"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

Tautomerism of Nitro Compounds. Communication 1. Study of the Mechanism of Tautomeric Conversions of Phenyl Nitromethane S/062/60/000/009/015/021 B023/B064

of other tautomeric compounds. G. S. Salyamon and Ya. S. Bobovich (Ref.12) are mentioned. V. I. Slovetskiy and V. A. Shlyapochniokov have taken the spectra. There are 1 table and 12 references: 3 Soviet, 6 US, 1 German, 1 Danish, and 1 Swedish.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: March 24, 1959; completed June 8, 1960

$$C_6H_5CH_2NO_2 + H_2O \underset{k_{NR}^{H_3O^+}}{\overset{k_{ND}^{H_2O}}{\rightleftharpoons}} C_6H_5C^{-}HNO_2^{H_3O^+} \qquad K'_N$$

$$k_1 \uparrow\downarrow k_2 \qquad K$$

$$C_6H_5CH{=}NOOH + H_2O \underset{k_{AR}^{H_3O^+}}{\overset{k_{AD}^{H_2O}}{\rightleftharpoons}} C_6H_5CHNOO^{-}H_3O^{+} \qquad K^A$$

$K'_N \approx 2\cdot10^{-7}$ M/л $k_{ND}^{H_2O} = 8\cdot10^{-7}$ л/M·сек $k_{NR}^{H_3O^+} = 200$ л/M·сек.

Card 4/4 $K_A = 1{,}3\cdot10^{-4}$ M/л $k_{AD}^{H_2O} = 4{,}14\cdot10^{-5}$ л/M·сек $k_{AR}^{H_3O^+} = 18$ л/M·сек.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

84854

S/062/60/000/010/007/018
B015/B064

11.1360

AUTHORS: Mayranovskiy, S. G., Belikov, V. M., Korchemnaya, Ts. B., Klimova, V. A., and Novikov, S. S.

TITLE: Tautomerism of Nitro-compounds. Information 2. Polarographic Investigation of the Kinetics of Tautomeric Conversions of Phenyl Nitro-methane

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 10, pp. 1787-1795

TEXT: In a previous investigation (Ref. 1), the polarographic activity of the aci-form of phenyl nitro-methane was determined. The present paper describes the technique applied and gives the experimental data obtained. The polarographic behavior of the aci- and nitroforms of phenyl nitro-methane was investigated, i.e., the kinetics of the transformation of the aci-form into the nitro-form at pH 1-4, the nitro-form into the anion at pH 7-10, and the anion into the nitro-form at pH 4-6. Moreover, the dissociation constants of the aci- and nitro-forms were

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84854

Tautomerism of Nitro-compounds. Information 2. Polarographic Investigation of the Kinetics of Tautomeric Conversions of Phenyl Nitro-methane

S/062/60/000/010/007/018
B015/B064

polarographically and potentiometrically determined. The experiments were conducted in an optical polarograph, and the current was measured with an M-91 (M-91) microammeter. The potential of the dropping electrode was checked with an ЛМ-1 (LM-1) voltmeter, and determined with a П-4 (P-4) potentiometer. The experiments were carried out at 25±0.1°C using various buffer solutions, and the pH was determined with glass electrodes and ЛП-5 (LP-5) or ЛП-59 (LP-59) potentiometers. The potentials of the half-waves at pH 1.15 are $E_{1/2}$ = -0.52 v for the nitro-form and $E_{1/2}$ = -0.66 v for the aci-form. Investigations of the dissociation kinetics showed that the ionization of phenyl nitro-methane in buffer solutions can be described by an equation of the first order. The ionization rate was investigated in the presence of various bases. The rate of transformation of the aci-form into the nitro-form was found to follow the equation of a reaction of the first order throughout the pH range investigated. Investigations on the recombination kinetics of phenyl nitro-methane showed that at pH 4-5 the dissociation of the aci-form and the recombination of the nitro-form take place simultaneously. The values for the dissociation

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84854

Tautomerism of Nitro-compounds. Information 2. Polarographic Investigation of the Kinetics of Tautomeric Conversions of Phenyl Nitro-methane

S/062/60/000/010/007/018
B015/B064

constants of the aci- and nitro-forms under the action of bases and acids were computed with the help of Brönsted's equation (Tables 1,2). The authors thank D. G. Knorre for advice. There are 11 figures, 2 tables, and 5 references: 4 Soviet and 1 US.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: March 24, 1959

Card 3/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

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77764
SOV/75-15-1-26/[illegible]

AUTHORS: Mayranovskiy, S. G., Titov, F. S.

