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Number 63

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<u>Russian Periodicals</u>		
"Avtomobil" (Automobile) Cards 31-34	No 3	Mar 1948
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 16-26, 35-38, 40-56, 59, 66, 102-105	Vol LX No 1	Apr 1948
"Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova" (Physiology Journal of the USSR imeni I. M. Sechenov) Card 57	Vol XXXIV No 1	Jan/Feb 1948
"Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk" (News of the Academy of Sciences of the USSR, Department of Chemical Sciences) Cards 1-15, 61-64, 92	No 2	Mar/Apr 1948
"Sovetskoye Zdravookhraneniye" (Soviet Public Health) Card 58	No 1	Jan/Feb 1948
"Uspekhi Fizicheskikh Nauk" (Progress of Physical Sciences) Cards 39, 67-70, 88-91	Vol XXXIV No 3*	Mar 1948
"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki" (Journal of Experimental and Theoretical Physics) Cards 71-75, 85-87	Vol XVIII No 3	Mar 1948
"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki" (Journal of Experimental and Theoretical Physics) Cards 76-84	Vol XVIII No 4	Apr 1948
"Zhurnal Tekhnicheskoy Fiziki" (Journal of Technical Physics) Cards 27-30, 60, 65, 93-101	Vol XVIII No 3	Mar 1948

NOTE

In indexing these abstracts the following guides are used: **MEDICINE** - "Quarterly Cumulative Index Medicus," American Medical Association; **CHEMISTRY** - "Chemical Abstracts Subject Index," American Chemical Society; **GENERAL** - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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<p>USSR/Academy of Sciences Chemistry - Academy of Sciences</p> <p>Mar/Apr 1948</p> <p>"News (28-29 October Session of the Department of Chemical Sciences, Academy of Sciences, USSR)" 1 p</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Brief account of proceedings of session. Articles submitted by Academician Zelinskiy, Terenin, Kapustinskiy, Arbuзов, and others. Kapustinskiy's article "New Systems of Thermochemistry" chosen for discussion.</p> <p>FDB 63T1</p>	<p>USSR/Academy of Sciences Chemistry - Academy of Sciences</p> <p>Mar/Apr 1948</p> <p>"Notice" $\frac{1}{2}$ p</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Annual report concerning progress in the field of physics, chemistry, and structure of high molecular substances to be made by A. F. Ioffe, S. S. Medvedev, S. N. Ushakov, V. A. Kargin, P. P. Kobeko, S. N. Danilov, V. I. Ivanov, B. A. Dogadkin, and S. Ye. Bresler, appointed by Commission for High Molecular Bonds, Department of Chemical, Physical, and Mathematical Sciences, Academy of Sciences USSR.</p> <p>FDB 63T2</p>
<p>USSR/Chemistry - Allyl Compounds Chemistry - Magnesium Compounds</p> <p>Mar/Apr 1948</p> <p>"Allyl Rearrangement," A. N. Pudovik, B. A. Arbuзов, Kazan State U, 4 pp</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Discusses action of magnesium bromobenzene on isomeric methoxy-chloropentene. A similar mixture 1-metoxi-5-phenolpentene-3 and 1-metoxi-3-phenolpentene-4 was obtained from both metoxichloropentene. Results show x "ion" nature of reaction. Submitted 3 Jun 1946.</p> <p>FDB 63T3</p>	<p>USSR/Chemistry - Salts, Crystal Structure of Chemistry - Lattices</p> <p>Mar/Apr 1948</p> <p>"Research on a Series of Hexachlorostannates," K. B. Yatsimirskiy, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 3 pp</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Application of Kapustinskiy's equation for calculating energy in lattices of simple and complex salts, thermochemical and crystallochemical data, permitted obtaining the limits of stability for hexachlorostannates with reference to discharge and factors of cation. Data obtained was confirmed by</p> <p>FDB 63T4</p>
<p>USSR/Chemistry - Catalysis Chemistry - Heptone, 2-Methyl</p> <p>Mar/Apr 1948</p> <p>"Kinetics of Exothermic Catalytic Reactions in a Stream. IV. Research on the Stationary and Nonstationary States of Oxidation of Isooctane on a Copper-Chromium Catalyst," L. Ya. Margolis, O. M. Todes, Inst Phys Chem, Acad Sci USSR, 6$\frac{1}{2}$ pp</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Discusses results obtained previously and those obtained in this study with a copper-chromium catalyst carried on asbestos, pertaining to the kinetics of catalytic oxidation of isooctane, showing that heat transfer conditions characterizing transition of this</p> <p>FDB 63T5</p>	<p>USSR/Chemistry - Salts, Crystal Structure of (Contd)</p> <p>Mar/Apr 1948</p> <p>conducting experiments on five heretofore unpublished hexachlorostannates. Submitted 23 Jan 1947.</p> <p>FDB 63T4</p>
<p>USSR/Chemistry - Catalysis (Contd)</p> <p>Mar/Apr 1948</p> <p>reaction from "silent oxidation" to "heterogeneous combustion" can be predicted. Stresses need of preventing heterogeneous combustion in commercially used exothermic catalytic reactions, since uniform thermal conditions throughout catalyst bed cannot be maintained in this case. Submitted 8 Apr 1947.</p> <p>FDB 63T5</p>	<p>USSR/Chemistry - Ammonium Salts Chemistry - Organic Compounds</p> <p>Mar/Apr 1948</p> <p>"Reactions of Exchange and Separation in the Group of Quarternary Ammonium Salts," D. N. Kursanov, V. N. Setkina, V. M. Rodionov, Inst Org Chem, Acad Sci USSR, 8 pp</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>Discusses interrelationship of quaternary ammonium salts of type (R-O-CH₂-N⁺)-X and alcohol. This is a primary requisite for studying interaction of quaternary ammonium salts with other organic materials. Shows that quaternary ammonium salts possessing alkoxyethylene radical enter easily into reduction reactions with alcohol, and produce formalin. Submitted 14 Apr 1947.</p> <p>FDB 63T6</p>

