YAVORSKAYA, YE V

YUGO

Synthesis of 3-phenyl-3-(methylamino)propionic acid and some of its derivatives. V. M. Rodionov and Ye. V. Yavorskaya. *J. Gen. Chem. U.S.S.R.* 23, 1025-8(1953)(Engl. translation).--See *C.A.* 48, 8755g. H. L. H.

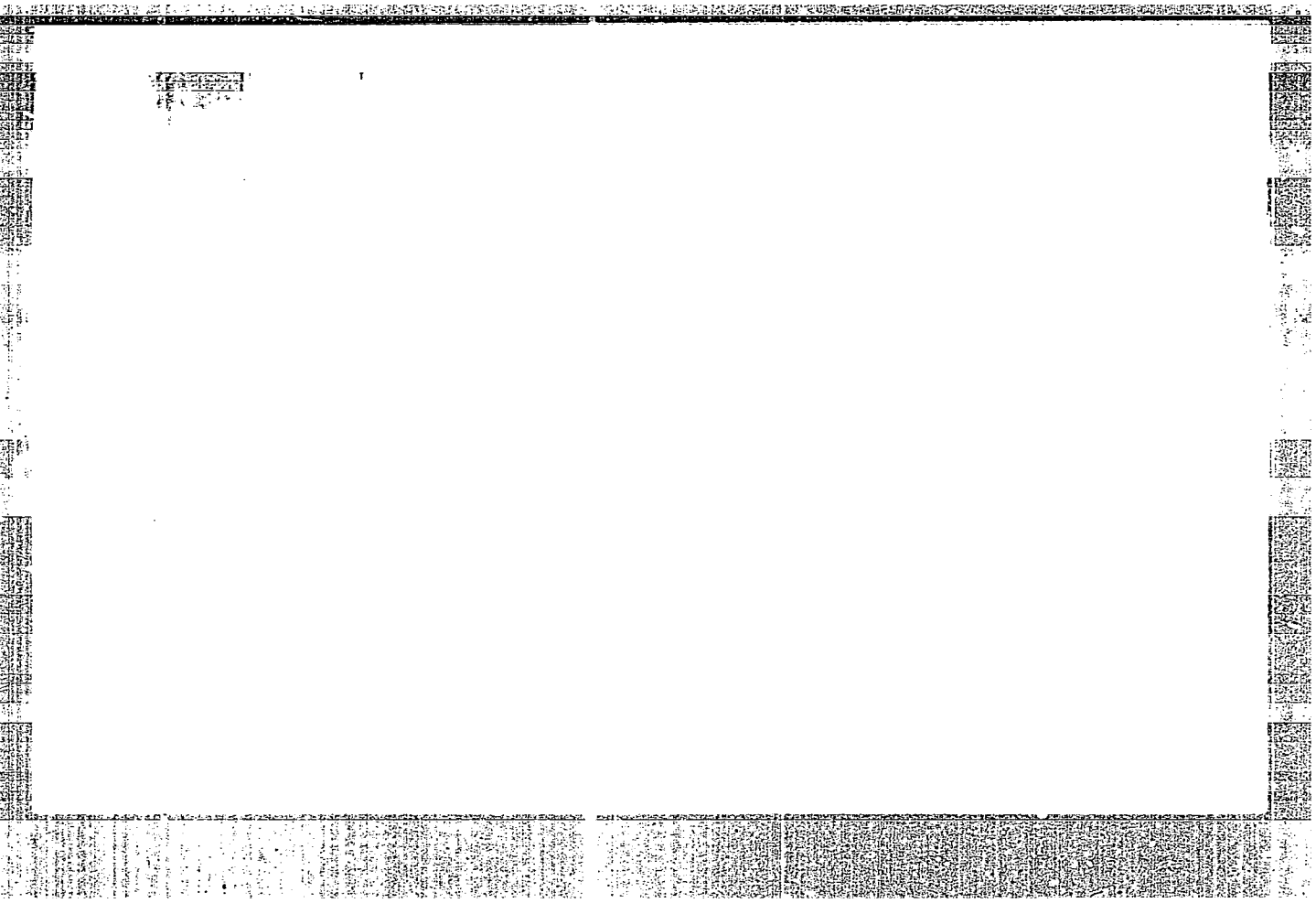
YAVORSKAYA, Ye. V.

POLUNINA, Ye.F.; CHENTSOVA, M.G.; YAVORSKAYA, Ye.V.; RODIONOV, V.M., akademik, redaktor [deceased]; ZHUKOVA, I.G., redaktor; SACHKVA, A.I., tekhnicheskiy redaktor

[Manual on applied studies on organic chemistry for students in schools of medicine] Rukovodstvo k prakticheskim zaniatiiam po organicheskoi khimii dlia studentov meditsinskikh institutov. Pod red. V.M.Rodionova. Moskva, Gos. izd-vo med. lit-ry, 1954. 110 p. (MLRA 7:10)

1. Sotrudnik kafedry organicheskoy khimii II Moskovskogo meditsinskogo instituta imeni I.V.Stalina (for Polunina, Chentsova, Yavorskaya)

(Chemistry, Organic)



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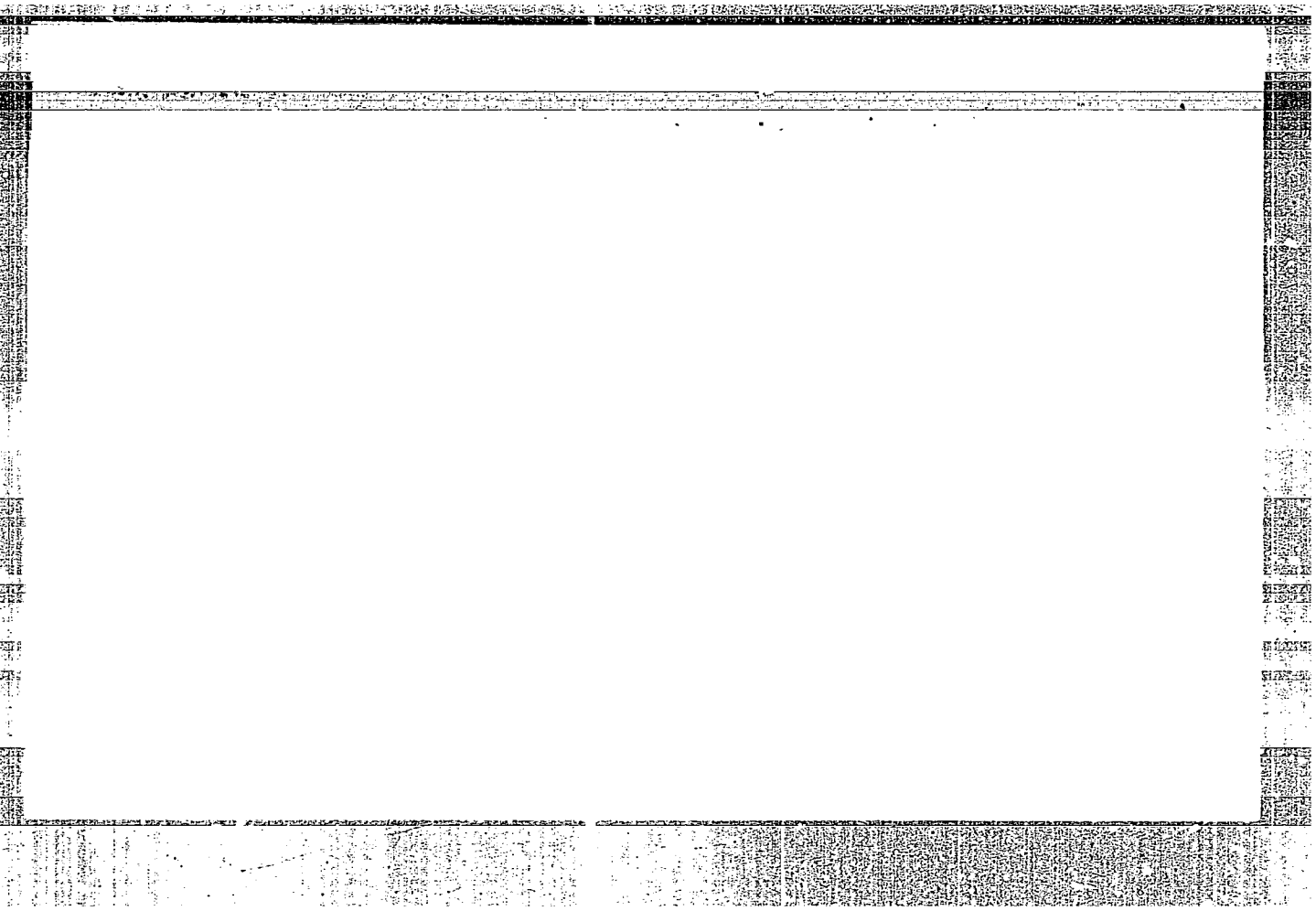


APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001962310020-7"

DROZDOV, N.S.; YAVORSKAYA, Ye.V.

Mesoderivatives of acridine. Part 23: Reaction of 9-methylacridine with nitroso compounds. Zhur.ob.khim. 30 no.10:3421-3425 O '61. (MIRA 14:4)

1. Moskovskiy meditsinskiy institut imeni N.I.Pirogova.
(Acridine) (Nitroso compounds)

Yavorskiy, A.

GLIKIN,B., inzhener-elektromekhanik; YAVORSKIY,A., inzhener-elektrik

The problem of electric power distribution on tank vessels. Mor. flot 15 no.9:13-14 S'55. (MLRA 8:11)
(Tank vessels) (Electricity on ships)

GLIKIN, B.; PETROVSKIY, M.; YAVORSKIY, A.

Ways of improving the operational properties of the electric equipment of ships. Mor. flot 22 no.11:20-22 N '62. (MIRA 15:12)

1. Nachal'nik sektora avtomatiki TSentral'nogo proyektno-konstruktorskogo byuro No.3 Ministerstva morskogo flota (for Glikin). 2. Gruppovoy inzh.-elektrik Chernomorskogo parokhodstva (for Petrovskiy). 3. Rudovoditel' gruppy TSentral'nogo proyektno-konstruktorskogo byuro No.3 Ministerstva morskogo flota (for Yavorskiy).
(Electricity on ships)

PANOV, F., inzhener-polkovnik; YAVORSKIY, A., mayor tekhnicheskoy sluzhby; SHCHUKIN, M., inzhener-podpolkovnik

For traffic safety. Tekh. i vooruzh. no.6:71-74 Je '64.
(MIRA 17:7)

YAVORSKIY, A.

Agricultural Machinery

Use of locomobiles on livestock breeding collective farms. MTS 12 no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1958. Unclassified.

YAKIMUK,P.G., inzhener-mekhanik; VASILYUK,N.F.; GAL'PERIN,L.Yu.; ZAYTSEV,T.F.; KARPEN'KO,S.A.; STEPANENKO,A.N.; YAVORSKIY,A.A.; SHAGOMYALO,V.I., redaktor; GURZHIY,M.Ye., tekhnicheskiy redaktor

[Tractor operator's manual] Spravochnik traktorista. Izd.4-oe, perer. i dop. Kiev, Gos.izd-vo selkhoz.lit-ry USSR, 1955. 519 p. (Tractors--Handbooks, manuals, etc) (MIRA 9:1)

Yavorskiy, A.A.

