

Plant Pathology

USSR

UDC 632

BEKKER, E. E., DOVLETMURADOV, I. D., PUSHKAREVA, I. D., POLETAYEVA, V. F.,  
SHILINA, S. G., and YASAKOVA, E. I., Institute of Botany, Academy of Sciences  
Turkmen SSR

"The Nature and Biosynthesis of the Toxin of Fusarium Wilt Pathogen, the  
Mechanism of Its Action, and Its Possible Transformation in the Cotton  
Plant"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, Sep/  
Oct 71, pp 749-754

Abstract: Analysis of purified extracts of *Fusarium oxysporum* f. *vasinfectum*  
culture liquid confirmed that the toxin of fusarium wilt of the fine-  
fibred cotton plant is fusaric acid. The severity of wilt depends mainly  
on the rate of production of fusaric acid by the pathogen. Biosynthesis of  
this toxin appears to proceed through formation of tryptophan and is inhibited  
by substances participating in transmethylation, such as cobalt or methionine.  
Plant resistance is augmented in the presence of cobalt, vitamin P, and  
pyridine alkaloids, and is considerably reduced in the presence of thiamine.  
The mechanism of action of fusaric acid probably involves competition between  
the product of its decarboxylation, 3-n-butylpyridine, and dehydrogenase co-  
factors. Immunity may be due to detoxification of fusaric acid through its  
transformation into methylamide

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UDC 542.91:547.413

BEKKER, R. A., ASRATYAN, G. V., LUR'YE, E. P., and DYATKIN, B. L., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Synthesis of Fluoroolefines by the Reaction of Polyfluorochlorocarbinols With Phosphorus Pentasulfide"

Moscow, Izvestiya Akademii Naul SSSR, Seriya Khimicheskaya, No 5, May 73, p 1159

Abstract: Reaction of polyfluorochlorocarbinols with  $P_2S_5$  leads to the formation of fluoroolefines: 1,3,3-trichloro-2-methylperfluoropropanol-2 yields 1-fluoro-1,1-dichloro-2-(difluorochloromethyl)propene, b.p.  $120^\circ$ , and 1,3-dichloro-2-phenylperfluoropropanol-2 yields  $\alpha$ -(difluorochloromethyl)- $\beta,\beta$ -difluorostyrene, b.p.  $82^\circ/40mm$ .

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UDC 59(093.32) : 591.9(265)

BEKKER, V. E., ZEZINA, O. N., LEVENSHTEYN, R. Ya., and MEL'NIKOV, I. A.,  
Institute of Oceanology, Academy of Sciences, USSR

"Zoological Studies During the 48th Voyage of the Scientific Research Ship  
Vityaz in the Central Part of the Pacific Ocean"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 6, Jun 71, pp 955-957

Abstract: A study was made of oceanic and ocean floor fauna of the Pacific Ocean over the Milwaukee banks, at Fiji, Tonga, Rarotonga, Auckland, Curtis Island, Penryn Atoll, and Honolulu. Two hundred and ten takes yielded 115 species belonging to 74 genera and 46 families, including some very rare specimens. Data were obtained on fishing grounds for blue fin and Pterolamiops longimanus sharks. Most numerous in the collections were flying fish of the Exocoetidae family and phosphorescent anchovies of the Myctophidae family (including the *Diaphus regani* caught at 18°1' southern latitude and 176°43' eastern longitude, which had previously been classified among the west-equatorial species). Hatchlings and fingerlings of *Exocoetus* sp., *Hirundichthys*, and others were encountered on the surface of the water only during daytime, with fewer of their longer specimens caught during daytime, and still

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BEKKER, V. E., et al., Zoologicheskii Zhurnal, Vol 50, No 6, Jun 71, pp 955-957

larger ones -- only at night. The greatest abundance of fingerlings was found in the regions where the northern and southern tropical currents meet, and the poorest catches were in equatorial waters. Sea bottom investigations in the low-productivity oligotrophic areas of the Pacific Ocean confirmed the general sparseness of fauna, with a predominance of Foraminifera, small glass sponges, Scyphozoa, and Serpulidae. A general similarity of the fauna of the Tonga and Kermadec trough was revealed, with several live species found in the Tonga basin for the first time. Biochemical investigations and quantitative analyses of easily assimilated organic substance of the superficial layer of deep-water sediment were also done.

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Hydrobiology

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UDC 59(093.32)

*B*  
KOVALEVSKAYA, N. V., BEKKER, V. E., and PASTERNAK, F. A., Institute of Oceanology, Academy of Sciences USSR, Moscow

"Biological Studies During the First Voyage of the Scientific Research Ship 'Dmitriy Mendeleev' in the Western Tropical Atlantic"

Moscow, Zoologicheskii Zhurnal, Vol 49, No 3, 1970, pp 478-479

Translation: The new scientific research ship of the Institute of Oceanology, Academy of Sciences USSR, "Dmitriy Mendeleev" left on 21 February 1969 on her first voyage from the port Kaliningrad. The trip lasted 61 days, during which 70 stations were visited covering about 14,900 nautical miles, with one stop at Montserrat and two entries into the ports -- Port-of-Spain (Trinidad) and Gibraltar. The main goal of the voyage was to take instrument readings of the eastward current from the ridge of the Lesser Antilles. Concurrently, biological experiments were carried out, including collection of benthic fauna, fish, and ichthyoplankton, as well as several attempts at artificial fertilization of fish roe and incubation in an aquarium. These studies were conducted by the authors of this paper at 60 stations of the trip.

Fish collection produced about 100 different species belonging to 80 genera  
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KOVALEVSKAYA, N. V., et al, Zoologicheskiy Zhurnal, Vol 49, No 3, 1970, pp 478-479

and 46 families, and in addition a considerable quantity of fish ova and larvae (determination of quantity was impossible during the voyage). The collection yielded 28 shore types and 68 ocean ones (43 bathy- and mesopelagic and 25 epipelagic). The most diverse are the mesopelagic family Myctophidae (8 genera and 18 species) and those from epipelagic Exocoetidae (6 general and 11 species). The remaining 44 families were represented by 1-2, or occasionally by 3 species. Quantitatively, the most numerous was the collection of flying fish (Exocoetidae).

The collection of deep sea fish was quite diverse, but most types were represented only by single examples. The only exception were several types of Myctophidae which came to the surface at night and could be relatively easily caught by surface catching equipment. For example, when the ship was stationed at Montserrat Island, about 200 examples of *Diaphus dumerili* and *D. garmani* were caught with dip nets. It is also interesting that real mesopelagic types, which reside during the day at depths of 300-500 m, could be found in large quantities at night at a depth of about 20 m. Finally, it should be noted that these types were caught at one station only in the immediate proximity of the island. All

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other Myctophidae found at night on the surface were discovered at considerable depths (1000 m and more). These include the only example of *Myctophum selenops*, a species known by only a few examples.

From the zoogeographic point of view, an interesting catch was made at 8° north latitude and 53°16' west longitude -- one example of *Electrona rissoi* (Myctophidae), which is well-known in the eastern Atlantic but not found in the past west of 40° west longitude. Catches of several rare and poorly studied types were also interesting (*Heterophotus ophistoma* [Astronesthidae], *Lepidophanes supralateralis* [Myctophidae] and some others).

Most numerous were catches of epipelagic fish, made at night with electrical illumination, using dip nets and a Savilov pleustonic trawl net; Oxyporhamphidae and Exocoetidae comprised this group. Most numerous forms in these groups were *Oxyporhamphus micropterus*, *Parexocoetus brachypterus*, *Exocoetus volitans*. *Prognichthys gibbifrons*, *Hirundichthys affinis* and *H. speculiger*. These types, except for *P. brachypterus*, were found at almost all stations, while the latter was found up to the 300 mile limit from the shores.

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Roe and larvae of *Oxyporhamphus micropterus* and *O. meristocystis* (the latter only near the Tobago and Barbados Islands) were found in the ichthyoplankton catch. Up to now it was believed that the first -- the oceanic type -- was widely scattered in tropical areas of all three oceans, and the second -- the neustic -- only in Pacific and Indian oceans. The roe and larvae of *O. micropterus* were caught both near the shore and far away from them, but the largest catch was made at a station northeast of the Guiana shores. In the same region, intensive spawning of one of the most numerous types of flying fish, *Exocoetus volitans*, took place (up to 880 larvae in one 20 min catch with the pleustonic trawl net). In March, 1969, northeast of the Lesser Antilles, these two types did not spawn, and the offspring observed there were most probably carried over by the Guiana and Antilles streams. Spawning of other flying fish was also observed in this region. Northeast of Desirad Island, developing roe of *Cheilopogon furcatus* was found, and at Montserrat Island, running males and females of *Ch. lutkeni* were caught.

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In recent years (mainly due to the efforts of Soviet expeditions) a systematic quantitative study was carried out of the benthic fauna of the Pacific, Indian and Southern oceans. Charts of quantitative distribution (quite detailed for many regions) were prepared, and some interesting principles were determined for the distribution of benthic fauna in these areas. As paradoxical as it seems, no such studies were carried out in the Atlantic ocean. Currently only isolated data exist on the quantitative distribution of benthos around the shores of Central and South Africa, along the meridian cross section from the shores of Greenland to the equatorial zone, and along the cross section from North America to Bermuda. Therefore, even these unpretentious results, obtained during the first voyage of the scientific research ship "Dmitriy Mendeleev" are quite interesting.

The poorest development of benthic fauna on the meridian cross section mentioned above is found in the southern part of the tropical zone, where it is represented by a single foraminifera. Extreme paucity of benthos was also observed in the northern zone. There the benthos biomass reached only 0.002-0.005 g/m<sup>2</sup>. At the same latitude but somewhat closer to the Antilles ridge islands, at a depth 5/8

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of 4600 m we found a considerable increase of the benthos biomass, up to 0.03 g/m<sup>2</sup>, mainly due to vitreous sponges and polychaeta, Aricidae and Moldanidae. Evidently this is due to a slight upwelling in the region of that station.

