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SCIENTIFIC INFORMATION REPORT

Biology and Medicine

(22)

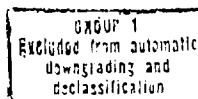
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Prepared by

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C-O-N-F-I-D-E-N-T-I-A-L

SCIENTIFIC INFORMATION REPORT

Biology and Medicine (22)

This is a serialized report consisting of unevaluated information prepared as abstracts, summaries, and translations from recent publications of the Sino-Soviet Bloc countries. It is issued in six series. Of these, four, Biology and Medicine, Electronics and Engineering, Chemistry and Metallurgy, and Physics and Mathematics, are issued monthly. The fifth series, Chinese Science, is issued twice monthly, and the sixth series, Organization and Administration of Soviet Science, is issued every 6 weeks. Individual items are unclassified unless otherwise indicated.

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I. BIOLOGY

Agricultural Sciences

1. Applications of Ultrasound in Agriculture

"Ultrasound and Methods of Using It in Agriculture," by
V. A. Pavlenko, Ukrainian Scientific-Research Institute
for the Mechanization and Electrification of Agriculture;
Kiev, Visnik Sil's'kogospodars'koy Nauki, No 6, Jun 62,
pp 13-26

Basic parameters of ultrasound and methods of using them for scientific and industrial purposes are reviewed. Since ultrasound technology is widely used in industrial and scientific enterprises in the Soviet Union and abroad, trends and methods for introducing ultrasonic oscillations into agriculture are given. In a number of cases, concrete resolutions for certain research and the intensification of technological processes based predominantly on the use of ultrasound are stated. The results of research performed by the authors to develop a method of determining the volume and physicomachanical properties of a grain yield with the aid of ultrasonic oscillations are presented.

2. Yugoslav Hydroponics Experiment

"First Domestic Tomatoes Grown Without Soil," Ranjug release;
Belgrade, Borba, 9 Sep 62, p 5

Experts in the Institute for Horticulture in Smederevska Palanka recently harvested the first "crop" of tomatoes grown in a greenhouse without soil.

This hydroponic greenhouse, in which the tomatoes were grown without having been planted in the ground, does not differ from classic projects of this type, except that in place of the usual layer of soil, its base was gravel from the Morava River. By using a system of pipes, the surface of the garden is inundated with water at definite intervals, and once daily, the garden is "fed" with essential materials such as nitrogen, phosphorus, and calcium. In addition, the plants are protected from drought, hail, and plant pests.

The first "crop" of tomatoes grown in the hydroponic greenhouse in a 5-acre area amounted to about 5.5 tons. Some tomato plants attained a height of over 2 meters.

This way of producing vegetables has a significant advantage over current growing techniques in classical greenhouses. Above all, it is economically more lucrative since the yield is 70 to 100 percent greater. In addition, operations such as plowing, irrigating, and crop-dusting are unnecessary in the hydroponic greenhouses. An especially great advantage of this is that vegetables can be cultivated in these greenhouses even on the Dalmatian Karst and the humus of the Vojvodina.

Bacteriological Warfare

3. Mixed Toxin Infection Produces New Toxic Substance

"The Nature of Hemotoxin Observed in a Focus of Affection and in Blood Serum in Experimental Mixed Infection Caused by *Cl. perfringens* and *oedematiens*," by S. M. Minervin and S. P. Zhak, Odessa Medical Institute imeni Pirogov; Moscow, *Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii*, Vol 33, No 9, Sep 62, pp 127-132

The observation that gas gangrene pathogens mixed under certain conditions acquired a new toxic property in vitro prompted the authors to produce the same hemotoxin in guinea pigs and to prepare an antiserum against it. The hemotoxin can be considered a new toxic substance and has unique antigenic properties. Specific antitoxin which does not neutralize the toxin of gas gangrene pathogens is formed as a result of immunization of animals with this substance. The phenomenon of the formation of this unique hemotoxin in animals infected with gas gangrene pathogens can be used for diagnostic purposes. In addition to the new substance, a small amount of hemotoxins formed by the separate gas gangrene pathogens can be observed in infection sites following experimentally inflicted gas gangrene.

4. Field Insect Collection Method Improved

"The Use of the Intake Manifold of an Automobile for Collecting Insects Under Field Conditions," by A. N. Alekseyev; Moscow, *Meditsinskaya Parazitologiya i Parazitarnyye Bolezni*, Vol 31, No 2, Mar/Apr 62, pp 239-240

The use of the intake manifold on a GAZ-51, GAZ-63, or GAZ-69 truck was tested and is recommended to accelerate and facilitate the collection of large numbers of insects on parasitological expeditions. One truck with engine idling can serve several Monchadskiy cones at a time. The attachment of flasks and hose systems from traps to truck is described and illustrated.

Large quantities of fleas were collected by a GAZ-63 truck for tests of a powerful aerosol generator (the MAG) in Western Siberia by an expedition from the Siberian Department of the Academy of Sciences USSR. It is suggested that the quantities of insects required for experiments with poisons can be better obtained by this method (several thousand have been collected within 30-40 minutes) than by methods commonly used.

Basic Biology

5. Function of Boron in Plant Metabolism

"The Significance of Boron in Nucleic Acid Metabolism," by M. Ya. Shkol'nik and A. N. Mayevskaya, Botanical Institute imeni V. L. Komarova, Academy of Sciences USSR, Leningrad; Moscow, Fiziologiya Rasteniy, Vol 9, No 3, May/Jun 62, pp 270-278

On the basis of data obtained in experiments with beans and sunflowers grown on complete nutritional media and on media deprived of boron, the authors suggest that the death of growing points in these plants in the absence of boron is a result of a disturbance in nucleic acid metabolism. A significant decrease in the RNA content in the tips and roots of the plants was noted after the exclusion of boron from the medium. A decrease in DNA in these areas was also noted in sunflowers after the exclusion of boron. This contradicts the hypothesis of Dugger and Gauch which explains the death of plants growth points in the absence of boron as a result of carbohydrate starvation and which considers the participation of boron in the translocation of sugars to be the principal aspect of its physiological role.

6. Hepatic Synthetic Processes Parallel for RNA and Protein Content

"Seasonal Changes in the Protein and Ribonucleic Acid Content of the Hepatic Cells of the Frog," by Ye. M. Gramenitskiy, Chair of General Biology, Leningrad Sanitation Hygiene Medical Institute; Moscow, Zhurnal Obshchey Biologii, Vol 23, No 4, Jul/Aug 62, pp 311-312

Studies showed that the hepatic cells of the frog (*Rana temporaria*) are rich in ribonucleic acid and proteins during summer. During winter, however, the ribonucleic acid and protein content gradually diminishes and reaches its minimum at the end of winter dormancy.

Seasonal fluctuations in the intensity of the synthetic processes in the hepatic cells are substantiated, evidently, by parallel changes in the ribonucleic acid and protein content during the course of the year.

Biochemistry

7. Simple Method Developed for Determination of Uranium in Plants and Animal Tissues

"Extraction-Luminescence Method for Determination of Uranium in Soils, Silts, Plants, and Animal Tissues," by A. A. Nemodruk and I. Ye. Vorotnitskaya, Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy; Moscow, Zhurnal Analiticheskoy Khimii, Vol 17, No 4, Jul 62, pp 481-485

To facilitate research on the effect of uranium on the development of animal organisms and plants, it became necessary to develop a simple and accurate method for the determination of micro quantities of uranium in soils, silts, plants and other biological matter. These requirements are most easily met by the luminescence method, which appears to be more accurate and sensitive than any other method known at the present time. The method includes preliminary separation of interfering elements by extraction with tributyl phosphate in toluene solution from solutions containing ammonium nitrate at Ph 2.5-3.0. The extract is then treated with ammonium carbonate solution to strip the uranium. Sodium fluoride is then added and the solution is evaporated to dryness, ignited at 500° C, and the uranium concentration determined by the intensity of luminescence of the resulting beads with a photoelectric photometer.

Microbiology

8. Bactericidal Effect of Organophosphorus Compounds

"The Problem of the Bactericidal Effect of Certain Organophosphorus Preparations on Cocci," by Ye. K. Naumova, N. Konovalova, and R. Latypov, Kazan Medical Institute; Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 33, No 9, Sep 62, p 135

"The purpose of the research was to test the bactericidal properties of two preparations of mixed esters of ethylphosphinic acid (laboratory numbers 607 and 609) with respect to Staphylococcus and Streptococcus and to study the action of these preparations on the association of microorganisms obtained from oral microflora of humans suffering from various diseases.

"Sensitivity to penicillin, biomycin, streptomycin, and levomycetin (by the paper disc method) was verified in all strains in advance. As a result, 2 strains of Staphylococcus not sensitive to all 4 antibiotics, 2 strains not sensitive to penicillin, 3 strains of Streptococcus not sensitive to all 4 antibiotics, and 10 strains not sensitive to streptomycin were selected.

"The preparations were diluted 10, 20, 50, and 100 times with distilled sterile water (or with melted glucose agar) and poured into agglutination test tubes, or Petri dishes (one ml in each), to which 300 million microbial cells of a one-day Staphylococcus culture and 3 drops of one-day Streptococcus culture were added. After 3 days of incubation at 37°C, the bacterial strength of the preparations was tested by seedings from the test tubes (with a standard loop) into a Petri dish with blood and meat-peptone agar. Colonies were counted after one and 24 hours of culturing at 37°C.

"The data obtained showed that organophosphorus preparations No 607 and 609 made of mixed esters of ethylphosphinic acid, had a bactericidal effect on Staphylococcus and Streptococcus in dilutions up to 1:500-1:1000. A bactericidal effect was observed with respect to Staphylococcus strains both sensitive and resistant to penicillin. This action was noted, not only in pure cultures of the microorganisms, but also upon association of two or three species, which was encountered in the oral cavity of humans having different diseases of the mucous membrane and teeth. On the basis of the data obtained, the authors conclude that further study of the synthetic preparations to determine their suitability for therapeutic practice is expedient."

9. Automatic pH Control

"Automatic Registration and Regulation of pH in Deep Culturing of Microorganisms. Report 2: Apparatus and Methodology of Automatic pH Regulation in Reactors," by N. I. Shapiro and V. S. Abramov, Tr. Leningr. N.-I. In-ta Vaksin i Syvoretok (Works of the Leningrad Scientific-Research Institute of Vaccines and Sera), No 3, 1960, pp 51-58 (from Referativnyy Zhurnal -- Biologiya, No 16, Aug 62, Abstract No 16B259)

Diagrams and a description of an apparatus which makes it possible to maintain pH at a given level automatically in deep cultures of microorganisms of the enteric-typhoid group on a protein medium are presented. Fluctuations in pH value in the medium do not exceed 0.2 pH unit. The device has been tested successfully under industrial conditions."

10. Tashkent Institute Working on Viability of R. burneti

"The Problem of the Resistance of Rickettsia burneti," by V. A. Lysunkina, Tr. Tashkentsk. N.-I. In-ta Vaktzin i Syvorotok (Works of Tashkent Scientific-Research Institute of Vaccines and Sera), No 6(20), 1961, pp 190-197 (from Referativnyy Zhurnal -- Biologiya, No 16, Aug 62, Abstract No 16B143)

"Rickettsia burneti maintained their viability for 449 days (the observation period) during preservation under laboratory conditions in 50% glycerin at pH 7.2. They remained alive for 2,099 days (the observation period) in dried form under vacuum. R. burneti in pieces of internal organs of animals, which were preserved at 40 under vacuum in Petri dishes, maintained viability in the spleen for 51 days and in the placenta for 10.5 months (the observation period). R. burneti in chick embryo yolk sac was preserved for 5 months; in milk, for 6 days; and on glass, for 4 days. R. burneti was preserved for 15.5 months in the Argas persicus organism at room temperature. The Rickettsia were maintained for 2 months in samples of artificially infected wood and clover."

The Preservability of R. burneti in Fecal Matter of Rhipicephalus turanicus Ticks," by F. Rizayeva, Tr. Tashkentsk. N.-I. In-ta Vaktzin i Syvorotok (Works of the Tashkent Scientific-Research Institute of Vaccines and Sera), No 6(20), 1961, pp 199-205 (from Referativnyy Zhurnal -- Biologiya, No 16, Aug 62 Abstract No 16B144)

"Rickettsia burneti was preserved for 225 days (the observation period) at different titers in feces of infected Rh. turanicus ticks. The high infectiousness of feces of ticks in the imago stage which had fed earlier on guinea pigs infected with R. burneti was established. The possibility of infecting guinea pigs with feces of infected imago ticks (even in a dose of 0.016 mg) via the nasal passages was demonstrated."

11. Discovery of New Microorganism Reported

"In the Laboratories of the Scientists; Microorganisms That Store Manganese"; Moscow, Vechernaya Moskva, 20 Mar 62, p 1

The caption to a photograph of G. A. Zavarzin, candidate of biological sciences, in his laboratory states: "Soviet scientists have observed a new group of microorganisms which participate in the formation of manganese ore. For a long time, scientists have predicted the existence of this

sort of microorganism, but obtaining it under laboratory conditions -- culturing it on media already known -- had so far been unsuccessful. G. A. Zavarzin, candidate of biological sciences and associate at the Institute of Microbiology, Academy of Sciences USSR, chose conditions under which the microorganism not only lived, but proliferated. For this purpose, insoluble carbohydrates were added to a solution containing a low concentration of manganese salts. Vigorous development of the microorganism with simultaneous oxidation of manganese was noted in the medium created. At present, G. A. Zavarzin is determining the necessary conditions for growth and development of other microorganisms which participate in the formation of iron ores."

12. Quinosol -- Culture Medium for Diagnostic Purposes

"Quinosol -- a Laboratory Culture Medium," by Docent P. Buchin, (Kemerovo); Moscow, Meditsinskiy Rabotnik, Vol 25, No 70, 31 Aug 62, p 3

A new culture medium, quinosol, particularly useful in the laboratory diagnosis of diphtheria, has been perfected at the Chair of Microbiology of Kemerovo Medical Institute. Its solubility in water, inability to combine with proteins, and ability to depress the growth of many microbes make the preparation valuable as an aid in diagnostics. It consists of 100 milliliters of distilled water, 3 grams of sodium chloride, 1.5 grams of glucose, 0.08 gram of aqueous purple indicator, 2 milliliters of 1:1,000 aqueous solution of quinosol, one milliliter of a 3 percent solution of cystine, 4 grams of dry nutritive agar, and 5 milliliters of dry blood dissolved in distilled water; defibrinated animal blood may be substituted for the dry blood. All of the ingredients, with the exception of the blood, are added to the distilled water and heated until the agar is dissolved; the mixture is then cooled and the blood is added. The quinosol culture medium makes it possible to easily differentiate between the true diphtheria microbe and the Hoffman pseudodiphtheria bacillus.

Radiobiology

13. Distinct Radiosensitivity of Central Nervous System Tested

"Glycolytic Processes in the Central Nervous System During Radiation Injury," by K. V. Fomichenko, Materialy 2-y Povolzhsk, Konferentsii Fiziologov, Biokhimikov, i Farmakologov s Uchastiyem Morfologov i Klinitsistov, (Data from the Second Volga Conference of Physiologists, biochemists, and Pharmacologists With

the Participation of Morphologists and Clinicians), Kazan, Kazan University, 1961, 516-517 (from Referativnyy Zhurnal--Khimiya, Biologicheskaya Khimya, No 8, Apr 62, Abstract No 83889, by V. Benevolenskiy)

"The intensity of anaerobic glycolysis in the white and grey matter of the rat cerebrum on the 15th, 30th, 60th, and 90th days after irradiation by 1,000 r from gamma rays of Co⁶⁰ was studied. It was established that toward the 15th and 30th days, anaerobic glycolysis was raised in all of the branches of the central nervous system whether glucose as a substrate was introduced or not. The elevated anaerobic glycolysis was normalized by the second postirradiation month. No statistically significant shifts from the normal could be detected by the 90th day. The authors consider that these data indicate a distinct radiosensitivity of the central nervous system to radiation action."

14. Bone Marrow Damage by Betatron

"Blood Picture and Bone Marrow Hemopoiesis During Acute Radiation Sickness Caused by 31 Mev Betatron," by Ye. D. Gol'dberg, O. S. Golosov, and O. V. Kurlov, Dokl. 2-y Nauchn. Konferentsii Fiziologov, Biokhimikov i Farmakologov Zap.-Sib. Ob'yedin. Posvyashch 22nd S'yezd KPSS (Reports of the Second Scientific Conference of Physiologists, Biochemists, and Pharmacists of the Western Siberian Association Dedicated to the 22d Congress CPSU) Tomsk, Tomsk University, 1961, pp 36-38; (from Referativnyy Zhurnal -- Biologiya, No 11, Jun 62, Abstract No 11N82, by V. Ponomareva)

"A total of 12 guinea pigs was subjected to general irradiation from a 31 Mev betatron by 4,000 and 5,000 r doses with a magnitude of 100 r/min, and another 12 guinea pigs, to irradiation from a 25 Mev betatron by the same total dose but at a rate of 7-31 r/min; ten animals served as controls. Complete bone marrow analysis was recorded starting on the second day. When the acid erythrogram method was used, a decrease in the acid resistance of erythrocytes of the peripheral blood became evident as early as 30-90 minutes after irradiation, and a tendency toward erythrocyte microcytosis, 10-15 minutes after the irradiation. No changes in the vitamin B₁₂ content in the liver or in blood serum were evident. The degree of disruption of lymphopoiesis due to irradiation from the 25 and from the 31 Mev betatron was identical."

15. Role of Hemopoiesis in Radiation Sickness

"The Role of Hemopoietic Tissues in the Development of Certain Symptoms of Radiation Sickness," by Yu. D. Balika, Vopr. Patogeneza, Eksperim. Terapii i Profilaktiki Luch-evoy Bolezni, (The Problem of the Pathogenesis, Experimental Therapy, and Prophylaxis of Radiation Sickness), M., Medgiz, 1960, 70-85; (from Referativnyy Zhurnal -- Biologiya, No 11, Jun 62, Abstract No 11N71, by Ye. Red'kina)

"A dog's hind limb was perfused with blood from a partner that had been subjected 1, 3, 7, and 9 days previously to general X-ray irradiation by 800 r. After the perfusion, the donor dogs were sacrificed and bone marrow samples were taken from the perfused and unperfused extremity. Perfusion from unirradiated dogs did not cause essential changes in the composition of the peripheral blood or in the bone marrow of recipient dogs, but perfusion from irradiated dogs decreased the number of leukocytes and of reticulocytes and disrupted hemopoiesis. Changes in the bone marrow of the unirradiated recipient dogs due to the perfusion from irradiated dogs were similar in their nature to bone marrow disruptions in the donor dogs after their irradiation. Smaller changes were evident when perfusion followed the first day of irradiation, and greater changes, when perfusion followed the 3rd-9th day after irradiation. It is postulated that disruptions in hemopoiesis due to radiation sickness are determined by substances which enter the blood following bone marrow disruption. In addition to shifts in hemopoiesis in the recipients, a decrease in the albumin level, which could be linked to disrupted hemopoiesis, was noted on the 20th day after perfusion."

