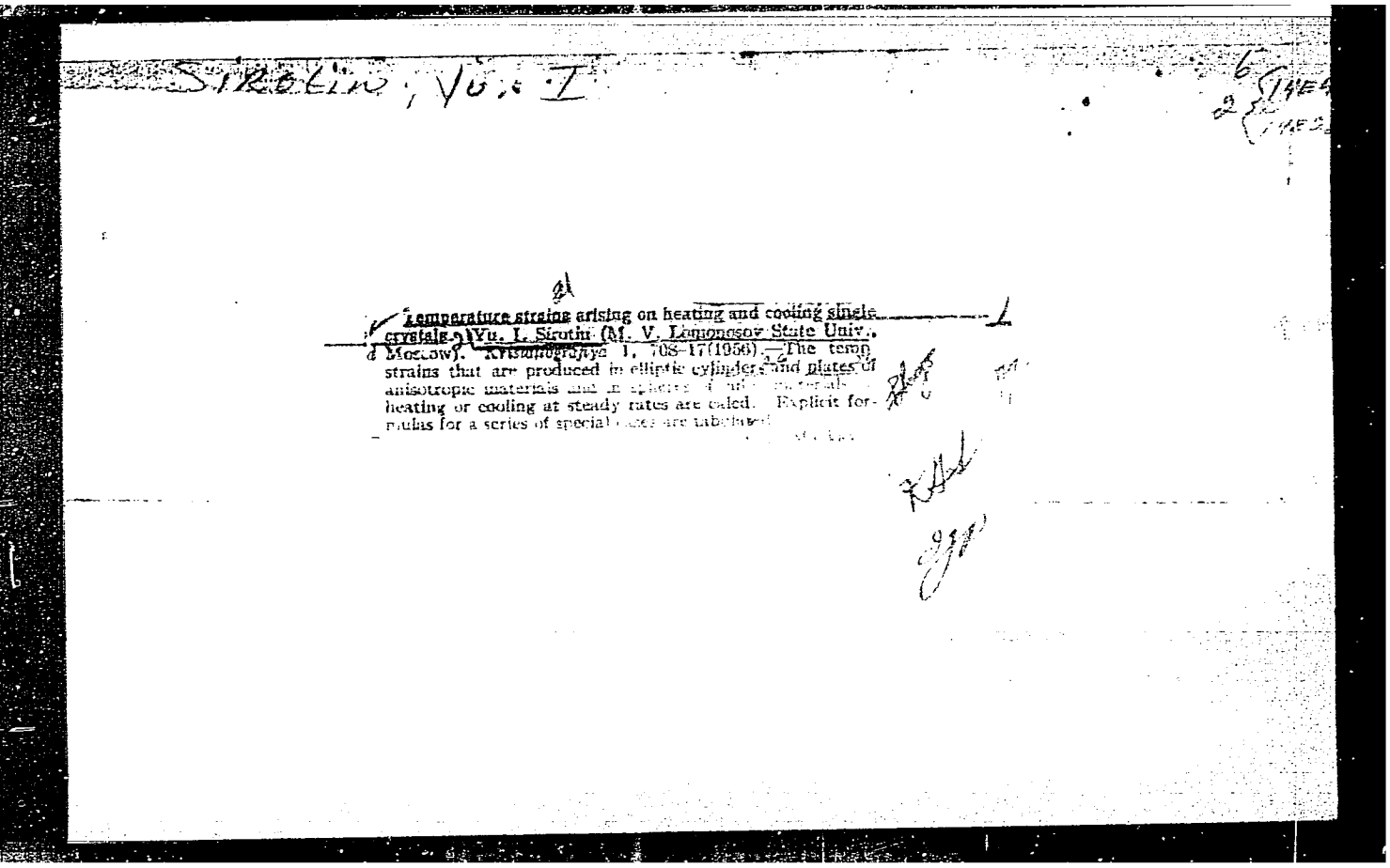
Sirotin, Yu.I.

INDENBOM, V.L.; SIL'VESTROVA, I.M.; SIROTIN, Yu.I.

Thermoelastic stresses in anisotropic plates. Kristallografiia 1 no.5:599-603 '56. (MIRA 10:2)

1. Institut kristallografii AN SSSR; Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Crystallography)



Sirotin, Yu. I.

Temperature strains arising on heating and cooling single crystals. Yu. I. Sirotin (M. V. Lomonosov State Univ., Moscow). *Kristallografiya* 1, 708–17 (1956).—The temp strains that are produced in elliptic cylinders and plates of anisotropic materials and in spheres of [illegible] materials heating or cooling at steady rates are calcd. Explicit formulas for a series of special cases are tabulated.

/60/005/02/001/003
E132/E260

AUTHOR: Sirotin, Yu. I

TITLE: Group Tensor Spaces

PERIODICAL: Kristallografiya, 1960, Vol 5, Nr 2, pp 171-179 (USSR)

ABSTRACT: The principle of a new method for obtaining tensors of a given symmetry is explained depending on their expression as linear combinations of certain basic tensors. The numbers and symmetries of the necessary basic tensors are found and tables are given, fuller than those hitherto published, of the dimensionalities of group tensor spaces. Following Jahn (Acta Cryst., 2, 30, 1949) tensors which have an intrinsic symmetry can be represented, as regards their symmetry, by the symmetrised Kronecker power of a vector V which transforms in the same way as the tensor. V^n, $[V^n]$ and $\{V^n\}$ denote respectively simple, symmetrical and antisymmetrical powers of the vector representation. For example, dielectric constant transforms as $[V^2]$, piezoelectric constant as $\{V^2\}^2$ and elastic constant as $[[V^2]^2]$. If these tensors describing material properties refer to a crystal then they must be invariant with respect to the symmetry transformations of the

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S/070/60/005/02/001/003
E132/E260

Group Tensor Spaces

point group of the crystal (crystallographic) symmetry tensor K. The tables show the numbers of independent components (dimensionality) of the products of each of the groups of internal symmetry P (property symmetry) with each crystallographic symmetry group (plus the groups ∞m, $\infty 2$, etc). 42 different powers of V are examined which should cover almost all conceivable physical properties. Instead of the usual method of taking a general low symmetry tensor and applying successive invariance conditions, the opposite process of taking a very symmetrical tensor and relaxing the conditions is followed. The required tensor is made up of a linear combination of certain basic tensors. The scheme by which the conditions are relaxed is illustrated. There are 1 figure, 2 tables and 23 references, 12 of which are Soviet, 2 German and 9 International.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova (Moscow State University imeni M.V.Lomonosova)

SUBMITTED: September 30, 1959

Card 2/2

Sirotin, Yu. I

S/020/60/133/02/19/068
B019/B060

AUTHOR: Sirotin, Yu. I.

TITLE: Anisotropic Tensors

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2, pp. 321-324

TEXT: By way of introduction, the author gives a definition of the tensor V^r as being a quantity which is transformed according to the r-th power (stepen') of the vector representation of the orthogonal group denominated after A. V. Shubnikov (Ref. 3). This tensor has the level r, is invariant to the K group, and spans the linear space $L(K \times V^r)$. The representation of the system of the producing elements of the space $L(K \times V^r)$ is briefly dealt with, and the bases (a) and (b) are given for the various syngonies of the crystals. Next, "selection rules" are given for the groups of the rhombic and cubic syngonies, by which the rational bases of the space $L(K \times V^r)$ can be determined. These are specified for some syngonies. The system of the producing elements can be easily

Card 1/2

Anisotropic Tensors

S/020/60/133/02/19/068
B019/B060

constructed when knowing a rational tensor base. The effect of the averaging tensor on the base consisting of multiplicative tensors in the space $L(V^r)$ of all tensors of the rank r is discussed. It follows from the finally discussed construction of the rational bases of the crystallographic symmetry groups that it is easy to construct the anisotropic tensor of a given crystallographic symmetry by the method described here. The author thanks V. L. Indenbom, V. A. Koptsik, and V. R. Regel' for interest displayed and for their discussions. There are 8 references: 6 Soviet and 2 British.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: March 17, 1960, by A. V. Shubnikov, Academician

SUBMITTED: March 8, 1960

Card 2/2

SIROTIN, Yu.I.