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USSR/Chemistry - Mercury Diphenyl Chemistry - Crystal Structure	Mar/Apr 1948	USSR/Chemistry - Aluminum Chloride, Ester Chemistry - Aluminum Bromide, Ester
"Crystalline Structure of Mercury Diphenyl," A. I. Kitaygorodskiy, D. R. Grdenich, Inst Org Chem, Acad Sci USSR, 1 p		"Physical Chemical Research on the Esters of Aluminum Chloride and Bromide," V. A. Plotnikov, M. L. Kaplan, Inst Phys Chem, Acad Sci USSR, 5½ pp
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2
Brief article on subject structure. Submitted 28 Mar 1947.		Studies of specific electroconductivity of esters of subject materials. Diagrams were studied for concentrations of 5.21 to 29.1 and 41.6 to 54.6% mol. esters. Both esters proved to be good conductors of current despite the fact that they contained bromine, a substance which usually is not acted on by dis-association forces. Submitted 5 Jun 1947.
FDB	63T7	FDB
USSR/Chemistry - β -Alanine Chemistry - Synthesis	Mar/Apr 1948	USSR/Chemistry - Potassium Fluoride Chemistry - Carboxyl Group
"Simple Laboratory Method for Preparing β -Alanine," V. M. Rodionov, N. G. Yartseva, Moscow Chem Tech Inst imeni D. I. Mendeleev, 5 pp		"Potassium Fluoride as an Analogue of Alkalie in Reactions of Organic Compounds. The Reactions of Decarboxylation and Decarbonylization," A. N. Mesmeyanov, K. A. Fecherskaya, G. Ya. Uretskaya, Chair of Org Chem, Moscow U, 5½ pp
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2
A. Galat's observations were confirmed by studies. In his experiments a complex catalyst was replaced by a simpler hydrate of a trimethyl phenyl ammonium oxide. Submitted 10 Oct 1947.		Describes decarboxylation action of potassium fluoride on trichloroacetic acid and a series of aromatic acids obtained as the result of the action of cyclopentane and cyclohexane on potassium fluoride. Submitted 10 Oct 1947.
FDB	63T9	FDB
USSR/Chemistry - Acetylene, Derivatives of Chemistry - 1, 3-Butadiene Ketones	Mar/Apr 1948	USSR/Chemistry - Organic Compounds Chemistry - Phosphorescent Substances
"The Derivatives of Acetylene - Chemistry of Divinyl Ketones. XI," I. N. Nazarov, V. M. Romanov, M. V. Kuvarzina, Inst Org Chem, Acad Sci USSR, 4 pp		"Studies in the Field of Phosphorous Organic Compounds," M. I. Kabachnik, Inst Org Chem, Acad Sci, 9 pp
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2
Discusses addition of alcohols to β and β -dimethyl-divinyl ketone. Reaction studied both with and without catalysts. Shown that the reaction has a selective character--alcohol joins easily only to irreplaceable vinyl groups. This reaction results in formation of 1-alkoxide-5-methyl-4-hexene-3. Submitted 9 Aug 1946.		Number ten in a series of articles. Discusses atomic refraction of phosphorus in esters and haloid anhydride acids of phosphorous acid. Critical review of size of atomic constant of phosphorous refraction, as determined by various authors. Establishment of most useful constant which can be applied to a major part of phosphorous organic series compounds. Submitted 25 Dec 1945.
FDB	63T11	FDB
USSR/Chemistry - Phosphorous Acid, Esters of Chemistry - Synthesis	Mar/Apr 1948	USSR/Chemistry - Silver Chemistry - Microscopy, Electron
"Methods for Obtaining and Properties of Some Cyclic Esters of Phosphorous Acid," A. Ye. Arbutov, V. M. Zoroastrova, N. I. Rizpolozhenskiy, Chem Res Investigation Inst imeni A. M. Butlerov, Kazan State U, 10½ pp		"Electron-Microscopical Structure of Fresh Precipitate From a Solution," A. B. Shekhter, S. Z. Roginskiy, S. V. Sakharova, Inst Phys Chem, Acad Sci USSR, 4 pp
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2
Methods for obtaining chlorine anhydrate from glycol phosphate acid, and ethyl and methyl esters of glycol phosphate acid. Description of some properties and process of conversion. Submitted 15 Aug 1947.		It was observed that submicroscopical particles of supported silver catalysts lost their regular crystalline form in course of use and acquired a round shape. Since fusing of particles was not plausible, metallic silver was thought to have been liberated and stabilized by carrier. In this study, electron
FDB	63T13	FDB

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USSR/Chemistry - Acetaldehyde Chemistry - Oxidation	Mar/Apr 1948	USSR/Chemistry - Silver (Contd) Mar/Apr 1948
"Kinetics of the Oxidation of Acetaldehyde in the Gaseous Phase," Z. K. Mayzus, N. M. Emanuel', Inst Chem Phys, Acad Sci USSR, 12 pp		photographs of precipitated silver chloride, barium dichromate, barium sulfate, copper chromate, lead chloride, manganese dioxide, zinc sulfide, sodium chloride, potassium chloride and sodium nitrate were obtained. Soluble precipitates showed a definite crystalline shape. Rapid formation of relatively insoluble precipitates produced first, round shapes, followed by secondary net-like porous aggregates, which, in turn, may be intermediate, thermodynamically unstable forms. Further study on subject is contemplated. Submitted 23 Feb 1946.
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		
Studies of disintegration of components in reacting mixtures of acetaldehyde and oxygen gave two types of kinetic curves for temperatures of 170 and 125°. Determined that at low temperatures amount of vinegar acid in products of reaction increases sharply. Submitted 8 Apr 1947.		
FDB 63T15		FDB 63T14
USSR/Chemistry - Albumin Chemistry - Hydrolysis	Apr 1948	USSR/Chemistry - Silicates Chemistry - Chemical Industry
"The Hydrolytic Ability of Albumin in Relation to the Asymmetry of Its Molecule," V. G. Yakovlev, Biol Inst, Kirgiz Br, Acad Sci USSR, Frunze, 3½ pp		"Regularities in the Evolution of a New Phase as Displayed in Silicate Technology," N. V. Solomin, All-Union Sci Res Inst Glass, 2½ pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Tests conducted on egg globulin show, experimentally, possible to obtain great increase of initial speed of acid and alkali hydrolysis under influence of urine as denaturing agent. Submitted by Academician K. I. Skryabin 3 Feb 1948.		Evolution of new phase has great significance in silicate technology. Such phases are crystallization of molten mixtures, genesis of emulsion, and destruction of gas bubbles. Important to control amount of substance entering new phase, also relationship between centers of new formations and their dimensions. Submitted by Academician D. S. Belyankin 12 Feb 1948.
FDB 63T16		FDB 63T17
USSR/Chemistry - Gases Chemistry - Reaction Kinetics	Apr 1948	USSR/Chemistry - Organic Compounds Chemistry - Analysis, Micro-
"General Equation for the Kinetics of Chemical Reactions in Gases," L. I. Sedov, Corr Mem, Acad Sci USSR, 4 pp		"Rapid Method of Simultaneous Microdetermination of Carbon, Hydrogen, Haloids or Sulfur in Organic Compounds," M. O. Korshun, N. S. Sheveleva, Microanalysis Lab, Inst Org Chem, Acad Sci USSR, 2½ pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Studies of gases which are mixtures of 'q' components. Sets up a hypothetical case which develops into an equation from which most of well-known kinetic equations can be derived. Submitted 17 Dec 1947.		Attempts to apply this new principle in analysis of substances which have following compositions: C,H,O, or Cl,C,H,O, or Br,C,H,O, or J,C,H,O, or S. Gives brief description of performance of this method. Submitted by Academician A. N. Nesmeyanov 7 Feb 1948.
FDB 63T18		FDB 63T19
USSR/Chemistry - Synthesis Chemistry - 2-Propyn-1-ol, Vinyl	Apr 1948	USSR/Chemistry - Barium Compounds Dielectrics, Solid
"Synthesis of Vinyl Propargyl Alcohol," I. M. Gverdt-siteli, Inst Org Chem, Acad Sci USSR, and Tiflis State U imeni I. V. Stalin, 1½ pp		"A New Variety of Barium Titanite," B. M. Vul, Corr Mem, Acad Sci USSR; I. M. Gol'dman, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 2½ pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Presents some properties of subject alcohol which have as yet not been described by anyone. Obtained after third fraction, it amounted to exactly 38.4% of base solution. Substance was identified by Grinard reaction. Submitted by Academician A. N. Nesmeyanov 6 Dec 1947.		Describes experiments showing variety of barium titanite with normal dielectric qualities can be obtained by using chemically pure substances. Gives results of X-ray research.
FDB 63T20		FDB 63T21

