

USSR

UDC 614.777:614.415(575.1)

ZAKHIDOV, A. Z., Professor and IL'INSKIY, I. I., Candidate of Medical Sciences

"Real Problems in the Purity of Water for Water Supplies and the Sanitary Preservation of Reservoirs in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 10-16

Abstract: With the rapid growth rate of cities in the Soviet Union and in other countries, there are increasing problems of providing a safe water supply. In Uzbekistan, efforts to solve such problems can be divided into three periods: 1924-1934 during which the work was mostly organizational; 1935-1949, mainly laboratory studies of chemical constituents of both natural waters and polluted waste waters; and 1950-1959, a time of rapid increase in sanitation facilities and the effects of polluted water on the self purification processes of natural reservoirs. The chemical and metal industries contribute the greatest amount of pollutants, predominately fluorine, the metals such as tin, zinc, copper, iron, tungsten and others, and organic such as furfunol, acetone, phenols, benzene and petroleum derivatives. The various methods of purification and the relative efficiencies are considered. Prospects of the water supplies to the year 2000 are discussed.

1/1

USSR

UDC 613.65-053.7

ILINSKIY, K. V., Novosibirsk Institute of Health

"Substantiation of the Work Routine of Young Workers Under Conditions of Limited Motor Activity"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 45-48

Abstract: The purpose of the study was to compare the physiological reactions of 18- and 19-year-old female assemblers engaged in precision instrument making with adults doing the same kind of work and to devise ways of compensating for the effects of hypodynamia. Endurance, color sensitivity, and several cardiovascular functions were investigated. The young workers proved to be more sluggish and weaker in their physiological reactions than the adults, with the decline in performance being especially pronounced at the end of a shift. The limited motor activity reduced the cardiac output and increased peripheral vascular resistance. The introduction of several 10-minute "exercise breaks" in the regular work routine had a beneficial effect on all the parameters studied.

1/1

USSR

UDC 519.1

IL'INSKIY, N. F. and TSATSENKIN, V. K.

"Mathematical Description of Electromechanical Systems Based on the Theory of Graphs"

Moscow, Avtomatizir. elektroprivod v nar. kh-ve--Sbornik (Automated Electrical Circuits in the National Economy -- Collection of Works), Vol 1, "Energiya", 1971, pp 30-33 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V395)

Translation: The theory of graphs provides a conceptual mathematical framework for obtaining equations describing complex electromechanical systems constructed of physically variegated elements. Known methods of obtaining a mathematical description using graphs were developed for linear systems. The report shows that the theory of linear graphs permits systematization also of the processes of deriving equations for nonlinear electromechanical systems. Underlying the method is the representation of system components as n-pole diagrams with concentrated parameters. The mathematical description of components is represented by polar equations relating

1/2

USSR

IL'INSKIY, N. F. and TSATSENKIN, V. K., Avtomatizir. elektroprivod v nar.
kh-ve--Sbornik, Vol 1, 1971, pp 30-33

variables at poles with component parameters. The mathematical expression of structural connections in a system is based on generalized Kirchhoff laws written for a linear graph and for an isomorphic system. With the example of a system of automated electrical circuitry, the paper shows that, based on the postulates and theorems of the theory of graphs, the processes of deriving equations of a system independently of its complexity can be profitably systematized and formalized.

Authors' Abstract

2/2

- 39 -

AA0046286

ILINSKIY N.S.

2

Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482

1/70

241737 MECHANISM OF LEVEL GAUGE INDICATOR where the parameter to be measured is the loss of weight of the plunger (1) immersed in liquid, proportional to the depth of liquid. Increase of the force which ejects the cylinder causes a reduction of the angle of the torsion tube (2) which with rod (3) is balancing the weight of the plunger. Shaft (4) passing the seal (5) terminates with screw (6) with sliding nut (7) and ring (8). Arms (9) and (10) magnify the movement finally transferred by geared sector mechanism (11-16-17) to dial indicator (18-19-20), which is graduated in % of the level. Arm (9) is pressed by spring (12) to the projection on shaft (4) and by spring (14) to arm (10) touched by slider (15). End of shaft (4) is pressing on suitably machined axis (21) of the plunger.

Yad

21

19781436

AA0046286

The instrument is adjusted with no liquid in the tank. The slider (15), the insert (13) which controls the level of projection on the shaft (4), and link (16) are set in such a position that the indicator shows zero while the torsion tube of the plunger is not stressed.

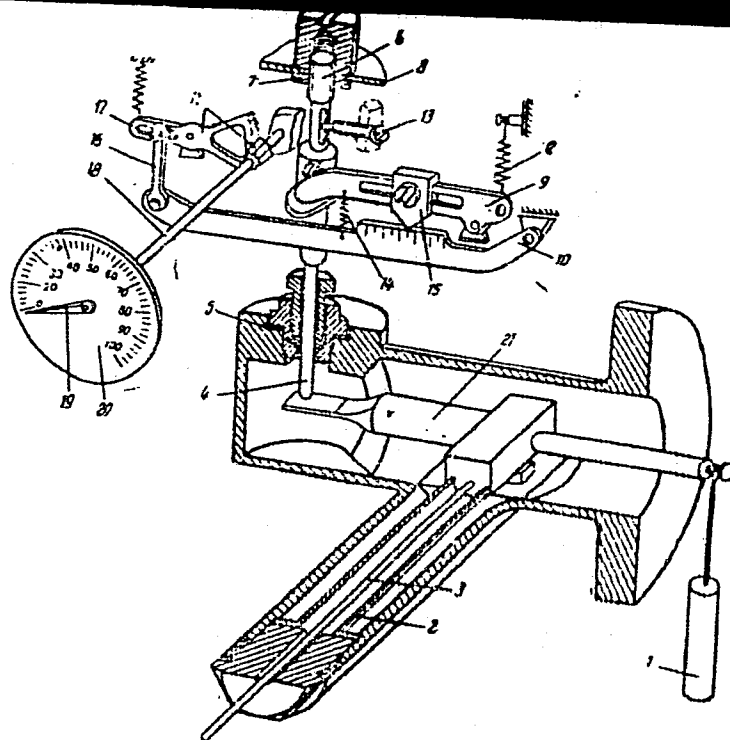
17.3.67 as 1140020/26-10.S.YA.GOIKHMAN et al.(2.9.69)
Bul 14/18.4.69. Class 42e. Int.Cl.G'01 f.

AUTHORS: Goykhman, S. Ya.; Sokolin, Sh. L.; Vikhman,
M. Ye.; Il'inskiy, N. S.; Tuchnin, Ye. A.;
Kanneetskiy, D. L.

2/2

19781437

AA0046286



Handwritten signature

19781438

Handwritten initials

USSR

UDC 534.7

GAVRILOV, L. R., GERSHUNI, G. V., IL'INSKIY, O. B., POPOVA, L. A.,

"Stimulation of Human Peripheral Nerves by Focused Ultrasound"

Moscow, Akusticheskiy Zhurnal, No 4, 1974, pp 519-523

Abstract: Stimulation of the fingers, palm, and lower third of the forearm of 5 subjects by focused ultrasound at frequencies of 0.48, 0.887, 1.95 and 3.67 MHz produced 3 types of sensations - tactile, temperature, and pain. The thresholds varied with the type of sensation, being lowest for the tactile sensations. The thresholds rose as the focal range was shifted from the fingers to the palm and then to the forearm. (Ultrasound directed at certain spots on the palm and forearm produced a distinct sensation of cold, an unusual response because it is physically impossible for ultrasound to chill the tissues). The thresholds of the tactile sensations were virtually independent of the duration of exposure to ultrasound lasting 1 to 100 msec. However, they rose considerably when the duration was decreased to 0.1 msec or less. Some suggestions are made for constructing ultrasonic apparatus to be used for stimulating nerve structures.

1/1

- 102 -

Hydrobiology

UDC: 612.315.1.0612.009

USSR

BROUN, G. R., IL'INSKIY, O. B., and VOLKOVA, N. K., Laboratory of General Reception Physiology (Headed by O. B. Il'inskiy), I. P. Pavlov Institute of Physiology, USSR Academy of Sciences, Leningrad

"Study of Certain Properties of Electroreceptor Structures of the Lateral Line of Black Sea Skates"

Leningrad, Fiziologicheskiy zhurnal SSSR im. I. M. Sechenova, No 10, vol 58, 1972, pp 1499-1505

Abstract: This article is written as the consequence of recent interest in sensory formations of lateral line systems of certain fish for generating electrical stimuli. These formations relate particularly to the receptor apparatus of the Lorenzini ampullae in some cartilaginous fish. The experiments in this investigation were performed on Black Sea skates, which are very convenient for studying the ampullae, and had the purpose of casting more light on the divergent opinions in the literature regarding the function of the ampullae apparatus, and clarifying the connection between the sensitivity of the animal and the ampullae. It was found that the skates exhibited high sensitivity to electrical stimuli. Oscillograms of these reactions are shown together with diagrams giving the location of the ampullae in the specimens.

1/2

-USSR

BRUN, G. R., et al., Fiziologicheskii zhurnal SSSR im. I. M. Sechenova, No 10, Vol 58, 1972, pp 1499-1505

The sensitivity of the latter to magnetic fields was also tested, and it was found that the Lorenzini ampullae played an important part in this type of receptivity as well. The authors express their gratitude to the Karadag Division of the Southern Seas Institute of Biology for providing the base for this work.

2/2

- 20 -

UDC 612.85

USSR

GAVRILOV, L. R., GERSHUNI, G. V., IL'INSKIY, O. B., SIROTYUK, M. G., TSIRUL'-NIKOV, Ye. M., and TSUKERMAN, V. A., Laboratory of the Physiology of Hearing, Institute of Physiology imeni I. P. Pavlov, USSR Academy of Sciences, Laboratory of the Physiology of the Sensory Organs, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Laboratory of General Physiology of Reception, Institute of Physiology imeni I. P. Pavlov, and Laboratory of Ultrasonic Cavitation, Acoustics Institute, USSR Academy of Sciences

"Study of the Skin Sensitivity by Means of Focused Ultrasound"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,366-1,371

Abstract: A study was made of the effect of focused ultrasound on the skin of a human hand. The sensitivity of the skin of the palm surface of the fingers, wrist and lower third of the forearm was investigated in five people (2 men and 3 women). The sensitivity thresholds were determined with a gradual increase and decrease in the stimulus. As a rule, the thresholds were higher with an increase in stimulus. The intensity for which no less than 50% positive responses occurred to 8-10 stimulations was taken as the threshold. Stimulation of the skin by identical stimuli with an intensity of 30-500 watts/cm² usually 1/2

USSR

GAVRILOV, L. R., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,366-1,371

aroused a tactile sensation, the nature of which depended on the stimulated section. When the focal point went deeper into the tissue, the tactile thresholds gradually increased and, finally, the sensation gradually went away altogether (and then in certain cases reappeared on the opposite side). The effect of sound streams on the occurrence of tactile sensations was tested leading to tickling sensations and sensations of heat and cold. Pain occurred at intensities of 1,400-1,600 watts/cm² lasting 100 milliseconds and more.

The mechanism of the effect of the focused ultrasound and its value in the study of the receptor structures are discussed. All the basic types of feelings in the skin can be isolated by the application of ultrasound.