TITLE: Concerning Glass Parts of Polarographic Equipment

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol 15, Nr 1, pp 121-123 (USSR)

ABSTRACT: The article describes some glass items used in polarography. There are 3 Soviet references.

ASSOCIATION: N. D. Zelinsky Institute of Organic Chemistry, Academy of Sciences, USSR, Moscow (Institut organicheskoy khimii imeni N. D. Zelinskogo AN SSSR, Moskva)

SUBMITTED: December 23, 1958

Card 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S. G.; LISHCHETA, L. I.

Polarographic study of the reaction kinetics of maleic-acid dianion with donor protons. Coll Cz Chem 25 no.12:3025-3035 D '60. (EEAI 10:9)

1. Institut organicheskoy khimii im. N. D. Zelinskogo, Akademiya nauk SSSR, Moskva.

(Polarograph and polarography) (Maleic acid)
(Anions) (Protons)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

68349

5.4600
~~5(4), 5(3)~~

S/076/60/034/01/044/044
B004/B007

AUTHORS: Mayranovskiy, S. G., Bergel'son, L. D.

TITLE: The Reduction of the Geometric Isomers of Some Derivatives of 1,2-Dibromoethylene on the Dropping Mercury Electrode

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 1, pp 236 - 237 (USSR)

ABSTRACT: The authors give a report on the polarographic investigation of cis- and trans-isomers of the following compounds: 1-(1'-oxycyclohexyl)-1,2-dibromoethylene, 3-oxy-1,2-dibromo-3-methylbutene-1, and 2,5-dioxy-3,4-dibromo-2,5-dimethylhexene. The polarograms were recorded in a 60% methanol solution at 25° and a background of LiBr or $(C_2H_5)_4NBr$ according to a method described in reference 2. The polarograms of all investigated substances showed a single reduction stage with a diffusion limiting current. With a similar concentration of the depolarizer the waves of the cis- and trans-isomers have the same height. The half-wave potentials of the trans-isomers are more positive than those of the cis-isomers. An electrolytic

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68349

The Reduction of the Geometric Isomers of Some Derivatives of 1,2-Dibromoethylene on the Dropping Mercury Electrode

S/076/60/034/01/044/044
B004/B007

micro-Coulomb measurement showed for the trans-isomer of the hexene derivative that two electrons participate in the process on the electrode. Herefrom the authors draw the conclusion that the bromine atoms are split off and that the corresponding acetylene derivatives are formed. There are 3 Soviet references.

ASSOCIATION: Akademiya nauk SSSR Institut organicheskoy khimii im. N. D. Zelinskogo (Academy of Sciences, USSR Institute of Organic Chemistry imeni N. D. Zelinskiy)

SUBMITTED: March 29, 1959

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

AUTHORS: Koutecky, J., Hanuš, V., Mayranovskiy, S. G. (Moscow)

S/076/60/034/03/025/038
B005/B016

TITLE: Polarographic Catalytic Hydrogen Waves Caused by Organic Catalysts. I. Exact Solution of the Problem for the Case of a Bimolecular Regeneration of the Inactive Form of the Depolarizer From the Products of Electrode Reaction, and of a Monomolecular Conversion of the Depolarizer to Its Active Form

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 3, pp 651-660 (USSR)

TEXT: In connection with investigations on catalytic hydrogen separation from buffer solutions on a dropping mercury electrode the authors aimed at explaining the complicated depolarization process for those cases in which the rates of the two chemical reactions taking place on the electrodes are very high (this means that equilibrium between diffusion and the chemical reactions is quickly established), and in which the concentration of the proton donors practically does not change with time. In this case, the concentrations of the components of the buffer system may be included into the two effective rate constants ϱ and $\varrho\sigma$ of a monomolecular reversible reaction. The following schematic reaction equations are then obtained for the depolarization process:

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

Polarographic Catalytic Hydrogen Waves Caused by Organic Catalysts. I. Exact Solution of the Problem for the Case of a Bimolecular Regeneration of the Inactive Form of the Depolarizer From the Products of Electrode Reaction, and of a Monomolecular Conversion of the Depolarizer to Its Active Form