Construction of tensors of given symmetry. Kristallografiya 6 no.3:331-340 My-Je '61. (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Calculus of tensors)

KOPTSIK, V.A.; SIROTIN, Yu.I.

Symmetry of piezoelectric and elastic tensors and of the physical properties of crystals. Kristallografiia 6 no.5:766-768 S-O '61. (MIRA 14:10)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Calculus of tensors) (Crystallography)

S/070/62/007/001/008/022
E132/E460

AUTHOR: Sirotin, Yu.I.

TITLE: The magnetic symmetry of tensors and the energy of magnetic anisotropy

PERIODICAL: Kristallografiya, v.7, no.1, 1962, 89-96

TEXT: There are four types of magnetic symmetry for tensors, field and physical properties being described by tensors of each of these types. The transformation properties of these generalized tensors are deduced with simple tables from the properties of normal tensors. By means of these tables, the energy of the magnetic anisotropy of crystals of all the magnetic classes can be calculated with any desired accuracy. There are 3 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: December 12, 1960

Card 1/1

SIROTIN, Yu.I.

Possible variations in the point magnetic symmetry of crystals in ferromagnetic transitions of the second kind. Kristallografiia 8 no.2:259-260 Mr-Ap '63. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SIROTIN, YU. I.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Crystallography in 1962:

"Several Applications of Symmetry Methods in Tensor Crystal Physics."

Vest. Akad. Nau SSSR. No. 4, Moscow, 1963, pages 119-145

KOPTSIK, V. A.; SIROTIN, Yu. I.

"Space magnetic symmetry of tensors."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome, 9 Sep 63.

Moscow State Univ.

SIROTIN, Yu.I.; KOPTSIK, V.A.

Magnetic space symmetry of tensors. Dokl. AN SSSR 151 no.2:328-331 Jl '63. (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom A.V.Shubnikovym.

(Calculus of tensors) (Crystallography)

SIROTIN, Yu.I.

Integral rational bases of tensor invariants of crystallographic groups. Dokl. AN SSSR 151 no.3:564-566 Jl '63. (MIRA 16:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom L.I.Sedovym.
(Groups, Theory of) (Crystallography, Mathematical)

L 21817-65 EWT(d) Pa-4 AFWL/SSD/IJP(c) S/0040/64/028/004/0653/0663

ACCESSION NR: AP5004468

AUTHOR: Sirotin, Yu. I. (Moscow)

TITLE: Tensor functions of a polar and axial vector compatible with structural symmetry

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 4, 1964, 653-663

TOPIC TAGS: tensor analysis, vector

Abstract: A general form of tensor functions of a polar and axial vector compatible with structural symmetry is derived. The derived functions (scalar, polar and axial vectors, symmetric and skew-symmetric, and general tensor of the second rank) are shown as expansions into a system of linearly independent tensors, made up of arguments, and so-called geometric tensors obtained by multiplication and contraction. The coefficients of expansion are arbitrary, univalent scalar functions made up of those quantities. In practice the expansions obtained satisfy two important conditions:

1) If the components of a tensor-function are integral rational functions of the components of the tensor arguments, then the coefficients

Card 1/3

2

of expansion are also polynomials of their arguments;

2) The expression of each tensor function is unique: i.e., the tensor function vanishes if and only if all coefficients of expansion are identically equal to zero when considered as functions of their arguments.

The author also considers a special case of such functions - the potential functions. The formulas are derived for a vector argument and an anisotropic medium by means of the Hamilton-Cayley formula, if we consider the latter as a general form of a tensor function of a tensor argument, compatible with the isotropy of the medium.

In paragraph 1 fundamental concepts are introduced and the problem is formulated, while in paragraphs 2 and 3 a general method of the solution is given. Paragraphs 4 and 5 contain the tensor functions of the vector and axial vector which are compatible with structural symmetry. Paragraph 6 considers the potential functions, while in paragraph 7 is given the derivation of tensor functions used to obtain invariant tensors; lastly, paragraph 8 relates the results with the Hamilton-Cayley formula.

"The author expresses his deep gratitude to L. I. Sedov and V.V. Lokhin."

Orig. art. has 37 formulas.

L 21817-65
ACCESSION NR: AP5004468

ASSOCIATION: Moskovskiy universitet (Moscow University)

SUBMITTED: 04Apr64 ENCL: 00 SUB CODE: MA

NO REF SOV: 012 OTHER: 009 JPRS

Card 3/3

SIROTIN, Yu.I.

Nonlinear formulation of the laws of phenomenological crystal physics. Kristallografiia 10 no.1:15-20 Ja-F '65. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 30379-66 EWT(d)/T IJP(c)

ACC NR: AP6012543 SOURCE CODE: UR/0040/66/030/002/0243/0251

43
41
B

AUTHORS: Pleshakov, V. F.(Moscow); Sirotin, Yu. I. (Moscow)

ORG: Moscow State University (Moskovskiy universitet)

TITLE: Anisotropic vector[16] functions with vector arguments

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 2, 1966, 243-251

TOPIC TAGS: vector function, crystal anisotropy, group theory

ABSTRACT: Generalized anisotropic vector functions with vector arguments are derived, which are compatible with crystal symmetries. These vector functions

$$V^i = F^i(A^j)$$

satisfy the conditions of uniqueness and multinomial correspondence. The desired function is represented in the form

$$V^i = \sum_{\mu=1}^{m} \frac{\partial \omega_\mu}{\partial B_i} f_\mu \equiv \sum_{\mu=1}^{m} W_{(\mu)}^i f_\mu$$

where $W_{(\mu)}^i$ is some fixed polynomial whose exact form depends on the particular class of symmetry in the crystal and f_μ is an arbitrary function of three functionally independent, invariant vectors A of a point group. For each class of symmetry an expansion of the type

$$\Psi = \omega_1 f_1 + \ldots + \omega_m f_m$$

Card 1/2

is carried out, and the condition of uniqueness and correspondence is proved. The first of these shows that for a given polynomial $W_{(\mu)}$ the function f_{μ} is uniquely determined from the functions V^i. The second shows that f_{μ} is multinomial in its arguments if V^i is multinomial in the components of the vector A. A class $\bar{4}2m$ example is given to illustrate these points. The authors express their deep gratitude to L. I. Sedov and V. V. Lokhin for their interest in this work and for their critical remarks. Orig. art. has: 57 equations.

SUB CODE: 12, 20/ SUBM DATE: 10Feb65/ ORIG REF: 005/ OTH REF: 006

SIROTIN, Ya.P., Cand Agr Sci —(diss) "The effectiveness of superphosphate in the nourishing of winter crops, and its after-effect upon perennial grass under the conditions of light-gray forest-steppe soils of Gor'kovskaya Oblast." Mos, 1958. 17 pp (All-Union Order of Lenin Acad of Agr Sci im V.I.Lenin. All-Union Agr Sci Res Inst of Fertilizers and Agrosoil Science), 150 copies (KL,46-58,142)

SIROTIN, Yu.P.; DANKOVA, M.V.

Effect of nitrogen and phosphorus fertilizers on perennial grasses. Zemledelie 6 no.10:46-51 O '58. (MIRA 11:11)

1. Vsesoyuznyy institut udobreniy i agropochvovedeniya.
(Grasses--Fertilizers and manures)

SIROTIN, Yuriy Pavlovich, kand. sel'khoz.nauk; MONOVA, Ye.S., red.; SOKOLOVA, N.N., tekhn. red.