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USSR/Chemistry - Isotopes Nuclear Physics - Isotopes	Apr 1948	USSR/Chemistry - Zeolites Zeolites
"Further Rules in a System of Isotopes," M. A. Levitskaya, Voronezh State U, 1½ pp		"The Problem of Transformations in Zeolites," M. N. Shkabara, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Author produced an article on isotope systems in "DAN," 55, 309, 1947, and this article contains an additional rule which should be added to data in the previous one. Submitted by Academician S. I. Vavilov 7 Feb 1948.		In process of transformations of more complex zeolites, pure Na or Ca enters into composition of compound. Entrance of potassium into composition of zeolite is an infrequent occurrence. During process of chemical transformation rearrangement of its structure occurs, which decreases its symmetry. Submitted by Academician D. S. Belyankin 2 Feb 1948.
FDB 63T22		FDB 63T23
USSR/Chemistry - Cyclopentadiene Chemistry - Synthesis	Apr 1948	USSR/Chemistry - Olefin Chemistry - Chemical Constitution
"The Action of Haloid Substituting Ethylene on Butadiene and Anthracene," V. M. Zorostrova, B. A. Arbuzov, Corr Mem, Acad Sci USSR, 3 pp		"Preservation of Stereochemical Configuration in Reactions of the Electrophile and Radical Displacement of the Olefin Carbon Atom," Academician A. N. Nesmeyanov, A. Ye. Borisov, 5 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Trichlor-ethylene produces a cyclopentadiene carrying two molecules of cyclopentadiene to each molecule of trichlorethylene. Describes interrelationship between some dienophyls with butadiene, 2,3-dimethylbutadiene, and anthracene. Submitted 16 Jan 1948.		Electrophile displacement of carbon atom, which is united by a twin carbon bond, occurs without disruption of geometric configuration. Radical displacement of carbon atom has same results. States that further studies will be conducted to determine reactions in nucleophile displacement on same compounds used in these experiments. Submitted 7 Feb 1948.
FDB 63T24		FDB 63T25
USSR/Electricity Superconductivity Metals - Conductivity	Apr 1948	USSR/Electricity Generators, High-Voltage Generators, Impulse
"The Problem of the Speed of Transference of a Metal From a Normal to a Superconducting State," N. Ye. Alekseyevskiy, 3 pp		"A System for Synchronizing High-Voltage Impulse Generators and Heavy Current Generators," N. M. Solonov, Leningrad Polytech Inst, 7½ pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Zhur Tekh Fiz" Vol XVIII, No 3
Describes experiments designed to examine certain peculiarities in superconducting transfers and to determine speed of transference from a nonsuperconducting to a superconducting state. Submitted by Academician L. D. Landau 2 Feb 1948.		A multispark gap is utilized to synchronize high-voltage impulse generator (GIN) and heavy current generators (GIF). Describes principles of operation of system. Compares with Bellaschy's method, and gives various fields in which this new system can be utilized. Submitted 16 Oct 1947.
FDB 63T26		FDB 63T27
USSR/Electricity Conductivity Mica	Mar 1948	USSR/Electricity Dielectrics Conductivity
"The Electrical Conductivity of Mica in Strong Electric Fields," B. V. Gorelik, V. T. Dimitriyev, Leningrad, 7½ pp		"The Problem of 'Real' Conductivity in Solid Dielectrics," B. V. Gorelik, V. T. Dimitriyev, Leningrad, 4 pp
"Zhur Tekh Fiz" Vol XVIII, No 3		"Zhur Tekh Fiz" Vol XVIII, No 3
Measurements of the electroconductivity of mica with fields of $5 \cdot 10^4 - 3.5 \cdot 10^6$ V/cm intensities at temperatures of 89 to 235° C. Study of existence of two fields of conductance: 1) which can be solved by Poole's formula, and 2) to which Frenkel's theory can be applied. Latter permits an explanation of sharp		Presents a new radically different method for determination of "real" conductivity and polarization emf for all fields in which it can be utilized. Shows that Ioffe's theory can be utilized to explain increase of conductivity caused by polarization emf. Submitted 23 Nov 1947.
FDB 63T28		FDB 63T29

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USSR/Electricity (Contd)	Mar 1948	USSR/Electricity Conductivity Glass	Mar 1948
increase of conductivity with a decrease of barrier potential of electron. Determined a relationship of Van't Hoff's constant to the field. Submitted 23 Nov 1947.		"Research on the Poole Effect in Glass," A. M. Venderovich, V. I. Chernykh, Siberian Phys Tech Inst, 11 $\frac{1}{2}$ pp	
"Zhur Tekh Fiz" Vol XVIII, No 3		Results of measurements of conductivity of glass with respect to force of fields. Studies on covering (amorphous and crystallized) glasses. Basis for an interpretation of results obtained can be found in fact that a transformation in glass can occur at temperatures much lower than temperatures at which	
FDB	63T28	FDB	63T30
USSR/Engineering Automobiles Fuel Consumption	Mar 1948	USSR/Electricity (Contd)	Mar 1948
"The Problem of the Fuel Consumption of the GAZ-51 Automobile," V. Belyshev, Chief Tester of GAZ-51 Automobile, 2 $\frac{1}{2}$ pp		glass becomes soft. Submitted 17 Nov 1947. This article also submitted for publication in "Journal of Experimental and Theoretical Physics" 31 May 1947.	
"Avtom" No 3		FDB 63T30	
Fuel consumption depends on carburetor regulation as well as method of operating vehicle. Established norms for GAZ-51 are 26.5 liters of gas for 100 km. This may vary with different loads under different operating conditions. Best speeds are 25 to 45 km per hour. Describes various other factors, including temperature and maintenance, which aid in reducing fuel consumption of subject engine. FDB 63T31		USSR/Engineering	
USSR/Engineering Automobile Industry Automobiles	Mar 1948	Automobiles Engines, Steam	Mar 1948
"Fifteen Years Work of the Leningrad Auto-Repair Works," Dir P. Belkin, $\frac{1}{2}$ p		"Steam-Driven Automobile," Yu. Shebalin, Engr, 3 $\frac{1}{2}$ pp	
"Avtom" No 3		"Avtom" No 3	
Brief description of work of subject plant for 15 years. Among other things these works are equipped to repair GAZ-AA, M-1, GAZ-42 cars, having been equipped recently to undertake repairs of GAZ-51.		Comparison of internal combustion drive to steam drive, advantages and disadvantages of both. In spite of high fuel consumption, 152 tons of rock coal per 100 km, cost is lowest of all vehicles tested. Cost per ton per 100 km was 1.02 rubles. A gasoline-equipped vehicle cost 6.65 rubles per ton per 100 km. Nevertheless is most inefficient from caloric standpoint.	
FDB	63T32	FDB	63T33
USSR/Engineering Construction Industry Road Building	Mar 1948	USSR/Geology	Apr 1948
"Review of 'Automotive Transport and Highway Construction' by A. M. Kofman," Chair for Operation of Automotive Transport, Moscow Auto-Highway Inst imeni Molotov, 1 p		"Two New Pliosaura From the Lower Volga Stratum of the Volga Region," N. I. Novozhilov, Inst Paleontology, Acad Sci USSR, 4 pp	
"Avtom" No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Published 1947, 5,000 copies, 263 pages, price 15 rubles. Book is arranged poorly, having many parts which are repetitions of others. Brief criticism of the deficiencies of the work showing that book is valueless.		Brief data concerning discovery of two Pliosaura skeletons found in Lower Volga stratum. Age determined by presence of typical Volga era ammoniacum. Skeletons identified as belonging to Pliosaurus rossicus sp.nov., and Peloneustes irgisensis sp.nov. Submitted by Academician I. I. Shmal'gauzen 8 Feb 1948.	
FDB	63T34	FDB	63T35

