardiographic data). Vrach. delo no.6:14-18 Je '61. (MIRA 15:1)

1. Laboratoriya eksperimental'noy patologii (zav. - doktor biol. nauk S.Ya. Kaplun) i terapevticheskaya klinika Sochinskogo instituta kurortologii (zaveduyushchiy - zasluzhennyy deyatel' nauki, prof. M.M.Shikhov).
(SALICYLATES) (ELECTROCARDIOGRAPHY)
(BLOOD CIRCULATION, DISORDERS OF)

SHIKHOV, M.M., zasl. deyatel' nauki, prof., red.

[Theses of the reports of the Scientific Conference Dedicated to the 25th Anniversary of the Sochi Scientific Research Institute of Health Resort Therapy and Physiotherapy] Tezisy dokladov Nauchnoi konferentsii, posviashchennoi 25-letiiu Sochinskogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii. Sochi, Sochinskii nauchno-issl. in-t kurortologii i fizioterapii, 1962. 138 p. (MIRA 17:8)

1. Nauchnaya konferentsiya, posvyashchennaya 25-letiyu Sochinskogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii.

SHIKHOV, M.M., prof., zasluzhennyy deyatel' nauki RSFSR; ORZHESHKOVSKIY, V.V., kand.med.nauk

Terminology of so-called infectious nonspecific polyarthritis. Vrach.delo no.8:70-72 Ag '62. (MIRA 15:11)

1. Sochinskiy nauchno-issledovatel'skiy institut kurortologii Ministerstva zdravookhraneniya RSFSR.
(ARTHRITIS, RHEUMATOID)

Shikhov, N. I.

SHIKHOV, N.I.

Occurrence of moth flies and pappataci fever in Krasnodar Territory. Med.paraz. i paraz.bol.supplement to no.1:47 '57. (MIRA 11:1)

1. Iz Krasnodarskoy krayevoy protivomalyariynoy stantsii.
(KRASNODAR TERRITORY--MOTH FLIES).

URUPOV, A.K.; BYAKOV, Yu.A.; SHIKHOV, S.A.

Using the refraction method for mapping areas of increasing thicknesses in the lower Carboniferous terrigenous formation. Geol. nefti i gaza 5 no. 2:29-31 F '61. (MIRA 14:2)

1. Permskiy gosudarstvennyy universitet i Trest Perm'neftegofizika.
(Volga-Ural region—Geology—Maps)
(Seismic prospecting)

SHIKHOV, S.A., aspirant

Stability of analytical continuation of gravity anomalies. Izv.vys. ucheb.zav.; geod.i aerof. no.6:63-66 '61. (MIRA 15:3)

1. Permskiy gosudarstvennyy universitet imeni A.M.Gor'kogo.
(Gravity prospecting)

BYAKOV, Yu.A.; SUDAKOV, S.A.

Combining geophysical methods when investigating the marginal section of the Kama-Kinel' Depression. Geol. nefti i gaza 7 no.12:31-36 D '63. (MIRA 17:8)

1. Permskiy universitet.

MALOVICHKO, A.K.; SHIKHOV, S.A.; SHILOVA, A.A.

Characteristics of the gravity anomalous field in the area of the Kama-Kinel' Depression based on prospecting data. Neftegaz. geol. i geofiz. no.7:20-22 '65. (MIRA 18:8)

1. Kontora "Perm'neftegeofizika" i Permskiy gosudarstvennyy universitet.

21(9)

AUTHOR: Shikhov, S. B. SOV/89-6-2-8/28

TITLE: Calculation of the Dimension Change Effect on the Critical Mass of a Fast Reactor by means of the Perturbation Theory (Uchet vliyaniya izmeneniya razmerov na kriticheskuyu massu bystrogo reaktora s pomoshch'yu teorii vozmushcheniy)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 2, pp 162 - 168 (USSR)

ABSTRACT: A method is devised whereby the critical mass of a reactor in dependence on the composition and dimensions of its active zone can be calculated with a sufficiently thick reflector. The working formula is introduced in the first approximation into the general scheme of the perturbation theory by employing the methods of the similarity theory. The space energy distribution of the neutron flux and the values of certain active zone volumes- which must be determined numerically - in a sufficiently thick reflector must be known for the calculation of the formula coefficients. If the coefficients determined are introduced into the deduced formula, the critical mass can be calculated for a wide volume range of the active zone. There may be a difference of up to 100% between the

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Calculation of the Dimension Change Effect on the Critical Mass of a Fast Reactor by Means of the Perturbation Theory SOV/89-6-2-8/28

volumes. If the active zone is larger than the range investigated, the coefficients for the new dimension range and the distributions must be determined numerically anew. The coefficients of the deduced formula were calculated for some typical distribution spectra of a fast reactor for a number of isotopes (Zr,Mo,Fe,Ba) which may be contained within the active zone of the reactor. The formula was checked by a nine-group calculation for a reactor core volume of 200 - 1000 dm^3. The nine-group constants were determined according to Soviet and foreign calculations published up to 1955. The results of the work were discussed with A. I. Leypunskiy, Regular Member, AS UkrSSR, G.I. Marchuk, and L.N. Usachev. A. P. Karbayeva and V. A. Kuz'micheva, Engineers, checked the deduced formula and the calculation of the coefficients. There are 4 tables and 4 references, 3 of which are Soviet.