2/2

- 63 -

USSR

UDC 621.396.67:624.97(088.8)

ILINSKIY, V. G., KHRIPACH, YU. B.

"Telescopic Multisectioned Mast"

USSR Author's Certificate No 252416, Filed 21 Sep 67, Published 12 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B84F)

Translation: The proposed telescopic mast is equipped with cylindrical sections entering one into the other, a lift mechanism in the form of a screw which is connected with a reduction gear and installed inside the stationary section of the mast, and a locking mechanism. In order to increase the operating reliability of the mast a screw with variable pitch is used in the lift mechanism along the grooves of which lift rolls move. In the upper part of the sections there are spring-loaded levers and supporting strips, and the locking mechanism is executed in the form of a lever connected by means of the cable to a dog. There are three illustrations.

1/1

- 25 -

USSR

UDC: 681.121.4:531.751.3

KATYS, G. P., IL'INSKIY, V. M., OVCHAROV, V. A.

"Mass Flow Meters With a Braked Body of Revolution"

V sb. Tochnoye izmereniye raskhodov i kolichestv veshchestv (Precision Measurement of Rates of Flow of Substances and Their Quantities--collection of works), Vyp. 122 (182), Moscow-Kazan', 1970, pp 129-133 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 9, Sep 70, Abstract No 9.32.734)

Translation: A procedure is developed, and a flowmeter is built and tested which has a hysteresis clutch for slowing down a pretwisted flow. The flowmeter may be used in hydraulic and gas lines where the flow moves at an appreciable angular velocity relative to the axis of the pipeline for causes not connected with measurement purposes. A modification of the device is intentional creation of a twist in the flow, with no requirements for a steady-state angular velocity of the twist. Four illustrations, bibliography of two titles.
1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON DESIGN AND CONTROL OF AUTOMATIC UNITS FOR EXPLORATION OF PLANET
SURFACE -U-
AUTHOR--(04)-KATYS, G.P., IIINSKIY, V.M., MELNICHENKO, I.K., ZDOR, S.E.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 27 P.
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND
MARINE ENGR, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--PLANETARY SURFACE, AUTOMATIC CONTROL EQUIPMENT, LUNAR SURFACE
VEHICLE, PROGRAMMED AUTOMATIC CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0008

STEP NO--UR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0117308

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE BASIC CHARACTERISTICS OF UNMANNED VEHICLES WHOSE CONTROL SYSTEMS USE SELF ADJUSTING AND LOGIC CIRCUITS. THE PARAMETER DISTRIBUTION ANALYSIS PROBLEMS WHICH CAN BE SOLVED BY THE VEHICLES ARE DISCUSSED. THE LOCOMOTION TECHNIQUES OF THE VEHICLES ARE EXAMINED. THE PROGRAMMING OF THE MOTION IS CONSIDERED TAKING INTO ACCOUNT THE SCANNING AND ANALYZING CHARACTERISTICS OF THE CRAFT.

UNCLASSIFIED

AA0046275

ILINSKIY V.S.
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

243347 AUTOMATIC VIBRATION AND SHOCK ABSORBER

consists of an inertia mass 1 and shock absorbers 2. In order to extend the range of resonant frequency control, the inertia mass can be altered by means of an electrohydraulic system consisting of sensor 3, valve amplifier 4, electromagnet 5, hydraulic drive 6 and control sliding valve 7. When there is no vibration affecting mass 1, or when the dynamic loads are below the pre-set level, the fluid from tank 8 is completely discharged through sliding valve 7. If the load on the mass exceeds the set amount, sensor 3 operates electromagnet 5 through amplifier 4. The electromagnet causes the sliding valve to close the channel to tank 8, and then fluid from the constant-action pump 9 flows into tank 8, alters the amount of the absorbing mass and reduces the resonant frequency. 11.7.67. as 1171851/25-28. V.S.IL'INSKII. A.F.SHCHEGLOV. (18.9.69.) Bul.16/5.5.69. Class 47a. Int.Cl.F16f.

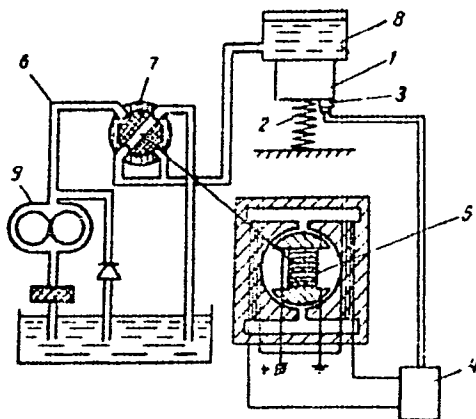
V

18

1/2

19781409

AA0046275



me

2/2

19781410

Acc. Nr.: A 40046206

Ref. Code: 21A 0000

Il'inskiy, V. S.

Protection of Apparatus Against Dynamic Effects (Zashchita apparatov ot dinamicheskikh vozdeystviy) Moscow, Energiya, 1970, 320 pp (SL:1864)

TABLE OF CONTENTS:

Introduction		
Chapter I	Methods for Reduction of Vibrations of Structural Elements of Apparatus	3
II	Vibration Insulation	7
III	Impact Insulation	17
IV	Shock Absorption of Equipment in Motion With High Linear Acceleration	80
V	Protection of Equipment Against Dynamic Effect in Transportation, Fall and Storage. Overloads in Resonance	114
VI	Designs and Basic Characteristics of Shock Absorbers	133
VII	Dynamic Vibration Dampers	179
Appendix		279
Bibliography		308
		317

Reel/Frame
19781312

18

AM0046206

The work deals with theoretical and practical problems in protection of apparatus and various sensitive equipment against dynamic effects, vibrations and impacts...

It was written for engineering-technical personnel, and it can be used as a manual in design of elastic insulating systems and dampers.

LD

2/4

19781313

USSR

UDC:621.438.1

IL'INSKIY, V. V., SKVORCHEVSKIY, Ye. A.

"Some Peculiarities of Small Gas Turbines and Problems of Modeling as Air is Blown Through Them"

Samoletostr. i Tekhn. Vozd. Flota. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Aircraft Construction and Airfleet Technology. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 32, pp 16-19 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 11, 1973, Abstract No 11.34.67, from the resume)

Translation: The problem of the peculiarities of the operating process of small gas turbines is studied. The possibility is analyzed of modeling the processes occurring in them as air is blown through. An estimate is presented of the influence of various similarity criteria on the nature of the flow. 1 Figure; 4 Biblio. Refs.

1/1

USSR

IL'INSKIY, Yu. A., KHOKHLOV, R. V.

"Theory of Stimulated Raman Scattering in Rotational Transitions"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 64, No 4,
1973, pp 1216-1221

Abstract: A study was made of the theory of stimulated Raman scattering in purely rotational transition considering intermediate oscillatory and purely rotational transitions. The contribution to the amplification as a result of these transitions can be primary when using pumping by a carbon dioxide gas laser with a wave length of 10.6 microns. Under these conditions the dependence on polarization will be different (for the $J_2 = J_1 + 1$ transition) than in the case of purely electron polarizability.

First, an approach to describing the rotational transition, stimulated Raman scattering is discussed which is based on the classical ideas, and then the consistent quantum theory is constructed considering the intermediate purely rotational levels and the possibilities of resonance in the oscillatory-rotational transitions. These cases can be realized when the stimulated Raman scattering is excited by radiation in the middle and far infrared bands.
1/1

- 97 -

USSR

UDC 621.378.1:621.391.822

IL'INSKIY, YU.A., FETIKOVA, V.M."On The Noise Of Infrared Radiation Detectors With Frequency Conversion"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11), pp 124-126

Abstract: A promising method for detection of infrared radiation is conversion of the frequency of this radiation with the aid of a nonlinear crystal. If the frequency of pumping is ω_1 , and the signal frequency is ω_2 , then it is possible to obtain the sum or difference of the frequency $\omega_1 \pm \omega_2$, which lies in the region of sensitivity of detectors of the visible or near infrared band. The problem of the sensitivity of such a detection method is important. The sensitivity is determined by the conversion factor and the noise of the device. The present paper studies and evaluates the principal noise in frequency conversion: 1) Thermal, 2) Background, and 3) The noise of parametric luminescence. On the basis of the fluctuation--dissipation theorem and equations of the field in the crystal, expressions are obtained for the power of the noise caused by the thermal fluctuations of the medium and background radiation. This noise is compared with the noise resulting from the spontaneous process of parametric luminescence. It is established that in the near infrared band the noise of parametric luminescence predominates, and the middle and far bands thermal and background noise

1/2

USSR

IL'INSKIY, M. A., et al., Kvantovaya elektronika, 10 5(11), pp. 214-215

prevail (if measures for their reduction by cooling are not taken). The authors thank D. N. Klyshko for discussion of the work. 3 ref. Received by editors, 4 May 1978.

3/3

- 66 -

USSR

UDC 616.988.73-036.12-085.371

BILIBIN, A. F., IL'INSKIY, Yu. A., TERSKIKH, I. I., and DVURECHENSKAYA, G. S.,
Chair of Infectious Diseases, Second Moscow Medical Institute imeni N. I. Pirogov,
and Ornithosis Laboratory, Institute of Virology imeni D. I. Ivanovskiy, Academy
of Medical Sciences USSR

"Vaccine Therapy in Chronic Ornithosis"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 24-27

Abstract: Chronic latent ornithosis with periodic relapses must be treated not only with antibiotics which act on the ornithosis pathogen and accompanying bacteria, but also with substances which stimulate the body's general and specific reactivity. The tissue ornithosis vaccine developed by Terskikh in 1963 accomplishes these objectives. The vaccines can be given subcutaneously or intracutaneously. The treatment procedure is determined individually for each patient, on the basis of his local, focal, and general reactions to initial intracutaneous administration of 0.1 ml of the vaccine. If the reactions are mild, the intracutaneous route is used for subsequent vaccinations. This method is also recommended when other diseases are present. Immediate and long-term observations of patients with chronic ornithosis who have been treated with this vaccine indicate that the method is effective.

1/1

Acc. Nr:

AP0038027

I

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 51-59

CONVERSION OF AN INFRARED IMAGE INTO A VISIBLE
IMAGE BY NONLINEAR OPTICAL METHODS
Voronin, F. S.; Divlekevev, M. I.; Il'inskiy, Yu. A.;
Solomatin, V. S.

Conversion of an image from the infrared to visible range in a nonlinear crystal is analyzed. The resolving power is estimated. Conversion from 1.06 to 0.53 microns in a KDP crystal is obtained; the resolving power is 18 lines per millimeter.

//

REEL/FRAME
19731068

21

GB

ILINSKIY Yu.A.

Acc. Nr: AP0043930

Abstracting Service: 5170
INTERNAT. AEROSPACE ABST.

