JPRS 69132

20 May 1977

USSR

EAST EUROPE

USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS

BIOMEDICAL AND BEHAVIORAL SCIENCES

No. 71

U. S. JOINT PUBLICATIONS RESEARCH SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22151. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

BIBLIOGRAPHIC DATA SHEET	1. Report No. JPRS 69132	2	3. Recipient's Accession No.
4. Title and Subtitle USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS - BIOMEDICAL AND BEHAVIORAL SCIENCES, No. 71			5. Report Date 20 May 1977 6.
7. Author(s)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstracts

The report contains abstracts and news items on aerospace medicine, agrotechnology, bionics and bioacoustics, biochemistry, biophysics, environmental and ecological problems, food technology, microbiology, epidemiology and immunology, marine biology, military medicine, physiology, public health, toxicology, radiobiology veterinary medicine, behavioral science, human engineering, psychology, psychiatry and related fields.

17. Key Words and Document Analysis. 17a. Descriptors

USSR	Medicine
Aerospace Medicine	Microbiology
Agrotechnology	Physiology
Biology	Psychology/Psychiatry
Botany	Public Health
Epidemiology/Immunology	Radiobiology
Human Engineering	Toxicology
Marine Biology	Veterinary Medicine

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group 2, 5E, 5J, 6, 8A

18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22151	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 78
	20. Security Class (This Page) UNCLASSIFIED	22. Price PCA05

JPRS 69132

20 May 1977

USSR AND EASTERN EUROPE SCIENTIFIC ABSTRACTS

BIOMEDICAL AND BEHAVIORAL SCIENCES

No. 71

This serial publication contains abstracts of articles and news items from USSR and Eastern Europe scientific and technical journals on the specific subjects reflected in the table of contents.

Photoduplications of foreign-language sources may be obtained from the Photoduplication Service, Library of Congress, Washington, D. C. 20540. Requests should provide adequate identification both as to the source and the individual article(s) desired.

CONTENTS PAGE

Agrotechnology 1
Biochemistry 15
Biophysics 16
Environmental and Ecological Problems 18
Epidemiology 22
Immunology 24
Industrial Toxicology 30
Microbiology 38
Military Medicine 45
Neurosciences 46
Pharmacology 49
Plant Biochemistry 51
Public Health 54
Radiobiology 61
Therapy 67
Veterinary Medicine 73

USSR UDC 632.954

ORGANOPHOSPHORUS GROWTH REGULATORS

Moscow ZASHCHITA RASTENIY in Russian No 10, Oct 76 pp 21-22

STONOV, L. D., candidate of agricultural sciences, All-Union Scientific Research Institute of Chemicals Used for Plant Protection

[Abstract] Initial trials of a large group of compounds prepared in the author's institute (synthesized under the direction of Prof. N. N. Mel'nikov) justified some conclusions on the relationship between herbicidal activity of the compounds and their chemical structure. The ester radical is a decisive factor of the activity. The most interesting of these compounds are the so-called isofoses which show herbicidal selectivity and high efficacy in weed control, and are most active when applied on the soil surface before sowing. Isofos-3 is the most active; common agricultural plants are resistant or partially to it. Weeds susceptible to it include pigweed, pennycress, and certain grasses. The author studied its herbicidal properties for rice in 1970-1975, and found it to be 80-94% effective, retaining its action through the vegetation period, without affecting harvest yield, vitality, or seed quality. Residue was not found in the rice. It has the least toxicity of the isofoses for warmblooded animals. Details for its application are given. The author has also studied the defoliant, herbicidal, and desiccant properties of DPF (dipyridylphosphate), and found it to be similar to gramoxon but more selective. DPF has been studied as a potato desiccant in the USSR and GDR, and though effective, some residues were found. Tables 2; no references.

USSR UDC 632.937.13

EFFICACY OF ENTEROBACTERIN

Moscow ZASHCHITA RASTENIY in Russian No 10, Oct 76 pp 18-19

BULBULSHOYEV, T., Pamir Biological Institute, Khorog

[Abstract] Intensity of UV-radiation and the severely continental climate under the high-altitude conditions of the Gorno-Badakhshanskaya Autonomous Oblast have required checking of the efficacy of enterobacterin to combat the apple moth and brown-tail moth. The author first began to test the preparation in 1972-73. It was used as a 0.5% suspension, 3.6-5 kg/hectare, on gardens 2000-3000 m above sealevel. The preparation, despite the climatic conditions of sun and altitude, proved to be effective and destroyed up to 88-100% of the moth pests. In 1976 it was used successfully on farms of the Shugansk Rayon against the caterpillars. No references.

USSR UDC 631.347.3+632.982.1

ULTRALOWCAPACITY SPRAYING

Moscow ZASHCHITA RASTENIY in Russian No 10, Oct 76 pp 24-25

SANIN, V. A., KHUKHRIY, O. V., GORBACH, T. I., LEPEKHIN, N. S., VOYTYUK, D. G., GORBACH, V. YA., and BARAN, V. N., Ukrainian Institute of Plant Protection, All-Union Institute of Plant Protection, Ukrainian Agricultural Academy, and All-Union Scientific Research Institute GINTOKS

[Abstract] Attention of agricultural research workers is increasingly attracted to ultralowcapacity (UMO) spraying. The USSR chemical industry is presently issuing, for experimental industrial use, special forms of insecticides for UMO, e.g., ritsifon 30%, carbofos 40%, metafos 40%, and dilor 15% 1 to 5 liters of which are spread per acre, depending on plant and pest. The preparations do not require addition of water or other solvents--thus saving much labor in preparation. Special UMO sprayers have not yet been issued, however. The authors have tested a converted sprayer OP-450 in 1973-1975 at the Karl Marx kolkhos in Kiev Oblast. The UMO device they used is pictured and described, and consists of a curved sawed-off tube (GOST 8734-58) 195 mm long adapted to the sprayer nozzle. The liquid is ejected through a 0.4 x 0.4 mm filter. Materials are of steel or stainless metal. Details of field trials and pests treated are given. The insecticides used are described as Soviet-made (cited above) or of foreign origin (despirol, pirimor, antio). Expenditures for UMO use were 20-25% lower than for the lowcapacity method. Physical properties of the insecticide liquid used must be determined in order to adjust the spray setting, and to assure delivery of desired quantities by the UMO. Figure 1; no references.

USSR UDC 632.9/4

POWDERY MILDEW CAN BE PREVENTED

Moscow ZASHCHITA RASTENIY in Russian No 10, Oct 76 pp 14-15

KORSUN, V. I., head of the First Section of the "Ovoshchnaya Fabrika" Sovkhoz, and MUDRIK, Z. M., agronomist in plant protection

[Abstract] The Ukraine has many hot-house enterprises which supply fresh vegetables during the year to the working people of large cities and of industrial centers. About 60% of the areas of the hot-houses is taken by cucumbers, the yield of which depends to a significant degree on organization of proper protection of them from powdery mildew. Fungicides

(colloidal sulfur, copper sulfate, and carbonate) are disappointing, and have involved loss of workers' time, energy, water, chemicals and use of machines. In 1974, at the sovkhoz, the authors tested sublimation of sulfur with the use of a bulb furnace, an electron-heated cone-shaped ceramic vessel, with four-stage regulated temperature. Features of the furnace are given. The sulfur is gasified and applied 20 days after planting, at night from 5 PM to 5-6 AM; the content of the gas in air during operation does not exceed 0.02-0.08 mg/m^3. Time expenditure for plant protection has been thereby decreased and yields improved. Sublimation of sulfur has been used for two years at the authors' sovkhoz and in the Kiev and other oblasts to protect cucumbers from powdery mildew. The heater furnaces are in short supply and hinder broad use of the method. No references.

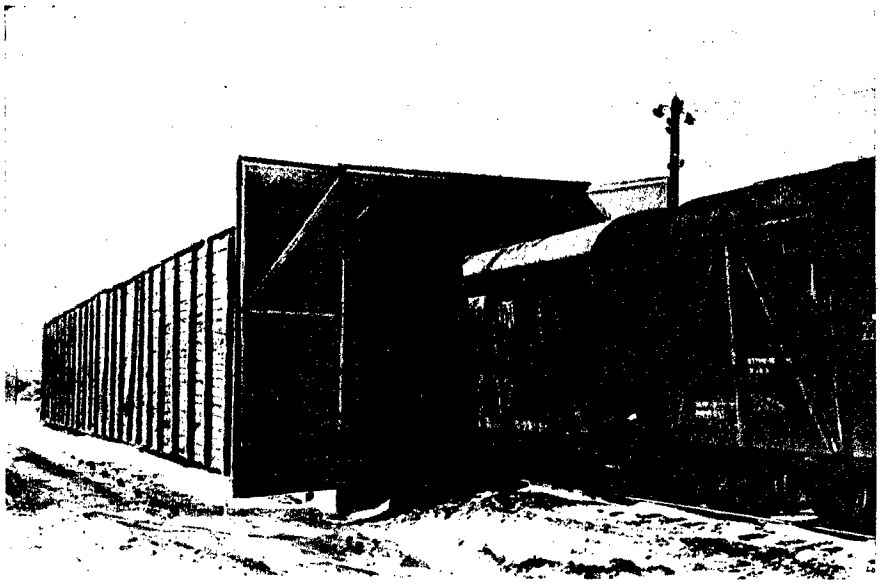
USSR UDC 632.913.1

METHYL BROMIDE USED TO DESTROY THE POTATO BUG

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 p 52

MUSAYEV, S. A., chief, Uzbek fumigation division

[Abstract] In recent years large quantities of potatoes have been shipped into Uzbekistan from other republics where there are foci of the potato bug. The conditions in Uzbekistan are very favorable for the insect. The potato vegetative period lasts 8-9 months and large areas in a large variety of climatic zones are occupied by tomatoes, eggplants and nightshades. One way to destroy the bug is methyl bromide fumigation which has been used on 708 railroad cars in 1972 and over 1800 in 1974. In 1974 a tunnel-type temporary wooden chamber (See photo) was constructed for the simultaneous fumigation of six freight cars. It is 94 meters long, 4.5 meters wide and 5 meters high (total, 2115 cubic meters).



USSR UDC 632.651 633.321

PARATYLENCHOSIS OF RED CLOVER

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 pp 45-46

SHESTEPEROV, A. A., candidate of biological sciences, All-Union Institute of Helminthology imeni Academician K. I. Skryabin (VIGIS)

[Abstract] The nematode Paratylenchus projectus is widespread in perennial grasses, including red clover, in Moscow Oblast. In foci with high numbers of the parasite the plants have small leaves and a light-green color and lag in growth and development. Their root systems are weakly developed and have few nodules. Dark-brown spots are observed on the main and lateral roots. In Moscow Oblast there is a higher density of population of the nematode in clover fields in loamy than in sandy or sandy loam soils. The population in loamy soils was reduced by a factor of 2 or 3 when manure was applied or the soil was plowed or kept under bare fallow.

USSR UDC 632.651

NEMATODES IN TADZHIKISTAN

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 pp 40-41

IVANOVA, T. S., laboratory head, Institute of Zoology and Parasitology, Academy of Sciences Tadzhik SSR

[Abstract] The specialization of farms on a definite crop requires very complete study of harmful fauna. In this connection special attention of scientists is attracted by investigation of soil parasites and carriers of diseases. The workers of the Institute have systematically investigated parasitic nematodes in Tadzhikistan since 1955 and have discovered more than 150 species of nematodes, about 50 of them parasites of plants. Those nematodes infest about 100 species of plants.

USSR UDC 632.95.026

PREVENTING POISONING BY BACTERIAL RODENTICIDE

Moscow ZACHCHITA RASTENIY in Russian No 9, 1976 pp 30-31

OMEL'YANETS, T. G., senior scientific co-worker, VNIIGINTOKS [expansion unknown]

[Abstract] The bacterial rodenticide used to control mice, containing viable bacteria of rodent typhus and bait, induces an infectious disease which destroys 65-100% of the mouse population. Because the bacteria survive a fairly long time in food products (3-20 days), special measures must be undertaken to prevent the infection of foodstuffs and of humans. All work with them is done by selected and specially trained workers wearing protective clothing, with the approval of the sanitary, epidemiological and veterinary services at certain farms where the danger is least, and disinfection procedures must be carried out.

USSR

UDC 632.95

ORGANOPHOSPHORUS INSECTICIDES FOR PROTECTION OF STORED GRAINS

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 pp 24-25

ZAKLADNOY, G. A., candidate of biological sciences, and BOKAREV, YE. M., aspirant at the All-Union Scientific Research Institute of Grain and Grain Products

[Abstract] The organophosphorus insecticides Foksim, methylnitrophos, DDVF and Malathion were tested on the granary weevil, confused flour beetle and lesser grain borer in wheat grains with low, medium and high moisture at 10, 20 and 30°C. Elevation of the moisture and temperature shortened the period of protection, except in the case of Foksim, which was most toxic at 20°C. Foksim should be considered best for the treatment of lots of grain requiring long storage and contaminated by a complex of insects. Tables 2.

USSR

DOSER FOR PACKAGING TRICHOGRAMMA ENTOMOPHAGE

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 pp 20-21

ZIL'BERG, L. P., director, Dondyushany Zonal Biological Production Laboratory, and FILIPCHUK, I. M., chief laboratory technologist

[Abstract] Trichogramma is used as an entomophage on over 7 million hectares a year. An industrial technology has been developed for obtaining it, and it is shipped by over 300 laboratories in small packages of about 50,000 individual units. A hand-operated metering device designed for the packaging of medical powders is used to insert Trichogramma in the packages. It consists of a casing, a dosing discharge device and an adjusting screw and doubles labor productivity in packaging. Figures 2; no references.

USSR UDC 632.915

EFFECTIVENESS OF NIGHT SPRAYING OF APPLE ORCHARDS

Moscow ZASHCHITA RASTENIY in Russian No 9, 1976 p 3

ATAYEV,, CH., director, "Sandy-Kachi" fruit sovkhoz, and ISAYEV, M., chief agronomist

[Abstract] In the apple orchards of Turkmeniya the damage caused by 3-5 generations of the apple worm per year can reach 75% of the apple crop. At the fruit sovkhoz night spraying of Trichlorfon or Malathion insecticide has been found to be effective. In the cool, moist air the chemicals are uniformly distributed over the orchard and settle on the plants with the dew. Spraying starts on the 7th or 8th day after the moths fly and is repeated after 12-15 days. It is done 4 or 5 times during the summer. Spraying starts at dusk and ends at about 4-5 A.M. (duration of shift, 6 hr).

USSR UDC 636.087.1

CHEMICAL COMPOSITION AND NUTRITIONAL VALUE OF WASTES IN WINE MAKING - WINE LEES AS AN ADDITIONAL SOURCE OF FOOD FOR POULTRY

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 11, 1976 signed to press 15 Jul 76 pp 3-9

KARAPETYAN, S. K., BALASANYAN, R. G., and GALSTYAN, YA. I., Institute of Physiology imeni L. A. Orbeli, Academy of Sciences Armenian SSR

[Abstract] Meal made from wine lees was found to contain 17 different amino acids, 13 to 15 trace elements, and vitamin B complex, when prepared by a method involving separation of the alcohol by heating, extraction with Rochelle salt, washing with water, and drying. After 63 days, chicks fed wine lees with mixed feed were indistinguishable from the controls fed nutrient yeast, in live weight and survival rate (98%). The inclusion of 5.4% meal from wine lees instead of 2% nutrient yeast markedly increased the production of egg-laying hens (the mean monthly production of an experimental hen was 13.1 eggs compared to 13.1 in the control, i.e., 7.6% more). Thus, wine lees could well serve as a valuable addition to the rations of both chicks and egg-laying hens. Figure 1; Tables 4; References 3 (Russian).

USSR UDC 631.862.1:631.445.24:]633.14+633.491

EFFECT OF ORGANIC MATTER OF SODDY PODZOLIC SOIL AND MANURE ON THE YIELD OF WINTER RYE AND POTATOES UNDER CONDITIONS OF LONG AND REGULAR FERTILIZER APPLICATION, CROP ROTATION AND CONTINUOUS CROPPING

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 18 Aug 76 pp 25-33

LYKOV, A. M., MANELLYA, A. I. and V'YUGIN, S. M., Department of Agriculture and Experimental Procedure

[Abstract] In a long-term experiment the application of normal rates of either manure or commercial fertilizers provided equal yields of winter rye and potatoes. Statistical analysis confirmed that the application of manure increases the yields of those crops. On the average in the 64-year period 1912-1975 even during continuous cropping monoculture and relatively equal agricultural engineering conditions the yield of those two crops increased when manure was applied together with mineral fertilizers. The influence of fertilizers on yield depends on the interaction of the fertilizer with weather conditions. Fertilizers, especially the organic, contribute to a reduction of the relative fluctuation of the yields of winter rye and potatoes in both favorable and unfavorable years. During crop rotation cropping the yields were considerably higher and resistant to the effect of weather conditions, especially when both fertilizers were applied together for a long period. Figure 1; Tables 5; References 22: 17 Russian, 5 Western.

USSR UDC 633.11"321":581.14.035

EFFECT OF DAY LENGTH UPON THE RATE OF DEVELOPMENT AND PRODUCTIVITY OF SPRING WHEAT UNDER CONDITIONS OF ARTIFICIAL LIGHTING AND CONSTANT TEMPERATURE

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 2 Aug 76 pp 12-19

KRASTINA, YE. YE., Artificial Climate Laboratory

[Text] [English abstract provided by the source] In experiments conducted with the spring wheat varieties Canada CB-151 and Moskovskaya 21 it was established that shortening of the day length increased the duration of stages II, III, VI and VIII of wheat organogenesis but did not change or even reduce the duration of stages IV and V. Change of a short into a long day increased the productivity of both varieties, although it did not affect the number of spikelets in the head of the main shoot. Continuous light reduced the productivity of Moskovskaya 21. References 9: 6 Russian, 3 Western.

USSR UDC 631.6(470.332)

SOIL IMPROVEMENT AS THE MAIN CONDITION OF RESTORATION AND IMPROVEMENT OF SOIL FERTILITY IN SMOLENSK OBLAST

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 10 Jul 76 pp 45-54

NOVIKOV, V. P., Smolensk Oblast Agricultural Administration

[Abstract] While the natural and climatic conditions of Smolensk Oblast are favorable for the production of various agricultural products, much of the land has low productivity. One third of all the agricultural land, or 700,000 hectares, has too much moisture, two thirds have low available phosphorus and exchangeable potassium and three fourths have excessive acidity and require liming. The work done and expenditures made on soil improvement during the last 10 years are described and those included in the plan for the Tenth Five-Year period are outlined. Tables 6; References 12 (Russian).

USSR UDC 632 633.11 632.954

EFFECT OF SYSTEMATIC (FOUR-YEAR) HERBICIDE TREATMENTS UPON WHEAT FIELD AND QUALITY

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 8 Jun 76 pp 140-148

KALITINA, N. V., ZINCHENKO, V. A., GRUZDEV, L. G., TABOLINA, YU. P., and RASPUTIN, V. M., Department of Chemical Means of Plant Protection, Agricultural Academy imeni K. A. Timiryazev

[Text] [Russian abstract provided by the source] The results of the fourth year of experiments with herbicides conducted at the Karabalykskaya agricultural experimental station of Kustanay Oblast are presented. Comparable data are presented on the influence on the quantity and quality of yield of corn of herbicide treatments in the course of 1, 2, 3 and 4 years, and also the aftereffects on the crop of treatments in the preceding 1, 2 and 3 years. Under the conditions of the 1974 vegetative period involatile esters (C_7 - C_9) of 2,4-D did not cause substantial changes of the wheat yield, but Banvel-D and Tordon-22K reduced it. The smallest biological yield was obtained in variants of treatment with herbicides in the course of 3 and 4 years. Under the influence of systematic treatments, tendencies to reduction of the yield of crude protein and also of irreplaceable amino acids were noted. Tables 6; References 28 (Russian).

USSR UDC 631.3 66].185

CLASSIFICATION OF MAIN FACTORS DETERMINING THE CLEANING EFFECT OF SOLUTIONS OF SYNTHETIC DETERGENTS IN CLEANING FARM MACHINERY

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 12 Mar 76 pp 172-180

DEGTEREV, G. P., Department of Electrification of Farm Production

[Text] [English abstract provided by the source] The general theory and practice of using synthetic detergents to clean farm machines are discussed. A classification of main factors indicating cleaning effect is suggested. The mechanism of the interaction between contamination and machine parts and the connection of contamination with the metal surface are shown. Much attention is given to study of the change of volume and surface properties of detergents when impurities accumulate in them. Figures 5; References 23: 17 Russian, 6 Western.

