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SCIENTIFIC

Number 45

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"Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Novaya Seriya, Otdel Geologicheskii" (Bulletin of the Moscow Society of Naturalists, New Series, Geological Section) Cards 20-23, 25-32, 61	Vol XXI Vol XXII No 4 No 1 No 2	Apr 1946 Jan 1947 Feb 1947
"Gidrotekhnicheskoye Stroitel'stvo" (Hydrotechnical Construction) (1) Cards 9-12	No 10	Oct 1947
"Journal of Physics of the Academy of Sciences of the USSR" (2) Cards 1, 69, 71-78, 103	Vol X No 5	May 1946
"Priroda" (Nature) Cards 24, 33, 34, 57-59, 68, 70, 104	No 3	Mar 1946
"Radiotekhnika" (Radio Technique) (3) Cards 6-8, 79-102	Vol II No 5 No 6 No 7 No 8	May/June 1947 Jul/Aug 1947 Sep/Oct 1947 Nov/Dec 1947
"Sovetskaya Botanika" (Soviet Botany) Cards 37, 60, 64	Vol XIV No 1	Jan 1946
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"Uspekhi Sovremennoy Biologii" (Progress of Contemporary Biology) Cards 36, 52-56, 65	Vol XXIV No 3 (6)	Nov/Dec 1947
"Vestnik Elektro-Promyshlennosti" (Herald of the Electrical Industry) Cards 2-5	No 12	Dec 1947

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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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RDB	2
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FDB	<u>20</u>
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FDB Periodical Abstracts Scientific No 45		
USSR/Chemistry - Crystallography Chemistry - Silicon Carbide	May 1946	USSR/Electricity Magnets, Permanent Magnetization
"Crystalline Structure of SiC VI, and the Geometrical Theory of Silicon Carbide Structures," G. Zhdanov, Z. Minervina, Phys Chem Inst imeni Karпов, 3 pp		"Magnetization of Permanent Magnetic Poles in Machines," B.D. Sadovskiy, Candidate Tech Sci, All-Union Electrotech Inst imeni V.I. Lenin, 3 pp
"Jour Phys, USSR" Vol X, No 5		"Vest Elektro-Prom" No 12
Two years ago authors proposed the geometrical theory of silicon carbide structures, allowing solution of superperiodical structure of silicon carbide and also prediction of existence of some new types of the structures, in particular, the 33-layer rhombohedral packing with the numeral symbol (2.3.3.3)3. Crystals of silicon carbide with 33-layer packing (SiC VI) were recently discovered by Thibault, but the structure	FDB 45T1	Explains theoretical significance of those recovery coefficients, which must be used in calculation of magnetic chains of machines with permanent magnetism. Before the generation of a field within the mass of a permanent magnet, it is important to study the material surrounding both sides of the magnet.
USSR/Chemistry - Crystallography (Contd)	May 1946	USSR/Electricity Motors, Direct Current
was not clarified. By calculation of the intensities based on Thibault's data, authors clarify the structure of SiC VI and demonstrate that it is identical with the predicted structure.		"Magnetic Characteristic of Interpoles," A.B. Ioffe, Candidate Tech Sci, "Dinamo" Works imeni S.M. Kirov, 5 pp
FDB 45T1		"Vest Elektro-Prom" No 12
USSR/Electricity (Contd)	Dec 1947	For determining the quality of commutation in DC machines in overloading, it is necessary to know the amount of the uncompensated reactive emf. Ioffe presents methods for calculating the changes occurring in interpoles during overloading. Shows application of his methods by giving examples of the operation of DC machines. States, however,
that his methods are based on a method of successive approximation, and therefore have not been used too widely.		IC 45T3
FDB 45T1		USSR/Electricity Ferromagnetism Steel
USSR/Electricity (Contd)	Dec 1947	"Losses in Steel during Magnetization," L. A. Bessonov, Engr, Moscow Energetics Inst imeni V.M. Molotov, 4 pp
		"Vest Elektro-Prom" No 12
IC 45T3		Discusses results of experimental work conducted at the Moscow Energetics Institute to determine losses occurring during magnetization of ESCM transformer steel of 0.5-mm thickness. Describes preparations for experiments and results observed.
USSR/Electricity Motors, Electric Efficiency, Industrial	Dec 1947	IC 45T4
"Possibility of Mechanizing Certain Technological Processes in Production of Large Asynchronous Electric Motors," M.M. Zil'bersheyd, GlavElektroMashProm MEP, 3½ pp		USSR/Nuclear Physics - Particle Accelerators Electronics Pilots, Automatic
"Vest Elektro-Prom" No 12		"Development of Theory of Nonlinear oscillations in the USSR," Prof S. M. Rytov, Dr Phys Math Sci, 5 pp
Discusses possibilities of mechanization and auto-mechanization of nonsynchronous three-phase, heavy-duty electric motors (power 1 - 10 kw) for following types of uses: winding and drying and preserving uses, balancing of machine rotors, stamping of plates for rotors and starters, and testing of assembled machinery. Does not discuss any mechanical processing.	IC 45T5	"Radiotekh" Vol II, No 8
		Briefly discusses attainments of Mandel'shtam, Papaleksi, Rytov, Gulyayev, Kholodenko and others in the subject field. Andronov perfected an automatic pilot for planes. Andronov in cooperation with Gorelik also studied nonlinear problems of movements of relative particles in a cyclotron.
		AMC 45T6

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USSR/Electronics Radio Waves - HF Mathematics, Applied	Sep/Oct 1947	USSR/Electronics Oscillators, Bridge
"The Coefficient of Effective Range of High Frequency Transmission Lines," A.R. Vol'pert, Candidate Tech Sci, 3 pp		"Theory of Bridge Type Oscillator with Variable Parameters," Prof K.F. Teodorchik, Dr Phys Math Sci, 4½ pp
"Radiotekh" Vol II, No 7		"Radiotekh" Vol II, No 7
Discusses methods of deriving formulas for the coefficients of effective transmission range of lines under various conditions. Shows method for drawing up graphs permitting rapid estimation of efficiency for any terminal voltage.		Describes characteristics of sinusoidal self-excited bridge type oscillator having variable parameters. Shows that if the varying element were connected to only one leg of the bridge, then oscillation is possible on the resonance frequency of the amplifier, if there is no phase transformation. But oscillation is possible at a non-AMC
AMC	45T7	45T8
USSR/Electronics (Contd)	Sep/Oct 1947	USSR/Engineering Hydroelectric Plants Construction Industry
resonant frequency if the amplifier transforms the phase. Discusses the general case where the varying elements form both legs of the bridge. Shows that in all cases stability of frequency is proportional to the coefficient of voltage rise caused by the amplifiers.		"Term Construction as a Factor in the Economy of Hydroelectric Stations," M.P. Fel'dman, 6 pp
		"Gidrotekh Stroi" No 10
		Explains principles and methods of determining the value of term construction as a factor in the economy of hydroelectric stations. Defines various symbols entering into mathematical calculations. Discusses relation of capital expense of hydro-technical equipment to term construction, and importance of term construction of hydroelectric stations for the energy system.
AMC	45T8	ID
USSR/Engineering Hydroelectric Plants Turbines	Oct 1947	USSR/Engineering Blasting Explosions - Effects
"After the First Unit Started at Dneprostroy," A. I. Timov, Engr, 1 p		"Large-scale Experimental Blasting," Ye.D. Kalimanov, Engr, 4½ pp
"Gidrotekh Stroi" No 10		"Gidrotekh Stroi" No 10
Much has been accomplished since beginning of first turbine unit at Dneprostroy: Two more units have been put into operation, locks have been opened to navigation, and much additional work has been done in preparation toward operating this installation at full capacity. Generally describes future plans for this hydroelectric enterprise. First turbine is operating most satisfactorily.		GlavGidroEnergostroy carried out experiments with blasting to determine the vertical and the horizontal effect of the explosions. Author discusses several aspects of the experiments: geological and hydrological characteristics of the testing site; calculated dimensions, i.e., methods for calculating various results of the explosions; studies and observations of the experiment.
ID	45T10	45T11
USSR/Engineering (Contd)	Oct 1947	USSR/Engineering Docks Construction, Marine
mental results upheld calculations, according to Bereskov's formula, for the amount of vertical displacement of ground.		"Reports to the Group on Hydrotechnology and Hydroenergy," F. Ya. Nesteruk, Asst Secy Group on Hydrotechniques and Hydroenergy, ¼ p
		"Gidrotekh Stroi" No 10
		On 29 May V.I. Shvey, Candidate of Technical Sciences, submitted a work on the demolition of military marine hydroequipment and its installation, which drew for examples on actual work and conditions of the port of Sevastopol'. On 5 Jun A.M. Rumyantsev, Chief Engineer of Moscow-Volga Canal, submitted a report of his trip to the various hydro-installations in France.
ID	45T11	ID
		45T12