[Phosphate meal and its use]Fosforitnaia muka i ee primenenie. Moskva, Sel'khozizdat, 1962. 85 p. (MIRA 16:1)
(Phosphates) (Fertilizers and manures)

SIROTIN, Yu.P., kand.sel'skokhozyaystvennykh nauk

Possibilities of using phosphate meal in the U.S.S.R. Zemledelie 24 no.1:59-63 Ja '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

(Phosphates)

SIROTIN, Yu.P., kand.sel'skokhoz. nauk; STAROV, M.V., agronom; PRONIN, M.Ye., prof.; KOSTROV, K.A., kand.sel'skokhoz. nauk; KLOCHKOV, A.M., kand. sel'skokhoz. nauk

Fall supplementary fertilizers for winter crops. Zemledelie 25 no.9: 16-34 S '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya (for Sirotin). 2. Zaveduyushchiy Mikhaylovskim agrotekhnicheskim [illegible]touchastkom Stavropol'skogo kraya (for Starov). 3. Voronezhskiy sel'skokhozyaystvennyy institut (for Pronin). 4. Mordovskaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya stantsiya (for Kostrov, Klochkov).

(Wheat—Fertilizers and manures)
(Rye—Fertilizers and manures)

[redacted], Yu.P., kand. sel'skokhoz. nauk

Using phosphate slags as phosphorus fertilizer. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.2:63-64 '64. (MIRA 17:6)

SIROTINA, G., kand.tekhn.nauk

Prospects for the use of winged propellers on inland navigation ships. Rech. transp. 21 no.6:28-32 Je '62. (MIRA 15:7)
(Propellers)
(Inland navigation)

SIROTINA, G.N., kandidat tekhnicheskikh nauk.

Determining the effective forces in turns by rotor ships.
Trudy GIIVT no.12:96-105 '54. (MLRA 10:2)

(Rotor ships)

SIROTINA, Galina Nikolayevna; YERLYKINA, Irina Semenova; KALIKHMAN, L.Ye., retsenzent; SOLODKIN, V.K., redaktor; VINOGRADOVA, N.M., redaktor izdatel'stva; KRASNAYA, A.K., tekhnicheskiy redaktor

[Book of problems in hydromechanics] Zadachnik po gidromekhanike. Moskva, Izd-vo "Rechnoi transport," 1956. 132 p. (MLRA 9:10)
(Fluid mechanics--Problems, exercises, etc.)

SOV/124-58-5-5417

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 65 (USSR)

AUTHOR: Sirotina, G.N.

TITLE: Gravitational Test-basin Instrumentation (Apparatura opytovogo basseyna gravitatsionnogo tipa)

PERIODICAL: Tr. Gor'kovsk. in-ta inzh. vodn. transp., 1957, Nr 14, pp 152-170

ABSTRACT: A description is given of a test basin for measuring the speed of ship models. The basin is of the gravitational type designed by the Gor'kovskiy institut inzhenerov vodnogo transporta (Gor'kiy Institute of Water Transportation Engineers).

D.A. Chumak

1. Model basins--Design 2. Model basins--Instrumentation
3. Ship models--Velocity

Card 1/1

VAGANOV, Gennadiy Ivanovich, dots., kand. tekhn. nauk; SHANCHUROVA, Valentina Konstantinovna, kand. tekhn. nauk; SHERSTINSKIY, Efraim Khaimovich, inzh.; Prinimali uchastiye: SIROTINA, G.N., dots., kand. tekhn. nauk; POSTNOV, A.V., kand. tekhn. nauk; LESYUKOV, V.A., inzh. vodnogo transporta, dots., kand. tekhn. nauk, retsenzent; FOMKINSKIY, L.I., starshiy nauchnyy sotr., retsenzent; MAKHUSHINA, A.N., red. izd-va; RIDNAYA, I.V., tekhn. red.

[Ship propulsion; methods and examples for carrying out ship propulsion calculations]Tiaga sudov; metodika i primery vypolneniia sudovykh tiagovykh raschetov. Moskva, Rechnoi transport, 1962. 241 p. (MIRA 15:8)

1. Kafedra organizatsii dvizheniya Gor'kovskogo instituta inzhenerov vodnogo tranporta (for Lesyukov). 2. TSentral'nyy nauchno-issledovatel'skiy institut ekonomiki i ekspluatatsii vodnogo transporta (for Fomkinskiy).
(Ship propulsion)

SIROTINA, G.N., dots., kand. tekhn. nauk; POLOVINKIN, V.V., kand. tekhn. nauk; UKHOVA, E.P., red.

[Theory and the arrangement of a ship and its propellers; manual for the mechanical branch of a correspondence course] Teoriia, ustroistvo korablia i dvizhiteli; uchebnoe posobie dlia mekhanicheskoi spetsial'nosti zaochnogo fakul'teta. Gor'kii, Gor'kovskii in-t inzhenerov vodnogo transp. Pt.1. 1963. 75 p. (MIRA 17:4)

ACC NR: AR6019855 (N) SOURCE CODE: UR/0398/66/000/001/A011/A011

AUTHOR: Sirotina, G. N.

TITLE: Analysis of the hull shapes for ships in the inland waterway cargo fleet

SOURCE: Ref. zh. Vodnyy transport, Abs. 1A50

REF SOURCE: Tr. Gor'kovsk. in-ta inzh. vodn. transp., vyp. 63, 1965, 3-35

TOPIC TAGS: shipbuilding engineering, cargo ship, ship component, inland waterway transportation

ABSTRACT: The characteristics of the hull shapes for push tugs, dry cargo ships, tankers, and sectional units are given. The projects for 15 150 to 2200 hp push tugs are reviewed. The fact that the coefficient of displacement is within the limits δ = 0.55 to 0.60, and that the coefficient of fineness of waterline α = 0.76 to 0.87 is established. The bow frames are V-shaped, while the stern is semi-tunnel shaped, with the semi-tunnel extending along 20 to 25% the length of the ship. In the absence of dihedral the coefficient of fineness of the midship section is β = 0.993 to 0.995; if there is dihedral of from 4 to 8°, β = 0.85 to 0.86. The length of the cylindrical insert is 0.1 to 0.2 the length of the ship. Characteristic values for the position of the center of buoyancy, and the limits of the specific resistance for the push tug at various underway speeds, are cited. Self-propelled cargo ships with cargo capacities above 2,000 tons have δ = 0.85 to 0.87, β = 0.996 to 0.999, α = 0.88 to 0.98,