USSR UDC 631.811:635.64

METHODS FOR CONTROLLING THE NOURISHMENT OF TOMATOES

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 53-55

BOGOMOLOVA, V. G., Soil Institute imeni V. V. Dokuchoyeva

[Abstract] A study was made of the correlation of the development of the "leaf apparatus" of tomatoes and the chemical composition of the leaves with the yield of the plant using a method of plant diagnostics. For five levels of yields (averages of 846, 1130, 1287, 1449, and 1881 g/bush) 846, other measured values had the following ranges (from high to low respectively) mass of leaves during the blooming stage, 45.9-30.0 g; mass of leaves during fruiting, 122.5-126.0 g; amount of ripe fruit, 94-92%; amount of green fruit 6-8%, amount of N 2.56-2.82%, P_2O_5, 0.46-0.35, K_2O, 2.43-1.75, the N/P_2O_5 ratio, 5.5-7.0, and K_2O/N ratio, 0.97-0.61, as % dry weight in the indicator leaves of fruiting plants. Mathematical treatment of the data allow them to be used as indicated to predict yields. Tables 4; References 3 (Russian).

USSR UDC 631.82:669.721:633.21.3

PASTURELANDS OF THE NON-CHERNOZEM ZONE - POSSIBLE NEW AREA FOR USING MAGNESIUM-CONTAINING FERTILIZER

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 43-48

MAZAYEVA, M. M., doctor of agricultural sciences and NEUGODOVA, O. V., candidate of agricultural sciences, Scientific Research Institute of Fertilizers, Insecticides, and Fungicides imeni Ya. V. Samoylov

[Abstract] The first part of the article gives a brief review of other areas, particularly in Russian and Western Europe where Mg, Ca+Mg or Mg + trace metal fertilization has been used. The second consists principally of a series of tables giving analyses for Ca, Mg, and K for the grasses and Mg values for the soils of the Noginskiy, Dmitrovskiy, Mytishchinskiy, Krasnogorskiy and Domodedovskiy rayons. Mg, Ca, and K values for the grasses ranged from 0.11-0.36%, 0.21-0.76% and 1.2-3.8% respectively. The concentration of MgO in mg/100 g soil ranged from 5.3-113.0. Approximately 58% of the samples contained Mg concentrations below recommended levels (.2%), and another 11% were on the limit. Fifteen percent of the samples showed a $K^+/(Ca+Mg)$ ratio lower than the limit of 2.2. Tables 4; References 17 (Russian).

USSR UDC 631.542.4:633.11

INFLUENCE OF MAGNESIUM CHLORATE ON THE YIELD AND QUALITY OF GRAINS OF SPRING WHEAT

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 39-41

ANTONOV, I. V., candidate of agricultural sciences, TERESHCHENKO, R. I., and PANTELIMONOVA, A. I., candidates of agricultural sciences, All-Union Scientific Research Institute of Grain Agriculture, and KOLDANI, G. N., and IVANOV, A. P., candidates of Agricultural Sciences, VNIISKHSPGA (expansion unknown)

[Abstract] In the Urals, Siberia and also the northern part of Kazakstan, the wheat is treated with a chemical desiccant before it is harvested. For example, for 1972, moisture content before harvesting ranged from 42-44.5%. The day of the harvest, values ranged from 22.1% for a control, to 21.5% and 18.8% for areas to which magnesium chlorate had been applied at the rates of 35 kg/hectare and 55 kg/hectare respectively. No definite trends were seen when values of % germination, mass/1000 gains, or other indicators of quality, were compared for a control group and groups receiving 35 and 55 kh/hectare magnesium chlorate. Tables 6; References 2 (Russian).

USSR UDC 632.95.025.8

RESISTANCE OF THE CAUSATIVE AGENT OF Piricularia oryzae OF RICE TOWARDS FUNGICIDE

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 34-38

DVUKHSHERSTOV, M. G. and GOLYSHIN, N. M., doctor of agricultural sciences, All-Union Scientific Research Institute of Chemicals Used for Plant Protection

[Abstract] A study was made of several aspects of problems dealing with the development of resistance by strains of P. oryzae Br. et Cav. towards organophosphorus fungicides, one specific for piricularids of rice, (ritsid), and one of general action (tsineb). Both compounds were very effective under the experimental conditions. Several strains showed a natural resistance towards the fungicides, due to genetic features. After 12 generations, the resistance towards ritsid had increased by 7-9 times and towards tsineb by 3.7-4.1 times. Other fungicides considered include ritsid-p, khinozan, inezin, benomil, polikarbatsin, polimartsin and maneb. Figure 1; Tables 7; References 12: 4 Russian, 8 Western.

USSR UDC 632.95.028

RESIDUAL AMOUNTS OF GARDONA IN APPLES

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 32-33

BOLOTNYY, A. V., IVANOVA, L. N., and YURKOVA, Z. F., VNIIGINTOKS

[Abstract] Gardona is a phosphorous insecticide effective against a number of blights. In addition it has a low toxicity for warmblooded animals. Parts of an orchard were sprayed with a 0.2% solution. Zones of localization of the insecticide in the leaves were observed using an ammonia-$AgNO_3$-acetone solution after irradiation with UV light. Sensitivity was 0.5 micrograms of the preparation in the sample. Values obtained for the breakdown of gardona indicate that it is a first order reaction. For the Renet Simirenko type of apple analytical values ranged from 3.1 mg/kg 0 days after spraying to below detection limits 15 days after spraying. The kinetics equation has the form $C_t = 2.5\ e^{-0.3t}$. For the Renet Orleanskiy apple, analogous values are 3.5 and .035 mg/kg and below detection limits after 20 days. The equation is $C_t = 4.86e^{-0.25t}$. Applications of 0.15-0.20% solution of gardona applied at a density of 4 kg insecticide/hectare are recommended. This has an "effective duration" of 20 days. Table 1; References 15: 6 Russian, 9 Western.

USSR UDC 631.542.4:633.18

RESIDUAL AMOUNTS OF MAGNESIUM CHLORATE IN RICE

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 29-30

PERSHIN, B. M., and PERSHINA, A. N., candidates of biological sciences, Far East Rice Experimental Station

[Abstract] Magnesium chlorate was used in the Primorskiy Kray from 1966-1968 as a preharvest desiccant of rice grains. It also decreased the loss of grain during the harvest and increased the harvest. It was shown in different crops that the magnesium chlorate, applied to the surface of the plants, rather rapidly decomposed and did not accumulate in the seeds. Concentrations of magnesium chlorate were determined in the 1973 and 1974 harvests using an iodometric technique. In 1973, when it did not rain, concentrations in the light scales of the rice taken the day after the spraying were 78.0-82.7 mg/kg; after 8 days 49.2-42.1 mg/kg. In 1974, when it rained, analogous values were 6.2-7.9 and 5.3-6.4 mg/kg. Tables 2; References 5 (Russian).

USSR UDC 631.85

RELATIONSHIP OF EFFECTIVENESS OF PHOSPHORUS FERTILIZERS TO CONTENT OF MOBILE PHOSPHORUS IN CARBONATE SOILS

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian Vol 15, No 2, 1977 pp 11-14

SUKHAREVA, V. N., and ZHUKOVA, L. F., candidates of technical sciences

[Abstract] Data are given for the title study carried out by the State Agronomy Bureau during the period 1966-1969 in Central Asia, the North Caucasus, Kazakhstan, Southern Ukraine, and Moldavia. In each region, the soils were separated into 3 or 4 groups according to the initial concentrations of P_2O_5, ranging from 15 to 60 mg/kg soil. For cotton crops grown in serozem (grey desert soil) in Central Asia, the harvest decreased from 30.8 hwt per hectare for the low phosphorus control group to 25.0 hwt/hectare for the high phosphorus group. Fertilization increased the yields by 14.6 to 12.7% respectively for the low and high initial phosphorus. For winter wheat grown in chestnut-brown soil in the Central Caucasus, the yields ranged from 18.2 to 25.9 hwt/hectare and the crop increases from 23.8% to 10.2% for the low and high initial phosphorus groups respectively. For winter wheat grown in a carbonate chernozem also in Central Caucasus, the yields ranged from 21.1 to 19.8 hwt/hectare and the increases from 21.5% to 24.5%. For winter wheat in a carbonate chernozem in the southern Urals and Moldavia, the yields ranged from 16.5 to 23.2 hwt/hectare and the increase from 21.3% to 9.0%. For summer wheat in a carbonate chernozem, the yields ranged from 12.7 to 18.8 hwt/hectare and the increases from 20.4 to 12.5%. Tables 3; References 20 (Russian).

USSR UDC 632.7 633.15

HIGH-LYSINE-CORN DAMAGE BY SOIL INSECT LARVAE

Moscow SEL'SKOKHOZYAYSTVENNAYA BIOLOGIYA in Russian Vol 12, No 1, Jan/Feb 77 signed to press 9 May 76 pp 130-133

PONOMARENKO, A. V., Rostov State University, and KAZADAYEV, A. A., Scientific Research Institute of Biology, Rostov State University, Rostov-on-Don

[Abstract] Experiments with ordinary and high-lysine hybrid corn Krasnodarskiy 334, Belostaya 1 wheat and Uladovskiy pea indicate that the aqueous extract from the grain of high-lysine corn plants and the grains and seedlings themselves are more attractive to click beetle larvae than those from plants of ordinary corn, wheat or the pea. Consequently sowings of high-lysine corn hybrids will be greatly damaged by click beetles. This must be taken into consideration in developing protective measures against those insects. Tables 3; References 10 (Russian).

USSR UDC 616.1-074:577.1

EXPERIENCE IN STANDARDIZATION OF BIOCHEMICAL EXPERIMENTS

Moscow LABORATORNOYE DELO (Laboratory Work) in Russian No 2, 1977 signed to press 30 Mar 76 pp 116-119

TOLEYKIS, A. I., GLAZUNOV, I. S., and MARGYAVICHENE, L. E., Scientific Research Institute of Physiology and Pathology of the Cardio-Vascular System at the Kaunas Medical Institute; All-Union Scientific Cardiological Center

[Abstract] Being involved in an international study of cardiovascular diseases, the authors had to devise quality control measures for their own as well as other laboratories. In general, duplicate specimens were subjected to blind analysis and if the results of the determinations differed by more than 3%, the determinations were repeated. For longitudinal quality control standard specimens were injected. Finally, to compare the work at Kaunas University with Rotterdam's performance, blind standards were obtained from the United States. The results have shown that in spite of inherent differences in the methodology, both laboratories reached a satisfactory level of standardization and maintained it for a long time. Figure 1; Table 1; References 4 (all Western).

USSR UDC 612.112.015.1-06:612.766.1

ENZYMATIC ACTIVITY OF BLOOD LEUKOCYTES AS A CRITERION OF THE FUNCTIONAL STATUS OF THE BODY UNDER PHYSICAL LOADS

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 18 Jun 76 pp 56-59

SUKHAREV, A. G. and SIMONOVA, L. A., Institute of Hygiene of Children and Adolescents, Ministry of Health USSR, Moscow

[Abstract] The authors believe that the dynamics of change in enzymatic activity of leukocytes in the peripheral blood can be used as a criterion precisely reflecting the functional state of the growing body of a child in order to develop hygienic norms for permissible physical stress. To demonstrate this, school children were divided into three groups according to intensity of daily motor activity and the suggested indicator was studied. It was found to reflect the functional status of the body quite accurately. A relatively low level of this indicator at rest and its increase after intensive exercises with a tendency toward restoration of the rest level after 30 minutes indicates high functional capability of the organism. A high level of the indicator at rest and a drop in activity after exercise with no recovery after 30 minutes rest indicates a reduced functional capability of the organism, resulting from excessive exercise. Table 1; References 5 (Russian).

USSR UDC 615.83:616.36-002.14

EFFECT OF MONOCHROMATIC RED LIGHT ON REPARATION OF THE LIVER UNDER EXPERIMENTAL AND CLINICAL CONDITIONS

Alma-Ata ZDRAVOOKHRANENIYE KAZAKHSTANA in Russian No 2, Feb 77 pp 57-59

IDRISOVA, R. S., Department of Children's Infections of the Alma-Ata Medical Institute

[Abstract] White rats, in which liver damage had been induced by CCl_4, were subjected to light from a helium-neon laser 6328 Å wavelength, 25-30 mw power, for 20 days, 5 min a day. Exposure led to intensified protein synthesis in the hepatocytes, as contrasted to that in controls; this was conclusively apparent after 6 sessions of the radiation, as were the significant regenerative processes and recovery of the cell structures. These findings, and the observation that the 20-session radiation did not affect liver tissue in healthy rats, prompted the author to use this treatment on 50 children with lingering mild and medium-severe forms of hepatitis. An LG-75 Soviet-made laser, designed for use in therapy, was used. The procedure was worked out in cooperation with the staff of the Department of Biophysics of the Kazakh State University (director V. M. Inyushin). On the first day the liver was irradiated for 8 sec, the lumbar area 4 sec; exposure on the liver area was increased gradually to 5 min, of the lumbar area, to 2 min, over a 10-day period; exposition was then slowly decreased to the initial level (20 day period). Based on liver tests, enzyme levels, and blood chemistry, the laser therapy promoted normalization. The author feels that the monochromatic light has a positive effect on many pathologic processes in the liver, an anti-inflammatory action, and stimulated oxidation-reduction processes. References 2: 1 Russian, 1 German.

USSR UDC 616.33/34-073.97

RECORDING OF BIOPOTENTIALS OF THE STOMACH AND INTESTINES UNDER CLINICAL CONDITIONS

Moscow KLINICHESKAYA MEDITSINA in Russian Vol 55, No 2, Feb 77 signed to press 4 Jun 76 pp 24-30

REBROV, V. G., Main Clinical Military Hospital imeni N. N. Burdenko

[Abstract] Improvement of existing methods of recording movement of the stomach (visual, X-ray, balloonographic, and electrophysiological) is needed for correct clinical diagnosis of motoric disturbances of the stomach. Electrophysiological methods are distinguished by their relative simplicity of use and harmlessness for the patients. Rebrov (1975), Martin and Thillier (1971) and others have shown the potential for recording the electric current

of the stomach at any point on the body, and Rebrov reports his most recent work. Electrical and mechanical activity of the stomach are mutually related and reflect various aspects of contractive activity: i) the functional status of the organ's muscular layer; ii) the presence of actual coordinated contractions. The nature and magnitude of the bioelectric activity corresponds, broadly, to changes in mechanical activity of the stomach, which justifies use, under certain conditions, of the EGG (electrogastrograms), for judgments on its motorics. The diagnostic significance of the amplitude-frequency characteristics of the EGG, taken separately, is quite limited; in many cases it is impossible, with this criterion, to demarcate a normal and pathologically-changed EGG, to determine localization of ulcerative damage. These indices are more informative in extreme cases of movement pathology (clearly pronounced hypo- or hypermotoric dyskinesis of the stomach). At the same time, these EGGs, with respect to configuration of the biowaves, i.e., as indices which are primarily changed during organic gastric pathology allow tracing the dynamic, functional status of the stomach in a number of diseases of the gastroduodenal system, and the efficiency of drug action, or analyzing the status of the stomach with repeated studies of the EGG. With corresponding changes in frequency of the tuning of EGS-4m electrogastrographs, curves are recorded from the body surface, which are based on gastric and small and large intestinal biorhythms. Further improvement of such apparatus should proceed in the direction of creating multi-channel instruments which record the entire spectrum of frequencies of the GI-tract biopotentials. Figures 3; References 18: 3 Russian, 15 Western.

USSR UDC 717.735-006-073.432.19

NEW POSSIBILITIES FOR ECHOGRAPHIC DIAGNOSIS OF RETINOBLASTOMA

Moscow VESTNIK OFTALMOGII in Russian No 1, 1977 signed to press 6 Feb 76 pp 65-68

FRIDMAN, F. YE., KHVATOVA, A. V., TIMAKOVA, V. I. and SOROKINA, M. N., Moscow Scientific Research Institute of Eye Diseases imeni Gel'mgol'ts (Director, Candidate of Medical Sciences K. V. Trutneva)

[Abstract] In order to broaden the diagnostic possibilities of the ultrasonic echographic method of investigation in cases of suspected retinoblastoma, a procedure for intravital determination of ultrasonic attenuation in the tissue of the supposed intraocular tumor has been devised. The procedure was employed in examining 31 patients (60 eyes). The results of the investigation were contrasted against clinical findings and pathohistological conclusions. The ultrasonic attenuation in 1 mm of the neoplastic tissue (with the frequency of the sounding impulse 5 MHz) was found to be less than 0.2 Db/mm, which is characteristic of "plus-tissue" of nontumorous nature (Coats's retinitis, fibrosis of the vitreous body). In retinoblastoma, the ultrasonic attenuation surpasses 0.2 Db/mm and varies depending upon the peculiarities of the histological structure of the tumor. Figure 1; Table 1; References 13: 5 Russian, 8 Western.

USSR UDC 614.9

SANITARY-HYGIENIC EVALUATION OF THE SYSTEM OF REMOVAL AND UTILIZATION OF MANURE EFFLUENT AT A COMMERCIAL CATTLE BREEDING COMPLEX

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 (signed to press 8 Jun 7? (omitted in text)) pp 22-26

IVANOVA, A. N., Podol'sk Sanitary-Epidemiological Station, Moscow Oblast

[Abstract] The manure effluent from large commercial cattle breeding operations contains a tremendous quantity of organic matter and biogenic elements, with a significant population of pathogenic microorganisms and helminth eggs; this effluent thus represents a genuine ecological danger. An evaluation is presented of a system for removal, decontamination and utilization of the manure. The studies show that a gravity-flow system of manure removal and decontamination of the solid fraction by the biothermal method satisfies the sanitary-hygienic requirements. However, utilization of the liquid fraction for irrigation of agricultural crops requires additional decontamination of this fraction. Table 1; References 2 (Russian).

USSR UDC 616.72-007.248-036.21(571.55)

CHARACTERISTICS OF A NUMBER OF ELEMENTS OF THE ECOSYSTEM OF THE UROVSK ENDEMIC AREA OF THE TRANSBAIKAL

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 26 Feb 76 pp 15-18

BUTKO, V. S., KALABUKHOV, YE. P. and ANDREYEVA, T. A., Chita Medical Institute, Chita Polytechnic Institute

[Abstract] As a part of a study of the Urovsk endemic area, the chemical composition of drinking water, trace elements contained in the soil, food products, accumulation of biologically-active trace elements in human bone tissue and the mechanical properties of certain skeletal bones under normal conditions and with Urov disease (osteoarthritis deformans endemica) were studied. In all, 4,860 specimens of various objects from the biosphere from 25 areas in the Urovsk endemic region were studied. The content of calcium and magnesium ions in the water of the endemic region was found to be somewhat low in comparison with the water of control regions. The diet of residents of the endemic villages contains low levels of calcium and copper and a somewhat higher concentration of lead, zinc, manganese, iron and silver. The same ratio was discovered in the bones of victims of the disease. Due to the great disruption of the calcium-strontium ratio in the environment, the ratio of calcium to strontium in the skeletons of Urov disease victims was 1.5 times lower than in healthy persons. Table 1; References 9 (Russian).

USSR UDC 614.771

SCIENTIFIC BASIS FOR METHOD OF CALCULATION OF MAXIMUM PERMISSIBLE LEVELS OF INTRODUCTION OF EXOGENOUS CHEMICAL SUBSTANCES INTO THE SOIL

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 5 Mar 76 pp 29-33

GONCHARUK, YE. I., professor, PERELYGIN, V. M., professor, TSIPRIYAN, V. I., BADRAK, S. A., SOKOLOV, M. S. and SHOSTAK, L. B., Kiev Medical Institute; Institute of General and Communal Hygiene imeni A. N. Sysin, Moscow

[Abstract] To provide a foundation for a suggested method of calculation the maximum permissible level of introduction of exogenous chemicals into the soil, the authors first determined the functional dependence between the residual quantity of a harmful substance in the soil and soil-climatic factors influencing the degree of detoxication and migration of chemical substances in the soil: content of humus, porosity of soil, soil pH, bacterial population of soil and its fermentative activity, quantity of precipitation, duration of insolation, mean and maximum soil temperatures during the vegetation season, observation time, etc. It is recommended that the indicator of persistence of a harmful substance in the soil be the period of time during which 99% of the substance is broken down. An example is given, involving calculation of the MPLI of DDT and hexachlorocyclohexane. Table 1; References 5.