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USSR/Geology	Apr 1948	USSR/Geology Tectonics	Apr 1948
"Some New Orthoceracones From the Artinsk Deposits of the South Urals," V. N. Shimanskiy, Inst Paleontology, Acad Sci USSR, 3 pp		"Some Dikes of Diabase Composition on the Alden Platform," Ye. M. Laz'ko, 3 1/4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
In summer of 1947 author obtained some nautiloidea in southern Urals. Gives brief description of subject Orthoceracones, stating that their study will permit an understanding of genesis of belemnites; gives reasons for Orthoceracones becoming extinct. Submitted by Academician I. I. Shmal'gauzen 10 Feb 1948.		Presence of dikes determined by many geologists. States that great majority of this mineral rock belongs to the Proterozoic Magma cycle. Gives brief description of general characteristics of dikes found in subject region. Submitted by Academician D. S. Belyankin 6 Feb 1948.	
FDB	63T36	FDB	63T37
USSR/Geology Hydrography	Apr 1948	USSR/Geophysics Atmosphere - Measurements	Mar 1948
"The Benthos of the South Baykal Abyss," R. S. Den'gina, Baykal Limnological Sta, Acad Sci USSR, 3 1/4 pp		"Measurement of Pressure and Temperature in the Upper Layers of the Atmosphere," G. Rozenberg, 4 1/4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Uspekhi Fiz Nauk" Vol XXXIV, No 3	
Abyss in south Baykal bathic region varies in depth from 500 meters to maximum of 1,473 meters, forming about 60% of southern part of lake. Brief treatise on benthos of this geologic formation. Submitted by Academician D. V. Nalivkin 23 Jan 1948.		Summary of upper air pressure and temperature collected during V-2 test flights, as well as radio-sonde observations. Data was obtained from articles published by Best, Durand, Gale, Havens, and LaGow.	
FDB	63T38	LC	63T39
USSR/Mathematics - Chains	Apr 1948	USSR/Mathematics - Calculators	Apr 1948
"Markov's Heterogeneous Chains," Yu. V. Linnik, 3 pp		"New Methods of Computing Sums of Products on a Tabulator," I. Ya. Akushkiy, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Considers an endless triangular matrix of random quantities, where $X_{1n}, X_{2n}, \dots, X_{nn}$ form the nth line and are connected to a simple Markov chain. Submitted by Academician S. N. Bernshteyn 4 Feb 1948.		Gives mathematical description of modified method, based on system produced by I. N. Yanzhul in 1946, for calculating sum of products by means of a tabulator. Submitted by Academician N. G. Bruyevich 23 Dec 1947.	
FDB	63T40	FDB	63T41
USSR/Mathematics - Numbers, Properties of	Apr 1948	USSR/Medicine - Liver Medicine - Albumin	Apr 1948
"A More Exact Theorem Concerning the Amplitude of a System of Extremal Points of a Regular Convex Number," D. P. Mil'man, Odessa Pedagogical Inst imeni Ushinskiy, M. A. Rutman, Odessa Higher Nautical School, 3 pp		"Some Properties of Cell Nucleus Albumins," I. B. Zbarskiy, K. A. Perevoshobikova, Cent Oncological Inst imeni P. A. Gertsen, 3 1/4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Deals with two lemmata: 1) that each supporting group is contained within a certain maximum supporting group and 2) that any extremal period $K(M)$ of a regular convex limited number K from E^* is itself a regular convex number, the extremal points of which are extremal points for K . Submitted by Academician A. N. Kolmogorov 14 Jan 1948.		Studies on nuclei of human livers determined status of cell nucleus, as well as some properties of nucleo-albumin and its conduct in presence of various salts, adenosintriphosphoric and nucleinic acid. Submitted by Academician A. V. Palladin 5 Feb 1948.	
FDB	63T42	FDB	63T43

RESTRICTED	FDB Periodical Abstracts Scientific No 63		RESTRICTED
USSR/Medicine - Muscles Medicine - Albumin	Apr 1948	USSR/Medicine - Cytology Medicine - Microscopy	Apr 1948
"Antigenic Properties of Actinine of the Transverse Striated Muscles and Some Features of Contractile Albumins of Smooth Muscles," I. I. Ivanov, Ye. G. Kiseleva, 4 pp		"Research on the Chromophile Substance of Neural Cytoplasm With the Aid of Ultraviolet Microscopes," Ye. A. Moiseyev, Inst Evolutionary Physiol and Pathol of Higher Nervous Activity imeni I. P. Pavlov; A. A. Ferkhmin, Acad Med Sci USSR, Pavlova, Koltushi Sta, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Experiments and studies to determine whether or not antigenic properties are present in actinine. Following this, authors studied contractile albumin of smooth muscles and some movable cells. Submitted by Academician L. A. Orbeli 7 Feb 1948.		Presents brief description of data collected during tests to determine variations in chromophile substance of nerve cells under influence of thiamine introductions. Submitted by Academician L. A. Orbeli 2 Feb 1948.	
FDB	63T44	FDB	63T45
USSR/Medicine - Nematodes Medicine - Taxonomy	Apr 1948	USSR/Medicine - Mice Medicine - Taxonomy	Apr 1948
"Reorganization of the System of Nematodes, Fam. Subuluridae," Academician K. I. Skryabin, N. P. Shikhobalova, Helminthological Lab, Acad Sci USSR, 3 pp		"Nomenclature of Wood Mice (Apodemus 'Flavicollis' - Sylvaticus; Mammalia, Muridae)," V. G. Geptner, Zool Museum, Moscow State U imeni M. V. Lomonosov, 1 1/2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Presents a new method for classification of Subuluridae family. Submitted 7 Feb 1948.		Describes development of nomenclature of subject mice. Submitted by Academician I. I. Shmal'gauzen 31 Jan 1948.	
FDB	63T46	FDB	63T47
USSR/Medicine - Insects Medicine - Turtles	Apr 1948	USSR/Medicine - Plants, Growth Chemistry - Ethyl Alcohol	Apr 1948
"The Biology of Several of the Bread Bugs (Pentatomidae) of Crimea, in Connection With the Problem of Numerical Dynamics of Their Populations," K. V. Arnol'di, Inst Morphol imeni A. N. Severtsov, Acad Sci USSR, 4 pp		"The Influence of Ethyl Alcohol on the Growth and Root Formation of Plants," K. G. Miroshnichenko, Leningrad Agr Inst, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Discusses relationship of subject bugs to activity of turtles. Submitted by Academician I. I. Shmal'gauzen 10 Feb 1948.		Results of subject tests on string beans, willow, and geranium, showing effect of ethyl alcohol on root formation, a phenomenon not studied until recently. Submitted by Academician N. A. Maksimov 2 Feb 1948.	
FDB	63T48	FDB	63T49
USSR/Medicine - Plants Medicine - Growth	Apr 1948	USSR/Medicine - Wheat Medicine - Hybridity	Apr 1948
"The Central Belt of the Mountainous Taiga as a Zone of Ecological Optimum for Plant Growth Processes in Northeast Altai," A. A. Malyshev, 3 pp		"Experimental Synthesis of the Amphidiploids of Hard and Soft Wheat," F. L. Lesik, Bot Gardens, Acad Sci, Ukrainian SSR, 2 1/2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Describes results of 4-year period of observation on growth processes of wild and cultivated plants in mountainous region of northeastern Altay. Development and size of leaves, or foliage, used as an indicator of growth. Test areas divided into several regions, with varying geological and topographical characteristics. Submitted by Academician V. N. Sukachev 14 Jan 1948.		Hard wheat has many advantages over soft wheat, an important one being that the former can adapt itself more readily to various soil and climatic conditions. Thus a hybrid containing best aspects of both hard and soft wheat has great significance. Discusses briefly contemporary hybrids, their advantages and shortcomings. Submitted by Academician N. A. Maksimov 2 Feb 1948.	
FDB	63T50	FDB	63T51