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B005/B016

$$B \underset{\varrho\sigma}{\overset{\varrho}{\rightleftharpoons}} A; \quad A + e^- \underset{}{\overset{\text{electr.}}{\rightleftharpoons}} C; \quad 2\,C \xrightarrow{k} 2\,B + D.$$

B - base (electrochemically inert form of the depolarizer); A - depolarizer (electrochemically active acid conjugated to B, which is in equilibrium with B in the solution); C - product of the electrode process; D - hydrogen. For the calculations an ideal mobility was assumed for the electrochemical equilibrium, so that the ratio $\lambda = [A]_0/[C]_0$ depends only on the potential, but not on time. As a further simplification the diffusion coefficients for the substances A, B, and C were assumed to be equal. It results therefrom that the algebraic sum of the diffusion currents flowing through random cross section is equal to zero. It was further assumed that the rates of all reactions mentioned above are very high already at a relatively small distance from the electrode, $\varrho t_1 \gg 1$; $\varrho\sigma t_1 \gg 1$; $k\alpha t_1 \gg 1$. t_1 - dropping period of the mercury electrode; $\alpha = [A] + [B] + [C]$. Under these conditions a steady state forms after a very short time t_s of electrolysis

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

Polarographic Catalytic Hydrogen Waves Caused by Organic Catalysts. I. Exact Solution of the Problem for the Case of a Bimolecular Regeneration of the Inactive Form of the Depolarizer From the Products of Electrode Reaction, and of a Monomolecular Conversion of the Depolarizer to Its Active Form

S/076/60/034/03/025/038
B005/B016

($t_s \ll t_1$), in which the concentrations of the substances A and B are equal to the initial concentrations owing to the assumed rapid regeneration of the depolarizer from the products of depolarization. It follows that the diffusion of the depolarizer from the solution to the electrode does not affect the electrode process, and that current density does not depend on time, accordingly. This means for a dropping electrode that the mean current density is independent of the depth of the reservoir and is, at the same time, proportional to $t_1^{2/3}$. On the basis of these assumptions the authors derived the equations for the mean polarographic current densities by means of an exact method. The derivation is given and explained in detail. There are 2 figures and 8 references, 1 of which is Soviet.

ASSOCIATION: Chekhoslovatskaya Akademiya nauk Institut fizicheskoy khimii (Czechoslovakian Academy of Sciences, Institute of Physical Chemistry). Akademiya nauk SSSR Institut organicheskoy khimii im. N. D. Zelinskogo (Academy of Sciences, USSR, Institute of Organic Chemistry imeni N. D. Zelinskiy)

SUBMITTED: February 10, 1959

Card 3/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

81411

S/020/60/132/06/36/068
B004/B005

5.5400

AUTHOR: Mayranovskiy, S. G.

TITLE: Polarographic Catalytic Hydrogen Waves and the Adsorption of the Catalyst

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 6, pp. 1352-1355

TEXT: In the introduction, the author discusses the influence of the adsorption of substances on the polarographic currents. Due to a change of concentration in the volume of the solution and on the electrode, the shape of the polarographic wave is altered. This is shown by the example of the catalytic hydrogen wave caused by quinine in 0.1 N borax solution. The experiments were carried out by means of the polarograph of the TsLA Energochermet (Central Laboratory of Automation of the State All-Union Trust for the Design, Planning, Assembly and Adjustment of Power Installations and Control and Measuring Instruments of the Ministry of Ferrous Metallurgy of the USSR) at 25 ± 0.1°C and a dropping time of 0.23 sec. Due to the different depolarizing effect of the cations of the catalyst

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

81411

Polarographic Catalytic Hydrogen Waves and the Adsorption of the Catalyst

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B004/B005

in dissolved and adsorbed state, the wave is split in two peaks (Fig. 1). This splitting may also be caused by the addition of tetraethyl ammonium benzosulfonate (Fig. 2). This rarely observed phenomenon only occurs if the waves of the "surface current" and the "space current" have comparable heights, and if $E_{1/2}$ of the latter lies within a narrow potential range near the maximum of the wave of the "surface current". This is schematically described by Fig. 3. The maximum quantity Γ of the adsorbed catalyst is computed from the equation for the limiting current composed of surface current and space current with $4.4 \cdot 10^{-10}$ g.mole/cm^2, and the occupation of the surface with about 0.2%. By means of the Langmuir isothermal line it is found that, under experimental conditions, the adsorption equilibrium is attained with about 7% only, and that with a longer adsorption time t, Γ must also increase. The extension of t was attained by changing the height of the mercury column. Fig. 4 shows that an increasing value of Γ really leads to a change in the potential wave. The author thanks A. N. Frumkin, Academician, whose papers he mentions several times, for assisting in the investigation. There are 4 figures and 19 references: 11 Soviet, 1 British, 4 Czechoslovak, 1 German, and 2 American.