USSR UDC 614.72:613.155.3-037

THE PROBLEM OF PREDICTION OF THE MAXIMUM PERMISSIBLE CONCENTRATIONS OF ATMOSPHERIC POLLUTANTS ON THE BASIS OF SHORT-TERM EXPERIMENTS

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 5 Apr 76 pp 74-79

SHANDALA, M. G., PAZYNICH, V. M. and PODLOZNYY, A. V., Scientific Research Institute for General and Communal Hygiene imeni A. N. Marzeyev, Kiev; Dnepropetrovsk Medical Institute

[Abstract] A method is developed for prediction of the threshold and maximum permissible concentrations of atmospheric pollutants; it is noted that the results produced agree with the experimentally developed MPC for V_2O_5. The method allows prediction of the level of functional deviations from the physiological norm in the body when the actual concentrations of atmospheric pollutants exceed the MPC. The method is based on physiological and biochemical data produced in short-term animal experiments, assuming that the functioning of individual systems in the organism, parameters of the organism, environmental parameters and concentrations of harmful substances in the air are interrelated by definite relationships, and that statistically insignificant variations in parameters of the functional state from the physiological

norm allow physiologically normal duration of life of the organism with the same reliability. The organism is thus looked upon as a system in which the researcher can measure only input and output quantities, while the internal structure and processes occurring within the body are not fully known. Figure 1; Tables 2; References 11.

USSR UDC 614.777:622.34

SANITARY PROTECTION OF BODIES OF WATER IN CONNECTION WITH MINING AND BENEFICIATION OF RARE METALS

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 24 Feb 76 pp 99-101

SAVILOV, YE. D. and YANYGINA, L. F., Novosibirsk Scientific Research Institute for Sanitation

[Abstract] The effluent of mines and beneficiation plants from the rare metals industry is polluted with suspended matter and metal ions. Beneficiation plant effluent is turbid, has a characteristic odor and contains flotation reagents. Some of these reagents are stable and may have a negative influence on the sanitary mode of bodies of water by increasing the BOD. EHA, one of the most toxic acids, primarily influences the blood system and the functional condition of the liver. The subthreshold dose of EHA for poikilothermic organisms is 0.5 mg/kg (10 mg/ℓ). Table 1; References 3: 2 Russian, 1 German.

USSR UDC 612.453.018-06:613.13

SEASONAL CHANGES IN THE CONTENT OF CORTICOSTEROIDS IN PRACTICALLY HEALTHY YOUNG PERSONS UNDER THE MONSOON CLIMATE CONDITIONS OF KHABAROVSK

Moscow PROBLEMY ENDOKRINOLOGII in Russian Vol 23, No 1, Jan/Feb 77 signed to press 30 Mar 76 pp 52-57

UCHAKINA, R. V., Department of Hospital and Facultative Therapy of the Pediatrics Faculty and of the Faculty for the Advanced Training of Physicians, Khabarovsk Medical Institute

[Abstract] Glucocorticoids, in addition to other substances, play a significant role in processes of adaptation of the human organism to various types of unfavorable factors, both internal and environmental. When the functional capacity of the hypophysis-adrenal system is high, the organism adapts to various types of changes in environmental factors more easily. This work

studies changes in the content of corticosteroids in healthy persons under the monsoon climate conditions of Khabarovsk as a function of season of year, climatic and weather factors. It is found that the glucocorticoid function of the adrenal cortex is clearly seasonal in nature. The highest level of corticosteroids in the blood plasma is observed in the winter, the maximum excretion of 17-OCS in the summer. In all seasons, bad weather caused an increase in the level of the free (biologically active) corticosteroid fraction. Tables 2; References 17: 12 Russian, 5 Western.

USSR UDC 613.6:669.713.7:612.017.2(470.11

SOME PROBLEMS OF THE ADAPTATION OF WORKERS IN ELECTROLYSIS SHOPS TO THE INFLUENCE OF THE PRODUCTION ENVIRONMENT IN THE FAR NORTH

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 30 May 76 pp 91-94

TEDDER, YU. P., candidate of medical sciences, and CHASHCHIN, V. P., Arkhangel'sk Medical Institute

[Abstract] The authors studied some of the functions of the body of workers characterizing the level of their adaptation to cold in connection with their working conditions. Functional tests were used with a specific irritant, reflecting the level of reactivity of the thermoregulatory apparatus. It was found that workers in the electrolysis shop of an aluminum plant in the far north manifest a long period of stable adaptation to cold, exceeding the level of adaptation of other occupational groups in the same geographic area. There is reason to believe that the increased resistance to cold is related to the chronic exposure of the workers to compounds of fluorine, and that one of the early signs of occupational fluorosis is a disorder in the thermoregulatory function of the organism in response to cold stimulus. Cooling of animals not adapted to cold strengthens the toxic effect of inorganic fluorine compounds. Figure 1; Tables 2; References 15 (Russian).

USSR UDC 616.988.75-036.22"1976"

CLINICAL FEATURES OF A/VICTORIA INFLUENZA AT THE TIME OF THE OUTBREAK IN 1976

Moscow KLINICHESKAYA MEDITSINA in Russian Vol 55, No 2, Feb 77 signed to press 25 May 76 pp 113-117

STARSHOV, P. D., CHEPUK, YE. B., ROMANOV, YU. A., and KASATKINA, Z. N., All-Union Scientific Research Institute for Influenza, Ministry of Health USSR; City Infectious Diseases Hospital No 30 imeni S. P. Botkin, Leningrad

[Text-English abstract supplied by source] A/Victoria influenza observed in 1,129 patients during epidemic outbreaks in 1976 resembled A/influenza with respect to the clinical manifestations observed during previous years (1969, 1972-73 and 1975). Patients with moderate-severe forms of the disease predominated (80%); severe forms were noted in 13.9%. In 52.1%, influenza ran its course with complications, mostly pneumonia (84%). The severity of influenza, incidence and markedness of complications depended upon the patients' age. In 41.2% of the patients, influenza ran its course against the background of various chronic concomitant diseases. Streptococcal pneumonia requiring the entire complex of intensive therapy had the most severe course. Almost all autopsy cases had this complication. Mortality was 2.3%, 20 of 26 deceased being persons over 60. Remantadin in a dose of 200 mg daily for 5 days decreased the duration of the fever period and markedness of intoxication symptoms, in patients with uncomplicated influenza, provided the preparation was administered during the first three days of the disease. Tables 2; References 4 (Russian).

USSR UDC 616.935-036.22

CHARACTERISTICS OF A DYSENTERY EPIDEMIC IN THREE TOWNS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 pp 122-127

ALEKSANDROVSKAYA, I. M. and SOLODOVNIKOV, YU. P., Central Institute of Epidemiology

[Abstract] Although Sonne dysentery is spread mainly by the food factor, water may become just as important under certain circumstances, as shown by this epidemiological analysis of late summer outbreaks of the disease in a dairy center A. and two nearby towns S., (which obtains its milk from A.,) and K. situated 10 KM downstream on the same river as A. A sudden sharp rise in the incidence of dysentery in A. was paralleled by an epidemic in S. where the course of the disease was particularly severe in those who had drunk milk. A few days later substantial numbers of residents of K. contracted the disease. The epidemics were caused by contamination of water supply system of A. resulting from two accidents to the sewage pipes. Figures 2; References 9 (Russian).

USSR

UDC 616.34-022-084(575.192)

SOME HYGIENIC PROBLEMS OF THE PROPHYLAXIS OF INTESTINAL INFECTIONS IN KASHKADAR'YA OBLAST OF THE UZBEK SSR

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 9 Jul 76 pp 80-82

VAFAKULOV, B. KH., Kashkadar'ya Oblast Department of Health, Ministry of Health, Uzbek SSR

[Abstract] A meeting of the Academy of Medical Sciences, USSR held in Tashkent in October of 1975 in cooperation with the Ministry of Health, Uzbek SSR, discussed the pressing problem "Scientific Principles of Anti-epidemic, Sanitary and Therapeutic Measures in Intestinal Infections." The session once more convincingly confirmed the possibility of influence of various environmental factors on human intestinal pathology. Attention was primarily given to the determination of the specifics of water supply for the population, which varied through the various natural and geographic zones of Kashkadar'ya Oblast in the Uzbek SSR. One of the primary health improvement measures to be taken in the near future is to increase the percentage of the population supplied with deep-well water through a centralized water supply system. Garbage collection and sanitary disposal represent another problem area. The condition of public and private toilets and the pollution of ground water due to the rising water table resulting from construction of reservoirs also represent a situation which must be improved. Tables 2.

USSR UDC 612.118.223+612.312.2).017.1:576.858.095.383

DYNAMICS OF FORMATION OF INTERFERON IN THE PALATAL TONSILS AND BLOOD SERUM OF MAN

Moscow VESTNIK OTORINOLARINGOLOGII in Russian No 2, Mar/Apr 77 signed to press 14 Sep 76 pp 62-64

TOKHADZE, T. L., professor, LEZHAVA, ZH. M. and KORSANTIYA, B. M., candidates of medical sciences, Department of Ear, Nose and Throat Diseases, and Section of Immunology of Infections, of the Central Scientific Research Laboratory of the Tbilisi Medical Institute

[Abstract] Peroral administration, to man, of viral interferonogen evokes a response reaction of the various links of the immunological system of the body; these links are involved in the mechanism of antiviral protection in different chronological order. Interferon formation of the palatal tonsils and the blood serum of chronic tonsillitis patients was studied at different periods (12,24,48,72,96,120, and 168 hrs) after the action of the interferonogen, oral antiinfluenza divaccine A2 + B. The palatal tonsils give the greatest protective reaction in the form of production of high interferon concentrations on the second day after administration. Interferon production in the serum reached a maximum on the fifth day. The lymphoid formations of the pharynx serve as the primary link in the body's immunological chain, and are the first to display protective activity in response to the viral infection. Figure 1; References 3: 2 Russian, 1 Western.

USSR UDC 615.332(CARMINOMYCINUM)].032.3.015.46

EFFECT OF ORAL ADMINISTRATION OF THE ANTITUMOR ANTIBIOTIC CARMINOMYCINE ON IMMUNOLOGIC REACTIVITY OF ANIMALS

Moscow ANTIBIOTIKI in Russian Vol 22, No 2, Feb 77 signed to press 29 Sep 76 pp 168-172

SHAPOVALOVA, S. P. and MALKOVA, I. V., Chemotherapy Department, Institute of the Search for New Antibiotics, Academy of Medical Sciences USSR, Moscow

[Abstract] Repeated oral administration of carminomycine to mice at doses of 2.5 and 1.25 mg/kg induced suppression of production of hemagglutinins to sheep erythrocytes and formation of immunologically-competent cells in the spleen of test animals. The DNA and RNA content in the spleen of experimental animals was lower in the group treated with carminomycine and sheep erythrocytes as compared to controls. Oral administration of carminomycine at a dose of 2.5 mg/kg prolonged the life span of a skin graft by 6.5 days as compared to a skin homotransplant in controls; it induced a statistically significant decrease in the absorption capacity of the reticuloendothelial cells. Tables 5; References 9: 6 Russian, 3 Western.

USSR UDC 576.851.49.095.5.095.18:547.963.32

TRANSFORMATION OF ENTEROBACTERIACEAE BY R6K PLASMID DNA

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 17 May 76 pp 99-104

GNEDOY, S. N., BABUSHKINA, L. M., FROLOV, V. N., and LEVASHEV, V. S., Second Moscow Medical Institute imeni Pirogov

[Abstract] The purpose of the study was to evaluate the transforming activity of R6K plasmid DNA preparations obtained by different methods and to determine the conditions promoting the effective transformation of E. coli C600. DNA purified in a cesium chloride and ethidine bromide gradient was found to possess the greatest transforming activity ($2 \cdot 10^{-4}$ per cell/μg DNA). Partly purified DNA possessed transforming activity ($8 \cdot 10^{-6}$ per cell) sufficient to perform genetic experiments on E. coli K-12. The frequency of transformation varied with the degree of purification of DNA. The efficiency of E. coli C600 transformation was most influenced by the growth phase of the culture, cell concentration, $CaCl_2$ concentration, and duration of incubation at 42°C. The transformability of heterologous recipients S. typhimurium AG37, Pr. vulgaris 4636, S. marcescens 20-10, and E. coli B was low. Figures 6; Table 1; References 12: 2 Russian, 10 Western.

USSR UDC 615.372:576.851.55].012.8

PURIFICATION OF CL. PERFRINGENS AND CL. OEDEMATIENS TOXOIDS USING SILICA GELS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 20 Feb 76 pp 82-85

YEFIMOVA, N. P. and TUL'BOVICH, YE. V., Perm' Scientific Research Institute of Vaccines and Sera

[Abstract] The use of KSK-2, KSK-2.5, and MSA-2 silica gels produced concentrated Cl. perfringens and Cl. oedematiens toxoids equal in specific activity and yield to that resulting from filtration on Sephadex-75. Preliminary treatment of the surface of the silica gels with certain reagents, particularly n-butyl alcohol and 0.5% colloxylin in acetic acid, increased both the activity and the yield of the toxoids. Succinate-borate and phosphate proved to be the best buffers for purifying the toxoids on the silica gels. Tables 3; References 5 (Russian).

USSR UDC 615.371:576.851.46].015.46:612.112.3

ISOLATION AND PURIFICATION OF A PREPARATION FROM WHOOPING COUGH BACTERIA THAT CAN STIMULATE LEUKOCYTOSIS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 19 May 76 pp 78-82

TROFIMOVA, N. P., DEMINA, A. A., IGONINA, YU. A., DOLOMANOVA, M. S., and SYRESINA, G. I., Central Scientific Research Institute of Epidemiology, Ministry of Health USSR, Moscow

[Abstract] A homogeneous protein fraction LSF-2 isolated from the culture fluid of Bordetella pertussis strains of the 1.0.3 serotype by precipitation with ammonium sulfate was found to possess marked leukocytosis-stimulating activity and protect white mice against infection by the virulent strain 18,323. The minimum dose (5 μg) of the preparation increased the number of leukocytes in the animals to over 100,000 cells in 1 mm^3 5 days after inoculation. It immunized 12 to 91% of the animals against strain 18,323, depending on the dose used. Figures 4; Tables 3; References 6: 2 Russian, 4 Western.

USSR UDC 616.986.7-07:616.15-097.34-078.7

SIGNIFICANCE OF THE AGGLUTININ TITER IN THE MICROAGGLUTINATION TEST IN LEPTOSPIROSIS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 12 Dec 75 pp 70-74

KIKTENKO, V. S., SHIRKOVSKAYA, A. P., YEZHOV, G. I., and GOLUB, V. P., University of the Friendship of Peoples imeni Lumumba, Moscow

[Abstract] A review of the Soviet and foreign literatures reveals a wide range of views on the diagnostic antibody titer in the microagglutination test for leptospirosis in man and animals: from 1:10 to as high as 1:1000. The authors suggest that the titers recorded in a single serological examination be differentiated from those in two or more examinations. They recommend that the following be considered positive titers of leptospirosis antibodies in the microagglutination test when only one serological examination is made: 1:100 and higher for man, 1:200 and higher for cattle, 1:100 and higher for swine, and 1:20 and higher for mouselike rodents. However, titers as low as 1:10 and 1:20 can be considered diagnostic in repeated examinations if the levels change from one time to another. Table 1; References 54: 47 Russian, 7 Western.

USSR UDC 612.112.94.017.1:612.398.145.1

ROLE OF IMMUNE RNA IN THE INTERACTION OF T- AND B-LYMPHOCYTES

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 pp 32-36

KIRIKOVA, V. M. and UTESHEV, B. S., Second Moscow Medical Institute imeni N. I. Pirogov

[Abstract] CBA mice were immunized with 0.5 ml of a 5% suspension of sheep erythrocytes and RNA was isolated 4 days later by hot phenol extraction from spleen cells and from T- and B-lymphocytes. The immune RNA was used to induce antibody formation in intact bone marrow cells or in spleen cells activated by the antigen. Incubation of the activated spleen cells with the immune RNA resulted in a 10-fold increase in the number of antibody-forming cells. There were 30 to 40 times more such cells in secondary recipients than in the control. Study of target cells for immune RNA showed that both thymus and bone marrow cells must be present at the same time for the nucleic acid to exert inductive action on the lymphoid cells of the spleen. The absence of either the T- or B-lymphocytes markedly reduced the number of antibody-forming cells compared to that found after the action of immune spleen RNA on a mixed spleen cell population. Tables 4; References 11: 2 Russian, 9 Western.

USSR UDC 615.371:576.851.132].015.46

COMPARATIVE EXPERIMENTAL STUDY OF THE IMMUNOGENICITY OF CORPUSCULAR VACCINES AND THE PS. AERUGINOSA EXTRACELLULAR ANTIGEN COMPLEX

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 27 May 76 pp 30-32

AKATOVA, N. S., State Institute for the Standardization and Control of Biological Preparations imeni Tarasevich, Moscow

[Abstract] Corpuscular vaccines and extracellular soluble substances were obtained from 6 Ps. aeruginosa strains of various serotypes belonging to 3 serogroups, cultured on meat-peptone agar with blood, and then injected subcutaneously into mice. The mice were protected by the vaccine in 28 of 72 cases and by the extracellular antigen in 36 of 72 cases. Thus, the extracellular antigen produced a higher level of cross immunity. Table 1; References 8: 3 Russian, 5 Western.

USSR UDC 615.371:576.851.49.095.57].036.8

TEST OF THE SAFETY, SIDE EFFECTS, AND IMMUNOGENICITY OF LIVE FLEXNER 2a AND SONNE DYSENTERY VACCINE PREPARED FROM SPONTANEOUS MUTANTS IN THE FORM OF DRAGEES IN A CONTROLLED TRIAL ON ADULTS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 1, 1977 signed to press 16 Jan 76 pp 20-25

BELAYA, YU. A., BIRKOVSKIY, YU. YE., MILOVANOVA, L. P., PAVLOVA, L. I., KUZ'MIN, S. N., MEL'NIK, M. N., SEREBRYAKOV, L. V., SEMENYUK, V. G., SALMIN, L. V., BONDARENKO, V. I., YASHCHENKO, K. V., KRASYUK, L. S., TISHCHENKO, D. K., SHAMILO, V. A., and LESNYAK, S. V., Institute of Epidemiology and Microbiology im. Gamaleya, Academy of Medical Sciences USSR, State Institute for the Standardization and Control of Biomedical Preparations imeni Tarasevich, and Kiev Institute of Epidemiology, Microbiology, and Parasitology

[Abstract] None of 187 persons age 19 to 24 years who received a total of 545 doses of Flexner 2a dysentery vaccine suffered any local or systemic reactions whether they ingested 6 - 8X10^9 live microbial cells (in 1 to 4 dragees coated with an acid-resistant substance to provide protection against gastric juice) at one time or a total of 18-24 X 10^9 microbial cells several times. Similarly, Sonne vaccine in doses of 1.5-6 X 10^9 microbial cells (1 to 4 dragees) ingested once or 18 X 10^9 microbial cells (12 dragees) several times also provied to be safe and without side effects. Enteral injection of 153 persons with the two vaccines in comparatively low doses markedly increased the specific antibodies of all classes of immunoglobulins, especially IgA antibodies. The vaccinal Flexner 2a and Sonne strains isolated from the vaccinates for 6 to 8 days proved to be avirulent in the keratoconjunctival test. Tables 3; References 17: 6 Russian, 11 Western.

USSR UDC 616-002.5-085.373

EXPERIMENTAL INVESTIGATION OF THE SPECIFIC ACTIVITY OF ANTITUBERCULOSIS VACCINE BCG AND A VACCINE FROM STRAIN B-115

Tashkent MEDITSINSKIY ZHURNAL UZBEKISTANA in Russian No 12, Dec 76 signed to press 1 Jul 76 pp 67-70

ADON'YEVA, T. A., Tashkent Scientific Research Institute of Vaccines and Sera

[Abstract] The goal of this study was to prepare lyophilized vaccine from the strain B-115 and to study its biological activity in comparison to BCG vaccine. The experiments were carried out on guinea pigs and white mice, studying the harmlessness, immunogenicity, residual virulence and sensitivity to the vaccine. It has been shown that the B-115 strain vaccine is as good as BCG with respect to the studied points. Tables 4; no figures or references.