RESTRICTED	FDB Periodical Abstracts Scientific No 63		RESTRICTED
USSR/Medicine - Pituitary Body Medicine - Fish	Apr 1948	USSR/Medicine - Bees Medicine - Neurons	Apr 1948
"Development of the Hypophysis and Thyroid Gland in Bream and Sturgeon," A. I. Irikhimovich, Inst Evolutionary Morphol, Acad Sci USSR, 4 pp		"Neurosecretory Cells of the Honey Bee," L. B. Levinson, G. N. Platonova, Inst Zool, Moscow State U imeni M. V. Lomonosov, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
First literature explaining development of thyroid gland and hypophysis in various stages of ontogenesis. Studies to determine effect of internal tissue and gland secretions on development of subject fish. Submitted by Academician I. I. Shmal'gauzen 3 Feb 1948.		Cytological studies of neurosecretory cells, particularly appearance of similarities, and difference between these similarities and ordinary nerve cells. Attempt also made to classify the bond between formation of secretion and various cell structures. Submitted by Academician I. I. Shmal'gauzen 2 Feb 1948.	
FDB	63T52	FDB	63T53
USSR/Medicine - Cytology Medicine - Stains and Staining	Apr 1948	USSR/Medicine - Histology Medicine - Cerebellum	Apr 1948
"Action of Concentrated Basic Dye Solutions on Tissue Cultures," B. V. Kedrovskiy, A. A. Svinkina, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 2 pp		"Materials on the Development of the Optical Center in the Frog Brain," Ts. M. Kiro, Inst Experimental Medicine, Acad Sci USSR, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1	
Test materials were fibroblast cultures from myocardium and epithelial cultures from kidneys of 8-10 day-old chicken embryos. Describes methods employed in staining these tissues. Submitted by Academician L. A. Orbeli 29 Jan 1948.		Studies made to determine course of development of covering of frog's cerebellum which is more complex than cerebellum of other tailed amphibia. Brief description of complex 'screen center' of frog's cerebellum. Submitted by Academician L. A. Orbeli 10 Feb 1948.	
FDB	63T54	FDB	63T55
USSR/Medicine - Shellfish Medicine - Marine Organisms	Apr 1948	USSR/Medicine - Choline and Choline Derivatives Medicine - Medulla Oblongata	Jan/Feb 1948
"A Tropical Mollusk Melanoides Tuberculatus Mull. in Central Asia," V. I. Zhadin, I. V. Starostin, 1 1/4 pp		"The Ability of Acetylcholine to Penetrate the Hematoencephalic Barrier," G. S. Gvishiani, Chair of Pharmacology, Mil Med Acad imeni S. M. Kirov, 8 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Fiziologicheskii Zhurnal SSSR" Vol XXXIV, No 1	
Describes discovery of subject mollusks in Russia which is significant as these mollusks are native to tropical regions. Author states that this mollusk appeared in Central Asia soon after disappearance of paleogenic sea from this region. Submitted by Academician D. V. Malivkin 23 Jan 1948.		Studies conducted to determine the subject penetrability of acetylcholine, and at the same time to clarify character of action of acetylcholine on the nidus of the medulla oblongata, differentiating this action from that of peripheric effect of acetylcholine. It was found that this substance, when introduced into the femoral vein stimulated respiration, increased intestinal tonus, and slowed down action of the heart, but had very little effect on the blood. Submitted 23 May 1946.	
FDB	63T56	FDB	63T57
USSR/Medicine - Public Health Medicine - Medicine, Military	Jan/Feb 1948	USSR/Medicine - Choline and Choline Derivatives (Contd)	Jan/Feb 1948
"Health Service in the Tula Oblast During World War II," S. Z. Topchiyan, Honored RSFSR Physician, 7 pp		duced into the femoral vein stimulated respiration, increased intestinal tonus, and slowed down action of the heart, but had very little effect on the blood. Submitted 23 May 1946.	
"Sovetskoye Zdravookhraneniye" No 1			
Tula Oblast was one of first to be liberated by victorious Red Army. Brier history of Tula Oblast health record for prewar days. Greatest problem was re-establishment of water supply and sewage systems. Approximately 90% of all hospital facilities damaged or destroyed. General description of preliminary sanitation and medical measures adopted. Reconstruction figures based on percentages compared to prewar figures.			
FDB	63T58	FDB	63T57

RESTRICTED	FDB Periodical Abstracts Scientific No 63		RESTRICTED
USSR/Metals Pearlite Austenite	Apr 1948	USSR/Metals Alloys X-Ray Analysis	Mar 1948
"Computation of the Speed of the Transformation of Sheet Pearlite in Austenite of Eutectoid Steel During Electric Heating," N. M. Rodigin, Inst of Phys Metals, Ural Br, Acad Sci USSR, 4 pp		"A Method of Producing Alloys of Varying Concentrations," V. S. Kogan, B. Ya. Pines, Phys Tech Inst, Acad Sci, Ukraine SSR, Kharkov, 7 1/2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1		"Zhur Tekh Fiz" Vol XVIII, No 3	
Speed of process and temperature at which this transformation takes place is dependent on amount of electrical energy to which metal is submitted, as well as distribution of carbon in a solid solution by means of diffusion. Formulas for converting observations into useable data. Submitted by Academician I. P. Bardin 4 Feb 1948. FDB 63T59		Describes methods for obtaining alloy samples which have varying concentrations. Fundamentals of this method are X-ray structural analysis. Submitted 23 Jun 1947.	
USSR/Metals Metallurgy, Ferrous	Mar/Apr 1948	USSR/Metals Iron Alloys Manganese	Mar/Apr 1948
"New Chemical-Metallurgical Trends in the Future Technology of Complex Iron-Nickel-Cobalt Ores," G. G. Urazov, D. P. Bogatskiy, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 10 pp		"The Effect of Manganese on Polymorphic Transformation in Alloys of Iron and Chromium," A. T. Grigor'yev, D. L. Kudryavtsev, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 9 1/2 pp	
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2	
Theoretical data obtained point to a more rational method of chemical-metallurgical processing of iron-nickel-cobalt ores based on their complex direct reduction. New technology determined which will be applied in Soviet industry. Experimental and theoretical confirmation of advantages to be obtained by using suggested new method. Submitted 26 Nov 1946. FDB 63T61		Describes dilatometric analyses, hardness, and microstructure of alloys. Studies made on ternary system iron-chromium-manganese. Submitted 17 Mar 1947.	
USSR/Metals Austenite Alloys	Mar/Apr 1948	USSR/Minerals Spectrum Analysis	Mar/Apr 1948
"The Dispersion Hardening of Highly Alloyed Austenite as a Factor of Thermal Stability," A. M. Borzdyka, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 9 1/2 pp		"Research on the Effect of the Total Composition of the Specimen on the Intensity of Spectral Lines During Spectral Analysis of Mineral Resources," S. A. Borovik, T. F. Borovik-Romanova, Inst Geochem and Analytic Chem, Acad Sci USSR, 4 pp	
"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2		"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2	
Studies processes of dispersion hardening of metallic 'gamma;' solid solutions of systems Fe-Cr-Ni and Fe-Cr-Mn in compounds with their mechanical stability (thermal stability), and gives a principle for rational utilization of these processes in practical application.		Experiments to determine the effects of Na and K salts on intensity of lines of neutral and ionized atoms of Li, Rb, Ti, and V under various sources of excitation: constant current arc, AC arc, spark, and acetone vapor flames. It was observed that NaCl and	
FDB	63T63	FDB	63T64
USSR/Metals (Contd)	Mar/Apr 1948	USSR/Minerals (Contd)	Mar/Apr 1948
cation to austenite alloys at high temperatures. Submitted 18 Mar 1946.		Na ₂ SO ₄ salts greatly weakened intensity of the lines. Submitted 11 Jul 1947.	
FDB	63T63	FDB	63T64

RESTRICTED	FDB Periodical Abstracts Scientific No 63	RESTRICTED
USSR/Minerals Glass Hardening	Mar 1948	USSR/Minerals Vanadium Spectra, Absorption
"The Effects of the Hardening of Glass," G. M. Bartenev, 6 pp		"Vanadium in Pyroxene Formations," A. I. Tsvetkov, Pyrochem Experiments Lab, Inst Geol Sci, Acad Sci USSR, 4 pp
"Zhur Tekh Fiz" Vol XVIII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1
Analyzes nature of glass hardening and discusses problem of occurrence of plates during symmetrical cooling, a phenomenon in accord with Newton's laws. Analyzes physical processes which occur during this operation, and compares data obtained from experiments with that obtained theoretically. Submitted 22 Jul 1947.		V ₂ O ₅ dissolves in diopside together with CaO and SiO ₂ in stoichiometric relationship with Chermak's silicates. Diopside forms a series of solid solutions with CaV ₂ SiO ₆ ; with aluminum as a catalyst solubility of V ₂ O ₅ in diopside shows a great increase. Additions of aluminum change absorption
FDB	63T65	FDB
USSR/Nuclear Physics - Fission Nuclear Physics - Photography	Mar 1948	USSR/Minerals (Contd)
"Photographic Plates With Thick Layers of Emulsion," V. Fedorov, 2 pp		Apr 1948
"Uspekhi Fiz Nauk" Vol XXXIV, No 3		spectrum of vanadium from green to red. Submitted by Academician D. S. Belyankin 6 Feb 1948.
Summary of experimental data obtained by Fowler, Kerry, Tsai San Tsiang, Chastel, Lattes, Powell, and Perfilov observing nuclear processes by photographic plates, having a thick layer of emulsion. Thus, it was possible to determine the third and fourth fragments during fission of uranium. Describes properties of this new photographic plate.		
LC	63T67	FDB
USSR/Nuclear Physics - Cyclotrons Nuclear Physics - Betatrons	Mar 1948	USSR/Nuclear Physics - Fission Nuclear Physics - Elementary Particles
"Electromagnetic Radiation in Accelerators," V. M. Lopukhin, V. A. Ugarov, 16 pp		"Fission of Bismuth, Lead, Thallium, Platinum, and Tantalum by High-Energy Particles," E. Shpol'skiy, 1 p
"Uspekhi Fiz Nauk" Vol XXXIV, No 3		"Uspekhi Fiz Nauk" Vol XXXIV, No 3
Various new particle accelerators such as cyclotron and betatron have given rise to many new physical phenomena. Tests conducted to determine type of radiation of charged particles in particle accelerators resulted in a series of interesting experimental data regarding this field of science. Discusses radiation and attainable energy limits in accelerators, radiation of a single electron, radiation of a system of		Summary of various facts derived from data published by Rabinovich, Perlman, Hoeckermann, Templeton, and Howl. Fission of subject elements established by means of chemical identification of radioactive products.
LC	63T68	LC
USSR/Nuclear Physics - Cyclotrons (Contd)	Mar 1948	USSR/Nuclear Physics - Cyclotrons Electronics - Circuits, Ferroresonant
electrons in a betatron, effect of radiation on performance of various types of accelerators, and experimental observation of phenomenon known as 'luminescent electrons' that is related to electron radiation. First attempt by Soviet scientists to study electron radiation in accelerators with energies of 100 MeV.		"Electrical and Mechanical Ferroresonance," A. Ye. Salomonovich, 22½ pp
		"Uspekhi Fiz Nauk" Vol XXXIV, No 3
		Discusses forced oscillation in circuits containing iron cores, evaluation of small factors, task of vibration galvanometer, circuits containing piezoelectric condenser, resonance phenomenon during movement of relativistic particles in a cyclotron, solutions to problem of ferroresonance, studies of stability of the hysteresis of resonance curves, ferroresonance during presence of electromagnetism,
LC	63T68	LC
		63T70