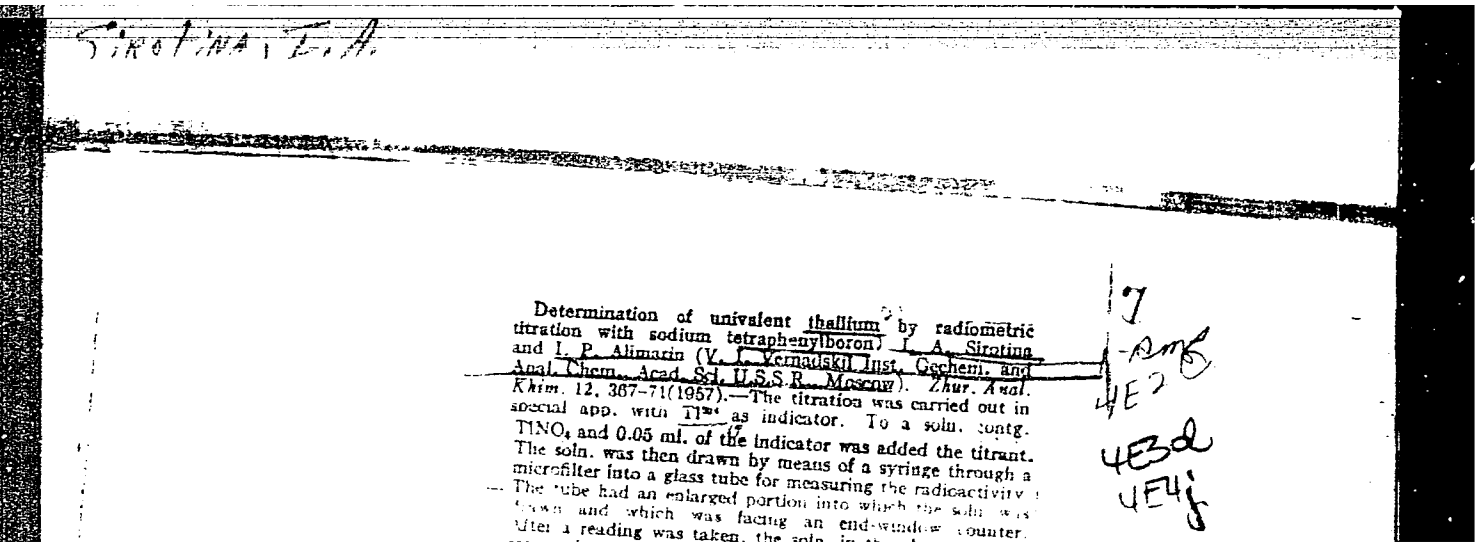
Card 1/2 UDC: 629.121.011.1

SIROTINA, I. A.

TOROPOVA, V.F.; SIROTINA, I.A.; ROTANOVA, V.B.

Copper and silver sulfite complexes. Uch.zap.Kaz.un. 115 no.3:53-60 '55. (MLRA 10:5)

1.Kafedra analiticheskoy khimii.
(Copper sulfite) (Silver sulfite)
(Complex ions)



SIROTINA, I. A.

Determination of univalent thallium by radiometric titration with sodium tetraphenylboron. I. A. Sirotina and I. P. Alimarin (V. I. Vernadskii Inst. Geochem. and Anal. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Anal. Khim.* 12, 367–71(1957).—The titration was carried out in special app. with Tl^{204} as indicator. To a soln. contg. $TlNO_3$ and 0.05 ml. of the indicator was added the titrant. The soln. was then drawn by means of a syringe through a microfilter into a glass tube for measuring the radioactivity. The tube had an enlarged portion into which the soln. was drawn and which was facing an end-window counter. After a reading was taken, the soln. in

7
-RMS
4E2
4E3d
4E4j

GIBALO, I. M., Sirotina, I. A. and [illegible] (Moscow State [illegible] im. M. V. Lomonosov; Inst of Geochemistry and Analytical Chemistry im V. I. Vernadskiy AS USSR)

"Radiometric Titration of Rare Elements"

Isotopes and Radiation in Chemistry, Collection of Papers of 2nd All-Union Sci.Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, [illegible] p.

This volume publishes the reports of the Chemistry Section of the 2nd All-Union Sci.Tech. Conf on Use of Radioactive and Stable Isotopes and Radiation in [illegible] of Atomic Energy under Council of Ministers USSR, Moscow, 9-12 April 1957.

AUTHORS: Alimarin, I.P., Sirotina, I.A. SOV/ 78-3-7-41/44

TITLE: Investigation of Co-Precipitations by the Method of Radiometric Titration (Izucheniye soosazhdeniya s pomoshch'yu metoda radiometricheskogo titrovaniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 7, pp 1709-1713 (USSR)

ABSTRACT: The mechanism of co-precipitations was investigated by the method of radiometric titration. Precipitations of silver, thallium, and lead with different anions as chlorine, iodine, thiocyanate, chromate, and sulfide were investigated by means of the radioactive isotopes Tl^{204}, Ag^{110} and ThB.
The application of non-isotopic indicators in radiometric titration is possible not only in the case of precipitations in which isomorphic mixtures are formed, but also in the formation of anomalous mixed crystals.
The possibility of determining silver and thallium as iodides and of lead and silver as chromates by means of radiometric titration with non-isotopic indicators was mentioned. There are 5 figures, 5 tables, and 9 references, 5 of which are Soviet.

Card 1/2

Investigation of Co-Precipitations by the Method of Radiometric Titration

SOV/ 78-3-7-41/44

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo, Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry Imeni V.I.Vernadskiy, AS USSR)

SUBMITTED: June 15, 1957

1. Metals--Precipitation 2. Metals--Titration 3. Ions --Chemical effects 4. Isotopes(Radioactive)--Applications 5. Titration--Test results

Card 2/2

KIRICHINS'KA, I.; SIROTINA, M.

Problem of immunogenesis in malignant neoplasms. Medych.zhur. 20 no.2:71-76 '50. (MIRA 11:1)

1. Z kafedri patologichnoi fiziologii Kyivs'kogo ordena Trudovogo Chervonogo Prapora medichnogo institutu im. akad. O.O.Bobomol'tsya (zav. kafedri - chl-kor. AN URSR zasluzhenly ciyach nauki, prof. Ye.O.Tatarinov [deceased])
(CANCER) (IMMUNITY)

SIROTINA, M.F.

Changes in the composition of peripheral blood upon conditioned reflex stimulation. Medych. zhur. 23 no.3:18-22 '53. (MLRA 8:2)

1. Institut eksperimental'noi biologii ta patologii im. akad. O.O.Bogomol'tsya.
(BLOOD) (CONDITIONED RESPONSE)

SHROTINA, M.F.

Viability of Ehrlich carcinoma in mice following administration of a small number of cancer cells. Medych.zhur.24 no.3:83-85 '54. (MLRA 8:10)

1. Institut fiziologii im. O.O. Bogomolts'ya Akademii nauk URSR

(NEOPLASMS, experimental,
Ehrlich carcinoma, transpl.after admin. of small number of cancer cells)

SIROTINA, M.F. [Syrotina, M.F.]

Features of the change in the composition of peripheral blood in animals after unconditioned food stimulation [with summary in English]. Fiziol.zhur. [Ukr.] 3 no.6:77-82 D '57. (MIRA 11:2)

1. Institut fiziologii im. O.O.Bogomol'tsya Akademii nauk URSR, laboratoriya fiziologii krovoobigu i dikhaniya.
(LEUKOCYTES)

SIROTINA, M.F. [SYROTINA, M.F.]

On the alimentary leucocytic reaction in animals with experimental hypertension [with summary in English]. Fiziol.zhur. [Ukr.] 4 no.3:356-362 My-Je '58 (MIRA 11:7)

1. Institut fiziologii im. O.O. Bogomol'tsya AN URSR, laboratoriya fiziologii krovobigy i dikhannya.
(LEUCOCYTES)
(HYPERTENSION)

MAKARCHENKO, A.F. [Makarchenko, O.F.]; SIROTINA, M.F. [Syrotina, M.F.]; ZLATIN, R.S.

Changes in the morphological composition of the peripheral blood in dogs of different types of higher nervous activity as affected by long-term external irradiation with small doses of gamma rays (Co^{60}). Fiziol.zhur. [Ukr.] 5 no.6:769-774 N-D '59. (MIRA 13:4)

1. Institut fiziologii im. A.A. Bogomol'tsa Akademii nauk USSR.
(BLOOD--ANALYSIS AND CHEMISTRY) (GAMMA RAYS--PHYSIOLOGICAL EFFECT)

SIROTINA, M.F. (Kiyev)

Characteristics of vascular permeability in experimental hypertension. Pat.fiziol.i eksp. terap. 4 no.4:39-41 Jl-Ag '60. (MIRA 14:5)

1. Iz laboratorii fiziologii krovoobrashcheniya i dykhaniya (rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. N.N.Gorev) Instituta fiziologii imeni A.A.Bogomol'tsa AN USSR.
(HYPERTENSION) (CAPILLARIES—PERMEABILITY)

GUREVICH, M.I. [Hurevych, M.I.]; SIROTINA, M.F. [Syrotina, M.F.]