SUBMITTED: June 21, 1958

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21.1000

78319
SOV/89-8-3-4/32

AUTHORS: Novozhilov, A. I., Shikhov, S. B.

TITLE: A Method of Averaging Nuclear Constants for Calculations of the Fast Reactor, Taking Into Account The Value of Neutrons

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 3, pp 209-213 (USSR)

ABSTRACT: The authors describe a method of averaging many-group constants for the single-group computations of the critical volume or critical mass of a two-zone fast reactor. Usually, for computations of single-group cross sections, one estimates approximately integral spectra separately in the active zone and in the shield, and afterwards, the initial many-group constants are averaged over those spectra. Trial computations showed that the critical mass obtained by means of an averaging over neutron spectra of many-group constants is 10-20% lower than the critical mass obtained by solving the many-group spatial diffusion system of equations. One obviously produces a discrepancy by not taking into account the

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A Method of Averaging Nuclear Constants for Calculations of the Fast Reactor, Taking Into Account The Value of Neutrons

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different contributions to the reactivity of neutrons of different importance. The authors devised a better method, starting from the equations for the total balance of neutrons and their importance in some finite volume, without distinguishing between the active zone and the shield.

$$-J_h - \Sigma_{cf}^{(h)} I_h - \left(\Sigma_{yn}^{(h)} I_h - \sum_{j=1}^{k-1} \Sigma_{yn}^{hj} I_j\right) + \chi_h \sum_{l=1}^{m} \frac{\nu_f^{(l)} \Sigma_f^{(l)} I_l}{K_{eff}} = 0; \qquad (1)$$

$$J_k^+ - \Sigma_{cf}^{(h)} I_k^+ - \left(\Sigma_{yn}^{(h)} I_k^+ - \sum_{j=k+1} I_j^+ \Sigma_{yn}^{jk}\right) + \frac{\nu_f^{(h)} \Sigma_{(f)}^{(h)}}{K_{eff}} \sum_{l=1}^{m} \chi_l I_l^+ = 0 \qquad (2)$$

$(k = 1, 2, \ldots m)$.

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Here

$$I_k = \int_V \Phi_k \, dV \quad \text{и} \quad I_k^+ = \int_V \Phi_k^+ \, dV$$

are integral fluxes and importances of neutrons of the k-th group in the volume under consideration; J_k, J_k^+ is total escape of neutrons and importance from that volume; indexes c, f, and yb in the macroscopic cross-sections indicate, respectively, the radiative capture, fission, and total inelastic outflow from the given group. Σ_{yb}^{kj} denotes the macroscopic cross section of the transfer from group j into group k, with

$$\Sigma_{yb}^{(k)} = \sum_{j=k+1}^{m} \Sigma_{yb}^{jk};$$

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χ_k denotes the share of fission neutrons joining the

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k-th group where $\sum_{k=1}^{m} \chi_k = 1$; $\nu_j^{(k)}$ is number of fission neutrons per one fission caused by a neutron of the k-th group. In Eq. (1) the group number increases with the decrease of neutron energy. Spectra of the neutron flux and neutron importance obtained from conjugate Eqs. (1) and (2) are then used for the separate averaging of the constants in the active zone and in the shield. The single-group constant obtained permits a reliable computation of the critical load of the reactor without solving the spatial many-group diffusion problém. When solving (1) and (2) one assumes that the loss into empty space is zero (for a thick enough shield), while the escapes from the equivalent bare reactors are counted as auxiliary (inner) sources of the screen. The solution can be written in the form proposed by L. N. Usachev:

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$$J_k = N_k + M_k \frac{\sum_{j=1}^{m} \nu_f^{(j)} \Sigma_f^{(j)} N_j}{1 - K_\infty}, \qquad (6)$$

where

$$K_\infty = \sum_{j=1}^{m} \nu_f^{(j)} \Sigma_f^{(j)} M_j. \qquad (7)$$

M_k is here the neutron flux of the k-th group in an infinite medium with fission neutrons as sources; N_k is neutron flux in an infinite medium with inner sources representing escapes from the active zone. In a footnote the authors observe that an averaging method, taking into account the neutron importance, was proposed independently by G. I. Marchuk, Numerical Methods for Computation of Nuclear Reactors (Chislennyye metody rascheta yadernykn reactorov), M., Atomizdat, 286 (1958). While this represents a general iteration