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FDB Periodical Abstracts Scientific No 63

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USSR/Nuclear Physics - Cosmic Radiation Mar 1948
Nuclear Physics - Radiation, Corpuscular

"Genetically Related Impulses Produced by Cosmic Rays," N. Dobrotin, V. Tsyrlin, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 7 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3

Tests conducted at altitudes of 3,860 meters determined that the basic part of the coincidences in vertically placed groups of proportional counters cannot be accounted for on basis of showers but apparently produced by genetically related secondary particles which are produced as result of interrelationship of cosmic rays and matter. Submitted 8 Aug 1947.

FDB 63T71

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
Nuclear Physics - Fission

"Nuclear Fission and Heavy Particles in Cosmic Rays," A. N. Gorbunov, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 1/2 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3

Twin proportional counters used to study highly ionized particles in cosmic rays at 3,860 and 4,700 meters. Determined that nuclear fission produced by cosmic rays occurs easier in heavy matter (lead) than in light matter (aluminum). Evaluation of stream of penetrating particles, producing fission, as well as effective gauge of their absorption in various mate-

FDB 63T72

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
(Contd)

rials. Presents conclusion regarding neutrality and instability of generating particles. Submitted 8 Aug 1947.

FDB 63T72

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
Nuclear Physics - Counters, Electronic

"Research on the Penetrating Characteristics of Particles of Atmospheric Cosmic Ray Showers," G. T. Zatsépin, L. Kh. Eydus, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 9 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3

Counters were used to study absorption of wide atmospheric showers by lead and aluminum. Observations were taken at 3,860 meters above sea level. Shower particles which penetrated 12 cm of lead were identified as electron-photon component of high energy Auger's showers. Data showing possible existence of

FDB 63T74

USSR/Nuclear Physics - Cyclotrons (Contd) Mar 1948

and ferroresonance type voltage stabilizers. States that it is also possible to have a stabilizer in which nonlinear element of system is a condenser with a piezoelectric dielectric.

LC 63T70

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
Nuclear Physics - Counters, Electronic

"The Structure of Atmosphere Penetrating Cosmic Ray Showers," L. N. Bell, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 10 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3

Flat proportional counters were used to study structure of wide atmospheric showers. Data obtained rejects accepted theory of absence of different types of penetrating showers, and establishes a genetic relationship between these showers and Auger's showers. The observed coincidence cannot be explained by the high energy particles of Auger's

FDB 63T73

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
(Contd)

showers, but can be explained only under the cascade laws. Submitted 15 Jun 1947.

FDB 63T73

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
Nuclear Physics - Elementary Particles

"Existence in Cosmic Rays of Positive and Negative Particles With Masses Greater Than the Mass of Mesotrons," A. Alikhanyan, A. Alikhanov, A. Vaysenberg, Inst Phys Problems, Acad Sci, and Physics Inst, Acad Sci, Armenian SSR, 36 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3

Method of magnetic declination utilized to study spectrum of impulses of cosmic ray particles at 3,250 meters. Shows that among particles which will not penetrate more than 5.4 cm lead, are particles which have both signs, and whose mass lies between

FDB 63T75

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FDB Periodical Abstracts Scientific No 63

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USSR/Nuclear Physics - Cosmic Radiation Mar 1948
(Contd)

mesons of low density in wide showers. On basis of studying penetrating capability of narrow shower particles authors were able to arrive at conclusion that two types of particles are present in such showers. Submitted 8 Aug 1947.

FDB 63T74

USSR/Nuclear Physics - Cosmic Radiation Apr 1948
Nuclear Physics - Radiation, Corpuscular

"Effect of the Earth's Magnetic Field on Large Auger Showers," V. V. Vladimirovskiy, Acad Sci USSR, 9 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

Studies on spectrum of damped illumination of fast electron in earth's magnetic field. Determined effect of the propagation of damped quantum in atmosphere on general number of particles in Auger's showers, which are produced by electrons. When energy of first electron is greater than $2 \cdot 10^{18}$ eV, then slowing down of the quantum produces more particles at sea level, than the primary electron that is slowed down by a magnetic field. Submitted 6 Aug 1947.

FDB 63T76
USSR/Nuclear Physics - Nuclear Theory Apr 1948
Nuclear Physics - Quadrupole Moment

"Quadrupole Moments of Heavy Nuclei," F. I. Kligman, Kiev Tech Inst Light Industries, 6 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

Shown that drop model of a nucleus, which takes into account all types of nuclear energy and includes central interrelationship, permits obtaining a correct positive quadrupole moment, which is observed in great majority of nuclei. A small number of nuclei, with negative quadrupole moments, cannot be included in general system unless there is great accuracy. Submitted 7 Jun 1947.

FDB 63T78
USSR/Nuclear Physics - Elementary Particles Apr 1948
Mathematics, Applied

"Some Mathematical Methods of the Theory of the Scattering of Particles," I. Ye. Tamm, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 9 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

Discusses a variation on method for determining real function of continuous spectrum of Shreding's equation, Rits' analogous method for discrete spectrum, permitting calculation of diameter of colliding particles by a method of successive approximations. Discusses distribution of impulses and dispersion of particles with central fields of force. Singular integral equation

FDB 63T80

USSR/Nuclear Physics - Cosmic Radiation Mar 1948
(Contd)

the masses of mesotrons and protons. In order to explain the trajectory of particles it is necessary to assume existence of particles with masses $M = 500, 1,000, \text{ and } 2,000 m_p$. Shows that in cosmic rays at this altitude are particles containing both signs, and whose mass is greater than the mass of protons. Submitted 10 Dec 1947.

FDB 63T75

USSR/Nuclear Physics - Quantum Mechanics Apr 1948
Crystals - Lattices - Dynamics

"Quantum Mechanics Consideration of Crystal Lattice Dynamics," S. V. Tyablikov, Moscow State U, 6 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

Discusses dynamics of crystal lattices, obtained from quantum equations for movement of given N bodies. First approximation results in data similar to that obtained when calculating for Brownian theory of lattices. Results of second approximation give some particulars of spectrum. Submitted 23 Jun 1947.