VASILYUK, N.F.; GAL'PERIN, L.Yu.; ZAYTSEV, T.F., KARPENKO, S.A.; STEPANENKO, A.N.; YAVORSKIY, A.A.; YAKIMUK, P.G., inzhener-mekhanik, redaktor; KOZAK, F.Ye., redaktor; CHEREVATSKIY, S.A., tekhnicheskiy redaktor

[Handbook for tractor operators] Spravochnik traktorista. Izd. 5-oe, perer. i dop. Kiev, Gos. izd-vo sel'khoz. lit-ry USSR, 1956. 471 p.
(Tractors) (MLRA 10:4)

ZAYTSEV, T.F.; KARPENKO, S.A.; NESVITSKIY, Ya.I.,kandidat tekhnicheskiy nauk; STEPANENKO, A.N.; YAVORSKIY, A.A.; SHAGOMYALO, V.I., redaktor; KRAVCHENKO, M.F.,tekhnicheskiy redaktor

[Tractor brigade leader's manual] Spravochnik brigadira traktornoi brigady. Izd. 2-oe, dop. Kiev, Gos. izd-vo sel'khoz. lit-ry USSR, 1956. 483 p. (MLRA 10:4)
(Tractors)

GLUSHCHENKO, Vladimir Petrovich [Hlushchenko, V.P.]; YAVORSKIY, Al'fred Al'fredovich [Lavors'kyi, A.A.]; SEMENKO, M.V., red.; GULENKO, O.I. [Hulenko, O.I.], khud.-tekhn.red.

[Mechanization of livestock farms in connection with loose housing of cattle] Mekhanizatsiia ferm z bezpryv'iaznym utrymanniam khudoby. Kyiv, Derzh.vyd-vo sil's'kohospodars'koi lit-ry URSR, 1960. 98 p. (MIRA 14:1)
(Farm mechanization) (Dairy barns)

KOVALENKO, O.Ya., kand.tekhn.nauk; YAVORSKIY, A.A. [IAvors'kyi, A.A.], inzh.

Mechanized feed distribution in cattle barns. Mekh. sil'. hosp. 11 no.5:9-11 My '60. (MIRA 14:3)
(Cattle—Feeding and feeds)

YAVORSKIY, Al'fred Al'fredovich[IAvors'kyi, A.A.]; OLEFIRENKO, G.A.[Olefirenko, H.A.], red.; KALASHNIKOVA, O.G. [Kalashnykova, O.H.], tekhn. red.

[Using tractors on livestock farms] Zastosuvannia traktoriv na tvarynnyts'kykh fermakh. Kyiv, Derzhsil'hospvydav URSR, 1962. 92 p. (MIRA 16:5)
(Ukraine--Stock and stockbreeding)
(Ukraine--Tractors)

USSR/Biology - Wheat Plant Breeding 11 Feb 50

"Effect of Transplantation of Embryos on the Formation of Branched Ears and the Yield of Grain in Kakhetinsk Wheat (Triticum turgidum L.)," G. V. Porutskiy, A. G. Yavorskiy, Inst of Plant Physiol and Agr Chem, Acad Sci Ukrainian SSR

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 901-904

Investigates and tabulates biological and morphological effects of transplanting embryos of Kakhetinsk wheat on endosperm of a spring wheat with a short growing stage, Odessa-13, and a winter wheat, Odessa-3, as compared with controls. Feeding the embryos on endosperm of Odessa-3 creates conditions favorable for branching and increase of grain yield, whereas endosperm of Odessa-13 achieves reverse effect. Includes three tables. Submitted 3 Dec 49 by Acad N. A. Maksimov.

PA 165T7

Yavorskiy, A.G.

USSR/Weeds and Their Control

N

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1849

Author : A.G. Yavorskiy
Inst : Not Given
Title : Field Choking in Relation of Crop Rotation and Soil Cultivation in Grass-Weed Crop Rotation in the Southern Part of the Wooded District of the Ukraine

Orig Pub : Nauch. tr. Ukr. s.kh. akad., 1956, 8, 31-36

Abstract : An analysis of weed prevalence in individual fields having supported crops on the turfy-podzolic soil of the testing station zone of the Ukrainian Agricultural Academy has shown, during a five year period of rotation (1949-1954), that on fields with winter cultivations the amount of weeds per $1m^2$ (from 16 to 68 for wheat and 18-22 plants for rye) was considerably lower than on the fields with summer grains (from 84-242). The cleanest were the winter crops on black and occupied fallow land and on one-year strata. In late winter crops on plowed furrows, choking by the wild radish was

Card : 1/2

USSR/Weeds and Their Control

N

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1849

greater, but on strata with winter wheat crops, the amount of 2 year old and perennial weeds arose drastically. The most prevalent weeds of the summer crops appear to be the wild radish, the field horestail and the dove-colored bristly fox-tail grass. The summer crops on plow-land are cleaner (92-144 weed plants per $1m^2$), but by sowing wheat on the layer of perennial grass, choking increased to 254 plants per $1m^2$. On perennial grass the amount of weeds is considerably greater in the stubble (82) than in the post-harvest crops (15). To combat weeds in a given zone, plow-turned fallow lands are recommended, with deep mellowing of the soil prior to cultivating being necessary.

Card : 2/2

YAVORSKIY A. G.

GLIKIN, B.A., inzh.; YAVORSKIY, A.G., inzh.

Determining the capacity of the electric power plant of a ship.
Sudostroenie 23 no.12:33-38 D '57. (MIRA 11:2)
(Electricity on ships)

GLIKIN, B.A., inzh.; YAVORSKIY, A.G., inzh.

Remagnetizing of marine generators. Sudostroenie 24 no.10:54-55 O '58. (MIRA 11:12)
(Electric generators) (Electricity on ships)

VOLKOV, Ivan Georgiyevich; GLIKIN, Boris Abramovich; ZABOLOTNYY, Il'ya Yevtikhiyevich; LIKHOTINSKIY, Valentin Sergeyevich; SPEKTOR, David Borisovich; YAVORSKIY, Anatoliy Georgiyevich; SUKHIN, Ye.T., red.; MARTIROSOV, A.Ye., red.; VAYL', T.I., red.izd-va; LAVRENOVA, N.B., tekhn.red.

[Reference book for sea harbor mechanizers] Spravochnik mekhanizatora morskogo porta. Moskva, Izd-vo "Morskoi transport," 1959. 462 p. (MIRA 13:2)

(Harbors--Equipment and supplies)
(Cargo handling--Equipment and supplies)

YAVORSKIY, A.G., inzh.; GLIKIN, B.A., inzh.

Use of mounted generators and ways to apply automatic control to the electric power plant of a ship. Sudostroenie 25 no.9:26-31 S '59. (MIRA 12:12)
(Electricity on ships) (Electric generators) (Automatic control)

MIKHALOVSKIY, A.G., doktor sel'skokhozyaystvennykh nauk, prof.; KALIBERDA, V.M., assistent; YAVORSKIY, A.G., kand.sel'skokhozyaystvennykh nauk, dotsent; VESELOVSKIY, I.V., kand.biologicheskikh nauk

Productivity of grassland crop rotations and measures for increasing soil fertility in the Ukrainian Polesye. Nauch. trudy UASHN 10:3-16 '60. (MIRA 14:3)

(Polesye--Rotation of crops) (Soil fertility)

GLIKIN, B.A., inzh.; PETROVSKIY, M.Ye., inzh.; YAVORSKIY, A.G., inzh.

Emergency operation of tank vessel electric power plants. Sudostroenie 28 no.5:35-38 My '62. (MIRA 15:7)
(Electricity on ships)

LUCHKO, A.S.; PORUTSKIY, G.V.; YAVORSKIY, A.G.

Gaseous excretions and the amino acid composition of green peas. Fiziol. rast. 11 no.1:53-58 Ja-F '64.
(MIRA 17:2)

1. Sel'skokhozyaystvennaya akademiya, Kiyev.

YAVORSKIY, A.K., inzh.; VINOGRADOV, B.N., inzh.

Effect of an accelerated cycle of autoclaving on the process of the hardening of lime keramzit concrete. Trudy GISI no.47:7-22 '64. (MIRA 18:11)

YAVORSKIY, A.K., inzh.

Converting plants producing silica brick to the manufacture of advanced products. Trudy GISI no.43:72-78 '63. (MIRA 17:4)

YAVORSKIY, A.K.; VOYTOVICH, V.A.

Adhesive for securing ultrasonic transformers during design testing.
Zav. lab. 31 no.2:252 '65. (MIRA 18:7)

1. Gor'kovskiy inzhenerno-stroitel'nyy institut.

Category : USSR/General Problems - Problems of Teaching A-3

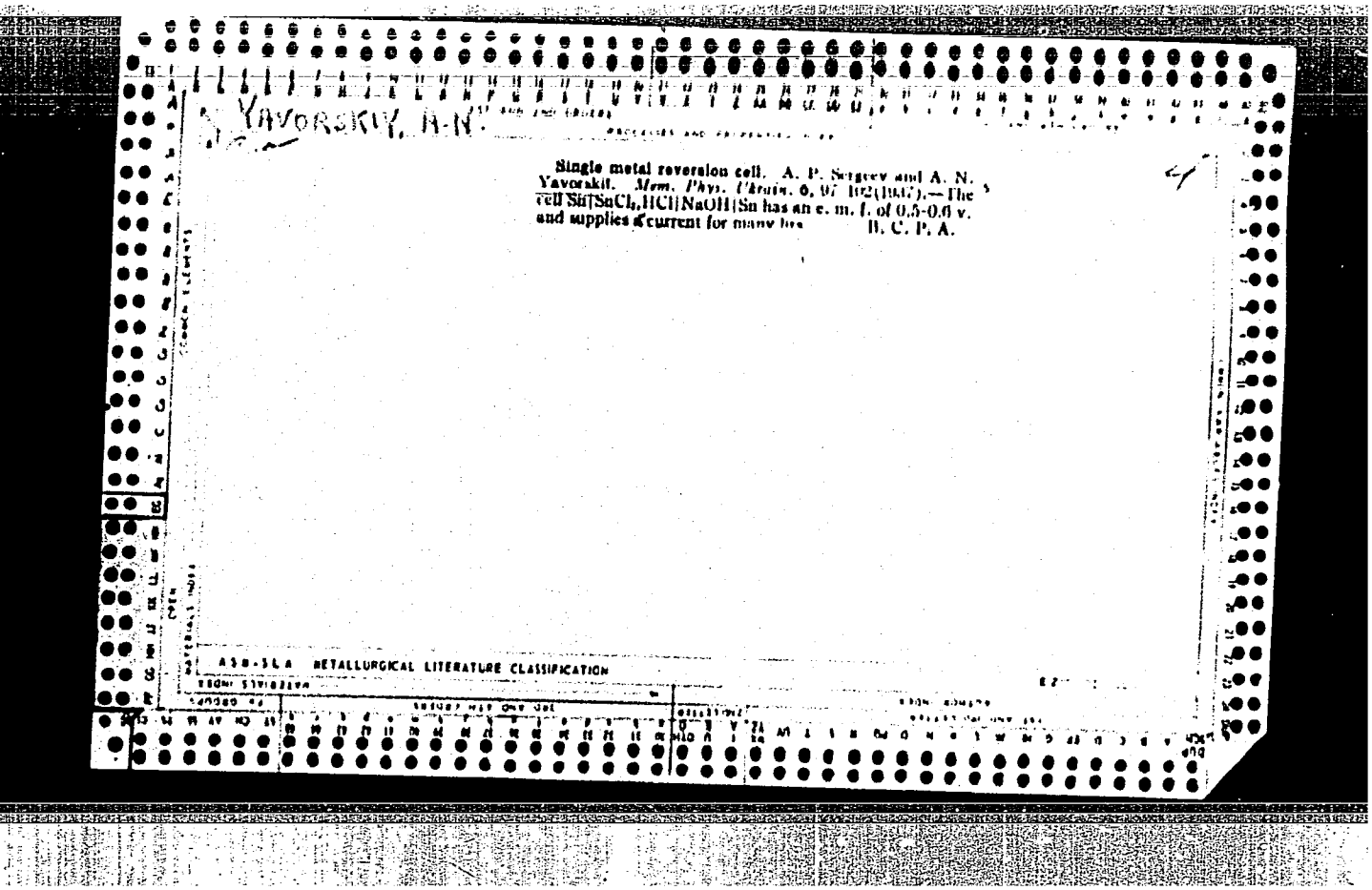
Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 69

Author : Yavorskiy, A.M., Piven, G.F.
Title : Polytechnical Preparation of Future Physics Teachers

Orig Pub : Radyans'ka shkola, 1956, No 4, 23-32

Abstract : No abstract

Card : 1/1



YAVORSKY, A.N.