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<p>USSR/Geophysics Earth - Analysis</p> <p>Sep 1947</p> <p>"Some Scientific Tasks of Astronomy-Geodesy in Connection with Study of Structure of the Solid Cover of the Earth," F.N. Krasovskiy, 18$\frac{1}{4}$ pp</p> <p>"Trudy Instit Teoret Geofiz" Vol II, No 2</p> <p>Discusses present status of knowledge on structure of the earth's crust. Studies were conducted by an astronomical-geodesical and gravimetric method. Gives results of investigations, and shows that recent tests with geodesy have permitted a better definition of the so-called anomalies of gravity. Refers to use of geodesy and gravimetry in countries other than</p> <p>LC 45T13</p>	<p>USSR/Geophysics Earth - Analysis</p> <p>Sep 1947</p> <p>"Extensive Task of Interpreting Yearly Graphs of Refracted Waves," I.S. Berzon, 64 pp</p> <p>"Trudy Instit Teoret Geofiz" Vol II, No 2</p> <p>Explains extensive task of interpreting yearly graphs of refracted waves in the case of one flat boundary division for sliding and penetrating waves. Discusses a system of yearly graphs, required for an identical determination of elements of refracted limits and the boundary speed a_2, and methods for evaluating these graphs. Discusses the questions for a practical identical interpretation of trans-</p> <p>LC 45T14</p>	
<p>USSR/Geophysics (Contd)</p> <p>Sep 1947</p> <p>Soviet Union. Submitted, May 1944, at the Scientific Council of the Institute of Theoretical Geophysics, Academy of Sciences of USSR.</p> <p>LC 45T13</p>	<p>USSR/Geophysics (Contd)</p> <p>Sep 1947</p> <p>verse yearly graphs, representing a system of observation, not exact enough for identical determination of elements lying near the refracted limits. Includes page on bibliography of reference material.</p> <p>LC 45T14</p>	
<p>USSR/Geophysics Earth - Analysis</p> <p>Sep 1947</p> <p>"Interpretation of Transverse Yearly Graphs for Refracted Waves," I.S. Berzon, 22 pp</p> <p>"Trudy Instit Teoret Geofiz" Vol II, No 2</p> <p>Explains method of interpreting direct transverse yearly graphs of limited length, based on an average normal yearly graph. Also discusses method for determining maximum length of transverse yearly graphs, which can be interpreted to be practically identical for any possible value of the angle of longitudinal declination. At present it is impossible to account for the accuracy of this method of calculation.</p> <p>LC 45T15</p>	<p>USSR/Geophysics Gravimetric Analysis</p> <p>Sep 1947</p> <p>"Technology of Calculating the Force of Gravity," V.A. Kazinskiy, 3$\frac{1}{4}$ pp</p> <p>"Trudy Instit Teoret Geofiz" Vol II, No 2</p> <p>Gives several tables for calculating the force of gravity. Tables based on data collected by observations on the intervals of various periods, such as periods of a pendulum, and other indications of the gravitational force.</p> <p>LC 45T16</p>	
<p>USSR/Geophysics Gravimetric Analysis</p> <p>Sep 1947</p> <p>"Relationship between the Declination of a Plumb Line, and the Gradients and Radii of Geoid Curves," V.A. Kazinskiy, 3 pp</p> <p>"Trudy Instit Teoret Geofiz" Vol II, No 2</p> <p>Describes method of obtaining formulas for studying the surfaces of geoids with the aid of gradients of the earth's gravity fields.</p> <p>LC 45T17</p>	<p>USSR/Geography Surveying, Aerial</p> <p>Apr 1947</p> <p>"Study of the Distribution and Dispersion of Plants by Aerial Photographs," S.V. Viktorov, 6 pp</p> <p>"Byull Mosk Obsheh Isp Pri, Otdel Biol" Vol LII, No 4</p> <p>Carried out investigations using aerial photographs on trees and shrubs in depressions of salt lakes in Kyzyl-Kum, Kara Kum and Ust-Urt deserts. Aerial photographs of the coenoses studied by morphographic and morphometric analyses. Established systems of determining the nature of the terrain, to a certain extent, by the morphology of certain coenoses revealed in the photographs.</p> <p>LC 45T18</p>	

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USSR/Geology Geological Prospecting	Feb 1947	USSR/Geology Glaciers Petroleum - Prospecting
"Division into Phytogeographical Regions as a Method of Geological Exploration," S.V. Viktorov, 8 pp		"Glacial Dislocations, and Their Importance in the Interpretation of the Structure of European USSR," G.F. Mirchink, 11 pp
"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 2		"Byull Mosk Ovshch Isp Pri, Otdel Geol" Vol XXI, No 4
Attempts to use phytogeographical regions as indicators of the distribution of different rocks. Reports on studies carried out on mountains of the Chil-Ustun and Chil-Mayram ridges, western Tian-Shan, and the Kysyl-Kum desert. Claims to have established a positive correlation between type of rocks in a given terrain and type of plants found in the area, i.e., the existence of a geological adaptation of phytocoenoses.	45T19	Demonstrates that the glacial dislocations are related to tectonic structure, and quotes examples from the region of Kanev in the Ukraine, Mount Michina, etc. Also offers suggestions for solution of the difficulties proposed by I.V. Danilovskiy to explain the tectonic nature of the dislocations in the Paleozoic terrain in the IC 45T20
USSR/Geology (Contd)	Apr 1946	USSR/Geology Geological Prospecting Bauxite
Polistovo-Lovat region, concluding that researches of this type are of great importance in the discovery of oil deposits.		"Discoveries of Fauna and Flora in the Devonian Bauxites on the West Slope of the South Urals," V.S. Meleshchenko, 4 pp
IC	45T20	"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1
USSR/Geology (Contd)	Jan 1947	Bauxites found on the west slope of the South Urals discovered in 1935. Occur in the basin of the Ai River as well as west of the latter in the basins of the Katav, Yurezan, and Sim Rivers. Prospecting for bauxites near the village Novaya Pristan on the Ai River, author found in them IC 45T21
various relics of fauna and flora. Describes those found near this village, and in the largest of the South Urals bauxite deposits, "Mezhevoy Log," 2 km east of Novaya Pristan.		USSR/Geology Geological Prospecting Construction Industry
IC	45T21	"Unconformity and Breaks in the Rhiphaean Group in the Katav-Ivanovsk Region, South Urals," D.S. Sokolov, 8 pp
USSR/Geology (Contd)	Jan 1947	"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1
Yurezan and Zilmerdakh series of the Rhiphaean group (the complex of ancient sedimentary deposits). Break accompanied by an ancient cycle of weathering which took place in the Yurezan series. Surveys revealed the occurrence of porphvrite dikes, whose morphology varies according to the genesis of cleavage of inclosing rocks.		Data of detailed survey and prospecting work carried out on the area in the Yurezan River valley near the Zevialikha and Zmeyevaya Mountains (the Katav-Ivanovsk region) in connection with hydrotechnical construction, yield evidence of unconformity and breaks in the accumulation of sediment between the IC 45T22
IC	45T22	USSR/Geology Potamology Gold
USSR/Geology (Contd)	Jan 1947	"Relief and Geology of the Disintegrated Cover of the Yenissei Ridge between the Rivers Bolshoy Pit and Angara," S.G. Mirchink, 20 pp
		"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1
		The relief of the Yenissei Ridge beyond the Angara represents a much-levelled mountainous country with deeply cut contemporary river systems. Its north part is covered by bare hills, and bare surfaces on the watershed between the Angara and Bolshoy Pit. Its south part, adjacent to the Angara, represents relatively lowered country, characterized by the IC 45T23
IC	45T22	IC 45T23