Several quantitative samples of benthos were collected at the cross section along the ridge of the Antilles Islands. There, at a depth of 1500-2000 m, its biomass was 0.3-1.9 g/m<sup>2</sup>. These indicators, considering the depths and locations of the stations along the north portion of the tropical zone, are considered to be quite high. Even more interesting and actually somewhat unexpected results were obtained along the cross section of the upper and lower parts of the South American continental incline and its foothill zone south of the Orinoco delta. Here a very diversified and rich benthic fauna was found at four stations. At 400 m, the biomass of bivalve mollusks, polychaeta, nematoda and crustaceans reached 34.24 g/m<sup>2</sup>. Lower down the incline, at a depth of 800 m, the benthic fauna becomes poorer, but even here the polychaeta, crustaceans and bivalve mollusks gave a biomass of 25.52 g/m<sup>2</sup>. Even in the middle portion of the incline, at a depth of 1200 m, a dense population of the brittle stars of the

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Amphiura types were found, which together with the polychaeta, isopoda crabs and bivalve mollusks gave a biomass of 18.24 g/m<sup>2</sup>. At the same station, several examples of pogonofora were found. These are noteworthy data. Expeditions in past years determined the high productivity of the benthos fauna of the continental incline of the Pacific and Atlantic oceans at moderate latitudes. The fact that benthos values for the bathyal zone of the tropical belt obtained by us are fully comparable with those of the continental incline of moderate latitudes, is a very unique phenomenon requiring intensive studies. In the region studied, a distinct stratification of waters is to be expected, as well as a possible deep layer of oxygen minimum. This circumstance, together with the strong shore run-off carrying considerable organic and mineral material, should favor accumulation and rapid preservation of unoxidized organic material in the bottom. Even at the deepest station (4650 m), remote from the shore, terrigenous residues were found, inhabited by relatively rich fauna of polychaeta, oenotera, and sea lilies, with a total biomass of 0.39 grams per square meter.

The study of the benthos of deep sea channels began comparatively recently, but a lot was already accomplished. Ultraabyssal invertebrates were found in almost 7/8

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all channels of the Pacific Ocean. In this respect the Atlantic Ocean was studied much less than the Pacific Ocean. Before our study in the Puerto Rico channel, one trawling was carried out at a depth of 7000 m, and two at a depth of 6000 m, but to this date the results of these studies have not been published. Therefore, from the trawling test-runs of this voyage, the most valuable is the trawling in the western part of the Puerto Rico channel, at a depth of 6300 m. The trawling yielded more than 25 types of various benthos invertebrates -- polychaeta, bivalve mollusks, and holothurioida (a total of about 80 examples). The almost total absence of isopoda crabs was noteworthy, even though it is a usual component of ultraabyssal communities. Undoubtedly the results of this trawling will turn into a special intensive study.

During our stay at Port-of-Spain, we visited the West Indies University and Fishing Station, and learned about their activities. An exchange of collection and demonstration materials took place.

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UDC: 621.396.6-181.5(088.8)

BEKKER, Ya. M.

"A Method of Making Ferrite Films"

USSR Author's Certificate No 261859, filed 4 Sep 68, published 25 May 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V250 F)

Translation: A method is proposed for making ferrite films by chemical gas-transport reactions in an oxidative medium. The process is carried out in ozone to intensify oxidation and improve film uniformity.

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USSR

UDC: 681.32.004

BEKKER, Ya. M., AGRANOVSKIY, V. L.

"Procedure for Manufacturing Integrated Ferrite Memory Elements"

USSR Author's Certificate No 251712, Filed 24 May 68, Published 19 Feb 70  
(from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 9, Sep  
70, Abstract No 9B215)

Translation: This Author's Certificate introduces a procedure for manufacturing integrated ferrite memory elements by compacting, sintering the plates, and cooling them; it is distinguished by the fact that in order to accelerate and improve the process the plates are cooled in a neutral gas environment at a pressure exceeding atmospheric.

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USSR

UDC 681.327

BEKKER, Ya. M., LUR'YE, Ye. V., and FROLOV, N. D.

"Chemical Pickling of Ferrites as a Technological Method of Creating Integral Memories"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Engineering. Scientific and Technical Collection. Microelectronics), 1970, vyp. 5 (26), pp 40-48 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B285)

Translation: Results from studying the process of machining ferrite plates by the chemical pickling method are presented. The surface state and the pickling rate are investigated as functions of the nature of the pickling agent, its concentration, and temperature. It is pointed out that for a VT-2 type ferrite, the best pickling agent is a mixture of acids. The magnetic properties of the ferrite do not change during the pickling process. It is noted that chemical pickling can serve as the technological process used to create microholes and also complex designs and reliefs on the surfaces of ferrite plates. There are 9 illustrations and an 8-entry bibliography.

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

3/70

237288 FERRITE FILMS for memory components are prepared by vapourising the ferrite at high temperature and under vacuum and depositing it on a monocrystalline plate of MgO. Both the ferrite and the plate are warmed up to 400°C by a direct electric heater. A high frequency induction heater takes the ferrite up to 1000°C at a pressure of 0.5 torr. It takes about 2 mins. to produce an approximately 50  $\mu$  thick element. 29.3.68. as 1228755/18-24. B.YE. KLEYMAN. Ya.M. BEKKER. (10.7.69.) Bul.8/12.2.69. Class TIG. 21a. Int.Cl. H01k, H03k.

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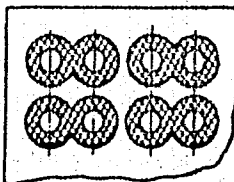
UDC: 681.327.66

*B*  
BEKKER, YA. M., BERG, I. V., KUZNETSOV, V. YA., LASHEVSKIY, R. A., SHVALEV, YU. V.

"A Memory Plate"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 36, patent No 262175, filed 3 Oct 68

Abstract: This Author's Certificate introduces a memory plate based on a ceramic slab with apertures. As a distinguishing feature of the patent, manufacture of the plates is simplified and their properties are improved by applying a ferrite film on both sides of the slab covering the apertures by pairs.



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1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--PROTON MAGNETIC RESONANCE STUDY OF THE INTERACTION OF AMINO ACIDS  
AND DIPEPTIDES WITH SRNA -U-  
AUTHOR--(03)-BEKKER, ZH.M., MOLIN, YU.N., SOROKIN, A.S.  
COUNTRY OF INFO--USSR *B*  
SOURCE--BIOCHEM. BIOPHYS. RES. COMMUN. 1970, 38(5), 871-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROTON RESONANCE, RNA, AMINO ACID, PEPTIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0310 STEP NO--US/0000/70/038/005/0871/0874  
CIRC ACCESSION NO--AP0119297  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119297

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY RESULTS ARE REPORTED OF A PMR STUDY OF THE INTERACTION OF SOME AMINO ACIDS AND DIPEPTIDES WITH SRNA. THE PMR SIGNALS OF GLYCYGLYCINE EXPERIENCED EXTREME LINE BROADENING IN THE PRESENCE OF SRNA, THE LINE WIDTH OF N, TERMINAL GLYCINE, ALPHA, CH SUB2 PROTONS CHANGING MORE THAN THE C TERMINAL. THERE WERE NO CONSIDERABLE CHANGES IN THE SPECTRA OF N, ACYLGLYCINE AND N, FORMYLGLYCYLGLYCINE IN THE PRESENCE OF S RNA, CONFIRMING THE ELECTROSTATIC NATURE OF THE ADSORPTION OF AMINO ACIDS AND DIPEPTIDES ON SRNA, AND INDICATING THAT ALL OTHER INTERACTIONS ARE LESS IMPORTANT. NEVERTHELESS, THE SPECIFICITY OF SUBSTITUTED AMINO ACIDS WAS MANIFEST IN THE INTERACTION OF DIPEPTIDES WITH SRNA. FACILITY: INST. CHEM. KINETICS COMBUST., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 550.834

BEKLEMISHEV, A. B., BARSOV, V. V., All-Union Scientific Research Institute  
of Geophysical Methods of Prospecting

"A Multichannel Device for Harmonic Analysis of Seismic Processes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tovarnyye Znaki,  
No 11, Apr 72, Author's Certificate No 333512, Division G, filed 8 Dec 69,  
published 21 Mar 72, p 184

Translation: This Author's Certificate introduces a multichannel device for  
harmonic analysis of seismic processes. The device contains signal re-  
ceivers connected through amplifiers and filters to multipliers whose out-  
puts are connected through integrators and an adder to a registration unit  
and a time mark generator. As a distinguishing feature of the patent, the  
effectiveness of analysis is improved by adding a signal generator with  
continuously variable frequency connected in parallel with the registration  
unit and with one of the inputs of each multiplier. The receiver for the  
process to be studied is connected through an amplifier to the second input  
of the photomultiplier.

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USSR

UDC 531.781.2+536.5:658.62.011.56

BEKLEMISHCHEV, A. I., BLOKIN-MECHTALIN, YU. K., BRENNERMAN, V. M., KUZNETSOV, A. A., LEBEDEVA, A. I., SHARIY, K. A.

"Information Measuring System for Automating Deformation and Temperature Measurements in Testing Structures for Strength"

V sb. Ustroystva i elementy sistem avtomatiz. nauch. eksperimentov (Devices and Elements of Automation Systems for Scientific Experiments -- Collection of Works), Novosibirsk, "Nauka", 1970, pp 169-172 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.145)

Translation: The system includes a digital measuring device, a device for transducer commutation, a centralized computer system and a device for contact with the object. The basic characteristics of the system are: number of transducers connected 2500 (2000 tensometers and 500 thermocouples); range of measuring deformation  $\pm 1 \cdot 10^{-5}$  -  $\pm 0.5 \cdot 10^{-2}$  relative units; temperature measurement range 0-375°C, 0-750°C and 0-1250°C; the size of the scale of the measuring device is 1000 units; rate of interrogation is 30 transducers per second for each of the channels; the reduced maximum error (without considering transducer error) is 1%; length of measurement distance is up to 150 m.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--COMPLEXES OF MESSENGER RNA WITH PROTEIN IN THE POLYRIBOSOMAL ZONE  
OF PLANT CELL EXTRACTS -U-  
AUTHOR--(03)-AITKHOZHIN, M.A., NAZAROVA, L.M., BEKLEMISHEV, A.B.  
COUNTRY OF INFO--USSR  
SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1970, 26(3), 56-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--RNA, PROTEIN, RIBOSOME, PLANT PHYSIOLOGY, UV  
SPECTROPHOTOMETER, RADIOACTIVITY MEASUREMENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/0470 STEP NO--UR/0031/70/026/003/0056/0058  
CIRC ACCESSION NO--AP0123040  
UNCLASSIFIED

B

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128040

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHOOTS OF PISUM SATIVUM WERE INCUBATED IN KH SUB2 PRIME32 PD SUB4 FOR 12 HR. AFTER STIRRING IN BUFFER (0.5M SUCROSE, 0.05M TRIS, 0.07M MGCL SUB2, 0.025M KCL, 0.005M MERCAPTOETHANOL), PH 7.6 SEPD. FRACTIONS OF RIBOSOMES WERE OBTAINED BY CENTRIFUGATION AND ULTRACENTRIFUGATION. RIBOSOME FRACTIONS WERE STUDIED BY UV SPECTROPHOTOMETRY AND RADIOACTIVITY MEASUREMENT. THE HIGHEST RADIOACTIVITY WAS FOUND IN HEAVY RIBOSOMES. MONO AND POLYRIBOSOME COMPONENTS WITH THE ACTIVITY OF 1.500, 1.460, AND 1.390 G-CM PRIME3 WERE DETECTED. IT WAS CALCD. THERE ARE COMPLEXES OF MESSENGER RNA WITH PROTEIN IN RATIO OF 20 PERCENT RNA-80PERCENT OF PROTEIN, BECAUSE FREE RNA HAS THE ACTIVITY 1.800 G-CM PRIME3.