USSR UDC 616.9-097

MECHANISMS OF DEVELOPMENT OF AUTOIMMUNE PROCESSES UNDER THE INFLUENCE OF BACTERIA AND VIRUSES AND PRODUCTS OF THEIR LIFE ACTIVITY

Tashkent MEDITSINSKIY ZHURNAL UZBEKISTANA in Russian No 12, Dec 76 signed to press 29 Mar 76 pp 35-39

NIKOLAYEV, A. I. and MAKHMUDOV, O. S., professors, Central Asian Medical Pediatrics Institute

[Abstract] A review type article without actual bibliography, citing only the authors and years of publications. Stating that bodily autoimmunization in infectious diseases has been poorly investigated, the authors concentrate on bacteria and viruses as causes of the autoimmune processes. Starting from Gear's tenets that autoimmunization results from the action of autoantigens on the reticuloendothelial system, a series of observations and studies is tested, including data from 1975. The conclusion is reached that bacteria and viruses are capable of causing formations of autoimmune processes in the afflicted organisms. The mechanism of these processes may differ, but to be able to develop optimal protocols for pathogenetic treatment, one must know these mechanisms in detail. No tables, figures or references.

USSR UDC 576.851.48.083

NUTRIENT MEDIUM FOR PRODUCTION OF ALPHA-HEMOLYSIN OF E. COLI

Moscow LABORATORNOYE DELO (Laboratory Work) in Russian No 2, 1977 signed to press 19 Mar 76 pp 106-108

PALKINA, N. A., RASKIN, B. M., DENISOVA, S. V., KUSHNAREV, V. M., LEVADNAYA, T. B., and LIKHOYED, V. G., Scientific Research Institute of Vaccines and Sera imeni I. I. Mechnikov, Moscow

[Abstract] A new medium has been developed for cultivation of a hemolytic strain of E. coli, making it possible to obtain large quantities of α-hemolysin needed for isolation and purification studies. This new medium is a modification of Smith's medium in which the Difco prolease peptone was replaced by an acid hydrolysate of horse erythrocytes. To prepare this, the erythrocytic mass was hydrolyzed with HCl under pressure, followed by neutralization, purification with activated charcoal and drying. In dried state this material is stable for prolonged periods. Cultivation of the hemolytic strain of E. coli on this new medium -- P678 Hly^+ -- increased the production of α-hemolysin five-fold in comparison to the runs utilizing the Smith medium. Figure 1; References 7: 2 Russian, 5 Western.

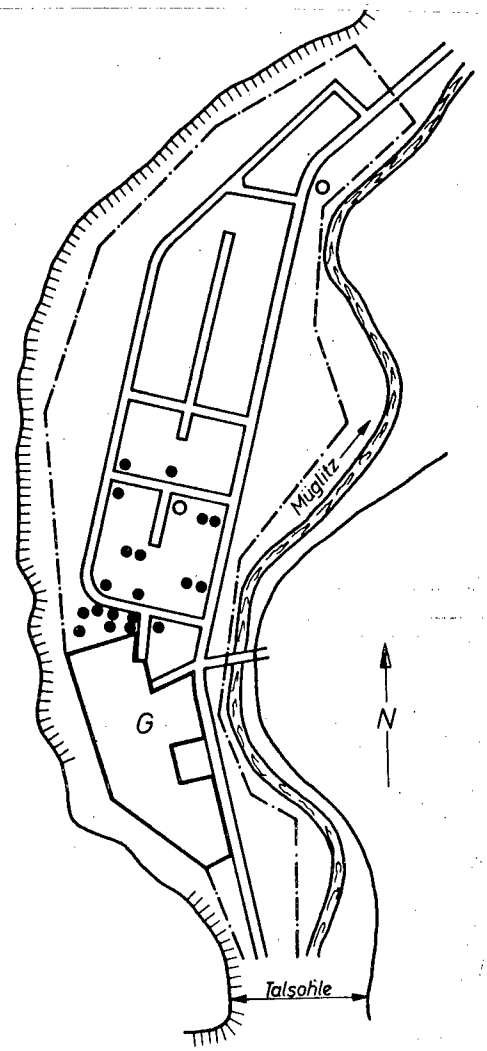
EAST GERMANY

NEIGHBORHOOD FLUOROSIS

East Berlin DAS DEUTSCHE GESUNDHEITSWESEN in German Vol 31, No 36, Sep 76 signed to press 22 Mar 76 pp 1700-1703

SCHMIDT, Chr. W., MD, physician-in-chief at the Department of Internal Medicine of Heidenau Kreis Hospital (medical director: KUPSCH, MD)

[Abstract] Twenty persons residing in the neighborhood of an aluminum foundry (16 men and 4 women, aged 24-78 years) for periods ranging from 4 and 51 years were examined by skeletal X-ray. All persons consumed fruits, vegetables, and small-animal meat grown in the vicinity for periods ranging from 2 to 41 years. None was employed in the hydrofluoric acid plant associated with the foundry. Four persons (3 men + 1 woman) showed no abnormality; 11 persons (8 + 3) showed slight periostal accumulation or structural densification; 3 persons (all male) showed slight evidence of fluorosis; 1 person (male) showed Fluorosis 0-(I) as defined by FRITZ; and 1 person (male) showed Fluorosis I-(II). The last-mentioned case is described in detail. The factory introduced measures to reduce the fluoride emission. The map below shows the part of the municipality of Dohna, where the tests were carried out:



Residences of 19 of the 20 persons examined (•); residence of persons with earlier diagnosed neighborhood fluorosis (Schmidt et al.) (o); Aluminum foundry: G

Figures 4; references 27: 14 German, 2 Russian, 1 Czechoslovak, and 10 Western.

EAST GERMANY

ACUTE POISONINGS WITH HALOGENATED HYDROCARBONS IN CHILDREN

East Berlin DAS DEUTSCHE GESUNDHEITSWESEN in German Vol 32, No 6, 1977 signed to press 18 Oct 76 pp 275-278

RECHLIN, Ruth, MD, Third Clinic of Pediatric Medicine (physician-in-chief: GUDOWSKI, G., medical counsellor, docent, doctor of medical sciences, at the City Clinic (medical director: HENDRIK, A., senior medical counsellor, lecturer, doctor of medicine, qualified lecturer, Berlin-Buch

[Abstract] The clinical pattern and therapy of acute intoxications with halogenated hydrocarbons such as carbon tetrachloride, dichloroethane, dibromoethane, and trichloroethylene (used for cleaning or other purposes) was discussed on the basis of 51 cases involving children. Acute and subacute intoxication is a two-step process; deep narcosis soon and then vomiting, diarrhea, colic-like phenomena, and sometimes death resulting from respiratory paralysis. First therapeutic measure is the administration of 3 ml/kg liquid paraffin, stomach lavage, and administration of activated carbon and salinic laxatives. Of 51 of the cases described, 27 were prophylactically dialyzed. This is recommended for all cases with clinical symptoms and cases in which it is ascertained that a lethal dose has been consumed. No late damages were encountered among the cases discussed. All, including those not dialyzed, recovered fully. Tables 3; references 20: 16 German and 4 Western.

USSR UDC 622.86 658.382.001.62

ALL-UNION SCIENTIFIC RESEARCH INSTITUTE OF LABOR SAFETY IN THE MINING INDUSTRY--THE VNIIBTG

Moscow GORNYY ZHURNAL in Russian No 1, Jan 77 pp 15-17

VASHCHENKO, V. S., institute director, candidate of technical sciences and State Prize Laureate, Ukrainian SSR

[Abstract] The main directions of scientific research work done in the institute are: 1) reduction of all kinds of production accidents at mines; 2) development of new and more effective means and methods of mine and industrial ventilation and combating dust, gases and other harmful substances in the atmosphere; 3) development of new and effective means and methods of combating noise and vibration of mining machines; 4) prevention of possible accidents and mine fires and the performance of mine rescue work. Its activity is directed toward coordination of the efforts of scientific research institutes of the Ministry of Ferrous Metallurgy USSR and educational institutes to solve theoretical and practical questions in the creation of the necessary sanitary and hygienic and safe working conditions in mines, quarries and concentration and agglomeration plants of the ministry.

USSR UDC 622.807:622.012.3

DUST CONTROL IN SECTIONS OF CYCLIC FLOW TECHNOLOGY

Moscow GORNYY ZHURNAL in Russian No 1, Jan 77 pp 75-79

BERESNEVICH, P. V., and BORISOV, V. G., candidates of technical sciences, KOTOV, YU. T., KUZ'MENKO, P. K., and SAPRYKIN, mining engineers, All-Union Scientific Research Institute of Labor Safety in the Mining Industry (VNIIBTG), ZOTOV, V. P., and SADOVSKIY, A. D., Turgoyak Mining Administration, and STAROSEK, B. G., Novokrivorozhskiy Mining and Concentration Combine, mining engineers

[Abstract] At some open-cut ore mines there are three directions of cyclic flow technology: the crushing of ore in semi-stationary and self-propelled equipment, the separation of ore in semi-stationary and self-propelled equipment, and a combination of that crushing and separating. During the operation of equipment a considerable quantity of dust is produced by the unloading of dump trucks, the screening of ore and the storage of oversize material, each of which processes presents its own problems with respect to dust control. Workers of the VNIIBTG have conducted investigations jointly with the mine workers to develop effective means and methods of collecting, moistening and covering dust and to introduce them at the mines. Figures 4; References 2 (Russian)

USSR UDC 613.632.4-06:616.153-07

SOME INDICES OF SEROTONIN METABOLISM IN STYRENE INTOXICATION

Minsk ZDRAVOOKHRANENIYE BELORUSSII in Russian No 2, Feb 77 signed to press 6 Feb 76 pp 24-25

ASKALONOV, A. A., chief physician, Medical and Sanitary Unit, Belorussian Tire Combine, Bobruysk

[Abstract] Styrene intoxication of animals leads to expressed disorders in serotonin content in the blood and tissues. The monoamine oxidase activity decreased in brain and liver tissues from the first days of poisoning; this decrease was observed in lung tissues only after prolonged styrene effect. Serum ceruloplasmin activity increased and urinary excretion of 5-hydroxylindolacetic acid decreased. The changes in the serotonin system may create conditions for disturbance of function of the parasympathetic nervous system. They indicate a need for clinical investigations to elucidate the pathogenesis of vegetative disorders often observed in styrene intoxication. References 8: 4 Russian, 4 Western.

USSR UDC 616.348-002-036.12-057

EFFECT OF TOXIC CHEMICALS ON ENTEROBACTERIA DURING NONSPECIFIC CHRONIC ENTEROCOLITIS

Tashkent MEDITSINSKIY ZHURNAL UZBEKISTANA in Russian No 12, Dec 76 signed to press 1 Apr 76 pp 50-53

UMAROVA, D. T., docent, Chair of Microbiology, Immunology and Fundamentals of Virology of the Central Asian Medical Pediatrics Institute and of the Viral-Bacteriological Service of the Tashkent Order of Labor's Red Banner Medical Institute

[Abstract] An investigation was carried out on 1,060 enterobacteria strains in regard to their ability to form aggressive enzymes and toxins; these bacteria were isolated from 210 agricultural workers exposed to toxic chemicals, who became afflicted with nonspecific chronic enterocolitis. It was shown that bacteria isolated from these patients had a much stronger tendency towards formation of aggressive enzymes and toxins than bacteria isolated from a control group ($t = 8.7$ at $P > 0.01$). No tables, figures or references.

USSR UDC 612.6.052.014.46:691.175

HYGIENIC EVALUATION OF THE CYTOGENETIC ACTIVITY OF POLYMER CONSTRUCTION MATERIALS IN ANIMAL EXPERIMENTS

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 8 Dec 75 pp 106-108

BOKOV, A. N., professor, GUS'KOVA, S. I. and GUS'KOV, YE. P., candidate of biological sciences, Department of Communal Hygiene, Rostov-on-Don Medical Institute

[Abstract] Male rats were subjected to inhalation poisoning by chemical complexes liberated from polymer construction materials for long periods of time (4 1/2 months). The condition of the animals was observed using a number of specific and integral tests to reveal chronic resorptive toxic effects by indicating the functional status of the central nervous system, liver, kidneys and other organs and systems. The data indicated that the polymer materials studied caused individual variations in the results of 2-3 tests of 11-14. The cytogenetic effect of polymer construction materials was studied by a count of chromosomal aberrations in dividing cell nuclei from bone marrow samples. The results of cytogenetic analysis indicate that chronic inhalation poisoning causes a significant increase in the number of aberrant anaphases (by a factor of 2-4) in comparison to the spontaneous level of mutation in control animals ($P < 0.05$). Of 12 polymer materials studied, 6 were found to be clearly mutagenic, causing a reliable increase in chromosomal aberration frequency in bone marrow cells. Analysis of the data produced indicated that materials similar in chemical composition caused similar changes, clearly indicating a relationship between cytogenetic effect and qualitative composition of the chemical substances liberated by the materials. References 3 (Russian).

USSR UDC 614.777:574.57]:628.191:54

EFFECTS OF CHEMICAL SUBSTANCES AND THEIR COMBINATIONS ON THE MICROFLORA IN WATER

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 31 May 76 pp 108-109

ZAKHARKINA, A. N., MOZHAYEV, YE. A. and KORSH, L. YE., Institute of General Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, Moscow

[Abstract] Many studies have shown that certain synthetic surfactants can clearly stimulate the development of pathogenic bacteria in water. In the studies here reported, dechlorinated, sterilized tap water was infected with a one-day culture of bacteria extracted from sewage; water from the Moscow River was also used without additional infection, after first determining the

content of surfactants and microflora. The chemical substances studied were introduced to the water samples in experimental vessels and held at 20-22 C. It was found that whereas when alkyl sulfate was present in the water at 5.0 mg/ℓ the number of saprophytic bacteria increased during the first 2 days by a factor of 40, and when acetone was present (0.01 mg/ℓ) the number increased by a factor of 18, when these two substances were present simultaneously in the same concentrations, the number of bacteria increased by a factor of 100-112. A combination of the same substances but with a higher concentration of acetone (0.1 mg/ℓ) resulted in an increase in the number of saprophytes on the 4th or 5th day in comparison to the control by two orders of magnitude. It must be recalled that the stimulating effect of acetone alone at this concentration was insignificant. Experiments were also conducted using various quantities of copper and alkyl sulfate. Copper sulfate ($CuSO_4 \cdot 6H_2O$) was used, introduced to tap water and river water with cultures of saprophytic bacteria and E. coli, and it was found that copper in concentrations below its MPC (0.02-0.03 mg/ℓ) significantly depresses the development of saprophytic bacteria, particularly E. coli. At 0.02-0.03 mgℓ, copper plus alkyl sulfate (5 mg/ℓ) stimulates the growth of the bacterial population approximately to the level observed with alkyl sulfate alone. The surfactant thus decreases the bactericidal influence of copper, possibly as a result of formation of a less toxic compound. References 2 (Russian).

USSR

UDC 613.31:[628.1-761:678.7

HYGIENIC CHARACTERISTICS OF CERTAIN POLYMER COATINGS SUGGESTED FOR USE ON DRINKING WATER SUPPLY EQUIPMENT

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 17 May 76 pp 96-97

KUPYROV, V. N., candidate of medical sciences, VOROBETS, V. I., candidate of chemical sciences, GAKAL, R. K., candidate of medical sciences, and STARCHENKO, S. N., Kiev Scientific Research Institute for General and Communal Hygiene imeni A. N. Marzeyev

[Abstract] Results are presented from hygienic study of new anticorrosion and insulating polymer coatings suggested by "Moldavgidromash" Plant for coating of immersible well pumps used as part of the drinking water supply system. It is found that type EP-00-10 coating, in contact with water, liberates chemical substances which cause deterioration of water quality, and water extracts of this material are found to be toxic to the body of mammals. Type EP-2100 enamel and KhS-720 paint do not essentially change the quality of water in contact with them, and aqueous extracts of these substances have no toxic effect on the body of animals, so that they are recommended for use as anticorrosion and insulating coatings of parts of immersible well pumps for drinking water systems. References 3 (Russian).

USSR UDC 613.6:[633.791:632.95

LABOR HYGIENE IN RELATION TO THE USE OF PESTICIDES IN HOP GROWING

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 23 Jun 76 pp 94-95

KIRIL'CHUK, P. P. and TSAPKO, V. G., candidate of medical sciences, Scientific Research Institute of Labor Hygiene and Occupational Diseases, Kiev

[Abstract] This study was performed in order to determine the conditions of labor of equipment operators and the dynamics of the content of pesticides in the environment as related to surface and aviation methods of spraying of hops. The plants were sprayed with organophosphorous pesticides. The use of pesticides by either method may lead to significant pollution both of the air and of other surrounding objects in the environment. The working location of tractor drivers spraying hops frequently is characterized by an excess of the level of chemical and physical factors (pesticides, dust, temperature, noise) over the established hygienic norms. Special tractor cabins should be used for spraying of hops. Workers must carefully observe all safety measures, with particular attention to protection of the skin and organs of respiration from the pesticides. Table 1; References 4 (Russian).

USSR UDC 614.31:613.298:547.413.133.2

DANGER OF VINYL CHLORIDE UPON ALIMENTARY INTRODUCTION TO THE HUMAN BODY

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 10 Jun 76 pp 70-74

BYKHOVSKIY, A. V., professor, and DYUBANKOVA, E. N., candidate of chemical sciences, Moscow Institute of Hygiene imeni F. F. Erisman

[Abstract] Vinyl chloride, one of the most widespread monomers, was earlier considered harmless but recent reports in the foreign and domestic literature indicate that it has carcinogenic properties, producing hepatic angiosarcoma. To some extent, these reports can be considered a model for polymer materials in general, requiring that these materials be considered in scientific studies and sanitary practice. The carcinogenic properties of VC may be found to be characteristic for other monomers and components included in the composition of polymer materials as well -- plasticizers, stabilizers, dyes and other additives. The results of a critical analysis of the literature data available indicate that at the present stage of development of hygienic science, serious attention must be given to the study of the long-term aftereffects of the exposure of the body to polymer materials which may enter the body under normal usage conditions. References 21: 9 Russian, 12 Western.

USSR UDC 614.777-074:547.491.06

THE PROBLEM OF DETERMINING CYANIDES IN WATER IN THE PRESENCE OF NITRILES

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 1 Jul 76 pp 63-64

PANOVA, V. A., BRYCHEVA, M. N. and LUR'YEV, YU. YU.

[Abstract] The influence of nitriles on the determination of cyanides was studies, and it was found that nitriles (organic cyanides) act differently in aqueous solutions. Some -- oxynitriles -- are unstable in aqueous solutions; lactonitrile is stable at pH 8.0 or lower, but quantitatively decomposes to cyanides and acetaldehyde at pH 9 or higher. The studies indicated that nitriles influence the determination of cyanides and therefore must be preliminarily separated. The best method for separation consisted in precipitation of cyanide ions with silver nitrate, separation of the sediment, careful washing with water and acetone and, finally, decomposition in a concentrated acid with subsequent distillation and determination of the cyanides in the distillate by the usual methods. The advantage of the method of separation of cyanides from nitriles by precipitation with silver nitrate is that the interfering influence of large quantities of organic compounds is eliminated immediately after separation of the sediment from the liquid, thus producing pure silver cyanide by careful washing of the sediment with water and an organic solvent. Reference 1 (Russian).

USSR UDC 614.72-074:[547.391.2+547.292].06

THE PROBLEM OF SEPARATE DETERMINATION OF VINYL ACETATE AND ACETIC ACID IN THE AIR

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 24 Apr 76 pp 61-62

OSOKINA, S. K. and KHRUSTALEVA, V. A., Moscow Scientific Research Institute for Hygiene imeni F. F. Erisman

[Abstract] The method suggested involves division of air samples into two parts: in one, the total quantity of acetic acid and vinyl acetate is determined, in the other -- vinyl acetate alone. The total quantity of vinyl acetate and acetic acid is determined by first converting the acetic acid to ethyl ether by the addition of sulfuric acid, then producing hydroxamates by the addition of hydroxylamine in an alkaline medium. Vinyl acetate is determined by the reaction of formation of hydroxamates by direct addition of hydroxylamine hydrochloride. The analytic procedure is outlined in detail. References 3 (Russian).