FDB 63T77
USSR/Nuclear Physics - Counters, Electronic Apr 1948
Nuclear Physics - Cosmic Radiation

"Utilization of Random Concurrences for the Measurement of Large Intensities in Work With Counters," M. I. Podgoretskiy, V. A. Khvoles, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 5 1/2 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

New method for measuring large intensities. A 'Static' system is coupled to ordinary counter. Theory of suggested method and experimental equipment and its performance. Submitted 8 Aug 1947.

FDB 63T79
USSR/Physics Apr 1948
Crystallography
Sound - Absorption

"Theory of the Absorption of Sound in Polycrystals," M. A. Isakovich, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 5 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4

Criticism and corrections to Zener's theory of absorption of sound in polycrystals. Results obtained can generally be utilized for absorption of sound in a dense media, whose nonhomogeneity is slight when compared to the length of the sound wave. Submitted 30 Jul 1947.

FDB 63T81

RESTRICTED	FDB Periodical Abstracts Scientific No 63		RESTRICTED
USSR/Nuclear Physics - Elementary Particles Apr 1948 (Contd)	USSR/Physics Tellurium Resistance, Electrical	Apr 1948	
for calculating this distribution. Both suggested methods can be utilized and developed into a wider class of equations. Submitted 17 Nov 1947.	"Variations of the Electrical Resistance of Tellurium in a Magnetic Field at Low Temperatures," R. A. Chentsov, Inst Phys Problems, Acad Sci USSR, 12 pp		
	"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4		
	Helium temperatures, utilized for experiments, obtained anomaly confirming decrease of resistance in weak magnetic fields. Temperature has to be less than 4° K. Effect observed on pure materials. Measurements made on temperature relationship of Khol's constant and magnetic susceptibility of tellurium at helium temperatures. Submitted 9 Jun 1947. FDB	63T82	
FDB 63T80	USSR/Physics	Apr 1948	
USSR/Physics Phosphors Anisotropy	USSR/Physics Phosphors Anisotropy		
"Optical Anisotropy of Phosphors With Organic Dyes During Illumination by Polarized Light, Part I," S. V. Cherbyntsev (Deceased), Phys Inst, Leningrad State U, 8 pp	"Optical Anisotropy of Phosphors With Organic Dyes During Illumination by Polarized Light, Part II," S. V. Cherbyntsev (Deceased), I. I. Vasserman, Phys Inst, Leningrad State U, 7 1/2 pp		
"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4	"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4		
Polarized light illumination of solid sugar solutions of organic dyes results in prolonged luminescence. Gives measurements of spectral progress of effect and the energy relationship. Calculations of dichromatism, on data obtained from linear oscillators, coin-	Dichromatism of sugar phosphors, excited by polarized light, increases sharply with a drop in temperature from room temperature. This can be explained by Yablonskiy's theory on energy levels. Discusses effects on dichromatism of a warm disorientation of molecules. Submitted 10 Jun 1947. FDB	63T84	
FDB 63T83	USSR/Physics	Apr 1948	
USSR/Physics (Contd)	Measurements		
cides with measurements obtained from phosphorescopic measurements. Submitted 10 Jun 1947.	"Change-Over to New Electrical, Magnetic, and Illumination Units" 1/4 p		
	"Zhur Eksper i Teoret Fiz" Vol XVIII, No 4		
	Another warning that much preparation is necessary before planning change-over to units of absolute electromagnetic system (MKSEW). Actual effective change-over date will be determined by Committee on Matters of Weights and Measures, Council of Ministers USSR.		
FDB 63T85	USSR/Physics	Mar 1948	
USSR/Physics Electron Theory Electrons - Motion	USSR/Physics Crystals - Lattices Crystals - Elastic Properties		
"The Theory of the Point Electron," A. A. Sokolov, Phys Inst, Moscow State U, 5 pp	"The Scattering of Short Elastic Waves in a Crystal-line Lattice," I. M. Lifshits, Phys Tech Inst, Acad Sci, Ukraine SSR, 8 pp		
"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3	"Zhur Eksper i Teoret Fiz" Vol XVIII, No 3		
Studies of a series of problems relating to classical theory of movement of point electrons. Submitted 1 Aug 1947.	Studies of dispersion of very short elastic waves in crystalline lattices with single obstructions (dispersing centers). Formulas obtained which relate amplitude of dispersed waves and form of wave surface to laws of dispersion. Submitted 19 Mar 1947.		
FDB 63T86	USSR/Physics	63T87	

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<p>USSR/Physics Magnetism Magnetic Fields - Earth</p> <p>Mar 1948</p> <p>"Tests With the Experimental Proof of the Bleket Theory of Terrestrial Magnetism," G. Rozenberg, 2 pp</p> <p>"Uspekhi Fiz Nauk" Vol XXXIV, No 3</p> <p>Brief summary of work by various scientists to confirm theories submitted by Bleket, who stated that the magnetic moment revolving a large body is connected to the moment of the speed of revolution. He based this theory on observations of comparative magnetism and angular moments of earth, sun, and Star 78 Davey.</p> <p>LC 63T88</p>	<p>USSR/Physics Bibliography</p> <p>Mar 1948</p> <p>"Bibliography" 5 pp</p> <p>"Uspekhi Fiz Nauk" Vol XXXIV, No 3</p> <p>V. N. Kondrat'yev's "Structure of the Atom and Molecule," is a good book for those who have a foundation in elements of quantum mechanics. P. P. Lazarev's "Energy, Its Source on the Earth and Its Genesis" will be of interest to all specialists in field of energy, and "Electronics and Their Application in Industry and Research" edited by B. Lovell-which, is a good reference due to its monographic form of presentation.</p> <p>LC 63T89</p>	
<p>USSR/Physics Bibliography</p> <p>Mar 1948</p> <p>"Annotated List No 32 of Nonperiodical Literature on the Physical Sciences Published in the USSR During the Fourth Quarter of 1947," S. A. Shorygi, 10 pp</p> <p>"Uspekhi Fiz Nauk" Vol XXXIV, No 3</p> <p>List of 32 books published late in 1947. Mentions books and contents by: P. G. Bergman, who translated an introduction to the "Theory of Relativity" by Einstein; F. F. Vol'kenshteyn, "Electroconductivity of Semiconductors"; G. S. Gorelik, and Prof M. L. Levin, "Radar"; "Hydromechanical Terminology," published by the Academy of Sciences USSR, in Russian-English-French-German.</p> <p>LC 63T90</p>	<p>USSR/Physics Light Spectrum Analysis</p> <p>Mar 1948</p> <p>"Demodulation Analysis of Light," G. S. Gorelik, 12½ pp</p> <p>"Uspekhi Fiz Nauk" Vol XXXIV, No 3</p> <p>Experiments conducted to determine whether it is possible to observe pulsation in light in those cases where spectrum apparatus has sufficient resolving power to be able to record presence of doublets. Discusses pulsation and lack of coherence, resolving power during demodulating analysis, and Rig's conception of "Light Pulsations."</p> <p>LC 63T91</p>	
<p>USSR/Physics Atomic Structure Molecular Structures</p> <p>Mar/Apr 1948</p> <p>"Review of 'Structure of Atoms and Molecules' by V. N. Kondrat'yev," M. V. Vol'kenshteyn, 2½ pp</p> <p>"Izvest Akad Nauk SSSR, Otd Khim Nauk" No 2</p> <p>This book meets requirements of growing interest by Soviet reading public in field of structure of matter. Book is too basic and general to be used as a text for scientific students or technicians. Published in Moscow and Leningrad 1946.</p> <p>FDB 63T92</p>	<p>USSR/Physics Ferromagnetism Deformation</p> <p>Mar 1948</p> <p>"A New Method of Studying Plastic Deformation in Ferromagnetic Crystals," N. S. Akulov, Sci Res Inst Phys; N. Z. Miryasov, Moscow State U, 5½ pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 3</p> <p>Records results of systematic studies of precipitation figures during various stages in deformation of an iron crystal. Compares results obtained by above method and those obtained through X-ray analysis. Submitted 31 Oct 1947.</p> <p>FDB 63T93</p>	
<p>USSR/Physics Jets Hydrodynamics</p> <p>Mar 1948</p> <p>"Regularities of the Breakdown of Liquids in Centrifugal Jets," I. I. Novikov, 9½ pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 3</p> <p>Gives hydrodynamic theory of a centrifugal jet and evaluates mechanism of decomposition which acts on surface of a drop of water coming out of the jet. Formulas for average diameter of a drop based on data obtained from experiments. These values for the diameter were precise. Submitted 14 Oct 1947.</p> <p>FDB 63T94</p>	<p>USSR/Physics Bibliography</p> <p>Mar 1948</p> <p>"Bibliography" 9½ pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 3</p> <p>List of books published in US, USSR, France, England, and Germany dealing with the following fields: acoustics, mechanical properties of materials, amorphous bodies and polymers, dielectrics, semiconductors, electrical technology, X-rays, gas discharges, electrical and magnetic properties of metals, laboratory technique, and spectroscopy.</p> <p>FDB 63T95</p>	

