MIKHAYLOV, B. I., GOLOLOBOV, YU. G., and KOFMAN, L. P.

"A Process for Preparing 2-hydeoxyethylthiol-4,6-diamino-s-triazides"

Translation: The compounds 2-oxyethylthiol-4,6-RR'N-symtriazine (I) (R, R' =
H, an alkyl) were prepared. These are used in the synthesis of insecticides
and are prepared by the reaction of 2-X-4,6-RR'N-sym-triazine (II) (X = a
halide) with β -oxyethylmercaptides of alkali metals in a solvent. To pre-
pare the products with a high yield, it is desirable to carry out the reaction
in a stream of nitrogen. For example, to 10 g $NOCH_2CH_2SNa$ in 40 ml of water
is added 20.15 g of (II) (C = Cl, R + H, R' =Et) suspended in 100 ml of ethyl-
-2-ethoxyethanol. The reacting slurry is allowed to stand at $90°$ for 4 hours
with a stream of nitrogen bubbling through it. It is cooled to $20°$, added to
400 ml of water, and allowed to stand for 16 hours. The precipitate is filtered
off, resulting in 17.2 g of (I) (R = H, R' =Et), yield of 70%. Its melting
point was 85-87°. Other compounds were prepared as follows:

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USSR

MIKHAYLOV, B. I., et al., USSR Author's Certificate No 348564, filed 10 Jul 70, published 8 Sep 72

R = Me, R' = Me, % yield = 87%, melting point = $73\text{-}75^{\circ}$;

R = Et, R' = Et, % yield - 75%, melting point - none given, $n^{20}D - 1.5444$,

$d_4^{20} = 1.1395$.

2/2

UDC 632.95

USSR

BLIZNYUK, N. K., KOLOMIYETS, A. F., GOLUBEVA, R. N., GRANIN, Ye. F., FADEYEV, Yu. N., VRUBLEVSKAYA, L. S., VARSHAVSKIY, S. L., KOFMAN, L. P., VIKHANSKIY, K. N.

"A Method of Making Derivatives of Aryl Esters of β-Isothiuronium Ethanesulfonic Acid"

USSR Author's Certificate No 337381, filed 1 Aug 63, published 1 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N522P by T. G. Chekareva)

Translation: Compounds of the general formula $RO_3SC_2H_4SC(NH_2)=NH \cdot HA$ (I) (R = aryl unsubstituted or substituted by Cl, NO_2, Me; A = Cl or an organic acid radical) are synthesized by reacting $CH_2=CHSO_3R$ (II) with salts of thiourea or a mixture of thiourea with inorganic or organic acids. Example. Solutions of equimolar quantities of II and thiourea hydrochloride in butanol which are saturated at 60-90°C are heated at 80-90°C for 1 hour, cooled, and filtered, giving I with a yield of 85-96%. Evaporation of the mother liquor gives an additional quantity of I. The overall yield of I is 95-100%. The following compounds of type I (A = Cl) are synthesized (given are R and the melting point in °C): Ph, 165-6; 4-ClC6H4 (Ia),

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USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 337381, filed 1 Aug 63, published 1 Jun 72

144-6; 3-ClC_6H_4, 168-70; 2,4-$Cl_2C_6H_3$, 157-9; 2,4,5-$Cl_3C_6H_2$, 178-80; 2,4,6--$Cl_3C_6H_2$, 184 (decomp.); 4-$NO_2C_6H_4$, 155-8; 3-MeC_6H_4, 160-2. Saturated aqueous solutions of equimolar quantities of Ia and 2,4-$Cl_2C_6H_3OCH_2COONa$ are mixed at 90-100°C, cooled, and filtered, giving compound I (A = 2,4-$Cl_2C_6H_3OCH_2COO-$, R = 4-ClC_6H_4), melting point 134-5°C, yield 99.5%. in concentrations of 3.1-25 mg per liter compound I suppresses the growth of the mycelium Botritis cinerea and Piricularia orysae by 50-100%; in concentrations of 0.25-1 mg per liter, compound I suppresses the growth of spores of Botritis cinerea and Piricularia orysae by 8-100%, and in a concentration of 0.1% the chemical suppresses rust of the wheat strain Puccinia graminis f. tritici by 42-58%.

2/2

USSR

UDC 632.95

TEVELEV, G. Kh., GRINSHTEYN, Ye. I., KOFMAN, L. P.

"A Method of Obtaining β,β'-bis-(0 0-dialkyldithiophosphoryl)-diethylene Disulfides"

USSR Author's Certificate No 364623, class C 07 f 9/16, C 07c 149/12, filed 23 Oct 70, published 1 Mar 73 (from RZh-Khimiya, No 18 (II), Sep 73, Abstract No 18 N448 P by O. Ye. Yachmennikova)

Translation: β,β'-bis-(0,0-dialkyldithiophosphoryl)-diethylene disulfides are obtained by the reaction of 0,0-dialkyl S-β-mercaptoethyl dithiophosphate with a halogen in a solvent. For example, 2.9 g of I_2 is added in small amounts to a mixture of 5 g of 0,0-dimethyl S-β-mercaptoethyl dithiophosphate, 20 ml of C_6H_6, and 10 ml of water at a temperature of about 20° and intensively stirred until the reaction mass becomes slightly colored. The organic layer is washed with water (2 X 10 ml) and 4 g of β,β'-bis-(0,0-dimethyldithio-phosphoryl)-diethylene disulfide, n_D^{20} 1.5985, d_4^{20} 1.3690 is isolated. β,β'-bis-(0,0-diethyldithiophosphoryl)-diethylene disulfide, n_D^{20} 1.5680, d_4^{20} 1.2570 is obtained in a similar manner. Other examples are given in which Cl_2 and Br_2 are used instead of I_2 for oxidation.

1/1

USSR

TEVELEV, G. Kh., GRINSHTEYN, Ye. I., KOFMAN, L. P., SOKAL'SKIY, M. A., AGUREYEV, V. G., and SINITSYNA, N. T.

"Addition of S-β-Mercaptoethyl O,O'-Dialkyl Dithiophosphates to Substituted Olefins"

Abstract: It is shown that S-β-mercaptoethyl O,O'-dialkyl dithiophosphates add to esters of maleic, acrylic and methacrylic acids as well as to substituted amides of acrylic acid in the presence of catalysts — salts of transition metals — with formation of the corresponding substituted S-β-alkyl-mercaptoethyl O,O'-dialkyl dithiophosphates. Analysis shows that the addition reaction takes place contrary to Markovnikov's rule, with the formation of products which are unbranched in the S-β-alkyl radical.

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UDC 632.95

USSR

TEVELEV, G. KH., GRINSHTEYN, YE. I., KOFMAN, L. P.

"Method of Preparing Substituted S-Betaalkylmercaptoethyl-O,O-Dial-kyldithiophosphates"

Translation: Compounds with the general formula $(RO)_2P(S)SCH_2CH_2S-CH(PI)_n R^{II}$ (I) (R and R^I = H, alkyl, R^{II} = COOAlK, COOH, $CONH_2$, CONHAlK, and $C(O)N(Alk)_2$), exhibiting insecticidal activity, are prepared by the reaction of O,O-dialkyl-S-beta-mercaptoethyldithio-phosphates with halogenides of carboxylic acids. To a mixture of 0.12 mole $ClCH_2COOMe$ and 0.092 mole S-beta-mercaptoethyl-O,O-dimeth-yldithiophosphate in 30 ml C_6H_6 is added 0.1 mole Et_3N in 15 ml C_6H_6 at 2-5°, mixed for 3 hrs at about 20°, allowed to stand for 12 hrs, and after usual treatment, I is obtained (R = Me, R^I = H, n = 1, R^{II} = COOMe) (yield 77%, b. p. 135-140/0.016, $n^{20}D$ 1.5309,

1/2

USSR

TEVELEV, G. KH., et al, USSR Author's Certificate No 250136, filed 18 Jul 68, published 15 Jan 70 (from RZh-Khimiya, No 18, 25 Sep 70, Abstract No 15N624, by I. M. Mil'shteyn)

d_4^{20} 1.2294). I modifications are similarly obtained (R = Et, R^I = H, n = 1, R^{II} = CONHMe), yield 70%, $n^{20}D$ 1.5440, and d_4^{20} 1.2277.

2/2

UNCLASSIFIED   PROCESSING DATE--04DEC70

1/2   011
TITLE--SEPARATION OF AN ISOBUTANE ISOBUTYLENE MIXTURE -U-

AUTHOR-(04)-GALATA, L.A., VLASOV, L.V., KOFMAN, L.S., CHIRIKOVA, Z.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 202,909
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DISTILLATION, BUTANE, BUTENE, CHEMICAL PATENT, CHEMICAL
   SEPARATION, ALIPHATIC AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1777   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137017
                          UNCLASSIFIED

CIRC ACCESSION NO--AA0137017
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF ISOBUTANE AND
ISOBUTYLENE IS SEPD. BY RECTIFICATION IN THE PRESENCE OF MONO OR
DIMETHYLAMINE AS A SEPG. AGENT.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70

1/2   039

TITLE--USE OF ENAMEL COATINGS BASED ON CYCLORUBBER AND CHLORINATED RUBBER
FOR PROTECTING EQUIPMENT AND STRUCTURES USED IN THE CHEMICAL INDUSTRY

AUTHOR--KOFMAN, N.I., FINKELSHTEYN, M.I.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH MATER. IKH PRIMEN. 1970, (1) 40-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ENAMEL, PROTECTIVE COATING, CHLORINATED ORGANIC COMPOUND,
SYNTHETIC RUBBER, PROTECTIVE COATING, CHEMICAL INDUSTRY, HYDROGEN
SULFIDE, NITRIC ACID, SULFURIC ACID, HYDROCHLORIC ACID, AMMONIA,
CONCRETE, METAL COATING, CHLORINE, SULFUR DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0550   STEP NO--UR/0303/70/000/001/0040/0042

CIRC ACCESSION NO--AP0107155
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0107155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ENAMELS BASED ON CHLORINATED
RUBBER OR CYCLORUBBER RESIST THE CONDITIONS IN CHEM. PLANTS, WHERE THEY
ARE EXPOSED TO THE PERMITTED CONCNS. OF H_2S, SO_2, SO_3, CL,
HCL, HF, AND VAPORS OF HNO_3, H_2SO_4, NH_3, CYCLOHEXANONE,
OR C_6H_6. THESE ENAMELS CAN BE USED FOR COATING METAL OR
CONCRETE. THEY ARE NOT STABLE AGAINST 5-7PERCENT SOLNS. OF H_2SO_4,
HCL, AND H_3PO_4 AT 60DEGREES.