16. Radiation Disruption of Hemopoiesis

"Gigantic Forms of Bone Marrow Megakaryocytes and Their Changes Under the Effect of X-Rays and Co^{60} ," by G. I. Tregubov, So. Nauchn. Tr. Rostovsk. n/p. Med. In-t., (Collection of Scientific Works of Rostov-on-Don Medical Institute), 1961, book 16, 53-59; (from Referativnyy Zhurnal -- Biologiya, No 11, Jun 62, Abstract No 11N73, by Ye. Red'kina)

"Studies were conducted on full-grown rabbits and rats and also on 11-week-old rats. Irradiation consisted of a single local irradiation of the distal epiphysis of the femur of rabbits by 1,200 and 600 r, and general irradiation of rabbits by 600 r and of rats by 1,000 r. The number of megakaryocytes was determined by the cell count of bone marrow sections. Under normal conditions, the number of megakaryocytes was one or two in a bone marrow section 2 mm², their size was 45 x 38 to 92 x 88, and they were distinguished by great polymorphism with a predominance of protoplasmic or nuclear substance. Anucleated forms were seen, often with signs of numerous divisions. The absence of noticeable changes in the bone marrow substantiates the resistance of these forms as compared with the usual megakaryocytes. Changes arising at later dates in the bone marrow and in the cells of normal size were more marked after general irradiation, were more protracted, and were slower to return to former development. Degeneration symptoms were most marked after the action of lethal doses and were especially distinct in young rats maintained on fat free diets. These rats showed a greater degree of nuclear division and a larger amount of bone marrow. According to the author's observation, both under normal and under experimental conditions active multiple nuclear division is characteristic of the bone marrow, with the subsequent division of nucleoprotoplasmic complexes and a more marked plasmatosis. It is postulated that the bone marrow consists of cells with an increased content of plastic material capable of forming new cell forms and blood plates."

17. Blood Shifts in Sheep Subjected to Radiation Sickness

"Certain Biochemical Blood Indexes in Sheep During Radiation Sickness, Report No 1," by I. V. Chikirda, Materialy Nauchno Konferentsii, Leningradskiy Veterinarny Institute (Data from the Tenth Scientific

Conference, Leningrad Veterinary Institute), 1., 1961, 8-9
(from Referativnyy Zhurnal -- Khimiya, Biologicheskaya
Khimiya, No 8 Apr 62, Abstract No 88895, by G. Vigdorovich)

"Sheep X-irradiated by 500 r and higher doses developed radiation sickness which was accompanied by a stable and prolonged fall of total protein, of albumin, and of inorganic phosphorus in the blood; by the disappearance of gamma-globulins several hours before death; by a decrease of the sugar and Ca content in the blood; by a fall of the alkaline reserve to a minimum; and then by the subsequent restoration of these indexes to normal."

18. Regenerative Processes in Injured Irradiated Nerves

"Regeneration of Peripheral Nerve Trunks After Roentgen Irradiation," by Docent N. K. Akhmedov, Chair of Normal Anatomy, Karaganda and Tashkent State Medical Institutes; Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 5, May 62, pp 11-13

The middle third of the left femur of 61 rabbits was X-irradiated by 300 r daily for 4 days with a total dose of 1,200 r. Seven days after the irradiation, a 0.5-cm portion of the sciatic nerve was removed.

Various studies showed that under the effect of ionizing radiation, regenerative processes in the injured nerve begin at a comparatively later period and continue for a longer time as compared with regeneration processes in injured unirradiated nerve trunks.

Degeneration processes in the axons and the resorption of the products of their destruction are significantly suppressed in injured nerves of irradiated extremities.

The irradiation of the animals was conducted at the Chair of Roentgenology and Radiology of the Tashkent Medical Institute under the guidance of Prof D. N. Maksumov and with the cooperation of N. A. Yuf, Chief of the Laboratory.

19. Serum Stimulates Heme Synthesis in Irradiated Animals

"The Effect of Roentgen Rays on Heme Synthesis in the Peripheral Blood of Fowl in in vitro and in vivo Experiments," by Szot Zbigniew, Malinowska Teresa, and Kowalski Edward, Acta Physiologica Polonica, 1961, Vol 12, No 4, 559-570; (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 8, Apr 62, Abstract No 88893)

"The biosynthesis of heme is increased after the X-irradiation of fowl by 750-1,000r doses as shown in experiments using 2 Cl^{14} -glycine. Heme biosynthesis was lowered when the X-ray irradiation dose ranged from 200 to 500 r, and starting with a 1,000 r dose, heme biosynthesis decreased as the dose increased. A study of the effect of aqueous extracts of certain organs, of serum, and of blood hemolysers of healthy and of irradiated animals showed that heme synthesis was stimulated when serum was present in the systems studied. The data obtained are discussed."

20. Mineral Metabolism in Irradiated Fowl Dependent on Dose

"The Metabolism of Radioactive Ca^{45} and P^{32} in the Bones of Chicks and Fowl Subjected to Gamma-Irradiation During Their Embryonal Period of Development," by N. I. Ivanova, Trudy Moskovskoy Veterinarii Akademii (Works of Moscow Veterinary Academy), 1961, Vol 37, 138-141; (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 8, Apr 62, Abstract No 88910)

"The inclusion of Ca^{45} and P^{32} into the bone tissue of chicks and fowl proceeds at a more intense rate after interrupted irradiation than after chronic irradiation or in unirradiated fowl. A 200-r dose of irradiation suppresses the intensity of Ca^{45} and P^{32} inclusion into the bone tissue of chicks and fowl."

II. CONTROL SCIENCES

21. Cybernetics in Physiological Research Discussed

"Physiology and Cybernetics," by Candidate of Biological Sciences A. Yesakov; Moscow, Meditinskiy Rabotnik, 4 Sep 62, p 2

The author recalls Pavlov's prediction a quarter of a century ago that mathematics would play a great role in the development of physiology. He discovered "cybernetic" phenomena in physiology long before cybernetics became a physicotchnological branch of science. P. S. Kupalov, P. K. Anokhin, P. G. Smyakin, and other Soviet scientists were responsible for further advancing of physiological research in the Soviet Union,

Soviet scientists have made considerable progress to date in modeling living cells. A cybernetic hand, an artificial heart-lung machine, and artificial hearing and vision devices are some results of the effort of Soviet scientists. Much more remains to be done, however, to achieve perfection and experimental effectiveness of cybernetic systems in the conduct of medicobiological research, ultimately bringing them closer to the specific nature of complex physiological

22. Training of Mental Activity

"Formation of Methods of Mental Activity of Pupils As a Contribution to the Development of Thinking and Activation of Learning," by D. N. Bogoyavlenskiy, Institute of Psychology of the Academy of Pedagogical Sciences RSFSR, Moscow; Moscow, Voprosy Psikhologii, No 4, Jul/Aug 62, pp 74-82

The author states in this report that educators and psychologists agree that teachers are confronted with two main tasks: to impart to students a definite amount of knowledge and to help each child to learn to think and to develop in each child qualities which are identifiable with the moral and intellectual qualities of a new man, the builder of a communist society. Mental growth and the development of perceptive talents are very important elements in the development of a well-balanced personality. It is essential, that students not only assimilate the content of knowledge, but also acquire the proper methods and procedures for mental activity.

23. Yugoslavs Popularize Soviet Bionics

"New Bewildering Science -- Bionics," by Z. B. [Zarko Bozic], permanent Borba correspondent in Moscow; Belgrade, Borba, 15 Aug 62, p 1.

The author gives a brief, popular description of the science of bionics and quotes a 14 August 1962 statement by Academician Prokhorov, member of the Presidium of the Scientific Council on Cybernetics, Academy of Sciences USSR as follows:

"On the basis of data of bionics, extraordinary machines are already being prepared which will collect and process their observations in space and transmit them to earth.

"The time can be imagined when a space ship will set out for Venus or Mars. Perhaps some animals will travel in it, but not as common passengers. Their organisms, together with simple technical equipment, could accomplish complex problems of guiding the ship."

24. Experiments With Living Organ

"Bionics - a New Direction in Research," by V. Capla, engineer; Bratislava, Tudomány es Technika, Vol 9, No 12, 19 Jun 62, pp 416-417

"Soviet scientists have succeeded in placing a frog's eye, that is, a living organism, into the model of an automatic control system. Through this experiment, they investigated the interaction between the living eye and the cybernetic machine. Experiments of this kind will answer the question of whether or not cybernetic machines can compete with exceptionally complex biological processes."

III. MEDICINE

Aerospace Medicine

25. Biocurrent-Measuring Electrode on "Vostok 3"

"Biocurrents Come From Orbit," by Junior Scientific Associate B. Yegorov; Moscow, Izvestiya, 31 Aug 62, p 4

The author states in this article that A. Nikolayev, the astronaut on "Vostok 3," was instrumented to record his EEG. This was done by a headset with small silver electrodes in the area of the forehead

and of the occiput. A thin layer of special paste was applied to the surface of electrodes to provide their close contact with the skin. The electrodes were connected by a wire to a small box containing an amplifier and source of current. The miniature transistorized amplifier fitted easily into the pocket of the space suit.

This was the first time that electroencephalograms were transmitted to earth from a manned spacecraft. The need for recording biocurrents of the brain in manned flights of long duration prompted the design of this new instrument. It is considered a great achievement of Soviet aerospace medicine.

26. Solar Activity and Cosmic Radiation in Outer Space Discussed

"The Struggle Against Radiation Hazard," by V. A. Gyurdzhian; Candidate of Medical Sciences; Moscow, Krasnaya Zvezda, 21 Aug 62, p 3

The author discusses the efforts of Soviet biologists and medical men to find ways of protecting human space travelers from cosmic rays of interastral origin and from radiation of solar origin. Soviet scientists also have been studying the effects of solid streams of charged particles within circumterrestrial radiation belts on the living organism.

The quantitative and qualitative composition of cosmic radiation in circumterrestrial belts fluctuates continuously. It depends on cycles of solar activity and on a few other factors. Periodic flares on the sun cause solar radiation to increase sharply.

A hermetic cabin can provide a space traveler with the required environment and can protect him from ultraviolet rays, but it cannot cope with cosmic radiation. It is comparatively simple to provide protection from electrons of the outer terrestrial radiation belt. But it is quite difficult to design protection against protons of the inner terrestrial zone of radiation. One important way to protect spacemen from radiation is the proper selection of trajectory and flight regimen so that the course of a space vehicle will avoid zones of high radiation intensity and energy. It is also important that a spacecraft be launched at a time when solar flares are not likely to occur. A space traveler can be provided with some sort of equipment which may be effective in protecting his entire body or parts of it from radiation. A multilayer shield has been suggested. The outer layer of this shield should be made of a lightweight substance, and the inner layer, of a heavy substance. The use of chemical and medicinal preparations has also been suggested as means of protection against radiation.

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Study of the effects of cosmic radiation began in the USSR as long ago as 1934. That year, a conference was held at which the stratosphere was discussed and the course was set for study of possible biological effect of cosmic radiation on both animate and inanimate objects. The first biological experiment was conducted in 1935 when *Drosophila* were carried aloft in a balloon.

It was not until 1951 that systematic experiments began to be conducted in the USSR. Dogs were sent into space in rockets. The first of a series of intensive biological experiments began in 1957 when a dog was sent into space. Since the dog remained in space for only a brief period and the vehicle was not equipped for re-entry, further experimentation was necessary. The second artificial earth satellite of 19-20 August 1960 contained a number of biological objects which were successfully returned to earth. Subsequent biological experiments increased the knowledge of Soviet scientists concerning the location and composition of the radiation belts. The animals that returned to earth were placed under observation. Results of these observations revealed no significant changes in their general condition and behavior. The dog Strelka twice gave birth to healthy offspring following its re-entry. The results of all experiments conducted by that time ruled out radiation in outer space as dangerous to plant life and to animal tissue and cells.

The first manned space flight lasted 108 minutes; the second, 25 hours. The flights of Andriyan Nikolayev and Pavel Popovich lasted longer. However, the orbits of all these flights were below radiation belts and solar activity. Observations of solar activity and direct measurements of the intensity of cosmic radiation in the upper layers of the atmosphere were made prior to all launchings and were continued while the flights were in progress.

Future flights will be oriented toward the collection of information about various zones of outer space and about changes in the intensity of radiation. This is expected to pave the way for new routes in outer space.

27. Functional Condition of Brain of Rabbits During High Gravitational Stress Discussed

"Investigation of Changes in Bioelectric Activity of the Cerebral Cortex in Response to Transverse Acceleration of Long Duration," by G. V. Izosimov and A. N. Razumeyev; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, Jul/Aug 62, pp 621-626

This report discusses an investigation of the bioelectric activity of the cerebral cortex in 50 rabbits of both sexes to transverse acceleration of long duration and of varying magnitude. Changes in

the bioelectric reaction were found to be of a phasic nature. Four types of reactions noted were found to depend on the initial pattern of the bioelectric activity. The onset of the initial phase of inhibition, in response to G forces, was found to depend on the magnitude of the gravitational pull and can be expressed mathematically in the form of a hyporbola. Gravitational pull was simulated in a centrifuge.

Cardiovascular Diseases

28. Physical Overexertion As a Cause of Coronary Insufficiency

"Concerning the Problem of Myocardial Infarct Following Physical Overexertion," by M. A. Gurevich, First Therapeutic Clinic, Moscow Oblast Scientific-Research Clinical Institute Imeni M. F. Vladimirskiy; Moscow, Kardiologiya, Vol 2, No 3, May/Jun 62, pp 30-35

Observations of 70 patients up to 40 years of age and suffering from myocardial infarct established that physical overexertion is an important and at times a dominating factor in the development of infarcts of the myocardium; in diagnosing coronary insufficiency, the possibility of previous physical overexertion must be taken into consideration (in 15 of the 70 patients physical overexertion was linked directly with the development of the infarct of the myocardium); medical control of physical exercise is essential.

29. Physiotherapy of Cardiovascular Diseases

"Basic Principles and New Methods of the Application of a Galvanic Current and Electrophoresis in the Complex Therapy of Cardiovascular Diseases," by N. A. Vinogradov and N. A. Kaplun, Physiotherapeutic Department of the General Institute of Resort Therapy and Physiotherapy; Moscow, Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury, Vol 27, No 4, Jul/Aug 62, pp 289-296

The mechanism of the actions of the galvanic current and electrophoresis, methods of electrotherapy now widely utilized in the treatment of patients suffering from disturbances of the cardiovascular system, are described. The results of the application of these methods to hospitalized patients are cited. The application of electrotherapy in conjunction with climatic and balneotherapy has been found to be highly effective in the therapy of such cardiovascular diseases as atherosclerosis, atherosclerotic cardiosclerosis, and hypertension.

Diagnosis

30. Dysentery Diagnosis at Military Institute

"Improvement of the Methodology of Bacteriological Investigation for Dysentery," by P. I. Yemel'yanov and A. V. Khrennikov, Voen. -Med. Zh. (Military Medical Journal), No 4, 1962, pp 61-64 (from Referativnyy Zhurnal -- Biologiya, No 16, Aug 62, Abstract No 16B355)

[No abstract given.]

Environmental Effects on Man

31. Venous Pressure Disruptions Due to Vibration

"Venous Pressure And the Rate of Blood Flow During Vibration Sickness," by D. K. Abramovich (Khar'kov), Ukrainian Scientific-Research Institute of Labor Hygiene and Occupational Diseases; Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 62, pp 26-30

Venous pressure was determined in both arms of 120 people (scalpers, grinders, riveters, and machinists), 112 of whom complained of vibration sickness and 8 of whom had worked for allong time with vibrating instruments but did not show symptoms of vibration sickness.

The resulting data revealed that prolonged vibration action lowers venous tonus, expands the veins, and slows blood flow in the veins. This creates venous stasis, which causes elevated venous blood pressure and leads to cyanosis. The retardation of venous blood flow, venous stasis, and other factors contribute to the development of the usual trophic disruptions symptomatic of this sickness.

32. Glucose Gastrointestinal Absorption Increased by Ultrasonic Irradiation

"The Effect of Ultrasonic Waves on the Absorption Activity of the Stomach and Intestine," by V. R. Faytel'berg-Blank, Ukrainian Institute of Health Resorts and Physiotherapy, Odessa; Kiev, Fiziologichnyy Zhurnal, Vol 8, No 4, Jul/Aug 62, pp 507-512

The effect of ultrasonic waves of various magnitudes and duration on glucose absorption into the stomach and intestine of dogs with their stomachs and small loops of the small intestine isolated according to

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The absorption activity of the gastro-intestinal tract is increased when the intensity of the ultrasound ranges between 0.3 and 0.5 wt/cm² and continues for 5 minutes. Greatest glucose absorption activity was noted when ultrasonic impulses were 0.5 wt/cm² and continued for 5 minutes. The increase in glucose absorption intensity was smaller when the ultrasound intensity ranged from 1 to 1.5 wt/cm² and continued for 5 minutes than when the intensity was 0.3-0.5 wt/cm². An insignificant glucose absorption increase was noted when the ultrasonic irradiation had an intensity of 0.5 wt/cm² and continued for 10 minutes.

An increase of glucose absorption was also noted due to the action of ultrasound on the femur and on the neck. Thermometric readings following ultrasonic irradiation showed an increase in the temperature in the region of the stomach and intestine. According to the author, the increased absorption activity of the gastro-intestinal tract following the use of ultrasound can be explained as a result of increased blood flow to the irradiated organs and also as a result of the reflex action of ultrasonic waves on glucose absorption.

Epidemiology

33. Data on Anthrax Cases Analyzed

"Epidemiological and Clinical Characteristics of Anthrax," by A. Ya. Zaporozhchenko, Central Scientific-Research Laboratory of Hygiene and Epidemiology, Ministry of Communications; Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 33, No 9, Sep 62, pp 111-115

An analysis of 2,400 cases of anthrax reported from 1920 to 1959 showed that 38.7% of these cases were sporadic, 14.1% were familial, and 27.2% represented outbreaks involving three or more persons recorded over a period of not more than 10 days, with a common source of infection. A study of clinical data showed that cutaneous forms were registered in 94.1%, enteric, in 5.2%, and pulmonary and eye forms, in 0.7% of the cases. Lethality was 9.33%; there was a fatal outcome in 100% of the pulmonary and ocular cases. An occupational source of infection was established in 25.7%, and a residential source, in 74.3% of the cases. The enteric form occurred as a result of the ingestion of meat from animals which had died of anthrax or from the passage into the intestine of food products which had been eaten from contaminated hands.