UNCLASSIFIED

USSR

UDC 616-021.5:615.371(049.3)

BEKLEMISHEV, N. D. (Reviewer)

Privivochnyye Reaktsii pri Immunizatsii Zhivymi Vaktsinami (Reactions to Live Vaccines) by K. V. Bunin and K. G. Gapochko, Moscow, 1970, 296 pp

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 153-155

Abstract: The monograph under review contains not only an exhaustive review of the literature, but also the results of the authors' own studies on the subject. Chapter 1 describes the side effects of live brucellosis, plague, tularemia, and anthrax vaccines. Chapter 2 summarizes experiments on the pathogenesis of postvaccinal reactions in guinea pigs and includes a discussion of the degree of sensitization in relation to the method of injecting vaccine. Chapter 3 deals with the clinical aspects of postvaccinal reactions in human beings, especially to aerosol vaccination. Chapter 4 is concerned with the pathogenesis, compensatory mechanisms, and classification of postvaccinal reactions. The concluding chapter analyses the possibilities of pathogenetic prevention of postvaccinal reactions using diphenhydramine and corticosteroids, with a special section devoted to  
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BEKLEMISHEV, N. D., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,  
No 10, 1971, pp 153-155

"nonspecific" desensitization. Injection of one vaccine was found to reduce sensitivity to another. The monograph is praised for its abundance of new and interesting facts. The reviewer takes exception only to the use of some technical terms, e.g., anaphylactic shock and immediate allergy, and to the author's assessment of the role of histamine in the mechanism of allergic reactions.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--BIOCENOLOGICAL PRINCIPLES OF COMPARATIVE PARASITOLOGY -U-  
AUTHOR--BEKLEMISHEV, V.N. B  
COUNTRY OF INFO--USSR  
SOURCE--BIOCENOLOGICAL PRINCIPLES OF COMPARATIVE PARASITOLOGY  
(BIOTSENOLOGICHESKIYE OSNOVY SRVNI TEL'NOY PARAZITOLOGII) MOSCOW, NAUKA,  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BIOCENOSIS, PARASITOLOGY, ARTHROPODA, EPIDEMIOLOGY, INSECT  
VECTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA ME--3003/0070 STEP NO--UR/0000/70/000/000/0001/0501  
CIRC ACCESSION NO--AM0129342  
UNCLASSIFIED

2/2 017

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AM0129342

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TABLE OF CONTENTS: PREFACE 5.  
 I. BIOGEOLOGY AND POPULATION BIOLOGY 7. II PARASITISM OF ANTHROPODS  
 ON LAND VERTEBRATES 250. III CARRIERS AND CAUSATIVE AGENTS 315.  
 IV BIOLOGY AND BLOOD SUCKING ANTHROPODS 388. V EPIDEMIOLOGY AND  
 FOCUSES OF INFECTIONS OF TRANSMISSIVE DISEASES 451. BIBLIOGRAPHY OF  
 WORKS OF V. N. BEKLEMISHEV 489. THE BOOK CONTAINS A GENERAL PICTURE  
 OF THE ORGANIZATION OF THE LIVING EARTH COVER AND ITS STRUCTURE FROM  
 "SPODCHNENNYE" UNITS. BIOGENOSES AND POPULATIONS ARE REGARDED AS ONE  
 OF THESE UNITS. ANALYZED ARE ALSO PARASITIC TYPE POPULATIONS WITHIN  
 THESE UNITS. RELATIONSHIPS BETWEEN PARASITE TYPES AND HOST TYPES ARE  
 DISCUSSED IN CONNECTION WITH OTHER BIOGEOLOGICAL RELATIONSHIPS. AS  
 THE RESULT WE ARE GIVEN A CLEAR IDENTIFICATION OF THE POSITION OF  
 CAUSATIVE AGENTS AND CARRIERS OF DISEASES IN LIVING NATURE AND IN HUMAN  
 COLLECTIVES, AS WELL AS THEORETICAL PRINCIPLES OF THEIR CONTROL. THE  
 BOOK WILL BE OF INTEREST TO BIOLOGISTS, ECOLOGISTS, PARASITOLOGISTS AND  
 MEDICAL ENTOMOLOGISTS.

UNCLASSIFIED

USSR

UDC: 517.925.34

BEKLEMISHEVA, L. A.

"Asymptotic Behavior of Some Solutions of Systems With a Polynomial Right-Hand Member"

Moscow, Sibirskiy Matematicheskiy Zhurnal, No 5, Vol 13, 1972, pp 1123-1144.

Abstract: The systems of equations studied in this article are differential equations of the form:

$$\frac{dx}{dt} = x \circ \sum_{k=1}^m A_k x^{Q_k},$$

where the symbol  $\circ$  indicates component-by-component multiplication of columns;  $x$  and  $A_k$  are columns of height  $n$ ;  $Q_k$  are lines of length  $n$ ; and  $x^{Q_k} = x_1^{q_{k1}} \dots x_n^{q_{kn}}$  ( $k = 1, \dots, m$ ). A short account is given of the work of various mathematicians, following the analytic and topological directions, in the investigation of multidimensional nonlinear systems. Solutions to the above system having the following forms are studied:

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USSR

UDC: 517.925.34

BEKLEMISHEVA, L. A., Sibirskiy matematicheskiy zhurnal, No 5,  
vol 13, pp 1123-1144

$$x(t) = c \cdot e^{\alpha t} \cdot (1 + o(1))$$

$$x(t) = c \cdot t^{\alpha} \cdot (1 + o(1)).$$

Here  $e^{\alpha t}$ ,  $t^{\alpha}$ ,  $\alpha$ , and  $c$  are columns with components equal to  $e^{\alpha_i t}$ ,  $t^{\alpha_i}$ ,  $\alpha_i$ , and  $c_i$  ( $i = 1, \dots, n$ ) respectively, while  $c_i \neq 0$  ( $i = 1, \dots, n$ ), and  $1 + o(1)$  is a column of functions which tend to 1 as  $t \rightarrow +\infty$ .

2/2

USSR

UDC 517.925.31

BEKLEMISHEVA, L. A., Moscow Physicotechnical Institute

"Some Solutions of Systems of Ordinary Differential Equations With a Polynomial Right-Hand Side. II"

Minsk, Differentsial'nyye Uravneniya, Vol 7, No 10, Oct 71, pp 1739-1751

Abstract: A previous article by the author considered a system of ordinary equations of the form

$$\frac{dx}{dt} = P(x),$$

where  $P(x)$  is a column of polynomials with real coefficients in terms of real powers of variable  $x$ . With the use of certain transformations this system of equations was replaced by its equivalent "reduced" system

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USSR

BEKLEMISHEVA, L. A., Differentsial'nyye Uravneniya, Vol 7, No 10,  
Oct 71, pp 1739-1751

$$\frac{dy}{d\tau} = y^2 \left[ f(\tau) + \sum_1^i A_{ij} y^{Q_{ij}} + \varphi(\tau, y) \right],$$

and the latter by the "associated" system

$$\frac{du}{d\tau} = u^0 \left[ h(\tau) + \sum_1^i C_{ik} u^{M_{ik}} + \psi(\tau, u, v) \right],$$

$$\frac{dv}{d\tau} = v^0 \left[ g(\tau) + \sum_1^i B_{ik} u^{M_{ik}} + \chi(\tau, u, v) \right].$$

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USSR

BEKLEMISHEVA, L. A., Differentsial'nyye Uravneniya, Vol 7, No 10, Oct 71, pp 1739-1751

Systems (2) and (3) contain the vector parameter  $\alpha$ , so that in fact we have a family of reduced and associated systems. The present article considers the simplest cases of reduced and associated systems and studies the question of the presence and form of reduced solutions for them. Some systems integrated in quadratures, which are characterized by the types of solutions under study, are considered.

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USSR

UDC 517.925.34

BEKLEMISHOVA, E. A.

"Some Solutions of Systems of Ordinary Differential Equations With Polynomial Right-Hand Members"

Minsk, Differentsial'nyye Uravneniya, vol. 7, No. 11, November 1971, pp 1946-1959

Abstract: This article is actually the third installment of a series, the first two parts of which were published in the same journal (vol. 7, Nos. 9 and 10, 1971). In this third part of the work, the author investigates solutions of order  $\alpha$  for the following system of differential equations:

$$\frac{dx}{dt} = x \circ \sum_1^m A_k x^{Q_k},$$

the meaning of the notation for which is given in the first installment. The author also considers five examples of this and similar types of equation and their solutions. She is connected with the Moscow Physical-Technical Institute.

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USSR

UDC 619-036.22-022.9:[598.2+595.42

BEKLESHOVA, A. Yu., SMIRNOV, V. A., and TERSKIKH, I. I., Institute of Virology  
imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR.

"Role of Seabirds and Their Ectoparasites in the Epizootic Process"

Moscow, Voprosy Virusologii, No 5, 1971, pp 596-600

Abstract: A study was conducted of the prevalence of ornithosis and arbovirus infection among kittiwakes (*Rissa tridactyla*) and guillemots (*Uria aalge* Pontopp and *Uria lomvia*) on Kharlov and Kuvshin islands in the Barents Sea at the beginning and end of the nesting period in 1966-1967. Attention was focused on the relationship between the seasonal activity and abundance of the tick *Ceraticoxodes putus* Pick.-Cambr. and the spread of ornithosis and encephalitis among the birds. The kittiwake is the main host of the tick and less susceptible to arboviruses. The guillemot, on the other hand, is more susceptible because its contacts with the tick are less constant.