Card 2/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

81411

Polarographic Catalytic Hydrogen Waves and the Adsorption of the Catalyst

S/020/60/132/06/36/068
B004/B005

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences, USSR). Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

PRESENTED: February 5, 1960, by A. N. Frumkin, Academician

SUBMITTED: January 20, 1960

Card 3/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

S/020/60/133/01/45/070
B004/B007

AUTHOR: Mayranovskiy, S. G.

TITLE: The Nature of the Decrease of the Current on Polarographic Waves Which Are Limited by a Preceding Chemical Reaction

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1, pp. 162 - 165

TEXT: The author refers to preceding papers (Refs. 1, 2) and defines the composition of the catalytic (kinetic) current of polarography as the sum of two currents limited by the rate of the same previous chemicmal reaction. In the one case, the reaction may occur in the space of the solution ("space current"), and in the other on the surface of the electrode ("surface current"). The fraction of the surface current increases with growing adsorption of the electrochemically inactive form of the depolarizer. On the basis of the Langmuir isothermal line and the functions developed by A. N. Frumkin (Refs. 4, 7), the author derives the equations (6), (7), and (8) for the catalytic hydrogen wave, whose shape depends on the change in catalyst adsorption caused by the

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

The Nature of the Decrease of the Current on Polarographic Waves Which Are Limited by a Preceding Chemical Reaction

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change in the potential. The correctness of these equations is discussed on the basis of the example of the catalytic hydrogen wave, which is caused by means of anabasine in an acetate-buffer solution (pH = 6.0) at a different concentration of KCl (Figs. 1, 2), by means of quinine in a citrate-phosphate buffer solution (pH = 3.0 and 4.0) (Fig. 3) and by means of a cysteine complex of Co^{2+} in an ammonia-buffer solution (Fig. 4). The measuring results are given. The author thanks A. N. Frumkin, Academician, for assisting in this investigation. There are 4 figures and 12 references: 9 Soviet, 1 US, 1 French, and 1 Czechoslovakian.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences, USSR). Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

PRESENTED: March 9, 1960 by A. N. Frumkin, Academician

SUBMITTED: March 9, 1960

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; PONOMARENKO, V.A.; BARASHKOVA, N.V.; SNEGOVA, A.D.

Polarographic study of iodomethyltrialkylsilanes. Unusual polarographic maximum on the iodomethylphenyldimethylsilane. Dokl.AN SSSR 134 no.2:387-390 S '60. (MIRA 13:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR. Predstavleno akademikom A.A.Balandinym.
(Silane)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; BARASHKOVA, N.V.; ALASHEV, F.D. (Moscow)

Polarographic behavior of anabasine. Zhur. fiz. khim. 35 no.2:435-443 F '61. (MIRA 16:7)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.
(Anabasine) (Polarography)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; MAYRANOVSKAYA, E.F.

Nature of the polarographic wave branching of a protein in colbalt salt solutions. Izv.AN SSSR.Otd.khim.nauk no.5:922-924 My '61. (MIRA 14:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Gosudarstvennyy onkologicheskiy institut im. Gertsena Ministerstva zdravookhraneniya RSFSR.
(Proteins) (Polargraphy)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

BELIKOV, V.M.; MAYRANOVSKIY, S.G.; KORCHEMNAYA, TS.B.; NOVIKOV, S.S.

Tautomerism of nitro compounds. Report 3: Effect of temperature and ionic strength of solutions on the rates of phenylnitomethane tautomeric transitions. Izv.AN SSSR,Otd.khim.nauk no.6:1108-1111 Je '61. (MIRA 14:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Methane) (Tautomerism)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

TEDORADZE, G.A.; MAYRANOVSKIY, S.G.; KLYUKINA, L.D.

Electrochemical behavior of pyridine. Izv. AN SSSR. Otd.khim. nauk no.7:1352-1354 Jl '61. (MIRA 14:7)

1. Institut elektrokhimii AN SSSR i Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Pyridine) (Electrochemistry)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; LISHCHETS, L.I.