EAST GERMANY

CURRENT SENSITIVITY OF ANEROBIC GRAM-NEGATIVE BACTERIA OF THE BACTEROIDES GENUS AGAINST CHLORAMPHENICOL AND TETRACYCLINE

East Berlin DAS DEUTSCHE GESUNDHEITSWESEN in German Vol 31, No 47, Nov 76
signed to press 5 Jul 76 pp 2245-2249

HOEHNE, C., chief physician, Institute of Medical Microbiology and Epidemiology (director: ORTEL, S., professor, doctor of medical sciences), Department of Medicine, Martin Luther University, Halle-Wittenberg

[Abstract] Resistance determinations were carried out between 1971 and 1975. The strains evaluated included Bacteroides fragilis, B. thetaiotaomicron, B. ovatus, B. melanogenic, B. vulgatus, B. distasonis. A total of 127 strains were included in the study. Except for one strain of B. ovatus, the overall resistance to chloramphenicol and tetracycline was evident only among the B. fragilis strains, although one-third of the B. thetaiotaomicron strains showed resistance to chloramphenicol. One strain each of B. ovatus and B. vulgatus was resistant to tetracycline; nine of the 23 B. fragilis strains showed no tetracycline sensitivity; 11.1 percent of the B. thetaiotaomicron strains showed resistance to tetracycline. The increase in overall resistance between 1974 and 1975 was from 26.5 to 31 percent. Tetracycline and chloramphenicol were judged not to be the most suitable therapeutic agents against infections caused by Bacteroides. Tables 2; References 40: 15 German, 1 Indian, and 24 Western.

USSR UDC 576.851.55

SPOROGENESIS OF CLOSTRIDIUM BOTULINUM AND ITS CHARACTERISTICS

Kiev MYKROBYOLOGYCHNIY ZHURNAL in Ukrainian Vol 38, No 6, Nov/Dec 76 pp 780-785

DONETS, YU. I., Odessa Medical Institute

[Abstract] Sporogenesis of bacteria belonging to genus Clostridium is reviewed. Six sporulation stages are observed during the formation of spores by many species of Clostridium bacteria. However, Cl. botulinum has seven stages. The sporulation process lasts for 10-48 hr. A weakly acid or neutral reaction of a medium, presence of 0.1% of glucose, unsaturated fatty acids, phosphorus and sulfur compounds, as well as salts of ammonia and potassium activate the production of spores, while alkaline medium, carbohydrates capable of fermenting, compounds of nitrogen and sometimes of chlorine inhibit it. The morphology and localization of spores depends on many specific properties of individual species. The spore core is represented by a cytoplasm surrounded by inner and outer spore coats. Spores of some species, including the Cl. botulinum, have two additional coats, exosporium and sporangium. Resistance of spores to high and low temperatures, pH, radiation, table salt and sugar are discussed at length, as well as germination and growth of spores. References: 1 Russian, 44 Western.

USSR UDC 576.851.49:632.958.31

ENVIRONMENTAL SURVIVAL OF SALMONELLAS USED TO CONTROL HARMFUL RODENTS

Kiev MYKROBYOLOGYCHNIY ZHURNAL in Ukrainian Vol 38, No 6, Nov/Dec 76 signed to press 22 Jan 76 pp 761-763

OMEL'YANETS, T. G., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers and Plastics

[Abstract] In order to avoid pollution of the environment with toxic chemicals, Salmonella enteritidis bacteria (typhus bacteria) is used to combat harmful rodents. S. enteritidis is also pathogenic to man to some extent, and as such it is important to know how long it can survive under low and high temperatures and other environmental conditions when mixed with different baits for rodents. Salmonella of Isachenko and Prokhorov that is used for extermination remain active after heating for 2 hr at 60°C in physiological solution. Heating at 70°C for 40 min and at 80°C for 20 min does not kill all the bacteria. When heated at 100°C, all Salmonellas perished within the first 5 min. In frozen state, the bacteria preserves their vitality for 10 months, and in dried state for 18 months (observation time). On cooked meat the Salmonellas are active for 20 days (time of observation). In milk and drinking water, S. enteriditis remain active for 4 and 3 days, respectively. Figures 1; References 3: all Russian.

USSR UDC 576.851.21.095.38:576.858.75

INTERACTION OF β-HEMOLYTIC STREPTOCOCCUS AND PARAINFLUENZAL VIRUSES

Kiev MYKROBYOLOGYCHNIY ZHURNAL in Ukrainian Vol 38, No 6, Nov/Dec 76 signed to press 3 May 76 pp 731-733

MOLYUK, YE. D. and LOKHVITSKAYA, K. N., Kiev Scientific Research Institute of Otorhinolaryngology

[Abstract] Experimental results show that β-hemolytic streptococci adsorb 3 TCD of viruses per 200 millions of microbial cells. Viruses were conpletely adsorbed in 0.1 ml of bacterial culture when the infectious viral titer of 10^{-3} was diluted to 1:320 and the mixture was kept at 37°C for 30 to 90 min. The parainfluenzal viruses did not show any antibacterial effect on streptococci when 0.1 ml of the viral culture (100 TCD) and 0.1 ml of bacteria (200 millions of cells) were mixed and kept at 37°C for 1 hr and then seeded on blood agar. The reproduction of viruses on bacteria was studied in a mixture containing 0.1 ml of viral culture (titer 10^{-3}) and 0.1 ml of bacterial culture (2 billion cessl/ml). The mixture was added to the beef extract broth and cultivation in thermostat continued for 24 hr. When cell cultures were inoculated with the supernatant fluid after centrifugation, no viral infection was observed. This means that if some reproduction took place, it was insignificant and all new virions were adsorbed on bacteria. References 24: 13 Russian, 11 Western.

USSR UDC 576.851.55.095.38:576.851.252

INTERACTION DYNAMICS OF CLOSTRIDIUM PERFRINGENS TYPE A NO 28 AND STAPHYLOCOCCUS 0-15

Kiev MYKROBYOLOGYCHNIY ZHURNAL in Ukrainian Vol 38, No 6, Nov/Dec 76 signed to press 5 Jul 76

SVEZHENTSOVA, N. A., TSELUKH, A. V. and DYACHENKO, YU. V., Odessa Medical Institute

[Abstract] Biological effect of C. perfrigens type A and Staphylococcus 0-15 on white mice was studied in the course of experiments during which a mixture of these agents (0.5 ml each in physiological solution) was injected into animals. Results indicated that the percentage of death among mice was lower in comparison with the death rate when each agent was used separately. The mechanism of action of mixture is not clear. Six ideas are suggested to analyze the observed phenomena. The plotted death curves of animals indicate that increase in the dosage of Staphylococcus 0-15 produces a higher death rates among mice, while Cl. perfrigens type A has definite individual dosage characteristics which follow a much more complex mechanism of action. The suggested ideas can be used for revealing the quantitative time-related interaction of cultures used in variety of experiments; they can also be applied for an analytical description of the interaction dynamics of two biologically active agents. Figure 1; Tables 3; References 7: all Russian.

USSR UDC 616.993.12-092.9-085.33-036.8

CHARACTERISTIC ACTION OF ANTIBIOTICS IN THE EXPERIMENTAL PROCESS CAUSED BY CL. HISTOLYTICUM

Moscow ANTIBIOTIKI in Russian Vol 22, No 2, Feb 77 signed to press 29 Jun 76 pp 172-177

POLYAK, M. S. and LISOCHKIN, B. G., All Union Scientific Technological Research Institute of Antibiotics and Enzymes, Leningrad

[Abstract] Cl. histolyticum cells isolated from the muscular tissue of white mice infected with the microbe and treated with cephaloridin were alike and similar to the cells of the initial strain with respect to their morphological features, growth characteristics on liquid or solid media, and their saccharolytic activity. The strains isolated from animals treated with oxyglucocycline exhibited lower gelatinolytic, hemolytic, caseinolytic and collagenolytic activity; the strain isolated from cephaloridin treated group differed but slightly from the controls. Lethal effect of the total toxin of both strain variants was also similar the only difference being observed in the time of the death of animals. Tables 3; References 15: all Russian.

USSR UDC 614.48:061.6

THE ORGANIZATION OF A CENTRAL STERILIZING ROOM IN A HOSPITAL

Moscow MEDITSINSKAYA SESTRA in Russian No 1, Jan 77 pp 44-46

BARSKIY, I. P., Chief Doctor, BYKOVA, V. F., Chief Nurse and NEDOREZOV, N. I., Technician, Medical-Sanitary Section, Novomoskovskiy Chemical Combine imeni V. I. Lenin, Tula Oblast'

[Abstract] Centralization of syringe sterilization at the Medical-Sanitary Section is reported. Area devoted to sterilization was reduced from 80 m^2 to 9.6 m^2. The arrangement of equipment for soaking, washing, sterilizing, shelving of syringes, needles and other equipment is diagrammed. Two fixed tanks, a sink, steam sterilizer and two dry heat sterilizers are included in the design. One worker can sterilize 500 syringes and 3000 needles in 7 hours, which is a twofold increase in productivity. Energy and money expended for syringe sterilization were halved. Figures 1.

USSR UDC 633.878.91+636.086.3:582.657.2

UTILIZATION OF TAN WASTE FROM POLYGONUM CORIARUM GRIG. IN PRODUCTION OF FOOD YEAST

Leningrad RASTITEL'NYYE RESURSY in Russian No 1, 1977 signed to press 12 Feb 76 pp 91-94

PIPINIS, I. A., SMALYUKAS, D. YU., and KEPSHULIS, A. S., Institute of Botany, Akademiya Nauk Litovskoy SSR, Vilnius

[Abstract] The authors investigated the carbohydrates of tan waste from the roots of Polygonum coriarum Grig. and conducted experiments with food yeast cultivation on hydrolyzates of the waste in order to obtain a new food source. After extraction of tannic substances, the following carbohydrates were identified in tan waste hydrolyzate: glucose (26.9%), galactose (0.8%), xylose (0.9%), arabinose (3.9%), rhamnose (traces), and unidentified carbohydrates (1.5%). The yield of biomass of Candida scottii Tul-6 was one of high productivity--comprising 8.7 g/l--when the hydrolyzate from the tan waste was used as a culture medium. The tan waste hydrolyzate appears to be a new inexpensive source of carbohydrates for the production of food yeast. Tables 2; References 18 (Russian).

USSR UDC 613.34:628.16.087

THE POSSIBILITY OF INFLUENCE OF ELECTRIC CURRENT AND SALT ADDITIVES ON THE CONTENT OF MICROORGANISMS IN WATER

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 1 Jun 76 pp 97-99

ZHURAVLEVA, V. I., Scientific Research Institute for General and Communal Hygiene imeni A. N. Marzeyeva, Kiev

[Abstract] Experiments were performed using a simple electrochemical cell, a transparent cuvette made of organic glass sheets glued together. The voltage gradient maintained was 30 V/cm. DC current was applied for from 15 to 60 s. Aluminum sulfate and iron chloride, coagulants widely used in the preparation of drinking water, were used to introduce aluminum and iron ions to the water. Bacteriological analysis of treated and control specimens indicated that electrolytic treatment of the water eliminated E. coli and staph. albus to 99.99 and 99.84% respectively, a statistically significant difference. The author calls for further study of the method. Tables 2; References 5: 4 Russian, 1 Western.

USSR UDC 613.281:664.953.812:576.8

MICROFLORA OF "OKEAN" PASTE AS AN INDICATOR OF ITS QUALITY

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 25 Jun 76 pp 102-104

BULYCHEVA, N. P., LOZBIN, L. I., MAYSTRUK, P. N. and MAROVA, M. S., Kiev Scientific Research Institute for Nutritional Hygiene

[Abstract] "Okean" paste, a product produced by grinding tiny shrimplike organisms, represents a danger of infection of the population if not sterilized, stored and handled properly, since the marine organisms of which the paste is made contain numerous pathogenic microorganisms, and the paste itself, even after sterilization (heat treatment at 90-95°C for 10 minutes with subsequent rapid freezing at -30°C) represents an excellent growth medium for almost all known microflora. The authors studied the sanitary-epidemiological reliability of the product and the possibility of its long storage under various conditions by studying the qualitative composition of microflora and its change during storage. It was found that "Okean" paste stored frozen for 1-1 1/2 years contained a few individual plasmocoagulating staphylococci, gram-positive spore baccili, Bac. cereus, Bac. subtilis, Bac. mesentericus. Considering that these microorganisms might cause food poisoning, it is recommended that "Okean" paste be stored refrigerated (2-4 C) for not over 2 days after thawing. Table 1.

USSR UDC 613.287:637.133

THE PROBLEM OF EFFECTIVENESS OF PASTEURIZATION OF MILK

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 17 Mar 76 pp 104-106

GRITSENKO, T. T., candidate of biological sciences, TARADIY, A. K., KONDRAT'YEV, I. A., doctor of veterinary sciences, and CHERNYAYEVA, V. B., Ukrainian Scientific Research Institute for the Meat and Milk Industry, Kiev

[Abstract] Work performed at the All-Union Scientific Research Institute for veterinary sanitation has shown that the ordinary methods of plate pasteurization of milk (74-76 C, 15-20 s) are not sufficient for decontamination of milk infected with dysentery bacteria; a temperature of at least 80°C was required. Considering that other studies have indicated that the methods currently in use are sufficient, the authors studied the heat resistance of shigellae; among 160 strains of shigellae studied, about 11% manifested high heat resistance, with standing heating under laboratory conditions for 60-85 minutes to 59°C, and momentary heating to 85-90°C. The most resistant strains were not killed by pasteurization on a plate pasteurizing apparatus even at 90°C, 45-60 s. Figure 1; Table 1; References 6: 5 Russian, 1 Western.

USSR UDC 636.52/.58 612.017

BIOLOGICAL REACTION OF ONE-DAY-OLD CHICKS TO INJECTION OF FUNGAL TOXINS

Moscow SEL'SKOKHOZYAYSTVENNAYA BIOLOGIYA in Russian Vol 12, No 1, Jan/Feb 77 signed to press 27 Oct 75 pp 109-113

DOLTORNYAZOV, I. KH. and MASLOBOYEV, A. YA., All-Union Scientific Research Technological Institute of Poultry Raising, Zagorsk, Moscow Oblast

[Abstract] Experiments to evaluate the reaction of one-day-old chicks to the injection of the cultural liquid of a toxin-producing fungus showed that, regardless of the degree of toxicity on paramecia, the toxins cause clinical and pathomorphological pictures in them typical of mycotoxicosis. The principal clinical symptoms are a stressed state, anorexia and sometimes an increased excitability. When the toxicity is weak the reaction has the form of stress and inhibition of growth. Because one-day-old chicks react selectively to fungi toxins the use of chicks to determine the toxicity of fungi is preferable to tests of Protozoa. Tables 3; References 10 (Russian).

USSR

FUNGAL BIOLOGICAL PREPARATION OF TRICHODERMIN-4 TO CONTROL PLANT DISEASES

Moscow SEL'SKOKHOZYAYSTVENNAYA BIOLOGIYA in Russian Vol 12, No 1, Jan/Feb 77 signed to press 26 Dec 76 pp 54-57

FEDORINCHIK, N. S., TARUNINA, T. A., TYUTYUNNIKOV, M. G. and KUDRYATSEVA, K. I., All-Union Scientific Research Institute of Plant Protection, Leningrad-Pushkin

[Abstract] On the basis of theoretical assumptions and study of the nutritional requirements of Trichoderm lignorum Harz, extensive experiments were conducted on the selection of nutrient medium components and their ratio which assure the possibility of successful transition of the fungus from the vegetative to the generative stages. Studied later was the correlation of the selected components to maximally assure the physiological requirements of the fungus for transition of the vegetative mycelium to mass sporulation and exclude the possibility of autolysis in that case. Testing of the biological preparation of Trichodermin-4 has been included in the plan of state tests of materials for the control of soil-borne plant diseases. Figure 1; References 10 (Russian).

EAST GERMANY

STATISTICAL STUDIES ON THE EPIDEMIOLOGY OF ASIAN CHOLERA. COMMUNICATION 2: VARIABILITY OF THE SURVIVAL TIME OF CHOLERA VICTIMS

East Berlin ZEITSCHRIFT FUER MILITAERMEDIZIN in German Vol 18, No 1, Feb 77 signed to press 5 Oct 75 pp 35-39

SCHUMANN, H., major, MD., WEIGEND, Chr., captain, MD, KOENIGSTEDT, D., graduate biologist, and HERKNER, B., graduate physician

[Abstract] A total of 5,176 survival times of patients who died as a result of Asiatic cholera were collected and analyzed statistically in three groups: 4,778 patients who were victims of the epidemic in Paris in 1849; 398 patients for whom data were reported in various papers, and the two groups combined. The variability of the survival times of the patients, who did not have the benefits of modern therapy, was characterized by the expression $V_t = V_0.e^{-kt}$, where V_t denotes the number of those surviving at time t, V_0 denotes the number of those surviving at time 0, e denotes the natural logarithm base, k denotes the rate constant, and t denotes the time. The frequency distribution of the survival times of those killed by Asiatic cholera is presented in tabular form. There was a clear functional relationship between the number of deaths and time. The corresponding regression and correlation coefficients were about the same in the three groups analyzed. The exponential function, of which the applicability was confirmed, is valid only for the class width of one day. It is evident from the information analyzed that approximately half of the patients die within 24 hours without effective therapy; the corresponding rates are 13 and 17 percent, respectively, for the 2d and 3d days. All this indicates the necessity of therapy start at the earliest possible moment and that under such therapy both the lethality will decrease and the variability of the survival time will be reduced. The frequency distributions established in this study do not provide indication about the temporal occurrence of deaths from cholera in the course of a given epidemic. Figures 2; Tables 3; References 48: 45 German and 3 Western.

USSR UDC 612.821.6:612.821.7:615.847

CHANGE IN EEG RHYTHMS OF MAN WITH OFF AND ON SWITCHING OF THE CURRENT DURING AN ELECTROSLEEP SESSION

Moscow DOKLADY AKADEMII NAUK SSSR in Russian Vol 232, No 5, Feb 77 signed to press 21 Nov 76 pp 1204-1207

VORONIN, L. G. and GALEYEV, A. L., Institute of Biological Physics, Academy of Sciences USSR, Pushchino, Moscow Oblast'

[Abstract] A method has been developed for continuous recording and analysis of the biological rhythms of the brain during exposure to impulse currents. The novelty of this method is in registering individual components of the EEG rather than the resultant summary curve. Visual check of the records indicated no obvious artifacts due to the switching of the current. Analysis of the rhythms showed that the low frequency Δ and θ rhythms are the most inert ones, barely changing with current input and withdrawal. They correlate with each other and show unidirectional behavior. They begin to get elevated after current input and continue to increase; after the current is switched off, they do not drop down until the subject wakes up. The α-rhythms are most sensitive to current stimuli. Initial current charge leads to an elevation, but after about 5 min a drop to below the starting level is seen and only upon awakening of the subject is a rapid rise noted. Switching the current on and off is accompanied by brain activity changes even though the subject remains dormant. Recording the EEG data during the switching on and off of the current represents adequately the changes in low frequency rhythms; however the α-rhythm does not quite represent the electric activity of the brain. Figures 2; References 8: 7 Russian, 1 Western.

USSR UDC 597.4/5:612.17

ACTION POTENTIALS OF MUSCULAR CELLS OF TRUE PACEMAKER IN THE SINOARTRIAL REGION OF THE MYOCARDIUM OF STERLET AND PERCH UNDER THE INFLUENCE OF TEMPERATURE

Moscow DOKLADY AKADEMII NAUK in Russian Vol 232, No 5, Feb 77 signed to press 25 Oct 76 pp 1208-1210

GOLOVKO, V. A. and ROSHCHEVSKIY, M. P., Institute of Biology, Koma Branch, Academy of Sciences USSR, Syktyvkar

[Abstract] The aim of the study was to determine the site of cells which have true pacemaker activity in the sinoatrial (s.a.) region of fish myocardium; also examined were the dynamics of changes in the intracellular parameters of the action potentials of muscular cells of an isolated s.a. region in a temperature range within which spontaneous rhythmical activity

is maintained. Experimental data obtained led the authors to conclude that increased frequency in sterlet (Acipenser rutenus) heart contraction is due to an increased rate of rapid depolarization, while in the perch Perca fluviatilis heart it is due to an increased number of cells acting as real rhythm controllers and due to increased rate of slow diastolic depolarization. Such differences in the mechanisms of regulation of the heart contraction frequency could have emerged during the evolutionary process, as a reaction to temperature changes. Figure 1; References 11: 5 Russian, 6 Western.