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USSR

UDC 576.858.25.095.38:576.895.42(98)

BEKLESHOVA, A. Yu., TERSKIKH, I. I., and SMIRNOV, V. A., Institute of Virology  
Imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Arboviruses Isolated from Ceratixodes putus Pick.-Cambr Avian Ticks Collected in  
the Far North"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 436-440

Abstract: The Ixodes tick Ceratixodes putus Pick.-Cambr, a widely distributed ectoparasite of aquatic birds, is found in two regions of the USSR, the Far East (Kurile, Commander, and Sakhalin Islands) and the Northwest (islands and coasts of the Barents and White Seas). The virus was isolated from various developmental phases of the tick (egg, larva, nymph, male, and female) immediately after collection from birds and their nests and after refrigeration at 0 to 4°C for 2-1/2 years. Of the four strains studied in detail, two were identified as tickborne encephalitis virus, while the other two were found to be antigenically related to the WEE and EEE viruses. All of the strains were pathogenic for mice, especially when administered intracerebrally. The disease was readily transmitted to chicks which were fed naturally infected ticks. Chicks inoculated with virus isolated from ticks developed a generalized infection with involvement of the viscera, in which the virus was detected.

1/1

USSR

TAKIBAYEV, ZH. S., and BEKMUKHAMBETOV, YE. S., et al.

"Thermionic Converter Life Tests"

Moscow, Atomnaya Energiya, Dec 73, pp 387-390

Abstract: An ES-6-3 six-element thermionic assembly with tungsten-rhenium emitters, niobium collectors, and interelectrode gaps of 0.3 mm was tested in a reactor for 2670 hours. The assembly was tested at an average electrical power density of about  $7 \text{ w/cm}^2$ . In the course of life tests at constant reactor thermal power the electrical power decreased discretely after each decrease in reactor power. Changes in output performance are caused by short-circuits in individual elements and increases in the collector temperature due to stratification of the collector pile. The article includes five figures. There are three references.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THE ACTIVITY OF VARIOUS ATPASES OF KIDNEY HOMOGENATE DURING STORAGE  
-U-  
AUTHOR--(02)-BEKMUKHAMEDOVA, Z.U., YURASOVA, T.F.  
COUNTRY OF INFO--USSR **B**  
SOURCE--UZB. BIOL. ZH. 1970, 13(6), 6-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--KIDNEY, RAT, ADENOSINE TRIPHOSPHATE, ENZYME ACTIVITY, SODIUM,  
POTASSIUM, MAGNESIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0407 STEP NO--UR/9079/70/013/006/0006/0009  
CIRC ACCESSION NO--AP0127978  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0127978

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF NA,K, AND  
MG,ATPASE DURING STORAGE OF KIDNEY HOMOGENATE OF RATS WERE STUDIED. THE  
ENZYME ACTIVITY AFTER LONG STORAGE DECREASED. FACILITY: INST.  
BIOKHM., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 621.382.2

BEKMIRATOV, M.F., DUSHKIN, V.A., MRYGIN, V.I. [Moscow Institute Of Electronics Techniques]

"Current Variations In Diode Structures Made Of High-Resistance Gallium Arsenide Compensated By Titanium"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 632-634

Abstract: Some results are presented of a study of noise and periodic current variations in S-diode structures of gallium arsenide with an admixture of titanium at the parts of the voltampere characteristic with positive differential resistance. The material for production of the specimen, grown by the Czochralski method, was of two types: p-type with resistivity on the order of  $\rho = 10^3 \text{ ohm.cm}$  and a higher resistance n-type material with a resistance  $\rho = 10^6 \text{ ohm.cm}$ . The conditions of formation and the character of the noise variations depended on the magnitude of the resistivity of the starting material and the form of the voltampere characteristic of the device. With specimens produced from a material with a resistivity close to intrinsic and with a significant voltage drop in the region of negative resistance, noise variations were observed in the frequency band up to 15 MHz with an integral amplitude of 100-200 mv. (The measurements were conducted with the S 4-8 spectrum analyzer and a V3-13 voltmeter.)

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"USSR"

BEKMURATOV, M.F., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 632-634

The frequency of the fundamental harmonic of the periodic current variations was found in the limits of from several megahertz up to tens of megahertz (up to  $40 \div 50$  MHz for individual specimens). The dependence of the frequency on the current flowing through the device was nonmonotonic. 3 fig. 6 ref. Received by editors, 28 June 1971.

2/2



USSR

UDC: 681.3

BEKMURATOV, T. F., MUSAYEV, M. M., NASYROV, M. Sh., SHAMSIYEV, T. G.

"An Analog-Digital Computer System Based on the 'Dnepr' Computer and the MN-7"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog-Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 45-49 (from RZh-Kibernetika, No 9, Sep 71, Abstract no 9V552)

Translation: The paper describes an analog-digital computer system based on the "Dnepr" digital computer and two MN-7 analog computers. The structure used in the hybrid system enables automation of the processes of control and setting up structural schemes on the analog computers. Authors' abstract.

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USSR

UDC: 681.3.06:51

AKHMETOV, K. A., BEKMURATOV, T. F., KAMILLOV, M. M., SHANSIYEV, T. G.

"On Optimizing a Technological Process on an Analog-Digital Computer System Using Search Methods"

V sb. Vopr. kibernet. i vychisl. mat. (Problems of Cybernetics and Computer Mathematics--collection of works), vyp. 40, Tashkent, 1970, pp 66-69 (from RZh-Kibernetika, No 7, Jul '71, Abstract No TV725)

Translation: The authors investigate an algorithm for optimizing the process of hydrolysis with the aid of an analog-digital computer system. The problem of optimization consists in maximizing the quantity Q of reducing agents throughout the final product (hydrolysate). The algorithm is based on using the method of alternately changing the parameters on which Q depends:  $x_2$  -- vapor flow-rate;  $x_3$  -- water flow-rate;  $x_4$  -- acid flow-rate. Tables are presented for the optimum values in the corresponding units of measurement. It is proposed that the method of statistical (random) search be used to optimize the process on an analog-digital computer system with regard to the real interference acting on the object. V. Mikheyev.

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USSR

UDC 576.312.3

SAKHAROVA, M. N., RAPOPORT, I. A., BEKHAZAR'YANTS, M. M., and NIKOFOROV, Yu. L.,  
Institute of Chemical Physics, Academy of Sciences USSR

"Puffs Induced by Thiocyanate and the Puff Model For Determining Drug Injury  
to Enzymes"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 5, 1971, pp 1,217-1,220

Abstract: The modification of Drosophila chromosome puffs induced by sodium thiocyanate added to the nutrient medium in a concentration of  $2 \times 10^{-4} M$  was investigated. As a result of incorporation of this compound, the number of puffs increased from 26 (control) to 28 in X-chromosomes; from 17 to 24 in 2L-chromosomes; from 21 to 23 in 2R-chromosomes; from 24 to 28 in 3L-chromosomes; and from 22 to 28 in 3R-chromosomes. Significant changes were also observed in the morphology of other puffs and in the activity of chromosome enzymes. This method appears to be very useful in the study of the biological effects of drugs on pathogens and on the host.

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1/2 052 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PROFILING PLANE DIFFUSER GRIDS FOR SUBCRITICAL VELOCITIES OF THE  
ONCOMING FLOW -U-  
AUTHOR--BEKNEV, V.S.  
COUNTRY OF INFO--USSR *B*  
SOURCE--MASHINOSTROENIE, NO. 5, 1970, P. 132-137  
DATE PUBLISHED-----70  
SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS  
TOPIC TAGS--WIND TUNNEL TEST, DIFFUSER DESIGN, DIFFUSER PERFORMANCE, FLOW  
CHARACTERISTICS, FLOW ANALYSIS, FLOW PROFILE, ANGLE OF ATTACK, BLADE  
PROFILE, ISENTROPIC FLOW, PRESSURE DISTRIBUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605007/D12 STEP NO--UR/0117/70/000/005/0132/0137  
CIRC ACCESSION NO--AP0139893  
UNCLASSIFIED

2/2 052

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THREE APPROACHES TO THE GENERALIZATION OF WIND TUNNEL TEST DATA OBTAINED FOR DIFFUSER GRIDS AT SUBCRITICAL FLOW VELOCITIES FOR (1) THE CONDITION OF MAXIMUM EFFICIENCY OF THE GRID PROFILE, (2) THE CONDITION OF MAXIMUM EFFICIENCY OF THE GRID, AND (3) THE CONDITION OF MINIMUM COEFFICIENT OF PROFILE LOSSES. THE RESULTS OF A COMPARISON WITH RESPECT TO ANGLES OF ATTACK, TRAIL ANGLES, GRID SPACINGS, AND LOSSES SHOWS THAT THE GREATEST DISCREPANCIES OCCUR FOR GENERALIZATION WITH RESPECT TO ANGLES OF ATTACK AND LOSSES. THE INFLUENCE OF THE ISENTROPIC INDEX OF THE GAS ON THE PRESSURE DISTRIBUTION OVER THE BLADE CONTOUR AND ON THE GRID LOSSES IS ASSESSED. FACILITY: MOSKOVSKOE VYSSHEE TEKHNICHESKOE UCHILISHCHE, MOSCOW, USSR.

UNCLASSIFIED

Turbine and Engine Design

USSR

UDC 621.515-154:533.6.001.24

BEKNEV, V. S. and SHABAROV, A. B.

"Variational Method for Solving the Basic Problems in the Theory of Turbine Machines"

V sb. Gazoturbin. i kombinir. ustanovki (Gas-Turbine and Combination Units — collection of works), Moscow, 1971 (1972), pp 93-97 (from RZh-49. Turbostroyeniye, No 4, Apr 73, Abstract No 4.49.114)

Translation: In order to optimize the stage of an axial compressor, a variation problem is set up for the flow in the stage. The minimum functional is found which represents the coefficient of blade diffusion averaged with respect to consumption. Under these conditions, the consumption, pressure, and the dimensions of the flow through part are considered as given. The equations for the flow yield additional differential and finite relationships. The local values for the coefficient of diffusion are limited by a given value. It is shown that the parameters of the stage calculated in this way will ensure the maximum range of stable operation. In the case of an axial turbine stage, it is proposed that the maximum coefficient of efficiency is found for given consumption and heat differential. The calculations should be carried out in sequential approximations in each of which the direct and inverse problems should be solved for the flow in the stage. Data on losses in the screen should be used also. Original article: 1 illus. and 9 bibl. Yu.V.R.

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USSR

UDC 621.515

BEKNEV, V. S., Doctor of Technical Sciences, Professor, and KOZHEVNIKOV,  
V. Yu., Engineer (Moscow Higher Technical School imeni N. E. Bauman)

"Calculation of the Distribution of Losses Along the Blade Height of an  
Axial Compressor"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Mashinostroyeniye, No 2,  
1971, pp 109-113

Abstract: On the basis of experimental data, relationships are obtained  
which make it possible to calculate the losses at each cross section with  
respect to the height of an axial-compressor blade. The obtained results  
permit a judgment to be made concerning the influence of various cascade  
parameters upon the distribution of losses with respect to blade height.  
3 figures, 3 bibliographic entries.