34. Anthrax in Caucasian Republics

"The Incidence of Anthrax Among Humans in the Precaucasian and Transcaucasian Republics and Its Prophylaxis," by N. I. Makarov, N. A. Saleyev, M. G. Akhundov, A. S. Zyuzin, A. F. Nadzhafov, T. P. Perepelkina, O. N. Odinichenko, Yu. I. Dzebizashvili, M. M. Chkoniya, V. N. Zil'fyan, and A. G. Mnatsakanyan, Scientific-Research Antiplague Institute of the Caucasus and Transcaucasus; the Azerbaydzhan, Dagestan, and Armenian Antiplague Stations, and the Georgian, Checheno-Ingushskaya, and Armenian Republican Sanitary-Epidemiological Stations; Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 33, No 9, Sep 62, pp 105-110

A study of anthrax in five Caucasian republics revealed that 94% of all human cases occur among agricultural workers. Infection of persons whose occupations require the processing of animal raw material was reported less frequently (6% of all cases), although this incidence was noted among children up to 15 years old. The high percentage of cases with a known source of infection is explained by the incompleteness of the epidemiological investigations.

Even one systematic antianthrax vaccination of cattle was found to diminish the incidence of anthrax among the human and animal populations. Methods of decreasing incidence among humans and measures for decontaminating disease foci are generally known; the success of these measures depends on careful calculation of foci, systematic application of veterinary prophylactic measures within them (annual vaccination of cattle), strict control of the slaughter of diseased animals, and destruction of all carcasses and prohibition of burial of diseased carcasses in the ground.

The authors recommend that the antiepidemic service in this region determine the number of anthrax foci accurately, become acquainted with their epizootiological characteristics, and cooperate with veterinary specialists in planned decontamination of the foci and inoculation of the healthy population.

35. Tularemia Eradication Successful

"The Eradication of Tularemia in Humans in an Area of Active Foci of Infection," by V. S. Sil'chenko, Voronezh Oblast Sanitary Epidemiological Station; Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 33, No 9, Sep 62, pp 87-91

The eradication of a tularemia focus of 30 years' standing in Povorinskiy Rayon of Voronezhskaya Oblast by a system of planned inoculations is described. The author concludes that antitularemia inoculations in a zone containing natural foci can result in complete eradication of tularemia outbreaks of any type, except for sporadic cases. Correctly organized inoculations carried out in planned order vaccination and obligatory revaccination in 5 years and encompassing the entire population produced a sharp reduction in the incidence of human tularemia in this area. This experience in tularemia control showed that complete eradication of the disease among humans is now completely feasible by inoculations in conjunction with other antiepidemic measures.

36. Tularemia Studies at Irkutsk Antiplague Institute

"The Epizootiology of Tularemia in Altayskiy Kray," by G. I. Kir'yanov, Izv. Irkutskogo N.-I. Protovochumn. In-ta Sibiri i Dal'n Vost. (News of the Irkutsk Scientific-Research Antiplague Institute of Siberia and the Far East), No 23, 1960, pp 19-23 (from Referativnyy Zhurnal -- Biologiya, No 16, Aug 62 Abstract No 16K179, by T. Dunayeva)

"Tularemia has been known in Altayskiy Kray since 1939. The Altayskiy Kray Antiplague Station carried out bacteriological investigation of more than 15,000 small mammals, 13,688 Ixodes ticks, and also birds, hydrobionts, water samples and various blood-sucking insects during 1949-1958.

Tularemia bacteria cultures were isolated from *Arvicola terrestris* L. (0.5% infected), *Microtus arvalis* Pallas, gray rats, and other small mammals. Nine cultures were isolated from Ixodes ticks. Fourteen cultures of the tularemia pathogen were isolated in investigation of 286 samples of water. *Arvicola terrestris* and, to a lesser extent, *Microtus oeconomus* Pallas are the basic sources of infection of water. In different geographic areas of the kray, the significance of *Arvicola terrestris* in a tularemia epizootic varies, depending on the characteristics of its distribution and the size of its population. The greatest numbers of these rodents are in the northern foothill areas and the hilly forest-steppe areas which abound in small brooks and rivers with good protective and nutritive conditions and a stable water regimen. In the southern foothill areas, the rivers have many rapids, their shores have no vegetation, and *Arvicola* do not frequent them. There are not many *Arvicola* in the western and southwestern areas since saline soils and salt lakes predominate here. Infection of *Arvicola* with tularemia is frequently noted in the forest-steppe areas. In years when the *Arvicola* population is high, epizootics are reported in more rayons than in years when it is low. Along with prophylactic inoculations against tularemia, the author suggests the release of American mink, a natural foe of *Arvicola*, to eliminate natural foci."

37. Horseflies Found To Carry Tick-Borne Encephalitis Virus

"A Case of the Isolation of Tick-Borne Encephalitis Virus From Horseflies," by V. N. Yagodinskiy, Chair of Microbiology, Military Medical Order of Lenin Academy imeni S. M. Kirov; Moscow, Meditinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 31, No 2, Mar/Apr 62, p 236

"A neurovirus was isolated from horseflies (*Tabanus flavicornis*) during a study of diseases with natural foci in July 1960 in Komsomol'skiy Rayon of Khabarovskiy Kray. The strain passed through a Sietz filter, was preserved well in 50% glycerin solution, and was passed in chick embryo fibroblast tissue culture without the appearance of cytopathogenic properties. The virus titer on the sixth passage was 10^{-8} . The disease in mice proceeded typically for tick borne encephalitis. Adult guinea pigs and white mice did not become ill. The neutralization reaction with antisera to tick-borne encephalitis gave neutralization indexes of 437 and 2790; there were not preventive properties in sera to Japanese encephalitis, lymphocytic choriomeningitis, and Taylor virus with respect to this strain. The complement fixation reaction with convalescent serum and antigen from the virus occurs in dilutions up to 1:32."

Hematology38. Effect of Some Vitamins on the Blood

"Increase in the Quantity of Blood Fibrinogen caused by Certain Vitamins," by N. A. Predtechenskiy and V. F. Vasyukova, Sb. Dok. 2-y Nauchn. Konferentsii Fiziologov, Biokhimikov, i Farmakologov Zap.-Sibirsk Ob'yeden. Posvyashch. XXII Session KPSS (Collection of Reports on the Scientific Conference of Physiologists, Biochemists, and Pharmacologists of the Western Siberian Association Dedicated to the 22d Session of the Communist Party of the Soviet Union). Tomsk, Tomsk University, 1961, pp 194-195 (from Referativnyy Zhurnal-Khimiya, Biologicheskaya Khimiya, No 13, 10 July 62, Abstract No 13 S337)

"Vitamins C, P, E, and vikasolin doses prescribed for children of nursing age were administered intramuscularly and per os to rabbits for 5 to 6 days. The blood content of fibrinogen increased beginning with the first day of the administration of the vitamins, reaching a maximum on the 3rd to 5th day; it then began to decrease gradually. No changes in the blood content of labile globulins were noted. It was assumed that the above mentioned vitamins selectively affected the liver, stimulating its fibrogen-forming functions."

Immunology39. Q Fever-Brucellosis Vaccine Tested on Humans

"The Immunological Effectiveness of Associated Vaccination Against Q Fever and Brucellosis," by V. A. Silich, A. A. Fuki, Ye. V. Strichanova, and M. A. Kozylvasheva, Institute of Epidemiology and Microbiology imeni Gamaleya and Krasnodarskiy Kray Sanitary-Epidemiological Station; Moscow, Zhurnal Mckrobiologii, Epidemiologii, i Immunobiologii, Vol 33, No 9, Sep 62, pp 68-71

An associated vaccine made of killed rickettsial anti-Q fever vaccine (series 1) and live brucellosis vaccine (from Br. abortus 19 BA) produced immunological reconstruction with respect to both infections in 251 persons. The associated vaccine contained one billion microbial cells per one ml. The separate vaccines were both prepared by the Institute of Epidemiology and Microbiology imeni Gamaleya. A control group received only Q fever vaccine. In the first month after associated vaccination, the elaboration of complement fixing antibodies to rickettsia occurred slowly in comparison with the control group, but by the third month the percentage of positive reactions was uniform in both groups. The reactogenicity of the associated vaccine was low (four persons experienced slight temperature increases). The authors recommend the use of this vaccine against brucellosis and Q fever.

Medical Electronics

40. New Device for Deciphering Physiological Processes

"An Electronic Differentiator," by A. S. Sharov, M. A. Alekseyev, and M. S. Zalkind, Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR; Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 12, No 4, Jul/Aug 62, pp 762-768

An electronic differentiator for deciphering complex forms of motor activity is described. The apparatus uses a three-channel d-c amplifier to record movement, speed, and acceleration during motor reactions simultaneously on loop and cathode-ray oscillographs and on the Cho-4 ink recording attachment. The feature which distinguishes the differentiator from similar devices is the layout of the calibration system, which eliminates the need for lengthy calculations. Circuit diagrams of the amplifier and calibration networks are given.

41. Application of Radioelectronics in Electrophysiology Discussed

"The Methods and Systems Contributing to the Automatic Analysis of Brain Biopotentials," by V. D. Nebylitsyn, Institute of Psychology of the Academy of Pedagogical Sciences RSFSR, Moscow; Moscow, Voprosy Psikhologii, No 4, Jul/Aug 62 pp 58-73

This report discusses the principal methods used in analysis of the electrical activity of the central nervous system and the computers recently developed for this purpose both in the Soviet Union and abroad. With the aid of these computers, it is possible to obtain quantitative information about some aspects of an electroencephalogram which may not yield to visual analysis. Although such computers are extremely versatile, it is difficult to appraise the extent of their usefulness in neurophysiology.

The report is divided into five parts. Part one discusses the frequency analysis; part two, the correlation analysis; part three, the study of evoked potentials; part four, the analysis of temporary parameters of a single electroencephalographic oscillation; and part five, the use of electronic computers for the study of brain biocurrents.

42. Superhigh Frequency Pulse Generator for Biological Research

"A Device for Influencing Biological Objects," by A. R. Livenson and K. I. Korotkikh, USSR Patent, Class 21 g, 4 07, No 130,993, 20.08.60 (from Referativnyy Zhurnal -- Avtomatika i Radioelektronika, No 7, Jul 62, p 705-27)

"The purposed device for influencing biological objects with super-high frequency pulses for research purposes contains a magnetron oscillator, modulator, horn radiator, and power supply. The device is distinguished by the use of a circuit switch and twin variable resistor for stepless regulation of the superhigh frequency pulse repetition rate without varying the output power."

43. Computer Accelerates Sphygmogram Reading

Electronic Computer in Medicine; Prague, Rude Pravo, 6 Sep 62, p 1

M. Koci, Engr M. Netusil, and Engr V. Novak, all personnel of the Laboratory for Graphic Investigative Methods (Laborator grafickych vysetrovacich metod) of the Czechoslovak Academy of Sciences have built an electronic analog computer for reading of sphygmograms (pulse curves). A comparison of the pulse curves permits a physician to distinguish some vascular diseases and possibly to study the origin and course, the condition of vascular walls, vascular changes in old age, etc. The computer can perform the readings in 20 seconds. The collective designed and built the computer during a 4-month period.

Oncology44. Differential Diagnosis of Gastric Cancer Through Blood Serum Content of Glycoproteins and Lipoproteins

Glycoproteins and Lipoproteins in Patients With Stomach Cancer, by Adamczyk Bogumil, Polski Przegląd Chirurgiczny, 1961, Vol 33, No 7-9, 782-783; (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 8, Apr 62 Abstract No 8S1157, by L. Roffelvd)

Changes in the glycoproteins and lipoprotein content of the blood serum of 43 patients with gastric cancer, 27 with gastric ulcers, and 12 with duodenal ulcers were determined by the method of electrophoresis. Analogous determinations were run on the blood serum of 20 healthy people. It was established that under normal conditions the glycoproteins were bound to gamma-globulins, while in 55% of patients with gastric cancer and 27.3% of patients with gastric ulcers no glycoproteins bound to this fraction of gamma-globulins were detected. A sharp increase of alpha₁- and alpha₂-globulins associated with an increase of glycoproteins was determined in the great majority of patients with gastric cancer.

No marked changes were noted in the glycoproteins and lipoprotein content of the blood serum of patients with gastric or duodenal ulcers.

45. Mannite Subulfan in the Therapy of Leukemia

Therapy of Chronic Myeloid Leukemia With Mannite Subulfan, by Ferenc Graf and Lorand Takacsi-Nagy, Orv. Hetilap (Hungary), 1961, 102, No 39, pp 1849-1851 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 R247, by A. Izanov)

Mannite busulfan (I; 1, 6-dimethyl-d-mannite) exhibits a selective action on leukopoiesis. It is readily soluble in water and can be administered either internally or intravenously; it is less toxic than mileran. I was used in the therapy of ten patients suffering from myeloid leukemia and previously treated with mileran, urethan, or subjected to Roentgenotherapy. For 24 to 26 days the patients were intravenously administered I daily, in doses of one gram in 10 to 15 milliliters of distilled water and vitamin B₆. Remissions developed in all of the patients; the number of erythrocytes increased, the number of leukocytes decreased to its normal count, the maturation index rose, and the size of the spleen and renal organs decreased. The hematological and clinical remissions continued for 2 to 6 months in eight of the patients; paramyeloblastosis developed in one of the patients within 6 weeks; infarct of the spleen terminating in death developed in another patient.

46. Hexaethyleneiminophosphornitryl in the Therapy of Tumors

Antitumorous Properties of Hexaethyleneiminophosphornitryl, by K. P. Ganina, Uch. Zapiski Kievsk. N.-I. Rentgeno-Radol. i Onkol. In-ta (Scientific Notes of the Kiev Scientific-Research Roentgeno-Radiological and Oncological Institute), 1961, 7, pp 177-187 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 R236, by Z. Bulkina)

Hexaethyleneiminophosphornitryl (I) was tested in animals suffering from sarcoma 45, Guerin's carcinoma, and leukemia LI0-1. The chemotherapeutic index of I is 3.3 to 3.6. In lethal doses administered to healthy rats, I depressed hemopoiesis and induced hemorrhagia, hepatic protein-lipoid dystrophy, and protein dystrophy of the myocardium and renal organs. In therapeutic doses, it induced a moderate atrophy of bone marrow and the spleen. I (in doses of 5-6 milligrams per kilogram body weight) inhibited the growth of sarcoma 45 by 96 to 99 percent; this effect depended on the dose and the time the therapy was initiated. The growth of Guerin's carcinoma was inhibited by 66 to 97 percent, and that of the tumors strain LI0-1, by 47 to 60 percent. A microscopical examination of the site where transplantation of the tumor was made revealed dystrophic modifications of the tumorous cells, a growth of connective tissue, and an accumulation of lymphoid elements.

47. Novocmain Ointment in the Therapy of Skin Cancer

Concerning the Morphological Laws of the Process of Therapy of Human Skin Cancer by Novocmain Ointment, by I. T. Kramorenko, M. A. Presnov, and S. F. Yushkov, Clinical Division and Laboratory of Experimental Chemotherapy, Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR; Leningrad, Voprosy Onkologii, Vol 8 No 7,62, pp 3-9

Novocmain ointment, in addition to 0.5 percent of cmain -- N-dez-acetyl-methyl-colchisin, contains hyaluronidase, ephedrine, butadion, and spermaceti emulsion, and is used in the therapy of human skin cancer. The ointment is applied daily for 10-15 days and is covered with a sterile dressing. The practical application of the ointment produced excellent results with very few relapses upon the termination of the treatment. Research carried out on bioptic materials taken from 12 patients during the process of therapy with novocmain ointment established that:

1. There are several stages in the process of the therapy of human skin cancer with novocmain ointment; these are (a) disturbed mitosis, (b) development of dystrophic and necrobiotic modifications of the tumorous cells, and (c) the replacement of the tumorous cells by connective tissue.
2. Basalomas are cured in a shorter period of time than are the flat-cellular forms of cutaneous cancer.
3. In the process of the therapy of human skin cancer with novocmain ointment, moderate atrophic changes in the epithelia of the hair follicles and the fatty and sweat glands of the skin are noted.

48. Occupational Cancer in Workers of the Aniline-Dye Industry

Cancerogenic Substances in the Aniline-Dye Industry and Measures of Prophylaxis, by I. L. Lipkin (Moscow, Scientific-Research Institute of Hygiene imeni F. F. Erisman); Moscow, Gigiyena Truda i Professional nyye Zabolevaniya, Vol 6, No 6, Jun 62, pp 17-24

Results of investigations conducted to determine the cancerogenic character of substances used in the production of dyes are reported in the article. The substances in question are divided into three groups. The first group consists of substances which undisputedly are cancerogenic, causing cancer of the urinary bladder. It includes such substances as beta-naphthylamine, technical alpha-naphthylamine, and benzidine. The second group consists of substances which have been found to be cancerogenic in experiments on animals and are, therefore, thought to be cancerogenic for man. The number of such substances is large and includes many hydrocarbons, amino compounds, aromatic amines, fluorides, and others. The third group consists of substances which are close in chemical structure to

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well-known cancerogenic agents and are, therefore, suspected of being themselves cancerogenic. These include fat yellow dye previously used for the coloring of butter and margerine; fat dark red color used for coloring gasoline, plastics and other materials; and oil red G (sudan III) used for the boloring of Holland cheese. As yet, however, the data on the cancerogenic character of these substances are contradictory.

A recent decree issued by the State Sanitation Inspection Committee of the USSR urges a search for the discovery of new and harmless coloring agents; the experimental investigation of new substances used in industry and suspected of being cancerogenic with the view toward the determination of the chemical nature of these blastomogenic substances and the mechanism of their action; medical examinations, including cystoscopies of personnel involved in the production and handling of such substances; and the investigation of the threshold of the allowable time limit in which workers should be permitted to handle substances which are cancerogenic for man.

49. Podophyllin in the Therapy of Tumors

"Application of Podophyllin in the Therapy of Tumors of the Urinary Bladder," by N. S. Ban'kovskiy, N. G. Zaytsev, I. V. Fedorov, and I. P. Shevtsov, Chair of Urology, Military-Medical Order of Lenin Academy imeni S. M. Kirov; Leningrad, Voprosy Onkologii, Vol 8, No 8, 1962, pp 21-24

Podophyllin, the active principle of *Podophyllum peltatum*, was applied in the therapy of tumors of the urinary bladder in the following manner: 1, 4, 8, and 12 percent suspensions of podophyllin in mineral oil were infused into the urinary bladder by means of a cateter in quantities of 100 milliliters at intervals of one week. The results were as follows:

1. A suspension of podophyllin in mineral oil is a new therapeutic agent in the complex of the therapy of papillomas of the urinary bladder;
2. Good results were obtained in the therapy of small single and multiple typical and atypical papillary fibroepitheliomas;
3. Podophyllin is used in combination with endovesical and transvesical electrocoagulation of the papillomas of the bladder for the prevention of recurrences of the disease;
4. Podophyllin is ineffective when used in the therapy of large papillomas and papillary carcinoma of the urinary bladder.

50. Human Sperm As a Causative Agent of Leukemia

"Leukemogenic Action of the Human Sperm," by J. Baló, J. Juhasz, and G. Kendrey, Mag. Onkol. (Hungary), 1961, 4, pp 199-201 (from Meditinskiy Referativnyy Zhurnal, Section 6, No 6, Jun 62, Abstract No 913, by N. N. Trapeznikov)

"Human sperm was intraperitoneally administered to albino mice a total of six to eight times at intervals of 2-3 days. Acute leukemia developed in 23 percent of the animals within 8 to 14 months (2 percent in the control group). Among humans, malignant tumors of different organs are encountered more frequently in males than in females. The diathesis of males to the development of different forms of malignant tumors cannot be explained either by living habits or occupation. The noticeable prevalence of malignant tumors among males can be linked only with sex hormones."