Effect of ultrasonic vibrations on the blood. Fiziol.zhur. 6 no.1:73-78 Ja-F '60. (MIRA 13:5)

1. Institut fiziologii im. A.A. Bogomol'tsa AN USSR, laboratoriya fiziologii krovoobrashcheniya i dykhaniya.
(ULTRASONIC WAVES--PHYSIOLOGICAL EFFECT) (BLOOD)

SIROTINA, M.F. [Syrotina, M.F.]

Changes in the composition of blood proteins caused by ionizing radiations in animals with experimental hypertension. Fiziol. zhur. [Ukr.] 6 no.6:809-814 N-D '60. (MIRA 14:1)

1. Laboratory of the Physiology of Circulation and Respiration of the A.A.Bogomoletz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R., Kiev.
(BLOOD PROTEINS) (HYPERTENSION)
(X RAYS--PHYSIOLOGICAL EFFECT)

SIROTINA, M.F. [Syrotina, M.F.]

Effect of ultrasonic vibrations on the morphological and protein composition of the blood. Fiziol. zhur. [Ukr.] 7 no.2:271-276 Mr-Ap '61. (MIRA 14:4)

1. Laboratory of Circulatory Physiology of the A.A.Bogomoletz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R., Kiev.
(ULTRASONIC WAVES—PHYSIOLOGICAL EFFECT)
(BLOOD—ANALYSIS AND CHEMISTRY)

MAKARCHENKO, A.F.; ZLATIN, R.S.; SIROTINA, M.F.

Change in higher nervous activity and in the peripheral blood picture during prolonged gamma-ray irradiation (Co^{60}) of dogs. Zhur. vys. nerv. deiat. 11 no.5:895-901 S-O '61. (MIRA 15:1)

1. Bogomolets Institute of Physiology, Ukrainian Academy of Sciences, Kiyev.
(GAMMA RAYS--PHYSIOLOGICAL EFFECT) (NERVOUS SYSTEM)
(CONDITIONED RESPONSE) (BLOOD)

61470
S/238/62/008/005/001/001
D267/D308

27.2400

AUTHORS: Zlatin, R.S., Makarchenko, O.F. and Sirotina, M.F.

TITLE: Characteristics of physiological and biochemical shifts associated with the protracted action of small doses of Co^{60} gamma-rays on organisms

PERIODICAL: Fiziologichnyy zhurnal, v. 8, no. 5, 1962, 567-571

TEXT: The authors have been prompted to carry out this research by their earlier results relating to neurological and hematological changes observed in personnel working under conditions of chronic exposure to ionizing radiation. The higher nervous activity (using the alimentary secretion method) the composition of peripheral blood and some biochemical factors were studied in six dogs (4 experiment animals and 2 controls), the experiment animals being subjected to chronic whole-body irradiation with very small doses (0.05 r during 6 hours) of the Co^{60} gamma radiation. The experiment lasted 3 years. Three characteristic stages could be found in the changes of higher nervous activity: (1) the

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Characteristics of ...

first stage lasts $1\frac{1}{2}$ to $2\frac{1}{2}$ months and is characterized in the case of strong-type dogs by the variation of positive conditioned reflexes within the standard limits, the lower limit being steadily approached, and by a certain extension of the latent period of these reflexes; for the weak-type dogs the positive conditioned reflexes first increase and then revert to the initial value, while the latent period is shortened; (2) the second stage lasts from 7 to 18 months and is characterized by the decrease of positive conditioned reflexes and by further extension of the latent period; (3) the third stage (which lasted to the end of the experiment) is characterized by the low level of reflexes, their latent period being longer than the initial value. Internal inhibition was enhanced in the second stage, and manifestly disturbed in the third stage. During the period after irradiation the experiment animals disclosed a persistent increase of positive reflexes and further disturbance of internal inhibition (in 2 dogs out of 3 surviving dogs, one having died from pneumonia). The hematological changes are characterized by a drop of leucocyte count the the lower limit of the norm during the last 8 months of irradiation,

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Characteristics of ...

by a polycythemic reaction, an increase in the number of thrombocytes from the 5th to the 30th month of irradiation, and by the absence of degenerative changes. The beta activity of the whole blood decreases during irradiation. Desoxyribonuclease was found in the urine of the irradiated dogs, but not in control dogs. There are 1 figure and 1 table.

ASSOCIATION: Instytut fiziologii im. O.O. Bohomol'tsya Akademii nauk URSR, Kiev (Institute of Physiology im. O.O. Bohomolets Academy of Sciences of the UkrSSR, Kiev)

SUBMITTED: July 15, 1961

Card 3/3

SIROTINA, M.F.

Content of renin in the kidneys in experimental increase of the blood pressure. Biul.eksp.biol. i med. 55 no.1:35-40 Ja'63. (MIRA 16:7)

1. Iz laboratorii fiziologii krovoobrashcheniya (rukovoditel' - deystvitel'nyy chlen AMN SSSR N.N.Gorev) Institua fiziologii imeni A.A.Bogomo'tsa (dir. - akademik AN UkrSSR A.F.Makarchenko) AN UkrSSR, Kiyev. Predstavlena deystvitel'nym chlenom AMN SSSR. N.N.Gorevym.

(HYPERTENSION) (RENIN)

54

ACCESSION NR: AR4027236 S/0299/64/000/002/P037/P037

SOURCE: RZh. Biologiya, Abs. 2P232

AUTHOR: Sirotina, M. F.

TITLE: (2P232) Morphological changes in the blood of athletes submerged under water

CITED SOURCE: Sb. Golovn. mozg i regulyatsiya funktsiy. Kiyev, AN USSR, 1963, 245-246

TOPIC TAGS: blood picture, blood morphology, water immersion, skin diving, blood coagulation

ABSTRACT: Eleven skin divers were examined. In half of the experiments, there was an increase in the erythrocyte sedimentation rate of 2-5 mm/hr. Acceleration of blood coagulation was also observed in 7 out of 9. In dogs submerged 10 meters underwater while under nembutal anesthesia, there was no change in the hemoglobin content, the erythrocyte count was only slightly altered, but there was a distinct increase in the number of leukocytes.

DATE ACQ: 14Feb64 SUB CODE: LS ENCL: 00

Card 1/1

SIROTINA, M.F. [Syrotina, M.F.]

Changes in the renin content of the kidneys in the dynamics of development of reflexogenic hypertenskon. Fiziol. zhur. [Ukr.] 10 no.1:68-74 '64. (MIRA 17:8)

1. Laboratoriya fiziologii krovoobrashcheniya Instituta fiziologii im. Bogomol'tsa AN UkrSSR, Kiyev.

ZLATIN, R.S.; MAKARCHENKO, A.F. [Makarchenko, O.F.]; SIROTINA, M.F. [Syrotina, M.F.]

Characteristics of the physiological and biochemical changes in prolonged action on the body of small doses of gamma radiation. Co 60
Fiziol. zhur. [ukr.] 8 no.5:567-573 S-O '62. (MIRA 17:11)

1. A.A. Bogomoletz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R., Kiyev.

SIROTINA, M.F. [Syrotina, M.F.]

Changes in the morphological composition of the blood in underwater submersions of athletes. Fiziol.zhur.[Ukr.] 9 no.1:77-81 Ja-F '63. (MIRA 18:5)

1. Laboratoriya fiziologii krovoobrashcheniya Instituta fiziologii im. A.A.Bogomol'tsa AN UkrSSR, Kiyev.

SIROTINA, M.L., kandidat biologicheskikh nauk.

Color reaction in the blood of the tussah moth as an early sympton of grasserie. Nauch.trudy Inst.ent.i fit. 2:338-349 '50. (Silkworms--Diseases) (MIRA 9:2)

SIROTINA, M. I.