Polarographic study of the effect of temperature on the rate of proton transfer to dianion of maleic acid. Izv.AN SSSR. Otd.khim.nauk no.10:1749-1757 O '61. (MIRA 14:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Maleic acid) (Polarography)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

30162

5.4300 1209, 1273, 1320

S/062/61/000/012/001/012
B101/B147

AUTHOR: Mayranovskiy, S. G.

TITLE: Effect of dimerization of intermediately forming free radicals upon the polarographic waves of aromatic aldehydes and ketones in acid media

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 12, 1961, 2140 - 2145

TEXT: On the basis of Western papers the following equations are presented for the reduction of aromatic aldehydes and ketones on a dropping mercury electrode: $RR'C{=}O + e^- + H^+ \overset{el}{\rightleftharpoons} RR'C^{\cdot}OH$ (I) (reversible addition of an electron and proton, and formation of free radicals; R = aryl, R' = H or alkyl (aryl)). $2RR'C^{\cdot}OH \xrightarrow{k_d} RR'\underset{HO}{C}-\underset{OH}{C}RR'$ (II) (dimerization to pinacols), k_d = dimerization constant. At more negative electrode potentials, the radicals are reduced to alcohols:

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

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B101/B147

Effect of dimerization of...

$RR'C^{\cdot}OH + e^- + H^+ \xrightarrow{k_{el}} RR'CHOH$ (III). This reaction causes a second wave on the polarogram. Processes I and II (first wave) are described by $E = \varepsilon_o - (RT/nF)\ln\left[i^{2/3}/(i_{lim} - i)\right]$ (1) cf. J. Koutecký, V. Hanuš, Coll Czech. Chem. Comm., 20, 125 (1955). ε_o is the characteristic potential which is independent of the depolarizer concentration and corresponds to the point $i^{2/3} = i_{lim} - i$ of the wave; n is the number of electrons (here n = 1); and i_{lim} is the limiting current. In the preceding paper (Dokl AN SSSR, 110, 593 (1956)), the half-wave was given as $E_{1/2} = E_o + (RT/3nF) \ln (k_d c_o t/4)$ (2), where E_o = redox potential of system I, c_o = concentration of the initial compound in the bulk of the solution, t = dropping period. Equations are now derived for the second wave which occurs if the potential is sufficient for reaction III. The rate of III depends on the potential of the electrode; current i' corresponds to the portion of free radicals reduced to alcohol; $i'_{lim} - i'$ corresponds to the

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portion of radicals dimerized to pinacols. According to R. Brdička-Wiesner (First International Congress on Polarography, Prague, 1951; Chem. zvesti, 8, 702 (1954)) one obtains:

$i'_{lim} - i' = sFDc_s/\mu = sF(k_dD)^{1/2}c_s^{3/2}$ (3), where c_s = concentration of free radicals on the electrode; $\mu = (D/c_sk_d)^{1/2}$ = thickness of the reaction layer; s = electrode surface area; D = diffusion coefficient of radicals, set equal to D of the initial aldehyde or ketone. According to A. N. Frumkin et al. (Kinetika elektrodnykh protsessov (Kinetics of electrodic processes), Izd. MGU, M., 1952, p. 174) a delayed discharge is given by

$i' = sFc_sk^o_{el} \exp(-\alpha EF/RT)$ (4), where k^o_{el} = rate constant of electron transfer at E = 0; α = transfer coefficient.

$E' = \varepsilon'_o - (2RT/3\alpha F) \ln\left[(i')^{3/2}/(i'_{lim} - i')\right]$ (5) is obtained from Eqs. (3) and (4). The characteristic potential is given by

$\varepsilon'_o = -(2RT/3\alpha F) \ln (k_dD/sF)^{1/2}\left[10^{-3}/(k^o_{el})^{3/2}\right]$, if current is expressed in