Ref. Code: 4R0141

A70-23134 Image transformation during the generation of sum frequency (Preobrazovanie izobrazheniya pri generatsii summarnoi chastoty). Iu. A. Il'inskiy and Iu. A. Ianait (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Radiotekhnika, vol. 13, no. 1, 1970, p. 37-43. In Russian. JTV V u 2

The conservation of the spatial modulation of light amplitude or intensity during parametric transformation is considered. It is shown that at the real lengths of crystals, the number of solvable elements may reach 40,000. (Author)

A-5

1/1

REEL/FRAME
19770356

21

Acc. Nr: **AP0045583**

I

Ref. Code:

UR0497

PRIMARY SOURCE: **Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 115-122**

THE CLINICAL PICTURE AND DIAGNOSIS OF ORNITHOSIS

Il'inskiy, Yu. A.

Summary

The article contains data concerned with the clinical picture and diagnosis of ornithosis. In the clinical course of this disease the author distinguishes acute, latent, recurrent (prevalently chronic) forms and residual manifestations; by the severity — atypical, mild, moderate severity and severe forms. In the clinical picture there are observed manifestations of general intoxication, fever, hepatolienal syndrome, and inflammatory process in the respiratory tract and lungs in the form of viral (60%) or viral-bacterial (40%) pneumonia, clinico-roentgenologically corresponding to interstitial, microfocal, macrofocal and lobar and pseudo-lobar forms.

The author emphasizes the difficulty of diagnosis, especially of mild and atypical forms observed in 53.1 per cent of cases and the necessity of using a complex of clinical, roentgenological, serological, allergic and epidemiological data, particularly the intradermal test with ornithous allergen and complement fixation reaction with ornithous antigen, which confirm the diagnosis in 97 and 95 per cent of cases respectively.

//

DI

6

**REEL/FRA
19780553**

I

Epidemiology

UDC 616.988.73

USSR

MITSKIY, Yu. A., Doctor of Medical Sciences, Chair of Infectious Diseases,
Second Moscow Medical Institute imeni N. I. Pirogov

"Clinical Symptoms and Diagnosis of Ornithosis"

Moscow, Klinicheskaya Meditsina, No 2, 1970, pp 115-122

Abstract: The clinical symptoms of ornithosis include fever, general intoxication, hepatolienal syndrome, inflammation of the respiratory tract and lungs due to viral or viral-bacterial pneumonia, and enlargement of the liver and spleen. The disease is difficult to diagnose because of the different clinical forms (acute, latent, recurrent), its variability and polymorphism, and the frequency of a mild or asymptomatic course (in a little over half the cases). A conclusive diagnosis is based on clinical, x-ray, serological, allergic, and epidemiological findings. Of major value are the skin test with ornithosis allergen, and the complement-fixation test with ornithosis antigen, which confirm the diagnosis in over 95% of the cases.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ANTIBODY CONTENT TO SHEEP ERYTHROCYTES AND ANTI O STREPTOLYSINS IN
MENTAL PATIENTS -U-
AUTHOR--(03)--KONSTANTINOVA, T.P., ILINSKIY, YU.A., KLOKOV, YE.A.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVRUPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 4, PP 592-596
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBODY, ERYTHROCYTE, HEMAGGLUTINATION, PSYCHOSIS,
SCHIZOPHRENIA, ALCOHOL, INSULIN, NERVOUS SYSTEM DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1659

STEP NO--UR/0246/70/070/004/0592/0596

CIRC ACCESSION NO--AP0106405

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106405

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY HAS BEEN CONDUCTED WITH 244 MENTAL PATIENTS AND 156 DONORS OF THE CENTRAL INSTITUTE OF BLOOD TRANSFUSION FOR THE DETERMINATION OF THE LEVEL OF NORMAL ANTIBODIES (HEMOLYSINS AND HEMAAGGLUTINATION TO SHEEP ERYTHROCYTES) AND ANTI O STREPTOLYSINS. THE PATIENTS WERE DIAGNOSED IN THE FOLLOWING WAY: 94 CASES WITH SCHIZOPHRENIA; 47, WITH ORGANIC BRAIN LESIONS (MAINLY OF A TRAUMATICAL AND INFECTIOUS ETIOLOGY); 26, WITH REACTIVE STATES; 19, WITH CHRONIC ALCOHOLISM; 26, WITH PSYCHOPATHY, ETC. AMONG THE SCHIZOPHRENIC PATIENTS 67 WERE TREATED WITH AMINAZINE, STELAZINE OR INSULIN. IT WAS ESTABLISHED THAT THE MOST DEMONSTRABLE TEST WAS THE HEMOLYSIN TITRE. ITS FLUCTUATION WAS NOTED IN THE DIFFERENT NOSOLOGICAL GROUPS. THE HEMOLYSIN TITRE WAS SIGNIFICANTLY HIGHER IN SCHIZOPHRENIC PATIENTS DURING INSULIN THERAPY. THIS ALLOWS TO ASSUME THAT THE HEMOLYSIN TITRE, AS A MORE DYNAMICAL ONE, THAN THE OTHER TWO STUDIED INDICES MAY REFLECT THE CHANGES IN THE IMMUNOLOGICAL REACTIVITY IN MENTAL DISORDERS AND BE USEFUL FOR THE GENERAL CLINICAL EVALUATION AND THE DETERMINATION OF THE PROGNOSIS.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--GYPSUM POLYMER CEMENT COMPOSITION FOR FINISHING PANELS AND WALLS
-U-
AUTHOR--(02)--BERKOVA, A.V., ILINYKH, L.V.
COUNTRY OF INFO--USSR
SOURCE--STRCIT. MATER. 1970, (2), 17
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYVINYL ACETATE, BUTADIENE STYRENE RESIN, LATEX, GYPSUM
CEMENT/(U)SKS65GPB BUTADIENE STYRENE LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1243

STEP NO--UR/0228/70/000/002/0017/0017

CIRC ACCESSION NO--AP0128659

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128659

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A COMPOSITION CONSISTING OF
POLY(VINYL ACETATE) EMULSION OR STABILIZED POLY(BUTADIENE, STYRENE)
LATEXES SKS, 65 GPB AND A GYPSUM POZZOLANA CEMENT BINDER IS USED FOR
FINISHING PANELS AND WALLS.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MICROSCOPIC PLASTIC DEFORMATION, ASSOCIATED WITH, STRESS
RELAXATION, IN STEELS AND ALPHA IRON -U-
AUTHOR-(03)-MIRKIN, I.L., PETROPAYLOVSKAYA, Z.N., ILINYKH, S.A.
COUNTRY OF INFO--USSR
SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (3), 62-64
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PLASTIC DEFORMATION, STRESS RELAXATION, CARBON STEEL, ALLOY
STEEL, CHROMIUM STEEL, INTERMETALLIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0924 STEP NO--UR/0129/70/000/003/0062/0064
CIRC ACCESSION NO--AP0133013
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133013

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE MICROSCOPIC PLASTIC DEFORMATIONS (STRAINS) TAKING PLACE IN C AND ALLOY STEELS AND ALPHA-Fe DURING STRESS RELAXATION AT HIGH TEMP. WAS STUDIED BY AN INTERFERENCE METHOD. IN STEELS THE MICROSCOPIC STRAINS WERE IN GENERAL VERY NON UNIFORM. IN ALPHA-Fe THE STRAINS TENDED TO HAVE AN INTERGRANULAR CHARACTER AND WERE SHARPLY LOCALIZED. IN THE PRESENCE OF FINE CARBIDE OR INTERMETALLIC HARDENING PHASES INTRAGRANULAR STRAINS IN CR STEELS TENDED TO TAKE PLACE PREFERENTIALLY.

UNCLASSIFIED

USSR

UDC 612.0+616-001.16

ILIPAYEV, I., Laboratory of Biophysics, Institute of High-Altitude Physiology and Experimental Pathology, Academy of Sciences Kirgiz SSR

"The Effect of Seasonal Condition and Overheating of the Organism on the Threshold of Electrical Fibrillation of the Dog Heart"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, Nov/Dec 70, pp 10-13

Abstract: Electrotrauma is more pronounced in summer than in winter, possibly owing to the fact that the sympathetic nervous system is more excited in summer than in winter. In this connection, the effect of high external temperature and of the season was studied in animals whose mechanism of death during electrotrauma involved fibrillation of the heart. Electrical fibrillation of the heart was determined twice in five dogs: in January-February and in June-July. The mean minimum fibrillation current in winter was 21.4 times higher than in summer. In another type of experiment, it was established that at night the sensitivity of the organism to electric current is lower. Repeated electrotraumas were produced at seasonal intervals. It was found that, with increasing temperature (in summer), the mean fibrillation current dropped 27.8%. With decreasing external temperature, the mean value of the $1/2$

- 81 -

USSR

ILIPAYEV, I., Sovetskoye Zdravookhraneniye Krigizii, No 6, Nov/Dec 70, pp 10-13

fibrillation current increased by 47.2%. Hence the external climatic factors (temperature, humidity, atmospheric pressure) condition the organism according to the particular season, so that the fibrillation current shifts. The arterial pressure dropped suddenly as a result of increased external temperature, but this does not appear to have a significant effect on the electric fibrillation threshold of the heart.

2/2

USSR

ILISAVSKIY, Yu. V. and KULAKOVA, L. A., Physicotechnical Institute imeni
A. F. Ioffe, Academy of Sciences, USSR, Leningrad

"Lattice Absorption of Ultrasound in CdS According to Opticoacoustic
Dispersion Data"

Leningrad, Fizika Tverdogo Tela, Vol 16, No 1, Jan 73, pp 286-288

Abstract: An investigation is made of the lattice absorption of ultrasound waves in CdS at room temperature in the frequency range of $f = 0.26-1.8$ GHz by the method of light dispersion in sound. Sonic attenuation was determined on the basis of change of the intensity of light dispersed on an acoustic wave during the movement of a laser beam along the specimen. A graph is presented which represents the coefficient of lattice absorption in CdS for transverse piezoactive and nonpiezoactive sound waves propagating in the base plane. A second graph represents the frequency relationship of the absorption of longitudinal sound waves propagating along and perpendicularly to the C axis. The experimental results lack qualitative agreement with theory in the case of transverse waves, but have such agreement for longitudinal waves. The approximate nature of the existing theories of lattice sound absorption does not permit a strict quantitative analysis to be made of data pertaining to the attenuation of longitudinal waves. 2 figures. 14 references.

1/1

- 67 -

USSR

UDC 621.317.799:621.382.83

~~ILIVANKOV, A. I.~~, KURCOZHIN, V. V., FISUROVSKIY, Ye. A., of Novosibirsk

"A Digital Instrument for Measuring the Characteristics of Self-heating in Micro Circuits"

Novosibirsk, Avtometriya, No 2, 1970 pp 59-66

Abstract: There are two ways of measuring the effects of self-heating in a micro circuit. One involves holding the input voltage constant and measuring the change in output voltage as the circuit heats, the other, holding the output voltage constant and adjusting the input voltage to maintain it as the circuit heats. Since the output voltage is orders of magnitude greater, it is less demanding for the instrument to hold the input voltage constant.