UNCLASSIFIED

POVOLOTSKIY, D. YA., GRECHIN, R. I., RECHKALOVA, A. V., KOFMAN, YY. V., and
ROSHCHIN, V. YE. ·

"Behavior of Oxygen and Reauction Products in Vacuum-Arc Remelting"

Abstract: Low-carbon (0.03-0.09 % C) and carbon (0.20-0.70% C) steels were
used for consumable electrodes in 5-ton arc furnaces for the purpose of studying
oxidation and reduction processes in vacuum-arc remelting (VAR) and the
behavior of inclusions. It was noted that in VAR, refining of the metal
from deoxidation products occurs as a result of mechanical removal of inclu-
sions and reduction of unstable oxides by carbon. Stable inclusions of
complex shape (corundum crystals and grains) are more fully removed by
mechanical means; however, the same does not hold true for inclusions of
spherical shape (globular corundum and glasses) and unstable inclusions. New
types of inclusions are formed in the VAR process. Non-equilibrium inclusions,
which transfer from the initial metal into the VAR ingot change composition
to a more equilibrium composition and change shape to a more idiomorphic form.
The length of the refining period when melting the initial metal for VAR has
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USSR

POVOLOTSKIY, D. YA., et al., Stal', No 12, Dec 73, pp 1092-1095

little effect on oxygen and inclusion content, so that there are savings in keeping the refining time as short as possible. Six figures, seven bibliographic references.

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USSR

KOFTELEV, V. T., FAYFER, S. I., TROFIMOV, Ye. A., SHISHKINA, I. P.

"Emissivity of Cermets Based on Aluminum Oxide and Molybdenum"

Translation: An investigation was made into the emissivity of pressed and sintered ceramals with composition (16-18) vol.% Mo + 4% BeO+Al_2O_3. A check on various methods of measurement showed that the most reliable is the method of the vanishing reference point: a light beam is directed at the surface of the specimen and the reference (MgO); the illuminance or temperature of the specimen, which is heated by the direct passage of current, is selected in such a way that the brightness of the specimen and reference is equal in monochromatic light. The resultant values of the coefficient of 0.81 (±5%) are considerably higher than the coefficients of emission of the components of the ceramal. N. S.

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USSR

UDC 621.385.032.329

KOFTELEV, V.T., FAYFER, S.I., SHISHKINA, I.P., VOROB'YEVA, V.D.

"Electrical Conducting Metalceramic For Cathode Heaters With Heating By Passage Of Current"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific-Technical Collection. Materials), 1970, Issue 3, p 121 (from RZh--Elektronika i elektronika, No 1, January 1971, Abstract No 1A72)

Translation: An analysis of the temperature dependences of the electrical resistivity of cermets of various compositions showed that the difference of the character of a cermet with heating by passage of currents and with heating by an exterior source of heat is due to the microlocalized superheating of the cermet at the point of contact of the metal particles, one with another. The contact phenomena in the metalceramic leads to a reduction of the working temperature of the cermet heaters. In order to increase it, it is recommended that a cermet be used with a comparatively small electrical resistivity and refractory metal components. G.B.

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USSR   UDC 621.385.032.329

KOFTELEV, V.T., FAYFER, S.I., SHISHKINA, I.P.

"Electrical Conducting Metal Ceramic For Cathode Heaters With Heating By An Exterior Source Of Heat"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific-Technical Collection. Materials), 1970, Issue 3, p 122 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A73)

Translation: The paper investigates the limiting theoretically possible working temperature of cermet heaters for the cathodes of electrovacuum devices. In the case of cermets based on Al_2O_3 with an electrical resistivity of ~ 1 ohm. cm, this temperature equals 1850--1900° C. The theoretically possible working temperature of the cermet heaters can be increased by use of a ceramic phase with high EI [electrical insulating ?] properties and non-interacting components employing metal with a high temperature coefficient, and increasing the porosity of the cermet and the concentration of metal in it. G.B.

1/1

USSR

KOGAN, A. B., KURAYEV, G. A., and CHORAYAN, O. G., Rostov State University

"Some Characteristics of Information Processes in the Visual Analysor"

Abstract: In acute experiments on frogs, impulse activity of the ganglion cells of the retina was recorded simultaneously with that of neurons in the tectum of the mesencephalon, the central portion of the frog's visual analysor, following stimulation with light flashes. A close relationship was observed between the capacity of the system and excess impulses from the cells of the tectum: the capacity was high when there was an excess of impulses, especially from the ganglion cells of the retina. A similar relationship obtained between the reliability of the system and excess impulses. In some cases the marked excess of impulses from the cells of the tectum compensated for the insufficient excess of impulses from the ganglion cells of the retina needed to maintain a high capacity. These findings show that the high capacity and reliability of the "ganglion cells of the retina - cells of the tectum of mesencephalon" system are largely due to the excess communications sent by the ganglion cells. The connection between the excess at the output of the

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USSR"

KOGAN, A. B., et al., Doklady Akademii Nauk SSSR, No 4, 1971, pp 951-953

system (tectum cells) and reliability, on the one hand, and capacity of the system, on the other, is regarded as evidence of the existence of feedback.

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UDC 577.3

USSR

KOGAN, A. B., SACHAVA, T. S., DOROZHKINA, L. I., PAVELKO, V. M., and
GOL'TSEVA, I. N.

"The Mechanism of the Effect of a Constant Magnetic Field"

Vliyaniye Magnitnykh Poley na Biologicheskiye Ob"yekty, pp 56-68

Abstract: An investigation was made of the effect of a constant magnetic field
on organisms of different evolutionary levels. During experiments on infusoria,
a change in movements, redistribution and reduction of RNA (protoplasmic), and
an increase in aerobic glycolysis was observed under the influence of a constant
magnetic field. In the cells of nitella algae, a reduction in dormancy poten-
tial during the effect of a magnetic field was detected using the technique of
intracellular registration of biopotentials. The effect depended on the in-
tensity of the field being used and on seasonal conditions under which the
experiment was conducted. In studying a single nerve cell of the muscle ex-
tension receptor of a crab, it was established that a magnetic field of 500 ^{o}e
with an exposure of 30 minutes causes an inhibitory reaction in the neurons
whose intensity depended on the season. Structural changes in the neurons
were characterized by disintegration of small RNA chunks and RNA accumulation

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USSR

KOGAN, A. B., et al., Vliyaniye Magnitnykh Poley na Biologicheskiye Ob"yekty,
pp 56-68

in the perinuclear area. The physiological activity of adrenalin exposed to
a magnetic field changed when it was tested on an isolated frog heart accord-
ing to the Shtrauber method.

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KOGAN, A. B.

COLEEN

101. USSR

UDC 612.82:611--018.82

KOGAN, A. B.

SO: FOREIGN PRESS DIGEST
29 OCT 1971

"The Principles of the Organization of Neuron Elements in the Functional Systems of the Brain"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 33-40

Abstract: The characteristic features of neuron organization and the properties of the mechanisms of the diffuse, gangliar, and tubular nervous systems associated with them are examined. The author cites the physiological and morphological bases of a hypothesis on the development in the brain's higher regions of a probabilistic-statistical organization of neurons, combining the specificity of the gangliar and tubular systems with the reliability of the diffuse system.

     The relative critical number of elements as an indication of the type of neuron organization is considered. The values of the relative critical number of elements involved in the systems which implement the spinal cord reflex, respiratory rhythm, and visual analysis are compared.

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USSR

KOGAN, A. B., Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga, Nauka Publishing House, 1970, pp 33-40

Experimental data is presented on the spacial character of neuron ensembles as functionally homogeneous conglomerates of neurons. It is noted that reciprocity of the reactions of adjacent ensembles is the most general form of their interaction.

The characteristics of the probabilistic organization of the brain's functional systems is investigated by mathematical and physical models.

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UDC 612.822.3

USSR

KOGAN, A. B., YEFIMOV, V. N., and SOKOLENKO, P. T., Problem Laboratory of Biophysics, State University, Rostov-on Don

"Analysis of the Dynamics of Neuron Functioning by Its Impulse Activity"

Leningrad, Fiziologicheskiy Zhurnal SSSR, Vol 56, No 4, 1970, pp 514-517

Abstract: Impulse activity is considered as a continuous process reflecting the functional dynamics of a given nerve. A great number of factors enter into the function of a nerve, such as the distance of its activity, distribution of stimuli, sympathetic and inhibitory affects, trophic and metabolic states, state of excitability and lability of the nerve cell, etc. All these factors are reflected, to some extent, in the measurement of impulse frequencies (frequency-gram) and of the intervals between the frequencies (intervalo-gram). The construction of a histogram (several types are shown) which is a graphic representation of a frequency distribution by means of rectangles, whose widths represent the class of intervals and whose heights represent the corresponding frequencies serves as the pattern of analysis of neuron activity.

1/1

USSR   .   UDC: None

KOGAN, A. B., VLADIMIRSKIY, B. M., TAMBIYEV, A. E., and FOMIN,
G. P., Rostov State University

"Spatial Organization of Neuron Assembly Functional Mosaics in
the Cerebral Cortex"

Moscow, Doklady Akademii nauk SSSR, vol 206, No 6, 1972, pp 1478-
1481

Abstract: Since it is difficult to determine by direct experiment
the full configuration of the mosaic pattern formed by the distri-
bution of excitatory and inhibitory cell groups, the authors under-
take in this article to determine the pattern through the use of
mathematical methods based on the statistics of earlier experimen-
tation. These statistics consist for the most part of dimensions
and other spatial characteristics of the actual probabilities of
neuron assemblies in the analysor fields of the cerebral cortex. The
statistical information for the present article is derived from a
paper published by the first of the authors named above (Neyro-
fiziologiya, 1, 1969, p 120). A picture of the reconstructed mo-
saic patterns, obtained with the assistance of an electronic di-
gital computer, is reproduced.
1/1

USSR

UDC: 669.187.042.39:546.21:669.786

KOGAN, A. YE., and LEVIN, A. M., Siberian Metallurgical Institute

"Behavior of Nitrogen During the Scavenging Time of Stainless Steel by Oxygen"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 4, 1973, pp 78-84

Abstract: The authors study the above phenomenon during the oxidation period of 21 smelts of stainless steel in a 40 ton electric arc furnace. It is shown that two opposite processes take place during scavenging by a vertical tuyere: nitriding of metal due to the ejected oxygen jet of the furnace atmosphere and degassing during decarbonization. Using the ejection calculation data and the results from studying the changes in the gas phase and metal melt composition in the furnace, the authors determined the factor of nitrogen assimilation by the metal from the ejected furnace gases. This made it possible to explain the regularity of each of the processes and derive a general formula which describes satisfactorily nitrogen content variation in the pool during scavenging while taking into consideration the development of nitriding and degassing.