Single metal reversion cell. A. P. Sergeev and A. N. Yavorskii. *Mem. Phys. Ukraine*, 6, 97-102(1957).—The cell Sn|$SnCl_4$,HCl|NaOH|Sn has an e. m. f. of 0.5-0.6 v. and supplies a current for many hrs. B. C. P. A.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

YAVORSKIY, A.N.

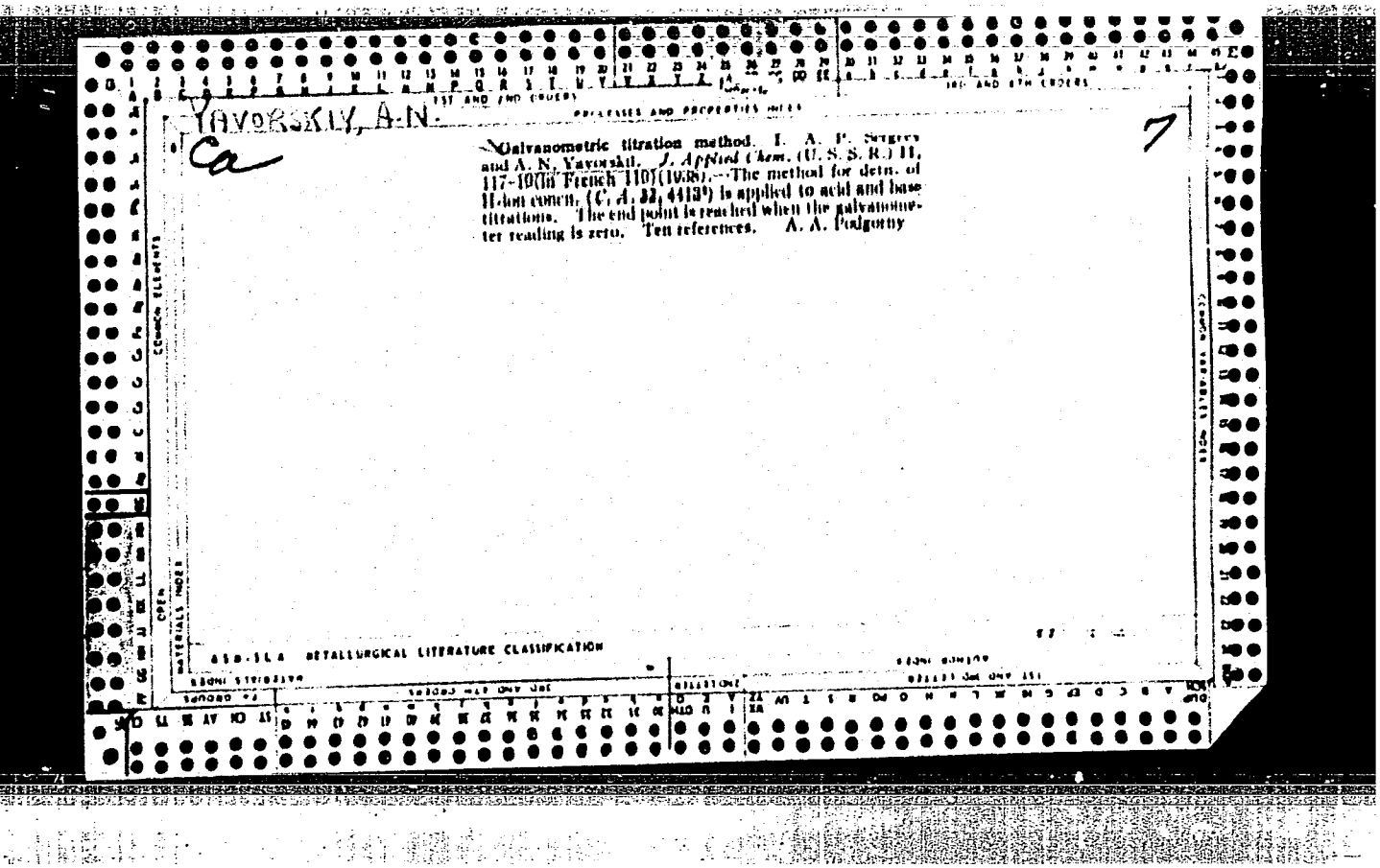
Ca

2

Galvanometric determination of the hydrogen-ion concentration. I. A. P. Sergeev and A. N. Yavorskii. *J. Applied Chem.* (U. S. S. R.) 11, 113-16(in French 116) (1938).—Connect the sample with a soln. of known H-ion concn. by means of a satd. KCl bridge, introduce Sb electrodes in both solns., and connect with a galvanometer. Note the sign of charges on the electrodes and substitute other standard solns. until equil. is obtained. The method permits p_H detn. to first decimal. Eight references.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



YAVORSKIY, A.N.

Ca

7

Galvanometric titration method. I. A. P. Sergeev and A. N. Yavorskii. *J. Applied Chem.* (U.S.S.R.) 11, 117-10(in French 110)(1938).—The method for detn. of H-ion concn. (*C. A.* 32, 4413[9]) is applied to acid and base titrations. The end point is reached when the galvanometer reading is zero. Ten references. A. A. Podgorny

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

YAVORSKIY, Anatoliy Nikolayevich.

The interior organization of secondary school shops Minsk Dziarzhaunae vydavetstva Belarusi, Vuchpedsektar, 1935. 63 p.

NN NNC

YAVORSKIY, A. N.

Physics - Problems, Exercises, etc.

Empirical problems in physics. Fiz. v shkole 12 no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952. Unclassified.

YAVORSKIY, A.V.

YAVORSKIY, A. V.

Differential diagnosis of kidney diseases in pulmonary tuberculosis. Probl. Tubark., Moskva No. 6, Nov.-Dec. 50. p. 68-9

1. Of Moscow Municipal Scientific-Research Tuberculosis Institute (Director--Prof. V. L. Eynis).

CLML 20, 3, March 1951

YAVORSKIY, A.V.

YAVORSKIY, A.V.

Late results of streptomycin therapy of pulmonary tuberculosis in a dispensary. Probl. tub. no.1:44-48 Ja-F '55. (MLRA 8:4)

1. Iz Moskovskogo tuberkuleznogo dispansera No.4 (glavnyy vrach zasluzhennyy vrach RSFSR S.M.Zamukhovskiy).

(TUBERCULOSIS, PULMONARY, therapy, streptomycin, remote results)
(STREPTOMYCIN, therapeutic use, tuberc., pulm., remote results)

GAFT, Ya.M., kand.med.nauk; Prinimali uchastiye: BRAINZBURG, N.A., vrach; GOL'TS, I.P., vrach; GORELIK, Ye.S., vrach; ZVONKINA, O.M., vrach; LIVSHITS, R.I., vrach; LUR'YE, Ye.L., vrach; OZHE, N.B., vrach; RYBAL'SKAYA, V.G., vrach; CHELNOKOVA, A.K., vrach; YAVORSKIY, A.V., vrach

Dynamics of the tuberculous process in patients transferred to the third group of dispensary registration. Probl. tub. 38 no.3:3-8 '60. (MIRA 14:5)

1. Iz protivotuberkuleznogo dispansera No.4 Moskvy (glavnyy vrach - zasluzhennyy vrach RSFSR S.M.Zamukhovskiy).
(TUBERCULOSIS)

YAVORSKIY, B.I.

PA 50/49T44

USSR/Fuels, Solid
Coal
Coke

May 49

"Coking Coal Industry of Kuzbas and Its Possible Expansion," B. I. Yavorskiy, Dr Geol Mineral Sci, Laureate of Stalin Prize, 2½ pp

"Ugol'" No 5

Claims geological studies of the quality of Kuzbas coal in various districts have not been completed. Recommends petrographic studies prior to initial coal sampling. Experiments disclosed that 40% of high-melting coking coal from Kuzbas coking-coal

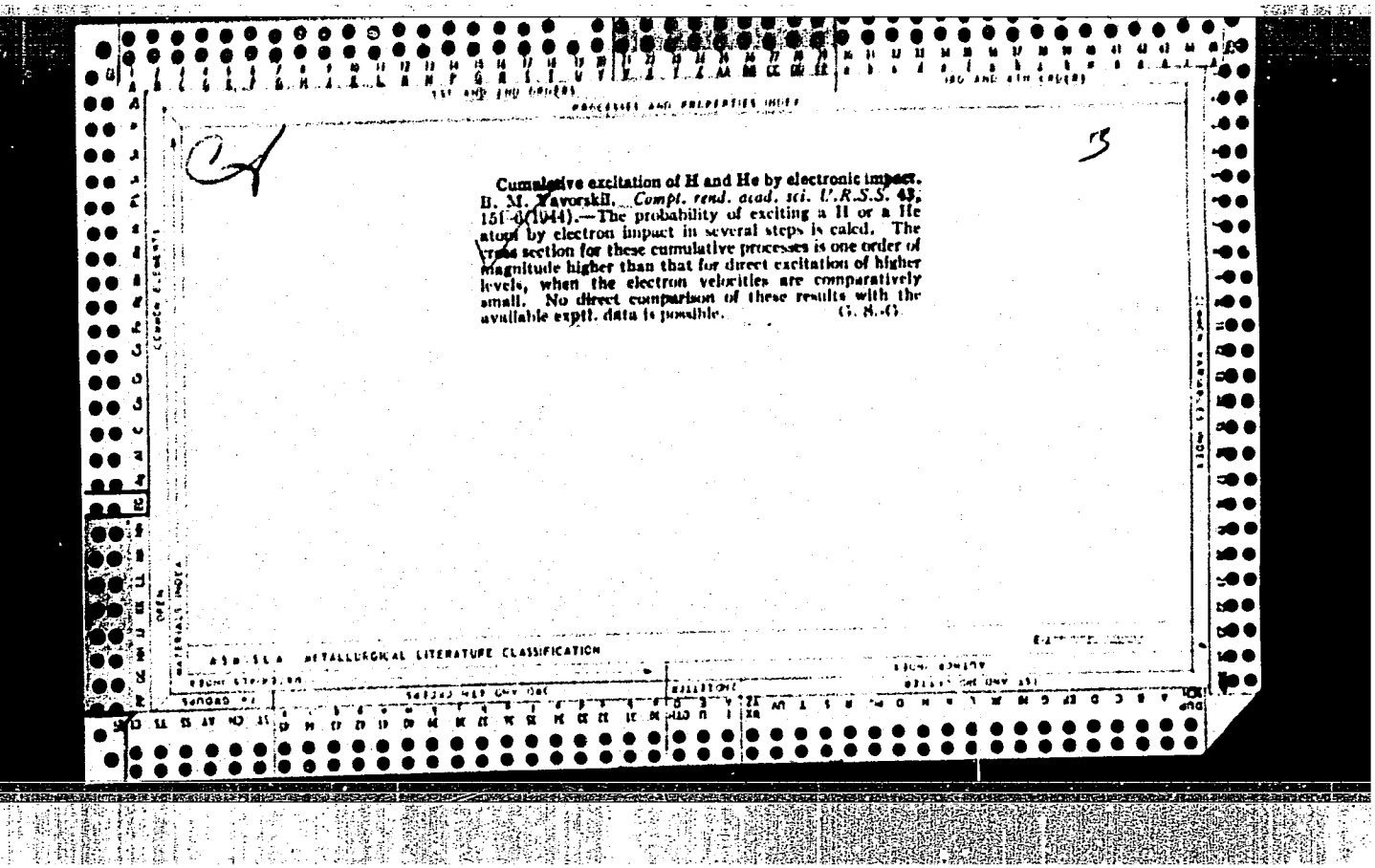
50/49T44

USSR/Fuels, Solid (Contd)