The majority of this article is devoted to a detailed description of such an instrument designed in the Institute of Automation and Electronic Measurement, Siberian Branch, Academy of Sciences of the USSR. The instrument consists of four major units: an apparatus for adjusting the initial voltage to a working point (defined as half the supply voltage of the collector, since this is the point at which the collector dissipates maximum power), an output voltage divider, an output voltage measurement instrument, and an indicator. The apparatus for adjusting the circuit to a working point and the output voltage measuring instrument are described in detail and illustrated by

1/2

USSR

ILIYENKOV, A. I., et al, Novosibirsk, Avtometriya, No 2, 1970 pp 59-66

additional block diagrams. The initial adjustment apparatus works rapidly, in a pulse mode, so that very little energy is dissipated in the circuit prior to reaching the working point. Since the curve of self-heating is monotonic and approaches its limit asymptotically, additional accuracy is obtained by changing the time intervals between adjacent measurements as a function of the curvature of the path (rate of change of output voltage). The circuits which make this adjustment are described as part of the output voltage measuring unit.

The estimated errors are: 1% due to the change in output power, negligible due to heating before adjustment to the working point, 0.3% due to instrument errors, and 0.4% due to errors in approximation, amounting to a total of 1.7%.

2/2

Acc. Nr: APC054299 ILIZAROV, G.A. Ref. Code: UR 9115

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye,
1970, Nr 3, pp 26-30

**SOME ROENTGENOGRAPHIC AND MORPHOLOGICAL DATA ON BONE TISSUE
REGENERATION IN DISTRACTION EPIPHYSEOLYSIS IN EXPERIMENT**

G. A. Ilizarov, L. M. Soybelman and A. M. Chirkova

A. roentgenographic and morphological study of bone tissue regeneration in distraction epiphyseolysis created with aid of G. A. Ilizarov's apparatus has been carried out in experiments on 51 puppies. The regeneration has been studied during the distraction period, period of fixation of bone ends with the apparatus after termination of distraction, and at various periods following withdrawal of the apparatus. The follow-up studies ranged from 1 to 420 days. The study revealed that toward the end of the distraction period, the diaphysis measuring 10--20 mm in height was substituted by bony regenerate with preservation in its central sections of fibrous tissue zone of various width undergoing ossification. After termination of distraction, during fixation of bone ends with the apparatus, and after withdrawal of apparatus, a gradual reconstruction of regenerate took place which within 4--6 months from the beginning of experiment acquired the structure of the metaphysary bone section. These experimental findings confirm the possibility of bloodless elongation of the long tubular bones by the method of distraction epiphyseolysis.

REEL/FRA
ME
19831437

1/2 017
UNCLASSIFIED
PROCESSING DATE--27NOV70
TITLE--PROPERTIES OF EXCITED STATES OF SAMARIUM 147 AND PROMETHIUM 149 -U-
AUTHOR--(04)-BEGZHANOV, R.B., GAFFAROV, D.G., ILKHANDZHANOV, N., MUMINOV,
A.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK UZB. SSR. SER. FIZ.-MAT. NAUK 1970, 14(2), 65-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--EXCITED STATE, SAMARIUM ISOTOPE, PROMETHIUM ISOTOPE, CASCADE,
MAGNETIC MOMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0570
STEP NO--UR/0166/70/014/002/0065/0068
CIRC ACCESSION NO--AP0137655
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANGULAR CORRELATIONS OF THE CASCADE GAMMA TRANSITIONS AND THE MAGNETIC MOMENTS OF PRIME147 SM AND PRIME149 PM EXCITED STATES WERE MEASURED WITH THE FAST SLOW COINCIDENCE CIRCUIT, THE TIME RESOLN. OF WHICH WAS SIMILAR TO 5 NSEC. THE MEASUREMENTS OF PRIME147 SM EXCITED STATES WERE PERFORMED WITH A PRIME147 EU SOURCE, PREPD. BY 18-MEV P IRRADN. OF NATURAL SM; THE MEASUREMENTS OF PRIME149 PM WERE MADE WITH A PRIME149 ND SOURCE, PREPD. BY THERMAL N IRRADN. OF PRIME148 ND (ENRICHED UP TO 98PERCENT). THE THEORETICAL AND EXPTL. VALUES OF MAGNETIC MOMENTS OF THESE EXCITED STATES ARE COMPARED. THE VALUES OF THE QUADRUPOLE MAGNETIC MOMENTS ENABLE CONCLUDING THE FORM OF PRIME147 SM AND PRIME149 PM NUCLEI. THE NATURE OF THE EXCITED STATES OF TRANSIENT REGION NUCLEI (PRIME147 SM AND PRIME149 PM) CAN BE EXPLAINED BY THE KISLINGER SORCUSEN PHONON MODEL, BY TAKING INTO CONSIDERATION THE EFFECTS OF THE SUPERFLUIDITY IN SPHERICAL NUCLEI, OF THE POLARIZATION OF THE CORE OF THE NUCLEI, AND THE QUASI PARTICLE PHONON COUPLING. FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 534.2

IL'KOV, V. K., POPKOV, V. I.

"Vibrations of Complex, Active Mechanical Systems"

Moscow, Akust. dinamika mashin i konstruktsiy--sbornik (Acoustic Dynamics of Machines and Structural Elements--collection of works), "Nauka", 1973, pp 32-38 (from RZh-Fizika, No 5, May 73, abstract No 5Zh579 by the authors)

Translation: An active mechanical system with a finite number of contact sections is considered. The system is made up of a vibrationally active mechanism, together with insulating and foundation elements. The oscillations of each contact section are characterized by six generalized velocities caused by the action of six generalized forces. For the case in which it is not necessary to know all the particulars of interaction between the forces generated in the working units and the structural elements of the mechanism, the sources of vibration are characterized by the forces on the sections of contact between the mechanism and the supports and by the resistance of the mechanism with respect to the forces acting on these sections.

1/1

- 20 -

USSR

IL'KUN, G., Doctor of Biological Sciences

"And the Tree Will Say Thank You"

Kiev, Pravda Ukrainy, 27 Apr 71, p 4

Abstract: The air-cleaning effect of trees in cities and industrial areas is described and the particular features of certain types of trees are considered. It is known that one adult tree produces enough oxygen in a growing season for two persons to breathe for one year. The Ukraine and Kiev have relatively clean air. But there are problems in Kiev too. Gases along the main thoroughfares, especially in hilly areas, have damaged the leaves of the famous chestnuts that line the streets. Trees on the downhill side (where passing cars are not throwing out heavy exhaust) are in much better condition than those along the uphill side. The question of the toughness of chestnuts is raised; more gas-resistant varieties -- such as poplars, willows, maples, and so forth -- should be considered to replace them. Figures on the air-cleaning ability of "one tree with 20 kilograms of fresh leaves" are given. It will accumulate 150-150 grams of sulfur gas or 50 grams of chlorine. Rains will wash this amount back to the ground 4-5 times a season, so a season total for one tree should average

1/2

- 52 -

USSR

IL'KUN, G., Pravda Ukrainy, 27 Apr 71, p 4

500 grams of sulfur anhydride, 200 grams of chlorine, plus "several dozen kilograms of dust." Urban Ukrainian areas should aim for one mature tree per resident.

2/2

BIOLOGY
Agriculture

USSR

UDC 581.114+632.151

IL'KUN, G. M., Central Republic Botanical Garden, Academy of Sciences
Ukrainian SSR, Kiev

"Effects of Toxic Gases on Plants"

Kiev, Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 3, No 1, Jan/Feb 71,
pp 87-92

Abstract: Among toxic gases harmful to plants that are released into the atmosphere by metallurgical and chemical enterprises acidic gases predominate. The damage done to plants by such gases depends on the content of free K, Na, Ca, and Mg cations in the plants. Plants phylogenetically adapted to alkaline soils are inherently more resistant to the action of toxic gases contaminating the atmosphere. Tests carried out on three species of trees growing near an industrial plant department producing Cl₂ showed that the higher the content of K⁺, Na⁺, and Ca⁺⁺ in the leaves of the species, the greater the amount of Cl₂ taken up by the leaves and made harmless there by neutralization. Furthermore, the concentration of the three cations in the leaves of trees exposed to Cl₂ was greater than that in the leaves of controls growing in an uncontaminated atmosphere; hence, on exposure of the trees to Cl₂, the cations were resorbed to a greater extent from the soil and transported to the leaves,

1/2

USSR

IL'KUN, G. M., Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 3, No 1, Jan/Feb 71, pp 87-92

where they exerted a protective effect. Results of experiments with NaF, NaCl, and Na₂SO₃ on corn leaves and other data showed that the anions F⁻, Cl⁻, and SO₃⁼, which are formed by toxic gases present in the atmosphere, inhibit acid phosphatase, phosphorylase, phosphoglucomutase, phosphopyruvate hydratase, and beta-amylase, while activating beta-fructofuranosidase and proteases. The alpha-amylase in corn leaves was activated by F⁻ and Cl⁻ and inhibited by SO₃⁼. On the basis of results pertaining to the action of F⁻, Cl⁻, and SO₃⁼ on plant enzymes, a diagram was drawn up which indicates the disturbances in synthesis and changes in metabolism that take place in leaves under the effect of anions from toxic gases. The diagram shows that photosynthesis, respiration, and the formation of carbohydrates, amino acids, and other organic acids are affected by these anions.

2/2

- 1 -

USSR

ZEL'DOVICH, YA. B. and ILLARIONOV, A. F., Institute of Applied Mathematics, Academy of Sciences USSR

"Scattering of a Strong Wave by an Electron in a Magnetic Field"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61, No 3, Sep 71, pp 880-885

Abstract: The authors examine the question of electron scattering of plasma of a strong electromagnetic wave, circularly polarized and propagating along a constant magnetic field. By allowing for the reaction of radiation, they find the dependence of the scattering cross section on the amplitude of the wave and the magnitude of the magnetic field. They cite the conditions for propagation of a wave in plasma. They see a certain analogy between the computation made in this article and the familiar academic derivation of the formula for the frequency of vibrations of a pendulum by examining the rotation equivalent to two perpendicular vibrations with a phase difference of $\pi/2$. The authors formulate the problem and give the results mathematically and graphically. Then they give the equation of motion and find characteristic resonance curves. Finally they describe the propagation of a strong wave in a plasma using a mathematical treatment. The article contains 1 illustration and 6 bibliographic entries.

1/1

USSR

UDC 002.63:53

ASRIBEKOV, V. YE., and ILLARIONOV, N. V.

"Second Stage in the Development of Information Dissemination for Physics and the Integral Information System"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1: Organizatsiya i Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

Abstract: The growing volume of research and the accompanying growth in the volume and types of primary literature require the development of secondary information publications as a unified system which more effectively satisfies the requests of different categories of specialists: i.e., the transition to a second approximation which differentiates categories of readers. In the second stage of development the secondary information system should arrive at computer-aided practical solutions to questions regarding the satisfaction of the demands of different categories of specialists and create the basis for the servicing of collective and individual information consumers. A program for the development of a journal of abstracts in physics within the limits of

1/3

USSR

ASRIBEKOV, V. YE., and ILLARIONOV, N. V., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1: Organizatsiya i Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

the second approximation provides for the two-stage creation of more efficient searching aids. The creation of searching aids and their experimental testing in an integral computer-based physics information system are of paramount importance and serve as the basis for a qualitatively new stage in the development of information servicing.