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USSR   UDC 612.822.3+612.84

KOGAN, A. V., TKACHENKO, N. N., TUMASOVA, N. K. and SHUL'GA, Ye. L.,
Scientific Research Institute of Neurocybernetics, Rostov-na-Don State
University

"On the Interconnection of Neuronal Background Activity in the Visual and
Somatosensory Cortical Areas"

Abstract: The correlation coefficients for the background impulse activity
of 159 pairs of cat neurons, one in the visual region and the other in the
somatosensory region, were analyzed. In 25 to 30% of the cases significant
(greater than 0.4) coefficients were found for a 5 sec recording interval.
However for a 1 min interval the coefficients were not statistically signif-
icant. A group of five cats with the somatosensory region partially isolated
from subcortical structures also showed significant coefficients for 5 sec
intervals. These results are said to suggest significant episodic correla-
tion and the importance of intracortical pathways. The 1 min results are
considered due to oscillation leveling.
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UDC 612.822.6

USSR

KOGAN, A. V. and CHOROYAN, O. G. (Reviewers)

Samoregulyatsiya Golovnogo Mozga: Kiberneticheskiye Aspekty Teorii Narkoza
(Self-Regulation of the Brain: Cybernetic Aspects of Narcosis Theory), by
K. A. Ivanov-Muromskiy, Kiev, 1971, 248 pp

Leningrad, Fiziologicheskiy Zhurnal SSSR im. I. M. Sechenov, No 8, 1972, pp
1,330-1,331

Translation: The monograph under review examines the mechanisms of self-regula-
tion of brain systems. It also deals with a wide range of matters: nature and
development of the main nerve processes, interrelations of the excitatory and
inhibitory processes at the cellular and system levels, formation of central
inhibition in relation to methods of inducing it.

There is no doubt that elucidation of the mechanism of action of narcotic
agents has considerable theoretical and practical significance. However,
it is a difficult task largely because we do not know enough about the dy-
namics of the regulatory processes responsible for the transition from wake-
fulness to diffuse inhibition. The author's use of the systems approach to

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USSR

KOGAN, A. V. and CHOROYAN, O. G. (Reviewers), Fiziologicheskiy Zhurnal SSSR
im. I. M. Sechenov, No 8, 1972, pp 1,330-1,331

investigate self-regulation of the brain is very promising. This approach makes
it possible to analyze the interrelations of the hierarchical control systems
from the cybernetic standpoint.

The introduction poses the problem of self-regulation of the cerebral cortex
by the mechanisms of direct communication and feedback between the cortex and
subcortical formations. It emphasizes the important functional role of various
brain structures in response to narcotics. However, one can question the
author's view that electric narcosis is the basis for creating new methods of
controlling the processing of information in different divisions of the brain
(p 8). Narcosis evidently produces some modification in such information
processing to cope with the strategic problem of the brain, homeostatic self-
regulation, but it does not fundamentally alter the method of information
processing, as the introduction implies.

The section "Cybernetic Aspects of Nervous Activity" contains a review of the
literature on the theory of cybernetic automatic control systems. It examines
some ideas on the mechanisms of self-regulation in the nervous system and

2/5

USSR

KOGAN, A. V. and CHOROYAN, O. G. (Reviewers), Fiziologicheskiy Zhurnal SSSR im. I. M. Sechenov, No 8, 1972, pp 1,330-1,331

assesses the methods used to evaluate brain function. In doing so, the author defines the process of self-regulation as a form of adaptation carried out with the help of direct communication and feedback aimed at maintaining homeostasis in the broad sense of the word.

In judging the contents of this section, one cannot help noting that it deals with a wide range of matters some of which go beyond the scope of the questions that are the object of the author's own research, which is discussed in the next chapter. For example, in the section that describes various models of brain activity, it would have been better, we believe, to have concentrated only on those which relate directly to sleep or narcosis.

The section "Methods of Investigation" describes the methods used by the author to alter brain function by means of pharmacologic agents (ether, nembutal, chlorpromazine) and electrical stimulation which induces electronarcosis. He employs for this purpose an original apparatus designed in his own laboratory. He also describes the considerations that guide the choice of optimum parameters of the electric current that brings about narcosis. He thoroughly analyzes the energy characteristics of stimuli in the light of his concept of

3/5

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USSR

KOGAN, A. V. and CHOROYAN, O. G. (Reviewers), Fiziologicheskiy Zhurnal SSSR im. I. M. Sechenov, No 8, 1972, pp 1, 330-1,331

the maximum significance of the energy evaluation of a stimulus. Various types of mathematical analysis in a computer and several original algorithms were used to process the factual material.

The next section "Experimental Studies" describes and discusses the results of the author's long-term research in this field. He shows that as the actions used are intensified, more or less identical changes take place in the dynamics of the EEG, which he rightly regards as proof that common patterns of change in excitability and lability underly the brain's reactions. The existence of balancing and paradoxical phases is an indication of the development of parabiosis. The author obtained experimental data which show that inhibition of the cortical structures during narcosis is not a diffuse phenomenon but a complex process with a mosaic distribution of foci of excitation and inhibition.

Some of the author's views, however, are clearly debatable, specifically his conclusion that narcotics affect primarily the cortical structures while the reticular formation is highly resistant to them. There is sound evidence in the literature that these agents act chiefly on structures with polysynaptic

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USSR

KOGAN, A. V. and CHOROYAN, O. G. (Reviewers), Fiziologicheskiy Zhurnal SSSR im. I. M. Sechenov, No 8, 1972, pp 1,330-1,331

junctions (Magoun, 1952; Dell, 1952; Bradley and Key, 1968; Herz, 1964; Hopkins, 1965; Gmyrya-Novi, 1965; others).

That narcotics have a pronounced effect on the structures of the nonspecific reticular formation is also suggested by the author's own data, notably those indicating that narcotics influence chiefly secondary responses while the primary responses remain intact. Fresh light could have been thrown on the author's results if he had also used information parameters of the self-regulatory processes. For example, in quantitatively evaluating homeostatic self-regulation of brain functions he could have successfully used the criteria of organization, orderliness (according to Fisher and Foerster), and other information characteristics.

In general, the monograph under review is a contribution to our knowledge of the physiological mechanisms governing the shift of the brain's operating mechanisms from wakefulness to inhibition and to the development of means of controlling these processes.

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TITLE--FAMILIAL FORMS OF SCOLIOSIS -U-

AUTHOR-(04)-ABALMASOVA, YE.A., KOGAN, A.V., NIKITINA, M.P., KHADZHAYEV,
R.R.
COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 22-26

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCULOSKELETAL DISEASE, HEREDITARY DISEASE, HUMAN GENETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1362   STEP NO--UR/9115/70/000/004/0022/0026

CIRC ACCESSION NO--AP0109443
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0109443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ANALYSIS INCLUDES 132
FAMILIES, IN 94 FAMILIES (200 SUBJECTS) SCOLIOSIS WAS OBSERVED IN 2 AND
MORE PERSONS, IN 38 FAMILIES THE RELATIVES OF SCOLIOTIC PATIENTS
SUFFERED FROM ENURESIS, 35 SCOILOTIC PATIENTS ALSO HAD ENURESIS. ALL
PATIENTS WITH SCOLIOSIS WERE DIVIDED INTO 3 GROUPS: SCOLIOSIS IN HOMO
AND HETEROZYGOUS TWINS, SCOLIOSIS IN PARENTS AND CHILDREN, SCOLIOSIS IN
TWO CHILDREN FROM ONE FAMILY. OF 8 PAIRS OF TWINS, 7 PAIRS WERE
HOMOZYGOUS. AMONG 8 PAIRS, THERE WERE 6 PAIRS OF SISTERS, BROTHER AND
SISTER IN ONE PAIR, AND BROTHERS IN ANOTHER. SCOLIOSIS IN TWINS WAS
ALWAYS CONCORDANT, BUT IN ONE OF THEM ALWAYS MORE SEVERE THAN IN THE
OTHER. BY THE CHARACTER AND SEVERITY, SCOLIOSIS IN THE DAUGHTER WAS
IDENTICAL TO THAT OF THE MOTHER, WHILE IN THE SON IT WAS ALWAYS LESS
MARKED. SCOLIOSIS IN THE SON BY THE CHARACTER AND SEVERITY WAS
IDENTICAL TO THAT OF THE FATHER, WHILE IN THE DAUGHTER IT WAS ALWAYS
MORE SEVERE. SCOLIOSIS OF VARIOUS SEVERITY WAS A RULE IN THE GROUP
WHERE IT WAS PRESENT IN TWO CHILDREN OF THE SAME FAMILY. AMONG ALL
SCOLIOSIS, THE SCOLIOSES IN PARENTS AND CHILDREN CONSTITUTED THE LARGEST
GROUP AND, MOREOVER, THE INCIDENCE OF SCOLIOSIS IN THE MOTHER AND
CHILDREN WAS 3 TIMES HIGHER THAN IN THE FATHER AND CHILDREN. IN ALL
GROUPS SCOLIOSIS WAS MORE FREQUENTLY OBSERVED IN THE FEMALES, BUT IN THE
GROUP WITH SCOLIOSIS IN THE MOTHER AND CHILDREN, THE PREVALENCE OF
FEMALES WAS ESPECIALLY MARKED. THE AUTHORS BELIEVE MYCLODYSPLASIA AND
THE DYSRAPHIC STATUS TO BE THE MOST FREQUENT CAUSE OF SCOLIOSIS
DEVELOPMENT.   FACILITY: TSENTRAL'NOGO INSTITUTA TRAVMATOLOGII I
ORTOPEDII.
                       UNCLASSIFIED

Pathology

USSR

UDC 616.988.75-06;616.831.06;616.8-009.24

KOGAN, B. S., KOVALEV, N. K., and SHEVELEV, YU. F., Chair of Psychiatry, Kursk
Medical Institute, and Kursk Oblast Psychiatric Hospital

"Convulsive States in Patients With Influenza Injury of the Central Nervous
System"

Abstract: A number of authors have described epileptic seizures in cases
of influenza and the influenza type of encephalitis. The present authors
observed 256 patients with acute affections of the central nervous system of
influenza origin who were patients at the Kursk Oblast Psychiatric Hospital
and the Kursk City Infectious Disease Hospital between 1954 and 1967. In
42 cases, the disease was accompanied by epileptic seizures, and in 37 of these,
influenza infection caused convulsive seizures (in 23 cases during the acute
period, and in 14 cases, 2 or 3 weeks after the disappearance of the major
clinical manifestations of influenza.) In 5 patients the course of an earlier
epilepsy of undetermined origin was adversely affected. All patients had
their conditions clinically diagnosed by internists and specialists, and in
32 cases, the diagnoses were confirmed by serological studies. Eight of the
42 cases observed died. Study of their medical histories showed that they

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KOGAN, B. S., et al., Klinicheskaya Meditsina, No 7, 1971, pp 93-96

had passed through various infections (measles, scarlatina, typhus, malaria,
etc.), 9 were alcoholics, 6 had had cranial trauma with loss of consciousness,
and 3 had had dynamic disturbances of cerebral circulation. The period of
fever lasted from 1 to 7 days in 33 patients, and 8 days or longer in 9
others. The following neurological symptoms were found: damage to the cere-
bral cranial nerves (38 patients); tendon anisoreflexia (26); pyramidal
hemisyndrome (14); pathological reflexes (12); instability of the Romberg test
(12); and meningeal symptoms (25). The authors support the opinion of A. I.
Viting and other investigators as to the toxic nature of affections of the
central nervous system in influenza. A total of 18 of the 42 patients with
epileptic symptoms showed local symptoms indicating the presence of an epilep-
togenic zone, and the other 24 showed general convulsive seizures without
clearcut local symptoms. The attacks were treated with chloral hydrate,
barbamil, hexenal, and other drugs. The 34 nonlethal cases received supportive
therapy, including small doses of sedatives for several months after the
cessation of the attacks.