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USSR/Geology	(Contd)	Jan 1947	USSR/Geology Soil Science
development of wide terraced surfaces. Six terraces are traced in the river valleys with elevations of 4, 6, 10 - 15, 25 - 30 and 40 meters. Author sees new possibilities in prospecting for gold placers in the South Yenisei region.			Mar 1946
"Cassel Earth Deposits in the USSR," L.M. Khandross, $\frac{1}{2}$ p			"Priroda" No 3
Generally describes appearance, characteristics and uses of Cassel earth, also known as Cologne earth, and Vandyke brown. Gives location of only one of these deposits, in Leningrad Oblast in the vicinity of Platkovo Station, Kozlovicheskii Village Soviet, Porkhovskiy region. Deposit was used by the Khudozhestvenny Paint Factory, 1938 - 1940.			45T24
IC	45T23		IC
USSR/Geology	Jan 1947	USSR/Geology Surveying, Aerial Maps	Jan 1947
"Variegated Series of the Greater Donets Basin," I. Yu. Lapkin, 11 pp			"Application of Aerial Survey to Geological Mapping of Ancient Series in Mountainous Bashkir," E.A. Fal'kova, 10 pp
"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1 Variegated series, occurring widely within the boundaries of this area, were repeatedly formed during Upper Paleozoic and Mesozoic eras. Series represent a fine indicator of physiographic conditions, and may supply considerable information on the paleontology of epochs during which they were formed. Comparative and complex study of variegated series, particularly with the purpose of obtaining their stratification, must be carried out by means of combined mineralogic, petrographic and paleontologic methods.			"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1
IC	45T25		IC
USSR/Geology	(Contd)	Jan 1947	USSR/Geology Marine Research
was an obsolete map prepared at the beginning of the last century. Area in question is composed of ancient Pre-Ordovician series, Ordovician, Gothlandian, Devonian and Carboniferous sedimentary series of sandstones, quartzites, quartzitic sandstones, conglomerates, silt stones, schists, limestones, and dolomites. These rocks bed in alternating layers, or bands.			"Sedimentary Geochemical Facies," G.I. Teodorovich, 22 pp
			"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1
Suggests revisions of L.V. Pastovalov's theories on types of marine geochemical facies, and considers the character of the following main types of sub-aqueous geochemical facies: a) deoxidizing, b) sideritic, c) lepto-chloritic, d) glauconitic, and e) oxidizing facies. Further describes 13 subdivisions of these types.			45T27
IC	45T26		IC
USSR/Geology Nickel Iron	Feb 1947	USSR/Geology	Feb 1947
"The Age of Ancient Weathering Crust in the South Urals," L. N. Formosova, 11 pp			"Brown Algae from the Lower Vissean Deposits of the Pechora Urals," M.A. Plotnikov, 4 pp
"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 2 Thick eluvial formations of ancient weathering crust occur on the surface of various Paleozoic and Pre-Cambrian rocks in the South Urals, as in many other regions in the Middle and North Urals. Contain nickel, iron, and many other valuable deposits. Author concludes that this thick weathering crust was completely formed before Upper Jurassic era, and that further continental epochs only resulted in mineralogical alterations of			"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 2
IC	45T29		IC
Describes algae found in the siderite concretions in the Lower Vissean deposits on the west slope of the Pechora Urals. Algae indicate the shallow water condition of the inclosing rock formation. Concretions on algae have a very characteristic appearance and are readily discernible in situ.			45T28

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USSR/Geology	(Contd)	Feb 1947	USSR/Geology
that complex of unstable colloidal argillaceous minerals, formed due to weathering previous to the Upper Jurassic era.			Lime
			"The Origin of Limestone Blocks (Cliffs) in the Lower Carboniferous Deposits in the East Part of the Alaysk Range," A.Ye. Mikhaylov, 5 pp
			"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 2
			Author established Namurian deposits containing relics of ammonoid fauna, characteristic of the lower parts of the Namurian stage, in the east of the Alaysk range. Namurian strata include large limestone blocks with relics of Visean fauna. Associates origin of these blocks with the undermining of the steep shores of the Namurian Sea, and
IC		45T29	IC
USSR/Geology	(Contd)	Feb 1947	USSR/Geology
with the falling of these limestone blocks into viscous coastal sediments, which buried them.			Erosion
			"Discussion of W. Penck's Concepts Outside the USSR," A.I. Spiridonov, 12 pp
			"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 2
			Summarizes literature published outside the Soviet Union discussing theories of the German geologist, W. Penck, on the subject of morphological analysis. Suggests adoption of several corrections advanced by W.M. Davis, chiefly in the parts of the Penck theory that deal with movements of the earth's crust, erosion cycles, and the development of the Piedmont benchlands. Complete bibliography
IC		45T30	IC
USSR/Geology		Feb 1947	USSR/Geology
"Tectonics and Principal Stages of Development of the Eastern Carpathians," M. V. Muratov, 47 pp			Ice
"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 2			Permafrost
Advances theory that the Eastern Carpathians, although their structure is asymmetrical, represent as a whole an anticlinal folded construction. Presents resume of literature on stratigraphy of the Eastern Carpathians, involving chiefly deposits younger than the Jurassic, and then attempts to trace history of this folded structure and the neighboring regions. Distinguishes three principal periods in the history of the Carpathians (1) Pre-Cambrian-Paleozoic (2) Upper Carboniferous-Jurassic (3) Post-Lower Cretaceous.			"Physical Properties of the Frozen Strata of Swamps," V.V. Romanov, O.D. Rozhanskaya, 1½ pp
IC		45T32	IC
USSR/Geology		Mar 1946	USSR/Geology
Arctic Studies Soundings			Ice
"Stratification of the Sediments at the Bottom of the Barents Sea," P.S. Vinogradova, 1½ pp			"Priroda" No 3
"Priroda" No 3			Briefly reports results of observations conducted by authors at the Vil'i Gory Marsh Station of UGMS. Station, in the Leningrad Military Okrug, is primarily a bog with many moss hillocks and wide expanses of moss and grass. Discuss physical properties of the frozen part of these bogs, e.g., weight of ice, mineral and chemical remains in ice, mechanical tenacity of frozen soil, thermal conductivity, etc.
Gives account of data collected from observations and surveys conducted during summer 1940 by expedition ship "Issledovatel" in the Barents Sea. Expedition sent out under authority of Polar Scientific Research Institute for Ocean Fisheries and Oceanography. Major object of expedition: thorough survey of central plain, 74 - 76° North and 30 - 34° East. Side expeditious made to area around Nadezhdy Island and one through			Apr 1947
IC		45T34	IC
			"Glacial Flora Relics in the Upper Lena District," N.V. Dylis, 5 pp
			"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 4
			Describes large area of land covered with rich alpine flora found near town of Kirensk in the upper part of the Lena River at an altitude of only 200 or 300 meters above sea level. Gives topographic and ecologic descriptions of the area, which seems to be an example of a well-formed phytocenosis perfectly preserved here since the glacial epoch.

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<p>USSR/Geology (Contd) Mar 1946</p> <p>central part of Novaya Zemlya to the ice edge. Studied water temperature, salinity, current, and sea bottom.</p> <p>LC 45T34</p>	<p>USSR/Medicine - Biology Medicine - Variation Nov/Dec 1947</p> <p>"Biochemical Variation," E. D. Manevich, Moscow, 20 pp</p> <p>"Uspekhi Sovremen Biol" Vol XXIV, No 3 (6)</p> <p>Generally discusses biochemical variation: biology of the genus Neurospora, survey methods, methods of determining growth, of obtaining biochemical mutants, biochemical mutants, synthesis of vitamins, and use of mutants in the capacity of test cultures. States that further work with biochemical mutants of Neurospora will do much toward solving some of the more complex problems facing present-day biologists.</p> <p>LC 45T36</p>	
<p>USSR/Medicine - Plants Medicine - Arctic Regions Jan 1946</p> <p>"Work on the Classification of Plant Growth in the Arctic," B.N. Gorodkov, Bot Inst imeni Academician V.L. Komarov, Acad Sci, USSR, 134 pp</p> <p>"Sovet Bot" Vol XIV, No 1</p> <p>Presents first part of a series of articles on work done on the classification of plant growth of the arctic regions. Part I is general historical account of the work done in this field since 1909. Briefly describes the various schools of thought, such as the "dynamic ecology school," that are concerned with the classification of arctic plant life.</p> <p>LC 45T37</p>	<p>USSR/Medicine - Spiders Medicine - Taxonomy Feb 1947</p> <p>"Spiders and Harvest Spiders from the Caves of the Black Sea Coast of the Caucasus," D. Ye. Kharitonov, 15 pp</p> <p>"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 2</p> <p>Studies collections of spiders and harvest spiders made by Ya. A. Birshteyn in 16 caves of the Black Sea Coast of Krasnodar and Abkhazia between 1937 and 1943. Five new species of spiders were discovered: Tegenaria pontica n. sp., Cybaeus caucasicus n. sp., Nesticus birsteini n. sp., Nesticus</p> <p>LC 45T38</p>	
<p>USSR/Medicine - Spiders (Contd) Feb 1947</p> <p>caucasicus n. sp., and Troglodyphantes birsteini n. sp., and all are completely described.</p> <p>LC 45T38</p>	<p>USSR/Medicine - Birds Medicine - Taxonomy Feb 1947</p> <p>"The Avifauna of the North East of Kamchatka," L.O. Belonol'skiy; Ye. N. Pogova, 12 pp</p> <p>"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 2</p> <p>Describes small collection of birds made between 1930 and 1931 in northeast Kamchatka, with biological observations on the specimens, particularly on migration dates, and nesting. A total of 66 species considered, among which author believes the Phalacrocorax urile, Thalassaetus pelagicus and Nyctea scandiaca most interesting.</p> <p>LC 45T39</p>	
<p>USSR/Medicine - Marine Organisms Medicine - Taxonomy Feb 1947</p> <p>"Some Materials on the Hydroids (Thecophora) from the Okhotsk Sea," V.F. Fenyuk, 8 pp</p> <p>"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 2</p> <p>Reviews species collected in northeast and northwest parts of the Okhotsk Sea. Following new species are described: Lafoeoa grandis Hincks subsp. ochotensis nov., Sertularia camschatica Vinogradov sp. nov., Thuiaria subtuja sp. nov., Thuiaria nivea sp. nov., Thuiaria excepticea sp. nov., Thuiaria zachsi sp. nov., and Diphasia spasski sp. nov. Gives complete descriptions, illustrations, and distributions.</p> <p>LC 45T40</p>	<p>LC 45T39</p>	