Practical work on the design of an integral physics information system was begun in the Physics Division of VINITI [All-Union Institute of Scientific and Technical Information] in 1966 with the creation of a detailed subject-index system for the physics of elementary particles and field theory. Detailed subject-index systems have now been developed and are in use for preparing publications of three series of systematized current-awareness information: viz., "Particles and Fields," "Atomic Nucleus," and "Plasma." Work is under way on the creation of detailed subject-index systems for several more divisions of physics. The article describes the principal operations

2/3

- 119 -

USSR

ASRIBEKOV, V. YE., and ILLARIONOV, N. V., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1: Organizatsiya i Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

which will be included in the practical scheme for the preparation of data for computer input and their subsequent use within the integral information system following completion of the development of detailed subject-index systems for all divisions of physics.

3/3

USSR

ILLARIONOVA, O. S., and SHCHETININ, V. V., Vladivostok Medical Institute

"Dynamics of Morphological and Histochemical Changes in the Myocardium After Exposure to Ultrasound"

Vladivostok, Biologicheskiye i Meditsinskiye Issledovaniya na Dal'nem Vostoke (Biological and Medical Research in the Far East), Vladivostok, 1971, pp 135-137

Abstract: The thickness of the myocardial wall can be safely determined by means of ultrasound during open-heart surgery provided that the exposure is for no more than 5 minutes. Experiments with ultrasonication of dog myocardium for up to 5 minutes showed no apparent morphological or histochemical changes. However, one hour after 10 to 15 minutes of exposure the cytoplasm of the cells stained unevenly with eosin and there were signs of hyperemia and stasis in the blood vessels. The color of the glycogen lumps was dull. Exposure of the myocardium to ultrasound for 15 minutes or more resulted in hyperemia and stasis in the blood vessels, edema of the stroma, appearance of cellular infiltrates around the blood vessels, and some areas lacking in glycogen.

1/1

ILLARIONOV, V. F.

SPS 54729
17 Dec 71

UDC 519.95

ON THE PROPERTIES OF A FIELD OF EXTREMALS IN ONE OPTIMUM CONTROL PROBLEM

Article by V. F. Illarionov and V. S. Pochinitsyev, Central Institute of Aerohydrodynamics named for Zhukovskiy, Moscow; Doklady Akademii Nauk SSSR, Russian, Vol 200, No 6, 1971, pp 1241-1247

Within the limits of the energy method [1, 2, 3], the problem of determining the flight of an airplane over a given distance (L), with a minimum expenditure of fuel, reduces to the minimization of the functional

$$I = \int_0^L f(h, E, P) dt \quad (1)$$

with the additional condition of constraint

$$\frac{dE}{dt} = \frac{1}{2} (P - N(h, E)), \quad E(0) = E_0, \quad E(L) = E_1 \quad (2)$$

where the integrand f(h, E, P) is $\sqrt{\frac{1}{2} \frac{dE}{dt}}$ -- probably (1) is fuel consumption per unit of flight distance; E = mechanical energy ($E = h + v^2/2g$); h, v = height, velocity; P = engine thrust; N = aerodynamic drag; C = airplane's weight = constant.

The controlling functions in (1) and (2) and P and h. Let us assume that functions f and X, along with their partial derivatives, are continuous for independent variables h, E, and P.

In this article, we will establish the properties of the family of extremals, in the plane (h, E), which are realized in the open area of the set of permissible values of P and h. We will use the conditions necessary for the optimality of controls $\delta(\epsilon)$ and $h(\epsilon)$ that arise from L. S. Pontryagin's maximum principle [4, 5].

aerohydrodynamics

1/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--SIGNIFICANCE OF THE STUDIES OF SOME INDICES OF CARBOHYDRATE METABOLISM IN PNEUMONIA -U-

AUTHOR--(02)-STEPASHKINA, K.I., ILLARIONOVA, E.D.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 47-50

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBOHYDRATE METABOLISM, PNEUMONIA, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1616

STEP NO--UR/0504/70/042/002/0047/0050

CIRC ACCESSION NO--AP0101676

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101576

ABSTRACT/EXTRACT--(U) GP-D-

ABSTRACT. THE AUTHORS INVESTIGATED THE TISSUE CARBOHYDRATE METABOLISM IN 36 PATIENTS (30 WITH ACUTE PNEUMONIA AND 6 WITH EXACERBATED CHRONIC NONSPECIFIC PNEUMONIA). THE AUTHORS DETERMINED SUGAR, TOTAL GLYCOPROTEIDS, SIALIC ACID IN THE ARTERIAL AND VENOUS BLOOD WITH DUE ACCOUNT TO THE ARTERIO VENOUS DIFFERENCE OF THE MENTIONED INGREDIENTS WHICH MAKES IT POSSIBLE TO JUDGE UPON THE OXIDATIVE PROCESSES IN THE TISSUES OF THE BODY. THE INVESTIGATIONS CONDUCTED SHOWED THAT THE ARTERIO VENOUS DIFFERENCE IN SUGAR, GLYCOPROTEIDS AND SIALIC ACID IN PATIENTS WITH NONSPECIFIC INFLAMMATORY DISEASES OF THE LUNGS IN THE STAGE OF THE ACTIVE INFLAMMATORY PROCESS IS REDUCED AS A RULE, THIS TESTIFYING TO A DISORDER OF THE OXIDATIVE PROCESSES OCCURRING IN THE TISSUE. STUDIES OF THE INDICES OF THE TISSUE CARBOHYDRATE METABOLISM IN PATIENTS WITH PULMONARY PATHOLOGY MAY BE USED TO DETERMINE THE DEGREE OF THE INFLAMMATORY PROCESS ACTIVITY, HENCE TO MAKE PROGNOSTIC CONCLUSIONS AND PRESCRIPTION OF THE MOST RATIONAL THERAPY.

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESIGN OF THE X RAY SPECTROMETER INSTALLED ON THE SATELLITE COSMOS 207 IS DESCRIBED. THE EFFECTIVE AREA OF THE PROPORTIONAL COUNTERS WAS 270 SQ CM. SLOT WINDOW COLLIMATORS WITH AN OPENING ANGLE OF 32 MIN BY 18 DEG (FWHM) WERE USED. PRELIMINARY DATA CHARACTERIZING THE OPERATION OF THE INSTRUMENT DURING FLIGHT ARE REPORTED. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSTITET, MOSCOW, USSR.

UNCLASSIFIED

1/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--PH CHROMATOGRAPHY ON PAPER IN DETERMINATION OF DISSOCIATION
CONSTANTS FOR ANTIBIOTICS OF OLIVOMYCIN, MITRAMYCIN GROUP -U-
AUTHOR--(03)-ILLARIONOVA, R.P., DYKHOVICHNAYA, D.YE., BONDARENKO, B.N.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 415-418

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PAPER CHROMATOGRAPHY, ANTIBIOTIC/(U)OLIVOMYCIN ANTIBIOTIC,
(U)MITRAMYCIN ANTIBIOTIC, (U)CHROMOMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0155

STEP NO--UR/0297/70/015/005/0415/0418

CIRC ACCESSION NO--AP0114551

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114551
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A METHOD FOR DETERMINATION OF DISSOCIATION CONSTANTS OF ANTIBIOTICS, SUCH AS OLIVOMYCIN, MITRAMYCIN, CHROMOMYCIN AND AURELIC ACID IS DESCRIBED. THE METHOD IS BASED ON DEPENDANCE OF R SUBF VALUES ON PAPER PH CHROMATOGRAMS UPON PK, HYDROGEN ION CONCENTRATION, DISTRIBUTION COEFFICIENTS OF THE SUBSTANCES IN WATER AND ORGANIC PHASES.

FACILITY: KIEV INSTITUTE FOR EPIDEMIOLOGY

MICROBIOLOGY AND PARAZITOLOGY.

UNCLASSIFIED

USSR

UDC 669.721.053.4.068

ILLYUVIYEVA, G. V., TATARSKAYA, M. G., TAKHAFUAD, A.

"Composition and Certain Properties of Magnesium Naphthenate"

Zap. Leningr. gorn. in-ta [Writings of Leningrad Mining Institute], Vol 50, No 3, 1970, pp 101-108 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G183 by the authors)

Translation: A study of the influence of solvents on the extraction of Mg from aqueous solutions of naphthenic acid indicates that with sufficient solubility of the compound being extracted, its composition and the completeness of extraction are independent of the properties of the solvent. The determining factor is the pH. Acid or solvated neutral Mg naphthenates cause the formation of strong flakes of non-sulfide Ca, Ba, $MgCO_3$ and dolomite minerals, making their flotation difficult. Basic Mg naphthenates do not have these properties and therefore practically do not change the flotation indicators. 3 figures; 2 tables; 10 biblio. refs.

1/1

USSR

UDC: 622.011.43

KULIYEV, A. K., ASKEROV, F. A., IMANOV, A. A.

"Studies of the Mechanical Properties of Rocks by the Method of Punch Indentation Under a Lateral Pressure of up to $2.74 \cdot 10^8 \text{ N}\cdot\text{m}^{-2}$ "

V sb. Bureniye i razrabotka glubokozalegayushchikh neftegaz. mestorozhd. (Drilling and Working Deep Petroleum and Gas Deposits--collection of works), Baku, "Elm", 1972, pp 64-70 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V621)

Translation: The paper deals with destruction of rocks by a boring tool in different stressed states. In a series of experiments cylindrical rock specimens were loaded by pressure on the lateral surface. The end faces were indented by flat punches. It was found that with an increase in lateral pressure up to a certain value for each rock, the values of hardness and yield stress change basically only slightly, while a further increase in lateral pressure leads to an increase in these characteristics. The volume of rock destroyed under the punch increases with lateral pressure considerably faster than the increase in hardness. Bibliography of six titles. A. B. Fadeyev.

1/1

USSR

VOLKOV, A. S., GUTKIN, A. A., IL'MENKOV, G. V., NOVAK, I. I., Physico-technical Institute imeni A. F. Ioffe, USSR Academy of Sciences, Leningrad

"Quantum Yield of the Photoconductive Effect in Germanium"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2796-2797

Abstract: To explain the contradictions in previous experimental data on the quantum yield of the photoconductive effect in germanium, the authors investigate the spectrum for this semiconductor at room temperature in the photon energy region of 1-1.9 ev. The results show that within limits of experimental error of $\pm 3\%$ the quantum yield of the photoconductive effect of germanium in this energy region remains constant. The authors thank A. N. Imenkov, D. N. Nasledov, A. A. Pogachev, and B. V. Tsarenkov for taking part in discussion of the experimental results.