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method for reduction of many-group diffusion problem to an equivalent one- and two-group problem, and is convenient for the computation of multizonal reactors, it requires prior notions about space and energy distribution of neutrons in reactors. The method developed by the author starts by multiplying Eq.(1) by I_k^+, and summing over all groups yields:

$$\frac{1}{K_{eff}} = \frac{\varkappa^2 \sum_{k=1}^{m} D_k I_k I_k^* + \sum_{k=1}^{m} \Sigma_{cf}^{(k)} I_k I_k^* + \sum_{k=1}^{m} I_k^* \left(\Sigma_{yB}^{(k)} I_k - \sum_{j=1}^{k-1} \Sigma_{yB}^{kj} I_j \right)}{\left(\sum_{k=1}^{m} I_k^* \chi_k \right) \left(\sum_{l=1}^{m} \nu_f^{(l)} \Sigma_f^{(l)} I_l \right)} . \quad (8)$$

Imposing then the requirement that the reactivity computed by the single-group method coincides with the reactivity obtained from the many-group calculation, the authors obtained a set of equations for the averaging of constants, and then using the single-group equation for the critical volume calculated the critical

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parameters of the two-zonal reactor. They computed the composition of the active zone and screens for three types of fact reactors. They also showed (see Table 2) that single-group cross sections, computed with and without contribution from neutron importances, could be quite significant. The method of calculating critical load of fast reactors outlined in the table is applicable under the following conditions: (1) The thickness of the shield must be of the order of 2-3 effective diffusion lengths. (2) There should be no edge effects in the shield; such effects could be present in case of intermediately fast reactors with hydrogen-containing materials in the shield. (3) The size of the active zone should be larger than 4-5 single-group free path lengths of the neutrons. Smaller zones would require corrections in equations used, which would account for kinetic effects in gases. (4) The method was checked for reactors with not more than 2 zones. There are 3 Tables; and 2 Soviet references.

SUBMITTED: January 8, 1959

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SOV/89-8-3-4/32

Table 2. Single Group Cross Sections, Averaged With and Without Accounting of Neutron Values.

(a)	(b)	(c)					(d)	
		$\overline{\Sigma_f \nu_f}$	$\overline{\Sigma_{cf}}$	$\overline{\Sigma_{eff}}$	$\overline{D}$	$\varkappa$	$\overline{D'}$	$\varkappa'$
I	(e)	0,0176	0,0085	0,0019	1,96	0,062	1,30	0,090
	(f)	0,0154	0,0084	—	1,65	0,060	0,88	0,086
II	(e)	0,0133	0,0085	0,0018	1,98	0,041	1,27	0,095
	(f)	0,0119	0,0083		1,62	0,040	0,95	0,089
III	(e)	0,0118	0,0067	0,0020	1,84	0,042	1,17	0,087
	(f)	0,0099	0,0072		1,58	0,043	0,96	0,085

Key to Table 2. (a) Reactor version; (b) method of averaging; (c) active zone; (d) screen; (e) with importance; (f) without importance.

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A Method of Averaging Nuclear Constants for Calculations of the Fast Reactor, Taking Into Account The Value of Neutrons

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Table 3. Volume Portions of the Basic Fissionable Isotope ϵ_f in Three Types of Reactors at $K_{eff} = 1$.

(a)	(b) I	(b) II	(b) III	(c)
(d)	0,0512	0,0464	0,0300	—
(e) . .	0,0460	0,0400	0,0260	−(10÷14)
(f) . .	0,0510	0,0466	0,0300	≲1

Key to Table 3. (a) Method of computation; (b) reactor type; (c) difference from results of spatial computation, %; (d) nine group spacial; (e) single group without taking into account neutron values; (f) single group taking into account neutron values.

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44681
S/869/62/000/000/005/012
B102/B186

21.1000

AUTHORS: Shikhov, S. B., Troyanskiy, V. B.

TITLE: An effective two-group method of calculating intermediate-thermal reactors

SOURCE: Teoriya i metody rascheta yadernykh reaktorov; sbornik statey. Ed. by G. I. Marchuk. Moscow. Gosatomizdat, 1962, 86 - 90

TEXT: Critical-mass calculations in one-group approximation with averaging of the constants yield good results only when no boundary effects arise (Ref. 1: Atomnaya energiya, 8, 3, 1960). Since this is not the case with intermediate systems, the authors develop a two-group method for use together with averaging of the constants as described in Ref. 1. The spatial multi-group problem is reduced to a two-group problem in the following way: The m-group system of equations that describes the interaction between neutrons and medium in the fast and intermediate regions, given in diffusion multigroup approximation, is solved as in Ref. 1. From this an expression for k_{eff} is obtained which is compared with k_{eff} calculated in

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two-group approximation for a non-reflected reactor. Hence the two-group constants are obtained. This system of constants for the epithermal region is related to the spectrum of neutron importance. The constants are averaged for systems with and without reflector and the constants of the reflector are determined by comparison. The success of the two-group method depends considerably on the quality of averaging of the multi-group constants in the resonance-energy range. The two-group method was verified by numerical calculations and by comparing the results with those of a 15-group approximation for a homogeneous spherical system with enriched uranium and hydrocarbon moderator and reflector. The 15-group method yields R_{cr} = 38.0 cm and k_{eff} = 1.007, the two-group method R_{cr} = 37.8 cm and k_{eff} = 1; these results show that both methods can be considered as equivalent.