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USSR

UDC: 621.438-253.5-226.001.6

BEKNEV, V. S., TUMASHEV, R. Z.

"Investigations of Working Wheels With Low-Aspect Blades Profiled by Cylindrical Templates With Regard to Losses Along the Radius"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1970, No 134, pp 75-79 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.104)

Translation: An investigation of stages with variable-aspect blade  $\bar{h}_{ww}$  and fixed  $\bar{h}_{gv}$  in which the blades are profiled with regard to end effects and designed by using corrected flat templates showed that the efficiency and thrust coefficient of the wheel and the stage are practically constant within the range  $\bar{h}_{ww} = 1.4-0.75$ , and that the separation boundary shifts by about 6% toward lower flow rates with a reduction in  $\bar{h}_{ww}$  from 1.4-0.75. Three illustrations, bibliography of two titles. E. S. B.

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USSR

UDC 669.24:539.261

BEKRENEV, A. N., GELUNOVA, Z. M., and GERASIMENKO, L. I., Petrozavodsk State University imeni O. V. Kuusinen; Volgograd Polytechnical Institute

"Study of the Substructure of Nickel After Explosive Loading"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1003-1006

Abstract: X-ray techniques were used to study the mosaic structure of nickel foil loaded with planar shock waves at pressures of 60 and 165 Kbar. Disorientation of sections of the mosaic and their dimensions were determined, as well as the microdistortions of the crystalline lattice at these pressures and various shock wave durations. A correlation was established between the development of the substructure and the level of hardening achieved. The nature of the mosaic structure of nickel grains following explosive loading was determined by the pressure of the shock wave. The duration of the shock impact had an influence only at 265 Kbar. Microdistortion and fragmentation of mosaic sections was found to be significant in the creation of the substructure of the explosively loaded nickel foil. The increase in density of dislocations in the foil occurs primarily as a result of dislocations arising at the shock wave front.

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Marine and Shipbuilding

USSR

BEKSHAYEV, Ya. A., VOROB'YEV, Yu. L.

"Determination of Forces and Moments Acting on Vessels Sailing Parallel Courses"

Sudostr. i Sudoremont. Nauch.-tekhn. sb. [Shipbuilding and Repair, Scientific and Technical Collection], No 4, 1970, pp 20-29, (Translated from Referativnyy Zhurnal; Mekhanika, No 4, 1972, Abstract No 4 B411 by A. K. Nikitin).

Translation: The linear problem of the stable motion of two ships in parallel courses at speed  $v_0$  in deep water is studied. The velocity potential in inverted motion is represented as

$$\Phi(x, y, z) = -v_0 x + \phi_1 + \phi_2 + \phi_0$$

where  $\phi_1$  is the velocity potential resulting from the motion of ship 1 without ship 2;  $\phi_2$  is the velocity potential resulting from the motion of ship 2 without ship 1;  $\phi_0$  is the velocity potential resulting from the interaction of the ships. Potentials  $\phi_1$  and  $\phi_2$  are known;  $\phi_0$  is determined from the Laplace equation and boundary conditions on the free surface, on the surface of the ships

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USSR

BEKSHAYEV, Ya. A., VOROB'YEV, Yu. L., Sudostr. i Sudoremont. Nauch.-tekhn. sb., No 4, 1970, pp 20-29.

and at infinity. Transverse forces and moments acting on the ships are determined by the method of a acceleration potential on the basis of the change in acceleration potential

$$0_{-} - 0_{+} = \frac{p_{-} - p_{+}}{\rho} = -\gamma(\xi, z) v_{0}$$

Integral equations are produced for determination of intensities  $\gamma_1$  and  $\gamma_2$ . The authors study the limiting case, when parameter  $v = g/v_0^2 \rightarrow \infty$  (low speeds of motion of ships). The integral equations in this case are simplified and reduced to a system of two linear singular equations, which is solved by successive approximations by inversion of a Cauchy-type integral for functions not limited at the ends of the interval. Then, the forces and moments are found for each approximation. The process of successive approximations is considered completed if

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USSR

BEKSHAYEV, Ya. A., VOROB'YEV, Yu. L., Sudostr. i Sudoremont. Nauch.-tekhn. sb., No 4, 1970, pp 20-29.

$$|P_y^{(n)} - P_y^{(n-1)}| < \epsilon_1, |M_y^{(n)} - M_y^{(n-1)}| < \epsilon_2$$

where  $P_y^{(n)}$ ,  $M_y^{(n)}$  are the transverse force and yaw moment in the n-th approximation on the ship in question, while  $\epsilon_1$  and  $\epsilon_2$  are the accuracies of calculation of the forces and moment used. It is demonstrated that a solution can produce similarly for the case of high speeds of motion of the ships ( $v \rightarrow 0$ ).

3/3

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--VAPOR PHASE OXIDATION OF 4,5-DIMETHYLPHTHALIC ANHYDRIDE -U-  
AUTHOR--(04)-SHARIPOV, A.KH., MUKHTARULLINA, F.A., BEKSHENEVA, N.M.,  
KHABIBULLIN, M.F.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 715-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--GAS STATE, OXIDATION, PHTHALIC ANHYDRIDE, VANADIUM OXIDE,  
MALEIC ANHYDRIDE, PYROMELLITIC ACID, ANHYDRIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1995/1462 STEP NO--UR/0030/70/043/003/0715/0717  
CIRC ACCESSION NO--AP0116899  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER OPTIMUM CONDITIONS DETD. WITH FUSED V SUB2 O SUB5 PARTICLES IN A CONTINUOUS REACTOR, 4,5-DIMETHYLPHTHALIC ANHYDRIDE (I) WITH 58-74 PARTS BY WT. OF AIR AT 430-40DEGREES AND A VOL. RATE OF THE I VAPOR AIR MIXT. OF 5500-5700 HR PRIME NEGATIVE1 GIVES 58PERCENT PYROMELLITIC ANHYDRIDE BASED ON I ADDED AND 90PERCENT BASED ON I CONSUMED. OTHER PRODUCTS ARE MALEIC ANHYDRIDE AND CO SUB2.

UNCLASSIFIED

USSR

UDC 621.791:62-784.5:621.78.062.3:669.295

GORSHKOV, A. I., and MATYUSHKIN, B. A., Candidates of Engineering Sciences;  
OL'KHOVIK, R. G., AFANAS'YEV, P. S. (deceased), and BEKRENEVA, YE. V.,  
Engineers

"Some Problems of Welding Alloy VT20 in a Controlled Atmosphere"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 20-22

Abstract: The mechanical properties of weld joints and the effect of the protective atmosphere on the gas content in the seam metal during manual welding in a chamber with a controlled atmosphere were investigated in this work. Alloy VT20 sheet, 1-5 mm thick, was used in which the alloying element content and impurity content were found in the following limits (in %): 5.7-6.4 Al, 0.8-1.2 Mo, 0.55-1.22 V, 1.9-2.4 Zr, 0.005-0.01 H<sub>2</sub>, 0.07-0.1 O<sub>2</sub>, and 0.02-0.03 N<sub>2</sub>. Welding rods VT20-2sv of the Ti-Al-Zr-Mo-V system and SPT-2 of the Ti-Al-Zr-V system with a diameter of 2.5 mm were used which had the following chemical composition: VT20-2sv -- 3.98 Al, 2 Zr, 0.83 Mo, 0.91 V, 0.0015 H<sub>2</sub>, 0.11 O<sub>2</sub> and 0.02 N<sub>2</sub>; SPT-2 -- 4.74 Al, 1.35 Zr, 1.92 V, 0.004 H<sub>2</sub>, 0.07 O<sub>2</sub> and 0.04 N<sub>2</sub>. It was determined that weld joints of alloy VT20 made by automatic and manual welding are close to the base metal in strength and

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• USSR

GORSHKOV, A. I., et al, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 20-22

surpass the base metal in impact strength and bend angle. Weld joints 3-5 mm thick made by manual and automatic welding with welding rods VT20-2sv and SPT-2 have a tensile strength equal to 90% of the base metal strength and an impact strength 1.6-2  $\text{kgm/cm}^2$  higher than the base metal impact strength. When welding in chambers without an auxiliary system of argon purification the values of partial oxygen and nitrogen pressures exceed equilibrium values so that there is an additional increase in the oxygen and nitrogen content in the seam metal and a decrease of hydrogen content. 2 figures, 4 tables.

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Instrumentation and Equipment

USSR

UDC 669.71.472(088.8)

BELYAYEV, A. S., BEKTASOV, O. A., VOVK, P. A., KUROKHITIN, A. N., NEKHOROSHEV,  
V. S.

"Device for Measuring the Weld Packing Density of the Bottom of an Aluminum Electrolyzer and the Bottom Mass Temperature"

USSR Author's Certificate No 272567, Filed 23 Dec 68, Published 7 Sep 70  
(from RZh-Metallurgy, No 4, Apr 71, Abstract No 4G161P)

Translation: The device includes a thermocouple and a galvanometer. For purposes of simultaneous measurement of the weld packing density and temperature of the anode mass, the device comprises a housing with sockets for arrangement of measuring instruments, a hollow connecting rod with a tip inside which a thermocouple is installed, and a short-circuiting device needle. The upper part of the connecting rod has an inclined plane for deflection of the density indicator needle, and the junction of the thermocouple is electrically connected to the short-circuiting device needle and the galvanometer. There are 3 illustrations.

1/1

Microbiology

USSR

UDC 576.858.6.083.35.07

(11)

ZHDANOV, V. M., BYKOVSKIY, A. F., AL'TSHTEYN, A. D., LOZINSKIY, T. F.,  
URYVAYEV, L. V., VOLKOVA, M. L., YERSHOV, F. I., IL'IN, K. V., BEKTEMIROV,  
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"Detection of Oncornaviruses in Continuous Tissue Cultures"

Moscow, Voprosy Virusologii, No 4, 1973, pp 411-414

Abstract: Studies were conducted on a number of human and animal continuous tissue cultures maintained in medium 199 containing 10% bovine serum to determine oncornaviruses. Formation of oncornaviruses in the tissue cultures were followed by the appearance of viral particles in the culture fluid labeled with H<sup>3</sup>-uridine, susceptibility of their synthesis to low actinomycin D concentrations, appearance of these particles following inhibition of nuclear material synthesis by bromodeoxyuridine or mitomycin, presence of reverse transcriptase in these particles, presence of 60-70 S RNA in these particles, and electron microscopy. Of the 26 human lines investigated 14 contained type B oncornavirus, and 4 lines type C virus. Eight of the  
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ZHDANOV, V. M., et al., Voprosy Virusologii, No 4, 1973, pp 411-414

14 animal lines studies also showed the presence of oncornaviruses. The source of these viruses in the human lines remains unclear, but the source may have been bovine serum or porcine trypsin used in the preparation of cell suspension. It is noteworthy that type B viruses were isolated in human cultures of epithelial origin, while type C viruses in human cultures of leukotic or sarcomatous origin.