USSR UDC 591.185

RESPONSE OF SINGLE CERCAL MECHANORECEPTORS OF THE CRICKET TO ACOUSTIC AND SINUSOIDAL MECHANICAL STIMULATION

Moscow DOKLADY AKADEMII NAUK in Russian Vol 232, No 5, Feb 77 signed to press 27 Oct 76 pp 1211-1214

KNYAZEV, A. N. and POPOV, A. V., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

[Abstract] The study showed that frequency threshold characteristics of all fiber receptors agree well with vibrational properties of the respective fibers. There are no finely-tuned mechanoreceptors on the cercuses of crickets. Optimal sound frequencies for all cercal mechanoreceptors are below 60 Hz. On optimal low frequencies the sensillae with fibers differing in length show different sensitivity. The dynamic range of the performance of one receptor does not exceed 15-20 dB. The cercal mechanoreceptor system is ideally suited for determination of low frequency vibrations or air currents which result from the motion of foreign bodies around the crickets and which are chiefly responsible for their evasive maneuvers in presence of enemies as well as their movement in space in general. Figures 4; References 11: 4 Russian, 7 Western.

USSR UDC 581.331

STUDY OF ALLERGENIC POLLEN GRAINS USING SCANNING ELECTRON MICROSCOPE

Moscow DOKLADY AKADEMII NAUK SSSR in Russian Vol 232, No 5, Feb 77 signed to press 28 Sep 76 pp 1222-1224

GUBANKOVA, S. G., Scientific Research Laboratory of Allergy, Academy of Medical Sciences USSR, Moscow

[Abstract] The author maintains that pretreatment of pollen prior to electron microscope scanning is very important. Each study should include examination of untreated pollen and of pollen subjected to acetolization according to Erdtman. Table 1; References 5 (all Russian).

USSR/GUINEA UDC 581.6:632.523. (6)

USEFUL PROPERTIES OF POISONOUS PLANTS FROM TROPICAL WEST AFRICA. REPORT NO 2. PLANTS WHICH ACT AS INSECTICIDES AND INSECT REPELLENTS

Leningrad RASTITEL'NYYE RESURSY in Russian Vol 13, No 1, 1977 signed to press 15 Apr 76 pp 145-153

BAZILEVSKAYA, N. A., Moscow State University

[Abstract] In recent years insects have presented a severe threat to Tropical African inhabitants because the insects were carriers of infectious diseases and destroyers of agricultural produce. The author and student A. U. Diallo of the Guinea Polytechnical Institute in the city of Conakry investigated over seventy plants which local inhabitants used as insecticides and repellents. Most effective as insecticides were plants containing rotenone and its derivatives, and also several alkaloids and saponins. Plants used as repellents for mosquitoes and other sucking insects were cut in bunches and clustered at doorways, or more often burnt, with certain plants being especially effective for certain insects. Only a few plants could be considered to be universal repellents. Thirty-one of the plants studied are described in the article. Information about them includes geographical distribution, physical description, and application in insect control. References 2 (Western).

USSR/GDR UDC 616.314-002-085.453.26:546.16]-039.71-092.9

COMPREHENSIVE EXPERIMENTAL STUDY OF THE MECHANISM OF THE ANTICARIOGENIC ACTION OF TOOTHPASTES CONTAINING SODIUM FLUORIDE

Moscow VESTNIK AKADEMII MEDITSINSKIKH ANUK SSSR in Russian No 1, 1977 pp 14-19

KOLESNIK, A. G., MOROZOVA, N. V., NOVIKOV, L. L., and BUSCH, S., Central Scientific Research Institute of Stomatology, Ministry of Health USSR, Moscow, and Karl Marx University, Leipzig, GDR

[Abstract] Rats maintained on a cariogenic diet had their teeth cleaned daily with tooth paste containing 1.5% sodium fluoride with and without calcium as an abrasive. Other animals received intragastric injections of 0.1 ml of 0.017% NaF. Chemical and radioisotopic studies showed that topical application of fluorine normalized some metabolic parameters in the molars, specifically, calcium metabolism in the mineral fraction and protein-bound phosphate metabolism. This happened only when the tooth paste did not contain calcium, which apparently prevented direct contact between the fluorine compound and the enamel. The quantity of fluorine isolated from the saliva of the animals that received the substances intragastrically was insufficient either to block the cariogenic effect of the special diet or normalize the metabolic processes in the solid tissues of the teeth.

USSR UDC 577.152.311.087.5

DETERMINATION OF THE ACTIVITY OF CHOLINESTERASES

Moscow LABORATORNOYE DELO (Laboratory Work) in Russian No 2, 1977 signed to press 28 Oct 75 pp 92-94

SIVORINOVSKIY, G. A., Laboratory of Reanimation and Hemodialysis, Odessa Oblast' Clinical Hospital

[Abstract] A modified potentiometric method has been proposed for determination of cholinesterase activity in blood, plasma, serum, erythrocyte hemolysate, and other biological fluids. The standard material consisted of frozen 2% physiological solution of acetylcholine chloride with the pH adjusted to 7.4 by addition of 0.01 N NaOH. During the process, physiological solution and the borate buffer (pH 8.9) were added to the substrate, while the material to be analyzed was added to the test tube. The time was noted for the beginning of the reaction, the initial pH value being recorded. At certain periods, the pH shift was determined and the amount of the split acetylcholine was determined from a calibrated graph in micrograms per unit volume, which served as an indicator for the activity of cholinesterases. No tables or figures, References 7: 4 Russian, 3 Western.

USSR UDC 615.917:547.412.133].015.157

COMPARATIVE STUDY OF THE INFLUENCE OF CONTINUOUS AND NONCONTINUOUS EXPOSURE TO CARBON TETRACHLORIDE ON THE ANIMAL ORGANISM

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 25 Jun 19?? (omitted in text) pp 27-29

BIZIN, YU. P., GORBAN', G. M. and PILIPYUK, Z. I.

[Abstract] The influence of CCl_4 on the body of animals was studied using 88 male white rats in 800 liter chambers. CCl_4 was applied in concentrations of 500 ± 57 mg/m^3, 10 times the threshold concentration for chronic periodic exposure. The total poisoning time in both continuous and periodic versions was 240 hours. It was shown that the rate and degree of intoxication of the animals were 4 to 5 times more rapid with continuous exposure to CCl_4 than with periodic exposure. The results of the studies thus indicate that biochemical and morphological changes in the body of the animals develop more rapidly with continuous inhalation of CCl4 than with interrupted (6 hour) inhalation cycles. Table 1; References 8 (Russian).

USSR UDC 581.1.035:[633.11+631.528.62

CHANGE OF PHYSIOLOGICAL AND BIOCHEMICAL PECULIARITIES OF SOFT WHEAT MUTANTS INDUCED BY CHEMICAL MUTAGENS AS A FUNCTION OF THE SPECTRAL COMPOSITION OF LIGHT

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 5 Aug 76 pp 3-11

MOTORINA, M. V., Artificial Climate Laboratory, Timiryazev Agricultural Academy, and SAL'NIKOVA, T. V., Institute of Chemical Physics, Academy of Sciences USSR

[Text] [English abstract provided by the source] The use of xenon lamps (variant II) as the source of irradiation of plants hastened their growth and development by 7 to 14 days and resulted in a decrease in the content of all pigments regardless of the genotypical peculiarities of the plants. Differences in the chlorophyll content in the mutants and the initial variety were significant in variant I (luminescent lamps + incandescent lamps) and were slight in variant II; differences in the content of carotenoids were irregular. The absolute values of most quantitative characteristics decreased significantly in variant II. The variation of characteristics in the objects studied was more pronounced in variant I. The stem length and especially the absolute grain weight did not differ in the variants and the mass of 1000 kernels remained typical of each genotype. Figures 4; Tables 3; References 21: 13 Russian, 8 Western.

USSR UDC 633.88:581.19:547.56:58 .977

COUMARINS OF SCABIOSA COMOSA FISCH. EX ROEM. ET SCHULT

Leningrad RASTITEL'NYYE RESURSY in Russian No 1, 1977 signed to press 2 Mar 76 pp 78-80

DARGAYEVA, I. D., and BRUTKO, L. I., All-Union Scientific Research Institute of Pharmacy, Moscow

[Abstract] Coumarins were examined in Scabiosa comosa Fisch. ex Roem. et Schult growing in the Kizhinginsk Rayon, Buryat ASSR in 1973. The researchers used above-ground plant parts in a number of detailed chemical investigations. A preliminary analysis of ethanol extract in a thin layer of silica gel mixed with petroleum ether and ethyl alcohol indicated the presence of three spots with Rf values 0.92, 0.87 and 0.57, fluorescent under ultraviolet light. Two kg of ground plant-material were processed with chloroform. The extract was separated in a tube with Al_2O_3; petroleum ether was used to extract the substances. The combined eluates were concentrated in a vacuum. Resulting substances exhibited reactions characteristic of coumarins. For example, in ultraviolet light, absorption was determined at 324 and 275 nm. Additional data conclusively identified coumarin. References 11 (Russian).

USSR UDC 333.11.112.1 633"324" 631.527.5

INTRASPECIFIC HYBRIDS OF DURUM WINTER WHEAT

Moscow SEL'SKOKHOZYAYSTVENNAYA BIOLOGIYA in Russian Vol 12, No 1, Jan/Feb 77 signed to press 16 Apr 76 pp 25-28

SALTYKOVA, N. N., Scientific Research Institute of Agriculture of the Southeast, Saratov

[Abstract] In the institute, intraspecific hybridization has been used since 1965 together with interspecific to obtain forms of winter durum wheat. The starting material was Triticum durum Michurinka, Novomichurinka, Odesskaya amber, Gordenform 195, Rubezh and also constant forms obtained by us at Saratov from interspecific double and triple hybridizations of winter soft with spring and winter durums: 1023/65, 1213/65, 4006/70, 73/67, 5/73, 12.73, 24.73, etc. Having created a base in the form of interspecific hybrids of durum winter wheat, it is advisable to proceed to hybridize them with one another, as in that case more constant forms with a complex of economically valuable characteristics and properties are obtained. Intraspecific hybridization permits obtaining forms with a more cultivated type of ear, similar morphologically to spring durum wheats but having relatively good winter-hardiness and a greater yield. In that case it is necessary to renew the base for intraspecific hybridization, drawing in new sources of winter-hardiness. It is advisable to use in that case interspecific hybridization with highly resistant soft wheats, as that type of hybridization fairly readily controls the possibility of developing a genetic system of winter-hardiness in hybrids. Tables 2; References 10 (Russian).

USSR UDC 576.851.2(584.1)

ACTINOMYCES OF VIOLET GROUP OBTAINED FROM DESERT SOILS IN SOUTHWEST TURKMENISTAN

Ashkhabad IZVESTIYA AN TURKMENSKOY SSR in Russian No 6, 1976 signed to press 28 Apr 76 pp 26-30

TIMUK, O. YE, Institute of Botany, Academy of Sciences Turkmen SSR

[Abstract] Violet-group (Violaceus) actinomyces are encountered in different soils. About 600 strains of various actinomycetes were found in Turkmenistan from 1971-73: of these only 2.6% were of the violet group. They were identified according to the N. A. Krasil'nikov guidebook (1970). These actinomycetes represent 6 species. The relatively large diversity of violet-group actinomycetes, their activity with respect to cellular tissue, the presence of aminolytic enzymes, the possibility of formation of melanoid pigments: this all suggests that their activity will play a significant role in the formation of organic matter when the desert lands of Southwestern Turkmenistan become settled. Tables 2; References 5 (Russian).

USSR UDC 635.342 631.527.5

SCHEME OF DEVELOPMENT OF FOUR-WAY HYBRIDS OF CABBAGE ON THE BASIS OF SELF-INCOMPATIBILITY

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 25 Jun 76 pp 124-131

KRYUCHKOV, A. V., Department of Selection and Seed-growing of Fruit and Vegetable Crops, Agricultural Academy imeni K. A. Timiryazev

[Text] [English abstract provided by the source] An original scheme worked out at the Academy for the selection process in the development of homozygous self-incompatible inbred lines with high combination capacity is described. Those lines are used for the production of four-way heterotic hybrid cabbage seeds. According to the scheme a genetic analysis is made for homo- and heterozygosis by alleles of the gene of self-incompatibility in all generations of the inbreeding. The heterozygotes isolated are used to obtain future generations, which provides saturation of the selection material with them of up to 50% in each generation. To facilitate the work the genetic analysis was made by means of line-indicators homozygous with respect to S-alleles, obtained in the first inbred generation as a result of diallele analysis. Figure 1; References 12 (Western).

USSR UDC 614.27:351.77([47 + 57])35)(049.3)

ORGANIZATIONAL STRUCTURE OF THE MANAGEMENT OF PHARMACY IN THE AUTONOMOUS SOVIET SOCIALIST REPUBLICS, KRAYS AND OBLASTS

Moscow FARMATSIYA in Russian Vol 26, No 1, Jan/Feb 77 signed to press 27 Feb 76 pp 9-12

VOLOSHIN, M. YE., and TANGIYEVA, G. A., Moscow Scientific Research Institute of Epidemiology and Microbiology

[Abstract] The organizational structure for management of pharmacy affairs in the ASSRs, krays, oblasts, and cities varies: in 50 ASSRs, krays, and oblasts of the RSFSR, direction of pharmacy establishments is carried out directly by pharmacy administrations, depending, in their activity, on central rayon and city pharmacies; in 23 administrative territories pharmacy administrations have in their control 52 inter-rayon offices (MRK), uniting from 18 to 100 pharmacy establishments to which have been charged the direction of a subordinate pharmacy network, and control of the activity of the network. The system of the Main Pharmacy Administrations (GAPU) of the ministries of health of 7 other union republics also has functioning 27 MRK, inter-rayon departments of the GAPU, and departments of GAPU pharmacy administrations subordinated to oblast pharmacy administrations. The authors have looked at 15 MRK of 10 oblast (kray, ASSR) pharmacy administrations in various geographic and economic zones of the RSFSR with respect to source of direction. It is clear that a lack of uniformity in procedures, organizational set-up, in the work-load and territory covered has created difficulties. They assert that further study of the structures is needed, and procedures must be devised for determining their number and classification and standardization of the regulations covering their responsibilities and authority. Tables 2; no figures or references.

USSR UDC 614.27(47 + 57):31"1971-1975"

BASIC INDICES OF THE DEVELOPMENT OF THE PHARMACY NETWORK DURING THE PERIOD 1971-1975

Moscow FARMATSIYA in Russian Vol 26, No 1, Jan/Feb 77 signed to press 11 Sep 76 pp 1-6

KLYUYEV, M. A., TENTSOVA, A. I., and BORISENKO, L. V., Main Pharmacy Administration, Ministry of Health USSR, All-Union Scientific Research Institute of Pharmacy, Moscow

[Abstract] Considerable progress has been achieved in developing the network of pharmacies. At the end of 1975 there were 12667 municipal and 12072 rural pharmacies in existence, showing an absolute increase of 2378 new pharmacies. The highest rate of growth of new pharmacies was observed in Central Asia,

the lowest in the Baltic states where a satisfactory level of pharmacy density already was in existence. Population density was reflected by the following: in cities there were 12.9 thousand inhabitants per pharmacy, while in the country -- 8.2 thousands in 1975. Turnover of goods increased by 31.8%, and drug purchase -- by 35.4% in comparison to the previous Five-Year Plan period. At the beginning of 1976 there were 329.8 thousand pharmacy workers employed, showing an increase of 20.3%. Overall, a dynamic improvement was noted in the number of centers, number of pharmacists employed in them, in the quality and quantity of drugs dispensed, and in the effectiveness of all operations. Tables 6; no figures or references.

USSR UDC 616.97-084.4

PROPHYLAXIS OF VENEREAL DISEASES

Moscow MEDITSINSKAYA SESTRA in Russian No 1, Jan 77 pp 50-51

LOZOVSKAYA, A. S., Central Scientific Research Institute of Sanitary Education

[Abstract] Answers to questions frequently asked nurses about venereal diseases are presented. Types of venereal disease, modes of infection, methods of diagnosis, cure, transmission to offspring and prevention are covered. The syphillitic chancre and gonnorheal discharge are described. The effects on offspring and need for medical treatment are emphasized. Avoidance of extra-marital sexual contact and of alcohol abuse are recommended for prevention. The author states that the Soviet government has achieved significant successes in combatting venereal diseases, but, nevertheless, constant execution of measures to prevent them must be an important task of medical workers.

USSR UDC 615.38.002.3:374

THE ROLE OF THE MEDICAL NURSE IN DONOR PROPAGANDA

Moscow MEDITSINSKAYA SESTRA in Russian No 1, Jan 77 pp 48-50

NIKOLAYEVA, L. K., and RAFAL'SON, D. I., candidates in medical sciences, and UL'YANOVA, K. A., Medical Nurse, Leningrad Scientific Research Institute of Hematology and Blood Transfusion

[Abstract] A widespread propaganda campaign is needed in order for blood donation to become regarded as a civic duty. Since medical nurses observe the importance of blood donation first hand it is not surprising that they are the most frequent blood donors. However, they must also become active in the propaganda campaign among patients and their relatives and friends.

Posters and reminders in wards, reception and information area of hospitals and maternity homes, reminders to blood recipients of the source of their lifesaving treatment and to those accompanying them for ambulatory transfusions are indicated. Relatives of a sick child, of a healthy one receiving preventive blood fractions, should be informed of the need for donors and youngsters should be educated about this civic duty.

USSR UDC 614:374+616.1/.4-082]:36].121

HEALTH EDUCATION AND MEDICAL CARE IN POLYCLINICS

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 8 Jul 76 pp 54-57

LORANSKIY, D. N., PARANSKAYA, ZH. A., and SEVEROVA, YE. YA., Central Scientific Research Institute of Health Education, Ministry of Health USSR, and Main Health Administration, Moscow Urban Executive Committee

[Abstract] Many persons suffer needlessly because they do not seek medical care, do so too late, fail to come to the clinic for regular checkups, do not follow the doctor's advice because they do not understand its significance, etc. This situation is due partly to the inadequacies of the local (uchastok) health system (inconvenient visiting hours, long waits, overburdened personnel) and partly to an inclination to self-diagnosis and self-treatment because of the large volume of technical medical information circulated through the mass media. The authors urge that more attention be paid to alerting people to the need to heed early symptoms of coronary insufficiency and other serious diseases and see a physician promptly. They also recommend that physicians make greater efforts to educate their patients about their specific condition. References 12 (Russian).

USSR UDC 362.11(37):651.5

ORGANIZATION OF OFFICIAL PAPER WORK IN A CENTRAL RAYON HOSPITAL

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 16 Aug 76 pp 52-54

VOLOBUYEV, V. K., Department of Social Hygiene and Organization of Health Care, Khabarovsk Medical Institute

[Abstract] Study of the 10 central rayon hospitals in Khabarovsk Kray showed that about 1100 to 1200 documents from various sources reach the chief physician's office a year and 850 to 900 originate there. All incoming

papers are logged in by the secretary and then passed on to the chief physician who determines what action is to be taken. Similarly, all outgoing papers are examined and signed by the chief physician and then recorded and sent out by the secretary. This highly centralized arrangement is inefficient, unnecessary, and wastes a good deal of the chief physician's time on trivial matters that could be readily handled by his deputy. The journal form of recording documents makes it difficult to find a desired item quickly or to follow up on the disposal of an issue of interest. The author suggests a system of control cards appropriately filed. References 3 (Russian).

USSR UDC 362.11:616-036.882-08:658.381.015.2

ANALYSIS OF THE WORK LOAD OF PHYSICIANS IN RESUSCITATION (INTENSIVE CARE) UNITS OF MOSCOW HOSPITALS

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 3 Aug 76 pp 45-47

SIMONYAN, K. N. and VERENTSOV, M. M., All-Union Institute of Social Hygiene and Organization of Health Care imeni N. A. Semashko

[Abstract] Time-motion studies on the work of physicians in the resuscitation and intensive care units (about 20 beds) of a number of Moscow hospitals with bed capacities ranging from 235 to 2230 showed that 93% of their patients suffer from 4 classes of diseases: circulatory disorders; accidents, poisonings and traumas; complications of pregnancy, childbirth, and postpartum period; and digestive diseases. An average of 57% of the physicians' time is spent on diagnosis and therapy. About 1 hour is devoted to each patient. Therefore, 6 or 7 patients can be handled in a normal workday. Table 1; No references.