RESTRICTED	FDB Periodical Abstracts Scientific No 45	RESTRICTED	
USSR/Medicine - Bacteriology Medicine - Plant Diseases "A Survey of Geographical Distribution of Bacterial Plant Diseases in the USSR," M.V. Gorlenko, 8 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 2 Summarizes information on geographical distribution of these diseases in the USSR. Considers all plant diseases in which bacteria play a role. Bacterioses are divided into groups according to their frequency in the USSR, yielding the following groups: six polyphagous cosmopolite species, 11 monophagous cosmopolite species, those with limited area due either to unfavorable conditions or absence of hosts, those with broken area of spreading, and rare species. Six species are considered specific IC 45T41	Feb 1947	USSR/Medicine - Plants Medicine - Taxonomy "A New Species of the Genus Alyssum from the Betpak-dala Desert (Kazakhstan)," N.U. Rubtsov, 3 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 2 Describes, with drawing, a new annual species, <i>Alyssum betpakdalense</i> N. Rubtz., and surmises that a thorough investigation of the yet little investigated Betpak-dala desert will result in discovery of a number of new species of different families.	Feb 1947
USSR/Medicine - Bacteriology (Contd) IC 45T41 for the USSR (<i>B. viticola</i> , <i>B. nigrofaciens</i> , <i>B. armeniacum</i> , <i>B. necrosis</i> , <i>B. heteroecum</i> , and <i>B. erivanense</i>). Considers other species of foreign origin.	Feb 1947	USSR/Medicine - Plants Medicine - Taxonomy "Dentaria Tenuifolia Ledeb., a New Plant of the Moscow Flora," A.K. Skvortsov, 2 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 2 Describes new habitat of <i>Dentaria tenuifolia</i> Ledeb. near Oka River in Moscow Oblast. Habitat was visited several times during the growing period. Number of flowering plants is very small in comparison with those that do not flower. Latter are represented by rosette leaves only. Presence of <i>Dentaria tenuifolia</i> near Oka River is	Feb 1947
IC 45T41 USSR/Medicine - Plants (Contd) Feb 1947 a new confirmation of mountain origin of the Oka flora.	Feb 1947	IC 45T43 USSR/Medicine - Protozoa Medicine - Taxonomy "Taxonomic Position of the Microsporidian Organism Causing Pebrine in <i>Antheraea Pernyi</i> G.," Z.A. Filatova, 16 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 3 A biometrical investigation of spores of <i>Nosema</i> from <i>Antheraea pernyi</i> G. and <i>Bombyx mori</i> L. has shown a significant difference in size, the spores from <i>A. pernyi</i> being slightly larger. A reciprocal infection has shown that their biological action on the organisms of the two species of silkworms is not specific; the spores of <i>Nosema</i> from <i>A. pernyi</i> IC 45T44	Mar 1947
IC 45T43 USSR/Medicine - Protozoa (Contd) Mar 1947 cause the pebrine of <i>B. mori</i> and vice versa. Therefore author considers the spores as subspecies <i>antheraeae</i> of <i>N. bombycis</i> , in spite of the morphological differences of the spores from <i>A. pernyi</i> .	Mar 1947	USSR/Medicine - Fish Medicine - Taxonomy "The Loaches of Inland Waters of Turkmen SSR," G.V. Nikol'skiy, 6 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 3 Inland waters of Turkmen, SSR, known to contain four species of loaches: <i>Nemachilus malapterurus</i> , <i>Nemachilus cristatus</i> Berg, <i>Nemachilus sargadensis</i> turcomanicus Berg and <i>Nemachilus kessleri turcomanus</i> sub. sp. n. This last differs from the nominal race by greater depth of body, larger base of dorsal and anal fins, and longer pectoral and ventral fins. Its habitat is Kushk River near town of Kushk.	Mar 1947
IC 45T44	45T44	IC 45T45	45T45

RESTRICTED	FDB Periodical Abstracts Scientific No 45	RESTRICTED
USSR/Medicine - Microorganisms Medicine - Microbiology	Mar 1947	USSR/Medicine - Botany Medicine - Taxonomy
"A New Method of Studying Microcoenoses," K.A. Voskresenskiy, 8 pp		"Materials on the Flora of the Voronezh Province," V.N. Voroshilov, 8 pp
"Byull Mosk Obschh Isp Pri, Otdel Biol" Vol LII, No 3		"Byull Mosk Obschh Isp Pri, Otdel Biol" Vol LII, No 3
Describes new methods of investigating the association of microscopic organisms in submerged media. Gives a method of growing periphyton and observations on its development. Demonstrates possibility of applying usual methods of phytogeography in studying microscopic periphyton. High growth rate of microscopic associations of many species and their applicability for experimental analysis make periphyton good subject for investigations in field of theoretical biocoenology. LC	45T46	Investigated in the summer of 1945 in the Novouman-skiy region and in adjacent parts of the Kashira and the Rozhdestvensko-Khavskiy districts of the Voronezh Province. Collected total of 636 species and forms. Describes two new species (<i>Raphanus candidus</i> and <i>Viola pseudostagnina</i>), two new varieties (<i>Agropyrum repens</i> var. <i>convolutum</i> and <i>Aster tripolium</i>)
USSR/Medicine - Botany (Contd)	Mar 1947	LC
var. <i>albosetus</i>) and three new forms (<i>Veronica verna</i> f. <i>rosea</i> , <i>Orobanche cumana</i> f. <i>albida</i> , <i>Jurinea dubia</i> f. <i>integrifolia</i>). In addition, obtained new data on a number of dubious species.		45T47
LC	45T47	USSR/Medicine - Plants Medicine - Geography
		Mar 1947
		"Campanula Steveni of the Middle-Russian Flora," P.A. Smirnov, 8 pp
		"Byull Mosk Obschh Isp Pri, Otdel Biol" Vol LII, No 3
		On the basis of his observations in Armenia and in the Altai, author comes to conclusion that <i>Campanula steveni</i> is a pure Caucasian species, occurring neither in Middle Russia nor in Siberia. Distinguishes two phytogeographic provinces in Southern Middle Russia: the western or Middle Russian, and the eastern or Volga. The border line between
		LC
		45T48
USSR/Medicine - Plants (Contd)	Mar 1947	USSR/Medicine - Plants Medicine - Evolution
these lies along the Tsna and Savala Rivers and the lower part of the Khoper River.		Mar 1947
		"A New Way of Approaching the Question of the Evolution of Species," I.N. Sveshnikova, 6 pp
		"Byull Mosk Obschh Isp Pri, Otdel Biol" Vol LII, No 3
		Used the genus <i>Vicia</i> in the study of the process of phylogenesis of forms in connection with a recently investigated factor, the chromomere count. Chromomeres can be thoroughly examined, and since the count remains constant in each chromosome it is a most subtle morphological factor and can be used in the study of comparative plant karyokinesis. States
		LC
		45T49
USSR/Medicine - Plants (Contd)	Mar 1947	USSR/Medicine - Marine Organisms Medicine - Taxonomy
that a comparative analysis of <i>Vicia sativa</i> and related wild species shows a regular increase in the chromomere count and in certain quantitative characters. This genus exemplified the process of duplication of chromomeres in plants, and thus polychromomere-like polyploid is one of the factors of plant evolution.		Apr 1947
		"Deryuginia, a New Genus of Copepoda of the Polar Basin," V.A. Yashnov, 6 pp
		"Byull Mosk Obschh Isp Pri, Otdel Biol" Vol LII, No 4
		Work published by A. Linko in 1913 gave information on the male of a new species discovered in plankton catches of the 1900 - 1903 Russian Polar Expedition near the New Siberian Islands. Article gives results of study on mature specimens of this species. New genus, named in honor of the eminent Russian hydrobiologist, K.M. Deryugin, belongs to the family Astideidae and consists of a single
		LC
		45T50