May 49

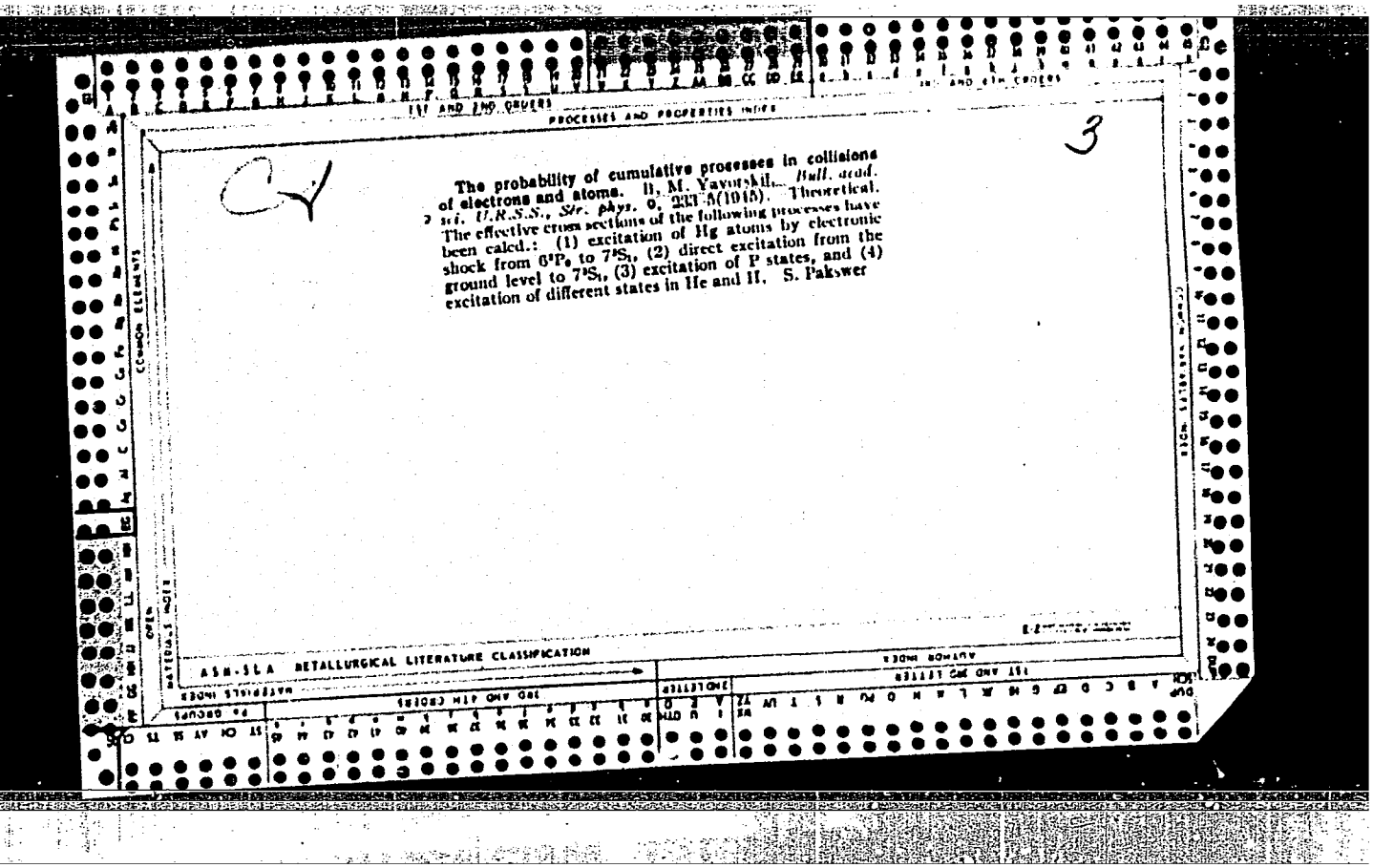
layers can be used. Discusses expansion of existing coking-coal bases, various coal brands, their quality and places they are mined.

50/49T44

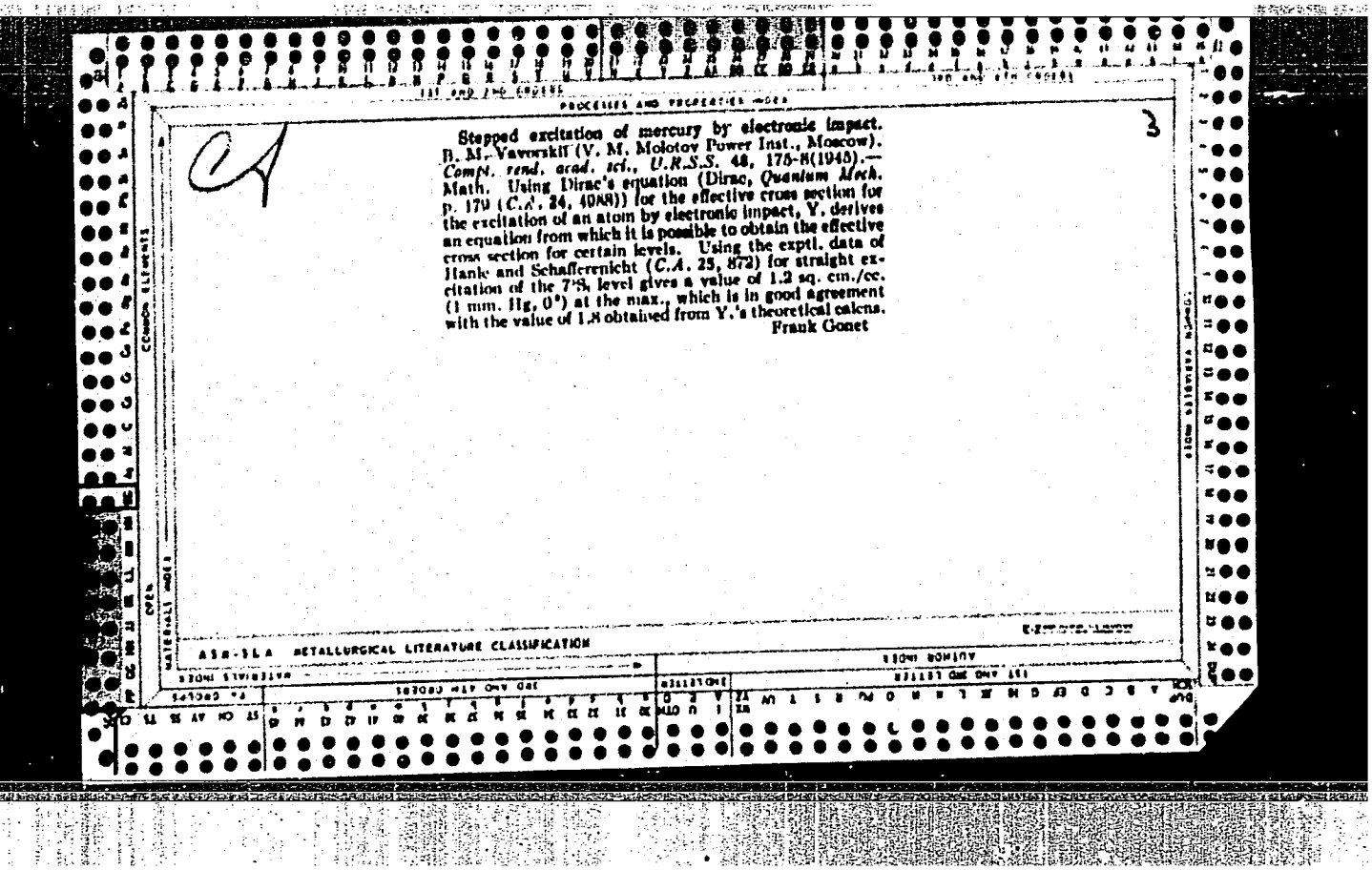


Cumulative excitation of H and He by electronic impact. B. M. Yavorskii. *Compt. rend. acad. sci. U.R.S.S.* 43, 151–6(1944).—The probability of exciting a H or a He atom by electron impact in several steps is calcd. The cross section for these cumulative processes is one order of magnitude higher than that for direct excitation of higher levels, when the electron velocities are comparatively small. No direct comparison of these results with the available exptl. data is possible. (C. R.-C.)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

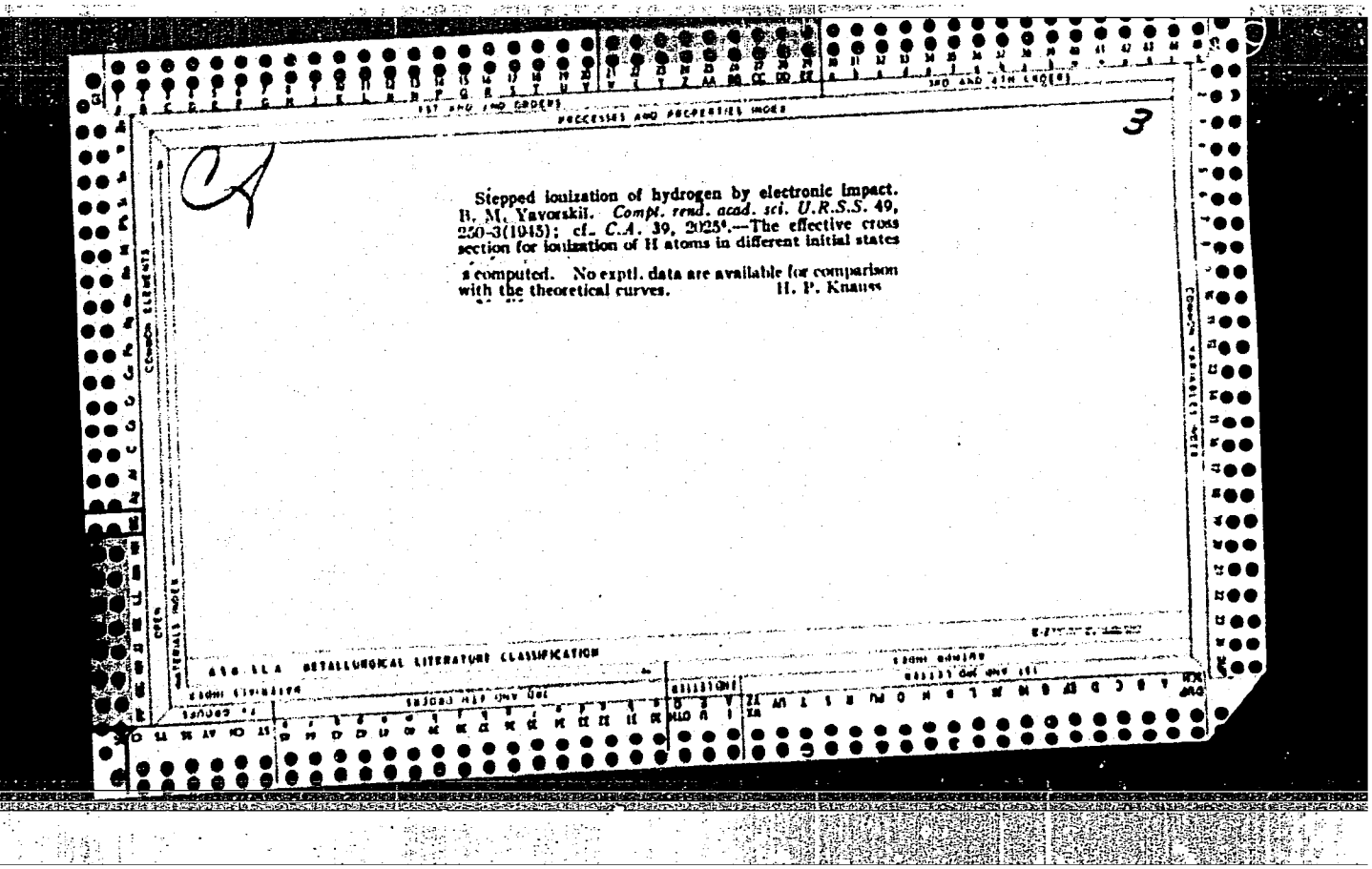


The probability of cumulative processes in collisions of electrons and atoms. B. M. Yavorskiĭ. *Bull. acad. sci. U.R.S.S., Sér. phys.* 9, 233-5(1945). Theoretical. The effective cross sections of the following processes have been calcd.: (1) excitation of Hg atoms by electronic shock from 6^1P_0 to 7^1S_1, (2) direct excitation from the ground level to 7^1S_1, (3) excitation of P states, and (4) excitation of different states in He and H. S. Pakswer



Stepped excitation of mercury by electronic impact. B. M. Yavorskii (V. M. Molotov Power Inst., Moscow). *Compt. rend. acad. sci., U.R.S.S.* 48, 176-8(1945).—*Math.* Using Dirac's equation (Dirac, *Quantum Mech.* p. 179 (*C.A.* 24, 4088)) for the effective cross section for the excitation of an atom by electronic impact, Y. derives an equation from which it is possible to obtain the effective cross section for certain levels. Using the exptl. data of Hanle and Schaffernicht (*C.A.* 25, 872) for straight excitation of the 7^3S_1 level gives a value of 1.2 sq. cm./cc. (1 mm. Hg, 0°) at the max., which is in good agreement with the value of 1.8 obtained from Y.'s theoretical calcns.