51. Theories of the Origin of Leukemia

"Etiology of Leukemia," by I. Barta, Mag. Onkol. (Hungary), 1961, 4, pp 233-240 (from Meditsinskiy Referativnyy Zhurnal, Section 6, No 6, Jun 62, Abstract No 922, by N. N. Trapeznikov)

"Morphologically and metabolically, the leukemic cell is similar to the tumorous cell. This similarity served as a basis for the theory that leukemia is one of the group of tumorous diseases; this theory is confirmed by its clinical picture, therapeutic results, and experimental data. Because of this, a considerable number of research workers are of the opinion that leukemia belongs to the group of tumor diseases, while another group holds that it is caused by a number of various cancerogenic substances. A widespread theory holds that leukemia is a viral infection caused by physical, chemical, and genetic factors; no one looks upon leukemia as a polyetiological disease. All of the above-mentioned factors induce modifications of the chromosome in the ovum, as well as in the somatic cells. These modifications disturb the synthesis of deoxyribonucleic acid, and cells with a capacity for unlimited propagation and a diminished maturing ability develop. Bibliography -- 23 titles."

52. Pathological Changes in Synaptic Patches During Cancer

"Concerning the Condition of Synapses in the Peripheral Nervous System During Cancer of Internal Organs," by A. R. Atakishiyev, Forensic Medical Examination, Klinsk Rayon of Moscow Oblast; Moscow, Arkhiv Anatomii Gistologii i Embriologii, Vol 43, No 7, Jul 62, pp 100-104

Histopathological changes in material obtained from 29 cadavers showed changes (distinct hypertrophy of synaptic patches and an increase in their number and the appearance of atypical malformations) in the synaptic areas of the solar plexus and of the stellate and superior cervical ganglia.

The nearer the synaptic nodes to the tumor areas, the greater were the changes in the synapses.

53. Characteristics and Sources of Mice Strains Used in Oncological Research

"List of Strains and Substrains of Mice in the Breeding Stations of the Academy of Medical Sciences USSR," by N. N. Medvedev, Laboratory of Experimental Animals, Academy of Medical Sciences USSR, Moscow; Leningrad, Voprosy Onkologii, Vol 8, No 7 62, pp 120-128

The article lists the strains and substrains of mice bred at the breeding stations of the Academy of Medical Sciences USSR for experimental purposes. The characteristics and sources of the strains and their uses in oncological research are also presented.

54. Czechoslovak Work With Steroid Hormones

"A New Chapter in Internal Medicine"; Prague, Obrana Lidu, 7 Aug 62, p 2

A collective in the Chemical Institute of the Czechoslovak Academy of Sciences has been primarily responsible for the development of a large number of steroid compounds and for suppressing their unfavorable qualities. Steroid hormones are now being used in Czechoslovakia in experiments on combating cancerous tissues in those organs whose functions are regulated by these hormones. Specialists from the Third Internal Medicine Clinic and the Second Surgical Clinic of Charles University in Prague have succeeded in determining the clinical procedures for treating such cancerous growths. The results obtained are comparable to the best results reported in world literature, and the Czechoslovak methods have been widely publicized. Czechoslovak preparations are being used in these studies.

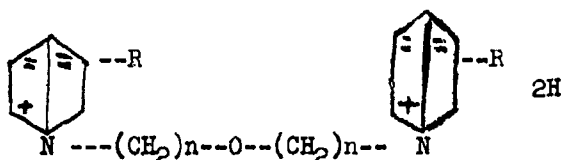
Pharmacology and Toxicology

55. Ganglioblocking Properties of Polymethylene-bis-Quinuclidine Halogens

"Concerning the Pharmacology of Polymethylene-bis-Quinuclidine Halogen" by F. Satritdinov, Laboratory of Pharmacology, All-Union Scientific-Research Chemicopharmaceutical Institute imeni S. Ordzhonikidze; Moscow, Farmakologiya i Toksikologiya, Vol 25, No 4, Jul/Aug 62, pp 428-433

The ganglioblocking and curarelike properties of seven compounds, halides of polymethylene-bis-quinuclidine, were studied in cats under urethane anesthesia. The compounds have the following general structural formula:

C-O-N-F-I-D-E-N-T-I-A-L



in which n is 1,2; R is H ; CH_3 ; $CH_2C_6H_5$; $COOCH_3$; G is either Iodine or Bromine. The preparations investigated were
 OF 1636 in which R is H , n is 1, and I is a halogen;
 OF 1644 in which R is CH_3 , n is 1, and I_2 is a halogen;
 OF 1651 in which R is C_6H_5 , n is 1, and Br is a halogen;
 OF 1657 in which R is $CH_2C_6H_5$, n is 1, and Br is a halogen;
 OF 1592 in which R is H , n is 2, and I is a halogen;
 OF 1593 in which R is CH_3 , n is 2, and I is a halogen;
 OF 1661 in which R is $COOCH_3$, n is 2, and I is a halogen.

The experiments established that all of the above-mentioned compounds possess pronounced ganglioblocking properties; the diiodide of 1,2-di-(quinuclidyl-1', 1') dimethyl ester was found to be the most potent of the compounds in its effect on the superior cervical ganglion; the dibromide of 1,2-di-(benzyl quinuclidyl-1', 1') dimethyl ester (OF 1657) was found to be the most potent of the compounds in its effect on the parasympathetic ganglion of the vagus nerve; compounds containing four methyl groups and a H atom in their chain were found to be less active than analogous compounds with only two methyl groups in the chain; all of the preparations under investigation possess curare-like properties only when applied in large doses, 7 to 50 milligrams per kilogram body weight.

56. Effect of Tabun Intoxication on the Blood

"Concerning Certain Modifications of the Blood of Dogs in Acute Intoxication by Dimethylaminoethoxyphosphoryl Cyanide (Tabun)," by G. Kotev and G. Rusev, Voen-Med. Godishnik (Military -Medical Yearbook), Bulgaria, 1961, 1, pp 37-44 (from Referativnyy Zhurnal-Khimiya, Biologicheskaya Khimiya No 15, 10 Aug 62, Abstract No 15 S1522, by N. Turkevich)

"Dimethylaminoethoxyphosphoryl cyanide (I; tabun) in the form of a one percent solution in sunflower oil was administered subcutaneously to dogs. Cholinesterase activity declined [the results reported are those obtained following the administration of tabun in absolutely lethal doses (one milligram per kilogram body weight) and sublethal doses (0.2 milligram per kilogram body weight),

respectively] from 29.19 to zero and from 62.18 to 20.62; acetylcholine concentration in the blood increased from 0.11 to 0.54 --; sugar concentration in the blood increased from 96.2 to 148 and from 101 to 119 milligram percent; lactic acid content in the blood increased from 7.5 to 21.3 milligram percent --; O₂ content in the arterial blood decreased from 18.73 to 2.87 and from 19.7 to 17.9 volume percent; CO₂ concentration in the arterial blood increased from 29.51 to 47.10 and from 20.2 to 34 volume percent."

57. Reaction of the Organism to ThioTEF [Triethyleneiminothiophosphoramidate]

"Data Obtained in the Experimental Analysis of the Modifications of the Hemopoietic Apparatus in Albino Rats Following the Administration of Different Doses of ThioTEF [Triethyleneiminothiophosphoramidate]. Report I. Modifications in the Peripheral Blood," by B. I. Verenikina, Tr. Leningr. San.-Gigiyen. Med. In-ta (Works of the Leningrad Sanitary-Hygienic Medical Institute), 1961, 71, pp 192-202 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 R239, by A. Grushina)

"The effect of the action of ThioTEF (I) on the hemopoietic organs and the peripheral blood of rats was studied. It was found that I (10 milligrams per kilogram body weight) administered daily produced a decrease in the number of leukocytes and thrombocytes. Their number increased somewhat after four injections were administered. After the fifth injection, the number of leukocytes increased, indicating exhaustion of the compensatory mechanisms of the hemopoietic apparatus. I primarily depressed myeloid hemopoiesis. The decrease of the number of granules in the leukocytes and their light color were also noted. Anisocytosis of the erythrocytes, which remained normal in quantity, developed and mononuclear and gigantic reticulo-endothelial cells appeared."

58. Nivaline -- an Anticholinesterase Substance

"Electrophoresis of Nivaline (Electrochemical, Experimental, Biochemical, and Functional Investigations)," by S. Kurcheva, St. Mikhaylov, D. Alipiyev, St. Bankov, L. Tsvetkova, and R. Benvenisti (Bulgaria), Scientific-Research Institute of Resort Health Science and Physiotherapy of the People's Republic of Bulgaria; Moscow, Voprosy Kurortologii, Fizioterapii i Lechebnoy Fizicheskoy Terapii, Vol 27, No 4, Jul/Aug 62, pp 299-304

The method of the electrophoretic application of nivaline, an anticholinesterase preparation which only temporarily inactivates cholinesterase, and the effect of such application of the drug on the organism were the

objects of investigations described in this article. The electrochemical properties of nivaline were studied. These studies established that nivaline in aqueous solution dissociates into ions, medicinal substances suitable for introduction into the organism by the electrophoretic method. Solutions containing 0.25 percent of nivaline were injected into healthy humans and patients suffering from diseases affecting the nervous system. The investigations established that nivaline introduced into the organism by the electrophoretic method improved tissue trophism, intensified blood and lymph circulation, and improved the functional state of the nerve elements; best results were obtained when applied to patients suffering from traumatic and inflammatory affections of the peripheral nerves and polyneuritis; its effectiveness when applied to cases afflicted with poliomyelitis depended on the duration and severity of the disease, and the presence of contractions.

59. Effect of Ganglioblocking Preparations on the Smooth Muscles

"Effect of Some of the New Ganglioblocking Preparations on the Motor Activity of the Gastrointestinal Tract (Experimental-Röntgenological Investigations)," by Ya. Shuster and A. L. Polyakov, Sb. Nauchn. Rabot Kizhsk. Med. In-t (Volume of Scientific Works of the Riga Medical Institute), 1961, 11, No 3, pp 159-175 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 15, 10 Aug 62, Abstract No 15 S1544)

"Data are cited on the stimulating effect of pentamethylene-1,5-bis(N-methylpyrrolidine)-diiodide (0.4 milligram per kilogram body weight); pentamethylene-1,5-bis-(N-methylpyperidine)-diiodide (0.6 milligram per kilogram body weight); tetramethylene-1,4-bis-(N-methylpyperidien)-diiodide (1.7 milligrams per kilogram body weight); hexonium (2.15 milligrams per kilogram body weight); and tetamonium (15 milligrams per kilogram body weight) on the motor activity of the gastrointestinal tract. It is the opinion of the authors that the stimulating action of these preparations is due, not to their ganglioblocking properties, but to other, little-studied mechanisms. The authors confirm the two-phase effect of the ganglioblocking preparations on the smooth muscles."

60. Blocking Action of Certain Cholinolytics

"Effect of Central Cholinolytics on the Orientation Reaction of Laboratory Animals," by P. P. Demisenko, Department of Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR; Moscow, Farmakologiya i Toksikologiya, Vol 25, No 4, Jul/Aug 62, pp 395-401

Male mice weighing 18 to 20 grams were used in experiments carried out to determine the effect of a number of cholinolytic substances on the cholinergic structures of some of the synapses. The preparations tested were metamisil (IEM-275, the methyldiazil hydrochloride of the racemate of diethylaminoisopropyl benzilate); amizil (the hydrochloride of diethylaminoethyl benzilate); IEM-23 (the hydrochloride of the diethylaminoethyl anisylate); IEM-30 (the hydrochloride of the diethylaminoethyl ester of diethylaminoethoxydiphenylene acetic acid); IEM-111 (The hydrochloride of the diethylaminoethyl ester of benzanisyllic acid); IEM-112 (the hydrochloride of diethylaminoethyl benzofuranate); aprophen (the hydrochloride of diethylaminoethyl methyldiphenyl acetate acid); pentaphen (the hydrochloride of the diethylaminoethyl ester of cyclopentanecarboxylic acid); methyldiphacil (IEM-265, the hydrochloride of the racemate of diethylaminoisopropyl diphenylacetate); and spasmolytin (the hydrochloride of the diethylaminoethyl diethylaminoethyl diphenylacetate).

The experiments established that:

1. Central cholinolytics depress the orientation reaction of the animals, with metamisil and amizil exhibiting the greater depressing action;
2. The depressing action of the cholinolytics is due to the ability of the substances to block the cholinergic synaptic structures of the ascending activating systems of the midbrain's reticular formation;
3. Because of their depressing effect, central cholinolytics can be used as tranquilizing drugs;
4. The graphic method of recording used in these experiments can be utilized in investigating the effect of other preparations on the motor activities of animals.

61. Toxicity of Carbocholine

"Case of Lethal Intoxication by Carbocholine, a Medicinal Preparation," by N. M. Gubin and V. M. Moiseyev, Chair of Forensic Medicine, Kharkov Medical Institute and Kharkov Oblast Bureau of Forensic Medical Expertise; Moscow, Sudebno-Meditsinskaya Ekspertiza, Vol 5, No 3, July/Aug-Sep 62, pp 48-49

A fatal case of intoxication by carbocholine, unusual in medical history, is described. Carbocholine is a preparation similar in structure to acetylcholine. It differs from the latter in that it is not decomposed by cholinesterase; like acetylcholine, however, it stimulates the cholinoreactive systems by stimulating the parasympathetic nervous system. Carbocholine is applied in medicine as a hypotensive drug which also intensifies the contractions of the smooth muscles, dilates the blood vessels, slows down cardiac activity, intensifies gastrointestinal peristalsis, and increases secretion by the salivary and sudoral glands. Carbocholine is administered subcutaneously or intramuscularly in doses of 0.005 to 0.001 gram. It should not be administered intravenously.

62. Effect of Some Preparations on the Nervous System

"Effect of the Prophylactic Administration of Certain Substances on the Resistance of the Nervous System of Animals in Trauma," by M. A. Rozin, Materialy Konferentsii po Probl. Adaptatsii, Trenirovki, i Drugim Sposobam Povysheniya Ustoychivosti Organizma (Data on the Conference on Problems of Adaptation, Training, and Other Methods of Increasing the Resistance of the Organism), Stalino, 1960, pp 118-119 (from Referativnyy Zhurnal -- Biologiya, No 13, Jul 62, Abstract No 13 T7, by W. Levin)

"The intraperitoneal administration of proserine (0.05 milligram per kilogram body weight) and vitamin B₁₂ (0.2 gamma per kilogram body weight) to mice daily for a period of 6 days diminished the disturbed nervous functions which developed as a result of a subsequently inflicted trauma of the cerebrum or the sciatic nerve. The abdominal subcutaneous administration of dibazol (0.1 milligram per kilogram body weight), proserine (0.1 or 0.05 milligram per kilogram body weight), and eserine (0.1 milligram per kilogram body weight) to frogs one hour prior to infliction of the trauma diminished reflex activity which usually develops as a result of a trauma of this type. The rise in the resistance of the nervous system induced by the above substances may be at the basis of the mechanism of the therapeutic effect of these drugs in cases of trauma of the nervous system."

63. Use of Epilin and Grizeofulvin Against Fungi

"New Ways of Treating Fungus Diseases of the Skin," by A. M. Ariyevich, O. G. Vikhрева, O. V. Tyufilina, N. K. Livanova, N. M. Bludova, V. M. Batolina, A. A. Sheklakova, M. P. Kemeneva, M. A. Vardashkina, and I. I. Sorokina, Micrological Department, Central Dermato-Venerological Institute and Clinical Dermato-Venerological Hospital imeni Korolenko, Moscow; Moscow, Sovetskaya Meditsina, Vol 26, No 6, Jun 62, pp 52-56

Epilin, p-beta-diethylaminoethoxy-phenyl-phenethyl-ketone, was synthesized at the All-Union Chemicopharmaceutical Institute imeni S. Ozdzhonikidze. Laboratory and clinical tests established that epilin is effective when used as a fungicidal and epilating preparation. It was successfully applied in the form of a plaster containing 20 percent of anhydrous lanolin, 5 percent of beeswax, 51 percent of lead plaster, 4 percent of epilin, and 20 percent of distilled water to 16,000 patients, suffering from trichophytosis, microsporosis, and favus of the hairy part of the head. The tests established also that epilin has no effect on the liver on the nervous and cardiovascular systems. Conjunctivitis and blepharoconjunctivitis are the only side reactions noted on some occasions. Grizeofulvin, an antifungus antibiotic, was synthesized at the Central Dermato-Venerological Institute and was found to be effective in the therapy of diffused forms of trichophytosis, microsporosis, and favus of the hairy part of the head.

64. Toxicity of Chlorindane and Heptachlor

"Data on the Investigation of the State of Health of Workers Engaged in the Production of Chlorindane and Heptachlor," by P. I. Kolyaganov (Gorkiy), Gorkiy Institute of Labor Hygiene and Occupational Diseases; Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, Vol 6, No 7, Jul 62, pp 42-44

In the process of the production of the insecticides chlorindane ($C_{10}H_6Cl_8$) and heptachlor ($C_{10}H_5Cl_7$), workers are constantly in contact with the intermediate products: cyclopentadiene, polychlorocyclopentadiene, and hexachlorocyclopentadiene. Investigations established that these intermediates as well as the end products, adversely affect the health of workers and in many cases cause development of chronic intoxication which are expressed primarily in damage to the nervous system, liver, and blood. Strict observance of personal hygiene measures, the systematic administration of vitamins, and periodical medical examinations are the best known prophylactic measures.

65. Relation of Psilocybin to Tryptamine

"Metabolism of Serotonin in Experimental Psychosis Induced by Psilocybin," by Vl. Vitek, M. Vojtechovsky, and St. Grof, Activ. Nerv. Super. (Czechoslovakia), 1961, 3, No 2, pp 213-215 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 15, 10 Aug 62, Abstract No 15 S 1430, by E. Zeymel')

"Following the development of experimental psychoses in seven persons who were administered psilocybin (I; phosphorylated oxydimethyltryptamine) in doses of 9 milligrams, no phosphorylated or free 4-oxyindolic acid, the assumed catabolite of I, was found in the urine. In one case only, a patient with a long history of hysteria, were the literature data in relation to the increase in the excretion of oxyindolacetic acid following administration of I confirmed. Experiments carried out on an isolated colon confirmed the fact that I is antagonistic to 5-oxytryptamine (concentration relation 125:1) and to tryptamine.