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UDC 576.858.095.383.095.18

BEKTEMIROV, T. A., and BEKTEMIROVA, M. S., Department of Virology, Central Institute for the Advanced Training of Physicians and the Moscow Institute of Viral Preparations, Moscow

"Artificial Interferon Inducers"

Moscow, Voprosy Virusologii, No 2, 1973, pp 131-142

Abstract: A review of the literature shows that a number of synthetic and biosynthetic interferon inducers are now available for studies. Basically, they are divided into low and high MW inducers. One of the best studied low MW inducers, tilorone (I) (bis-DEAE-fluorenone), is without activity in tissue cultures, but is highly effective in studies conducted in vivo with rodents (mice, rats, rabbits) in inducing interferon production and in its antiviral properties (tick-borne encephalitis). However, I has been found to be ineffective in man and monekys, and some other species, and is toxic for man. A number of high MW polycarboxylates (pyran copolymers, copolymers with vinylpyrrolidone backbones, polyacrylates, polymethacrylates, polyvinyl sulfate) have been shown to function as inducers. These polymeric complexes have been demonstrated to protect animals against influenza, Semliki forest virus, tick-borne encephalitis, and other viruses for up to 60 days. Since interferon induced by them does not remain in the circulation for more than 48 h, their long-term effectiveness is attributed to other factors. It is known that some of these inducers

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BEKLEMIROV, T. A. and BEKTEMIROVA, M. S., Voprosy Virusologii, No 2, 1973, pp 131-142

persist for long periods in the host leukocytes and RES cells; they may form a coat over target cells and protect them from viral invasion, they may combine with the negatively charged viral surface and thereby inactivate the latter, or that they may complex with crucial enzymes in the cell and in that manner prevent viral multiplication. Another class of high MW inducers consists of polyribonucleotides. In this category the most studied and most effective agent consists of a complex of two homopolymers: polyriboinosinic acid and polyribocytidylic acid (poly I:C). Intravenous administration of microgram quantities of poly I:C to animals evokes interferon in the blood and resistance to viral infections. Poly A:U and a complex of poly I with a dinucleotide of cytidylic acid have been shown to be less effective than poly I:C, although poly G:C has been demonstrated to be more effective than poly A:U. Poly I:C induces interferon production in tissue cultures of human, porcine, rat, murine, rabbit, dog, chicken, and hamster cells. In many systems DEAE-dextran has been found to enhance interferon production, or actually required in some systems in conjunction with poly I:C. Studies conducted with human subjects have shown that 2,000-4000  $\mu$ g of poly I:C may induce interferon in man; however, the amounts produced are small and it is questionable, at best, whether this

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BEKTEMIROV, T. A. and BEKTEMIROVA, M. S., *Voprosy Virusologii*, No 2, 1973, pp 131-142

inducer would be of value in clinical application. Poly I:C and similar agents have been described as also having antiviral properties not dependent on interferon, as well as antibacterial and antifungal properties in various in vitro and in vivo systems. The antitumor effectiveness of poly I:C in experimental animals has been attributed to its effects on humoral and cellular immunity, as well as selective inhibition of protein and nucleic acid syntheses in the tumors. However, as has been found with pyran and tilorone, excess quantities of poly I:C may actually enhance tumor growth (the latter phenomenon is unrelated to interferon induction). Data on the interferon-inducing properties of DNA-RNA hybrids, single stranded RNA, and DNA polynucleotides remain controversial. It is believed that once inside the cell poly I and poly C function independently, with the former being much more active in inducing interferon synthesis. The production of interferon and its release from the cell are independent processes, and the latter is an active process requiring SH-containing proteins (enzymes?). The produced interferon induces the synthesis of an antiviral protein. Among the toxic side effects of poly I:C, which may to some extent be eliminated by ultrasound treatment of the preparation, are a prolongation of the prothrombin time, leukopenia, elevated serum transaminase

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BEKTEMIROV, T. A. and BEKTEMIROVA, M. S., Voprosy Virusologii, No 2, 1973, pp 131-142

levels, toxicity for the embryo, and alterations in the small blood vessels, liver, and hemopoietic organs in various species. In addition, administration of poly I:C has also been found to be complicated by the Shwartzmann phenomenon, autoimmune disease, thymic atrophy, splenic hypoplasia, lymphopenia, and pyrogenic reactions.

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BEKTEMIROV, T. A.

"Virological Problems Discussed at the 15th All-Union Conference of Epidemio-  
logists, Microbiologists, and Infectious Disease Specialists"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 750-752

Abstract: The convention was held in Tbilisi on 25-29 May 1971. At the plenary session, USSR Chief Sanitary Physician P. N. Burgasov presented a review of the results achieved and problems to be resolved in combating infectious diseases, while V. D. Solov'yev discussed the theory and practice of the immunology of viral infections. In the section on "Replication of Viruses and Chemotherapy of Viral Infections," F. I. Yershov discussed induced extracellular synthesis of infectious ribonucleoproteins. In the section on the "Structure and Genetics of Viruses," N. V. Kaverin reported on the formation of informosome-like compounds in cells infected with paramyxoviruses, while I. G. Balandin discussed experimental results indicating that viral information in a host cell controls synthesis only after the cell's own information is suppressed. The section on "Influenza" dealt with the effectiveness of various specific and nonspecific methods of preventing the disease as well as methods of selecting new vaccinal strains. In the section on "Important Viral Infections," emphasis was placed on

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'BEKTEMIROV, T. A., Voprosy Virusologii, No 6, Nov/Dec 71, pp 750-752

erythrocytotropism (A. K. Shubladze), identification of arboviruses and the diseases caused by them (S. Ya. Gaydamovich), and measles vaccines (O. G. Andzhaparidze). At the business meeting, the new executive board of the All Union Society of Epidemiologists, Microbiologists, and Infectious Disease Specialists was elected.

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USSR

UDC 616.915-085.371-092.9

GORSHUNOVA, L. P., BEKTEMIROV, T. A., and KOSHTOYAN, S. YE., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Chair of Virology, Central Institute of Advanced Training of Physicians, Ministry of Health USSR, Moscow

"Interferon Production and Nonspecific Protective Reactions in the Central Nervous System of Animals Vaccinated With Live Measles Vaccine"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 735-739

Abstract: Immunization of white mice with live measles vaccine results in a prolonged production of endogenous interferon, not only in the reticulo-endothelial system but also in other organs. Within 72 hours of immunization, interferon concentration in the spleen and the lymph nodes is higher than in the blood serum for 15 days, while in the lungs and the brain it is even higher than in the reticuloendothelial system for 30 days. It was concluded that this local production of interferon is due to the attenuated measles virus entering the various organs and persisting in them for longer periods. The vaccinated animals also display an augmented, nonspecific resistance to intracerebral inoculation with neurovirulent herpes virus, which must be due to nonspecific protective reactions developing in the CNS in association with the local production of interferon.

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USSR

UDC 616.988.75-095.383-078

SOLOV'YEV, V. D., NEKLYUDOVA, L. I., BEKTEMIROV, T. A., and FEDOROVA, Yu. D.

"Interferon Formation in Hongkong Influenza Patients"

Moscow, Voprosy Virusologii, No 5, 1971, pp 548-552

Abstract: Influenza A2 virus was isolated from 53 of 99 patients diagnosed as having influenza in January and February 1969. Interferon was found in nasal secretions, urine, and serum, and interferon-synthesizing activity was noted in white blood cells. The titers tended to increase in the nasal secretions and urine by day 3 or 4 of the disease, i.e., the time of onset of clinical recovery. The concentration of interferon varied with the original antibody level, intensity of the fever, and magnitude of the increase in antibodies. The titers were higher in patients with an elevated body temperature and low original level of anti-influenza antibodies. Large amounts of interferon were found in patients with serologically confirmed influenza, particularly in those with a four-fold or greater increase in antibodies. The titers of leukocytic interferon were lowest during the first two days of the disease. They increased in the convalescence period.

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USSR

UDC 576.858.13.095.383

BEKTEMIROV, T. A., SHENKMAN, L. S., and MARENNIKOVA, S. S., Chair of Virology, Central Institute of Advanced Training of Physicians and Moscow Scientific Research Institute of Viral Preparations

"Induction of Interferon by Vaccinia Virus Strains Differing in Pathogenicity"

Moscow, Voprosy Virusologii, No 5, 1971, pp 555-560

Abstract: Experiments on rabbits and mice revealed an inverse relationship between the amount of interferon induced by intracerebral injection of various vaccinia virus strains (EM-63, B-51, L-IVP, white clone of the Tashkent strain) and their pathogenicity. The strains of low pathogenicity (EM-63 and B-51) induced more interferon and did so earlier than the pathogenic strains (L-IVP and Tashkent). However, intravenous injection of mice with the different virus strains resulted in the Tashkent strain inducing the largest amount of interferon. The amount of virus in the brains of mice and skin of rabbits decreased just when the interferon concentration was highest for the particular strain. In vitro tests showed the Tashkent strain to be the least sensitive to interferon. The other three strains were less resistant to the inhibiting effect of interferon.

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BEKTEMIROV, T.A.

medicine/virology

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INTERFERON FORMATION IN PERSONS INOCULATED WITH GENETICALLY NON-HOMOGENEOUS STRAINS OF HONG KONG INFLUENZA

6412-712

born (Medicine/Virology)

Article by T.A. Bektemirov, T.A. Bektemirova, T.A. Bektemirova of the Department of Virology, Central Institute for Advanced Medical Studies, Moscow; Kozlov, Moscow, Ussr; and V. I. Virologii, Ruzstani, No 6, 1971, submitted 25 June 1970, pp 689-691

COLEEN

Results obtained on interferon formation in volunteers experimentally infected with influenza corresponded to those obtained in the natural infection by A2 influenza (Hong Kong). Viral inoculation in the vaccinated volunteers was accompanied by interferon production in the material examined. A higher interferon concentration was determined in the urine, and it reflected the dynamics of interferon accumulation in other cellular systems. Differences in the interferogenic capability of the strains were not established. However, the intensity of antibody formation in genetically heterogenous strains was varied. A more active interferon formation was observed after the initial vaccination. A correlation between the interferogenic capability of the strains and their enzymatic activity was not established.