Frank Gonet



Stepped ionization of hydrogen by electronic impact. B. M. Yavorskii. *Compt. rend. acad. sci. U.R.S.S.* 49, 250-3(1945); cf. *C.A.* 39, 2025⁸.—The effective cross section for ionization of H atoms in different initial states is computed. No exptl. data are available for comparison with the theoretical curves. H. P. Knauss

CA

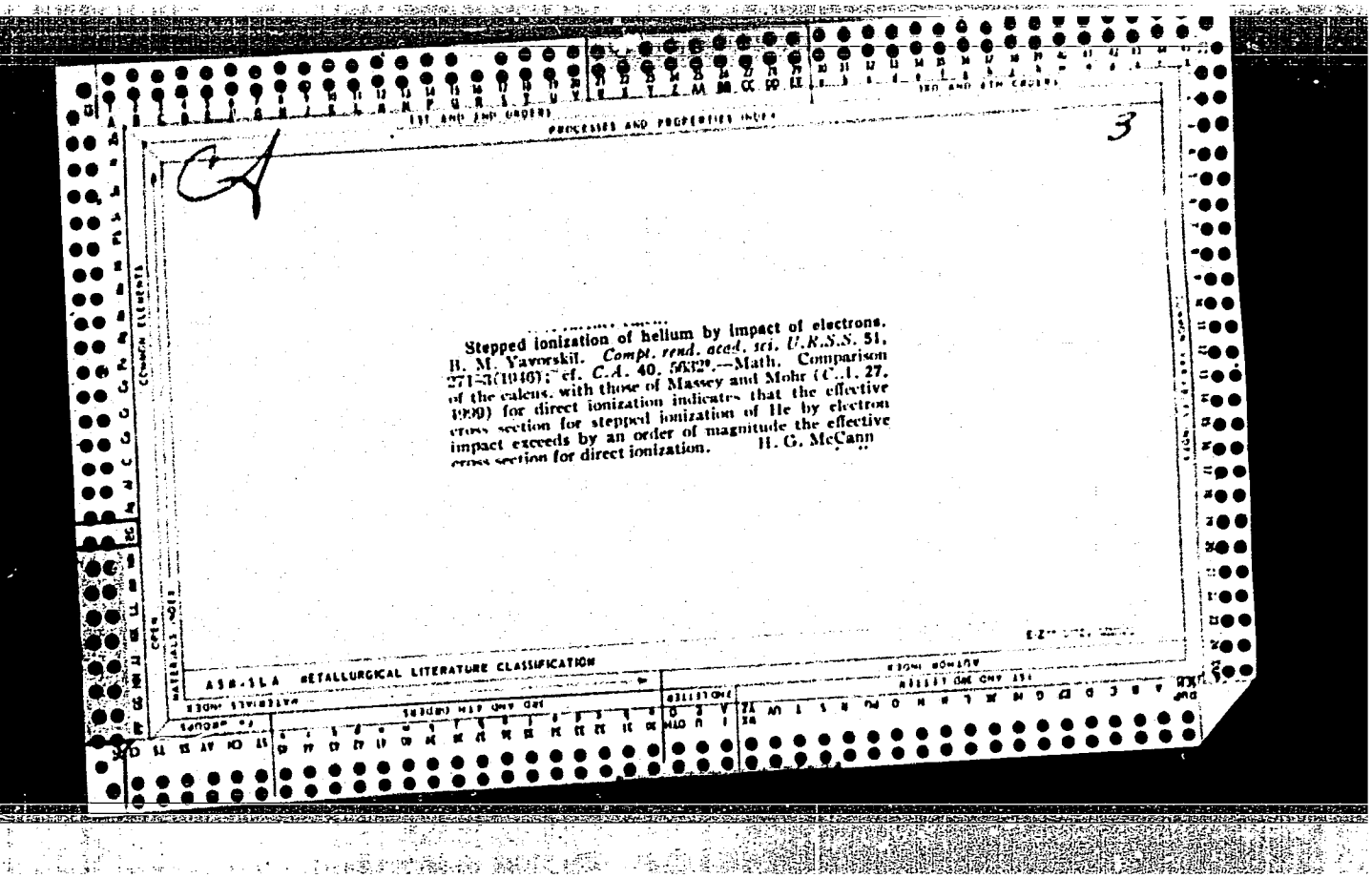
3

Absolute probabilities of excitation of the *P* levels of mercury by electron impact. B. Yavorskii (Molotov Energetics Inst., Moscow). —*Doklady Akad. Nauk S.S.S.R.* 50, 153-4(1945).—The 6^3P_0 level has a max. calcd. excitation cross section of ~ 1.2 sq. cm./cc. (in at. units of $\pi a_0^2 \times 10^{16}$) at an electron energy of 8 e.v.; the corresponding max. values for the 6^1P_1, 6^3P_1, and 6^3P_2 levels are 16.5 (at 16 e.v.), 4.8 (at 9 e.v.), and 10.3 sq. cm./cc. (at 13 e.v.), resp. Cyrus Feldman

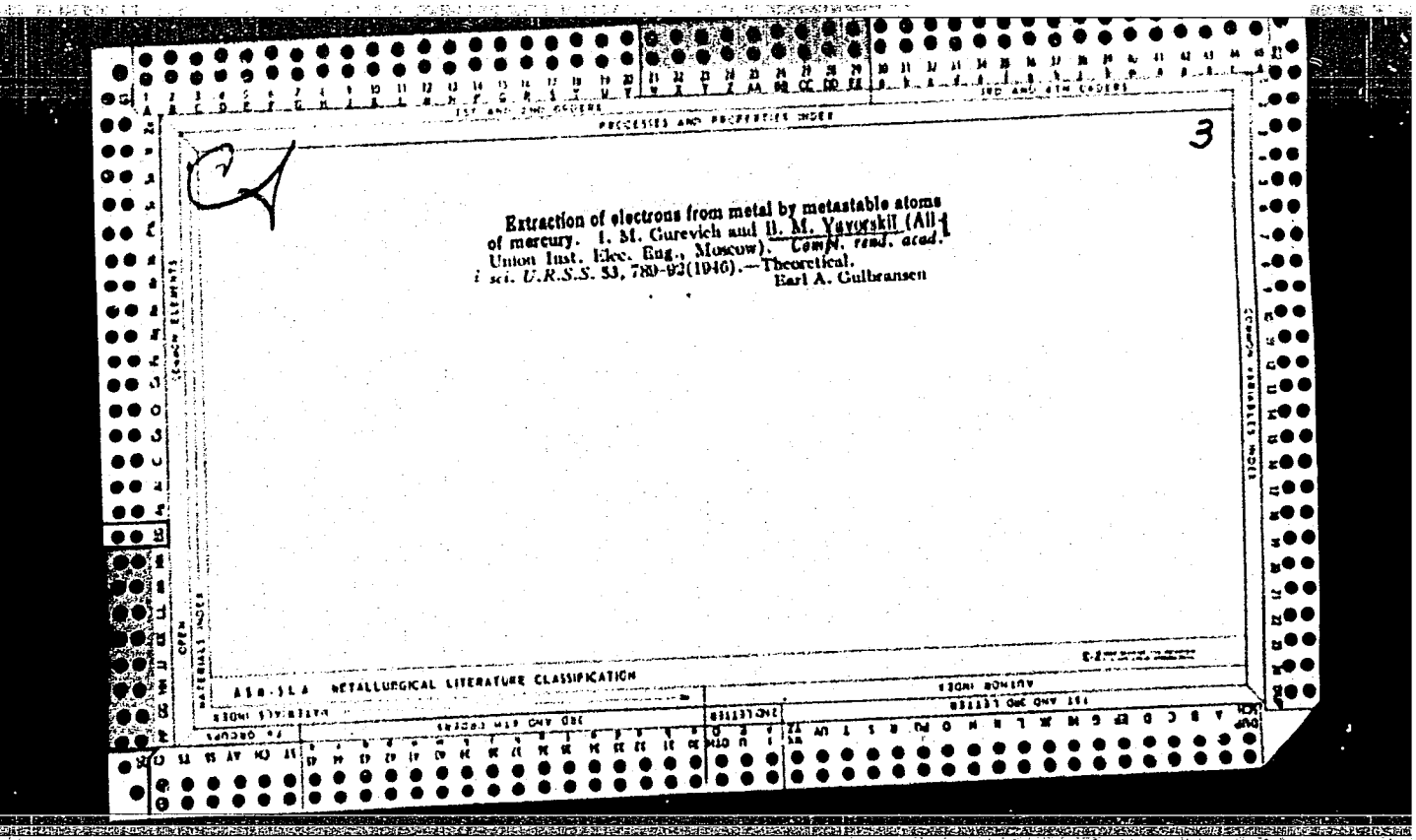
CA

3

Probabilities of collisions of the first and second kinds between atoms of mercury and free electrons. B. M. Yavorskiĭ. *J. Phys.* (U.S.S.R.) 10, 476-80(1940).—The effective cross sections for certain transitions in collisions of the second kind between Hg atoms and electrons are calcd.
B. A.



Stepped ionization of helium by impact of electrons. B. M. Yavorskii. *Compt. rend. acad. sci. U.R.S.S.* 51, 271–3(1946); cf. *C.A.* 40, 5632⁹.—Math. Comparison of the calcns. with those of Massey and Mohr (*C.A.* 27, 1999) for direct ionization indicates that the effective cross section for stepped ionization of He by electron impact exceeds by an order of magnitude the effective cross section for direct ionization. H. G. McCann



3

Extraction of electrons from metal by metastable atoms of mercury. I. M. Gurevich and B. M. Yavorskiĭ (All-Union Inst. Elec. Eng., Moscow). *Comptes rend. acad. sci. U.R.S.S.* 53, 789-92(1946).—Theoretical.
Earl A. Gulbransen

A 50-51 A METALLURGICAL LITERATURE CLASSIFICATION

YAVORSKIY, B. M.

"Theory of Elementary Processes in a Gas Discharge." Sub 8 Dec 47, Physics Inst imeni P. N. Lebedev, Acad Sci USSR

Dissertations presented for degrees in science and engineering in Moscow in 1947. (degree of Dr. Physico-Math Sci.)

SO: Sum No. 457, 18 Apr 55

PA 34T67

USSR/Nuclear Physics
Electron Theory
Atoms

Apr 1947

"Graduated Processes for Nonelastic Interaction of Atoms and Electrons," B. M. Yavorskiy, 12 pp

"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki" Vol XVII, No 4

Computations are made of effective cross sections for the excitation of hydrogen, helium and mercury atoms by an electron collision for the case when the atom is initially in an excited state. It is shown that effective cross sections for graduated processes of atom excitation exceed by an order of magnitude the values

USSR/Nuclear Physics (Contd) Apr 1947

corresponding to direct excitation of atoms from their normal states. Excitation functions are compared with experimental data on excitation functions for graduated processes.

34T67

YAVORSKIY, B. M.

ID

All-Union Electrical Inst. Moscow
Engineering Inst. im. Molotov

PA 53T87

YAVORSKIY, B.