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cases. X-ray contrast and noncontrast prostatography serves as one of the important methods of improved diagnosis of male hypogonadism. Prostatography offers a possibility of detecting the presence, the shape and the size of the prostate gland, and is of expedience in various pathological processes developing in this organ.

REEL/FRAME
19790759

DI 2

ROENTGENOLOGICAL EXAMINATION OF THE PROSTATE IN HYPOGONADISM

A. I. Bukhman, B. Sh. Kagan, I. V. Golubeva, G.I . Eryamkin

Summary

Materials of examination of 23 patients with various diseases were subjected to tho-
rough clinico-roentgenological analysis. Male hypogonadism was present in 15 of these

KOGAN E·A·

Acc. Nr:
AP0041517

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

83487z Reaction of germanium dioxide with o-oxyquinoline studied by an adsorption-complexing method. Kogan, E. A.; Evdokimov, D. Ya. (Kafedra Obshch. Khim., Odess. Elektrotekh. Inst. Svyazi im. Popova, Odessa, USSR). $Zh.\ Neorg.\ Khim.$ 1970, 15(1), 191-4 (Russ). Charcoal was treated with a AcOH soln. of o-oxyquinoline (I) (sic) and then adsorption of GeO_2 in aq. soln. on this charcoal was detd. Higher adsorption of GeO_2 on I-treated charcoal in comparison to that on untreated charcoal proves that GeO_2 is capable of a chem. reaction with I in aq. soln.   HMJR

REEL/FRAME

UDC 621.792.6:678.7

USSR

KOGAN, E. A., LOSEV, B. I., BALALAYEV, E. G., and FRIDMAN, M. L.;
All-Union Scientific Research and Design Institute Teploproyekt,
Moscow; Institute of Mineral Fuels, Moscow, Academy of Sciences
USSR; Moscow Petroleum Conversion Plant

"Adhesion of Thermoplasts to Elastomers"

Abstract: Elastomer-thermoplast sheets of the type used as coatings
protecting against corrosion were prepared from butyl rubber, buta-
diene-styrene rubber (SKS-30), and butadiene-acrylonitrile rubber
(SKN-40) that contained S and molten polypropylene joined to them
under pressure. The two-layer sheets were subjected to vulcaniza-
tion at 143° under pressure. The adhesion between the elastomer
and polypropylene decreased in the order butyl rubber > SKS-30 >
SKN-40. It was highest for butyl rubber because of the mutual com-
patibility of the two polymers, lower for SKS-30 because the rigid
styrene groups interfered with mutual penetration, and lowest for
SKN-40 because the cumbersome nitriloacrylic groups reduced inter-
penetration by diffusion. The adhesion was at a maximum after a
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definite length of the time of vulcanization (15-18 min); if vulcanization was continued for a time greater than the optimal, adhesion decreased because of shrinkage of the elastomer due to structurization. Use of polypropylene of different grades showed that adhesion increased with an increasing degree of atactic structure in the polypropylene, which was associated with a decrease in density. Addition to the polypropylene of carbon black in amounts $\leq$ 5% increased adhesion, while amounts of carbon black $>$ 5% reduced it. In the vulcanization pressure range of 1-7 kg/cm^2, the maximum adhesion was obtained at a pressure of 5 kg/cm^2. The authors thank S. S. VOYUTSKIY for his interest in the results of the work.

2/2

1/2   016   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ADHESION OF THERMOPLASTS TO ELASTOMERS -U-

AUTHOR-(04)-KOGAN, E.A., LOSEV, B.I., BALALAYEV, E.G., FRIDMAN, M.L.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 373-376

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESION, POLYPROPYLENE, THERMOPLASTIC MATERIAL, ELASTOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1602   STEP NO--UR/0069/70/032/003/0373/0376

CIRC ACCESSION NO--AP0125224
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0125224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF VARIOUS FACTORS ON
THE STRENGTH OF THE ADHESION BOND BETWEEN POLYPROPYLENE AND RUBBERS HAS
BEEN STUDIED. FOR ALL RUBBERS EXAMINED THE MAXIMUM ADHESION STRENGTH IS
ATTAINED WITH THE CURING TIME APPROXIMATELY TWICE AS SMALL AS THAT
REQUIRED FOR OPTIMUM PHYSICAL AND MECHANICAL PROPERTIES. INCREASE OF
THE LAYER THICKNESS, POLARITY AND MOLECULAR WEIGHT OF RUBBERS DIMINISHES
THEIR ADHESION TO NONPOLAR THERMOPLASTS.   FACILITY: VNI I
PROYEKTNYY INSTITUT TEPLOPROYEKT, MOSCOW.   FACILITY: INSTITUT
GORYUCHIKH ISKOPAYEMYKH AN SSSR, MOSCOW MOSKOVSKIY
NEFTEPRERATYVAYUSHCHIY ZAVOD.

1/2   033   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--MOISTURE PERMEABILITY OF PLIED UP POLYMER MATERIALS -U-

AUTHOR-(03)-BALALAYEV, E.G., KOGAN, E.A., LOSEV, B.I.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 43-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PERMEABILITY MEASUREMENT, POLYPROPYLENE, BUTYL RUBBER,
COMPOSITE MATERIAL, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1801   STEP NO--UR/0191/70/000/003/0043/0044

CIRC ACCESSION NO--AP0123598
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0123598
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE H SUB2 O PERMEABILITY OF
POLYPROPYLENE (I) PLIED UP WITH BUTYL RUBBER ELASTOMERS (II) WAS DETD.
BY A "BEAKER" METHOD (P. TAYLOR, ET AL., 1936). THE DIFFUSION RATE OF H
SUB2 O VAPORS THROUGH THE COMPOSITE MEMBRANE WAS INDEPENDENT OF THE
ARRANGEMENT OF I OR II LAYERS. THE H SUB2 O PERMEABILITY OF THE
COMPOSITE MATERIALS OBEYED THE DIFFUSION PRINCIPLES ESTABLISHED EARLIER
FOR GASES PASSING THROUGH A 2 LAYER RUBBER, PROVIDED THERE WAS NO CHEM.
REACTION BETWEEN THE POLYMER AND THE MEDIUM.

UNCLASSIFIED

USSR   UDC 612.766.1:656.13.071.7

VAYSMAN, A. I., LASHCHENKO, N. S., IKSANOV, M. SH., DOROFEYEVA, Ye. D.,
ROSTOVTSEVA, G. G., GOLOVA, I. A., CHANDAYEV, A. K., VOL'PER, G. I., and
E. I. KOGAN

"Physiological Characteristics of the Work of Bus and Truck Drivers in a Large
City"

Abstract: The results of various functional psychological and physiological
tests (reflexes, reaction to a moving object, proof reading test, EKG, blood
pressure, pulse, etc.) confirmed the conclusions drawn from questionnaires
filled out by 8000 bus drivers that fatigue gradually sets in after 4 to 5
hours on the job and becomes pronounced after 7 to 8 hours of driving. Along
with a deterioration in performance, many showed an "improvement" in some
physiological indices at the end of the work shift (e.g., increase in number of
correct reactions to a moving object, decrease in time of differential reac-
tions). This "improvement" is regarded as the result of overstraining the
compensatory mechanisms in order to preserve a level of activity sufficient to
protect the life and health of the driver. The truck drivers, on the other
hand, continued to function well even after 8 or 9 hours on the job because
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of the less strenuous nature of the work (less time spent in driving during the shift, fewer actions to control the vehicle per unit of time, and less emotional stress). Some suggestions are made for altering the work schedules of bus drivers to take into account the physiological factors uncovered in the study.

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USSR

UDC 615.281.8:547.963.32

AKSENOV, O. A., TIMKOVSKIY, A. L., AGEYEVA, O. N., KOGAN, E. M., BRESLER,
S. Ye., SMORODINTSEV, Al. A., and TIKHOMIROVA-SIDOROVA, N. S., All-Union
Scientific Research Influenza Institute, Ministry of Public Health USSR,
Institute of Nuclear Physics, Academy of Sciences USSR, and Institute of
High Molecular Weight Compounds, Academy of Sciences USSR, Leningrad

"Interferonogenic and Antiviral Activity of Double-Stranded Polyriboguanilic
and Polyribocytidylic Acid Complex"

Abstract: The interferonogenic and antiviral activity and toxicity of
(poly-G)·(poly-C) complexes produced by two methods were compared with those
of (poly-I)·(poly-C). Stable complexes were formed both by adding NaCl
(0.1M) to an equimolar solution of poly-G and poly-C in 0.005M sodium phos-
phate buffer (pH 7.4) at 20°C, and by heating the polynucleotide mixture in
the same buffer for 10 min at 100°C with subsequent slow cooling. Success
of the first method, not encountered in other papers, is probably due to
careful purification of the polynucleotides. The double-strand complex
stimulated maximum interferon formation in white mice 2-4 hours after
intravenous injection. Interferon disappeared after 10-12 hours.
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AKSENOV, O. A., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 345-350

(Poly-G)·(poly-C) produced less interferon than did (poly-I)·(poly-C)
(160-320 vs. 640-1,280 units/ml). The complex protected mice from lethal
doses of AO/PR8 influenza virus, though (poly-I)·(poly-C) was somewhat more
effective. (Poly-G)·(poly-C) was most effective when administered within
1 day of infection, while (poly-I)·(poly-C) was most effective when ad-
ministered 2-3 days prior to the virus. The protective effect was higher
for complex produced at 20°C than for that produced at 100°C. (Poly-G)·
(poly-C) was nontoxic to white mice even at maximum dose (50 mg/kg), while
(poly-I)·(poly-C) was 50 percent lethal at 10-15 mg/kg. Though (poly-G)·
(poly-C) was found to be generally less effective than (poly-I)·(poly-C),
its lower toxicity makes it a preferable antiviral agent.