USSR UDC 362.11/.12.003.1

ESTIMATED COSTS OF IN- AND OUTPATIENT TREATMENT IN HOSPITALS OF DIFFERENT SIZES

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 21 Jul 76 pp 41-45

ROYTMAN, M. P. and VOLKOVA, I. A., All-Union Scientific Research Institute of Social Hygiene and Organization of Health Care imeni N. A. Semashko

[Abstract] Analysis of estimated costs of running 54 hospitals of different types and sizes (municipal, rayon, district) in the RSFSR, UkrSSR, Leningrad, Kiev, and Minsk revealed an inverse relationship between costs and size. For example, the average cost of treatment in a rayon hospital per day is

5 rubles and 22 kopecks compared to 5 rubles and 34 kopecks in uchastok hospitals and a single visit to a physician is cheaper - 88 kopecks vs. 1 ruble and 0.9 kopeck. Salaries and related charges (e.g., social insurance payments) constitute the major items of expense: 49 to 51% in all hospitals and 78 to 81% in outpatient clinics. Food per bed-day constitutes 17% of total expenditures in municipal hospitals and 19.5% in district and rayon hospitals. Drugs cost about 13% in all the hospitals. Salaries, drugs, dressings, equipment, and soft goods are estimated to cost 68 to 71 and 86 to 90% in the hospitals and outpatient clinics, respectively.

USSR UDC 618.2 + 618.3:613.63

THE COURSE OF FIRST PREGNANCY, DELIVERY AND OF THE POST-PARTUM PERIOD IN WOMEN LIVING IN RURAL AREAS

Tashkent MEDITSINSKIY ZHURNAL UZBEKISTANA in Russian No 12, Dec 76 signed to press 9 Oct 75 pp 39-42

KHAMIDOV, M. KH., Chair of Obstetrics and Gynecology, Samarkand Medical Institute

[Abstract] Analysis of clinical observations on 78 pregnant women who were employed as field hands on a cotton farm, justified the following conclusions. The work conditions had no bearing on natural abortions. The frequency of pathologic bleeding during the post-partum period was related to extragenital ailments and complications of pregnancy and delivery. The principal reason for perinatal mortality of infants was pathology of pregnancy and delivery. Prophylactic measures should concentrate on timely discovery of extragenital diseases coupled with wide-ranging sanitation-educational programs among the women cotton workers, and adherence to the regulations limiting the work load for pregnant women. No tables, figures or references.

USSR UDC 61:001.83(47+100)

INTERNATIONAL SCIENTIFIC MEDICAL CONTACTS OF THE USSR

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 5 Apr 76 pp 64-67

POLUNIN, V. S. and ZARAYSKAYA, S. M., All-Union Institute of Medical and Technical Medical Information, Ministry of Health USSR

[Abstract] Soviet medical scientists are now cooperating with their counterparts in more than 70 countries mainly in the fields of environmental protection and toxicology, oncology, epidemiology, and microbiology, viruses and viral

diseases, and cardiovascular diseases. Over 500 research projects were under way at the end of 1975 or more than triple the number 5 years earlier. Scientists from almost 100 leading research organizations and governmental agencies are working in 300 foreign medical centers. About 80% of the projects involve the socialist countries of Eastern Europe. The Soviet Union is actively implementing bilateral agreements with the United States, France, and other capitalist countries. In 1975, about 900 medical specialists were working in 26 developing countries of Africa and Asia as advisers, teachers, and practicing physicians. The mechanism of cooperation with the capitalist countries differs from that with the socialist countries because of the internal structure and economic policies of the various states concerned. The number of Soviet medical scientists traveling abroad to participate in joint projects and attend congresses is increasing every year and more and more foreign specialists come to the Soviet Union (4000 to 5000 a year). References 4 (Russian).

USSR UDC 613.34:628.315

HYGIENIC EFFECTIVENESS OF DECONTAMINATION OF DOMESTIC SEWAGE FOLLOWING MECHANICAL PURIFICATION

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 pp 18-22 signed to press 13 Oct 76

CHERKINSKIY, S. N., professor, KULIKOV, A. V. and YAKOVLEVA, G. P., candidates of medical sciences, First Moscow Medical Institute

[Abstract] Experiments were performed on the chlorination of sewage in order to establish norms for decontamination, using artificially infected sewage following mechanical treatment (screening, sand filtration and vertical settling). The model infectious agent used was the paratyphoid B pathogen, due to its relatively high chlorine resistance. The experiments were performed by establishing the chlorine absorption capacity of each specimen of sewage after preliminary determination of the coli index, infection with a 24 hour culture of S. paratyphi B and treatment with chlorine water until the desired content of residual chlorine was achieved after 30 minutes' contact. After neutralization of the chlorine with a sterile solution of hyposulfite, the coli index of the chlorinated sewage was determined and 7 volumes of 100 cm^3 each were inoculated on a selenite medium of double concentration. After 24 hours' incubation at 37 C, the colonies were transferred to a bismuth-sulfite agar medium and identified according to the usual method. The studies indicate that when, due to epidemic factors, it is necessary to chlorinate domestic sewage water following mechanical purification, the factor indicating sufficient hygienic and antiepidemic effectiveness of the process must be considered a coli index of not over 3000 with a residual chlorine level of at least 4.5 mg/ℓ. Tables 2; References 3 (Russian).

USSR UDC 615.47:628.313

AUTOMATIC SEWAGE SAMPLER

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 4 Mar 76 pp 84-86

RAZUMOVSKIY, E. S., GREBENEVICH, YE. V., KRUGLYAK, A. M. and SOLOV'YEV, V. P., Scientific Research Institute for Communal Water Supply and Water Purification, Academy of Communal Management imeni K. D. Pamfilov, Moscow

[Abstract] In 1975, the Scientific Research Institute for Communal Water Supply and Purification and the Academy of Communal Management imeni K. D. Pamfilov developed an automatic sampling machine known as the PASV. It is designed for taking of hourly and mean daily samples of sewage. A photograph is presented. A submersible magnetic pump feeds water samples through plastic hoses to the 24 collecting bottles in the sampling machine, maintaining water flow velocity high enough to prevent precipitation of solids. The sampling quantities and intervals are controlled by the operating program of the machine.

USSR UDC 628.14/.15+628.2]:061.3"1976"

CONFERENCE ON "MEANS FOR INCREASING THE RELIABILITY OF OPERATION AND IMPROVING THE SANITARY CONDITION OF WATER SUPPLY AND SEWERAGE SYSTEMS"

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 p 112

KOLESOV, A. M., Moscow

[Abstract] The conference mentioned in the title was organized by the Ministry of Residential and Communal Management RSFSR, and held at Rostov-on-Don 22-24 June 1976. Representatives of the Council of Ministers RSFSR, USSR State Supply Committee, RSFSR State Construction Committee, Academy of Communal Management imeni K. D. Pamfilov, leaders of planning and technological institutes of the Ministry of Residential and Communal Management RSFSR, chiefs of republic, kray, oblast and city water and sewerage systems and specialists of the republic sanitary-epidemiological station of the Ministry of Health, RSFSR, and of elements of the Sanitary-Epidemiological Service of Rostov oblast took part, hearing 12 primary reports. The most interesting reports were on the sanitary status of water supply and sewerage in cities of the RSFSR; means for improving the barrier role of drinking water purification plants; expansion of the scale of decontamination of water by the use of electrolytic sodium hypochlorite and direct electrolysis; improvement of the quality of water in Siberian water supply systems; and means for sanitary protection of sources of water supply of cities in the RSFSR.

USSR UDC 612.112.94.014.482:612.6

CYTOCHEMICAL AND CYTOGENIC CHANGES IN BLOOD LYMPHOCYTES UNDER THE INFLUENCE OF LARGE DOSES OF IONIZING RADIATION ON THE BODY

Moscow MEDITSINSKAYA RADIOLOGIYA in Russian Vol 22, No 1, Jan 77 signed to press 27 Feb 76 pp 63-67

SOKOLOV, V. V., IVANOVA, L. A. and GORIZONTOVA, M. N., Scientific Research Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

[Abstract] Parallel cytochemical and cytogenetic studies of lymphocytes were conducted on 40 men who had worked from four to eight years in a proton accelerator with yearly exposures of 0.5-2.8 rem and total exposure of 3.8-19.6 rem. The control group was 30 people with no contact with radiation except usual diagnostic X-rays. No differences in occurrence of chromosomal and non-chromosomal aberrations during metaphase was found. However the experimental group has more aneuploid and polyploid cells with an increased level of mitotic activity. SDH and LDH activities were markedly elevated, with their ratio unchanged. Mitochondrial and cytoplasmic alpha-glycerophosphatase were unaffected, while acid phosphatase level was elevated. The results indicate accelerated energetic and catabolic processes or the influence of lysosomal enzymes on cell permeability and decreased resistance of the cytoplasmic membrane. Proliferative activity is also increased. These changes are the first stages of the reaction to the radiation load and can be viewed as a nonspecific adaptative reaction. Tables 1; References 15: 13 Russian, 2 Western.

USSR UDC 615.849.1:658.386.3

PRESSING PROBLEMS IN THE ADVANCED TRAINING OF RADIOLOGIST-THERAPISTS

Moscow MEDITSINSKAYA RADIOLOGIYA in Russian Vol 22, No 1, Jan 77 signed to press 28 Nov 75 pp 74-79

KHOLIN, V. V., Leningrad Institute of Advanced Medical Training imeni S. M. Kirov

[Abstract] Scientific research institutes can be successfully used as a base for postgraduate medical education, particularly for radiologist-therapists, for whom investigation and clinical practice must be closely connected. Resources in radiologic equipment, various radiation sources, methods of preparing and treating patients, questions of dosimetry, biometry, beam control and the use of computers are available. Planning individualized therapy can be based on the results of the research of radiological and oncological institutes. Students can participate in scientific conferences

and observe teachers engaged in actual practice and research, which can give them a wider ranging training than that in hospitals and dispensaries. Research, teaching and practice must be equally emphasized. Serious deficiencies in the preparation of doctors have been observed from 1964 to 1974, particularly for post-graduate courses. However the situation is improving. Continuing education of practicing radiologists is also being emphasized. In both these areas use of scientific research institutes as a base for postgraduate medical education is indicated. References 5 (Russian).

USSR

UDC 616-006.04-085.849-059:615.832.9]-092.9-07:616-006-008.922.1-074

THE BLOOD SUPPLY AND RESPIRATION OF TUMOROUS AND NORMAL TISSUES IN IRRADIATION UNDER CONDITIONS OF GENERAL HYPOTHERMIA AND LOCAL HYPOXIA

Moscow MEDITSINSKAYA RADIOLOGIYA in Russian Vol 22, No 1, Jan 77 signed to press 29 Jan 76 pp 24-28

KAUASHEV, S. K., Kazakh Institute of Oncology and Radiology, Alma-Ata

[Abstract] Dynamic shifts in blood fill and respiration resulting from irradiation under normal conditions, and under general hypothermia and local hypoxia, were studied in 300 male white mongrel rats with transplanted RS-1 tumors. Irradiation dose was 2000 R; cooling to 28-30° was accomplished with a water-ice bath. Local hypoxia was induced with bands. Irradiation with hypothermia caused an immediate decrease in blood fill in muscle but no change in the tumor. The blood fill of muscle was increased after one day while that of the tumor showed an increase from the third day, reaching a maximum on the fifth day. Respiration in both tissues decreased from the third day, reaching a minimum on the fifth day. Irradiation under hypoxia caused an increase in blood fill and respiration, contrary to the effect of hypoxia alone. The data indicate that tumors may be more vulnerable to radiation therapy three to five days after joint irradiation-hypothermia-hypoxia, while normal tissue would be increasingly protected. References 12: 11 Russian, 1 Western.

USSR UDC 616.24-002.2+616.24.006]-073.916

COMPLEX AEROSOL-PERFUSION SCANNING IN CHRONIC INFLAMMATORY AND TUMOROUS DISEASES OF THE LUNGS

Moscow MEDITSINSKAYA RADIOLOGIYA in Russian Vol 22, No 1, Jan 77 signed to press 29 Jun 75 pp 15-20

BUYUKLYAN, A. N., GABUNIYA, R. I. and ROMAGIN, V. K., Scientific Research Institute of Medical Radiology Academy of Medical Sciences USSR Obninsk

[Abstract] Pulmonary ventilation and blood circulation were studied using aerosol-perfusion in 92 patients, of whom 58 were diagnosed as chronic pneumonia, 34 as lung cancer and 12 showed no pathological changes. MAA albumin (macro-agregates of albumin) labeled with 99M Tc aerosol was used as the inhalant. After inhalation scanning MAA-^{131}I was injected intravenously and perfusion scanning was conducted on the patient in the same position. Diseased lungs appear more symmetrical than normal, with an area lacking radioactive preparation corresponding to the spine. Increased deposition of the aerosol in the large bronchae and decreased in the periphery due to partial obstruction were found in the early stages of chronic diffuse pneumonia. Blood circulation was not disturbed. In the later stages, extremely non-uniform distribution of the aerosol accompanied by disturbed circulation was characteristic. Ventilation and circulation disturbances were also correlated in lung cancer. The data indicate that the joint use of perfusion and inhalation makes it possible to determine localization and extent of ventilation and circulation disturbances. Figures 5; References 10: 4 Russian, 6 Western.

USSR UDC 613.648+614.876

BASIC GOALS AND TASKS IN THE ORGANIZATION OF MEDICAL SUPERVISION OF THOSE WHO WORK WITH SOURCES OF RADIATION

Moscow MEDITSINSKAYA RADIOLOGIYA in Russian Vol 22, No 1, Jan 77 signed to press 19 Aug 76 pp 5-15

GUS'KOVA, A. K., DENISOVA, YE. A., CHERNEGA, G. V., SOLDATOVA, V. A., GORBARENKO, N. I., KIRSANOVA, G. I., GRIBOVA, I. A., VYALOVA, N. A. and BARABANOVA, A. V.

[Abstract] Literature reports on improvement of safety measures for those who work with ionizing radiation, future trends, similar dosage levels in different countries, experimental results and long-term observation of workers in affected industries, are analyzed. It has been found that in the last 10-15 years the radiation exposure level has decreased and that a total dose of 25-50 rem correlates with increased lability of the regulatory system as an adaptive reaction, while doses on the order of 100 rem correlated

with a doubling in the frequency of vegeto-vascular dysfunction. Total lifetime doses from 70 to 400 rads correlate with a tendency to unstable moderate leukopenia and reticulocytosis. Follow-up of patients who have suffered chronic radiation disease showed 40% of them with leukopenia, with hypoplasia of the hemopoietic bone marrow. Increased incidence of lung cancer and fibrosis in uranium miners and of neurocirculatory dystonia syndrome of the hypotonic type in workers in accelerators, reactors, etc. exposed to uniform irradiation are seen, as are shifts in neuroreceptory function of circulation in the wrist and fingers of X-ray technicians and radiologists. The authors of this article observed four cases of skin cancer of the fingers and eyelids in X-ray technicians. Several cases of leukemia, characterized by a preceding period of marked blood circulation decrease, were found in workers with a total dose over 400 rad. Increased risk of involution processes in the cardiovascular system for those regularly exposed to radiation have been reported in the literature. Improved methods of dosimetry, establishment of differential thresholds and careful medical monitoring of persons receiving doses near the limit for signs of cancer of cardio-vascular disease, with particular attention to those types of conditions probable for the conditions of exposure, are recommended. Figures 4; Table 1; References 102: 71 Russian, 31 Western.

USSR UDC 612.82:539.104:599.87

EFFECT OF STRESS ON SELF-STIMULATION IN IRRADIATED RATS

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 11, 1976 signed to press 6 Jul 76 pp 104-106

ARUTYUNYAN, R. K. and GASPARYAN, N. A., Radiobiology Sector, Ministry of Health Armenian SSR

[Abstract] Rats were stressed by forcibly preventing them for 2 or 3 minutes from approaching the lever they were accustomed to press in order to start electrical stimulation of the hypothalamus. Ionizing radiation at 150 r slowed the rate of self-stimulation by the experimental animals 10 to 20% and the normal rate was not restored for 6 or 7 days. Restoration was slow and incomplete after 300 r and the rate of self-stimulation remained low until the animals died between days 20 and 25 after irradiation. In the controls (nonirradiated rats), however, stress accelerated the rate of self-stimulation 15 to 20%. Thus, while stress is stimulatory in intact animals, it further weakens nerve structures in animals inhibited and exhausted by irradiation. Figure 1; References 10: 7 Russian, 3 Western.

USSR UDC 633.11(479.25)

ACCUMULATION OF RADIOSTRONTIUM, CALCIUM, AND POTASSIUM BY SOME GRASS SPECIES AND GROUPS IN ARMENIA

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 11, 1976 signed to press 30 Jun 76 pp 77-82

ANANYAN, V. L. and SARKISYAN, G. A., Institute of Agrochemical Problems and Hydroponics, Academy of Sciences Armenian SSR

[Abstract] Analysis of plant specimens from the subalpine (Kuchak, Elidzha) and forest (Dilizhan) zones of Armenia showed the highest concentration of ^{90}Sr in Chamaemelum sp. and Achilea millefolium (Kuchak) and Galium verum (Elidzha). The plants formed the following series with respect to radiostrontium concentration: weedy grasses > legumes > herbaceous plants--and in terms of strontium units herbaceous plants > weedy grasses > legumes because of the higher calcium content of the legumes. There were marked differences in the coefficients of accumulation of ^{90}Sr and Ca in the three places. In Kuchak and Dilizhan, the observed ratio was > 1, i.e., there was a preferential uptake of radiostrontium by the plants, but in Elidzha the ratio was < 1, i.e., more calcium was taken up than radiostrontium. Figure 1; Tables 4; References 5: 4 Russian, 1 Western.

USSR UDC 577.3

EFFECT OF HIGH-ENERGY GAMMA-RAY PHOTONS ON THE FUNGUS ENDOMYCES VERNALIS

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian No 11, 1976 signed to press 16 Jun 76 pp 52-56

SIMONYAN, N. V., AVAKYAN, TS. M., DZHANPOLADYAN, N. L., and ADZHIAN, N. S., Yerevan Institute of Physics

[Abstract] The ascomycetous fungus Endomyces vernalis was subjected to gamma-ray photons with an energy of 4.5 Gev. The RBE of the gamma quanta was > 1 and thus more destructive than X-rays at 248 Kev. The survival rate of the cells irradiated with the gamma photons in an oxygen atmosphere was much lower than when they were irradiated in the air. Preliminary treatment of the fungal cells with cysteine or cysteamine substantially increased the survival rate, apparently because it increased the number of SH groups in the cells and, consequently, the number of cells with higher radioresistance. Figures 3; Table 1; No references.

USSR UDC 546.42 546.41 551.521.6 577.472(28)

DIFFERENCES IN ^{90}Sr and STABLE Sr ACCUMULATION IN FRESHWATER LIVING AND OTHER COMPONENTS

Riga IZVESTIYA AKADEMII NAUK LATVIYSKOY SSR in Russian No 1, 1977 signed to press 25 May 76 pp 29-38

LEYNERTE, M. P., VADZIS, D. R., SEYSUMA, Z. K., SLOKA, YA. YA., and KULIKOVA, I. R., Institute of Biology, Academy of Sciences Latvian SSR

[Text] [Russian abstract provided by the source] The comparative accumulation of ^{90}Sr (from atmospheric precipitations), stable Sr and Ca, by water organisms and soils, was studied in four different bodies of fresh water at the end of the vegetative season. The calculated discrimination coefficients [(pCi^{90}Sr/rCa in the object)/(PCi^{90}Sr/rCa in the water)] and [(mg Sr/rCa in the object)/(mg Sr/rCa in the water)] are different for ^{90}Sr and stable Sr. Consequently, depending on the water body and species of water organism, either the ^{90}Sr or the stable Sr accumulation coefficients are higher. The concentration of stable Sr in the organisms depends on the Sr and Ca concentrations and their interrelation in the water. In a water body, where the stable Sr concentration in the hydrobionts is low, the ^{90}Sr content in them is high and, on the contrary, in a water body, where the ^{90}Sr content in the hydrobionts is low, the Sr concentration is high. Depending on the water body (that is, on the concentrations of ^{90}Sr, Sr and Ca in the water) the calculated specific activity of ^{90}Sr (pCi^{90}Sr/mg Sr) in the water is higher or lower than the specific activity in the water organisms and soils. Figures 3; Tables 5; References 24: 11 Russian, 13 Western.

USSR UDC 613.5:691:546.296

THE RADON LIBERATION OF BUILDING WALLS

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 9 Jun 76 p 111

KRISYUK, E. M., candidate of physical-mathematical sciences, and SHALAK, N. I., candidate of technical sciences, Scientific Research Institute for Radiation Hygiene, Leningrad

[Abstract] The ionizing radiation of construction materials is one of the leading factors in the irradiation of the population. The presence of natural radionuclei in construction materials can cause both external irradiation of the population and an increase in the concentration of radon and its decay products in the air of homes in comparison to the concentration in outside air. The effective concentration of radium varies both with its rate of liberation by the structural materials of which buildings are made, and with the air exchange rate in the building. The effective radium concentration can be used as a standard characterizing the radioactivity of air in buildings. Reference 1 (Russian).