USSR/Nuclear Physics - Impact Electronic Feb 1947
Nuclear Physics - Ionization

"Ionization of Mercury by Electron Impact," B. Yavorskiy, 4 pp

"CR Acad Sci" Vol LV, No 4

Symposium of previous work on subject, leading to calculation of effective cross section for ionization of mercury vapor by electron impact. Total cross section of atoms in one cc computed, recalculated for density at a pressure of one mm Hg and 0° C. Work cited includes papers by Massey, Mohr, Bethe, Houston, Slater, Eckart, Sommerfeld, Watson, Smith, Nottingham, and the author.

53T87

[redacted]

Inst. Electrical Engineering

Dec 49

YAVORSKIY, B. M.

USSR/Physics - Electron Scattering
Electron Microscope

"Scattering of Electrons in Thin Layers," L. M. Biberman, Ye. N. Vtorov, I. A. Kovner, N. G. Sushkin, B. M. Yavorskiy, Moscow State U imeni v. M. Molotov, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 4

Results of experiments using electron microscope EM-100 to measure angular distribution of electrons passed through thin film and scattered in the interval from $3 \cdot 10^{-4}$ to $3 \cdot 10^{-2}$ radium showed measurements in this interval are quite reliable. However, number of 60 Kv-electrons scattered was much greater than number calculated for very small angles ($3 \cdot 10^{-3}$ radian). Submitted by Acad S. I. Vavilov 6 Oct 49.

155T64

YAVORSKIY, B.

USSR/Nuclear Physics - Atoms, Excitation of Oct 51

"Excitation of Atoms in Mercury Discharge," V. Fabrikant, B. Yavorskiy, Moscow Power Eng Inst

"Zhur Eksper i Teoret Fiz" Vol XXI, No 10, pp 1180, 1181

Authors refer to work by Kagan and Perkin ("Iz Ak Nauk SSSR, Ser Fiz" 14, 1950) in which the latter quotes inaccurately results by Yavorskiy and Fabrikant. Nevertheless exptl results by Kagan and Perkin confirm qualitatively results previously obtained by different method by Fabrikant, Butayeva and Tsirg (ibed. 7, 1937; 8, 1938). Submitted 20 Apr 51.

PA 197T101

(CA 47 no. 21: 10989 '53)

YAVORSKIY, B.

USSR/Physics - Statistical Mechanics Aug 51

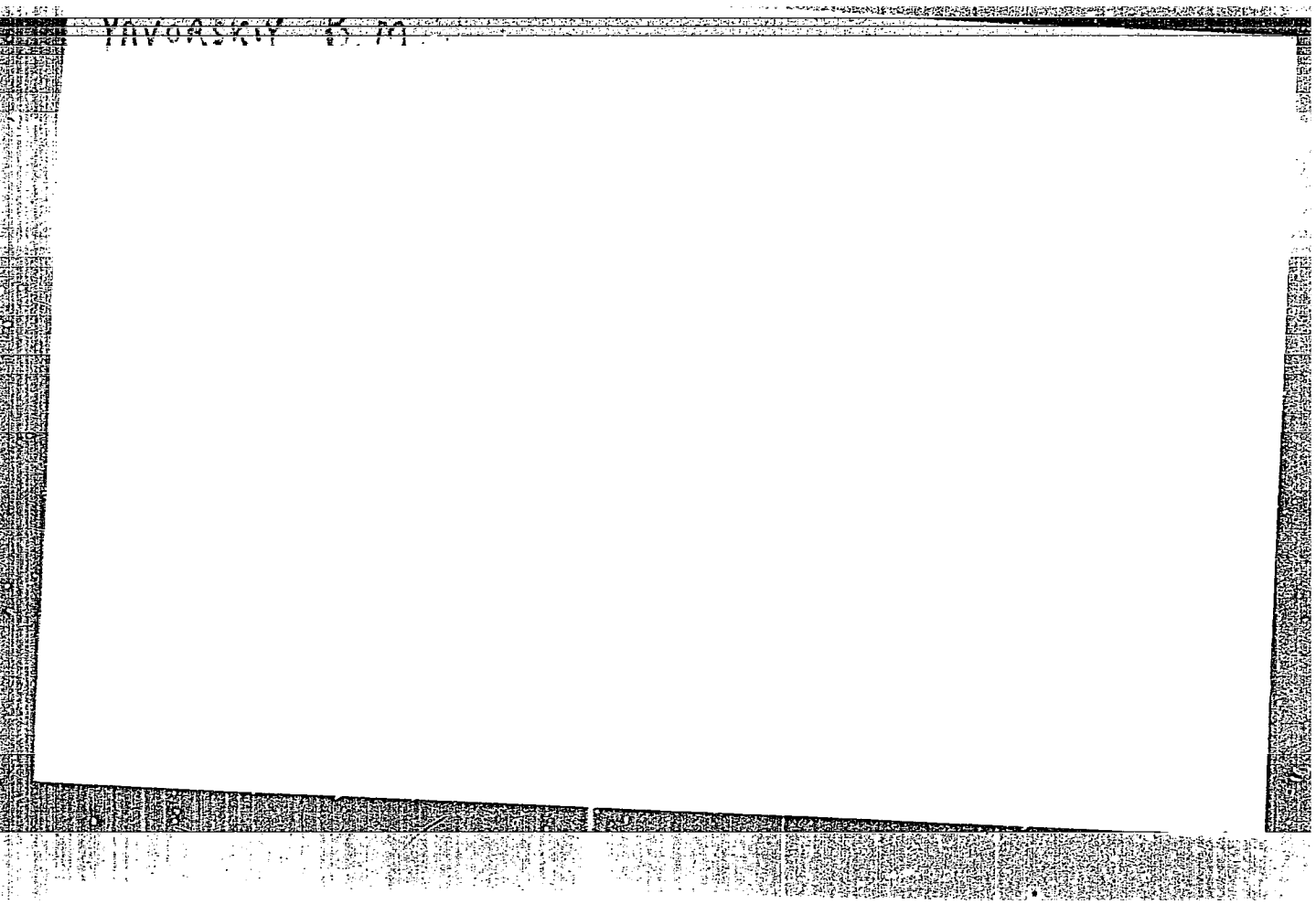
"Review of 'Introduction to Statistical Physics,' by V. G. Levich," B. Yavorskiy

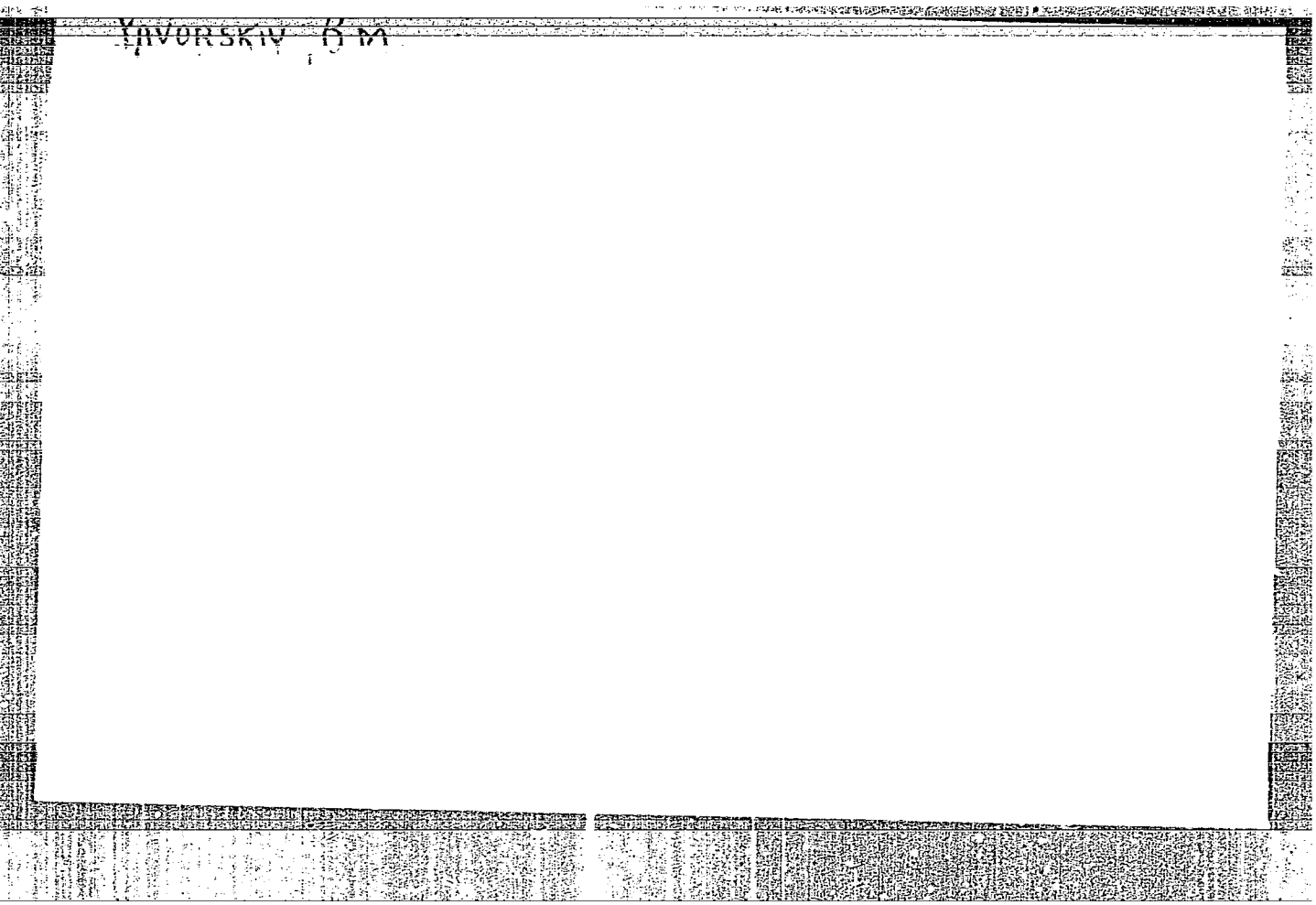
"Uspekhi Fiz Nauk" Vol XLIV, No 4, pp 645-648

Subject book, "Vvedeniye v Statisticheskuyu Fiziku," was published by Gostekhizdat, Moscow and Leningrad, 1950, 417 pp, 19.70 R. Book is basically a course of lectures given by Levich at the Moscow State Pedagogic Inst imeni Lenin in the years 1940 - 1949. Until recently books were not intended, in the main, for the university program and did not take into consideration the needs of the student body studying physics according to the abridged program. Subject book fulfils this need. In Yavorskiy's opinion Levich has succeeded in his proposed aim: to write a course on statistical physics creating for the student the correct representations concerning the modern state of this discipline and expounding the principle problems of statistical physics and its numerous applications. Book contains 16 chapters on theory of ideal gases, helium II, kinetic theory of gases, theory of probability, thermodynamics, etc.

192T102

PA 192T102





YAVORSKIY, B.

USSR/Physics - Textbooks

Apr 52

"Review of S. A. Artsybyshev's Book 'Course of Physics. Part I. Mechanics and Heat,'" B. Yavorskiy

"Uspekh Fiz Nauk" Vol XLVI, No 4, pp 600-602

Published by the Uchpedgiz (State Text Pedagogic Press), 1951, 18 rubles, 659 pp, 571 illustrations. Admitted by the Min of Higher Educ USSR as a textbook on physics for students of physicomathematical faculties of pedagogical institutes. States that the appearance of S. A. Artsybyshev's new physics textbook has not solved the problems of creating a textbook capable of satisfying the growing demands for prepg future teachers of secondary-school physics.

218T103

YAVORSKIY, B. M.

PA 240T95

USSR/Physics - Optical Transitions 21 Dec 52

"Approximate Method of Computing the Probabilities of Optical Transitions," L. A. Vaynshteyn and B. M. Yavorskiy, All-Union Inst of Correspondence Courses of Textile and Light Industry

"DAN SSSR" Vol 87, No 6, pp 919-922

Analyzes functions by J. Slater (cf. Phys Rev. 36, (1930); P. Gombas Acta Physica (Budapest) 1, 3, 1952; V. Fok et al. Sow. Phys. 6, (1936); etc.) and attempts to simplify computations for specific cases. Presented by Acad G. S. Landsberg 21 Oct 52.