66. Effect of Large Doses of Serpasil on the Organism

"Clinical Picture of Intoxication by Lethal Doses of Serpasil and the Effect of the Intoxication on the Brain and the Internal Organs of Experimental Animals," by V. F. Matveyev, "Probl. Shizofrenii, Nevrozov, Reaktiv. Sostoyaniy i Organ. Psikhiatr. Pomoshchi (Tr. Gos. N.-I. In-ta Psikhiiatrii, 27) ("Problems of Schizophrenia, Neuroses, and Reactive Conditions and the Organization of Psychiatric Aid [Works of the State Scientific-Research Institute Psychiatry, 27]), Moscow, 1961, pp 255-26 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 T28)

"Serpasil was administered intraperitoneally to mice and intramuscularly and internally to rats. The LD₁₀₀ of serpasil for mice is 15 milligrams per kilogram body weight. Rats given serpasil intramuscularly in doses of 47.25 milligrams per kilogram body weight lived for 12 to 16 hours; when serpasil was administered internally in doses of 24 milligrams per kilogram body weight, the animals lived for 12 to 15 days. Death of the animals intoxicated by lethal doses of serpasil occurred mainly as a result of the damage caused to the central nervous system (paresis, ptosis, spasmodic attacks, disturbed respiration, and others). Diffused dystrophic modifications were found in the cerebrum; the subcortical formations suffered greater damage than the gray matter of the cortex. The gastrointestinal tract and the renal organs were the more affected of the internal organs. It is assumed that death was due to the severe damage to the central nervous system caused by the drug. The degenerative modifications of the nerve cells occurred without any visible reaction on the part of the glia and leukocytes; this indicated a decreased reactivity of the organism when in a state of intoxication by serpasil."

67. Diafen -- a New Tranquilizer

"Science and Technology"; Moscow, Nedelya, No 28,
8-14 Jul 62, p 3

"A small tablet of diafen restores the stimulated nervous system of man to its normal condition. The new substance was prepared at the L'vov Medical Institute."

68. Securinine in the Therapy of Psychoses

"Therapeutic Significance of Securinine, a New Domestic Preparation," by A. T. Masliyev, Tr. 1-go Mosk. Med. In-ta (Works of the First Moscow Medical Institute), 1961, 15, pp 339-344 (from Referativnyy Zhurnal--Biologiya, No 14, Jul 62, Abstract No 14 T55, by V. Levitskiy)

"Securinine is an alkaloid with strychnine properties. The reported positive effect of securinine is based on experience gained in the application of the drug to 30 patients suffering from nervous and psychotic diseases and in asthenic conditions of different origins. Securinine was injected in the form of 0.4 percent solution in doses of 15 to 20 drops 2-3 times per day or in the form of 0.2 percent solution in doses of one milliliter once each day. The course of treatment continued for periods of 1-2 weeks."

69. Effect of Nitro-Aromatic Substances on the Organism

"Clinical and Laboratory Investigations of Metabolic, Blood Composition, and Neuromuscular Excitability Modifications of Chemical Industry Workers Engaged in the Production of Nitro-Aromatic Substances," by V. Vasilesku, Zenobiya Kovesnyanu, Yelena Dumitresku-Papakhadzhi, Sh. Fotino, Ye. Bitman, Mariya Sukmanskiy, Eudzhaniya Gizari, and K. Ionesku, Rumynsk. Med. Obozreniye (Rumanian Medical Review), 1961, 5, No 1, pp 302-303 (from Referativnyy Zhurnal--Biologiya No 13, Jul 62, Abstract No 13 T302)

"Laboratory investigations disclosed that the employees (70) of a chemical "kombinat" branch working with nitro-aromatic derivatives suffered from hemolytic anemia (27 percent), leukopenia (18 percent), eosinophilia (31 percent), a decrease in the level of the total N (40 percent) and protein N (63 percent, and an increase in the content of

nonprotein N (37 percent) and polypeptid N (94 percent). Considerable modifications of the amine N content (94 percent of the workers) were noted. Electrophoretic studies revealed an increase in the number of α_2 and β fractions. A diminution of the chronaxy of the flexors and wrist extensors was noted in the workers after 6 hours of work."

70. Effect of Iminodipropionitryl on the Organism

"Neuromotor Disturbances Induced in Rats by the Administration of Iminodipropionitryl (IDPN)," by B. I. Banuzov, V. sh. "Toksikol. i Farmakol. Yadokhimimatov Primenyayemykh v S. Kh." (Volume "Toxicology and Pharmacology of Poisons Used in Agriculture), Minsk, 1961, pp 5-6 (from Referativnyy Zhurnal--Biologiya, No 4, Jul 62, Abstract No 14 T351)

"Iminodipropionitryl was subcutaneously administered daily to rats in doses of 100 to 200 milligrams per kilogram body weight for 14 to 21 days. The animals were then kept under observation for 150 days. Symptoms of neurolathyrism were noted in the animals; these were considerably less pronounced, however, when doses of 100 milligrams per kilogram body weight were administered. No substantial differences in the intoxication picture of young and old rats could be noted."

71. Pholex Defoliant and Its Effect on the Organism

"On the Problem of the Effect of Pholex, a Cotton Defoliant, on the Organism of Experimental Animals," by Prof R. I. Danilova and Docent N. I. Smetanin, Chair of Pathological Anatomy, Tashkent State Institute for the Advanced Training of Physicians and Chair of Labor Hygiene, Tashkent State Medical Institute; Tashkent, Meditinskiy Zhurnal Uzbekistana, No 8, Aug 62, pp 33-36

Pholex is a light yellow liquid containing 75 percent pholex (fungibutylthiophosphite) and 25 percent emulsifier OP-7. It is applied in the form of a 2 percent aqueous solution of the emulsion by means of a specially equipped airplane AN-2. Applied locally to rabbits and guinea pigs, it readily penetrated the skin causing death of the animals. Applied to the skin of other animals, pholex induced ulcerated dermatitis; applied intratracheally, it produced catarrhal and catarrhal-desquamative bronchitis. The penetration of pholex into the organism induces also circulatory and dystrophic modifications of the central nervous system and acute dystrophy of the ganglion cells of the cerebrum and suprarenal glands. Pholex was found to be considerably less toxic than mercaptophos and other organophosphorus compounds and is recommended for use in agriculture as a defoliant. Strict observance of the sanitation and safety regulations applicable in the handling of other organophosphorus compounds are also applicable in the handling of pholex.

72. Determination of the Properties of Sulfamide Preparations

"Sulfamide Diuretic Preparations," by Edith Birtler, Farmacia (Rumanian People's Republic), 1962, 10, No 1, pp 1-17 (from Referativnyy Zhurnal--Khimiya, No 16, 25 Aug 62, Abstract No 16 LL50)

The problems of the chemical structure, identification, and quantitative determination of toxicity, pharmacological activity, indications, and dosages of diuretically active compounds were clarified. Particular attention was given to sulfamides with thiodiazole, benzene, benzothiodiazine, and quinazoline rings."

73. Philadelphin -- a New Antibiotic

"The New Antibiotic Philadelphin Obtained From the Flowers of Philadelphus coronarius L. and Possessing Trichomonacidal Properties," by G. Fazakas and G. Horvath, Orv. Szle (Hungary), 1961, 4, pp 404-406 (from Meditinskiy Referativnyy Zhurnal, Section 3, No 9, Sep 62, Abstract No 3022)

[No abstract given.]

74. Naphthizin -- a New Vasoconstrictor

"Naphthizin," by V. Kucherenko, a Pharmacist; Moscow, Meditinskiy Rabotnik, Vol 25, No 70, 31 Aug 62, p 3

Naphthizin, a vasoconstrictor close to adrenalin in its action, is being produced at the Kiev Chemicopharmaceutical Plant imeni M. V. Lomonosov. It stimulates the adrenoreactive systems, constricts the peripheral blood vessels, and increases arterial pressure. Its action is less pronounced than that of adrenalin, but is of greater duration. It is used in affections of the upper respiratory organs, in cases of acute and chronic rhinitis, sinusitis, and acute and chronic laryngitis, and for arresting nose bleeds. It is administered in the form of 0.5 to 0.1 percent solutions in doses of 1-2 drops in each nostril 2-3 times daily.

75. Results of Phthivazid Inactivation in the Organism

"Relationship of the Toxic Action of Phthivazid to the Manner of Its Inactivation in the Organism," by G. A. Smirnov and T. I. Kozulitsina, First Therapeutic Department and Biochemical and Microbiological Laboratory, Institute of Tuberculosis, Ministry of Health USSR, Moscow; Moscow, Voprosy Meditsinskoy Khimii, Vol 8, No 4, Jul/Aug 62, pp 401-406

Phthivazid, a compound of isonicotinic acid hydrazide and vanillin, was administered to 157 patients suffering from pulmonary tuberculosis in doses of 0.5 gram twice daily. The patients were kept under observation to determine the manner of decomposition of the drug in the organism. Daily analyses of the urine and feces were carried out. The observations established that phthivazid metabolism in the organism of tubercular patients is subject to individual differences: among patients in whom the inactivation of the drug occurs by acetylation mainly toxic reactions are rare; these are encountered with greater frequency in patients in whom the drug is inactivated mainly by decomposition to metabolites which do not contain hydrazine; vitamin B₆ had no effect on the excretion of the active hydrazide or hydrazine-containing substances with the urine.

76. Effect of Frugosid on Circulation

"Effect of Frugosid on Coronary Circulation and Cardiac Oxygen Consumption," by V. M. Revenkov, Sb. Doklady 2-y Nauchn. Konferentsii Fiziologov, Biokhimikov, i Farmakologov Zap.-Sib. Ob'yedin. Posvyashch. XXII S'yezdu KPSS (Collection of Reports on the Second Scientific Conference of Physiologists, Biochemists, and Pharmacologists of the Western-Siberian Association Dedicated to the 22d Conference of the Communist Party of the Soviet Union), Tomsk, Tomsk University, 1961, pp 233-234 (from Referativnyy Zhurnal--Biologiya, No 13, Jul 62, Abstract No 13 T167)

"Experiments conducted on cats under nembutal anesthesia established that frugosid in doses of 0.039 milligram per kilogram body weight decreased by about 9 percent the volume rate of coronary circulation within one minute and by 17 percent within 3 minutes; in doses of 0.06 milligram per kilogram body weight, it produced a considerable rise in the volume rate of coronary circulation. The arterial blood content of HbO₂ was not changed; it was sharply reduced, however, in the blood which flows from the sinus venosus. The administration of erysimine produced a similar effect. The action of cordiamine is opposite to that of frugosid and erysimine."

77. Corchorozidum -- a Glycoside and Tranquillizer

"Korkhorozid -- Corchorozidum," by G. Ul'yanova;
Moscow, Kardiologiya, Vol 2, No 3, May/Jun 62, p 89

Corchorozidum is a glycoside obtained from jute [*Corchorus olitorius*, Bol'shaya Sovetskaya Entsikopediya, Vol 14, pp 243-244]; it is readily soluble in alcohol, but dissolves with difficulty in water. One gram of corchorozidum contains 72,000 frog and 10,960 rat active units, i.e., it surpasses strophanthin in activity. It differs from other glycosides in that its action is mainly diastolic. It is characterized by gentle action, few side reactions, and no negative effect on the coronary and peripheral blood vessels. Corchorozidum markedly intensifies the tonus of the cardiac muscle and slows down the rhythm of cardiac contractions. It acts as a tranquilizing agent in relation to the central nervous system. Corchorozidum is recommended for use in cases suffering from pronounced cardiac insufficiency and tachiatric forms of auricular fibrillation. It is supplied in ampoules, each containing 0.33 milligram of the crystalline glycoside having a biological activity of 20 to 25 frog active units.

78. Effect of Tetamonium and Hexonium on Cardiac Rhythm

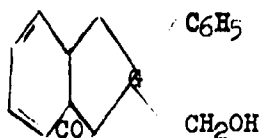
"On the Mechanism of the Antiarrhythmic Action of Ganglio-blocking Substances," by G. F. Kareva and Z. P. Senova, Laboratory of Special Pharmacology, Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences USSR; Moscow, Farmakologiya i Toksikologiya, Vol 25, No 4, Jul/Aug 62, pp 434-437

Experiments were conducted to determine the mechanism of the antiarrhythmic action of tetamonium and hexonium -- ganglioblocking substances. The activity of these preparations was compared with that of quinidine and novocaineamide -- well-known antiarrhythmic compounds. An electric current and aconitine were used to develop experimental arrhythmia in experimental animals. The investigations established that tetamonium and hexonium are capable of arresting cardiac arrhythmic activity. They had, however, no effect on the duration of the effective refraction period of an isolated auricle of a rabbit. It is assumed, therefore, that the antiarrhythmic action of tetamonium and hexonium is due to the depressing effect of the preparations on the transmission of stimuli from the efferent nerves to the myocardium and is not associated with their direct effects on the cardiac transmission system. It is assumed also that these ganglioblocking properties of the preparations under investigation may also be usefully applied in arrhythmias caused by extracardiac influences on the heart.

79. Effect of Omephine on the Coagulating Properties of Blood

"Experimental Investigation of Omephine, a New Anti-coagulant," by M. N. Koptelova, Institute of Organic Synthesis, Academy of Sciences Latvian SSR; Moscow, Voprosy Meditsinskoy Khimii, Vol 8, No 4, Jul/Aug 62, pp 396-401

Results of the investigation of the anticoagulating properties of omephine, a preparation synthesized at the Institute of Organic Synthesis of the Academy of Sciences Latvian SSR, are reported. Chemically, Omephine is 2-oxymethyl-2-phenylindandione-1,3. Its structural formula is as follows:



Omephine is a white crystalline powder with a melting point of 162-163 degrees. It is insoluble in cold water, poorly soluble in hot water, and readily soluble in organic solvents. It was administered to rabbits once in doses of 5, 15, 25, 50, and 100 milligrams per kilogram body weight and several times in doses of 10 to 25 milligrams per kilogram body weight for periods of 5-6 days. The activity of prothrombin under normal conditions was established first and then again after the administration of omephine. The experiments established that:

1. Omephine is highly effective as an anticoagulant and has low toxicity;
2. Its action is of brief duration;
3. Vitamin K when administered intravenously somewhat neutralizes the action of omephine;
4. Daily administration for a period of time does not affect peripheral blood and hepatic and renal functions and does not modify the morphological picture of the internal organs;
5. The results of the investigations provide a basis for the recommendation that omephine be applied in the therapy of thrombo-embolic diseases.

80. Effect of Preparations Obtained From beta-Aminoketones on the Organism

"On the Pharmacology of the New beta-Alkylaminoketones," by A. N. Kudrin, A. N. Kost, V. V. Yershov, A. Ye. Troshina, N. B. Polyakova, V. A. Uspenskiy, P. B. Terent'yev, and I. A. Yakovleva, Chair of Pharmacology, Ryazan' Medical Institute imeni I. P. Pavlov, and Laboratory of Special Organic Synthesis, Moscow State University imeni M. V. Lomonosov; Moscow, Farmakologiya i Toksikologiya Vol 25, No 4, Jul/Aug 62, pp 437-444

Rats, rabbits, and dogs were used in experiments which were carried out to determine the effect of three groups of beta-aminoketones on the organism.

Group one consisted of preparations A-19 (the hydrochloride of 5-dimethylamino-2,2-dimethylpentanone-3), A-21 (the iodomethylate of 1-dimethylamino-2-methylpentanone-3), and A-17 (the iodomethylate of 2-dimethylamino-methylcyclohexanone). The preparations of this group raised the body temperature, potentiated the inotropic effect of the threshold dose of adrenalin on an isolated heart of a frog, and were found to be slightly antagonistic to aminazine.

Group two includes the preparations TG-6 (the hydrochloride of beta-hexamethylene-m-nitropropiofenone), A-16 (the hydrochloride of beta-dimethylamino-alpha-ethyl-p-methylpropiofenone), and A-15 (the hydrochloride of beta-dimethylaminopropiofenone). The substances of this group fully removed and considerably alleviated the pressor effect of adrenalin on normal animals, as well as animals suffering from cholesterol-induced atherosclerosis.

The preparation RG-5 (p-methoxy-beta-hexamethyleneiminopropiofenone) of group three acts as an anesthetic of receptors and neurotransmitters.

81. Effect of Alpha- and Gamma-Pyrones on Tissue Permeability

"Search for Effective Compounds Which Affect the Permeability of Tissues Exposed to Radiation," by A. V. Sirnova and I. S. Rudakova, Laboratory of General Pharmacology, Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences USSR: Moscow, Farmakologiya i Toksikologiya, Vol 25, No 4, Jul/Aug 62, pp 462-466

In the search for preparations which will act as protective agents of the permeability of tissues exposed to penetrating radiation, the authors tested a number of alpha- and gamma-pyrones, derivatives of chromocarboxylic-2-acid. Rats were used in experiments which established

that alpha-pyrone are equally active to rutin in protecting tissues from penetrating radiation; preparations of the gamma pyrone-series were found to be inadequately effective in tissue protection; most effective of the alpha-pyrone was exculetin when used in combination with sodium bisulfate or sodium borate. The author urges that the search for other preparations which are capable of reducing the permeability of tissues exposed to radiation be continued.

82. Effect of Synthetic Fatty Acids on the Organism

"Data on the Toxicology of Synthetic Fatty Acids," by Yu. L. Yegorov, A. A. Kasparov, and M. V. Zakharov, Uch. Zap. Mosk. N.-I. In-t Gigiyeny (Scientific Notes of the Moscow Scientific-Research Institute of Hygiene), 1961, No 9, pp 4-46 (from Referativnyy Zhurnal-Khimiya Biologicheskaya Khimiya, No 15, 10 Aug 62, Abstract No 15, S1534, by M. Linyuchev)

"The results obtained in experiments to determine the toxicity parameters of five fractions in the production of synthetic fatty acids on their entry into the organism (by inhalation, per os, or through the skin) are presented. The experiments were conducted on rats, mice, and rabbits. The toxicity parameters of valeric and capronic acids were also determined. The low-molecular C₅--C₆ and C₇--C₉ fractions which only mildly irritate the skin have been found to be the most toxic. The C₅--C₆ fraction readily penetrates the skin and induces severe intoxication. The threshold dose for rabbits for this fraction is 0.005 gram per square centimeter; 5 grams per kilogram body weight when applied to the skin induced acute intoxication; 10 grams per kilogram body weight killed all the animals. A comparison of the toxicity of the C₅--C₆ and valeric and capronic acids established the high toxicity of the acids when separately applied. Modifications of higher nervous activity, carbohydrate- and pigment-, forming functions of the liver, and gastric secretions were noted in chronic experiments. It is the author's opinion that these modifications are reversible and are of a functional character."

Physiology

83. Acetylcholine-Proserine Effect on Muscle Electrotonus

"The Effect of Acetylcholine on Physical Electrotonus in Smooth Muscle," by M. F. Shuba, Laboratory of Laboratory of Electrophysiology, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR; Kiev, Fiziolo-Gichniy Zhurnal, Vol 8, No 4, Jul/Aug 62, pp 449-455

The effect of acetylcholine on the physical electrotonus of the annular smooth muscles of the frog stomach was investigated.

Acetylcholine induces muscle contraction and the appearance or the intensification of its spontaneous activity, and increases stimulation in the contracting muscle.