"Diseases of the oak worm (silkworm) and the measures of fight against them" 1951, 56 pages with illustrations. Publication of Academy of Sciences Ukrainian SSR.

SO: Vet., January 1952, Unclassified.

Ukrainian SSR, Council of Scientific-Technical Propaganda

SIROTINA, M.I.; TITOVA, O.M.; YUKHIMETS', M.I.

Selection of healthy silk-seed for increasing the productivity of tussah moths. Visnyk AN URSR 26 no.10:42-46 O '55. (MLRA 9:1)
(Sericulture)

SIROTINA, M.I.; CHALAYA, M.F.

Oak-feeding silkworms as virus carriers. Dop. UN URSR no.2:177-180 '56. (MIRA 9:12)

1. Institut entomologii ta fitopatologii Akademii nauk URSR, Kiivs'-kiy institut epidemiologii ta mikrobiologii NKPZ.
(Silkworms--Diseases)

USSR/ Farm Animals. Silkworm.

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40580.

Author : Sirotina, Mi. I.
Inst : Not given.
Title : On the Latent Polyhedral Sickness in Oak-Feeding Silkworm.

Orig Pub: Dopovidi AN URSR, 1956, No 6, 598-601.

Abstract: The study of the hemolymph of larvae and moths of the oak-feeding silkworm with the aid of a phase-contrast microscope showed that in the obvious form of jaundice the pathological changes of the nuclei can be observed in 40-75% of the cells of the hemolymph, and in the latent form of the infection, not causing a fatal outcome, in 10-20%. From the moths in

Card 1/2

SIROTINA, M.I.

Histological method of estimating the viability of the Chinese tussah moth [with summary in English]. Zool.zhur. 36 no.10:1485-1492 O '57. (MIRA 10:11)

1. Institut entomologii i fitopatologii AN USSR.
(Silkworms--Diseases and pests)

SIROTINA, M.I.

Hematological tests in developing microbiological methods for the control of the Colorado beetle. Dokl. AN SSSR 140 no.3:720-723 S '61. (MIRA 14:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut zashchity rasteniy. Predstavleno akademikom Ye.N.Pavlovskim.
(Potato beetle--Biological control) (Hemolymph)

SIROTINA, M.I.

Working out methods of forecasting the reproduction of the Colorado beetle. Vop. ekol. 4:143-144 '62. (MIRA 15:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut zashchity rasteniy, Kiyev.

(Potato beetle)

SIROTINA, M.I.; PRITSKIY, Ya.V., CHERNAYA, G.S.

Indices for short-term forecasting of the abundance, vitality and fecundity of Colorado beetle. Dokl. AN SSSR 156 no. 2: 448-451 My '64. (MIRA 17:7)

1. Nauchno-issledovatel'skiy institut zemledeliya i zhivotnovodstva zapadnykh rayonov NechSSR. Predstavlено akademikom Ye.N. Pavlovskim.

DANDERS, Ya.; YATSEVICHUS, I. [Jacevicius, I.]; GOL'DENBERG, A.; KHARIN, B., inzh. (Leningrad); MOVA, N., inzh.; VINNIKOV, F. (Gomel'); MAMYKIN, I. (Gomel'); BENDERSKIY, A., starshiy inzh. (pos. Igra, Udmurtskoy ASSR); CHERTETSOV, V.; OSIPOV, I.; SIROTININ, M.I.

Exchange of news and experience. Izobr.i rats. no.4:25-26 Ap '62. (MIRA 15:4)

1. Sekretar' Respublikanskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorv, g. Riga (for Danders). 2. Glavnyy inzh. mezhdugorodnoy telefonnoy stantsii, g. Vil'nyus (for Yatsevichus). 3. Predsedatel' oblastnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov g. Ufa (for Gol'denberg). 4. Krayevoy sovet Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov, g. Krasnodar (for Mova). 5. Igrinskiy lespromkhoz kombinata "Udmurtles", (for Benderskiy). 6. Predsedatel' Krasnoyarskogo krayevogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Sirotinin).
(Technological innovations)

SIROTINA, M.V.

Leukocytic reaction in the development of experimental cancer in normal conditions and following application of hypnotics. (MIRA 14:1)
Vopr.fiziol. no.8:150-154 '54.

1. Institut fiziologii AN SSSR.
(NEOPLASMS, experimental,
leukocyte count, eff. of hypnotics)
(LEUKOCYTE COUNT,
eff. of hypnotics in exper. cancer)
(HYPNOTICS AND SEDATIVES, effects,
on leukocyte count in exper. cancer)

ZHINKIN, L.N.; ORLOVA, G.N.; SIROTINA, M.Yu.

Inclusion of methionine in developing and regenerating somatic muscles [with summary in English]. Arkh.anat.gist. i embr. 36 no.1:32-38 Ja '59. (MIRA 12:3)

1. Laboratoriya gistologii (zav. - prof. L.N. Zhinkin) Instituta eksperimental'noy meditsiny AMN SSSR. Adres avtora: Leningrad, Kirovskiy pr., 69/71., Institut eksperimental'noy meditsiny AMN SSSR.

(MUSCLES, metab.
methionine, inclusion of prep. labeled by radiosulfur during regen. & develop. (Rus))
(METHIONINE, metab.
musc., inclusion of radiosulfur-labeled metnionine during regen. & develop. (Rus))

ZHINKIN, L.N.; SIROTINA, M.Yu.

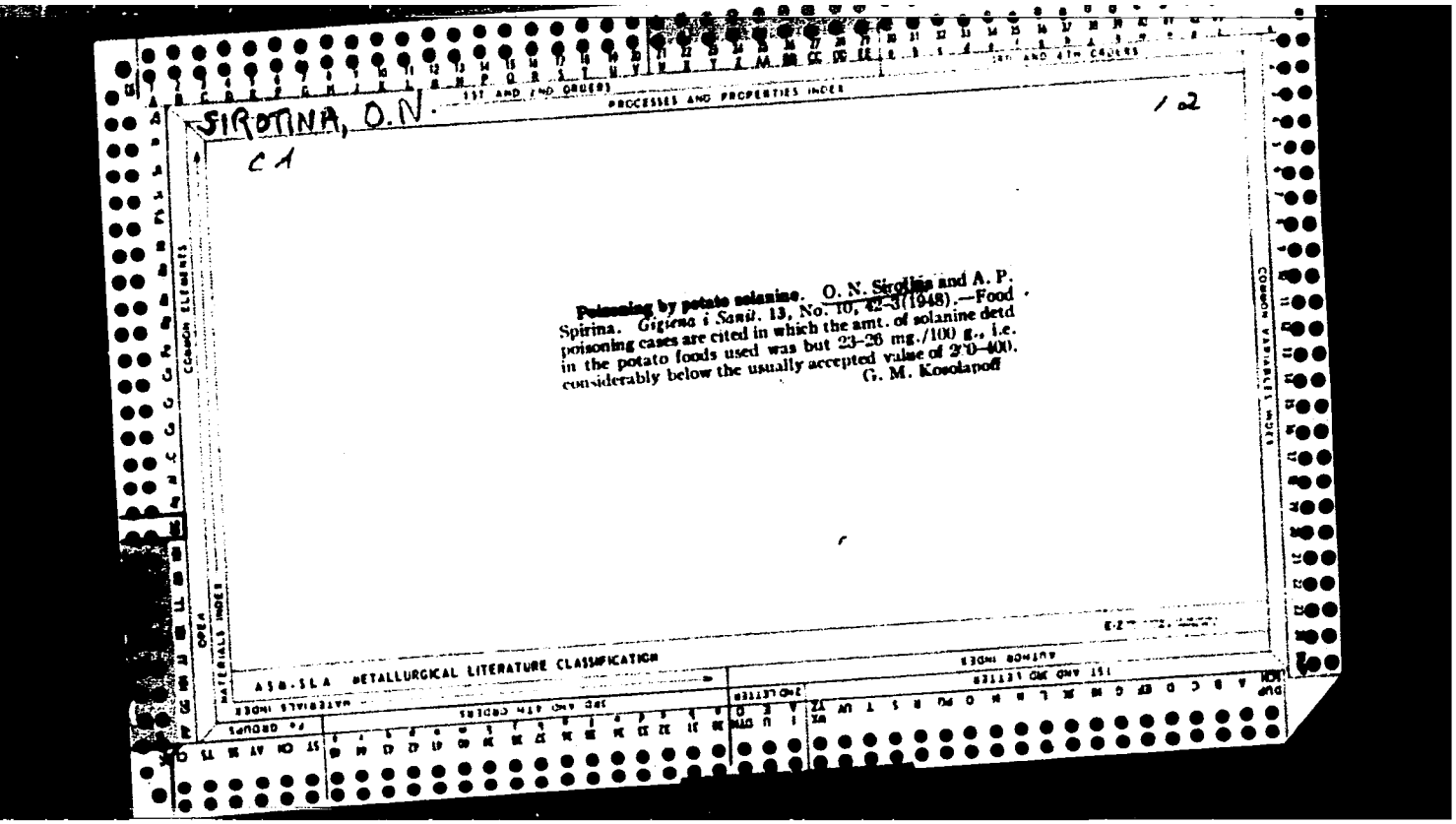
Dynamics of inclusion of S35 labelled methionine and sodium sulfate in the epithelium of the stomach of white mice. Arkh. anat. gist. i embr. 40 no. 1:32-40 Ja '61. (MIRA 14:2)