1/1

- 14 -

172 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--LIFETIME OF IRON DOPED INDIUM ANTIMONIDE CURRENT CARRIERS -U-

AUTHOR--(103)-ILMENKOV, G.V., NASLEDUV, D.N., SMETANNIKOVA, YU.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. PCLUPROV. 1970, 4(3), 593-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INDIUM ANTIMONIDE, IRON, CRYSTAL IMPURITY, ZONE REFINING,
PHOTOCONDUCTIVITY--

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1721

STEP NO--UR/0449/70/004/003/0593/0596

CIRC ACCESSION NO--AP0120433

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0120433

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. DEPENDENCE OF LIFETIME OF CURRENT CARRIERS OF FE DOPED INSB WAS EXAMD. IN THE RANGE 80-270DEGREEK. THE MATERIAL WAS PREPD. BY ZONE REFINING AND THE SAMPLES SHOWING NO HALL CONST. ANOMALIES WERE CHOSEN FOR MEASUREMENTS. LIFETIMES (TAU SUBN, TAU SUBP) WERE DETD. FROM TEMP. DEPENDENCES OF PHOTOMAGNETIC AND PHOTOCURR. CURRENTS. FE DOPED INSB WAS COMPARED WITH P TYPE UNDOPED MATERIAL AND NO APPRECIABLE DIFFERENCE IN THE TEMP. DEPENDENCES OF TAU SUBN AND TAU SUBP FOR THE BOTH KINDS OF SAMPLES WAS OBSG. IN REGION OF HIGH TEMPS. TAU SUBN AND T SUBP ARE LIMITED BY AUGER RECOMBINATION, AND IN THE 80-100DEGREEK REGION TAU SUBN IS LESS THAN TAU SUBP AS THE RESULT OF ELECTRON TRAPPING. THE EXISTENCE OF 2 LEVELS ACCOUNTING FOR RECOMBINATION WAS SUGGESTED, YIELDING THE FOLLOWING PARAMETERS: E SUB1 EQUALS 0.055, E SUB2 EQUALS 0.11 EV AT LIQ. N TEMP.; COEFFS. OF ELECTRON AND HOLE TRAPPING C SUBN1 EQUALS 3 TIMES 10 PRIME NEGATIVES, C SUBP1 EQUALS 4 TIMES 10 PRIME NEGATIVE10, C SUBN2 EQUALS 1 TIMES 10 PRIME NEGATIVE6, AND C SUBP2 EQUALS 1 TIMES 10 PRIME NEGATIVE8 CM PRIME NEGATIVE3 SEC PRIME NEGATIVE1. CONCNS. OF CENTERS GIVING RISE TO THE LEVELS RANGES (2-3) TIMES 10 PRIME14 CM PRIME NEGATIVE3; THE CENTERS WERE ASSIGNED TO STRUCTURAL DEFECTS AND NOT TO FE IMPURITIES. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 632.95

REVEL'SKIY, I. A., IOONSON, V. A., IL'MOYA, K. A., KARAVAYEVA, V. G., LOOG,
E. P., SIROTA, T. S.

"Sensitivity of Flame Photometric Detector for Phosphorus-Containing Pesticides
as a Function of the Experimental Parameters"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-
neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp
108-111 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N422)

Translation: In studying the dependence of the sensitivity of the two-channel
flame-photometric detector to phosphorus-containing pesticides on the experi-
mental parameters, a solution of triethyl phosphate (I) in alcohol is used.
The optimal O_2 flow rate (20-40 cm^3/min), H_2 and H_2 flow rates were found from
the point of view of sensitivity of the two-channel flame photometric detector.
For an amount of I on the order of 10^{-7} grams, the signal of the phosphorus
channel exceeds the signal of the sulfur channel approximately 400 fold.

1/1

USSR

REVEL'SKIY, I. A., IOONSON, V. A., IL'MOYA, K. A., BELOV, V. M., KARAVAYEVA,
V. G., LOOG, E. P., SOVAKOVA, T. M.

UDC 632.95

"The Sensitivity of a Flame-Photometric Detector to Certain Pesticides as a
Function of Temperature"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagrvaz-
neniya imi produktov pitaniya, kornov i vnesn. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 102-
107 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N448)

Translation: On a chromatograph of the Melpar Company, a Study was made of
the behavior of a single and double-channel flame photometric detector as a
function of the temperature of the detector and the thermostat of the columns.
The separation of the artificial mixture of pesticides is carried out in a
glass column 2 meters long with an inside diameter of 4 mm filled with NR
chromosorb with a 3% phase of OV-1. The column was heated for 50 hours in ad-
vance at 250°. The evaporator temperature was 250°, the thermostat tempera-
ture of the columns and the detector was 75-220°. The flow rates of N₂ (the
gas-carrier), H₂O₂ and air are 80, 150, 20 and 10 cm³/min respectively. In
checking the sensitivity of the flame photometric detector, a mixture of methyl
parathion, parathion, methylthion and ethion in hexane was used. The amount
1/2

USSR

REVEL'SKIY, I. A., et al., Tr. 2-go Vses. soveshch. po issled. ostatkov nes-titsidov i profilakt. zagrvažneniya imi produktov pitaniya, kormov i vnesh. sredv, Tallin, 1971, pp 102-107

of each component was 10^{-9} in a microliter of solution. For a decrease in background current and the noise level it was necessary to operate at low temperatures of the flame-photometric detector (but not less than 80-100° to avoid condensation of moisture), or with additional cooling of the photomultiplier and filter. It is expedient to study the dependence of the background current and noise level for each new column. The phosphorus channel is more sensitive than the sulfur channel to temperature variations of the detector and columns. The background current and noise level for it are ~10 times higher than for the sulfur channel. For the two-channel flame photometric detector, the background current and noise level as functions of the column temperature were somewhat greater than for the single channel, and as functions of the detector temperature, somewhat less. The basic deficiencies of the investigated flame photometric detector are as follows: the filters and photomultipliers are under the effect of the detector housing temperature; as a result of internal reflections of light, variation in the parameters is observed on transition to operation with a two-channel detector. The detector developed at the Special Design Office of the Estonian SSR Academy of Sciences does not have these deficiencies.

2/2

- 58 -

1/2 008

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--PURIFICATION OF LEUCOPARAFUCHSINE -U-

AUTHOR--(05)-ILMUSHKIN, V.M., LAZARENKO, L.I., KHOMENKO, V.V., KOLCHEV,
V.D., FOTCHENKO, A.S.

COUNTRY OF INFO--USSR

I

SOURCE--U.S.S.R. 266,977

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL PURIFICATION, BIOLOGIC PIGMENT, DYE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1809

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132075

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132075

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEUCOPARAFUCHSINE (I) WAS PURIFIED BY TREATING TECH. I WITH HCL AND NAOL IN THE PRESENCE OF 5-20PERCENT NA SUB2 S SUB2 O SUB4.2H SUB2 O (ON THE WT. OF I) AT 20-110DEGREES. THE RESULTING I.3HCL WAS FILTERED, DISSOLVED IN DISTO. WATER IN THE PRESENCE OF AACTIVATED C, AND REFILTERED. THE RESULTING FILTRATE WAS TREATED WITH NH SUB4 OH AND PURE I FILTERED AND DRIED.

UNCLASSIFIED

USSR

UDC 576.852.23.097.29

DALIN, K. V., MIGUNOV, V. N., FISH, N. G., POLIKAR, A. Ch., and IL'NITSKAYA, Ye. A.,
Moscow Institute of Vaccines and Sera imeni Kochinikov, and Sofia Institute of
Epidemiology and Microbiology

"Heterogeneity of a Specific Toxin in a Filtrate of *Corynebacterium diphtheriae*"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70,
pp 115-118

Abstract: In an earlier study, the authors showed that toxin in filtrates of *Corynebacterium diphtheriae* strain PW-8 may consist not only of proteins with a sedimentation rate of about 4S, but also of larger components. In the present work, the molecular composition of toxic filtrates from the Wisconsin and Massachusetts varieties are compared and the composition of filtrates obtained at different times of culturing is analyzed. *C. diphtheriae* Strain PW-8 grown in stab culture produced two types of specific toxin in the filtrates: macromolecular, with a sedimentation rate of about 6 to 11S; and low-molecular, with a sedimentation rate of about 4-5S and possessing greater toxicity and antibinding activity (attributed to proteolysis of the molecules of specific toxin during culturing). The macromolecular toxin appeared in the filtrates within a few hours after the start of growth and persisted throughout (36 hours). It is tentatively identified as Ehrlich's "toxon."

1/1

IL'NITSKIY, A. P.

SPAS 65320
1 7/20/72

UDC: 614.777:1615.217.4:547.21

WATER POLLUTION BY CARCINOGENIC HYDROCARBONS AND SUBSEQUENT RATE OF THESE AGENTS
Article by L.M. Shvad, A.P. Il'Nitskiy, Institute of Experimental and Clinical
Oncology, USSR Academy of Medical Sciences, Moscow; Moscow, Vestnik Akademi
Meditsinskikh Nauk SSSR, Russian, No 1, 1972, pp 33-42

One of the factors determining the incidence of oncological pathology is believed to be environmental pollution with carcinogens. Development of industry, urbanization, as well as increased use of electricity in different branches of the economy have resulted in access of numerous compounds some of which have carcinogenic properties into the environment. In this connection, it is particularly important to pursue investigations dealing with carcinogenic pollution of the environment. We refer, first of all, to such widespread carcinogens as polycyclic aromatic hydrocarbons (PAH).

While the history of investigating carcinogenic PAH in atmospheric air dates back several decades, such studies directed toward the water environment were initiated relatively recently. Without going into the history of this matter, it must be stressed that the earliest work dealing with pollution of water reservoirs by carcinogens (hydrocarbons) were published only in the 1950s. At that time, the investigations of G.M. Gortalam and P.P. Bikan (1958), G.P. Yakovleva (1955), and other authors were published in the Soviet Union.

In spite of the obvious importance of the problem, and of the experience gained by investigators in different countries in investigating it, there are still a number of aspects that have not been studied at all, or else not sufficiently investigated.

In particular, there has not been sufficient investigation of carcinogenic hydrocarbon pollution of fresh water reservoirs, of factors affecting its level, as well as of the fate of carcinogenic PAH in water.

For this reason, we pursued investigations to develop precisely these issues.

USSR

UDC 614.777: [615.277.4:547.53

IL'NITSKIY, A. P., YERSHOVA, K. P., KHESINA, A. YA., ROZHKOVA, L. G.,
KLUBKOV, V. G., and KOROLEV, A. A., Institute of Experimental and Clinical
Oncology, Academy of Medical Sciences USSR, Institute of General and Communal
Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, and First
Moscow Medical Institute imeni I. M. Sechenov

"Stability of Carcinogens in Water and Effectiveness of Decontamination
Methods"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Abstract: Polycyclic aromatic hydrocarbons, especially benzpyrene, can re-
main active in water a long time and spread to considerable distances from
the source of contamination. The wide distribution of these carcinogens
in water is promoted by the presence of certain substances that help them to
dissolve, e.g., surfactants which at concentrations of 10 to 50 mg/Ll can
increase the solubility of benzpyrene as much as 10-fold. Certain purifi-
cation methods (ultraviolet irradiation, chlorination, ozonization, gamma
irradiation) decrease the concentration of the carcinogens in varying degrees.
Ozonization is the most effective, gamma irradiation the least effective.

1/2

- 88 -

USSR

IL'NITSKIY, A. P., et al., Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Experiments showed that bacteriological indicators (e.g., the coli titer) following the use of ultraviolet or gamma rays reveal little about the presence or absence of carcinogenic hydrocarbons. Sixty minutes' boiling of water containing benzopyrene at a concentration of 0.002 to 0.002 μ g/L neutralized most of the compound.