The effect of acetylcholine, (10^{-6} - 10^{-4}), on a muscle is accompanied by a decrease of physical electrotonus and often by the appearance of negative local potentials.

Changes in physical electrotonus due to the effect of acetylcholine are reversible because after washing the muscle with normal Ringer's solution the physical electrotonus is restored.

Proserine intensifies spontaneous activity in the muscle and increases its excitability, but the physical electrotonus remains unchanged. Proserine sharply intensifies the effect of acetylcholine on the physical electrotonus of smooth muscles.

84. Postcompression Hypoxia and Reactive Hyperemia in People Discussed

"The Effect of Local Hypoxia on the Vascular Reaction of the Extremities," by I. Silin'sh, Institute of Experimental and Clinical Medicine, Academy of Sciences Latvian SSR; Riga, Izvestiya Akademii Nauk Latvian SSR, No 3, 1962, pp 105-111

This report contains the results of a pneumo-optic plethysmographic investigation of the effect of hypoxia on the peripheral blood vessels of 15 healthy subjects and 18 endarteritis patients. A paradoxical response to cold was noted in several healthy people at the stage of postcompression hypoxia. In the majority of patients, the paradoxical response to cold was noted both before and after compression of the thigh.

A marked increase in the amplitude of pulsation from the toes after compression of the thigh was noted in healthy people; in the endarteritis patients, only a slight increase in the pulse amplitude was observed. The rise in the plethysmographic curve in healthy people coincided with the moment of thigh compression; in ill people, the rise was delayed from 20 to 120 seconds.

The paradoxical vascular reaction to cold is explained by passive dilation of blood vessels during an increase in over-all blood pressure. The increase in the amplitude of pulsation from the toes after compression of the thigh is considered to be an indication of functional capability of the network of small blood vessels to ensure normal local blood supply.

85. High Accumulation of Free Ammonia in the Brain of Rats During Hypothermia Discussed

"The Ammonia-Glutamic Acid-Glutamine System in the Rat Brain During Various Phases of Hypothermia," by Ya. I. Veksler and Z. S. Gershenovich, Chair of Biochemistry, Rostov-on-Don State University; Kiev, Ukrains'kiy Biokhimichnyi Zhurnal, Vol 34, No 3, 1962, pp 406-415

This report discusses experiments conducted on 219 white rats to determine the extent of disturbance that takes place in the ammonia-glutamic acid-glutamine system of the brain during various phases of hypothermia and during warming. An acute disturbance in ammonia metabolism in the brain and a very high accumulation of free ammonia in the brain tissue were observed in those rats which were subjected to artificial cooling. Restoration of normal relationships in the ammonia-glutamic acid-glutamine system during warming, proceeded slowly. As much as 6 days passed, in a number of instances, before the ammonia content returned to normal. Active warming, as compared with best generated internally by the organism, did not affect perceptibly the process of restoration of metabolism in the brain.

Anesthesia during hypothermia and during various forms of warming did not substantially affect the course of changes in the ammonia-glutamic acid-glutamine system of the brain.

On the basis of the data obtained, it was concluded that the process of intensified ammonia formation during hypothermia is a compensatory reaction which reflects an organism's mobilization of its defensive resources.

86. Bioelectric Activity of Cat Brain During Formation of Respiratory Conditioned Reflexes

"Changes in the Bioelectric Activity of the Motor, Optic, and Acoustic Areas of the Cerebral Cortex During Respiratory Conditioning," by L. A. Toporkova, Chair of Normal Physiology of the Kuybyshev Medical Institute; Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti Imeni I. P. Pavlova, Vol 12, No 4, Jul/Aug 62, pp 715-719

Experiments on three adult cats showed that the formation or orienting reflexes is accompanied either by weakening or intensification of respiratory movements and by occasional manifestation of rhythmic discharges that are synchronous with the rhythm of the stimulus. It was observed that respiratory reactions disappear much faster than altered bioelectric activity of the brain during extinction of the orienting reflex.

Three phases were noted in the dynamics of altered bioelectric activity of the brain during the formation of respiratory conditioned reflexes. Each one of these three phases coincides with various periods of the formation of respiratory conditioned reflexes.

Public Health

87. Storage and Transportation of Meat Products During Hostilities

"The Protection of Meat Products Designated for Troop Supply From Contamination by Isotopes and by Toxic Military Substances in Case Weapons of Mass Destruction Are Used," by Josef Janicek, Marcela Vakermanova, and Otto Powel; Vojenske Zdravotnicke Listy, 1961, Vol 30, No 3, 130-139 (from Referativnyy Zhurnal -- Biologiya, No 8, Apr 62, Abstract No 8N25, by I. Semenov)

"Four types of protective covers for preserving meat products under peaceful conditions and under conditions of possible use of weapons of mass destruction were studied. Protective covers A and B consisted of a group of 'proteins' (mixtures of gelatine-glycerine and gelatine-glycerine-methyl-cellulose-chalk-glass), cover C was 'melted' ceresin rosin, and cover D was a 'synthetic' (polyvinylbutyrol). In evaluating these protective covers, the weight of the products, the water content, the fat constants (the acid and peroxidase number), and the pH were determined, and microbiological checks

were conducted. The efficacy of the protective covers from the effect of weapons of mass destruction was determined by experiments in which Sr^{90} , P^{32} , or mustard gas tagged with S^{35} were placed on the surface. Cover B was the most efficient for the prolonged storage of these products (1-2 years) under warehouse conditions. Covers C and D were effective for 3-4 weeks under refrigeration. Cover D provided the best protection against the use of weapons of mass destruction for it reduced the penetration of radioactive substances and of mustard gas and was easily decontaminated. In transportation of food products under military conditions, it was found expedient to add a supplementary layer D to the surface of layer B with its subsequent removal during the washing and decontamination of the products."

88. Ultraviolet Irradiation Decontaminates Circulating Air in Machine Shops

"Bacterial Seedability of the Air Environment of Machine Shops and Means for Decreasing It by Ultraviolet Irradiation of the Circulating Air," by G. L. Khazan, N. N. Goncharova, V. B. Karamyshev, A. G. Vychezhninin, O. I. Ovcharenko, and G. S. Zhuk (Khar'kov), Ukrainian Scientific-Research Institute of Labor Hygiene and Occupational Diseases; Kiev, Vrachebnoye Delo, No 6, Jun 62, pp 121-124

The bacterial seedability of the air of machine shops depends greatly on the bacterial contamination of the emulsion which is used for the cooling fluid and its atomization.

The presence of a significant amount of noise in the machine shops, evidently, is one of the factors which contributes to the spreading of influenzal diseases among the shop workers.

The use of ultraviolet irradiation in the recirculating units in industry contributes to a significant decrease of bacterial contamination and increases air ionization by means of light-weight ions.

The regime of air ionization in machine shops depends on the space distribution of the walls and the intensity of emulsion atomization.

When ultraviolet irradiation is used to decrease bacterial air contamination in machine shops where dust is a factor, it is advisable to install a filtering unit to purify the circulating air from dust.

89. An Effective Prophylactic Method for Ultraviolet Irradiation of Children

"The Prophylactic Irradiation of Preschool and Young School Children by Small (Non-Erythematous) Ultraviolet Doses," by Prof M. L. Koshkin, B. I. Gil'man, M. N. Duda, I. I. Dudchenko, L. I. Zvyagintseva, and K. V. Slashchova, Chair of General Hygiene, Khar'kov Medical Institute; Kiev, Vrachebnoye Delo, No 6, Jun 62, pp 127-132

Small doses of ultraviolet irradiation for prophylactic purposes were used on 647 children (4-6 and 7-12 years old). Irradiation was performed systematically three times each week, the daily dose being 1/3-1/2 the diodose (with a PRK-2 lamp at a distance of 100 cm for 5-6 or 6-7 minutes or a EUV lamp at a distance of 35 cm for 40 minutes), during the seasons with inadequate ultraviolet irradiation, i.e., during the fall-winter and the early part of spring.

Results proved very effective; the children who were irradiated by small doses of ultraviolet rays had a better general condition (they slept better, ate better, were more calm but more active, and had a light sun tan) as compared with the unirradiated children.

Further research is continuing on the use of this new method of prophylactic irradiation of children by small doses of ultraviolet rays.

90. Allergic Reactions As Syndromes in Occupational Diseases

"Nonspecific Syndromes in Occupational Diseases," by Prof Ye. M. Tapeyev, Active Member of the Academy of Medical Sciences USSR; Moscow, Sovetskaya Meditsina, Vol 26, No 6, Jun 62, pp 13-24

Observations of a number of patients suffering from various occupational diseases established that, in addition to the specific symptoms which are characteristic of a particular disease, there are a number of nonspecific syndromes which can broadly be defined as allergic reactions. Examples of the latter are occupational dermatitis, nonspecific blood reactions, bronchial asthma, silicoarthritis, scleroderma accompanying vibration sickness, and others. A thorough study of the nonspecific syndromes is highly important if the pathogenesis of the disease is to be understood, the disease correctly diagnosed, and proper therapy prescribed. Further investigation of the nonspecific syndromes in occupational diseases in order to prevent the development of nonspecific reactions is urged.

91. Czechoslovak Protective Measures Against Organophosphorus Compounds

"Employment of Organophosphorus compounds in Agriculture in the Former Usti nad Labem Kraj During 1958-1960," by Vladimir Pekarek, Vaclav Stastny, and Josef Budlovsky; Prague, Pracovni Lekarstvi, Vol 14, No 6, Aug 62, pp 289-291

The article describes the procedure for protection of agricultural workers handling organophosphorus compounds in the former Usti nad Labem Kraj in 1958-1960. During these years, 2,086 persons were actively working with these compounds. Two comparatively severe cases and one mild case of intoxication with organophosphorus compounds occurred; 112, or 5.3 percent, of the workers were transferred from this type of work because of a drop in their cholinesterase level.

The article includes a description of the origin and evolution of occupational intoxications observed by the authors and of one very serious case of poisoning by Ekatox following a suicide attempt. The mean cholinesterase plasma level in 1959 prior to the commencement of work with organophosphates amounted to 82.9 units in 666 persons investigated; in 1960, 74.1 units in 799 persons. Borderline levels were 50 to 132 units. (FOR OFFICIAL USE ONLY) (COPYRIGHT by the State Medical Publishing House, Prague, 1962)

92. East German Device for Purifying Water

"Germ-Free Water Through Silver Ionizing Device," by Engr H. Walter of the Chamber of Technology, Wismar; Schiffbautechnik, No 8, Berlin, Aug 62, pp 425-426

According to the above article, the Mathias Thesen Shipyard in Wismar has developed a water-purification device for shipboard use, said to be intended for installation on Soviet vessels. The article mentions that any Soviet vessels currently being built in East German shipyards have to be equipped with a silver-ionizing, water-purification plant.

The article, which describes the function of an ion-exchange, water-purification facility and devotes considerable space to presenting general background information, notes that the East German device is designed to transfer 0.5-0.15 milligram of silver to each liter of water at a rate of 2-5 cubic meters of water per hour. With its built-in silver plates, which weigh approximately 500 grams, the device can process up to 4,800 cubic meters of water and impart to it a silver content of 0.1 milligram per liter. "Thus, a person consuming 100 liters of water per day could be provided with water for 48,000 days."

According to the article, a larger device, with a capacity of 20-40 cubic meters of water per hour, is currently being tested. The author further points out that the only way the amount of silver present in potable water produced by the above device can be determined at present is by weighing the silverelectrodes. "However, efforts are currently under way to develop a suitable detection device for use on board ships."

Radiation Sickness

93. Aminazine and Phenatine in the Prophylaxis of Radiation Sickness

"Pharmacological Protection From Acute Radiation Sickness by Means of Combined Application of Aminazine and Phenatine," by V. V. Petelina, Sb. Dokl. 2-y Nauchn. Konferentsii Fiziologov, Biokhimikov, i Farmakologov Zap.-Sib. Ob'yedin. Posvyashch. XXII S'yezdu KPSS (Volume of Reports on the Second Scientific Conference of Physiologists, Biochemists, and Pharmacologists of the Western Siberian Association Dedicated to the 22d Conference of the Communist Party of the Soviet Union), Tomsk, Tomsk University, 1961, pp 114-115 (from Referativnyy Zhurnal -- Biologiya, No 13, Jul 62, Abstract No 13 T201, by S. Yarmonenko)

"The intravenous administration of aminazine (I) and phenatine (II) in doses of 0.5 milligram per kilogram body weight prior to the irradiation of cats (550 r) and dogs (400 to 600 r) alleviated the course of radiation sickness and increased the survival rate of the animals by 30 to 60 percent. The combined administration of I and II to rats irradiated with doses of 800 and 1000 r failed to increase the protective action of the drugs. The mechanism of the protective action of I and II, in the author's opinion, is linked with the subcortical regulatory mechanisms, for the administration of the preparations contributed to the alleviation of a number of disturbed unconditioned indexes (salivation, vestibular reflexes, and others), and reduced the depressed state of the respiratory center without having an essential effect on the modifications of the cortical dynamics."

94. Prophylaxis of Acute Radiation Sickness

"Some Data on the Experimental Vitaminotherapy and Prophylaxis of Acute Radiation Sickness," by V. A. Shkapina, Tr. Smolenskogo Med. In-ta (Works of the Smolensk Medical Institute), 1961, 13, pp 397-411 (from Referativnyy Zhurnal -- Biologiya, No 13, Jul 62, Abstract No 13 T204, by V. Shashkov)

"Experiments were conducted on rabbits to assay the prophylactic and therapeutic effectiveness of a complex of vitamins consisting of vitamins B₁, pp, C, P in doses of 10 milligrams and vitamin B₂ in a dose of 5 milligrams administered to the animals subjected to total gamma-irradiation by Co⁶⁰ in doses of 100 r. The survival rate, the hematological indexes,

and the carbohydrate metabolism of the animals were determined before and 2, 7, 14, 21, and 31 days after the irradiation. The administration of the complex of vitamins to nonirradiated animals somewhat intensified carbohydrate metabolism, mainly as a result of the mobilization of the hepatic glycogen. The administration of the complex of vitamins to the irradiated animals for prophylactic and therapeutic purposes alleviated the severity of radiation sickness, increased the survival rate of the animals, prolonged the life of the rabbits that perished, and restored to normal the metabolic and circulatory processes of the animals that survived. The vitamin complex was found to be more effective when used for prophylactic purposes."

95. Complex Therapy of Acute Radiation Sickness

"Concerning the Problem of Experimental Complex Therapy of Acute Radiation Sickness," by T. N. Protasova and V. D. Rogozkin, V. sb. "Vopr. Patogeneza, Eksperim. Terapii i Profilaktiki Luchevoj Bolezni" (Problems of the Pathogenesis, Experimental Therapy, and Prophylaxis of Radiation Sickness), Moscow, Medgiz, 1960, pp 310-323 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 T203, I. Sluchevskiy)

"Investigations were conducted to determine the therapeutic effect of strychnine (I), securinine (II), antibiotics, and vitamins on 180 mice subjected to X-ray irradiation with doses of 550-600 r; rats irradiated with doses of 650, 700, and 750 r; and dogs irradiated with doses of 600 r. The administration of streptomycin and penicillin increased the survival rate of the mice and rats by 21.6 percent and longevity by 3.6 days; in addition, a protracted latent period and weaker clinical manifestations of the disease were noted. Therapy with antibiotics administered in combination with vitamins C₁, P, B₁, and B₆ increased the survival rate of the animals by 32.5 percent and longevity by 2 days as compared with those of the control animals. The clinical course of the disease was lighter, and the hemorrhagic syndromes and edema diminished at the same time. No increase in the survival rate of the animals was noted when absolutely lethal doses were applied. The survival rate was increased by an average of 20 percent and longevity by 2 days when sublethal radiation doses were administered.

"The therapeutic effect was considerably enhanced when vitamins and antibiotics in combination with I and II (in doses of 0.2 milliliter of 0.02 solution administered subcutaneously from the first to the seventh days) were applied. The application of the therapeutic complex in combination with I increased the survival rate of the animals by an average of 41.6 percent, and in combination with II, by 52 to 60 percent. Besides exhibiting a favorable effect on the survival rate and longevity of the

animals, I and II alleviated the clinical manifestations of the disease and the blood modifications. In the irradiated rats which were subjected to complex therapy (as compared with control animals), the deamination of dl-alanine and glutaminic acid in the liver noticeably increased. The oxidation of tyrosine in the control rats increased considerably after the irradiation; in the rats which were subjected to therapy, the level of tyrosine oxidation occurred in a wavelike manner during the first 4 days; on the fifth day, it was restored to normal. Analogous results were obtained in the experiments on dogs."

96. Bone Marrow Transplantations Improve Course of Acute Radiation Sickness in Gravid Rabbits

"The Effect of Bone Marrow Transplantations on the Development of Radiation Sickness in Pregnant Animals and in Their Progeny," by Ye. Ya. Ivanova, E. A. Parshina, and Ye. I. Aleksandrovich, Biochemistry Laboratory of the Roentgenology Department, Institute of Obstetrics and Gynecology, Academy of Medical Sciences USSR, and Chair of Hospital Pediatrics, Leningrad Pediatrics Medical Institute; Moscow, Meditinskaya Radiologiya, Vol 7, No 8, Aug 62, pp 52-58

The effect of homologous bone marrow transplantations on the development of acute radiation sickness in pregnant rabbits and on the progeny of these rabbits that were previously subjected to a general X-ray irradiation by 400 and 700 r doses was investigated.

Results showed that the intravenous administration of bone marrow to gravid animals irradiated by 700 r, which is lethal to the progeny, improved the course of radiation sickness and in some animals saved the fetus. It is concluded that the use of bone marrow transplantation in combination with other means of treat acute radiation sickness during pregnancy can be recommended.

97. Effects of Irradiation on Blood Clotting Investigated in Hungary

"Data on the Development of Early Postirradiation Blood Clotting Disturbance," by Dr Bela Fiam, Medical Col and Candidate of Medicine, Dr Jozsef Magyari, Medical Capt, and Dr Dzso Tanka; Budapest, Honvedorvos, Vol 14, No 2, Apr-Jun 62, pp 138-143

In rabbits, postirradiation coagulation abnormalities appear in their early form only after large doses of radiation. These early forms are typified by excessive histamine secretion within 24 hours, increased clotting, and the appearance of labile fibrogen. The excess of histamine is followed by reactive heparinemia. The resulting failure to coagulate lasts 1-4 days and then gradually decreases. After a transitional phase, hypothromboplastinemia sets in.

Surgery

98. Surgical Treatment of Radiation-Affected Blood Vessels and Nerves

"The Surgical Treatment of Blood Vessels and Nerves During Acute Radiation Sickness," by L. A. Mel'nik, Chair of Hospital Surgery, Chernovtsy Medical Institute; Meditinskaya Radiologiya, Vol 7, No 8, Aug 62, pp 47-52

A total of 264 surgical operations were performed on major arteries and veins and on peripheral nerves of 22 clinically healthy dogs (13 irradiated by general external Xray at 400 r and treated, 4 untreated, and 5 unirradiated controls) to test the feasibility of such surgical treatment during acute radiation sickness.