240T95

YAVORSKIY, B. M. 259T85

USSR/Physics - Photoionization Cross Section 11 Apr 53

"Photoionization of Complex Atoms," L. A. Vaynshteyn and B. M. Yavorskiy, All-Union Correspondence Inst of Textile and Light Industry

DAN SSSR, Vol 89, No 5, pp 813-816

Calcn of the probability of transition of an optical electron into a continuous spectrum, a method for the calcn of the probabilities of transitions between discrete levels of an atom having already been proposed by the authors (DAN SSSR, Vol 87, 919 (1952)).

259T85

State that photoionization processes and also the reverse processes of recombination with radiation are essential in many problems of astrophysics and gas-discharge physics. Presented by Acad G. S. Landsberg 19 Feb 53.

YAVORSKIY, B.M.

USSR/ Physics

Card 1/1 Pub. 43 - 12/97

Authors : Vaynshteyn, L. A., and Yavorskiy, B. M.

Title : Approximate method for the calculation of probabilities of optical transitions

Periodical : Izv. AN SSSR, Ser. fiz. 18/2, page 251, Mar-Apr 1954

Abstract : The contents of this report were published in Doklady Akademii Nauk SSSR (Reports of the Academy of Sciences USSR), vol. 87, page 919, 1952.

Institution : .....

Submitted : .....

YAVORSKIY, B. M.

USSR

An approximate calculation of vibrator forces and effective
cross sections of photoionization. L. A. Vainshtein and
B. M. Yavorskii. *Zhur. Eksptl. i Teoret. Fiz.* 27, 712-18
(1954).—The effective cross section of photoionization is
given by $a_\nu = (4\pi^2/137)a_0^2 g_1 \sum_{l_1 l_2 l_3} f_{12}$ (a_0 radius of the 1st
H-orbit) and the oscillator strength $f_{12} = (1/3g_1)(E_2 - E_1)$
$[Q_{12}/(4l^2_{max} - 1)]\rho^2_{12}$; $\rho_{12} = \int P_1(r)P_2(r)rdr$ is calcd. by means
of approx. radial functions. f_{12} is calcd. for some at. tran-
sitions for Li (2^2S-2^2P and 2^2S-3^2P), Na (3^2S-3^2P and 3^2P-
4^2S), K (4^2S-4^2P), Cd (5^1S-5^1P), and Hg (6^1S-6^1P), and
the results are compared with exptl. data. a_ν is calcd. for
B, C, N, O, Ne, Ca, and Na for $k = 0$; the values are com-
pared to values calcd. by Seaton (cf. *C.A.* 46, 5424*h*,
5425*a*); the discrepancy is of the order of 20–40%.

S. Pakswer

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(1)

YAVORSKIY, Boris Mikhaylovich; AITIK, I.V., redaktor; VORONIN, K.P. tekhnicheskiy redaktor.

[How light and electric energy are propagated] Kak rasprostraniaiutsia svet i elektricheskaia energiia. Moskva, Gos. energ. izd-vo 1955. 108 p. (MLRA 8:8)
(Light) (Electric power)

YAVORSKIY, B.M.

PRIKHOT'KO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Vizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 7/30

KAMENETSKIY, V.D.; YAVORSKIY, B.M.

Calculation of absorption spectra for organic compounds. Fiz. sbor. no.3:88-92 '57. (MIRA 11:8)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti.

(Organic compounds--Spectra)

YAVORSKIY, B.M., professor (g. Moskva).

Answer to I.A. Shestakov. Fiz. v shkole 17 no.3:86-88 My-Je '57.
(Expansion (Heat)) (MLRA 10:6)

YAVORSKIY

BEIEN'KIY, L.I.; KAZANSKAYA, M.Ye.; YAVORSKIY, B.M.; KAMENETSKIY, V.D.

Spectrophotometric analysis of leuco esters (with summary in English). Zhur.fiz.khim.31 no.7:1564-1572 Jl '57. (MIRA 10:12)

1. Institut khlopchato-bumazhnoy promyshlennosti, Moskva.
(Spectrophotometry) (Esters)

PHASE I BOOK EXPLOITATION 1023

Yavorskiy, Boris Mikhaylovich

Kak rasprostranyayutsya svet i elektricheskiy tok (How Light and Electric Current Are Propagated) Moscow, Gosenergoizdat, 1958. 142 p. 30,000 copies printed.

Ed.: Antik, I.V.; Tech. Ed.: Fridkin, A.M.

PURPOSE: This booklet is addressed to engineering and technical workers in the field of power engineering.

COVERAGE: The booklet discusses the physical processes occurring in the generation and propagation of light and during the passage of an electric current through solids. A preliminary discussion of the essentials of the kinetic theory of light is presented and modern concepts of the physical structure of the atom are reviewed.

Card 1/6

Although the presentation of material presumes a certain knowledge of mathematics and physics on the part of the reader, it does not involve the use of higher mathematics. The author thanks Professor V.A. Fabrikant for reviewing the manuscript. There are 23 references, all Soviet (including 7 translations).

TABLE OF CONTENTS:

How Light and Electric (Cont.) 1023

AVAILABLE: Library of Congress

Card 6/6

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24(5,7,8) PHASE I BOOK EXPLOITATION SOV/1817

Yavorskiy, Boris Mikhaylovich, Andrey Antonovich Detlaf, Lidiya Bronislavovna Milkovskaya, and Georgiy Petrovich Sergeyev

Kurs lektsiy po fizike, t. 1: Mekhanika, molekulyarnaya fizika i termodinamiki (A Course of Lectures on Physics, Vol 1: Mechanics, Molecular Physics, and Thermodynamics) Moscow, Gos. izd-vo "Sovetskaya nauka," 1958. 276 p. 30,000 copies printed.

Ed. of Publishing House: K.I. Anoshina; Tech. Ed.: M.D. Shlyk.

PURPOSE: This book is intended as a text for a correspondence course in basic physics for engineering students.

COVERAGE: This is the first volume of a three-volume correspondence course in physics for engineering students. The content of this course approximates that of the physics course offered to engineering students attending regular technical institutions of higher learning. Each chapter includes test problems, intended to develop

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the student's ability to apply the physical principles, as well as examples of how to solve various problems in physics. The text, however, does not include material which is of direct importance to the future engineer. Therefore, the authors suggest that such material be offered in all the higher technical institutions of learning during the third and senior years. No personalities are mentioned. No references are given.

TABLE OF CONTENTS:

A Course of Lectures on Physics (Cont.) SOV/1817

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A Course of Lectures on Physics (Cont.) SOV/1817

PART II. PRINCIPLES OF MOLECULAR PHYSICS AND THERMODYNAMICS

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A Course of Lectures on Physics (Cont.) SOV/1817

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A Course of Lectures on Physics (Cont.) SOV/1817

Ch. XII. Solid Bodies

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YAVORSKIY, B.M.

AUTHOR: Yavorskiy, B.M., Professor (Moscow) 47-58-2-23/30

TITLE: An Answer to A.N. Khvostova (Otvet A.N. Khvostovoy) What Importance has Brownian Movement for the Molecular-Kinetic Theory and Thermodynamics? (Kakoye znacheniye imeyet brounovskoye dvizheniye dlya molekulyarno-kineticheskoy teorii i termodinamiki?)

PERIODICAL: Fizika v Shkole, 1958, Nr 2, pp 83-84 (USSR)

ABSTRACT: Oscillatory movements of particles suspended in liquid were discovered by an English botanist, R. Brown, in 1827, but only in 1906 were these movements explained by Einstein and, independently from him, Smolukhovskiy. The Brownian Theory is now the basis for the molecular-kinetic and thermodynamic theories. The author explains the theory.

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1. Particles-Oscillation 2. Thermodynamics-Theory
3. Molecular-Kinetic theory

YAVORSKIY, B.M.

AUTHOR: Yavorskiy, B.M., Professor (Moscow) 47-58-3-26/27

TITLE: Max Planck, On the Occasion of the 100th Anniversary of His Birth (Maks Plank, k 100-letiyu so dnya rozhdeniya)

PERIODICAL: Fizika v Shkole, 1958, Nr 3, pp 92-96 (USSR)

ABSTRACT: The author evaluates the scientific work of the German physicist Max Planck.

AVAILABLE: Library of Congress

Card 1/1 1. Biographies-Planck, Max

5.1370,5.3610

75667
SOV/80-32-10-16/51

AUTHORS: Bogoslovskiy, B. M., Yavorskiy, B. M., Virnik, A. D.

TITLE: Concerning the Application of Thermal Diffusion to Dye Refining

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 10, pp 2225-2229 (USSR)

ABSTRACT: The article reports on the results of preliminary studies on thermal diffusion refining of dyes. Laboratory tests were made in a metal apparatus (Fig. 2) and a glass apparatus built along the same lines. The investigated dye or dye mixture solutions (congo-red, acid blue, acid orange) of 2 to 4% concentration were introduced at the middle of the column heated by an electric coil with temperature regulated by a LATR-1 autotransformer. The concentration of the original solution as well as that of the samples drawn from the top and bottom of the column was determined colorimetrically with a type FEK-M photoelectric colorimeter and appropriate light filters.

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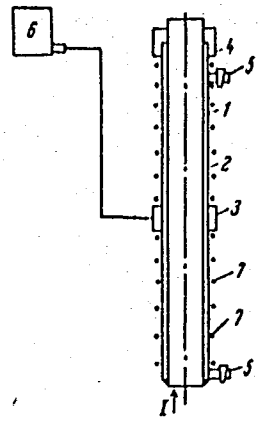

Fig. 2. Sketch of metal column: (1) internal tube; (2) external tube; (3) feeding device; (4) centering packing seal; (5) sampling cocks; (6) container for the investigated solution; (7) electric heating coil; (I) cooling water inlet.

The concentration of prepared standard solutions of the corresponding dyes was determined in the same manner. The concentration K was established

from the expressions

$$K_1 = \frac{D_1 B_2 - D_2 B_1}{A_1 B_2 - A_2 B_1} \cdot n,$$

$$K_2 = \frac{D_2 A_1 - D_1 A_2}{A_1 B_2 - A_2 B_1} \cdot n,$$

where A_1 and A_2 are, respectively, the optical densities of the standard solution of the first dye determined with light filters #1 and #2; B_1 and B_2 are, respectively, the optical densities of the standard solution of the second dye, as above; D_1 and D_2 are, respectively, the optical densities of the investigated solution of dye mixture with unknown concentration of the components, as above; K_1 and K_2 are, respectively, the concentrations of the first and second component dye (in g/l); n is the concentration of the standard dye solutions (in g/l). The concentra-

tion of the dye mixture K is the sum of K_1 and K_2.

The concentration changes plotted against time showed that the concentration of the dye molecules in the lower half of the column increased, and that in the upper half decreased correspondingly. The value of the thermal diffusion separation is characterized by the separation constant q:

$$q = \frac{[C_1 : C_2]_{II}}{[C_1 : C_2]_I},$$

where C_1 are the relative molar concentrations of the solute (dye) and the solvent (water); indexes I and II pertain to the upper resp. lower half of the column. The maximum change in concentration was reached within the first 1-2 hr; subsequently the rate of the change decreased sharply. It was found that, in general, the concentration of a mixture of dyes increased in the lower part of the column. In case of a mixture of dyes with different molecular weights, it is the component with the lower molecular weight that accumulates predominantly in the lower part of the column

and in case of equal molecular weights, the component with the relatively shorter length of molecule. The separation constant could be increased by the application of a multistage cascade built from consecutively connected columns. The authors express their appreciation to Lykova, A. V., for her permission to conduct the experiments at the Physics Laboratory of the Moscow Technological Institute of the Meat and Dairy Industry. There are 4 figures; and 3 Soviet references, one of them a translation of Jones, K. and Ferry, W., The Separation of Isotopes by Means of Thermal Diffusion, publ. 1947 by IL.