FDB Periodical Abstracts Scientific No 63		FDB Periodical Abstracts Scientific No 63	
USSR/Physics Distortion, Optical Aberration, Optical	Mar 1948	USSR/Physics Electrons - Diffraction Mica	Mar 1948
"Relaxation of Aberration of an Optical System to Small Values of Object Displacement," D. Yu. Gal'pern, 7½ pp		"Diffraction of Electrons in 'Bent' Mica," M. A. Rumsh, 6 pp	
"Zhur Tekh Fiz" Vol XVIII, No 3		"Zhur Tekh Fiz" Vol XVIII, No 3	
Formulas for calculating changes in aberration due to small variations in the disposition of an object. Method used for deriving the formulas $n(1 - \cos\theta) - n'q(1 - \cos\theta') = 0$. Application of formulas to a hypothetical case. Submitted 22 Nov 1947.		Experiments conducted to confirm certain observations by Pok and Kolpinskiy: 1) in the presence of bent crystals, interference dots appear somewhat confused in regions of large angles of diffraction in comparison with those which would be found in other areas were the crystal not bent; 2) all maxima, exclusive of those which lie on a line which passes	
FDB 63T96		FDB 63T97	
USSR/Physics Illumination Magnetism	Mar 1948	USSR/Physics (Contd)	Mar 1948
"Electron-Optical Effects in the Development of Plasma," G. V. Spivak, Sci Res Inst Phys; Ye. L. Stol-yarova, Moscow State U, 9½ pp		through the central dot parallel to the axis of de- flection, are asymmetrical; 3) maximum intensity of dots, following one another, can be calculated by the formula $n^{-2/3}$ where n is the number of the maxima from the neutral line. Submitted 14 Oct 1947.	
"Zhur Tekh Fiz" Vol XVIII, No 3			
Tests to determine the action of a magnetic lense on illumination potential in a long pipe. Illumination potential has a periodic manner of progress depending on distance between electrodes. Three effects are combined as a result of the entrance of the anode in- to the lense field. Ignition of plasma occurs at a			
FDB 63T98		FDB 63T97	
USSR/Physics (Contd)	Mar 1948	USSR/Physics Energy - Dissipation Waves - Surface	Mar 1948
point when several H/p are attained at the anode. When this phenomenon occurs, illuminating potential decreases. Submitted 14 Oct 1947.		"Interference Method of Studying the Connection Be- tween the Structure of a Wave Surface and the Struc- ture of Energy Dissipation Points," L. P. Moroz, 14 pp	
		"Zhur Tekh Fiz" Vol XVIII, No 3	
		Study of geometry of wave surfaces permits localiza- tion of picture showing macrostructure of points or dots which disperse energy, and facilitates study of their characteristics and properties. Discusses method for classification of elements of dot macro-	
FDB 63T98		FDB 63T99	
USSR/Physics Rheology Lubricants	Mar 1948	USSR/Physics (Contd)	Mar 1948
"Rheological Properties of Calcium Lubricants," G. V. Vinogradov, K. I. Klimov, 21½ pp		structure which disperse energy, and method for ex- perimental study of bond between structure of wave surface and structure of dots dispersing energy. Submitted 22 Nov 1947.	
"Zhur Tekh Fiz" Vol XVIII, No 3			
Methods and results of studies of elastico-plastic properties of calcium lubricants. Observations on character of elastic deformation during constant and various loads, determining slip modulus of lubricants, phenomenon of creep and elastic aftereffects, and ef- fects of heating and cooling of lubricants on kinetics of its deformation. Determining boundary slip ten-			
FDB 63T100		FDB 63T99	

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<p>USSR/Physics (Contd) Mar 1948</p> <p>sions of lubricants in capillaries and in instruments with coaxial cylinders. Submitted 9 Oct 1947.</p> <p>FDB 63T100</p>	<p>USSR/Physics Mar 1948</p> <p>Crystals - Lattices Crystal Structures</p> <p>"The Nature of the Shattering of Crystals. The Influences of Cleavage and Parting," N. V. Belov, M. V. Klassen-Neklyudova, 13 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 3</p> <p>Crystalline states are characterized by property of shattering in well defined crystalline forms. Data presented from other literature as well as data obtained in experiments regarding establishment of regular geometry for lattices for a series of metal and mineral crystals. Leads to conclusion that</p> <p>FDB 63T101</p>
<p>USSR/Physics Apr 1948</p> <p>Hydrodynamics Flow</p> <p>"The Computation of Hydrodynamic Forces Acting on a Cavitating Contour in a Horizontal-Parallel Flow," D. A. Efros, 3 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1</p> <p>Discusses hydrodynamic phenomena which occur during development of cavitation and which can be described as "equivalent flow" of a stationary discontinuous potential flow of an ideal liquid. Suggests a method for computing these forces. Submitted by Academician V. L. Pozdyunin 27 Jan 1948.</p> <p>FDB 63T102</p>	<p>USSR/Physics (Contd) Mar 1948</p> <p>there is a constant relationship between phenomenon of shattering along cleavage lines, and structure of an ideal crystalline lattice. Discusses several examples of formation of parting.</p> <p>FDB 63T101</p>
<p>USSR/Physics Apr 1948</p> <p>Phosphors Spectra, Absorption</p> <p>"A New Absorption Zone in Alkaline-Haloid Phosphors Activated by Thallium," O. V. Fialkovskaya, Sci Res Inst Phys, Leningrad State U, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1</p> <p>Brief description of a new band of absorbed light, determined to be 1,625 Å for KCl, which was observed during studies made on spectrum of alkaline-haloid phosphors activated by thallium. This phenomenon is noticeable only in those alkaline-haloid crystals which contain an equal number of alkaline cations and haloid anions. Submitted by Academician A. N. Terenin 13 Jan 1948. FDB 63T103</p>	<p>USSR/Physics Apr 1948</p> <p>Mechanics Elasticity</p> <p>"The Elastic-Plastic Condition of Plates," A. P. Sokolov, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1</p> <p>Describes experiments carried out by extending a thin plate of unlimited dimensions with a circular groove whose edge was independent of external conditions, in order to test its elasticity. Submitted by Academician L. S. Leybenzon 30 Jan 1948.</p> <p>FDB 63T104</p>
<p>USSR/Soil Science Apr 1948</p> <p>Meteorology</p> <p>"Climatic Conditions as a Factor Controlling the Humus Content of USSR Soils," V. R. Volobuyev, 3 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 1</p> <p>System of soil thermotypes can be considered a general system reflecting climatic conditions or a system of climates. This relationship utilized to show relationship between humus content of soils and climatic conditions. Submitted by Academician L. I. Prasolov 31 Jan 1948.</p> <p>FDB 63T105</p>	<p>List of Abbreviations used in FDB Periodical Abstracts</p> <p>ID Intelligence Division Library AMC Air Documents Division, Air Materiel Command ST Reference Division, State Department BM Bureau of Mines, Department of Interior BS National Bureau of Standards SI Smithsonian Institution LC Library of Congress FDB Foreign Documents Branch, CIA COM Department of Commerce AF A-2 Library, USAF</p>