Results showed that ligaturing, lateral and circular suturing of arteries, veins, and nerves, and the plastic repair of defects in the abdominal aorta are quite feasible during acute radiation sickness.

The complex treatment of radiation sickness (glucose and vitamin therapy, antibiotics, and the intravenous injection of 2-3% emulsions of dried and powdered spleen and liver of newly born puppies) is quite effective.

The use of lateral and circular sutures on vessels and on nerves during the peak of acute radiation sickness is accompanied by various complications (thrombogenesis, hemorrhage, and wound suppuration) in more than half of the cases.

Best results of lateral and circular ligatures of blood vessels and of nerves were obtained during the initial stage of radiation sickness and during the period of convalescence.

99. Soviet Surgeon Demonstrates Suture Apparatus in Yugoslavia

"Distinguished Soviet Surgeon, Morozov, Visits Novi Sad," Tanjug release; Belgrade, Borba, 8 Sep 62, p 4

Yuriy Ivanovich Morozov, distinguished Soviet surgeon, on his sojourn in Yugoslavia, visited the Institute for Medical Research in Novi Sad on 7 September 1962. During his visit, he demonstrated the application of new apparatus for suturing blood vessels before a group of Yugoslav surgeons.

100. Tissue Conservation in Hungary

"Conservation of Tissue, by Dr. Zoltan Zaboszký, Medical Captain, and Ambrus Nyerges, First Lieutenant; Budapest, Honvedorvos, Vol 14, No 2, Apr-Jun 62, pp 115-117

For the past year and a half, our department has sterilized various types of tissue in a one percent aqueous solution of beta-propiolactone. The prepared substance is incubated for 3 hours at 37° C in a thermostat, washed with a phosphate buffer under sterile conditions, and then placed in a physiological saline solution. The skin, removed under sterile conditions, is stored in a manner evolved by Zoltan: the skin is smoothed on a towel moistened with physiological saline solution, shaped to the wound surfaces, and then twisted into a towel soaked in saline solution and placed into a sealed glass jar. Skin prepared in this manner can be preserved and used for 3 weeks. Skin removed under nonsterile conditions is first sterilized in a one percent solution of beta-propiolactone and then stored in the manner described above after washing.

For the past year and a half, we have been removing bone under non-sterile conditions from fresh cadavers. The bone is worked into the desired shape and sterilized. After being washed, it is stored in saline solution. Smaller pieces, such as pins and screws, are put into sterilized ampules.

Arteries are removed in a similar manner. The surrounding fat and connective tissue are removed. The branches of the main artery are left to a length of 5 mm and tied off only when the artery is used. Arteries are also sterilized in beta-propiolactone. They are preserved in Hank's or physiological saline solution and can be used for up to 3 or 4 weeks.

Tissue has been conserved at our department in the above-described manner for 1 1/2 years. Surgery was carried out in 62 cases with bone prepared in this manner and in 11 cases with skin. Blood vessels were transplanted three times in the course of experimentation with animals. In every case, the transplant took, and there were no unfavorable reactions.

Because of our good experiences with it, we believe that beta-propiolactone should be used extensively to sterilize tissue. We recommend that this sterilizing chemical be regularly produced at plant level in Hungary.

Therapy101. Vitamin B₆ in the Therapy of Spasms Induced by Hydrazides

"Experimental Investigation of the Central Action of Hydrazides Inducing Spasms," by Jozsef Knoll, Karoly Kelemen, Berta Knoll, and J. Gyorgy Nievel, Magyar Tud. Akad. Biol. es Orv. Tud. Oszt. Kozl. (Hungary), 1961, 12, No 1-2, pp 157-166 (from Referativnyy Zhurnal -- Biologiya, No 14, Jul 62, Abstract No 14 T51, by A. Ivanov)

"Mice were used in experiments carried out in order to determine the central action of hydrazides which induce spasms and death in mammals. The animals were subcutaneously administered (in milligrams per kilogram body weight) semicarbazide (I, 250 to 1,000), thiosemicarbazide (II; 5 to 100), and isoniazide (III; 200 to 400). The first spasmodic attacks, depending on the dose of the respective hydrazides, developed within 51 to 92 seconds following the administration of I; 52 to 101 seconds following the administration of II, and within 45 to 57 seconds after the administration of III. The LD of I, II, and III are, respectively, 1,000, 30, and 400 milligrams per kilogram body weight. In a second series of experiments, vitamin B₆ was administered simultaneously with the hydrazides. With the help of B₆, it was possible to arrest the spasmodic and lethal actions of large doses of II. B₆ was found to be antagonistic to the action of I and III only if the latter were administered in small doses (250 and 200 milligrams per kilogram body weight, respectively). The authors came to the conclusion that the spastic effect of the hydrazides is due not only to their inactivating effect on the decarboxylase of glutamic acid, but also the other unknown factors. The next series of experiments revealed that the effect of the above-mentioned hydrazides can be considerably intensified with the help of audiogenic stimulants; sensitivity to the latter reached its maximum within 2 hours after the administration of I and II."

102. Phosarbin Therapy of Experimental Poliomyelitis

"Effect of Phosarbin on the Chronaxy and Rheobase of Muscles in Experimental Poliomyelitis," by L. V. Donskaya, Tr. Leningr. San.-Gigiyen. Med. In-ta, 1961, 64, pp 313-318 (from Referativnyy Zhurnal -- Biologiya, No 13, Jul 62, Abstract No 13 T114, by V. Shashkov)

Daily prolonged subcutaneous administration of phosarbin in doses of 0.1 milligram per kilogram body weight lengthened the incubation period and duration of diseases induced in mice by the viruses of poliomyelitis (Lansing strain), two-wave meningoencephalitis, and Taylor's spontaneous encephalomyelitis. A single administration of phosarbin

improved the general condition of the affected muscles with the restoration of the chronaxy and rheobase to normal. The beneficial effect of phosarbin when applied in neuroinfections is related to its anticholinesterase properties."

103. Dibiomycin in the Therapy of Trachoma

"Therapy of Trachoma With Dibiomycin, a New Preparation, in Tadzhikistan," by A. S. Vaysblat, A. A. Dzhumambayeva, and N. N. Livanskaya, Chair of Microbiology, Central Institute for the Advanced Training of Physicians and the Republican Trachoma Dispensary, Ministry of Health Tadzhik SSR; Moscow, Antibiotiki, Vol 7, No 9, Sep 62, pp 829-831

Dibiomycin, a chlortetracycline compound, is now being applied in the therapy of trachoma, a disease which is widespread among the rural population of the Tadzhik republic. The results of the therapy are as follows: of 221 patients treated with one percent dibiomycin ointment, 59.3 percent fully recovered within 4 to 7 months; the ointment was particularly effective when applied to patients with third degree trachoma with infiltration of the conjunctive; an adequate therapeutic effect can be attained by the application of the ointment once in 48 hours.

104. Aminazine Therapy of Schizophrenia

"Certain Characteristics of Remissions in the Therapy of Schizophrenic Patients With a Syndrome of Verbal Hallucinoses with Neuroplegic Drugs," by O. Vertogradova, V sb. Probl. Shizofrenii, Nevrozov, Reaktivn. Sostoyaniy i Organiz. Psikhiatr. Pomoshchi (Tr. Gos. N-I. In-ta Psikhiiatrii, 27) (Volume of Works on the Problem of Schizophrenia, Neuroses, Reactive Condition, and Organization of Psychiatric Assistance [Works of the State Scientific-Research Institute of Psychiatry.27]), Moscow, 1961 pp 172-177 (from Referativnyy Zhurnal -- Biologiya, No 13, Jul 62, Abstract No 13 T61)

"The high effectiveness of aminazine (I) when used in the therapy of 40 patients suffering from schizophrenia with a clinical picture of pronounced verbal hallucinoses was noted. It is emphasized, however, that prolonged supporting therapy with I is necessary following the remission in order to prevent the occurrence of relapses."

105. ASK-41 in the Therapy of Epidemic Hepatitis

"Effectiveness of AKS-41 in the Therapy of Epidemic Hepatitis (Preliminary Report)," by T. Kh. Nadzhiddinov and A. G. Shamsutdinova, Sb. Nauchn. Tr. Tashkentsk. Med. In-t (Volume of Scientific Works of the Tashkent Medical Institute), 1961, 17, pp 27-32 From Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 13, 10 Jul 62, Abstract No 13 S1502)

"ASK-41, a preparation consisting of two parts of BoPo_3 , two parts of KPO_3 , and one part of sodium beta-chloroethane sulfonate was applied in the therapy of epidemic hepatitis with the results that the hepatic carbohydrate and antitoxic functions were restored to normal. The hepatic protein functions remained undisturbed despite the application of ASK-41. The effectiveness of the preparation is diminished when applied to alcoholics with neglected forms of the disease and in the presence of other drugs which affect the hepatic functions."

106. Dichlothiazid -- a Diuretic and Hypotensive Agent

"Dikhlotiazid -- Dichlothiazidum" by G. Ul'yanova; Moscow, Kardiologiya, Vol 2, No 3, May Jun 62, pp 88-89

Dichlothiazidum is 6-chlor-7-sulfamine-3,4-dihydro-2,2,4-benzothiadiazin-1,1-dioxide. It is a potent diuretic and when taken internally is well absorbed from the gastrointestinal tract. Its diuretic action continues for 10 to 12 hours and longer. It acts also as a hypotensive agent and is administered in combination with ganglioblocking drugs. A salt-free diet intensified the hypotensive action of the drug. It is prescribed for patients suffering from cardiac insufficiency, cirrhosis of the liver, nephrosis, and nephritis. Its side effects are few and are seldom observed. Its prolonged application may induce hypokalemia or hypochloremic alkalosis. In such cases, the administration of potassium or sodium chloride is indicated.

107. Bacteremia As a Factor in Burn Sickness

"Characteristics of the Bacterial Factor in Burns," by A. A. Sinitskiy and A. M. Yakovlev, Chair of Microbiology and Clinic Affections, Military Medical Order of Lenin Academy imeni S. M. Kirov; Leningrad, Vestnik Khirurgii, Vol 89, No 7, Jul 62, pp 79-82

Despite the controversial opinion in regard to the role which infection plays in burn sickness, all investigators agree on one point: bacteria infect a burn even during the first hours after the trauma is inflicted, and the type of the microflora in the burn wound is fairly

uniform irrespective of the location of the trauma, the method of therapy applied, and the time of the year at which the burn occurred. This may be explained by the fact that the biological characteristics of the burned skin provide a favorable medium for a specific association of microflora. Investigations established this uniformity of the microflora, and the pronounced manifestation of the bacterial factor in the development of bacteremia. Prompt skin autotransplantation is the best protection against the development of bacteremia. The qualitative and quantitative characteristics of the microflora do not contraindicate surgical interference.

IV. SCIENCE NEWS ITEMS

Aid to Underdeveloped Countries

108. Soviet Medical Aid to the Republic of Iraq

"Observations on Certain Eye Diseases in the Republic of Iraq," by T. G. Safaraliyev, Azerbaydzhan Scientific-Research Institute of Ophthalmology; Baku, Azerbadyzhanskiy Meditsinskiy Zhurnal, No 7, Jul 62, pp 43-48

Soviet specialists and physicians in Iraq have diagnosed and treated tuberculosis, bilharziosis, and kidney and bladder stones. Among eye diseases, the most prevalent were trachoma, cataract, and glaucoma (the latter in its very late stage).

Recommended methods of treatment are mentioned.

109. Soviet Red Cross Work Among Ethiopians

"Cholesterol and Cholesterol Ester Blood Plasma Level in Ethiopians," by A. S. Loginov, Soviet Red Cross Hospital in Addis-Ababa; Moscow, Kardiologiya, No 4, Jul/Aug 62, pp 84-85

Since many years of hospital work in Addis-Ababa showed no myocardial infarct or angina pectoris among Ethiopian residents, A. L. Myasnikov suggested that the atherosclerosis incidence, using cholesterol and cholesterol ester blood plasma levels, be investigated.

The blood plasma cholesterol level in 152 healthy Ethiopians was normal in two thirds and low in one third of the group (20-70 years old). Hypercholesterolemia was determined in 10 out of 31 patients with hypertension; the remainder had a normal cholesterol level. The level of

cholesterol esters was low in 36 blood plasma samples out of 65. Electrocardiographic studies of 45 Ethiopians (50-80 years old) showed disorders in coronary circulation or diffuse atherosclerosis in 27 cases. X-ray studies of the aorta in 52 patients (50-85 years old) showed atherosclerosis in 22 cases.

The author concludes that the blood plasma cholesterol and cholesterol ester level is low among Ethiopians who maintain a low fat diet.

Ethiopians are prone to atherosclerosis of the aorta and to diffuse atherosclerosis.

Hypertension and diabetes mellitus are the major diseases, in addition to a diathesis to atherosclerosis.

Myocardial infarct is rarely observed among Ethiopians.

Conferences

110. Recent Soviet Conferences in Biology and Medicine

The conferences listed below were reported or announced in recent issues of Soviet periodicals. Included in the listing are the date and location of the conference, sponsoring organizations, and source. Unless otherwise indicated, it is assumed that there was no non-Soviet participation in the conferences.

a. Conference on Philosophical Problems of the Physiology of Higher Nervous Activity and Psychology; 8-11 May 1962, Moscow; sponsored by the Academy of Sciences USSR, the Academy of Medical Sciences USSR, the Academy of Pedagogical Sciences RSFSR, and the Ministries of Higher and Secondary Special Education USSR and RSFSR. (Voprosy Filosofii, No 7, 1962, p 68 and 136)

b. Theoretical Conference on Philosophical Problems of Cybernetics; no date given; sponsored by the Scientific Councils of the Academy of Sciences USSR on the Philosophy of Natural Sciences and Cybernetics. (Priroda, No 8, Aug 62, p 114)

c. First All-Union Conference on Mammals; first of 1962, Moscow; sponsored by the Ministry of Higher and Secondary Special Education USSR and the Biology Department of Moscow State University imeni M. V. Lomonosov; guests from Bulgaria, Hungary, the GDR, Poland, Rumania, and Czechoslovakia. (Vestnik Akademii Nauk Kazakhskoy SSR, No 7, Jul 62, p 77)

d. Second All-Union Conference of Surgeons, Traumatologists, and Anesthesiologists; 20-25 December 1961, Baku. (Azerbaydzhanskiy Meditsinskiy Zhurnal, No 4, Apr 62, p 98)

e. Fourth Belorussian Congress of Hygienists, Epidemiologists, Microbiologists, and Infectionists (announcement); June 1963. (Zdravookhraneniye Belorussii, No 7, Jul 62, p 88)

f. Fourth All-Union Conference on the Question of the Use of Microelements in Agriculture and Medicine; 4-9 June 1962, Kiev; next conference proposed for 1966 in Novosibirsk. (Visnyk Sil's'kogospodars'koi Nauky, No 8, Aug 62, p 121)

g. Scientific Conference of the Lithuanian Republic Scientific Society of Dermatologists-Venerologists; 28-29 May 1962, Vil'nyus. (Zdravookhraneniye Belorussii, No 7, Jul 62, p 86)

h. First Belorussian Republic Conference of General Practitioners; 15-16 May 1962, Minsk. (Zdravookhraneniye Belorussii, No 7, Jul 62, p 34)

i. Conference on Fundamental Problems of Mycology; 1-5 February 1962, Leningrad; sponsored by the Botany Institute imeni V. I. Komarov of the Academy of Sciences USSR. (Vestnik Akademii Nauk SSSR, No 7, Jul 62, p 122)

j. Symposium on Coumarin and Furocoumarins; 5-7 March 1962, Leningrad; sponsored by the Botany Institute, and the Institute of [the Chemistry of] Natural Compounds, Academy of Sciences USSR. (Vestnik Akademii Nauk SSSR, No 7, Jul 62, p 120)

k. Expanded Laboratory Conference on General and Experimental Biogeocenology; 28 August-3 September 1961, Sverdlovsk; sponsored by the Laboratory of Biophysics, Institute of Biology, Ural Affiliate of the Academy of Sciences USSR. (Zoologicheskii Zhurnal, No 4, Apr 62, p 638)

l. First Kazakhstan Conference on the Study of Medicinal Plants; February 1962, Alma-Ata; sponsored by the Institute of Botany and the Department of Biological and Medical Sciences, Academy of Sciences Kazakhstan SSR. (Vestnik Akademii Nauk Kazakhskoy SSR, No 6, Jun 62, p 88)

m. Scientific Conference on Experimental Geobotany; 1-5 February 1962, Kazan'; sponsored by the Kazan' State University imeni V. I. Ul'yanov-Lenin and the Kazan' Branch of the All-Union Botanical Society; next conference to be held in the next 2 years in Moscow or Leningrad. (Botanicheskii Zhurnal, No 7, Jul 62, p 1061)

n. Scientific Conference on the Study of Inner Reservoirs of the Georgian SSR; 24-25 November 1961, Batumi; sponsored by the Scientific Research Fish Economy Station (NIRKHS) of the Gruzrybprom Trust of the Georgian Sovnarkhoz, the Institute of Zoology of the Academy of Sciences Georgian SSR, the Batumi State Pedagogical Institute imeni Shota Rustaveli, and the Adzharskaya Oblast House of Engineering. (Voprosy Ikhtiologii, Vol 2, No 3(24), 1962, p 56)

111. Fifth Conference on Microelements Proposed for 1966

"Fourth All-Union Conference on the Question of the Use of Microelements in Agriculture and Medicine," by V. A. Kapitanchuk; Kiev, Visnyk Sil'skogospodars'koi Nauky, No 8, Aug 62, pp 121-123

This account of the Fourth All-Union Conference on the Question of the Use of Microelements in Agriculture and Medicine, held on 4-9 June 1962 in Kiev, notes that the Siberian Department of the Academy of Sciences USSR recommended that the Fifth All-Union Conference be called in 1966 in Novosibirsk. Foreign participation in the Fourth Conference is not indicated in this article.

112. Belorussian Hygienists, Epidemiologists To Meet

"Belorussian Scientific Society of Hygienists in 1961," by M. Livshits; Minsk, Zdravookhraneniye Belorussii, No 7, Jul 62, pp 88-89

This article notes that among the basic tasks facing Belorussian hygienists in the coming year is the preparation for the Fourth Belorussian Congress of Hygienists, Epidemiologists, Microbiologists, and Infectionists, which is scheduled to be held in June 1963.

113. Bloc Conferences Listed

"Meeting Calendar"; Warsaw, Klinika Cezna, Vol 32, No 3, Jul-Sep 62, pp 276, 294

The following bloc scientific conferences are listed:

1. The 26th Annual Congress of the Czechoslovak Ophthalmological Society in Plzen, September 1962. Main Topic: "Significance of Communicable Diseases of the Eyes." For information apply: Prof Rudolf Knobloch, Dr of Medical Sciences, Ophthalmological Clinic of the Medical Faculty, Charles University, Plzen, Czechoslovakia.