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USSR   UDC 615.281.8:547.963.32

TIMKOVSKIY, A. L., AKSENOV, O. A., BRESLER, S. Ye., KOGAN, E. M.,
SMORODINTSEV, Al. A., and TIKHOMIROVA-SIDOROVA, N. S., Institute of
Nuclear Physics, Academy of Sciences USSR, Institute of High Molecular
Weight Compounds, Academy of Sciences USSR, and All-Union Scientific
Research Influenza Institute, Ministry of Public Health USSR, Leningrad

"Molecular Weight Characteristics of the Polyriboguanilic-Polyribocytidylic
Acid Complex and Their Relation to Antiviral and Interferonogenic Activity"

Abstract: Molecular weight characteristics and immunological activity of
(poly-G)·(poly-C) were studied in comparison to those of (poly-I)·(poly-C)
to determine the reasons for variations in the compound's immunological
activity. It was found through gel chromatography that the molecular
weight of the complex depended directly on the quantity of oligonucleotide
impurities within either of the precursors, poly-G acid or poly-C acid.
While impure precursors produce a complex with molecular weight 300,000-
500,000 daltons, purification of both results in molecular weight close
to that of (poly-I)·(poly-C) (over $1·10^6$ daltons). Antiviral activity of
the purified complex in white mice was practically identical to that of
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TIMKOVSKIY, A. L., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 350-355

(poly-I)·(poly-C). Activity also depended directly on precursor molecular weight, disappearing at 30,000-40,000 daltons. It is suggested that molecular weight is more important than nucleotide composition to antiviral and interferonogenic activity. Thus although the mechanism of action of both complexes remains to be clarified, apparently it is identical for both and depends directly on complex molecular weight and precursor purity.

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KOGAN, E. M.

INVESTIGATION OF POSTMORTEM CELL DIVISION IN THE RAT'S HEPATIC PARENCHYMA

Investigation of mitotic activity in surviving organs and tissues resulted in postulation of the position (Bullough) that the nature of extinction of cell division following somatic death depends on the type of tissue. Thus, the degree of completion of cell division is of practical interest of this position is obvious. survival could serve as a cytological indicator of viability of cadaver tissue, which is important to consider in organ transplantation, as well as in pathoanatomical and forensic medical examinations.

The purpose of the present work was to study postmortem mitotic activity in the hepatic parenchyma of partially hepatectomized rats.

In the experiments we used 52 male rats weighing 200-250 and 120-130 grams. Under nembutal anesthesia two-thirds of the liver was removed by the method of Higgins-Anderson, and the animals were decapitated 26-30 hours after surgery, during the period of intensive mitotic division of hepatocytes. The bodies of the animals were kept at room temperature. Analysis of the morphology of mitotic figures and a count of mitoses were performed on aceto-carmine squash preparations. The mean mitotic index per case was derived from 10 values, each of which was determined by counting 1,000 hepatocyte nuclei (so that in all 10,000 nuclei were counted). For determination of the mitotic phase index, 400-600 mitotic figures were counted. We administered H3-thymidine (0.5 microcuries/gram in 0.2 ml saline) to some of the animals (14). Determination was made of the percentage of labelled dividing hepatocytes (mean of 4-5 readings each of which was derived from counting 100 mitotic figures) on autoradiograms of liver sections.

The material was analyzed with a microscope magnification of 7×40. The statistical reliability of the results was checked using the t - test by the method of Fisher and Student. Three series of experiments were performed. In

TITLE--DATA FOR HYGIENIC ASSESSMENT OF ASBOZURITE AND SOVELITE DUST
  CONTAINING ASBESTOS -U-

AUTHOR-(03)-KOGAN, F.M., SVIRSKIY, E.L., POCHASHEV, YE.N.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA I SANITIARIYA, 1970, NR 3, PP 19-23

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ASBESTOS, INDUSTRIAL HYGIENE, RESPIRATORY SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0458   STEP NO--UR/0240/70/000/003/0019/0023

CIRC ACCESSION NO--AP0100936
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0100936
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ASBOZURITE DUST CONTAINING
  ASBESTOS IN FREE MIXTURE WITH DIATOMITE WAS FOUND TO BE MORE FIBROGENIC
  THAN SOVELITE DUST CONTAINING FIBERS COVERED WITH A BINDING SUBSTANCE
  (WHITE MAGNESIUM AND CALCIUM CARBONATE). AMONG PERSONS WITH A
  SUFFICIENTLY LONG RECORD OF WORK UNDER EXPOSITION TO ASBOZURITE DUST
  SEVERAL MEN PRESENTED SUSPICIOUS SIGNS OF PNEUMOCONIOSIS. IN HYGIENIC
  ASSESSMENT OF DUST CONTAINING ASBESTOS IT IS NECESSARY TO CONSIDER,
  BESIDES ITS CONTENT, THE PRESENCE OF A BINDING COMPONENT AND THE TYPE OF
  CONNECTION EXISTING BETWEEN THEM.

UNCLASSIFIED

1/2   014   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--STABILITY OF POLYURETHANES -U-

AUTHOR-(05)-ANTIPOVA, V.F., MELAMED, V.I., PETROV, G.N., RAPPOPORT, L.YA.,
   KOGAN, F.S.
COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 49-50

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--POLYURETHANE RESIN, CHEMICAL STABILITY, QUARTERNARY AMMONIUM
   SALT, TRIETHYLAMINE, EPICHLORHYDRIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0674   STEP NO--UR/0191/70/000/002/0049/0050

CIRC ACCESSION NO--AP0119582
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0119582
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF DONOR ACCEPTOR
ADDITIVES, E.G., N,N,DIMETHYLBENZYLAMINE (I) AND PHENYL GLYCIDYL ETHER
(II), I AND GLYCIDOL, I AND EPICHLOROHYDRIN (III), AND II AND ET SUB3 N,
ON THE AGING RESISTANCE OF CROSSLINKED POLYURETHANES (IV) WERE STUDIED.
THE STABILITY OF IV WAS INVERSELY PROPORTIONAL TO THE TOTAL ADDITIVE
CONTENT, REACHING A MIN. WHEN BOTH COMPONENTS WERE PRESENT IN AN
EQUIMOLAR RATIO. THE STABILITY OF IV INCREASED WHEN III WAS USED,
PRESUMABLY DUE TO THE FORMATION OF A STABLE QUATERNARY AMMONIUM COMPD.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE—30OCT70

1/2   014

TITLE—A COMPOSITION FOR PROVIDING A FOUNDATION FOR ELECTROVACUUM ARTICLES
-U-

AUTHOR-(04)-MASLOV, N.I., PETROV, G.N., RAPPOPORT, L.YA., KOGAN, F.S.

COUNTRY OF INFO—USSR

SOURCE—USSR 264,960
REFERENCE—OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED—03MAR70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—ELECTROVACUUM, PATENT, ADHESION, BUTADIENE, ISOPRENE, ORGANIC
ISOCYANATE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—3002/1456   STEP NO—UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO—AA0128855
UNCLASSIFIED

UNCLASSIFIED

2/2   014
CIRC ACCESSICN NO--AA0128855
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   A COMPN. FOR INCREASING THE
ADHERENCE OF ELECTROVACUUM ARTICLES, E. G., ELEC. LAMPS, TO THEIR
FOUNDATION IN CONDITIONS OF INCREASED MOISTURE HAS THE FOLLOWING
RELATION OF COMPONENTS (IN WT. PARTS).   DIVINYL POLYMER WITH ISOPRENE
10-11, TOLYLENE DIISOCYANATE 1-1.1, EPICHLORCHYDRIN 0.29-0.31,
DIMETHYLBENZYLAMINE 0.21-0.23, AND POWD. MARBLE 23-36.

UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--KINETICS OF IRREVERSIBLE THERMAL DENATURATION OF CHYMOTRYPSIN
   COMPARATIVE STABILITY OF THE PROTEIN MOLECULE AND ITS ADSORPTION SITE
AUTHOR-(03)-ANTONOV, V.K., VOROTYNTSEVA, T.I., KOGAN, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 240-245

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL REACTION KINETICS, PROTEIN, ENZYME ACTIVITY, OPTIC
   PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1417   STEP NO--UR/0463/70/004/002/0240/0245

CIRC ACCESSION NO--AP0059279
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0054279

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE IRREVERSIBLE THERMAL
DENATURATION KINETICS OF CHYMOTRYPSIN HAVE BEEN STUDIED BY FOLLOWING, ON
THE ONE HAND, THROUGH INTENSITY CHANGES ON THE OPTICAL ROTATORY
DISPERSION CURVE AT 233 MU CHARACTERIZING THE CONFORMATIONAL STATE OF
THE MOLECULE AND, ON THE OTHER HAND, CHANGES IN CONCENTRATION OF
CHYMOTRYPSIN PROFLAVINE COMPLEX CHARACTERIZING THE STATE OF THE
ADSORPTION SITE OF THE ENZYME. BOTH METHODS ALLOW TO OBTAIN VALUES OF
EFFICIENT RATE CONSTANTS OF DENATURATION AND THERMODINAMIC ACTIVATION
PARAMETERS FROM WHICH THE CONCLUSION WAS DRAWN THAT UNDER THE
EXPERIMENTAL CONDITIONS THE CONFORMATIONAL STABILITIES OF THE MOLECULE
AS A WHOLE AND OF ITS ADSORPTION SITE ARE EQUAL. COMPARISON OF THE
THERMODYNAMICS DATA OBTAINED IN THE PRESENT WORK WITH THOSE IN THE
LITERATURE HAS SHOWN THAT THE ACTIVATION PARAMETERS ARE HIGHLY DEPENDENT
UPON THE PH OF THE MEDIUM AND ELECTROSTATIC INTERACTIONS ARE A VERY
IMPORTANT FACTOR IN DETERMINING THE STABILITY OF THE NATIVE CHYMOTRYPSIN
STRUCTURE.

UNCLASSIFIED   PROCESSING DATE--04DEC70

TITLE--CORRELATIONS AMONG LENGTHS, ORDERS, HYBRIDIZATION OF ATOMS, AND
    FORCE CONSTANTS OF CARBON NITROGEN AND CARBON OXYGEN BONDS -U-

AUTHOR-(03)-POPOV, YE.M., KOGAN, G.A., ZHELTOVA, V.N.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 14-22

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITROGEN COMPOUND, CARBON COMPOUND, CHEMICAL BONDING, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0346   STEP NO--UR/0379/70/006/001/0014/0022

CIRC ACCESSION NO--AP0137450
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0137450

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTER OF THE C-N AND C-O BONDS ARE INVESTIGATED IN THE FOLLOWING DEPENDENCIES: THE ORDERS OF THE BONDS VS. LENGTH, LENGTH OF THE BOND VS. AV. PERCENTAGE OF S CHARACTER, AND THE BOND ORDER VS. PI CONTRACTION OF THE BONDS. THE DIFFERENCES OF THE LENGTHS OF THE BONDS ARE DUE MOSTLY TO THE SPECIFICITY OF THE SIGMA BONDS. THE PLOT OF THE LENGTHS OF THE SIGMA BONDS OF C-N AND C-O VS. THE AV. PERCENTAGE OF S CHARACTER IS LINEAR. THE GREATEST CHANGE IN THE LENGTH WITH THE PI BOND ORDER OF C-N AND C-O STARTS AT A PI BOND ORDER OF 0.3. THE DEPENDENCE IS LINEAR. AT A PI BOND ORDER OF 1.0, THE SLOPE OF THE DEPENDENCE AGAIN BECOMES SMALLER. THE DEPENDENCE OF THE PI BOND ORDER ON THE FORCE CONST. IS DISCUSSED.   FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW, USSR.