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USSR/Medicine - Marine Organisms (Contd)	Apr 1947	USSR/Medicine - Biology Medicine - Worms
species, <i>Deryuginia tolli</i> (Linko). Complete description and drawings.		"Oligochaeta Native to Caves of the Caucasus," I.I. Malevich, 12 pp
		"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 4
		Studies collection of Oligochaeta made in twelve grottoes and caves of the Caucasus. Usually found far from the entrance in sections of complete darkness. Describes in detail the new species and forms, including <i>Eisenia veneta</i> Rosa, var. <i>crassa</i> , var. <i>nova</i> ; <i>Eisenia veneta</i> Rosa, var. <i>minute</i> , var. <i>nova</i> ; <i>Eisenia birsteini</i> sp. n.; <i>Eophila hypogea</i> sp. n.
IC	45T50	IC
USSR/Medicine - Regeneration Medicine - Histology	Nov/Dec 1947	USSR/Medicine - Biology Medicine - Growth, Experimental Studies
"Studies in the USSR on Mechanisms of the Process of Regeneration," L.V. Polezhayev, Moscow, 28 pp		"Results of Thirty Years of Studies in the USSR on the Regularity of Growth of Organisms," P.B. Gofman-Kadoshnikov, Moscow, 29½ pp
"Uspekh Sovremen Biol" Vol XXIV, No 3 (6)		"Uspekh Sovremen Biol" Vol XXIV, No 3 (6)
Discusses stimulating and inhibiting regenerative factors; physical, chemical, and biological research in the field of regeneration; research on histogenesis in regeneration, covering histogenesis in regeneration of organs, and in regeneration of cells; regeneration and ontogenesis; problems of loss and recovery of regenerative capabilities of organs, and general conclusions. Includes 5-page bibliography.		Discusses developments in biology in two main categories: 1) work to explain growth in various subjects, and 2) work to determine those general regularities basic to growth of organisms. Under the first category, discusses the growth of human organs, mammals, birds, reptiles and amphibians, fishes, and invertebrates and microorganisms; and briefly describes work done under the second
IC	45T52	IC
USSR/Medicine - Biology (Contd)	Nov/Dec 1947	USSR/Medicine - Research Medicine - Endocrine Glands
category. Contains a good bibliography.		"Scientific Session of the All-Union Institute of Experimental Endocrinology," I.A. Eskin, 3 pp
		"Uspekh Sovremen Biol" Vol XXIV, No 3 (6)
		From 24 to 28 Mar 1947, a scientific session of the All-Union Institute of Experimental Endocrinology was held in Moscow. At this meeting were presented accounts of work done on experimental endocrinology in Leningrad, Khar'kov, Kiev, Kishineva, Alma-Ata, and several other cities. In the four-day period judgment was passed on some 30 reports handed in by various scientists.
IC	45T53	IC
USSR/Medicine - Biology Medicine - Cells	Nov/Dec 1947	USSR/Medicine - Botany Medicine - Plants
"Mechanisms for the Formation of Cell Types," G.V. Lopashov, Moscow, 24 pp		"Forms and Development of Plants," V.V. Skripchinskiy, Stavropol'-Kavkazskiy, 14 pp
"Uspekh Sovremen Biol" Vol XXIV, No 3 (6)		"Uspekh Sovremen Biol" Vol XXIV, No 3 (6)
Gives general explanation of cell types, and names of scientists interested in their study. Discusses the stability of cell types and their bases, methods for determination of their development, genetic fundamentals for determination of cell types, and some considerations in regard to their evolution. Contains a 2-page bibliography.		Discusses ideas of several natural scientists and biologists on the role of forms and processes in plant life and a summary of facts indicating the interdependence between the form and development of plants. Then discusses facts on the dependence of shape-formation to the process of development, facts showing parallelism between growth and shape-forming processes and the process of development,
IC	45T55	IC

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<p>USSR/Medicine - Botany (Contd) Nov/Dec 1947</p> <p>and facts attesting the dependence of the phenomena of development to shape-forming and growing processes. Contains a 2$\frac{1}{2}$-page bibliography.</p>	<p>USSR/Medicine - Materia Medica Mar 1946 Medicine - Botany</p> <p>"Medical Treasures of Our Country," D.M. Rossiyskiy, Active Promoter Sci, 5 pp</p> <p>"Priroda" No 3</p> <p>For untold centuries many plants have been used for their medicinal properties. Briefs some of the studies and experiments conducted over the years to definitely establish the medicinal value of certain plants. Discusses briefly the habitat of some of the more important herbs, and their uses.</p>	<p>IC 45T56</p>
<p>USSR/Medicine - Chemotherapy Mar 1946 Medicine - Plague</p> <p>"Chemotherapy of Leprosy, Typhus, and Plague," Dr I. F. Leyont'yev, 1 p</p> <p>"Priroda" No 3</p> <p>Briefly discusses some of the new techniques introduced in the chemotherapy of leprosy, plague and typhus. However, all material appears to have been taken from English language publications, by authors such as Scott, Megaw, and Harvey.</p>	<p>USSR/Medicine - Plague Mar 1946 Medicine - Fleas</p> <p>"Echidnophaga Gallinacea as a Plague Germ Vector," Dr I.F. Ioffe, $\frac{1}{2}$ p</p> <p>"Priroda" No 3</p> <p>Briefly reports work accomplished by Rucker, Jellison, and Wheller in this field. Studies by these three scientists conducted individually over a period of 35 years.</p>	<p>IC 45T57</p>
<p>USSR/Medicine - Botany Jan 1946 Medicine - Plants</p> <p>"A.G. Dolukhanov, M.F. Sakhokia and A.L. Kharadze's Article, 'Some Aspects of Plant Growth of the High Mountainous Regions of Caucasia'," A.A. Grossgey, $\frac{1}{2}$ p</p> <p>"Sovet Bot" Vol XIV, No 1</p> <p>Reviews article published in "Works of the Tiflis Botanical Institute" Vol VIII, 1942. Article was written on the basis of data gathered over a good number of years. Reviewer states, however, that despite the fact that authors attempt to divide the mountainous regions of Caucasia into vegetative belts,</p>	<p>USSR/Medicine - Zoology Apr 1947 Medicine - Climate</p> <p>"A.P. Bogdanov and Acclimatization of Animals-- Material on History of Acclimatization of Animals in Russia," L.V. Shaposhnikov, 8 pp</p> <p>"Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LIII, No 4</p> <p>Gives history of the work of A.P. Bogdanov, eminent Russian biologist and teacher. Completely summarizes his major contributions to the study of animal acclimatization in Russia, and lists organizations and studies initiated as a result of his work. Blames practical failure of Bogdanov in his own day to inertia, backwardness and</p>	<p>IC 45T58</p>
<p>USSR/Medicine - Botany (Contd) Jan 1946</p> <p>they failed in their objective, and as a result, it is impossible to class what authors term "vegetative belt" with the generally accepted interpretation.</p>	<p>USSR/Medicine - Mollusks Jan 1947 Medicine - Taxonomy</p> <p>"A Table for the Determination of the Caspian Gastropods," V.P. Kolesnikov, 3 pp</p> <p>"Byull Mosk Obshch Isp Pri, Otdel Geol" Vol XXII, No 1</p> <p>Gives taxonomical table to assist in classifying species and varieties of the Caspian mollusks. Indicates occurrence in the Caspian sea. Refers to further work on subject in the monograph "The Caspian Gastropods," of the series "Paleontology of the USSR."</p>	<p>IC 45T59</p>
<p>IC 45T60</p>	<p>IC 45T61</p>	<p>IC 45T60</p>

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USSR/Medicine - Zoology (Contd)	Apr 1947	USSR/Medicine - Zoology Medicine - Taxonomy Apr 1947
lack of economic initiative in the Tsarist Government.		"Material for the Study of Mammals in Mongolia: Part I, Jerboa," A.G. Bannikov, 18 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 4 Result of study of materials collected between 1942 - 1945 in Mongolia. Sixty specimens belonging to five species (seven forms) collected, and studied at Zoological Museum of Moscow State University. Gives details on Allactaga bullata G. Allen; Allactaga sibirica semideserta subsp. nova; Alactagulus acontion, subsp. ?; Dipus sagitta ubsanensis subsp. nova; and Scirtopoda andrewsi IC 45T62
IC 45T62		IC 45T63
USSR/Medicine - Zoology (Contd)	Apr 1947	USSR/Medicine - Botany Medicine - Taxonomy Jan 1946
G. Allen, with maps showing distribution, and tables of occurrence.		"Some Asiatic Species of the Nitraria L. Order," Ye. G. Bobrov, Bot Inst imeni Academician V.L. Komarov, Acad Sci, USSR, 12 pp "Sovet Bot" Vol XIV, No 1 Gives general account of work done by various scientists toward classifying various types of Nitraria L. found in Asia. Lists various types of this plant which have been found in Asia, but states that little is known regarding species in Siberia and the Caspian region.
IC 45T63		IC 45T64
USSR/Medicine - Biology Medicine - Growth	Nov/Dec 1947	USSR/Medicine - Species Medicine - Ecology Apr 1947
"Thirty Years of Soviet Mechanics of Development," N.I. Lazarev, Moscow, 20 pp "Uspekh Sovremen Biol" Vol XXIV, No 3 (6) Contains a 5-page list of works on the study of the mechanics of physiological development. Attempts to show the directions in which study has been carried out under the Soviet regime.		"Differentiating Action of a Phytocoenotic Medium," A.A. Shakhov, 10 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 4 Ecologic discussion of the factors producing classes among specimens in a given species and coenosis attempts to clarify the exact nature of species, and shed new light on the exact role of a given phytocoenosis in its struggle for existence. Conclusions drawn on the relation between the edaphotope and biotope, climatotope and biotope, and upon the general biogeocoenotic picture. IC 45T66
IC 45T65		IC 45T67
USSR/Medicine - Plankton Medicine - Marine Organisms	Feb 1947	USSR/Meteorological Research Weather Reconnaissance Snow Mar 1946
"Phytoplankton of the Ucha Water Reservoir," K.A. Guseva, 14 pp "Byull Mosk Obshch Isp Pri, Otdel Biol" Vol LII, No 2 Made observations on the plankton of the Ucha reservoir between 1936 - 1946. Reservoir is in the system of the Moscow-Volga canal. During this period the water went through three stages: filling, establishment at designed level, and lowering of level due to the war (1941 - 1945). Total of 290 species found, for the most part present each year and changing only quantitatively. About half of all species forming the principal background of the phytoplankton in question IC 45T67		"Giant Snow Flakes," A.D. Zamorskiy, 1 p "Priroda" No 3 During the evening of 30 Apr 1944 Moscow experienced a remarkable snowfall, where the snowflakes attained a diameter of 8 centimeters and limited visibility to 500 meters. States that only once had this phenomenon been observed previously. Describes general meteorological and weather conditions preceding the snowfall and weather conditions existing after the snowfall. IC 45T68