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μa. $E'_{1/2} = \varepsilon'_0 - (RT/3\kappa F) \ln (i'_{lim}/2) = \varepsilon'_0 - (RT/3\kappa F) \ln(0.5\kappa c_0)$ (7) is valid for the half-wave potential. Here, κ is the proportionality factor according to the Ilkovich equation (n = 1), expressed in $\mu a \cdot mM^{-1}$. These theoretical deductions were experimentally verified. The characteristic data of the dropping electrodes were as follows: m = 1.02 mg/sec; t = 0.23 sec. As a background, 0.1 N CH_3COOK + 0.1 N CH_3COOH was used for benzaldehyde, and 0.4 N CH_3COOK + ~0.4 N CH_3COOH + 0.1 N KCl + ~1.5% ethanol for acetophenone. Results: 1) A distinct separation of the two waves is possible with a quickly dropping electrode and at low concentrations of low-molecular aldehydes and ketones. Accumulation of poorly soluble, inhibitory compounds on the electrode can thus be avoided. 2) $\log i^{2/3}/(i_{lim} - i)$ and $\log i'^{2/3}/(i'_{lim} - i')$ are linear functions of E and E', respectively. 3) With increasing concentration $E_{1/2}$ becomes more positive and $E'_{1/2}$ more negative. 4) For benzaldehyde, $\Delta E_{1/2}/\Delta \log c_0 \approx 20$ mv; $\Delta E'_{1/2}/\Delta \log c_0 \approx -44$ mv. At the benzaldehyde concentrations studied, ε'_0

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Effect of dimerization of... S/062/61/000/012/001/012
B101/B147

varied between -1.278 and -1.296 v; α = 0.48. 5) $\Delta E_{1/2}/\Delta \log c_0 \approx 20$ mv was found for acetophenone. Exact determination of $\Delta E'_{1/2}/\Delta \log c_0$ failed ($\sim$-44 mv), because the second wave is indistinct at low acetophenone concentrations; ε'_0 = -1.510 v; α = 0.45. Experiment and calculation were in good agreement. There are 3 figures and 13 references: 8 Soviet-bloc and 5 non-Soviet-bloc. The three references to English-language publications read as follows: R. M. Powers, R. A. Day, Jr., J. Amer. Chem. Soc., 80, 808 (1958); P. J. Elving, J. T. Leone, J. Amer. Chem. Soc., 80, 1021 (1958); M. Suzuki, P. J. Elving, J. Phys. Chem., 65, 391 (1961).

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo, Akademiya nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR)

SUBMITTED: June 8, 1961 (initially)
July 25, 1961 (after revision)

Card 5/5

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; STRADYN', Ya.P. [Stradiņš, J.]

Effect of double layer structure on the polarographic behavior of nitro compounds. Izv. AN SSSR Otd.khim.nauk no.12:2239-2241 D '61. (MIRA 14:11)

1. Institut organicheskoy khimii im. N.D.Zel'inskogo AN SSSR i Institut organicheskogo sinteza AN Latviyskoy SSR.
(Polarography) (Nitro compounds)

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[illegible], [illegible]; [illegible], [illegible]; [illegible], A.N., akademik

Polarographic catalytic [illegible] of hydrogen [illegible] affected by the structure [illegible] the [illegible] layer. Dokl. [illegible] SSSR. 141 no.1:147-150 [illegible] '61. (MIRA 14:11)

1. Institut elektrokhimii [illegible] SSSR.
(Hydrogen-ion concentration)
(Catalysis)
(Electrochemistry)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; BARASHKOVA, N.V.; ALASHEV, F.D.

Polarographic study of N-oxide of N-methylpiperidine. Kinetic waves of N-oxides. Zhur. fiz. khim. 36 no.3:562-566 Mr '62. (MIRA 17:8)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR, Moskva.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S. G.; KOUTETSKIY, Ya.[Koutecky, J.]; GANUSH, V.[Hanus, V.]

Polarographic catalytic hydrogen waves induced by organic catalysts. Part 3: Experimental study of the effect of the preceding reaction on the space catalytic waves. Zhur. fiz. khim. 36 no.12:2621-2627 D '62. (MIRA 16:1)

1. Institut organicheskoy khimii imeni N. D. Zelinskogo AN SSSR, Moskva i Institut fizicheskoy khimii Chekhoslovatskoy AN, Praga.

(Polarography) (Catalysis) (Pyridine)

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MAYRANOVSKIY, S.G.; BARASHKOVA, N.V.

Catalytic adsorption pre-wave on polarograms of pyridine solutions. Izv. AN SSSR Otd.khim.nauk no.1:186 Ja '62. (MIRA 15:1)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pyridine) (Polarography)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; LISHCHETA, L.I.

Determination of the rate constants of the transfer of protons in pyridine at various temperatures from polarographic catalytic hydrogen waves. Izv. AN SSSR Otd.khim.nauk no.2:227-236 F '62. (MIRA 15:2)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

(Pyridine)
(Polarography)
(Protons)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; BELIKOV, V.M.; KORCHEMNAYA, TS.B.; NOVIKOV, S.S.