USSR   UDC: 613.648-07:/612.45_612.897.014.46:615.357.37

KOGAN, I. A., Kharkov Scientific Research Institute of Medical Radiology

"The Effect of Insulin on the Sympathicadrenal System in Persons Working With Radiation Sources"

Abstract: Catecholamines were determined by the trihydroxyindole method in the urine of 95 medical and industrial radiologists working with radioactive isotopes and other sources of radiation for varying lengths of time. Excretion of catecholamines by those who had worked with radiation sources for 10 years or more and had received a total dose of 70 to 150 r was the same as in controls. In those who had worked with such sources for longer periods and had received from 150 to 350 r, the excretion of epinephrine was $2\frac{1}{2}$ times higher than in controls, while that of norepinephrine was significantly lower. Intramuscular injection of insulin(0.1 to 0.15 units/kg body weight) markedly increased the excretion of epinephrine by the healthy persons and by the radiologists who received 5 to 30 r both on the day of injection and on the following day. It increased on

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USSR

KOGAN, I. A., Meditsinskaya Radiologiya, Vol 15, No 11, Nov 70, pp 39-46

the day of injection and the next day in those who received 30 to 70 r. In
those who received over 150 r but were able to continue working, the reaction
to insulin was of the hypoadrenal type. In those who received similar doses
and were suffering from chronic radiation sickness, the response to insulin was
distorted: instead of increasing, epinephrine decreased substantially. Thus,
prolonged exposure to radiation gradually impairs the compensatory and adaptive
mechanisms of the autonomic nervous system.

2/2

B.   Information Theory

UDC: 51:621.391

USSR

KOGAN, I. M.

"Radio Engineering. Volume 4. Applied Information Theory"

Moscow, Radiotekhnika. T. 4. Prikladnaya teoriya informatsii. Itogi nauki i tekhn. VINITI AN SSSR (Cf. English above. Summary of Science and Technology. All-Union Institute of Scientific and Technical Information, Academy of Sciences of the USSR), 1972, 220 pp, 59 X, (from RZh-Kibernetika, No 5, May 73, abstract No 5V572 X)

Translation: A survey devoted to some problems of applied information theory. Following is a list of the main divisions of this survey. 1. Mathematical and Applied Aspects of Information Theory. 1.1. Information Theory as a Mathematical Discipline. 1.2. Information Theory in Applications. 2. Applied Information Theory. 2.1. The Concept of Selection and the Fundamental Relation Between Interference Immunity and Redundancy. 2.2. Redundancy as a Measure of Effectiveness, and Potential-Contact Interference Immunity. 2.3. Information Criterion of

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USSR

KOGAN, I. M., Radiotekhnika. T. 4. Prikladnaya teoriya infor-
matsii. Itogi nauki i tekhn. VINITI AN SSSR, 1972

Interference Immunity and the Multichannel Principle. 2.4.
Information Value. 3. Applied Information Theory in Tech-
nology. 3.1. Applied Information Theory in Radar. 3.2.
Information Theory in Television. 3.3. Applied Information
Theory in Automatic Control and Measurement Technology. 3.4.
Applied Information Theory in Systems Analysis. 3.5. Applied
Information Theory in Geological Prospecting. 4. Applied
Information Theory in Biology. 4.1. The Biophysical Aspect.
4.2. The Biofunctional Aspect.

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USSR

UDC 62-52(047/1)

GRADETSKIY, V. G., DMITRIYEV, V. N., KOGAN, I. Sh.

"Status and Prospects for Development of Acoustical-Pneumatic Control Systems"

Pnevmatich. Pribody i Sistemy upr. [Pneumatic Drives and Control Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 245-249 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, 1971, Abstract No 11 A17 from the Resume).

Translation: Results are presented from studies of physical phenomena in turbulent acoustical-pneumatic convertors (APC), demonstrating that APC can operate not only as discrete, but also as analog convertors. Existing APC designs and prospective areas of their application are studied. 3 Figures; 19 Biblio. Refs.

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UDC 577.4

USSR

KOGAN, I. V., STERLIKOVA, L. N.

"Problems of Constructing Complete Tests for Nonrecurrent Parenthetic Formulas"

V sb. Tekhn. diagnostika (Technical Diagnostics — collection of works), Moscow, Nauka Press, 1972, pp 167-169 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V430)

No abstract

1/1

USSR

UDC: 51.621.391

KOGAN, I. V., STERLIKOVA, L. N.

"Construction of Verifying Tests for Noniterated Aggregation Formulas"

V sb. Diskretn. analiz (Discrete Analysis--collection of works), vyp. 17, Novosibirsk, 1970, pp 22-31 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V566)

Translation: A formula in the algebra of logic in the basis $\{\&, V, -\}$, in which each variable is encountered only once, is called a noniterated aggregation formula. Substitutions of the constants 0 and 1 for subformulas are considered as inaccuracies in the formula. This paper establishes upper and lower estimates of the length of a test for verifying the absence of inaccuracies of this type. A method of constructing verifying tests is proposed for the formulas $f_1 \& f_2$ and $f_1 V f_2$ from the verifying tests for formulas f_1 and f_2. S. Marchenkov.

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UDC 51.621.391

USSR

KOGAN, I. V.

"Joint Construction of Checking and Diagnostic Tests for Nonrepeating Bracket Formulas"

Kibernetika [Cybernetics -- Collection of Works], No 1, Kiev, 1970, pp 64-76, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V632 by V. Leont'yev).

Translation: The problem of combined construction of checking and diagnostic tests is studied for nonrepeating bracket formulas and the corresponding non-repeating circuits. Defects such as replacement in the bracket formulas of a certain letter (or portion of the formula which may included in brackets) with a constant are tested. The test checking for the absence of arbitrary com-binations of such defects in the circuit (formula) is called a checking test. A diagnostic test refers to a system of checks allowing determination of the specific defect from a predetermined list. Diagnosis of individual defects is studied, i.e. defects replacing one letter or expression in the brackets with a constant. A method is suggested for construction of checking and diag-nostic tests based on equivalent transformations of circuits and earlier works of the author. The relationship is established between individual checking and diagnostic tests. Several examples are studied.

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UNCLASSIFIED   PROCESSING DATE--11SEP70

1/2   028
TITLE--AUTOMATIC DECIPHERING OF THE ELECTROCARDIOGRAM -U-

AUTHOR--ANIN, YU.L., GALPERINA, A.I., KOGAN, I.V., PEGANOVA, L.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 94-97

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROCARDIOGRAPHY, HEART DISEASE, COMPUTER MEDICAL DIAGNOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0966   STEP NO--UR/0475/70/000/003/0094/0097

CIRC ACCESSION NO--AP0102905
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70.

2/2   028
CIRC ACCESSION NO--AP0102905
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A ATTEMPT IS PRESENTED OF USING
ELECTRONIC COMPUTING DEVICES FOR DECIPHERING OF ELECTROCARDIOGRAPHIC
RECORDS.

0123

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70

1/2   013
TITLE--HEAT STABLE POLISHING ABRASIVE CLOTHS -U-

AUTHOR-(05)-POPENKOVA, Z.N., ZAYTSEVA, M.A., KOGAN, L.A., DREBENTSOVA,
   A.A., POLESHCHUK, I.P.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,752
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ABRASIVE, CORUNDUM, LATEX, PATENT, POLYMER BINDER/(U)SKS30
   STYRENE RUBBER, (U)SVKH7 SYNTHETIC RUBBER, (U)FM3 RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1761   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137001
          UNCLASSIFIED

2/2   013
CIRC ACCESSION NO--AA0137001
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT STABLE ABRASIVE POLISHING
   CLOTH CONSISTS OF A FIBER BASE FINISHED WITH SKS-30 AND SVKH-I LATEXES
   IN A 1:1 RATIO. ABRASIVE MATERIAL CONSISTING OF WHITE "MICROPOWDER" AND
   CR ELECTROCORUNDUM WITH A COARSE FRACTION CONTENT OF SMALLER THAN OR
   EQUAL TO 7PERCENT IS APPLIED TO THE BASE.   SYNTHETIC RESIN FM-3 WITH A
   LOWERED STICKINESS OF 140-5 SEC IS USED AS A BINDER.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   010
TITLE--ON THE SEISMIC STUDIES IN THE GREENLAND SEA -U-

AUTHOR-(02)-KOGAN, L.I., MILASHIN, A.P.

COUNTRY OF INFO--USSR, GREENLAND

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 470-473

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMIC PROFILE, CONTINENTAL SLOPE, SEDIMENT, GEOLOGIC
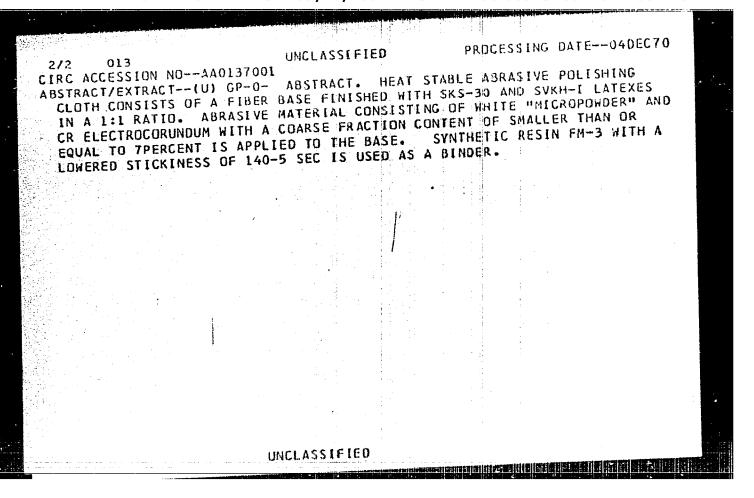   FORMATION, OCEAN BOTTOM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1856   STEP NO--UR/0213/70/010/003/0470/0473

CIRC ACCESSION NO--AP0129216
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0129216
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEISMIC PROFILING MADE IN THE
GREENLAND SEA WEST OF SPITSBERGEN HAS REVEALED DIFFERENT GEOLOGICAL
STRUCTURES WITHIN DIFFERENT GEOLOGICAL PROVINCES OF THE BASIN. THE
SEISMIC PROFILE CROSSED THE SHELF, CONTINENTAL SLOPE AND MID OCEANIC
RIDGE. WEST OF SPITSBERGEN, WITHIN THE SHELF AND CONTINENTAL SLOPE, A
TROUGH WAS DISCOVERED WITH ABOUT 2.5 KM THICK SEDIMENTARY COVER IN ITS
CENTRAL PART. THE THICKNESS OF SEDIMENTS IN THE MID ATLANTIC RIDGE AREA
RANGES FROM 0 TO 1000 M, LAYERING IS HORIZONTAL OR SLIGHTLY SLOPING.
THE SEDIMENTARY COVER WITHIN THE ABYSSAL PLAIN ABOUT 1000 M THICK CAN BE
DIVIDED INTO TWO PARTS. THE UPPER PART 300 TO 350 M THICK HAS WELL
PRONOUNCED HORIZONTAL LAYERS CORRESPONDING APPARENTLY TO LOOSE OR WEAKLY
CONSOLIDATED SEDIMENTS.   FACILITY: VSESOYUZNYY NAUCHNO ISSLED.
INSTITUT MORSKOY GEOLOGII, GELENDZHIK.