2/2

USSR

UDC 613.644

IL'NITSKAYA, A. V. and PAL'TSEV, Yu. P., Moscow Institute of Hygiene imeni F. F. Erisman

"Combined Effect of Ultrasound and Noise of Standard Parameters"

Moscow, Gigiyena i Sanitariya, No 5, 1973, pp 50-53

Abstract: Various physiological functions were studied in healthy male and female subjects age 19 to 22 after exposure to (a) ultrasound at a frequency of 21 kHz and 110 db, (b) broad-band sound at the main frequencies from 1,000 to 10,000 Hz and 75 db, and (c) ultrasound and noise of the above parameters. Low-frequency ultrasound of 110 db produced functional changes in the central nervous (e.g., abnormal brain bioelectrical activity) and cardiovascular (e.g., lowering of blood pressure, marked acceleration of the pulse) systems and vestibular apparatus (irregular nystagmic rhythm, decrease in amplitude and, in some cases, absence of nystagmus even after repeated stimulation of the analyser). The combined effect of high-frequency noise and ultrasound caused the same changes as ultrasound, but the vestibular reaction to the two stimuli was more pronounced than to ultrasound alone. Ultrasound of 110 db did not affect acoustic sensitivity.

1/1

USSR

UDC 621.396.663

BRUDNYY, E. O., IL'NITSKIY, L. YA.

"Analysis of the Causes of the Occurrence of Errors in the Readings of an Automatic Radio Compass During Banking of Aircraft and Spacecraft"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 3-11 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G71)

Translation: A study is made of the electromagnetic field around an aircraft the surface of which is approximated by an ellipsoid of rotation. Formulas are derived which permit investigation of the nature of variation of the radio deviation for various bank angles of the aircraft. There are 5 illustrations.

1/1

- 53 -

USSR

UDC 621.396.663

BRUDNYY, E. O., IL'NITSKIY, L. YA.

"Possible Versions of the Operation of Automatic Middle-Wave Aircraft Radio
Compasses for a Common Nondirectional Antenna"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific
Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 11-14
(from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G72)

Translation: A study is made of the mutual effect of the receivers of radio
compasses when operating on a common nondirectional antenna. Various methods
of decoupling them for parallel operation are demonstrated. The basic re-
quirements on the operation of the receivers on a common antenna are formu-
lated. There are 2 illustrations and a 2-entry bibliography.

1/1

USSR

UDC 576.8.097.22:615.33]:576.8.098

TALLMEYSTER, E. T., KHEYNARU, A. L., and ILOMETS, T. Ya., Tartu State University

"Multiplicity of Mechanisms Controlling Episomal Resistance to Antibiotics"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 23-27

Abstract: R-factors of 10 wild polyresistant strains of Shigella and Escherichia coli were investigated after they were transferred to an auxotrophic E. coli K12 W1845 F⁻ strain through conjugation. Serial tests, performed to study the behavior of genetic determinants of resistance to streptomycin, levomycetin, and benzylpenicillin, yielded diverse results. Seven R-factors displayed either low-level (50-100 mcg/mg) or high-level (200-1000 mcg/mg) resistance to streptomycin after conjugation. One R-factor controlling resistance to benzylpenicillin lacked beta-lactam activity, while absence of enzymatic inactivation of levomycetin was demonstrated by Bouanchaud color tests in the case of two R-factors resistant to that antibiotic. The results indicate that R-factors with an identical antibiotic resistance spectrum may have genetic resistance determinants with different mechanisms of action.

1/1

- 31 -

USSR

UDC: 8.74

ILOVAYSKIY, I. V.

"A Nonclassical Procedure for Synthesizing Digital Systems and an Experiment in Developing a Set of Automatic Design Programs"

Moscow, Kibernetich. sistemy avtomatiz. proyektir.--sbornik (Cybernetic Automated Design Systems--collection of works), 1973, pp 119-126 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V587 by O. Belkin)

Translation: It is noted that the theory of automata and synthesis of combination circuits is difficult to apply to the actual design of large discrete systems because of the awkwardness of assigning the initial data. It is suggested that the process of synthesis be broken down on the structural and logical levels into a number of substages in accordance with representation of the discrete system by a set of pairs of equally detailed flowchart descriptions. The program system is compiled in LyAPAS language and realizes the logic stage of synthesis up to the circuit diagram level (with time optimization). On the level of programs which are not reduced to a system, synthesis is completed up to block diagrams.

1/1

USSR

UDC: 577.4

ILOVAYSKIY, I. V.

"Formal Synthesis of Circuits for a Device in Accordance With Algorithms for Functioning of the Circuits"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 47, Novosibirsk, 1971, pp 56-72 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V457)

Translation: The paper deals with the stage of converting descriptions of the functioning of devices into circuit descriptions as related to logic synthesis. [From the introduction].

1/1

- 26 -

USSR

UDC 8.74

ILOVAYSKIY, I. V., SIDRISTYY, B. A.

"Formalization of the Process of Planning and Designing Digital Devices"

V sb. Vychisl. sistemy (Computation Systems -- collection of works), vyp. 47, Novosibirsk, 1971, pp 73-86 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V557)

Translation: An approach is formulated for the problems of planning and designing digital devices in the logical synthesis step (using the terminology of V. M. Glushkov in the book Teoriya konechnykh i verovatnostnykh avtomatov [Theory of Finite and Probability Automata], Moscow, Nauka Press, 1965).

1/1

- 60 -

AA0046264

ILVOVSKIY

L.I.

~~BR 0482~~

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

243497 SUSPENDED LOAD-CARRYING CONVEYOR, comprises
a running track along which, by means of
a traction unit carriages move which carry the
suspension arms for the loads. The loading and
unloading of the suspension arms of these conveyors
and also the technological operation usually
require complicated equipment and frequently to
carry out these operations it is necessary to
lower the speed of movement of the traction unit
of the conveyor. Now at selected spots the
conveyor is fitted with a brake (10) for stopping
the traction unit (2) and the frame which is
driven along rigid guides (6) on which the
rotating mechanism (9) are fixed for altering the
direction of movement of the traction unit and
also the section of the track (4) which is
connected by expanding joints (5) to the track of the

V

18

1/3

19781385

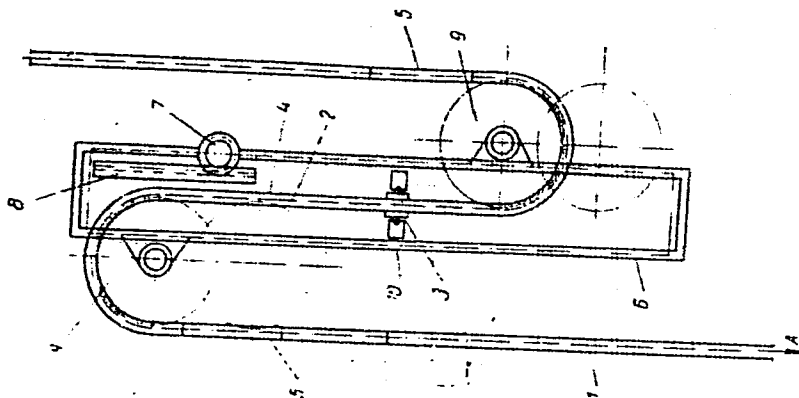
AA0046264

conveyor. This construction allows for the temporary stoppage of a section of the traction unit of the conveyor at a given place without stopping the drive of the conveyor, and consequently the loading and unloading of the suspension arms of the conveyor; and also the technological operations with the load can be carried out in the stationary position.

6.11.67. as 1196069/27-11, IL'VOVSKII, L.I.
(22.9.69) Bul. 16/5.5.69. Class 81e, Int. Cl.
B 65g.

19781386

AA0046264



96.

3/3

19781387

USSR

UDC: 51

ILOVAYSKIY, N. D.

"Automated Forecasting of Train Traffic"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 27, pp 134-138 (from RZh-Matematika, No 9, Sep 73, abstract No 9V598 by the author)

Translation: A system is described for tracing, generating, and forecasting train traffic for current, eight-hour, and 24-hour periods. A method is presented for forecasting the arrival of trains at the railway terminal and planning train make-up with regard to the reliability of marshalling yard operation for barrier-free train reception. Some questions of software for the given system based on dynamic programming are considered.

1/1

Pharmacology and Toxicology

USSR

UDC 776

DUBITSKIY, A. M., ILYALETDINOVA, S. G., and OBUKHOVA, V. M.

"Toxicity of Blue-Green Algae for Larvae of Blood-Sucking Mosquitoes of South-East Kazakhstan"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 65-67

Abstract: Of 13 species of algae tested, *Microcystis aeruginosa*, *Hapalosiphon fontinalis*, *Anabaena variabilis*, and *Anabaena oscillarioides f. turkestanica*, were toxic to larvae of *Culiseta longiareolata*, *Aedes aegypti*, *Aedes caspius*, and *Culex pipiens*. When exposed to the above algae, 44 to 99.7% of mosquito larvae perished. *Microcystis aeruginosa* was the most toxic, and *Anabaena oscillarioides f. turkestanica*, least toxic for larvae, with the remaining two species occupying an intermediate position. Analysis of the stomach contents of larvae showed that they contained 50-70% algae. However, mosquito pupae, which do not feed on algae, were not affected by any of the algae tested.

1/1

USSR

UDC 612.841.617.721.6+612.842.67-085.835.3-073

CHERKASOV, I. S., Doctor of Medical Sciences, SHIBINSKAYA, N. I., Docent,
KOBOZEVA, G. I., Candidate of Medical Sciences, RADKOVSKAYA, A. YA., and
IL'YASHENKO, A. P., Physician, Chair of Eye Diseases, Odessa Medical Institute
and Basseynova Hospital for Mariners

"Hydrodynamics of the Eye and Vascular Pressure in Healthy Man During Hyper-
baric Oxygenation"

Odessa, Oftal'mologicheskiy Zhurnal, No 8, 1971, pp 575-577

Abstract: The investigation was performed on 10 healthy subjects aged 18-34, in a 4.5 m³ pressure chamber which was continuously ventilated to maintain oxygen concentration at 40-60% under conditions of normal temperature, humidity and CO₂, and at a pressure of 2.5 atm. The following determinations and calculations were performed: tonography, blood pressure in the brachial artery and in the central artery of the retina, average dynamic arterial pressure, the retino-brachial coefficient, and the coefficient of Lobstein. The results revealed that hyperbaric oxygenation produces no significant changes in the hydro- and hemodynamics in the eyes of healthy individuals. A small decrease in intracocular fluid secretion and intracocular pressure occurred during exposure to 2.5 atm. After decompression, production of the intracocular fluid was increased somewhat due to a greater blood flow, but soon returned to normal.