1. Laboratoriya eksperimental'noy gistologii (zav. - prof. V.P. Mikhaylov) Instituta eksperimental'noy meditsiny AMN SSSR). Adres avtorov: Leningrad, pr.Maklina, 32, Institut tsitologii AN SSSR.

(METHIONINE) (SULFUR METABOLISM) (STOMACH)

SITINA, N.V. [translator]; PIK, I.TS. [translator]; SIROTINA, N.Ye. [translator]; SERGOVANTSEV, B.V. [translator]; MOROZOV, I.I., red.; ALEKSANDROVA, A.A., red.; SVESHNIKOV, A.A., tekhn.red.

[Questions of the reliability of electronic equipment. Collection of articles translated from the English] Voprosy nadezhnosti radioelektronnoi apparatury; sbornik statei. Moskva, Izd-vo "Sovetskoe radio," 1959. 185 p. (MIRA 13:9)
(Electronic apparatus and appliances)


SIROTINA, O.N.

C1

1 a2

Poisoning by potato solanine. O. N. Sirotina and A. P. Spirina. *Gigiena i Sanit.* 13, No. 10, 42–3(1948).—Food poisoning cases are cited in which the amt. of solanine detd in the potato foods used was but 23–26 mg./100 g., i.e. considerably below the usually accepted value of 2'0–400.
G. M. Kosolapoff

SIROTINA, O.S.

Neuronal structure of the cortical segment of the acoustic analysor in human ontogenesis. Zhur. vys. nerv. deiat. 12 no.4:606-612 Jl-Ag '62. (MIRA 17:11)

1. Chair of Nervous Diseases, Histology and Imbryology, State University, Voronezh.

SIROTINA, O.S. (Voronezh, K.Marksa, 112, kv.37.)

Myelinization of the cortex of the supratemporal surface of the human gyrus temporalis superior during postnatal ontogenesis. [redacted] anat., gist. i embr. 44 no.4:73-80 Ap '63. (MIRA 17:6)

1. Kafedra nervnykh bolezney (zav.-prof. K.A. Kunakov [deceased]) i kafedra gistologii i embriologii (zav.-chlen korrespondent AMN SSSR prof. A.A. Voytkevich) Voronezhskogo meditsinskogo instituta.

VLASOVA, K.D.; BEZHENEL'NITSINA, I.A.; MEZENTSEVA, A.G.; SIROTINA, O.S.; TAFINTSEVA, I.A.

Clinical statistical analysis of vascular lesions of the brain according to data of Voronezh polyclinics. Trudy Vor. med. inst. 51:38-42 '63. (MIRA 18:10)

SIROTINA, O.S.; VLASOVA, K.D.

Clinical aspects and differential diagnosis of subarachnoid hemorrhages and hemorrhagic meningoencephalitis. Trudy Vor. med. inst. 51:25-31 '63. (MIRA 18:10)

1. Kafedra nervnykh bolezney Voronezhskogo meditsinskogo instituta.

MUCHNIK, V.S., doktor tekhn.nauk; RECHIN, V.D.; SIROTINA, R.I.

Introduction of hydraulic coal mining in Kuznetsk Basin mines.
Biul.tekh.-ekon.inform.Gos.nauch -issl.inst.nauch. i tekh.
inform. 17 no. 5:13-14 My '64. (MIRA 17:6)

VOLYNSKIY, Aleksandr Yakovlevich; BAZILEV, N.P., nauchn. red.; SIROTINA, S.L., red.; IONOV, V.I., red.

[Foundry molds and their assembly] Liteinye formy i ikh sborka. Moskva, Vysshaia shkola, 1964. 290 p. (MIRA 17:10)

TELIS, Moisey Yakovlevich; ZHEVTUNOV, P.P., nauchn. red.; SI:OTINA, S.L., red.; ABOLEMOV, V.P., red.

[Melting of nonferrous metals and alloys] Plavka tsvetnykh metallov i splavov. Moskva, Vysshaia shkola, 1964. 318 p. (MIRA 17:5)

SIROTINA, T.V. [Syrotina, T.V.]

Some data on oil reservoir properties of sandstones in oil fields of the Skibovaya zone in the Carpathians. Geol. zhur. 19 no.4:79-84 '59. (MIRA 13:1)

(Carpathian Mountains--Petroleum geology)

SIROTINA, T.A.

Effect of pressure and geological age on the porosity of reservoir rocks. Neft. i gaz. prom. no.2:[illegible] Apr-Je '58.

(MIRA 18:6)

DIKENSHTEYN, G.Kh.; KUTUZOVA, V.V.; MASHRYKOV, K.K.; BABAYEV, A.G.; POL'STER, L.A.; YUFEREV, R.F.; SHISHOVA, A.I.; BAREYEV, R.A.; MAKAROVA, L.N.; MURADOV, K.; PYANOVSKAYA, I.A.; SEMOV, V.N.; SIROTINA, Ye.A.; TURKINA, I.S.; FEL'DMAN, S.L.; KHON, A.V.; KUNITSKAYA, T.N.; GOLENKOVA, N.P.; ROSHINA, V.M.; FARTUKOV, M.M.; SHCHUTSKAYA, Ye.K.; ALTAYEVA, N.V.; BYKADOROV, V.A.; KOTOVA, M.S.; SMIRNOV, L.M.; IBRAGIMOV, M.S.; KRAVCHENKO, M.F.; MARKOVA, L.P.; ROZYYEVA, T.R.; UZAKOV, O.; SLAVIN, P.S.; NIKITINA, Ye.A.; MILOGRADOVA, M.V.; BARTASHEVICH, O.V.; STAROBINETS, I.S.; KARIMOV, A.K.

[Splicing of the wires of overhead power transmission lines] Soedinenie provodov vozdushnykh linii elektroperedachi. Moskva, Energiia, 1964. 69 p. (Biblioteka elektromontera, no.132) (MIRA 17:9)

LUPNOV, N.P.; SIROTINA, Ye.A.; TOVBINA, S.Z.