GOF'SHTEYN-GARDT, A.L., KOVYREVA, N.I., KOGAN, L.M., KULAGIN, L.N., KURLYAND, B.I., TIN'KOV, A.P., TRUSHINA, V.YE.

"Semiconductor Light Source (Light-Emitting Diode) Of Gallium Phosphide"

Translation: The results are discussed of the development and an investigation of the electrical and optical characteristics of gallium phosphide red-radiation light-emitting diodes. The method of creation of p-n structures and the design of the light-emitting diode are described. The principal areas of application of the light-emitting diodes are considered. The devices described are characterized by a quantum efficiency of radiation of 0.1--1 percent. 11 ill. 1 tab. 19 ref. Author's abstract.

1/1

UNCLASSIFIED   PROCESSING DATE--20NOV70

1/3   007
TITLE--OXIDATIVE CHLORINATION OF BUTYNEDIOL -U-

AUTHOR-(03)-KOGAN, L.M., BOBROVA, T.I., BURMAKIN, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 926-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, ALCOHOL, CHLORINATED ORGANIC COMPOUND, ALKENE,
   SOLVENT ACTION, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1939   STEP NO--UR/0030/70/043/004/0926/0928

CIRC ACCESSION NO--AP0132201
                  UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132201
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TEMP.,
2,BUTYNE,1,4,DICL (I) TO SOLVENT AND CL-I MOLAR RATIOS ON THE COURSE OF
THE OXIDATIVE CHLORINATION OF I WAS STUDIED. THE REACTIONS WERE CARRIED
OUT BY INTRODUCING CL FOR 3-5.5 HR AT 20-110DEGREES INTO THE REACTOR
CONTG. 300-400 ML 35PERCENT HCL TO WHICH 30-40PERCENT H SUB2 O SOLN. OF
I WAS GRADUALLY ADDED. THE RESULTING REACTION MIXT. WAS EVAPD. TO 200
ML AND COOLED TO GIVE 2,2,3,3,TETRACHLORO,1,4,BUTANEDIOL (II), M.
256DEGREES (H SUB2 O), AND MUCOCHLORIC ACID (III), M. 127DEGREES (H SUB2
O) AS THE MAIN PRODUCTS. THE COURSE OF THE CHLORINATION WAS AFFECTED BY
THE TEMP. AT 20-30DEGREES II WAS OBTAINED IN 29-52PERCENT YIELD AND
LITTLE OR NO III RESULTED. AT 72DEGREES A MIXT. OF BOTH PRODUCTS WAS
OBTAINED IN WHICH III (25-55PERCENT) PREDOMINATED OVER II (8-19PERCENT).
AT 110DEGREES AN OIL CONTG. TRICHLOROBUTANETRIOL AND SIMILAR COMPDS.
WAS OBTAINED. INCREASING CL-I MOLAR RATIO (6-18) AT 72DEGREES CAUSED AN
INCREASE IN THE YIELDS BUT DID NOT AFFECT THE II-III RATIO WHICH ALSO
WAS NOT MUCH CHANGED EITHER BY VARYING THE RATIO OF I TO SOLVETN (6-29
G-KG SOLVENT PER HR) OR EXTENDING THE REACTION TIME TO 20 HR
DEMONSTRATING THE STABILITY OF BOTH PRODUCTS UNDER REACTION CONDITIONS.
INCREASED YIELDS OF III AT ELEVATED TEMP. INDICATED THAT THE EQUIL.
REACTION OF CL WITH H SUB2 O TO HCL AND HOCL REPRESENTED THE STEP WHICH
CONTROLLED THE COURSE OF CHLORINATION. THE COMPLEX FORMATION BETWEEN I
OR 2,3,DICHLORO,2,BUTENE,1,4,DIOL AND CL IN H SUB2 O SIMILARLY TO THE
REACTION OF OLEFINS WITH CL IN H SUB2 O WAS EITHER NOT OBSD. OR
REPRESENTED A SECONDARY PROCESS.

UNCLASSIFIED

CIRC ACCESSION NO--AP0132201
ABSTRACT/EXTRACT--THE REACTION SCHEME FOR THE OXIDATIVE CHLORINATION OF I
WAS PROPOSED.   FACILITY: VSES, NAUCH.-ISSLED. INST. KHIM.
SREDSTV ZASHCH. RAST., MOSCOW, USSR.

UNCLASSIFIED

GAR, K. A., KOGAN, L. M., POKROVSKIY, YE. A., KHOKHRYAKOVA, V. S., and
BURMAKIN, N. M.

"Hexachlorobutadiene as an Antiphylloxera Vineyard Soil Fumigation Agent"

Translation: In a zone of total and partial phylloxera infection the use of
hexachlorobutadiene (I) should retain its importance for many years to come.
The article recommends consumption rates for I and a technique for using it,
and shows the effect of I on the grape plant, soil microflora and microfauna
and the effectiveness of a granulated preparation of I against phylloxera.
An estimate is given of the toxicity of I for warm-blooded animals.

1/1

USSR

SIMONOV, V. D., NEDEL'CHENKO, B. M., KOGAN, L. M., ANTONOV, L. T., BURMAKIN, H. M.

"The Problem of Industrial Production of Mucochloric Acid"

Translation: A continuous technological process has been developed for the production of mucochloric acid by the reaction of oxidative chlorination of furfural (1) with the optimal parameters: molar $Cl_2:1=5.6:1$, specific productivity of reactor 80 $kg/m^3 \cdot hr$, volumetric ratio of I to circulating solution: 0.1-0.15, temperature 95-100° (maintained by heat of reaction), yield 80-82%. For fine dispersion, the Cl_2 is passed through teflon bubblers with 1 mm diameter apertures. A diagram of the process is presented.

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Acc. Nr: *AP0040883*

Ref. Code:
UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr *1*, pp *176-182*

ALGORITHMICAL APPROACH TO RATIONAL RESERVATION OF INFORMATION SYSTEM

L. M. KOGAN, V. A. TSEITLIN

There is considered the problem of the rational distribution of the levels of the reliability of the information system devices proceeding from the reliability requirements made to a number of algorithms. The approach to the solution of this problem as well as the method of the optimal distribution of reliability among the devices of the algorithmical is suggested.

REEL/FRAME
19750622

TITLE--STRUCTURES OF DIGITAL ANALOGS FOR REPRODUCTION OF WIDE CLASS OF
    FUNCTIONS -U-

AUTHOR--KOGAN, L.M.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 3, PP 174-176

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--DIFFERENCE EQUATION, ALGORITHM, APPROXIMATION METHOD, PERIODIC
    FUNCTION, FUNCTION ANALYSIS, COMPUTER CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1475   STEP NO--UR/0103/70/000/003/0174/0176

CIRC ACCESSION NO--AP0106231
                        UNCLASSIFIED

.UNCLASSIFIED   PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106231
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE DESCRIBED THE STRUCTURES
  OF DIGITAL DIFFERENCE ANALOGS FOR THE REPRODUCTION OF FUNCTIONS OB BOTH
  A MONOTONICALLY AND ARBITRARY VARYING ARGUMENT. AS A MATHEMATICAL
  METHOD OF REPRESENTING THE FUNCTIONS, THEIR APPROXIMATION BY THE
  POLYNOMIALS THAT ARE THE SOLUTIONS OF DIFFERENCE EQUATIONS IS USED.

UNCLASSIFIED

KOGAN, L. R.

Radioastronomy

So:JPRS SCRS 59985
7 SEP 73

UDC 535.853.4:523.164

OPTICAL ACCUMULATION TIME IN SUPERLONG-BASELINE INTERFEROMETERS

[Article by L.R. Kogan of the Institute of Space Research of
the USSR Academy of Sciences; Moscow, Izvestiya Vysshikh Ucheb-
nykh Zavedeniy -- Radiofizika, Russian, Vol 16, No 5, 1973,
submitted 1 August 1972, pp 707-711]

As is well known, the basic factor which limits' signal
accumulation time, and, consequently, the sensitivity, of a
superlong-baseline interferometer (ISDB), is the frequency sta-
bility of the sinusoidal-signal generators which are used as
heterodynes at the receiving points[1,2]. The well-known sig-
nal-to-noise ratio — √T, where T is the accumulation time, is
fulfilled in an ISDB only for small averaging times. With
large accumulation times, the signal decrease which results
from heterodyne instability becomes decisive, and, therefore,
signal-to-noise ratio no longer increases as T increases, but,
on the contrary, decreases. It is clear from these qualitative
considerations that there should be an optimum signal accumula-
tion time Topt for an ISDB at which the signal-to-noise ratio
is maximal. This work gives the results of computing Topt as a
function of the short-term signal stability of a heterodyne and
of its frequency.

For most types of generators short-term stability
σΔ$r_{/}$(t), beginning with a certain averaging time t_0, changes
as a function of the averaging time according to the law L/(√t[3]).
Therefore the root-mean-square deviation of phase fluctuation
during the time t where t > t_0 is equal to

$$\varphi(t) = \sqrt{t_0/2} \cdot 2\pi/\sigma_{r/}t(t). \qquad (1)$$

After filtering of the interference lobes, that is, mul-
tiplications by the sine wave of the corresponding phase and
integration for the time interval (0, T), we find that, as a

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KOGAN, L.R.

PARAMETERS OF THE RT-22 KRAO RADIOTELESCOPE ANTENNA AT WAVELENGTHS OF 3 AND 1.35 CENTIMETERS

[Article by I. D. Bakhrakh, M.L. Grigor'yeva, V.A. Ifanov, L.R. Kogan, V.I. Kostenko, L.A. Mitvayenko, G.G. Mishenko, and Yu.G. Yermin, of the Institute of Space Research of the USSR Academy of Sciences; Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy --
Radiofizika, Russian, Vol 16, No 5, 1973, submitted 3 July 1972,
pp 675-679]

A two-reflector antenna system in the 3-centimeter wave band was developed in 1968 in order to improve the KRAO Crimean Astrophysical Observatory] RT-22 radiotelescope[1] and, to provide maximum sensitivity, it was tuned and its basic electrical parameters at 3.34 centimeters were determined. In developing the illuminating system of the KRAO's RT-22, the operating experience of the FIAN[2] [Physics Institute imeni P. N. Lebedev of the USSR Academy of Sciences] RT-22 was considered and certain changes in its system parameters were introduced: the diameter of the secondary reflector D2 = 1,500 millimeters, and the system's secondary focus was chosen as 1,200 millimeters from the vertex of the paraboloid with a view to insuring minimal losses in the millimeter waveband. These circumstances limited the longitudinal dimension of the irradiator in the 3-centimeter wave band. The two-reflector irradiator has a comparatively small longitudinal dimension, which is why it was chosen. Its scheme was tried out on an analogical antenna, the FIAN RT-22[2], and gave satisfactory results.