RESTRICTED	FDB Periodical Abstracts Scientific No 45	RESTRICTED
USSR/Medicine - Plankton (Contd) are common with those of the Ivanovsk reservoir and with the Volga River itself.	Feb 1947	USSR/Nuclear Physics - Isotopes Nuclear Physics - Spectra - Analysis "Concerning the Formula for Isotopic Shift," I. Smorodinskiy, Acad Sci, USSR, 3 pp "Jour Phys, USSR" Vol X, No 5 Gives derivation of a formula for the isotopic shift in the spectra of heavy nuclei based on the method of perturbation of boundary conditions. Result differs from that of the well-known formula of Racah, and Rosenthal and Breit. Prof Landau assisted in research.
IC USSR/Nuclear Physics - Neutrons - Scattering Nuclear Physics - Meson	45T67 Mar 1946	FDB USSR/Physics Collision Processes Electron Theory "The Probabilities of the Collisions of the First and Second Order between Atoms of Mercury and Free Electrons," B. Yavorskiy, All-Union Electrotech Inst and Energetics Inst imeni Molotov, 5 pp "Jour Phys, USSR" Vol X, No 5 Effective cross section for the excitation of a mercury atom from the 6^3P_1 to the 6^3P_2 state computed. Effective cross section for collisions of the second order of mercury atoms in the 6^3P_2 state with electrons obtained with the aid of the
"Scattering of Neutrons by Means of Protons and the Mesotron Theory of Nuclear Forces," V.B. Berestetskiy, 2 pp "Priroda" No 3 Gives short summary of information appearing in German and English language publications during 1940 - 1945. Briefly discusses the theory of effective forces in scattering but states that it was an extremely difficult task to arrive at a conclusion. Briefs the mesotron theory which was first put forth by Yukav in 1935.		45T69 May 1946
IC USSR/Physics (Contd)	45T70 May 1946	FDB USSR/Physics Systems, Electric Electronic Equipment "Self-excitation of Electric Systems with Distributed Parameters," S. Gvozdover, Moscow State U, 8 pp "Jour Phys, USSR" Vol X, No 5 Offers solution in general form of the problem relating to the excitation of an arbitrarily loaded electric system with distributed parameters by means of some electronic device, connected to one of the system terminals. Problem is first examined for a chain of n recurrent similar circuits, and then transferred to a distributed system by proceeding to the limit by $n \rightarrow \infty$. Formulas are derived for
Klein-Rosseland relation. Transitions to the normal state 6^1S_0 and to the emitting level 6^1P_1 studied. Shows that the probability of stepwise mode of destruction of metastable atoms exceeds probability of transition of excited atoms directly to the normal state as a result of collisions of the second order with electrons.		45T71 FDB
FDB USSR/Physics (Contd)	45T71 May 1946	FDB USSR/Physics Wave Guides Oscillations - Transmission "Acoustic and Electromagnetic Wave Guides of Complicated Shape," P. Kraenoooshkin, Moscow State U, 13 pp "Jour Phys, USSR" Vol X, No 5 Describes the waves in hollow pipes of rectangular section and complicated shape. Establishes equivalence between the pipe of complicated shape and the straight cylindrical pipe filled with nonuniform medium. Uses ideas of normal wave and modulated normal wave similar to those of normal oscillations. Investigates by means of normal waves the pipes of
determining the conditions for self-excitation and calculating the amplitude and frequency of steady-state oscillations as functions of the characteristics of the distributed electric system and of the properties and performance of the electronic device.		45T72 FDB
FDB USSR/Physics (Contd)	45T72 May 1946	FDB USSR/Physics Wave Guides Oscillations - Transmission "Acoustic and Electromagnetic Wave Guides of Complicated Shape," P. Kraenoooshkin, Moscow State U, 13 pp "Jour Phys, USSR" Vol X, No 5 Describes the waves in hollow pipes of rectangular section and complicated shape. Establishes equivalence between the pipe of complicated shape and the straight cylindrical pipe filled with nonuniform medium. Uses ideas of normal wave and modulated normal wave similar to those of normal oscillations. Investigates by means of normal waves the pipes of
		45T73 FDB

RESTRICTED	FDB Periodical Abstracts Scientific No 45	RESTRICTED
<p>USSR/Physics (Contd) May 1946</p> <p>parabolic, elliptic and toroidal forms. Pays special attention to tunnel effect, band-pass effect, and clinging phenomenon.</p>	<p>USSR/Physics Ferromagnetism Electron Theory</p> <p>"Exchange Interaction of the Valence and Inner Electrons in Ferromagnetic (Transition) Metals," S. Vonsovskiy, Sverdlovsk State U, 8 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Presents an approximate theory of the subject exchange interaction. The spin of valence electrons shown to be acted upon by a powerful magnetic field (of the order of Weiss' field) exerted by the internal (ferromagnetic) electrons. Magnitude of this field depends upon the magnetization of the ferro-</p>	<p>May 1946</p>
<p>FDB 45T73</p> <p>USSR/Physics (Contd) May 1946</p> <p>magnetic electrons and on the state (the quasi-momentum) of the valence electron. Near the Curie point, where the magnetization changes strongly, the effective mass and the quasi-momentum distribution of the valence electrons must, therefore, change substantially. This effect gives rise to anomalies in the temperature variation of the electrical conductivity of ferromagnetic. Offers a natural explanation of the nonintegral values of their atomic magnetic momenta and of the difference in the values of the latter in ferromagnetic and paramagnetic regions.</p>	<p>USSR/Physics Electron Motion Crystals</p> <p>"Method of Effective Mass for Electron Motion in Crystals," S. Pekar, Phys Inst, Acad Sci, Ukrainian SSR, Kiev State U, 3 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Motion of an electron investigated on the basis of quantum mechanics in the field with a potential composed of two parts: 1) periodic potential (of the type of that in a crystal), and 2) smoothly varying potential, whose variation over the period of the first one is very small. The foundation and the</p>	<p>45T74</p> <p>May 1946</p>
<p>FDB 45T74</p> <p>USSR/Physics (Contd) May 1946</p> <p>validity limits of the method are given, enabling author to neglect the periodic part of the potential by introducing the concept of an effective mass of the electron.</p>	<p>USSR/Physics Sound - Speed Helium</p> <p>"Determination of the Velocity of Propagation of the Second Sound in Helium II," V. Peshkov, Inst Phys Problems, Acad Sci, USSR, 10 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Describes in detail experiments on observation of the second sound (whose velocity is of the order of 240 m/sec) in helium II. Velocity of this second sound was measured with an accuracy up to 0.3% in the temperature range 1.36 - 2.19° K, and used for calculation of the ratio of the superfluid and normal 'parts' of the liquid according to Landau's theory. FDB</p>	<p>45T75</p> <p>May 1946</p>
<p>FDB 45T75</p> <p>USSR/Physics May 1946</p> <p>Electric Conductivity Wave Propagation - Magnetic Fields</p> <p>"The Field of a Plane Wave Near the Surface of a Conducting Body," V. Fok, Acad Sci, USSR, 11 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Derives approximate formulas for the field induced by an incident plane wave on and near the surface of a convex body of finite conductivity. Since these formulas also give the current distribution in the skin-layer on the surface, they may be used for the calculation (by means of definite integrals) of the field at arbitrary distances from the body, yielding</p>	<p>USSR/Physics Magnetic Fields, Solar Solar Phenomena</p> <p>"Magnetic Field of Sunspots, II," L. Gurevich, A. Lebedinskiy, Leningrad State U, 6 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Carries out further research on the mechanism of self-excitation of the magnetic field of a sunspot taking into account the Hall currents, i.e., with a current supposed to be given by</p> $i = \sigma E + \sigma' E \times H,$ <p>where σ is the coefficient of electric conductivity and σ' Hall's coefficient. Shows that this</p>	<p>45T76</p> <p>May 1946</p>
<p>FDB 45T77</p>	<p>FDB 45T78</p>	<p>45T77</p> <p>45T78</p>