ASSOCIATION: Dye Chemistry Laboratory of the Moscow Textile Institute (Laboratoriya khimii krasiteley Moskovskogo tekstil'nogo instituta)

SUBMITTED: November 28, 1958

REZNIKOV, Leonid Isaakovich; EVENCHIK, Esfir' Yefimovna; YUS'KOVICH, Vasiliy Fomich; YAVORSKIY, B.M., prof., doktor fiz.-matem. nauk, red.; SIDOROV, N.I., red.; KOPTEKOVA, L.A., red.; LAUT, V.G., tekhn.red.

[Methods of teaching physics in secondary schools] Metodika prepodavaniia fiziki v srednei shkole. Pod red. B.M.IAvorskogo. Moskva, Izd-vo Akad.pedagog.nauk RSFSR. Vol.2. [Mechanics (continuation), molecular physics and heat] Mekhanika (prodolzhenie), molekuliarnaia fizika i teplota. 1960. 405 p.
(MIRA 13:7)

(Physics--Study and teaching)

YAVORSKIY, Boris Mikhaylovich; DETLAF, Andrey Antonovich; MILKOVSKAYA, Lidiya Bronislavovna; GORBATOV, Yu.B., starshiy prepodavatel', red.; KHRUSTALEVA, N.I., red.izd-va; VOROHINA, R.K., tekhn.red.

[Lecture course in physics] Kurs lektsii po fizike. Moskva, Gos. izd-vo "Vysshaia shkola." Vol.2. [Electricity and magnetism] Elektrichestvo i magnetizm. 1960. 421 p. (MIRA 14:2)

1. Kafedra fiziki Moskovskogo energeticheskogo instituta (for Gorbatov).
(Electricity) (Magnetism)

83350

S/139/60/000/004/006/033
E201/E591

16.4100
24.4500

AUTHORS: Kamenetskiy, V. D. and Yavorskiy, B.M.

TITLE: An Approximate Allowance for the Distortion of the Incident and Scattered Waves in Collisions of Slow Electrons with Atoms and Ions

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.66-73

TEXT: Interaction of slow particles on collision (e.g. collisions of slow electrons with atoms or ions) cannot be regarded as a perturbation in quantum-mechanical treatments and, consequently, the Born approximation is inapplicable. In such cases the main problem is the correct allowance for the distortions of the incident and scattered waves. These distortions can be tackled by either variational methods (Refs.2-5) or by the Drukarev integral-equation method (Ref.6-9). All these methods give approximately the same accuracy but they are very cumbersome. The approximate method proposed in the present paper is in effect a combination of the variational and Drukarev's methods. From the variational methods the authors took the idea of trial functions

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An Approximate Allowance for the Distortion of the Incident and Scattered Waves in Collisions of Slow Electrons with Atoms and Ions

of given asymptotic form to represent the wave functions. Unknown parameters in the trial functions are found by comparing these functions with the corresponding Drukarev's wave-functions for small r, where r is the radius vector. These parameters are analytic functions of (1) coefficients which occur in the electron wave functions of an atom or an ion, (2) parameters representing the atomic core, and (3) the wave number of the incident electron. For the sake of briefness, the proposed approximate method shall be called the "expansion method". The accuracy and the speed of convergence of the consecutive iterations of the expansion method are illustrated for the case of elastic scattering of slow electrons by a static field of the form

$$U(r) = -U_o e^{-\beta r}; \quad U_o > 0; \quad \beta > 0 \qquad (19)$$

(the results are given in Tables 1 and 2). The most important advantage of the expansion method is its extreme simplicity. The

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An Approximate Allowance for the Distortion of the Incident and Scattered Waves in Collisions of Slow Electrons with Atoms and Ions

amount of time required to produce a result using the expansion method is about half that necessary when Drukarev's method is employed. The paper is entirely theoretical. Acknowledgment is made to Doctor of Physico-Mathematical Sciences G. F. Drukarev for his advice. There are 2 tables and 13 references: 9 Soviet, 1 German, 1 Swedish and 2 English.

ASSOCIATION: Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti (All Union Correspondence Institute for the Textile and Light Industries)

SUBMITTED: August 15, 1959

Card 3/3

32157 R
S/139/60/000/004/007/033
E032/E414

24,4400

AUTHORS: Kamenetskiy, V.D. and Yavorskiy, B.M.

TITLE: The expansion method and its application to the theory of collisions between slow electrons and light atoms

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.74-82

TEXT: The "expansion method" was described by the present authors in Ref.1 (Izv. vyzov MV i SSO SSSR, Fizika, 4, 66, 1960) (preceding paper). The method can be used in approximate quantum mechanical calculations of collisions of slow particles. The present paper deals with the sensitivity of the solutions to changes in the "trial functions", the usefulness of the various approximations, the accuracy of the method, etc. The paper is concluded with a brief summary of some numerical results obtained for the scattering of electrons by helium and hydrogen. The role of exchange effects in the elastic scattering of s-electrons on helium and hydrogen is discussed. A further special case considered is that of the cross section for the excitation of the 2S-level in hydrogen (including exchange effects). The general conclusion is that although the expansion method is only an

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The expansion method . . .

approximate method, nevertheless, with a suitable choice of the trial functions, adequate accuracy can be achieved. Numerical calculations showed that in the case of collisions of slow electrons with light atoms, an accuracy of 25 to 30% can be reached. In many cases the accuracy is higher still. The solutions can be obtained in simple analytical forms. The scattered amplitude is derived as an algebraic function of parameters which enter into the wave functions of the atomic electrons, the nuclear charge and the wave number of the incident electron. It is stated that the present method is very much simpler and less laborious than the variational calculations, or calculations based on Drukarev's integral equations (Ref.2: V.A.Fok, ZhETF 10, 961, 1940 and Ref.4: G.F.Drukarev, Doctoral Dissertation, Leningrad, 1956).
Acknowledgments are made to Doctor of Physics-Mathematical Sciences, G.F.Drukarev for his advice. There are 3 tables and 15 references: 5 Soviet and 10 non Soviet. The references to four English language publications read as follows: G.A.Erskine, H.S.W.Massey, Proc.Roy. Soc., 212A, 521, 1952; W.Kohn, Rev.Mod.Phys., 26, 292, 1954; M.J.Seaton, Proc.Roy.Soc., 241, 522, 1957; B.H.Bransden, McKie, J.S.C. Proc.Phys.Soc., A69, 422, 1956.

Card 2/3

32157 R

The expansion method ...

S/139/60/000/004/007/033
E032/E414

ASSOCIATION: Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti (All Union Correspondence Institute for the Textile and Light Industries)

SUBMITTED: August 25, 1959

Card 3/3

S/139/60/000/005/005/031
E032/E114

26.2340

AUTHORS: Kamenetskiy, V.D., and Yavorskiy, B.M.

TITLE: Application of the Expansion Method to the Elastic Scattering of Slow Electrons on Heavy Atoms

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No. 5, pp 26-34

TEXT: The calculation of the cross-sections for electrons scattered on heavy atoms is more difficult than the analogous problem for light atoms. There are three reasons for this. Firstly, sufficiently accurate wave functions are only known for a limited number of heavy atoms. Secondly, the convergence of the series of partial waves in the heavy-atom case is in general considerably less rapid than in the light-atom case. Thus, for example, for helium, the S-cross-section for elastic scattering is approximately equal to the total cross-section up to 30 eV, while for heavy atoms such as, for example, Zn, Cd or Hg, the experimentally determined electron cross-sections are very different from the S-cross-section already at 1 or 2 eV. It follows that in order to obtain significant comparisons between theory and experiment in the case of heavy atoms, several partial waves must be taken into

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Application of the Expansion Method to the Elastic Scattering of Slow Electrons on Heavy Atoms

account even for slow electrons. Finally, in the case of heavy atoms the problem is difficult to solve because of the very large number of atomic electrons and the complicated form of their radial wave functions. There are two methods which can be used to treat this problem. The first of these is the so-called expansion method (EM) described by the present authors in Refs 1 and 2, and the second is the more accurate method of integral equations which has been described by Drukarev (Refs 3 and 4) (DMIE). The present authors have carried out calculations for Hg using both methods. The 6^1S wave function for mercury was taken in the form of the following three-parameter expression

$$u(r) = rR(r) = A\, e^{\alpha r}(cr - r^2). \qquad (1)$$

The atomic core was treated on the basis of the Thomas—Fermi statistical model. The energy of the incident electron in the field of Hg^{++} was assumed to be in the form of the following two-parameter function:

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Application of the Expansion Method to the Elastic Scattering of Slow Electrons on Heavy Atoms

$$U(r) = \frac{2}{r} + \frac{a_i(r_0 - r)}{r} \qquad \text{when } r \leqslant r_0; \tag{3}$$

$$U(r) = -\frac{2}{r} \qquad \text{when } r \geqslant r_0,$$

where r_0 is the radius of the Hg^{++} ion and was calculated by Fermi in Ref. 18. The S, P, D and F cross-sections for elastic scattering in Hg and Ca are calculated on the basis of the above functions without taking exchange into account. A calculation of the S-cross-section for Hg including exchange effects has also been carried out. The calculations cover the range 0-22 eV. Numerical values for the various parameters involved are given as well as comparisons between calculated and experimentally determined cross-sections.

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E032/E114

Application of the Expansion Method to the Elastic Scattering of Slow Electrons on Heavy Atoms

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There are 9 tables and 29 references: 8 Soviet, 16 English, 1 German, 2 Italian and 2 Scandinavian.

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AUTHORS: Boguslavskaya, N. A., Bogoslavskiy, B. M., Yavorskiy, B. M.

TITLE: Absorption Spectra of Monoazo Dyes of Type Acid Red

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ABSTRACT: The aim of this work was to study the effect of the position of sulfo group in the dye molecule on its absorption spectrum, the effect of replacement of hydroxyl group by amino group on absorption spectrum of the dye in which the position of sulfo group was not changed, and the effect of the transposition of hydroxyl and amino groups from α to β position in naphthalane ring on absorption maxima. All 24 monoazo dyes were synthesized by coupling of napthyl-aminosulfonic acids with corresponding α and β napthols or naphthylamines. The absorption spectra of the prepared dyes were taken with a Beckmann spectro-photometer in the range 220-700 mμ. The absorption maxima of monoazo dyes are shown in Table A.

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Absorption Spectra of Monoazo Dyes of Type Acid Red

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Absorption maxima of monoazo dyes (in m μ)

Diazonium compounds	Coupling component			
	α-Naphthol	β-Naphthol	α-Naphthylamine	β-Naphthylamine
1,2-Naphthylamin-sulfonic acid	278, 485	278, 310, 494	270, 480	275, 346, 465
1,4-Naphthylamin-sulfonic acid	266, 452	280, —, 506	272, 500	276, 340, 475
1,5-Naphthylamin-sulfonic acid	268, —	—, 380, 505	275, 465	280, 350, 480
1,6-Naphthylamin-sulfonic acid	280, 500	285, —, 505	280, 470	255, 355, 475
1,7-Naphthylamin-sulfonic acid	267, 510	283, —, 535	274, 468	265, 345, 480
1,8-Naphthylamin-sulfonic acid	274, 502	—, 400, 480	285, 475	278, 334, 490

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Absorption Spectra of Monoazo Dyes of Type Acid Red

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The change in the position of the sulfo group in α-monoazo dyes molecules does not cause bathochromic or hypsochromic shift of the absorption maxima. The introduction of OH and NH_2 into the naphthalene ring does not noticeably affect the position of absorption maxima of napthalene in the ultraviolet region of the spectrum (220 and 275 mμ). The effect of the hydroxyl and amino group on the position of the absorption maxima in the red region of the spectrum is different. The absorption maxima of dyes with an hydroxyl group are by 20-25 mμ higher than that of the corresponding dyes with an amino group. The change of the OH group from α to β position in the dye molecule has a slight bathochromic effect. This is related, probably, to the formation of an intramolecular hydrogen bond between hydroxyl hydrogen and the nitrogen of the azo group. Transposition of amino group from α to β position is accompanied by a strong absorption maximum at 345 mμ and by a slight bathochromic effect.

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