The radiation patterns of the two-reflector irradiator in the E and H planes and the cross-polarization characteristic at the 3.34 centimeter wavelength are shown in figure 1. The irradiator's dispersion coefficient, computed per the radiation pattern, does not exceed β = 0.2.

Preliminary tuning of the antenna was done on the sun, final tuning on radio sources of small angular size. A radiometer with a parametric amplifier was used in tuning at the

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USSR

UDC 591.412:612.273:591.8.05:547.963.3

BELOV, L. N. and KOGAN, M. Ye., Institute of Physiology, Siberian Department
of the USSR Academy of Sciences, Novosibirsk

"DNA Content and RNA Synthesis in Mouse Myocardial Cells Following Exposure
to Altitude Hypoxia and Administration of Thyroxine"

Abstract: A cytofluorometric study of the Feulgen-auramine DNA content and
an H^3-uridine autoradiographic study of RNA synthesis were carried out on
myocardial cell nuclei from mice exposed to hypoxia 6 hours daily for 1 to
6 days. Intermittent hypoxia for 18 hours or more intensified RNA synthesis
and increased Feulgen-DNA by 27% in half the nuclear population. Subcutan-
eous injection of the mice with 40 µg of L-thyroxine had a less pronounced
effect on RNA synthesis and increased Feulgen-DNA in half the nuclear popu-
lation by 17%. The similar effects of hypoxia and thyroxine, suggest a com-
mon underlying mechanism and are consistent with the hypothesis that acti-
vation of RNA synthesis is mediated by hormonal induction.

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USSR

KOGAN, N. YA., KOGAN, L. V., Scientific Research Institute of Applied Mathematics and Cybernetics Under Gor'kiy State University imeni N. I. Lobachevskiy

"Movements of a Uniaxial Gyrostabilizer with Relay Control When Taking Into Account the Forces of Dry Friction in the Supports of the Axes (I)"

Abstract: The phase space and point transformation methods /D. S. Pel'por, Giroskopicatskiye sistemy, Vyssheya Shkola, 1971/ were used to investigate the dynamics of a uniaxial gyrostabilizer with relay control taking into account the forces of dry friction in the supports of the stabilization axis. Viscous friction in the supports of the axes is not taken into account. With relay control the dry friction in the stabilization axis does not insure stable operating conditions of the gyrostabilizer.

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121

UDC: 621.373:530.145.6

USSR

KOGAN, L. V.

"On the Effect Which Radio-Frequency Field Strength Has on a Radio-Optical Resonance Signal"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Educational Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 49, pp61-69 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D248)

[No abstract]

1/1

UDC 533.6.011.8

USSR

KOGAN, M. N.

"Some Problems of Molecular Gas Dynamics"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1971, Vol 2, No 1, pp 49-59 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B160)

Translation: A study was made of some methods and results of investigating flows with arbitrary Knudsen numbers (flow around bodies, flow in channels) and also applications of the kinetic theory for the construction of the gas dynamic equations (calculation of the transfer coefficient, the slip rate coefficient, the creep and the temperature discontinuity). A study was also made of the class of slow (R < 1) streams of dense (K << 1) gas for which the Navier-Stokes equations with capture are invalid. The bibliography has 36 entries.

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- 18 -

UDC· 533.6.011.8

USSR

GORELOV, S. L., KOGAN, M. N.

"Flow of a Rarefied Gas Between Two Parallel Plates"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1970, 1, No 6, pp 126-130 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B207)

Translation: A Monte Carlo method is used to solve the linear problem of flow of a rarefied gas between two parallel plates under the effect of a temperature gradient lengthwise of the plates. The procedure used is described briefly. The results of flowrate calculations as a function of the Knudsen number are compared with data obtained by other methods and with experimental data. Velocity profiles are presented for various Knudsen numbers. A solution is found for the problem of a velocity jump and flow in a Knudsen layer due to a temperature gradient. The results of calculations of the velocity profile in this case are given. All calculations are done for a model of molecules in the form of Maxwellian spheres whose cross section varies in inverse proportion to the velocity of the molecules. Resumé.

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USSR

KOGAN, M. N., MAKASHEV, N. K.

"Flow of a Gas in a Flat Channel Caused by a Longitudinal Temperature Gradient with an Arbitrary Knudsen Number"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerodynamics Institute), 1970, Vol 1, No 2, pp 69-74 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B349)

Translation: This article contains a study of a gas between two infinite parallel stationary plates $-d/2 \leq x \leq d/2$ the temperature of which varies linearly $T_w = T_0(1 + az)$. A small perturbation of the distribution function satisfying the model Boltzmann equation is found in the form $\phi = azv^2 + v_z\psi(x, v)$; for ψ the following problem is obtained:

$$\frac{v_x d}{\alpha} \frac{\partial \psi}{\partial x} + \frac{ad}{\alpha} v^2 = -\psi + 2u_1, \quad \psi(\pm \frac{d}{2}, v_x \gtrless 0) = 0$$

$$\alpha \sim Kn^{-1}$$

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KOGAN, M. N., et al., Uch. zap. Tsentr. aerogidrodinam. in-ta, 1970, Vol 1, No 2, pp 69-74

in which the function u_1 satisfies the integral equation with a kernel having a logarithmic singularity; this permits u_1 to be taken from under the integral sign and an approximate explicit expression to be obtained for it. The volumetric gas consumption found in terms of the cross section of a "flat tube" increases monotonically with a decrease in pressure in contrast to the case of the Poiseuille flow. With a zero flow rate, the gas against the wall flows in one direction, and in the midplane $x = 0$, the gas flows in the other direction. The investigated phenomenon can have a noticeable effect, for example, on the accuracy of measuring the low pressure of a heated gas by a colder instrument since the zero flow rate through the measuring tube is established for a pressure drop on its ends. As was demonstrated in the paper, the latter can be up to 50% of the mean pressure with a temperature difference on the order of the mean temperature. The bibliography has 10 entries.

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ENGINEERING
Aeronautical

KOGAN, M. N., MIKHAYLOV, V. V., Moscow

"On the Use of Nonstationary Analogy in Plotting Hypersonic Flows around Blunt Bodies"

Abstract: A class of nonstationary flows is found for which nonstationary analogy can be directly applied in calculating a hypersonic flow around a blunt body far from the blunt surface. The basic idea behind the proposed method of calculation is that corrections are made in the form of the bow shock found by nonstationary analogy, rather than in the flow distribution. The form of the bow shock is determined by complete coincidence of the fields of the stationary and nonstationary solutions, and the shape of the body corresponds to the trajectory of a particle of the nonstationary flow with entropy equal to that behind the direct shock wave. With this kind of plot, there is no need to introduce any corrections for the shape of the body or the flow distribution. Of course this applies only to regions of flow where the theory of two-dimensional cross sections is applicable. Consideration is

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given to the possibility of using nonstationary analogy for plotting stationary
hypersonic flows of a perfect gas around flat or axially symmetric blunt
bodies. Conditions are found for which the parameters of the known non-
stationary solution, recalculated with respect to the nonstationary analogy,
coincide with the parameters of some stationary flow within the framework of
the theory of two-dimensional cross sections. It is shown that in the general
case, the use of nonstationary analogy without introducing corrections for
entropy in the flow distribution requires some special deformation of the
shape of the shock wave with a transition from nonstationary to stationary
flow. The authors thank O. S. Ryzhov and V. V. Sychev for discussing the
work.

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UDC: 534.2

USSR

GUSEV, V. N., KOGAN, M. N., PEREPUKHOV, V. A.

"On Similarity and Change of Aerodynamic Characteristics in a Transient Region at Hypersonic Flow Velocities"

Translation: An investigation is made into the aerodynamic characteristics of simply shaped bodies in the transition region between the free molecular limit and the continuous medium limit at hypersonic flow velocities. A dimensionless number to test similarity is found from the Boltzmann equation. It is found that the principal dimensionless gas-dynamic parameter is the Reynolds number with the coefficient of viscosity calculated from the stagnation temperature. A comparison is made between experimental data and theoretical data analyzed with regard to this dimensionless number. Authors' abstract.

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USSR

GOLUBINSKIY, A. I. and KOGAN, M. N., Moscow

"On a Nonstationary Pressure Pulse Acting on a Body in a Liquid or Gas"

Moscow, Mekhanika Zhidkosti i Gaza, No. 1, 1970, pp 113-120

Abstract: It is shown that it is possible within the framework of linear theory to avoid a detailed calculation of the nonstationary flow picture, thus reducing a determination of impulses to a problem with a smaller number of dimensions. It is noted that the difficulties in solving differential equations rise sharply as the number of independent variables increases, thus making the solution of nonstationary problems considerably more complex than the corresponding stationary problems. It is sometimes possible in calculations of strength or dynamic calculations to restrict oneself to a knowledge of the total pulses, pressures, forces, or moments over a period or over the entire period of the nonstationary process, and not at each point in time. A flow with unperturbed parameters $(U, 0, 0)$, p_∞, p_ω at infinity around a body or a group of bodies is considered. It is assumed that the angle of the surface of the body to the flow and the rates of displacements or deformations of the surface are small so that the flow may be considered weakly perturbed and

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GOLUBINSKIY, A. I. and KOGAN, M. N., Mekhanika Zhidkosti i Gaza, No. 1, 1967, pp 113-120

satisfying the linearized equations of gas dynamics

$$\frac{\partial \rho}{\partial t} + U \frac{\partial \rho}{\partial x} + \rho_\infty \left(\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} + \frac{\partial w}{\partial z} \right) = 0$$

$$\frac{\partial u}{\partial t} + U \frac{\partial u}{\partial x} + \frac{1}{\rho_\infty} \frac{\partial p}{\partial x} = 0, \quad \frac{\partial v}{\partial t} + U \frac{\partial v}{\partial x} + \frac{1}{\rho_\infty} \frac{\partial p}{\partial y} = 0$$

$$\frac{\partial w}{\partial t} + U \frac{\partial w}{\partial x} + \frac{1}{\rho_\infty} \frac{\partial p}{\partial z} = 0$$

$$\frac{\partial}{\partial t}(p - a_\infty^2 \rho) + U \frac{\partial}{\partial x}(p - a_\infty \rho) = 0 \quad \left(a_\infty^2 = \frac{\varkappa p_\infty}{\rho_\infty} \right) ;$$

where u, v, w are the perturbed component of the velocity, and p and ρ are the perturbed pressure and density. The Mach number is either sub- or supersonic.

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GOLUBINSKIY, A. I. and KOGAN, M. N., Mekhanika Zhidkosti i Gaza, No. 1, 1967, pp 113-120

These equations are integrated over time from 0 to ∞. It is shown that a pulse of pressure perturbations at an arbitrary point of the body produced by perturbations in the boundary conditions or conditions in the incident flow is numerically equal to a stationary pressure at the corresponding points of the body.

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