RESTRICTED	FDB Periodical Abstracts Scientific No 45	RESTRICTED
USSR/Physics (Contd)	May 1946	USSR/Physics (Contd) May 1946
thus an approximate solution of the general diffraction problem. Presented to the Session of the Council for Radio Physics and Radio Engineering, 12 Dec 1945, in Moscow.		effect is important for the outer parts of a sunspot.
FDB	45T77	FDB
USSR/Radio, Frequency Modulation Vacuum Tubes, Transmitting	May/June 1946	USSR/Radio Oscillators, Stabilized Vacuum Tubes
"Frequency Modulated Master Oscillator of an Ultra Short Wave Transmitter for High-Fidelity Broadcasting," M.G. Margolin, Candidate Mech Sci, 15 pp		"An Oscillator with External Limitation of Amplitude," N.F. Vollerner, Candidate Mech Sci, 8 pp
"Radiotekh" Vol II, No 5		"Radiotekh" Vol II, No 5
Describes oscillator for high-fidelity broadcasting in Moscow. Uses zero beat discriminator circuit to stabilize the mean frequency. Gives calculation of modulator and discriminator.		Discusses operation of subject oscillator by a cutoff method. Shows method of plotting the curve shape of the circuit voltage for sustained oscillations operating on the linear section of the vacuum-tube characteristic curve with linear limiter. Gives some uses for this type of oscillator.
AMC	45T79	AMC
USSR/Radio, Frequency Modulation Vacuum Tubes, Reactance	May/June 1947	USSR/Radio Wave Guides - Windows
"Frequency Modulators with Reactance Tubes," Prof I.S. Gonorovskiy, Dr Mech Sci, 15 pp		"Radiating Slits in Circular Wave Guides," Ya. I. Fel'd, Candidate Mech Sci, 13 pp
"Radiotekh" Vol II, No 5		"Radiotekh" Vol II, No 5
Gives theory and calculation of frequency modulator based on application of reactance tubes for frequency control of the oscillator. Presents considerations on the computation of frequency modulation transmitter circuit, plotting of modulation characteristics, operating conditions of reactance tubes, etc. Deals with problem of parasitic amplitude modulation, from which standpoint investigates various methods of coupling the reactance tube to the oscillator circuit.		Discusses wave guides with longitudinal radiating slits. Deduces equations for the field within a wave guide disturbed by a slit. Gives formulas for the voltage across the slit and for reflection coefficient in wave guide due to slit, etc. Shows that if a metallic partition is installed beyond the slit, it is possible by altering the distance from the slit, to achieve completely traveling waves in the wave guide.
AMC	45T81	AMC
USSR/Radio, Frequency Modulation (Contd)	May/June 1947	USSR/Radio Television Apparatus Radio Equipment
Gives results of testing the Moscow 1 kilowatt experimental FM broadcast transmitter on ultra short waves.		"The All-Union Scientific-Engineering Council of Radio Engineering and Electric Communications imeni A.S. Popov" 8 1/4 pp
		"Radiotekh" Vol II, No 5
		Briefly describes several meetings held in Moscow, 17 - 20 Feb 1947, by the Scientific-Engineering Council on questions regarding television. A.I. Berg played a leading role in the discussions. At same time another conference was held on the subject of microphones and loudspeakers. Both conferences began work on the morning of 18 Feb. Briefs
AMC	45T81	AMC
		45T83

RESTRICTED USSR/Radio	(Contd)	FDB Periodical Abstracts Scientific No 45 May/June 1947	RESTRICTED USSR/Radio	Jul/Aug 1947
		proceedings of section on television centers; on television transmitters and antennae; and on television receivers. Final session held 20 Feb, when P.V. Shmakov presented a paper on the possibility of color television.	Vacuum Tubes Amplifiers, Ultra High Frequency	
AMC		45T83	"Theory of Ultra High Frequency Amplifiers," Prof V.I. Siforov, Dr Tech Sci, 18½ pp	
USSR/Radio	(Contd)	Jul/Aug 1947	"Radiotekh" Vol II, No 6	
		maximum possible amplification for pentodes, grounded grid triodes, and other tubes. Describes conditions that will do away with parasitic oscillation in multistage systems.	Discusses theory of single-stage and multistage ultra high frequency amplifiers. Describes conditions for optimum operation of tubes in cascade systems. Explains methods for obtaining characteristics of tubes, thus permitting a determination of the maximum amplification. Investigates relation between the various characteristics of tubes. Discusses formulas for calculating the	45T84
AMC		45T84	USSR/Radio Towers	Jul/Aug 1947
USSR/Radio Towers	(Contd)	Jul/Aug 1947	Antennas - Constants	
		of the antenna system. All measurements were made on two wave bands.	"Investigating Complex Broadcast Systems with Tower Antennas," B.V. Braude, Candidate Tech Sci; I.M. Rushchuk, M.M. Pruzhanskiy, Engineers, 12 pp	
AMC		45T85	"Radiotekh" Vol II, No 6	
USSR/Radio Towers	(Contd)	Jul/Aug 1947	Gives experiments conducted on models of radio broadcasting antennas, consisting of four separate tower antennas. Discusses results of the measurement of the radiation resistance, the phase and speed of the propagation of electromagnetic waves along the tower antennae, and the construction of dummy antennae for use during directional operation	
AMC		45T85	AMC	45T85
USSR/Radio		Jul/Aug 1947	Generators - Vacuum Tube Oscillators, High Frequency	
		of the antenna system. All measurements were made on two wave bands.	"Use of High Power Radio Tubes as Generators of Ultra Short Waves," A.M. Kugushev, Candidate Tech Sci; D.I. Karpovskiy, Engr, 6½ pp	
AMC		45T86	"Radiotekh" Vol II, No 6	
USSR/Radio		Jul/Aug 1947	Discusses the expediency of using oscillating systems in the form of transmission lines for high power radio tube generators of ultra short waves which can be dismantled. Discusses results of tests conducted on such generators using waves in the 2- to 3.5-meter range and with an oscillator output of 8 to 60 kw.	
Filters, High Frequency Wave Guides - Filters		45T87	AMC	45T86
"Lattice Filters for Short Decimeter Waves," V.F. Semenov, Candidate Phys Math Sci, 3½ pp		Jul/Aug 1947	USSR/Radio	Jul/Aug 1947
"Radiotekh" Vol II, No 6			Generators - Vacuum Tube	
Presents several aspects of experiments conducted with lattice filters for H ₁ type waves, and a cylindrical wave guide of circular cross section. Discusses possibility of using filters in the construction of wave guides with open ends.			"Ultra Short Wave Oscillator," Ye. P. Korzhagina, Candidate Tech Sci, 8½ pp	
AMC		45T87	"Radiotekh" Vol II, No 6	
AMC		45T88	Explains the effect of the interelectrode capacity and the inductance of the tube inputs on the performance and the frequency of an oscillator. Discusses data necessary for proper selection of the oscillator circuit and gives the technical method of calculating its parameters.	
AMC		45T88	AMC	45T88