2. The 27th Annual Congress of the Czechoslovak Ophthalmological Society in Prague, September 1963. Main topic: Glaucoma. For information apply: Prof Emil Dienstbier, Dr of Medical Sciences, First Ophthalmological Clinic of the Faculty of General Medicine, Charles University, U nemocnice 2 (499), Prague 2, Czechoslovakia.

3. The 28th Annual Congress of the Czechoslovak Ophthalmological Society in Kosice, September 1964. Main topic: "Virus Diseases of the Anterior Chamber of the Eye." For information apply: Ophthalmological Diseases Clinic, Medical Faculty, P. J. Safarik University, Ratislavova 41, Kosice, Czechoslovakia.

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4. The 29th Annual Congress of the Czechoslovak Ophthalmological Society in Brno, September 1965. Main topic: "Genetics in Ophthalmology." For information: Prof Jan Vanysek, Dr of Medical Sciences, Ophthalmological Clinic of the Medical Faculty, J. Ev. Purkyne University, Pekarska 53, Brno, Czechoslovakia.

5. The 30th Annual Congress of the Czechoslovak Ophthalmological Society in Bratislava, September 1966. Main topic: "Etiology and Treatment for Inflammation of the Vascular Membrane." For information apply: Prof Josef Suster MD, Ophthalmological Clinic of Comenius University, Mickiewiczova 13, Bratislava, Czechoslovakia.

6. The 29th Congress of Polish Ophthalmologists in Krakow, in the summer of 1964 as part of the 600th anniversary of the Jagiellonian University. For information contact: Prof Marian Wileczek, Md, ulica Slawkowska 24a m. 3, Krakow, Poland.

7. The 65th Meeting of the German Ophthalmological Society in Berlin [East or West not specified], 26-30 September 1962.

8. Congress in Observance of the Tenth Anniversary of the Tissue Center in Hradec Kralove. For information apply to the secretary: Rudolf Klen, MD, the Kraj Institute of National Health, Faculty Hospital, Hradec Kralove, Czechoslovakia.

9. The Third All-Union Conference of Ophthalmologists in Novosibirsk, June 1963.

1.14. Forthcoming Czechoslovak Radiology Congress

"Medical Societies"; Prague, Casopis Lekaru Ceskych, Vol 101, No 37, 14 Sep 62, p 1135

The Radiology and Roentgenology Section and the Oncology Section of the "Jan Ev. Purkyne" Czechoslovak Medical Society will conduct a Czechoslovak radiology congress with international participation on 10-14 June 1963 at the Moskva-Pupp Grand Hotel in Karlovy Vary.

The program will be organized as follows:

I. Diagnostic Part -- "Progress in Angiography."

A. New methods in angiocardiology -- transseptal levography, coronarography.

B. Angiography in vascular and inflammatory diseases of the kidneys -- arteriography and phlebography.

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C. Angiography of the liver -- arteriography, phlebography of the portal system of the liver, and phlebography of the efferent veins of the liver.

D. Angiography of the spleen and the pancreas -- arteriography, splenoportography, and angiography of the efferent ducts of the pancreas.

E. Lymphography and possibilities of its use in practice.

II. Therapeutic Part -- "Treatment of Tumors of the Genitourinary Tract."

A. Treatment of tumors of the bladder.

B. Treatment of tumors of the kidneys.

C. Reports will be presented by outstanding Czechoslovak and foreign specialists.

Official languages of the congress will be Czech, Slovak, Russian, English, French, and German. All reports will be simultaneously translated into these languages. Contributions on the above topics are not to exceed 10 minutes. Applications for presentation of reports, including the title and a brief summary of the content, are to be submitted in triplicate (summaries not to exceed 250 words) to the secretary of the congress by the end of 1962. A more detailed program will be published at the beginning of 1963. Applications for attendance at the congress will be accepted up to 31 March 1963.

The chairman of the congress is Prof Dr Jan Bastecky, Doctor of Sciences, of the Radiological Clinic of the Faculty Hospital in Hradec Kralove. The secretary is Josef Roesch, MD, V. Borcove 2, Prague 6-Brevnov. (FOR OFFICIAL USE ONLY) (COPYRIGHT by the State Medical Publishing House, Prague, 1962)

115. Medical Film Festival in Czechoslovakia

"Medical Societies"; Prague, Casopis Lekarů Ceských, No 35, 31 Aug 62, p 1080

The Central Club for medical Personnel in Prague, in cooperation with the Central Institute for Medical Information, will conduct the Fifth National Festival of Amateur Medical Films on 14-17 November 1962 [presumably in Prague]. Amateur motion-picture photographers working in film groups in medical establishments and "Red Corners" and independently may participate. In evaluation of the works, particular attention will be given to collective efforts. Applications for the competition may be submitted to the Central Club for Medical Personnel, Prague 2, Sokolska 31 (Telephone 23 36 34 or 23 41 90). Films for the competition are to be submitted to the same address by 15 October 1962. (FOR OFFICIAL USE ONLY) (COPYRIGHT by the State Medical Publishing House, Prague, 1962)

116. Nephrology Congress in Prague

"Notice"; Bucharest, Muncitorul Sanitar, 1 Sep 62, p 4

The Second International Congress on Nephrology will be held in Prague between 25 and 29 August 1963. The official languages of the congress will be Russian, English, and French.

117. Hematology Congress in Czechoslovakia

"Medical Societies"; Prague, Casopis Lekarů Ceských, No 35, 31 Aug 62, p 1080

The Hematology Section of the "Jan Ev. Purkyně" Czechoslovak Medical Society and the Transfusion Commission of the section will conduct the Third National Congress on Diagnosis and Therapy of Hemoblastosis and on Problems of Fibrinolysis by "Atherapy" of Hemorrhagic Conditions. The program of the congress, scheduled for 11-13 October 1962 in Starý Smokovec, will open at 0830 hours on the first day and at 1000 hours on each following day.

Interested persons who are not members of the Hematology Section may obtain applications for the congress from Docent Dr F. Hermansky, secretary [of the Hematology Section], First Internal Medicine Clinic, Prague 2, U Nemocnice 2, by 12 September 1962. (FOR OFFICIAL USE ONLY) (COPYRIGHT by the State Medical Publishing House, Prague, 1962)

118. Czechoslovak Session on Rural Hygiene

"News"; Bratislava; Bratislavské Lekárske Listy, No 2,
31 Jul 62, p 128

The Hygiene, Health Organization, and Industrial Medicine Sections of the "Jan Ev. Purkyně" Czechoslovak Medical Society will conduct a joint work session in the Main Hall of the Medical House in Prague on 20 February 1963, starting at 0900 hours. The topics to be considered at the session are as follows:

1. Hygienic problems of socialist development and reconstruction of the village.
2. Hygienic problems of improving the healthfulness of agricultural work.
3. The rural health care for the rural populace.

Addresses 10-15 minutes long may be presented and should be submitted by 15 January 1963 to Jirina Jindrichova, MD, Candidate of Sciences, Division of Occupational Diseases of the Kraj Institute of National Health, Hradec Kralove, Jeronymova ul. 737. (FOR OFFICIAL USE ONLY) (COPYRIGHT by the Publishing House of the Slovak Academy of Sciences, Bratislava, 1962)

119. Annual Congress on Medical Training in East Germany

Berlin, Die Pharmazie, No 8, Aug 62, p 486

The annual Advanced Training Congress for Physicians, Dentists, and Pharmacists will be held in Leipzig C 1, Kurt-Fischer Strasse 29, on 17-25 September 1962, in conjunction with the Fifth General Meeting and Scientific Conference of the GDR Pharmaceutical Society. Prof Dr Med H. Kraatz, secretary of the medical class of the German Academy of Science in Berlin, and Prof Dr Med H. Redetzky, rector of the German Academy for Advanced Medical Training, will be in charge of the congress.

120. East German Veterinary Medicine Society To Meet

Leipzig, Monatshefte fuer Veterinaermedizin, No 15, 1 Aug 62,
p 639

The Scientific Society for Veterinary Medicine of the German Democratic Republic will hold its annual meeting in Leipzig on 11-13 October 1962.

121. East German Veterinary-Medical Society Meets

Leipzig, Monatshefte fuer Veterinaermedizin, No 15, 1 Aug 62, p 639

The Scientific Society for Veterinary Medicine in the German Democratic Republic will hold its annual meeting in Leipzig on 11-13 October 1962.

122. Medical Congresses With Bloc Participation in East Germany

"Medical-Scientific Events in the GDR During 1962 Within the Framework of Cooperation Between Socialist Countries"; Berlin, das deutsche Gesundheitswesen, No 26, 28 Jun 62, p 1094

<u>Dates (1962)</u>	<u>Location</u>	<u>Congress and Scientific Director</u>
5-8 Sep	Berlin	GDR Ministry of Public Health, Medical Clinics I and II of the Charite in Berlin, Prof Dr Schulz; joint meeting with the Czechoslovak and USSR Ministries of Public Health. Advanced training course in differential diagnosis and therapy of liver diseases.
11-14 Sep	Berlin	GDR Ministry of Public Health, Prof Dr Holstein; joint meeting with the USSR Ministry of Public Health. Symposium on work hygiene problems in connection with socialist reconstruction.
25-28 Sep	Berlin	GDR Ministry of Public Health, Prof Dr Marcusson; joint meeting with the Public Health Ministries of the People's Republic of Bulgaria, the Hungarian People's Republic, the USSR, and Czechoslovakia. Advanced training course with international

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participation in the prevention of infection in children's institutions.

1. Prevention and combating of in institutions for infants and preschool age children.
2. Prevention and combating of intestinal infections.
3. Prevention and combating of epidemic hepatitis.

27-28 Sep	Berlin	GDR Ministry of Public Health, Prof Dr Oesterle; joint meeting with the USSR and Czechoslovak Ministries of Public Health. Symposium on sterilization in medical and pharmaceutical practice and its standardization.
1-3 Oct	Karlsburg, Kreis Griefswald	GDR Ministry of Public Health, Prof Dr Mohnike; joint meeting with the Public Health Ministries of the People's Republic of Poland, the Hungarian People's Republic, the Rumanian People's Republic, the USSR, and Czechoslovakia. Symposium on diabetic angiopathy.
5-10 Oct	Berlin	GDR Ministry of Public Health, Docent Dr Mueller; joint meeting with the Polish Ministry of Public Health. International symposium on "Neurology of the Spine in Childhood." Clinical picture, neuroradiology, electrodiagnosis, and liquorology.
11-12 Oct	Isle of Riems	GDR Ministry of Public Health, Medical-Scientific Society for Hygiene in the GDR, work group for public health and hygiene in rural areas, Prof Dr Knabe;

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		joint meeting with the Polish Ministry of Public Health. Symposium on clinical picture and epidemiology of ornithosis and its significance as an occupational disease.
11-13 Oct	Dresden	GDR Ministry of Public Health, Prof Dr Velhagen; joint meeting with the Ministries of Public Health of the Hungarian People's Republic, the USSR, and Czechoslovakia. Symposium on Oto-Neuro-Ophthalmology.
Oct	Not given	Work group for Hematology. Conference of GDR hematologists.
21-23 Nov	Halle	GDR Ministry of Public Health, Medical-Scientific Society for Hygiene in the GDR, Hygiene Section, Docent Dr Horn; joint meeting with the Ministries of Public Health of the People's Republic of Poland, the Rumanian People's Republic, the USSR, and Czechoslovakia. Conference on hygienic problems related to urban planning, including an international symposium on problems of hygienic protection of the atmosphere. 1. Air pollution and the population's state of health. 2. Control and prevention of air pollution. 3. Miscellaneous subjects on air hygiene. 4. Biometeorology and bioclimatological problems, taking into account the air pollution factor.
27-29 Nov	Weimar	GDR Ministry of Public Health, Prof Dr Urbach; joint meeting with the Public Health Ministries of the Polish People's Republic, the Rumanian People's Republic, the Bulgarian People's Republic, the Hungarian People's Republic, the USSR, and Czechoslovakia. Symposium on questions pertaining to influenza and adenovirus prophylaxis.

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1. Virology
2. Epidemiology
3. Possibilities of combating influenza and adenovirus.
4. Group discussion
5. Evaluation of the results and recommendations.

1962 Not given GDR Ministry of Public Health; joint meeting with the Czechoslovak Ministry of Public Health. Discussion of nomenclature for and classification of psychiatric illnesses.

123. Polish Surgeons' Conference

"Communication"; Warsaw, Polski Przegląd Chirurgiczny, Vol 35, No 7, Jul 62, p 673

The Sixth Scientific Conference of the Industrial Surgery (Chirurgia Wytworcza) Section of the Society of Polish Surgeons will take place in Gdansk on 14-15 September 1962.

The main topic of the conference will be industrial surgical operations in mechanical injuries. The address of the local committee is: First Surgical Clinic, Medical Academy, ulica Debinki 7a, Gdansk.

124. Yugoslav Veterinarians To Meet

"Professional Meeting on Respiratory Diseases of Poultry, Breeding and Health Protection of Turkeys and Geese"; Belgrade, Veterinarski glasnik, No 8, 1962, p 805

The Department for Breeding and Health Protection of Poultry (Odeljenje za uzgoj i zdravstvenu zastitu zivine) of the Institute for Preventive Veterinary Medicine (Institut za veterinarsku preventivnu medicinu) in Belgrade will hold a broad professional meeting (not restricted to members) beginning at 0830 on 12 and 13 October 1962 in the Veterinary Faculty (Veterinarski fakultet) in Belgrade. The following topics are to be covered: respiratory diseases of poultry,

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current problems of breeding and health protection of
trukeys, and current problems of breeding and health
protection of geese.

Reports of 6 pages, coreports of 3 pages, and supporting
material of 2 pages were to have been submitted by 5 September
1962. Requests to attend and reservations for rooms are to be
submitted by 5 October 1962. Detailed information is available
at the above department, Bulevar JNA 18, Belgrade.

* * *

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Central Intelligence Agency



Washington, D.C. 20505

7 September 2004

Ms. Roberta Schoen
Deputy Director for Operations
Defense Technical Information Center
7725 John J. Kingman Road
Suite 0944
Ft. Belvoir, VA 22060

Dear Ms. Schoen:

In February of this year, DTIC provided the CIA Declassification Center with a referral list of CIA documents held in the DTIC library. This referral was a follow on to the list of National Intelligence Surveys provided earlier in the year.

We have completed a declassification review of the "Non-NIS" referral list and include the results of that review as Enclosure 1. Of the 220 documents identified in our declassification database, only three are classified. These three are in the Release in Part category and may be released to the public once specified portions of the documents are removed. Sanitization instructions for these documents are included with Enclosure 1.

In addition to the documents addressed in Enclosure 1, 14 other documents were unable to be identified. DTIC then provided the CDC with hard copies of these documents in April 2004 for declassification review. The results of this review are provided as Enclosure 2.

We at CIA greatly appreciate your cooperation in this matter. Should you have any questions concerning this letter and for coordination of any further developments, please contact Donald Black of this office at (703) 613-1415.

Sincerely,

A handwritten signature in cursive script, reading "Sergio N. Alcivar".

Sergio N. Alcivar
Chief, CIA Declassification Center,
Declassification Review and Referral
Branch

Enclosures:

1. Declassification Review of CIA Documents at DTIC (with sanitization instructions for 3 documents)
2. Declassification Status of CIA Documents (hard copy) Referred by DTIC (with review processing sheets for each document)

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Processing of OGA-Held CIA Documents

The following CIA documents located at DTIC were reviewed
by CIA and declassification guidance has been provided.

OGA Doc ID	Job Num	Box	Fldr	Doc	Doc ID	Document Title	Pub Date	Pages	Decision	Proc Date
AD0463342	78-03109A	55	1	2	88	Consolidated Translation Survey For April 1965	4/1/1965	190	Approved For Release	3/25/2004
AD0465168	78-03109A	55	1	3	89	Consolidated Translation Survey For May 1965	5/1/1965	245	Approved For Release	3/25/2004
AD0467068	78-03109A	55	1	4	90	Consolidated Translation Survey For June 1965	6/1/1965	221	Approved For Release	3/25/2004
AD0468849	78-03109A	55	1	5	91	Consolidated Translation Survey For July 1965	7/1/1965	218	Approved For Release	3/25/2004
AD0471155	78-03109A	55	1	6	92	Consolidated Translation Survey For August 1965	8/1/1965	236	Approved For Release	3/25/2004
AD0473500	78-03109A	55	1	7	93	Consolidated Translation Survey For September 1965	9/1/1965	221	Approved For Release	3/25/2004
AD0474384	78-03109A	55	1	8	94	Consolidated Translation Survey For October 1965	10/1/1965	181	Approved For Release	3/25/2004
AD0475860	78-03109A	55	1	9	95	Consolidated Translation Survey For November 1965	11/1/1965	305	Approved For Release	3/25/2004
AD0477388	78-03109A	56	1	1	96	Consolidated Translation Survey For December 1965	12/1/1965	181	Approved For Release	3/25/2004
AD0478471	78-03109A	56	1	2	97	Consolidated Translation Survey For January 1966	1/1/1966	198	Approved For Release	3/25/2004
AD0479675	78-03109A	56	1	3	98	Consolidated Translation Survey For February 1966	2/1/1966	354	Approved For Release	3/25/2004
AD0481681	78-03109A	56	1	4	99	Consolidated Translation Survey For March 1966	3/1/1966	237	Approved For Release	3/25/2004
AD0334379	78-03117A	191	1	37	4255	Status And Activities Of Prominent Scientists In Communist China In 1962	1/29/1963	53	Approved For Release	3/29/2004
AD0333974	78-03117A	190	1	35	4212	Scientific Information Report Outer Mongolia (1)	1/17/1963	27	Approved For Release	3/29/2004
AD0335202	78-03117A	195	1	13	4394	Scientific Information Report Outer Mongolia (2)	3/13/1963	27	Approved For Release	3/25/2004
AD0332657	78-03117A	183	1	13	3924	Scientific Information Report Biology And Medicine (22)	10/12/1962	76	Approved For Release	3/29/2004
AD0333147	78-03117A	185	1	30	4020	Scientific Information Report Biology And Medicine (23)	11/16/1962	90	Approved For Release	3/29/2004
AD0333427	78-03117A	188	1	13	4112	Scientific Information Report Biology And Medicine (24)	12/13/1962	84	Approved For Release	3/29/2004
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AD0334612	78-03117A	193	1	10	4310	Scientific Information Report Biology And Medicine (26)	2/20/1963	112	Approved For Release	3/29/2004
AD0335309	78-03117A	195	1	32	4413	Scientific Information Report Biology And Medicine (27)	3/20/1963	110	Approved For Release	3/29/2004
AD0336242	78-03117A	198	1	16	4509	Scientific Information Report Biology And Medicine (28)	4/12/1963	81	Approved For Release	3/29/2004
AD0332575	78-03117A	184	1	6	3957	Scientific Information Report Chemistry And Metallurgy (22)	10/23/1962	47	Approved For Release	3/29/2004
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