USSR UDC 616.322-002.2-085

TREATMENT OF CHRONIC TONSILLITIS WITH INTERFERON

Moscow VESTNIK OTORINOLARINGOLOGII in Russian No 2, Mar/Apr 77 signed to press 19 Jul 76 pp 59-61

DAYNYAK, L. B., professor, MINCHIN, R. A., candidate of medical sciences, and KUZNETSOV, V. P., candidate of biological sciences, Clinical Department of the Moscow Scientific Research Ear-Nose-Throat Institute; Interferon Laboratory of the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR

[Abstract] The authors have investigated the potential for use of human leukocyte interferon in treatment of chronic tonsillitis. They note that it is quite likely that the role of interferon is to increase the level of bodily immunobiological processes; in ointment form it has been successfully used to treat burns, trophic ulcers, infected wounds, and otitis, i.e., diseases in which viral action does not play an important part. They treated 203 children, aged 7 to 17, with a simple form of chronic tonsillitis, with interferon ointment, which was applied to the tonsillar lacunae 6 days in succession, in two courses, at an interval of 12 months. The treatment was successful in 148 patients; there were no relapses, no pathological content in the lacunae, and frequency of inflammations of the upper respiratory tract decreased. A clear increase in phagocytic activity of the leukocytes occurred (in 51 of 68 patients the number of phagocytic cells increased to 15-36%). A tendency to normalization of the lysozyme level and of beta-lysins was seen. The data support the suggestion of T. V. Golosova (1974) that the therapeutic effect of interferon ointment is related to stimulation of local immunity and, primarily, to increased phagocytic activity of the leukocytes. (The children were in boarding schools Nos 32 and 42, and in a special boarding school of Frunze Rayon of Moscow). References 11: 10 Russian, 1 Western.

USSR UDC 616.1+616.831-005]-026.11-083.98

ORGANIZATION OF EMERGENCY CARE FOR PATIENTS WITH ACUTE CARDIOVASCULAR DISEASES OR DISTURBANCES OF THE CEREBRAL CIRCULATION

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 13 Jul 76 pp 38-41

YARYGINA, V. A., VVEDENSKAYA, I. I., and TAMARIN, YU. A., candidates of medical sciences, Department of Social Hygiene and Organization of Health Care, Gor'kiy Medical Institute imeni S. M. Kirov, and KOMISSAROVA, A. P., Chief Physician of the Gor'kiy Municipal First Aid Station

[Abstract] In recent years, the Gor'kiy Municipal First Aid Station and its branches have responded to an average of 300,000 calls a year or 208.1

per 1000 population. The number is steadily increasing and in 1973, for example, emergency calls increased substantially over the previous year: for acute disturbances of the cerebral circulation by 17.6%, acute coronary insufficiency by 17%, and myocardial infarction by 20.5%. Whereas the main efforts were previously directly toward bringing patients to specialized hospitals as soon as possible, the current emphasis is on widening the scope of diagnosis and therapy at home. Sixteen specialized first aid teams (cardiac, thromboembolism, neurologic) consisting of several physicians, and paramedics treat cardiac arrhythmias, shock, collapse, etc. on the spot, return several times a day until compensation sets in, and, if deemed necessary, bring the patients to a hospital. As a result of the work of these rescue squads, only 4.2% of patients 60 years and older (more than half could not be moved) died and the number of bed-days of those who were hospitalized decreased considerably. Tables 2; References 4 (Western).

USSR UDC 658.382.2.07:681.3

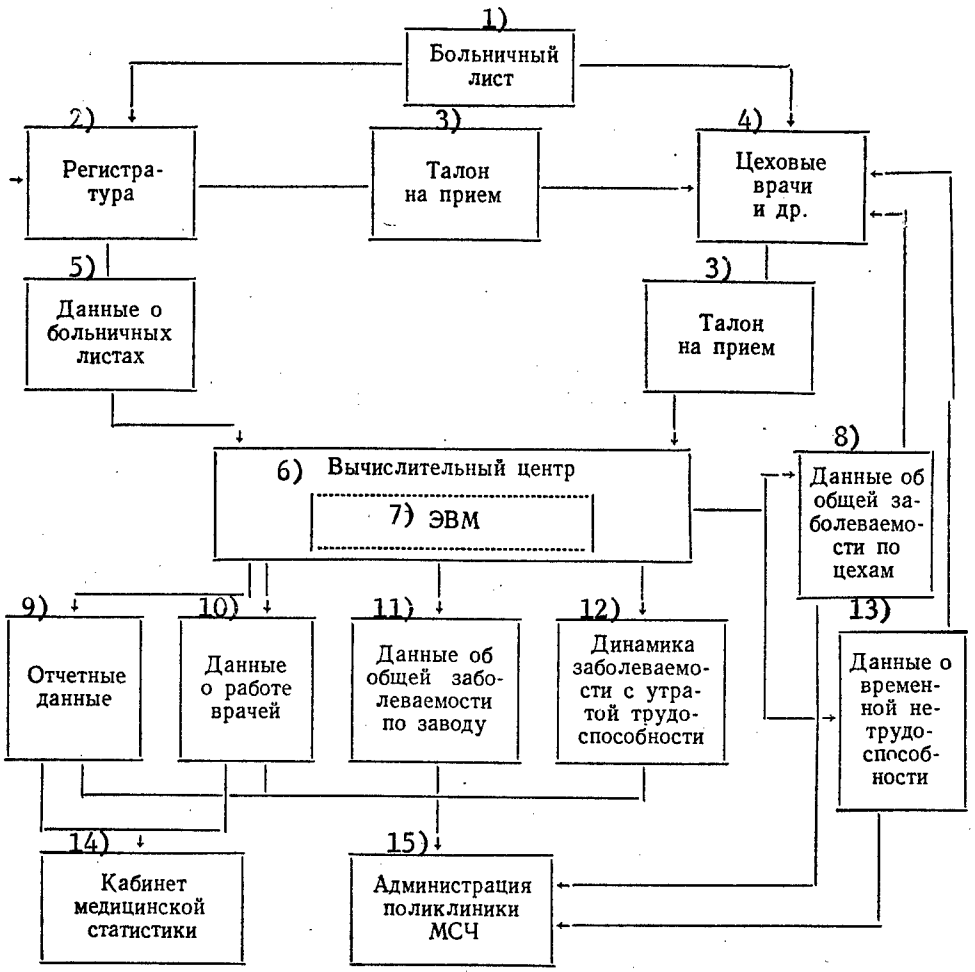
A COMPUTERIZED INFORMATION SYSTEM FOR AN INDUSTRIAL HEALTH UNIT

Moscow SOVETSKOYE ZDRAVOOKHRANENIYE in Russian No 2, 1977 signed to press 9 Sep 76 pp 27-30

MUROV, M. A., KRUPINA, T. V., and PETLENKO, V. B., All-Union Institute of Social Hygiene and Organization of Health Care imeni N. A. Semashko, and Health Unit of the Izhmash Combine

[Abstract] An automatic computer-assisted control system was introduced several years ago in the Izhmash Combine to record, store, and process information on the main operations of the health unit, including the clinical and hospital activities, and on the sick and disability rates. The system consists of two subsystems, one for current recording and analysis of the outpatient services (since 1973) and the other for recording and analysis of the work of the hospital facility (since 1975). After the data are processed, the administrators, physicians, and statisticians regularly receive 14 different kinds of output data; summary of the sick rates by diagnoses, number of physician visits per disease, incidence of diseases by the different shops, etc. Analysis of the results to date reveal a marked increase in the reliability of information available for decision making, greater speed in obtaining data on general sick and disability rates, more efficient utilization of personnel, and greater opportunities for preventive care.

The flow pattern is as follows:



1 - Medical certificate
2 - Registration office
3 - Admission slip
4 - Shop physicians and others
5 - Medical certificate data
6 - Computer
7 - Computer
8 - General morbidity data by shops
9 - Current data
10 - Data on physicians' work
11 - Data on general morbidity by plant
12 - Dynamics of morbidity with disability
13 - Data on temporary disability
14 - Medical statistics office
15 - Administration of health unit polyclinic

USSR UDC 617.57/.58-031 611.13/.16]-08 612.014.426

MAGNETIC DECOMPRESSION CHAMBER FOR TREATMENT OF VASCULAR DISORDERS OF THE EXTREMITIES

Minsk ZDRAVOOKHRANENIYE BELORUSII in Russian No 2, Feb 77 signed to press 23 Aug 76 pp 45-46

DEMETSKIY, A. M., professor, LOLLINI, V. A., and KARTASHOV, N. G., Vitebsk Medical Institute

[Abstract] Use of a barochamber is contraindicated in the presence of a well-expressed pain syndrome, trophic disorders or spasm of arterial vessels. Artificial electromagnetic fields have been reported to have a favorable effect on regional blood circulation through the elimination of painful disorders and the spasm of vessels and intensification of metabolism in tissues, but to obtain a stable effect the electromagnetic dose must be increased and the treatment lengthened, with resulting unfavorable reactions. In the institute a magnetic barochamber has been created (dimensions 80x35x40 cm, solenoid length 50 cm, and diameter 25 cm) which makes it possible to create within it a mobile, variable-in-direction, permanent, variable or pulsed magnetic field with an intensity of 0 to 500 oersteds. It has been tested in the clinic and makes it possible to carry out low-pressure and magnetic therapy simultaneously, reducing the intensity of the magnetic field and the amount of variation of atmospheric pressure. Figures 2; No references.

USSR UDC 616.71-001.5-085.835.3-036.864

HEALING OF CLOSED FRACTURE WITH USE OF HYPERBARIC OXYGENATION

Moscow ORTOPEDIYA TRAVMATOLOGIYA I PROTEZIROVANIYE in Russian No 2, Feb 77 signed to press 8 Apr 76 pp 7-9

DAVYDKIN, N. F., Faculty Surgical Clinic of the Kuybyshev Medical Institute imeni D. I. Ul'yanov

[Abstract] The author's viewpoint in initiating this study was that the tissues in the area of a fracture are under unfavorable metabolic conditions, involving hypoxia, which is, in various forms, successfully treated by hyperbaric oxygenation (HO). 120 white rats were subjected to closed fractures of the tubular bones; 60 animals were provided with HO from the first day, the remainder served as controls. The oxygen was administered daily for 10 days, 1 hr per day, at a pressure of 2 kg/cm^2, in an adequately ventilated barochamber. The closed fracture is accompanied by development of anemia which reaches a maximum value 3 days after the trauma; recovery is accelerated in the oxygenated animals. HO was found to decrease post-trauma necrosis of the fragmented bone and surrounding tissues and promoted normalization of the various phases of the

bone formation process. Peripheral blood values indicated that the HO-treated animals showed a less pronounced reaction to the trauma. Figure 1; No references.

USSR UDC 616.211+616.321)-002.2-085.832.96:546.17

USE OF THE KOA-01 CRYOAPPLICATOR WITH PARAFLUID NITROGEN CIRCULATION FOR TREATMENT OF PATIENTS WITH PATHOLOGIES OF THE NASAL CAVITY AND PHARYNX

Moscow VESTNIK OTORINOLARINGOLOGII in Russian No 2, Mar/Apr 77 signed to press 14 Jul 76 pp 55-59

PREOBRAZHENSKIY, N. A., professor, academician Academy of Medical Sciences USSR, GRIG, M. G., candidate of medical sciences, BEZCHINSKAYA, M. YA., cand. med. sci., and KOMAROV, B. A.

[Abstract] The cryooperation is one of the methods employed in medicine in the last 10 years to treat pathological changes in tissues. The coolant, liquid nitrogen, which reaches a temperature of -195°C has been used in otorhinolaryngology; the technique has the advantage of being bloodless, causing minimal reactive changes in the surrounding tissues. The authors have tested an improved cryoapplicator which is described as simple in operation, inexpensive, and reliable in use (author's license No 364317, with priority from 9 July 1970). Its advantages include a small-size value, and an additional thermoinsulating tube made of stainless steel; these changes have made it possible to prolong work up to 7-10 min, and avoid freezing neighboring tissues. A drawing of the apparatus, with an accompanying description in the text, is provided. The device is portable and convenient in manipulation of ENT organs; replaceable parts permit use of it in other specialties. Technological parameters of the cryoapplicator are given: i) cold source, liquid nitrogen; ii) volume of charge in cm^3, 100; iii) temperature of cooling of cryonozzle in air, degrees C, -195; iv) temperature of cooling of cryonozzle in contact with tissue, no higher than -190; v) time of maintenance of -195 temperature for various nozzles, minutes, from 7 to 10; vi) time of maintenance of -190 temperature in contact with tissue for various nozzles, minutes, from 5 to 7. Figures 2; References 2 (Russian).

USSR UDC 617.7-007.681-085:617.721-085.849.19

THERAPEUTIC AND PROPHYLACTIC IMPORTANCE OF LASER IRIDECTOMY IN THE CLINICAL TREATMENT OF THE PRIMARY ANGULAR GLAUCOMA

Moscow VESTNIK OFTALMOLOGII in Russian No 1, 1977 signed to press 27 Jul 76 pp 10-14

AKOPYAN, V. S., candidate of medical sciences, and DROZDOVA, N. M., All-Union Scientific Research Institute of Eye Diseases (Director, Academician of the Academy of Medical Sciences USSR, M. N. Krasnov)

[Abstract] Therapeutic laser iridectomy in primary closed angle glaucoma (80 eyes) and prophylactic iridectomy on the second healthy eye (14 eyes) were performed. An argon laser and a Q-switched ruby laser were employed for the purpose. Laser iridectomy is effective in cases of functional block of the anterior chamber angle, of functional block combined with individual synechiae, or with initial dystrophic changes in the drainage zone. In chronic closed angle glaucoma with disseminated goniosynechiae, and in pupillary block combined with marked dystrophic alterations in the drainage zone, laser iridectomy does not suffice to compensate the process. Lasers used were Model-800 of the Coherent Radiation Company and the Soviet ruby laser (M. N. Krasnov, 1972) with quality modulation. Table 1; References 13: 6 Russian, 7 Western.

USSR UDC 616.379-008.64-085.252.349-07:[616.16-008.1+616.151.5]-07

THE STATUS OF MICROCIRCULATION AND HEMOCOAGULATION IN DIABETES PATIENTS RECEIVING VARIOUS TYPES OF ANTIDIABETIC THERAPY

Moscow PROBLEMY ENDOKRINOLOGII in Russian Vol 23, No 1, Jan/Feb 77 signed to press 16 Mar 76 pp 3-7

TIKHONOVA, YE. P., GRINCHENKO, T. S., ZHUROVA, M. V., KORZH-KOZITSKAYA, N. P., POZUSHCHAN, I. I. and ROM-BUGOSLABSKAYA, YE. S., Khar'kov Scientific Research Institute for Endocrinology and Hormone Chemistry

[Abstract] A study is made of the influence of various types of long-term antidiabetic therapy on the development of vascular complications, microcirculation and coagulation processes. Significant differences are found in the frequency of development of diabetic micro- and macroangiopathy in persons with insulin-dependent and insulin-independent forms of diabetes. The method of treatment (insulin, sugar-reducing sulphanylamides) has no direct influence on the frequency of development of vascular complications of diabetes. Diabetes results in significant disorders in the microcirculatory system, involving both the condition of the vascular walls and the rheological properties of the blood, which should be considered in selecting therapeutic tactics. Table 1; References 20.

EAST GERMANY

RADIATION EXPOSURE OF HOLDING PERSONNEL INVOLVED IN VETERINARY X-RAY DIAGNOSIS

Jena MONATSHEFTE FUER VETERINAERMEDIZIN in German Vol 32, No 3, 1 Feb 77
signed to press 16 Mar 76 pp 107-109

ROTHE, W., graduate physicist, State Bureau of Nuclear Safety and Radiation Protection in the German Democratic Republic (president: SITZLACK, G., professor, Dr, qualified lecturer

[Text] An account is given of radiation protection in the context of X-ray examination of small and big animals on the premises of seven reviewed veterinary centers. Also reported are the dosimetric results obtained from the holding personnel involved in X-ray diagnosis of 319 big and 4,047 small animals. Infringement of valid regulations was quite often observed in that animals were held in position in any inadequate way and by unauthorized persons. The measured results, however, have shown that the radiation exposure of vocationally-exposed persons can be kept far below the maximum permissible equivalent doses, provided that all applicable rules of radiation protection are observed by those on duty. Table 1; References 19: 10 German and 9 Western.

EAST GERMANY

ELIMINATION OF BACTERIAL ENDOTOXINS FROM THE CIRCULATORY SYSTEM OF THE PIG UNDER THE INFLUENCE OF VARIOUS AMBIENT TEMPERATURES

Jena MONATEHSFTE FUER VETERINAERMEDIZIN in German Vol 32, No 3, 1 Feb 77
signed to press 18 Mar 76 pp 89-90

WACHTEL, W., Dr of veterinary medicine, Animal Production and Veterinary Medicine Section, Area: Physiology (head: LYHS, L., professor, Dr of sciences), Humboldt University, East Berlin

[Text] The action of bacterial endotoxins on the body is likely to be magnified by parallel action of extreme ambient temperatures. The body will be rendered more sensitive to extreme ambient temperatures by the vasodilatory effect of endotoxins which will act primarily on the peripheral part of the circulation. Endotoxins affect the metabolism of energy substrates by causing diffusion disorder and by their direct action upon certain enzyme systems. Elimination of bacterial endotoxins from the blood will be markedly delayed, in addition to the above effects, if the given ambient temperature deviates strongly from the biologically-optimum temperature. Table 1; no references.

USSR

UDC 636.22/.28.082.34 636.084.52

INFLUENCE OF IMPLANTATION OF AMINO ACIDS AND ESTROGENS ON THE GROWTH AND MEAT PRODUCTIVITY OF CASTRATES

Moscow IZVESTIYA TIMIRYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 1, 1977 signed to press 2 Jun 76 pp 158-165

SHAMBEREV, YU. N., and GAVRISHCHUK, V. I., Hormonal Preparations Laboratory

[Text] [English abstract provided by the source] Implantation of 500 mg of arginine or lysine into castrates increased their average daily weight gain by 15-19%. The effect of lysine was more significant and stable. The stimulating effect of amino acids increased when they were introduced together with estrogens. The effectiveness of the preparations varied with the volume and nature of feeding. Best results were obtained when feeding was moderate. Amino acids did not change the meat quality to any considerable extent, especially when used with estrogen. Tables 6; References 13: 4 Russian, 9 Western.

USSR

UDC 628.312.3:637.331

DECREASE IN POLLUTION OF PRODUCTION EFFLUENT FROM CHEESE PLANTS BY TECHNOLOGICAL UTILIZATION

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 23 Jun 76 pp 101-102

KHRAMTSOV, A. G., doctor of technical sciences, VASILISIN, S. V., candidate of technical sciences, and NESTERENKO, P. G., Northern Caucasus Affiliate, All-Union Scientific Research Institute for the Butter and Cheese Industry, Stavropol'

[Abstract] The effluent of plants producing cheese represents a considerable danger of pollution of natural bodies of water with lactic acid, serum proteins and milk sugar (lactose). The best solution to the problem is total utilization of the wastes of cheese production, for example, as animal feed. The northern Caucasus affiliate of the All-Union Scientific Research Institute for the Butter and Cheese Industry has developed a technology for production of dry serum concentrate which can be stored for long periods of time capable of completely closing the cycle of production of lactose with full industrial processing of wastes into feed concentrate, greatly reducing the level of pollution of plant effluent. Reference 1 (Russian).

USSR UDC 628.337:636

ELECTROHYDRAULIC DECONTAMINATION OF BIOLOGICALLY PURIFIED ANIMAL HUSBANDRY EFFLUENT

Moscow GIGIYENA I SANITARIYA in Russian No 3, Mar 77 signed to press 17 Nov 75 pp 88-89

DOL'NIKOV, A. E. and MEL'NIKOVA, K. V., Belgorod Division, All-Union Institute of Experimental Veterinary Science

[Abstract] A study was made of the effectiveness of the use of the electrohydraulic method of treatment for decontamination of animal husbandry effluent from a swine farm after biological purification of aeration tanks. It was found that gram-negative microflora were more sensitive to the treatment than gram-positive. The electrohydraulic effect can be used to decontaminate biologically purified animal husbandry effluent. The degree of purification depends on the predominant form of microorganism. The editor notes that the bactericidal action of the electrohydraulic effect has been proven repeatedly, but the question of its practical realization remains quite problematical. Tables 2.

CSO: 1840 - END -