FDB Periodical Abstracts Scientific No 45	
<p>USSR/Radio USSR/Radio, Frequency Modulation Radio Measurements</p> <p>"Measuring the Coefficient of Frequency Modulation," G.V. Dlugach, Candidate Tech Sci; I.M. Sorokin, Engr, 16 pp</p> <p>"Radiotekh" Vol II, No 7</p> <p>Presents summary of methods for measuring frequency modulation. Studies errors and gives formulas for calculating these errors. Discusses some instruments which have been developed.</p> <p>AMC 45T89</p>	<p>USSR/Radio USSR/Radio Transmission Lines Mathematics, Applied</p> <p>Sep/Oct 1947</p> <p>"Drawing up of Circuit Diagrams and Their Use for Solving Some Problems in Regard to Transmission Lines," I.T. Sokolov, Candidate Tech Sci, 12 pp</p> <p>"Radiotekh" Vol II, No 7</p> <p>Discusses some theoretical conclusions based on circuit diagrams drawn for calculations and observations of some basic factors in the field of the theory of transmission lines. Describes method of drawing up circuit diagrams and shows methods whereby they can be used for solution of some actual problems.</p> <p>AMC 45T90</p>
<p>USSR/Radio Antennas, Turnstile Television - Apparatus</p> <p>Sep/Oct 1947</p> <p>"A New Wide Band, Ultra Short Wave Antenna for Television," B. V. Braude, Candidate Tech Sci, 13½ pp</p> <p>"Radiotekh" Vol II, No 7</p> <p>Describes results of experimental research on new wide band flat plane radiator, in the form of two flat metal plates or lattices, set in the same plane, and fastened at the ends with the feeder lines running between the two fastened ends. Describes results of studies conducted on a model turnstile antenna, constructed with the above-described radiator.</p> <p>AMC 45T91</p>	<p>USSR/Radio - Signals Radio Receivers - Selectivity</p> <p>Sep/Oct 1947</p> <p>"Questions on Amplitude Selectivity," Ya. I. Efrussi, Candidate Tech Sci, 16 pp</p> <p>"Radiotekh" Vol II, No 7</p> <p>Describes calculations and operations of nonlinear systems contributing to the selection of a good signal on a strong noise background, independent of the frequency of these signals. Calculations are based on two signals, weak and strong appearing as one, and regulated simultaneously for amplitude and phase. Demonstrates possibility of isolating the weak signal from a strong background, thus determining the degree of selectivity of the</p> <p>AMC 45T92</p>
<p>USSR/Radio - Signals (Contd)</p> <p>Sep/Oct 1947</p> <p>amplitude filter, and setting up the factors limiting the amplitude selectivity and the characteristics at full performance.</p> <p>AMC 45T92</p>	<p>USSR/Radio Antennas, Slot</p> <p>Nov/Dec 1947</p> <p>"Contemporary Nature of the Theory of Slit Antennae," A.A. Postol'kors, Corr Mem, Acad Sci, USSR, 4 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>A slit antenna is composed of either one slit or a series of slits in a closed surface affording excellent conductance to radio waves. Length of each slit is half of the wave length in free air while the distance between the slits is half the wave length of the wave in the guide. Briefly describes some of the more noteworthy developments in this field of radio technology.</p> <p>AMC 45T93</p>
<p>USSR/Radio Television - Development Television - Receiver</p> <p>Nov/Dec 1947</p> <p>"History of the Development and Achievements of Soviet Television," Prof I.S. Dzhit, 4½ pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Work in Soviet television began about 1925. Briefly presents some of more important aspects of development of Soviet television technology. At present four types of television receivers manufactured.</p> <p>AMC 45T94</p>	<p>USSR/Radio Electroacoustics</p> <p>Nov/Dec 1947</p> <p>"Developments in the Field of Electroacoustics in the Soviet Union," Prof S.N. Rzhavkin, Dr, Phys Math Sci; V.V. Furduev, Dr Tech Sci, 6½ pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Field is one which made its appearance just recently. Briefly presents some of the more important developments in this field of technology for the past twenty years. Mentions names of specialists dealing with electroacoustics and several of the institutions where work on electroacoustics was conducted.</p> <p>AMC 45T95</p>

<p>RESTRICTED FDB Periodical Abstracts Scientific No 45 RESTRICTED USSR/Radio Waves - Propagation Nov/Dec 1947</p> <p>"Work of Soviet Scientists on the Propagation of Ultra Short Waves," Academician B.A. Vvedenskiy; M.I. Ponomarev, Candidate Tech Sci, 3 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Briefly discusses various achievements of Soviet scientists in the field of propagation of ultra short waves. Briefly mentions some of the work accomplished by Shchukin, Arenberg, Drabkin, etc.</p> <p>AMC 45T96</p>	<p>USSR/Radio Nov/Dec 1947</p> <p>Antennas - Design Antennas - Development</p> <p>"Development of the Technology of Short Wave Antennas in the USSR," Prof G.Z. Ayzenberg, Dr Tech Sci, 4 1/2 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>First directional half-wave vibrator-type [dipole] short wave antenna was developed by V.V. Tatarin at Nizhnegorod in 1926. Type of antenna was first used on Moscow to Tashkent radio channel. Briefly presents some other important developments in the field of short wave radio antennas.</p> <p>AMC 45T97</p>
<p>USSR/Radio Nov/Dec 1947</p> <p>Antennas - Development</p> <p>"The Beginning of the Soviet Theory of the Antenna," Prof I.G. Klyatskin, Dr Tech Sci, 3 1/2 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Gives brief history of various theories submitted on antenna by Soviet radio specialists. Klyatskin, in 1924, submitted a theory for distribution of current and for operation of a radio on any wave length.</p> <p>AMC 45T98</p>	<p>USSR/Radio Receiver - Development Nov/Dec 1947</p> <p>"Thirty Years of Soviet Development of Network and Local Broadcast Radio Receivers," P.N. Kuksenko, Dr Tech Sci, 4 1/2 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Gives short history of development of some of the more important achievements in the line of radio receivers for local radio broadcasts and network broadcasts (Magistral). Lists various types of radio sets (receiver sets) being manufactured for sale at present time.</p> <p>AMC 45T99</p>
<p>USSR/Radio Reception - Development Nov/Dec 1947</p> <p>"Works of Soviet Scientists on the Theory of Radio Reception," Prof V.I. Siforov, Dr Tech Sci, 4 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Our nation is the birthplace of the technology of radio reception. Discusses briefly those aspects of development in the field of radio reception which have been the result of the combined effort of all Soviet scientists, and aspects in need of further study and development.</p> <p>AMC 45T100</p>	<p>USSR/Radio Transmitters - Development Nov/Dec 1947</p> <p>"Advancements of the Technology of Soviet Radio Transmitting Equipment," A.L. Mints, Corr Mem, Acad Sci, USSR, 6 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Gives short summary of basic Soviet advances in the field of radio transmitting equipment, for the past 30 years. Does not intend to give complete history of this field but merely mentions more important advancements, and particularly those which were fully Soviet achievements and those having counter-part in foreign developments. Discusses various radio stations built in the USSR.</p> <p>AMC 45T101</p>
<p>USSR/Radio Nov/Dec 1947</p> <p>Ionosphere - Effects Heaviside Layer</p> <p>"Ionosphere Studies in the USSR," Prof V.N. Kessenikh, Dr Phys Math Sci, 4 pp</p> <p>"Radiotekh" Vol II, No 8</p> <p>Briefly discusses the developments and achievements of Soviet scientists in the field of study of the ionosphere, especially such layers as the D and the E layer, to determine its effects on radio broadcasting and the propagation of radio waves. In recent years the ionosphere has been studied with a view of solving two problems: (1) problem of wave channels</p> <p>AMC 45T102</p>	<p>USSR/Radio May 1946</p> <p>Wave Propagation - Surface Effect Wave Propagation - Refraction</p> <p>"Propagation of Radio Waves along an Irregular Surface: IV, Coastal Refraction and Allied Phenomena," E. Feynberg, 9 pp</p> <p>"Jour Phys, USSR" Vol X, No 5</p> <p>Starting from general equations for the field on an irregular surface, obtains the formula for the disturbance of field and for change of direction of propagation for a surface composed of a perfect region (sea) and a region with a finite conductivity (land), and also accounting for a rectilinear slope (a shore slope). Shows that in some cases, a term</p> <p>FDB 45T103</p>

<p>RESTRICTED</p> <p>USSR/Radio (Contd) Nov/Dec 1947</p> <p>in the ionosphere, and (2) problem of calculating skip distance.</p> <p>AMC 45T102</p>	<p>RESTRICTED</p> <p>USSR/Radio (Contd) May 1946</p> <p>must be added to the equation previously used in the treatment of coastal refraction. This term follows from the general equations, and accounts for the transition zone. Experimental data analyzed and shown to agree with theory. Parts I, II and III appeared in "Journal of Physics, USSR" No 8, 1944, and 9, 1945.</p> <p>FDB 45T103</p>
<p>USSR/Radio Radar Mar 1946</p> <p>"Physical Principles of Radar," Academician B.A. Vvedenskiy, 11½ pp</p> <p>"Priroda" No 3</p> <p>Briefly describes some of the principles radar is based on. Discusses such items as the directivity of radar, dispersion effect of the target, basic formula for calculating the reflected impulse, the impulse method recording on an oscillograph, use of radar for triangulation purposes, and resultant effects when part of the impulses are reflected from the earth before they reach the target.</p> <p>IC 45T104</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 EM Bureau of Mines, Dept of Interior BS National Bureau of Standards SI Smithsonian Institution IC Library of Congress FDB Foreign Documents Branch, CIA COM Department of Commerce AF A-2 Library, USAF</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 EM Bureau of Mines, Dept of Interior BS National Bureau of Standards SI Smithsonian Institution IC Library of Congress FDB Foreign Documents Branch, CIA COM Department of Commerce AF A-2 Library, USAF</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 EM Bureau of Mines, Dept of Interior BS National Bureau of Standards SI Smithsonian Institution IC Library of Congress FDB Foreign Documents Branch, CIA COM Department of Commerce AF A-2 Library, USAF</p>