Stratigraphy of Aptian and Albian sediments of the Kopet-Dag.
Trudy VSEGEI 42:156-173 '60. (MIRA 14:9)
(Kopet-Dag--Geology, Stratigraphic)

SIROTINA, Ye.I. s uchastiyem N.G.Gayevskoy

Alveolar echinococcosis of the brain. Vop.neirokhir. 21 no.6:51-53 N-D '57. (MIRA 11:2)

1. Ukrainskiy nauchno-issledovatel'skiy psikhonevrologicheskiy institut.

(ECHINOCOCCOSIS, case reports
alveolar of brain)
(BRAIN, dis.
echinococcosis, alveolar)

CHIBUKMAKHER, N.B., prof., TARNOPOL'SKAYA, L.A., SIROTINA, Ye.I.

The work of the Khar'kov Neurosurgical Society and minutes of sessions in 1957. Vopr.neirokhir. 22 no.4:60-62 Jl-Ag '58 (MIRA 11:9)
(KHAR'KOV--NEUROLOGY--SOCIETIES)

CHIBUKMAKHER, N.B., prof.; SIROTINA, Ye.I.; TARNOPOL'SKAYA, L.A.

Report on acrivities of the Kharkov Neurosurgical Society and minutes of meetings for 1958. Vop.neirokhir. 23 no.6:48-51 N-D '59. (MIRA 13:4)

(KHARKOV--NEUROSURGICAL SOCIETIES)

SIROTINA, Ye. I., Cand Med Sci -- (diss) "Surgical treatment of severe forms of neuralgia of the trigeminal nerve according to the method of Prof Ya. M. Pavlonskiy." Khar'kov, 1960. 12 pp; (Khar'kov State Medical Inst); 300 copies; free; (KL, 17-60, 172)

CHIBUKHANER, N.B.; SHROTINA, Ye.I.; DOTSENKO, M.G.

Report on the work of the Kharkov Neurosurgical Society for 1962.
Vop. neirokhir. 27 no.6:56-58 N-D '63. (MIRA 17:12)

CHITBUKMAKHER, N.B.; SIROTINA, Ye.I.; DOTSENKO, M.G.

Report on the meetings of the Khar'kov Scientific Society of neurosurgeons during the year 1963. Vop. neirokhir. 28 no.6:58-59 N-D '64. (MIRA 18:4)

CHEMBERLEN, O., [Chamberlain, O]; SERGE, Ye., [Serge, E]; VIGAND, S., [Wiegand, S]; IPSILANTIS, T.; SIROTINA, Ye.P. [translator].

New foreign titles; antiprotons. O. Chamberlain, and others. [Translated from Nature, vol.177 no.4497, 7/1/56 p.11-12, by E.P. Sirotina]. Usp.khim. 25 no.7:915-916 Jl '56. (MLRA 9:10)

1. Laboratoriya fiziki i radiofiziki Kaliforniyskogo universiteta, Barkli, Kaliforniya (for Chamberlain, Serge, Wiegand, Ipsilantis).
(Protons)

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S/056/60/039/003/027/045
B006/B063

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26.1410

AUTHORS: Sirotina, Ye. P., Syrovatskiy, S. I.

TITLE: The Structure of Low-intensity Shock Waves in Magneto-hydrodynamics

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 3(9), pp. 746-753

TEXT: The authors of the present paper investigated low-intensity shock waves by a method that was used by L. D. Landau and Ye. M. Lifshits to study shock waves in ordinary hydrodynamics, and was generalized by Syrovatskiy for the treatment of shock waves propagating perpendicular to a magnetic field in magnetohydrodynamics. Though this method cannot be used to study the specific features of strong shock waves, such as isothermal and isomagnetic jumps, it permits a general solution of the problem of any waves in consideration of dissipative processes. This is particularly important for the investigation of the dependence of the solution on the parameters and of the occurrence of singularities. The first section deals with the equations of low-intensity shock waves. The authors consider a plane shock wave in which all quantities are only functions of

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x. The general magnetohydrodynamic equations for a steady, uniform flow are written down. These equations along with the conditions for the occurring jumps of the parameters lead to the following differential equation for p(x):

$$\left[1 + \left(j^2 + \frac{a_1}{2}\right)\left(\frac{\partial V}{\partial p}\right)_s\right]\delta p + \frac{1}{2}\left[\left(j^2 + \frac{a_1}{2}\right)\left(\frac{\partial^2 V}{\partial p^2}\right)_s + b_1\left(\frac{\partial V}{\partial p}\right)_s^2\right](\delta p)^2$$

$$= -\left\{\frac{j^2 + a_1/2}{T}\,\frac{\varkappa}{j}\left(\frac{\partial T}{\partial p}\right)_s\left(\frac{\partial V}{\partial s}\right)_p + \left[\frac{c_1}{2} - j\left(\frac{4}{3}\eta + \zeta\right)\left(\frac{\partial V}{\partial p}\right)_s\right]\right\}\frac{dp}{dx} \quad ; \quad \delta p = p(x) - p_1 \,.$$

(p, T, and V are the pressure, temperature, and specific volume, respectively, of the medium; η and ζ are the first and the second viscosity coefficient, respectively; $\varkappa$ is the coefficient of thermal conductivity; a_1, b_1, and c_1 are coefficients tending toward zero with $H \to 0$). First, this equation is used to study the attenuation of small-amplitude waves and to determine the attenuation factor (Section II), and later (Section III) it is used to determine the width of the discontinuity. The last part (Section IV) deals with the relationship between the attenuation factor

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The Structure of Low-intensity Shock Waves in Magnetohydrodynamics

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B006/B063

and the width of the small-amplitude discontinuity. R. V. Polovin and G. Ya. Lyubarskiy are mentioned. There are 10 references: 8 Soviet, 1 US, and 1 British.

SUBMITTED: April 13, 1960 (initially) and June 8, 1960 (after revision)

Card 3/3

17859

S/535/61/000/132/005/012
E030/E484

11.0100

AUTHORS: Kopylov, N.I., Candidate of Technical Sciences
Sirotina, Ye.P.

TITLE: Viscosity of gasoline B-70 (B-70), kerosene T-1 and fuel T-5 at low temperatures

SOURCE: Moscow. Aviatsionnyy institut. Trudy. no.132.1961.58-62. Teplofizicheskiye svoystva nekotorykh aviatsionnykh topliv v zhidkom i gazoobraznom sostoyanii.

TEXT: Using a conventional design of capillary viscometer by Pinkevich and Mitrofanov (Ref.2: Transactions of the Conference on Viscosity and Colloidal Solutions, Akademizdat, no.2, 1944, 252), viscosities were obtained for gasoline and T-1 from -38°C to 17°C and for T-5 from -45°C to 10°C. Smoothed data are calculated and listed at 5°C intervals. The densities of the fuels were assumed to obey the relation:

$$d_4^{20} = d_4^{\div} + \gamma(t - 20)$$

recommended for petroleum products. The capillaries used had diameters of 0.6 and 0.8 mm. The data are accurate to between

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S/535/61/000/132/005/012
E030/E484

Viscosity of gasoline ...

1.5 and 5% and obey the Bachinsky relation:

$$\eta = \frac{A}{(t + a)^n}$$

with the following values of the constants (η in centipoise):

Data for Bachinsky equation

Table 4.

Liquid	A	a	n
Gasoline B-70	247	150	2.08
Kerosene T-1	238.8	90	2.07
Fuel T-5	3319	76	2.53

There are 2 figures, 5 tables and 2 Soviet references.

Card 2/2

LYSOV, B.S., kand.tekhn.nauk [translator]; MOZZHUKHIN, Ye.I., kand. tekhn.nauk [translator]; SHULEPOV, V.I., kand.tekhn.nauk [translator]; IVANOV, A.F. [translator]; SIROTINA, Ye.P. [translator]; NATANSON, A.K., kand.tekhn.nauk, red.; ALEKSEYEV, V.A., red.; DZHATIYEVA, F.Kh., tekhn.red.

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