The results of earlier conducted investigations have confirmed a correlation between the pathogenic properties for man and the inhibitor sensitivity and enzymatic activity of the influenza viruses [1].

The relative significance of inhibitor-sensitive strains had sharply increased by 1969. A study of the biological properties of 43 inhibitor-sensitive strains in 1969 and 50 strains in 1970 has shown that type A2 (Hong Kong) B8 influenza viruses are heterogenous [5]. One of the principal signs making it possible to distinguish strains conditionally into two groups is enzymatic activity. Along with strains with a high neuraminidase activity (30 mcg/ml/min) strains have been encountered with low activity (1 mcg/ml/min). Enzymatic activity has been found to be dependent upon the degree of inhibitor sensitivity and thermal stability.

USSR

SOLOV'YEV, V. D., and BEKTIMIROV, T. A.,

Interferon v Teorii i Praktike Meditsiny (Interferon in the Theory and Practice of Medicine), Moscow, "Meditsina," 1970, 272 pp

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SOLOV'YEV, V. D., and BEKTIMIROV, T. A., Interferon in the Theory and Practice of Medicine, Moscow, "Meditsina," 1970, 272 pp

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SOLOV'YEV, V. D., BEKTEMIROV, T. A., KARAKUYUMCHYAN, M. K., and BEKTEMIROVA, M. S.,  
Chair of Virology, Central Institute for Advanced Training of Physicians, and  
Moscow Scientific Research Institute of Virus Preparations

"Correlation between Individual Interferon Production and Susceptibility to Certain  
Viral Infections"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 419-423

Abstract: Individual resistance to disease is apparently congenital and is a function of the ease with which the body is able to activate its defenses against infection. Studies on interferon production in rabbits and mice revealed marked differences in resistance among individuals of the same species. Serum interferon titers ranged from 1:4096 to 1:4,000,000 in rabbits and from less than 1:400 to 102,400 in mice. Mice of the A, CC57BR, and BALB/c lines also exhibited individual peculiarities in serum interferon, but unlike randombred animals, most of the mice of the same line produced equal amounts of interferon. The strongest producers were the CC57BR mice and the weakest the BALB/c mice. An inverse relationship was noted between the intensity of interferon production and susceptibility to rabies fixed virus and Western equine encephalitis virus. The weakest interferon producers, the BALB/c line, proved to be the most sensitive to these viruses. The most active producers, the CC57BR line, were the least susceptible. The randombred and A line mice occupied a middle position with respect to both interferon production and susceptibility to the viruses.

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SOLOV'YEV, V. D., BEKTEMIROV, T. A., KARAKJUMCHYAN, M. K., and BEKTEMIROVA, M. S.,  
Chair of Virology, Central Institute for Advanced Training of Physicians, and  
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UDC 576.858.095.383.095.18

BEKTEMIROV, T. A., and BEKTEMIROVA, M. S., Department of Virology, Central Institute for the Advanced Training of Physicians and the Moscow Institute of Viral Preparations, Moscow

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Moscow, Voprosy Virusologii, No 2, 1973, pp 131-142

Abstract: A review of the literature shows that a number of synthetic and biosynthetic interferon inducers are now available for studies. Basically, they are divided into low and high MW inducers. One of the best studied low MW inducers, tilorone (I) (bis-DEAE-fluorenone), is without activity in tissue cultures, but is highly effective in studies conducted in vivo with rodents (mice, rats, rabbits) in inducing interferon production and in its antiviral properties (tick-borne encephalitis). However, I has been found to be ineffective in man and monekys, and some other species, and is toxic for man. A number of high MW polycarboxylates (pyran copolymers, copolymers with vinylpyrrolidone backbones, polyacrylates, polymethacrylates, polyvinyl sulfate) have been shown to function as inducers. These polymeric complexes have been demonstrated to protect animals against influenza, Semliki forest virus, tick-borne encephalitis, and other viruses for up to 60 days. Since interferon induced by them does not remain in the circulation for more than 48 h, their long-term effectiveness is attributed to other factors. It is known that some of these inducers

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BEKTEMIROV, T. A. and BEKTEMIROVA, M. S., Voprosy Virusologii, No 2, 1973, pp 131-142

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USSR

BEKTEMIROV, T. A. and BEKTEMIROVA, M. S., *Voprosy Virusologii*, No 2, 1973, pp 131-142

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BEKTEMIROV, T. A. and BEKTEMIROVA, M. S., Voprosy Virusologii, No 2, 1973, pp 131-142

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USSR

UDC 576.858.095.383

BEKTEMIROVA, M. S., KARAKUYUNCHYAN, M. K., and POLKOVNIKOVA, V. YA., Moscow  
Scientific Research Institute of Virus Preparations


"Individual Features of Interferon Production Induced by Pyrogenal in Random-  
bred and Purebred Mice"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 608-611

Abstract: Wide variations were observed in interferon titers in mice 2 hrs after intravenous injections of 10 mcg of sterile pyrogenal. By dividing the results into 4 groups of titers of less than 20, 20-80, 160-320, and 1,280 the following percent distributions of mice were obtained: randombred -- 12, 34, 37, and 17; BALB line - 4, 59, 37, and 0; A line -- 0, 43, 41, and 16; and CC57Br line -- 0, 41, 41, and 18. Even though the distribution span among purebred rats is smaller, the difference is not significant. As a comparative study, Newcastle disease virus was administered 2 weeks prior to or after injection of pyrogenal. No correlation was found between the interferon titers induced by these two agents. It is suggested that there are individual variations in the number of antibody-producing cells and that different agents have different mechanisms of action and act on different types of cells.

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1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70  
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OF THE GASTRO INTESTINAL TRACT -U-  
AUTHOR--(02)-FUZAYALOV, YU.M., BEKTURDIYEV, KH.   
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PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102774

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN EXAMINING 155 PATIENTS WITH CHRONIC DISEASES OF THE GASTRO INTESTINAL TRACT THE AUTHORS ESTABLISHED THE EFFECT OF GASTRIC SECRETION, LOCALIZATION OF THE PATHOLOGICAL PROCESS AND THE STAGE OF THE DISEASE ON THE CONTENT OF GASTROMUCOPROTEIN AND COPPER IN THE GASTRIC JUICE OF PATIENTS. THE DATA OF INVESTIGATION MAKE IT POSSIBLE TO MAKE A CONCLUSION THAT THERE EXISTS A DIRECT DEPENDENCE BETWEEN THE CONTENT OF COPPER AND GASTROMUCOPROTEIN IN THE GASTRIC JUICE OF PATIENTS WITH CHRONIC DISEASES OF THE GASTROINTESTINAL TRACT. DETERMINATION OF GASTROMUCOPROTEIN AND COPPER IN THE GASTRIC JUICE MAY BE USED AS AN ADDITIONAL CRITERIA OF THE FUNCTIONAL DIAGNOSIS OF THE GASTRO INTESTINAL TRACT AS WELL AS FOR DIFFERENTIAL DIAGNOSIS.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--PROPERTIES OF POLY(METHYL METHACRYLATE) SOLUTIONS IN SOLVENT  
PRECIPITATING AGENT MIXTURES -U-  
AUTHOR-(02)-BEKTUROV, E.A., BEREZA, S.V.  
COUNTRY OF INFO--USSR **B**  
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 55-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMETHYLMETHACRYLATE, INTRINSIC VISCOSITY, POLYMER RHEOLOGY,  
SOLVENT ACTION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0324 STEP NO--UR/0360/70/020/001/0055/0059  
CIRC ACCESSION NO--AP0103979  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103979

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYS. PROPERTIES OF POLY(ME METHACRYLATE) (I) SOLNS. IN A CHCL SUB3, C SUB9 H SUB20 MIXT. WAS STUDIED. A PLOT OF INTRINSIC VISCOSITY (N) VS. SOLVENT COMPN. INDICATED THAT ADDN. OF C SUB9 H SUB20 TO A I SOLN. IN CHCL SUB3 HALVED THE VISCOSITY, WHICH CONTRADICTED EARLIER RESULTS (A. ZIONY ET AL., 1967), PRESUMABLY DUE TO DESOLVATION OF THE ESTER GROUPS RATHER THAN THE HYDROCARBON CHAIN. ADDN. OF LARGER THAN OR EQUAL TO 50PERCENT C SUB9 H SUB20 TO THE SOLN. DID NOT AFFECT THE UNPERTURBED DIMENSIONS AND THE DEGREE OF COILING OF THE POLYMER CHAIN, BUT EXERTED A SIGNIFICANT EFFECT ON (N) AND THE B COEFF. (W. H. STOCKMAYER AND H. FIXMAN, 1967).

UNCLASSIFIED

USSR

BEKULOV, M. T., TOVKUYEV, M. A.

"Flow Around a Permeable Plate with Stream Separation in the Presence of a Wall"

Uch. Zap. Kabardino-Balkar. Un-t [Scientific Writings of Kabardino-Balkarian University], 1972, No 39, pp 166-167 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5B430, by M. I. Gurevich).

Translation: A stream of an ideal, weightless, incompressible fluid flows around a flat plate located perpendicularly to an infinite wall, with stream separation. The two-dimensional problem is studied. The normal velocity at the plate is proportional to the pressure difference before and behind the plate. The proportionality factor is low, i.e., the plate is slightly permeable. A conformal mapping on the upper half plane is used to produce a general solution to the problem and the drag factor of the plate, ignoring terms containing  $k^n$ , where  $n \geq 2$ . In contrast to the case of an impermeable plate, the drag factor of the plate depends on the distance between the plate and the wall.

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USSR

UDC: 621.43.011:533+621.5:533

BEKURYAYEV, V. I., BUKHMAN, Ya. Z., STEPANENKO, O. A.

"High-Velocity Turbulent Stream Produced by a Jet Engine. Comparing Theory With Experiment"

Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), 1972, vyp. 45, pp 73-76 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B407)

Translation: The theory of turbulent jets propagating in a stratified atmosphere is compared with the results of observations of the propagation of a gas jet produced by the RD-3M turbojet engine. The observations were made at the Sibay Mine Quarry where extensive work is being done on the use of turbojet engines for creating artificial wind in the quarry. The results of the comparison are given in the form of graphs showing the experimental and theoretical trajectories of the axis or contour of the jet. The comparison shows satisfactory agreement between theory and experiment. Authors' abstract.

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USSR

UDC 533.99

BAYKOV, A. P., BELAGO, V. A., ISKOL'DSKIY, A. M., GERASIMOV, L. S.,  
and NESTERIKHIN, Yu. Ye.