1/1

Molecular Biology

USSR

UDC 576.851.47.095.38:576.858.9

PANTSKHAVA, N. N., DITYATKIN, S. Ya., and IL'YASHENKO, B. N., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Reproduction of Infectious DNA from E. coli Phage in Proteus Cells"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 35-40

Abstract: Studies were conducted to determine the optimum conditions for the infection of 2 strains of *Proteus vulgaris* (401 and 3137) with the circular DNA (1.7×10^6 MW) isolated from E. coli phage $\lambda\phi 7$. DNA was isolated from ca. 10^{13} viral particles per 1 ml, and diluted with 0.05 M tris buffer, pH 7.8. The DNA preparation was mixed with a proteus culture, grown in peptone broth (Spofa, Czechoslovakia), and 0.2 ml samples were immediately frozen in a mixture of dry ice and alcohol at -70° , and then thawed in a water bath at 37° . After an additional 10 min incubation period, the bacteria were diluted with 1% peptone and the viral titer was determined by plaque assay on E. coli C. Optimal conditions consisted of a cell concentration of $1-2 \times 10^{10}$ /ml, and $0.062-1 \mu\text{g/ml}$ of DNA, pH 6.0-8.0, and Spofa peptone. Under these conditions

1/2

USSR

PANTSKHAVA, N. N., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 35-40

$1-4 \times 10^5$ infectious centers were formed per $1 \mu\text{g}$ of phage $\lambda\phi 7$ DNA. The fraction of proteus cells that were transfected constituted $1/10^5$ th of the total number of proteus cells. The low efficiency of infectivity was apparently due to the low number of proteus cells able to take up the DNA. The freezing and thawing method has been found to be the only one allowing proteus transfection with E. coli phage $\lambda\phi 7$ DNA. All previous studies had consisted of attempts at infecting proteus spheroplasts with phage $\lambda\phi 7$ DNA. Proteus cells in the lag, logarithmic, and stationary phases of growth were equally well infected.

2/2

- 25 -

USSR

UDC 576.8.095.51.095.18:615.28

SKALA, L. Z., IL'YASHENKO, B. N., LIKHACHEVA, N. A., and SKVORTSOVA, Ye. K.,
All Union Institute of Disinfection and Sterilization

"A Study of the Mutagenic Action of Halide Containing Disinfectant"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, p
146

Abstract: Four iodine compounds and four chlorine compounds were tested on bacteria and phages in concentrations causing 86-99% inactivation of the microbes. The frequencies of mutation observed in *E. coli* were: 6×10^{-6} by iodopiron, 4×10^{-6} by iodonate, 3×10^{-6} by iodolan, and 6×10^{-6} by an aqueous iodine solution. Chlorine compounds yielded similar results on *E. coli*: 1.1×10^{-7} mutations were observed after application of chlorsuccinamide, 5×10^{-6} after KDKhTsK, 3.1×10^{-6} after sulfochlorantine, and 3.4×10^{-6} after chloramine. The frequency with which the bacteriophages reverted to wild type ranged from 5×10^{-6} to 7×10^{-6} . Since the frequency of spontaneous mutations in *E. coli* K12 (reversion from thr^- to thr^+) is 7.6×10^{-6} , it is concluded that the strongly inactivating iodine and chlorine compounds exert no mutagenic effect on the bacteria and bacteriophages investigated.

1/1

- 20 -

USSR

UDC: 681.327

IL'YASHENKO, Ye. I., MATVEYEV, S. N.

"Results of Investigation of an Associative Memory with Compensation of Interference Signals"

Moscow, Magnit. elementy avtomatiki i vychisl. tekhn. XIV Vses. soveshch., 1972. Ref. dokl. (Magnetic Elements in Automation and Computer Technology. Fourteenth All-Union Conference, 1972. Abstracts of Papers), 1972, pp 100-104 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B384 by B. K.)

Translation: The paper deals with problems of construction of an associative memory using a compensation digit in the accumulator to appreciably increase the number of digits which can be interrogated in parallel. An investigation is made of the effectiveness of introducing such compensation into a memory model with a capacity of 64 twelve-digit words. Oscillograms are presented for useful signals and interference, as well as the results of a study of their statistical characteristics plotted for compensated and uncompensated accumulators. It is noted that with an increase in the accumulator capacity (to more than 128 words), there is a gradual reduction

1/2

USSR

IL'YASHENKO, Ye. I., MATVEYEV, S. N., Magnit. elementy avtomatiki i vychisl. tekhn. XIV Vses. soveshch., 1972, Ref. dokl., 1972, pp 100-104

in the effectiveness of introducing a compensation digit. Two illustrations, bibliography of four titles.

2/2

- 40 -

USSR

UDC 681.327.02

IL'YASHENKO, Ye. I.

"A Magazine-Type Associative-Address Memory Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285057, class 21, filed 14 Apr 69, published 29 Oct 70, p 43

Translation: This Author's Certificate introduces a magazine-type associative-address memory device. The unit contains a data storage device, limit switches connected to a coordinate detector matrix, an associative interrogation register, a mask-register and a control module. As a distinguishing feature of the patent, the number of elements in the device is reduced and its speed is increased by connecting the address outputs of the limit switches through rectifiers to the address windings of the transformers in the coordinate detector matrix.

1/1

Higher Algebra & Geometry and Topology

USSR

UDC 513.7

IL'YASHENKO, YU. S. (Moscow)

"On Rectification and Circle Formation Problems"

Moscow, Matematicheskiy Sbornik, Vol 90, vyp 2, Feb 73, pp 184-195

Abstract: The article gives a solution of the rectification problem and a partial solution of the circle formation problem. These problems were posed by A. M. LEONTOVICH, I. I. PYATETSKIY-SHAPIRO, and O. N. STAVSKAYA in earlier articles. The author formulates a rule to effect the rectification of any unclosed, "admissible" broken line (i.e., a broken line which has no link degenerating into a point or lying on a preceding or subsequent link). For each natural N proof is given of the existence of an analogous rule for effecting circle formation by any n -link ($n < N$), closed broken line with a rotational number different from zero and the angle between adjacent links different from π .

The author thanks A. M. LEONTOVICH, "without whose collatoration the article probably would not have been written. A. M. LEONTOVICH's

1/2

USSR

IL'YASHENKO, YU. S., Matematicheskiy Sbornik, Vol 90, vyp 2, Feb 73, pp 184-195

computations suggested to the author the way to prove Theorem 3 [on circle formation/; to him belongs the explanation for the 'eights paradox,' as well as many comments which in the final text constitute details of the proof. Unfortunately, A. M. LEONTOVICH refused to consider himself the co-author of the present article."

2/2

- 7 -

USSR

IL'YASHENKO, Yu. S.

"Problems of Straightening and Rounding"

Mat. sb. [Mathematics Collection], 1973, 90, No 2, pp 184-195 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V677 by V. Mikheyev)

Translation: Solutions are presented to the following problems: A. The Straightening Problem. Each point $x \in R^{2n}$, $x=(x_1, y_1, \dots, x_n, y_n)$ corresponds to an $(n-1)$ -link non-closed broken line in a plane with points $(x_1, y_1), \dots, (x_n, y_n)$. Each natural motion q of plane R^2 corresponds to a motion \bar{q} of space R^{2n} : $\bar{q}(x)=(q(x_1, y_1), \dots, q(x_n, y_n))$. The group of all such transforms is represented by \bar{G} . The problem is to construct a stage, generated by transform $x \rightarrow F(x)$ (1) or a flow defined by the equation $\dot{x}=F(x)$ (2), such that: 1) stage (1) and flow (2) satisfy the requirements of localness, homogeneity and in a certain sense are independent of n (see part 2); stage (1) and flow (2) commute with group \bar{G} ; 2) for almost all $x \in R^{2n}$, broken line $F^v(x)$ (correspondingly $q^t(x)$) becomes straight as $v \rightarrow \infty$ (correspondingly as $t \rightarrow \infty$). This means that set $\{F^v(x), v > 0\}$ (correspondingly, $\{q^t(x), t > 0\}$) as

1/2

USSR

IL'YASHENKO, Yu. S., Mat. sb., 1973, 90, No 2, pp 184-195

a compact closure and all limiting points of set $\{F^v(x), v>0\}$ (ω are the limiting points of set $\{q^t x, t>0\}$) correspond to straight broken lines.

Here F^v is the v th power of the transform (1), q^t is the transform of phase flow (2) in time t ; a straight broken line is a broken line in which each link has length 1 and serves as a continuation of the preceding link. B. The Problem of Rounding is formulated exactly as the problem of straightening, but is related to closed lines; point $x \in R^{2n}$ now corresponds to an n -link closed broken line; a right broken line is a regular (possibly star shaped) polygon with a side length of 1.

2/2

USSR

UDC 547.269.3+541.49

IL'YASHEVICH, I. I., PODCHAYNOVA, V. N., SEREBRYAKOVA, N. V., YEGOROVA,
L. G., and TYURENKOVA, G. N., Ural Polytechnical Institute imeni S. M. Kirov

"Synthesis of Complexing Agents. Ethylenediamine-N,N'-di- β -ethanesulfonic-N-methylphosphonic Acid and Its Properties"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 758-761

Abstract: Ethylenediamine-N,N'-di- β -ethanesulfonic acid was dissolved in water; its pH was brought to 8-9. Chloromethylphosphonic acid was prepared. Both solutions were then combined, kept on water bath until the pH ceased to change, maintaining it at 8-9 during the reaction time. At the completion of the reaction, the solution was cooled, its pH lowered to 1-2 by addition of HCl, the solution was filtered and evaporated. Next it was passed through a KU-1 ion exchange column, evaporated, and the product -- ethylenediamine-N,N'-di- β -ethanesulfonic-N-methylphosphonic acid (I), m.p. 86-87° is precipitated with methanol. It is more basic than ethylenediamine-N,N'-di- β -ethanesulfonic acid, but less basic than ethylenediamine-N,N'-tri- β -ethanesulfonic acid (II). It was shown that presence of the P(O)(O⁻)₂ group in (I) increases the stability of its complexes with cations, as compared to (II).

1/1

- 28 -

USSR

UDC 532.5

IL'YASHUK, B. G., KUDRYAVTSEVA, K. A., LEYFEROV, V. A.

"Device for Studying Liquid Oscillations"

Tr. Fiz.-tekh. in-t nizk. temperatur AN USSR (Works of the Physico-Technical Low-Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970, vyp. 1, pp 265-272 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B359)

Translation: A device is described which creates reciprocal movement in the horizontal plane according to a sine law for a cavity filled with liquid. The cavity with the liquid is installed on a dolly which moves along guides and is driven by a crankgear with multilink breaking shaft. Movement along the guides using the crankgear permits high accuracy of reproduction of the sine law to be obtained, and application of the multilink breaking shaft permits the amplitude of movement of the dolly to be changed during movement. A special lock instantaneously halts the dolly at the end position. This offers the possibility of studying the damping of the movement of the liquid. The design of the cavities permits directional collapse of the liquid mass, which simulates pulsed application of a load. Oscillations of a liquid in a sphere with and without dampers are presented as an example.

1/1

- 162 -

USSR

UDC 747.341.139.31 + 547.391

PUDOVIK, A. N., BATYYEVA, E. S., IL'YASOV, A. V., NESTERENKO, V. D.,
MUKHTAROV, A. Sh., and ANOSHINA, N. P.

"Reactions of Trivalent Phosphorus Acid Amides With p-Quinones"

Leningrad, Zhurnal Obschey Khimii, Vol 43 (105), No 7, Jul 73, pp 1451-1456

Abstract: Reaction of N-acetamides of dialkylphosphorous acids with p-quinones has been studied. Analogously to N-arylamidophosphites the N-acetamidophosphites react easily with p-benzoquinone, chloranil, and α -naphthoquinone forming crystalline addition products -- O,O-dialkyl O-p-hydroxyaryl N-acetimidophosphates. Using the EPR method, the possibility of a single electron transfer in the reactions of trivalent phosphorus acid amides with p-quinones was demonstrated going through an intermediate ion-radical formation.

1/1

- 43 -