"Investigation of the Electrical Explosion of Foils"

Novosibirsk, Fizika goreninya i vzryva, No 2, 1973, pp 286-291

Abstract: For certain applications of the electrical explosion of metal foils, it is advisable to investigate the conditions for uniformity of such explosions -- a topic which, in the authors' opinion, has not been given sufficient attention. The purpose of this paper, therefore, is to make that investigation and to look into the possibility of using the foil as a distributed detonator. An earlier paper by the first-named of the authors above (ZhTF, 1973, vol 43, 1) showed that for wires with  $d \geq 10^{-3}$  cm, the explosion is uniform for initial current densities  $j \geq 10^8$  A/cm. Thus, in the experiments of the present paper, the parameters of the LC circuit setting off the explosion were chosen for a current density of  $10^7$ - $10^8$  A/cm<sup>2</sup>. The subject was aluminum foil,  $10^{-3}$  cm thick, 15 cm long, and 2-4 cm wide, exploded in air. The circuit for the experiment is shown, involving oscillographical, optical, and x-ray observation methods. The authors thank A. A. Deribas and A. N. Dremin for their useful comments.

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USSR

UDC: 621.373+621.397.331.222+621.386.2/7

BAYKOV, A. P., BELAGO, V. A., BUDARNYKH, V. I., DOTSENKO, V. I.,  
KURASHOV, E. M., LYUBIN, V. M., NALIVAYKO, V. I., FEDOROVA, Ye. I.,  
TSUKERMAN, V. G., and SHESTAK, A. F.

"Methods of Recording X-Ray Images in a Science Research Automation System"

Novosibirsk, Avtometriya, No 6, 1971, pp 67-80

Abstract: A description is given of a complex of pulsed x-ray sources with memory elements for recording fast processes, along with highly sensitive systems for visualizing two-dimensional x-ray images of threshold intensity. The radiation required has a duration of  $10^{-8}$  to  $10^{-7}$  sec with a hardness of several hundred kev. For the recording equipment, photographic film and television systems were used, in which the memory cells were the semi-conducting targets of sensor tubes. In such a system, the image is impressed directly on the target of the x-ray vidicon with a controllable memory, or is fixed by re-recording the video signal on a vidicon with optical memory, thus allowing connection of the recording equipment to the input of an electronic computer. The purpose of a complex of this type is to gather scientific data as part of a system for automation of the research procedure. Descriptions of the equipment are given, together with photographs  
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USSR

UDC: 621.373+621.397.331.222+621.386.2/7

BAYKOV, A. P., et al, Avtometriya, No 6, 1971, pp 67-80

of the x-ray and recording equipment as well as sample oscillograms of various equipment items. The authors express their gratitude to Yu. Ye. Nesterikhin and A. M. Iskol'dskiy for their delincation of the problem and their supervision of the work. For his assistance with the experiments made using this equipment, the authors thank E. V. Yanshin.

2/2

USSR

UDC: 621.37/.39(083.72)

BELAKHOV, L. Yu., POPOV-CHERKASOV, I. N. (editors)

"Scientific and Technical Terminology. Collection of Standardized and Recommended Terms. In 10 Volumes. Vol. 6. Part 1. Monitoring and Measuring Instruments and Equipment. -- Electronic Technology. -- Radio Electronics and Communications"

Nauchno-tehnicheskaya terminologiya. Sb. standartiz. i rekomend. terminov. V 10 tomakh. T. 6. Ch. 1. Kontrol'no-izmeritel'nyye pribory i apparaty. -- Elektronnaya tekhnika. -- Radioelektronika i svyaz' (cf. English above), Moscow, Standarty, 1970, 467 pp, ill. 2 r. 10 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A9K)

[No abstract]

1/1

USSR

UDC: 621.37/.39(083.72)

BELAKHOV, L. Yu., POPOV-CHERKASOV, I. N. (editors)

"Scientific and Technical Terminology. Collection of Standardized and Recommended Terms. In 10 Volumes. Vol. 6. Part 1. Monitoring and Measuring Instruments and Equipment. -- Electronic Technology. -- Radio Electronics and Communications"

Nauchno-tehnicheskaya terminologiya. Sb. standartiz. i rekomend. terminov. V 10 tomakh. T. 6. Ch. 1. Kontrol'no-izmeritel'nyye pribory i apparaty. -- Elektronnaya tekhnika. -- Radioelektronika i svyaz' (cf. English above), Moscow, Standarty, 1970, 467 pp, ill. 2 r. 10 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A9K)

[No abstract]

1/1

USSR

UDC: 621.37/.39(083.72)

BELAKHOV, L. Yu., POPOV-CHERKASOV, I. N. (editors)

"Scientific and Technical Terminology. Collection of Standardized and Recommended Terms. In 10 Volumes. Vol. 6. Part 2. Monitoring and Measuring Instruments and Equipment. -- Electronic Technology. -- Radio Electronics and Communications"

Nauchno-tekhnicheskaya terminologiya. Sb. standartiz. i rekomend. terminov. V 10 tomakh. T. 6. Ch. 2. Kontrol'no-izmeritel'nyye pribory i apparaty. -- Elektronnaya tekhnika. -- Radioelektronika i svyaz' (cf. English above), Moscow, Standarty, 1970, 248 pp, ill. 1 r. 55 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A10 K)

Translation: Part 1 see Abst. 1A9.

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USSR

UDC: 533.9.03

BELAN, N. V., KIRYUSHKO, V. I., MASHTYLEV, N. A.

"Experimental Study of the Distribution of Current in a Coaxial Accelerator"

Samoletostr. i tekhn. vozd. flota. Resn. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Air Force Technology. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 19, pp 28-32 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 10, Oct 70, Abstract No 10.34.163)

Translation: The authors present the results of an experimental study using a differential magnetic probe to determine distribution of current with respect to length in the accelerating electrodes of a coaxial injector. It is shown that the current is continuously distributed with respect to the length of the accelerating electrodes, with a part of the current flowing on the surface of the insulator throughout the entire discharge. The results of localized current measurements by differential magnetic probe inside the accelerator are compared with integral measurements of the current in an accelerating circuit by using a Rogowski loop. Five illustrations, bibliography of seven titles. Resumé.

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USSR

UDC: 536.421.4+536.421.1

BEJAN, S. A., BOGOROV, I. Ye., and FISHELEVA, S. E.

"Effect of Impurities on the Crystallization of Selenium Spherulites"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 98-105 (from RZh-Fizika, No. 9, 1971, Abstract No. 9B384)

Translation: The effect of In and Te impurities on the crystallization of thin amorphous Se films is investigated by the method of the diffractational electron microscope for ordinary heating as well as for heating by the electron beam in the microscope. It is found that In changes the relationship of the crystal growth rates on a mica substrate and promotes the formation of needle-shaped crystals later on due to the splitting of crystals transformed into regular sheaf-shaped crystals and spherulites. These cause granulation and increases in the number of crystal seeds without changing their morphology and texture. In the heating of the films by the electron beam with increasing beam intensity, the splitting is accelerated in films with both impurities,  
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USSR

BELAN, S. A., et al., Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 98-105 (from RZh-Fizika, No 9, 1971, Abstract No 9E384)

as in pure Se. This also occurs for other materials forming spherulites, such as  $TiO_2$ ; the latter indicates that the increasing tendency to the formation of spherulites with increasing growth rate is a general law. Author's abstract.

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1/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--EPIDEMIOLOGICAL SIGNIFICANCE OF SKIN ALLERGIC TEST WITH DYSENTERIN.  
REPORT III. SIGNIFICANCE OF SKIN ALLERGIC TEST IN COMPLEX PROPHYLACTIC

AUTHOR--BELAN, YE.N.

COUNTRY OF INFO--USSR

B

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4,  
PP 47-53

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN TEST, ALLERGIC DISEASE, INDUSTRIAL HYGIENE, FOOD  
PRODUCTION, DYSENTERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--198B/1533

STEP NO--UR/0016/70/000/004/0047/0053

CIRC ACCESSION NO--AP0106285

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02NOV70

CIRC ACCESSION NO--AP0106285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE PROBLEM OF EXPEDIENCY OF UTILIZATION OF SKIN ALLERGIC TEST WITH DYSENTERIN IN COMPLEX PROPHYLACTIC EXAMINATION OF THE WORKERS OF FOOD PRODUCE PLANTS AND CANTEENS. FECES WERE EXAMINED BACTERIOLOGICALLY, RECTOROMANOSCOPY WAS CARRIED OUT AND ANAMNESTIC DATA WERE ASCERTAINED IN EACH CASE. TO ANALOGOUS EXAMINATION WERE SUBJECTED 101 PERSONS OF THE CONTROL GROUP WHO WERE NOT CONNECTED WITH THE PRODUCTION OR SELLING OF FOODSTUFFS. IN THE LATTER GROUP A POSITIVE REACTION TO DYSENTERIN WAS FOUND ONLY IN 7.9PERCENT OF THE CASES, AND IN THE WORKERS OF FOOD INDUSTRY, IN 30PERCENT. THE HIGHEST PERCENTAGE OF ALLERGIC RESPONSES WAS IN THE WORKERS OF FOOD STORES AND PUBLIC CATERING ESTABLISHMENTS (37 AND 35.1PERCENT, CORRESPONDINGLY). THE CAUSATIVE AGENTS OF DYSENTERY (IN THE MAJORITY OF THE CASES FLEXNER) WERE REVEALED BACTERIOLOGICALLY IN 1.4PERCENT OF THE WORKERS CONCERNED WITH FOOD; PATHOLOGICAL CHANGES IN RECTOROMANOSCOPY WERE FOUND IN 2.3, AND INTESTINAL DYSFUNCTIONS IN THE IMMEDIATE ANAMNESIS, IN 6.6PERCENT OF THE CASES OF THE SAME GROUP. ALL THESE FINDINGS WERE RECORDED MAINLY IN PERSONS WITH A POSITIVE SKIN ALLERGIC TEST. CONSEQUENTLY, THE LATTER TEST CAN ASSIST IN DETECTION OF PERSONS REQUIRING A MORE THOROUGH COMPLEX EXAMINATION.

UNCLASSIFIED

USSR

UDC 621.372.326

ROZHKOV, G. D., BELANOV, A. S., VZYATYSHEV, V. F.

"Calculation of a Multilayered Dielectric Wave Guide"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972,  
vyp. 100, pp 102-114 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7B84)

Translation: It is demonstrated that one of the possibilities for decreasing the damping in dielectric wave guides for submillimeter waves is the conversion to multilayered wave guides. The advantages and disadvantages of these wave guides are noted. A study is made of the so-called "compositional" wave guide with a nonuniform shell; its advantage is the possibility of controlling its parameters by varying the dimensions and material parameters of the individual parts of the shell. There are 4 illustrations.

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