Mechanism of reduction of nitro compounds on the dropping mercury electrode. Izv.AN SSSR.Otd.khim.nauk no.3:523-525 Mr '62. (MIRA 15:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Nitro compounds) (Reduction, Electrolytic)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

BELIKOV, V.M.; MAYRANOVSKIY, S.G.; KORCHEMNAYA, TS.B.; NOVIKOV, S.S.

Tautomerism of nitro compounds. Report No.4: Mechanims of tautomeric transformations of nitro compounds. Izv.AN SSSR Otd.khim.nauk no.4:605-614 Ap '62. (MIRA 15:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo.
(Nitro compounds) (Tautomerism)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Polarographic determination of rate constants of proton transfer in pyridine and in some of its homologs under the effect of water.
Izv. AN SSSR. Otd.khim.nauk no.5:784-789 My '62. (MIRA 15:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pyridine) (Protons)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; LISHCHETA, L.I.

Effect of temperature on the "space" and "surface" polarographic kinetic currents restricted by the recombination rate of maleic acid monoanions. Izv.AN SSSR. Otd.khim.nauk no.11:1984-1989 N '62. (MIRA 15:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Maleic acid) (Polarography)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

BELIKOV, V.M.; MAYRANOVSKIY, S.G.; KORCHEMNAYA, TS.B.; NOVIKOV, S.S.

Kinetic polarographic currents of the recombination of anions of nitro compounds. Izv. AN SSSR. Otd.khim.nauk no.11:2103 N '62. (MIRA 15:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR i Institut elementoorganicheskikh soyedineniya AN SSSR.
(Nitro compounds) (Polarography)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

GANUSH, V. [Hanus, V.]; MAYRANOVSKIY, S.G.; KOUTETSKIY, Ya. [Koutecky, J.]

Polarographic catalytic hydrogen waves produced by organic catalysts. Part 2. Zhur. fiz. khim. 36 no.9:2010-2107 S '62. (MIRA 17:6)

1. Akademiya nauk Chekhoslovakii, Institut fizicheskoy khimii AN SSSR i Institut organicheskoy khimii imeni N.D. Zelinskogo.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Effect of the double layer structure on irreversible polarographic waves in the reduction of organic substances with consumption of protons in the potential-determining stage. Dokl. AN SSSR 142 no.5:1120-1123 F '62. (MIRA 15:2)

1. Institut organicheskoy khimii im.N.D.Zelinskogo AN SSSR. Predstavleno akademikom A.N.Frumkinym.
(Electrochemistry)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Polarographic catalytic hydrogen waves as dependent on the structure of organic catalysts. Dokl. AN SSSR 142 no.6:1327-1330 F '62. (MIRA 15:2)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Predstavleno akademikom A.N.Frumkinym.
(Polarography)
(Catalysts)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

LEVICH, V.G.; KHAYKIN, B.I.; MAYRANOVSKIY, S.G.

Effect of the double layer on the polarographic catalytic hydrogen space waves. Dokl.AN SSSR 145 no.3:605-608 Jl '62. (MIRA 15:7)

1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent AN SSSR (for Levich).
(Catalysis) (Electromotive force)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

ERSHLER, A.B.; TEDORADZE, G.A.; MAYRANOVSKIY, S.G.

Effect of the adsorption of organic substances on the kinetics of their electroreduction. Dokl.AN SSSR 145 no.6:1324-1327 Ag '62. (MIRA 15:8)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N. Frumkinym.
(Organic compounds) (Adsorption) (Reduction, Electrolytic)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Effect of the double layer structure on the polargraphic "surface" catalytic hydrogen waves. Notes on the results of works by E.Pungor and G.Y.Farsang. Zhur.fiz.khim. 37 no.2: 451-452 F '63. (MIRA 16:5)

1. Institut organicheskoy khimii AN SSSR i Institut elektrokhimii AN SSSR.
(Electrolyte solutions) (Polargraphy) (Catalysis)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; POLIYEVKTOV, M.K.

Polarographic determination of the diffusion coefficient of hydroxyl ions in aqueous solutions of alkali metal nitrates. Zhur. fiz. khim. 37 no.4:885-887 Ap '63. (MIRA 17:7)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Space kinetic waves in the polarography of salts of weak acids in nonbuffer solutions. Dokl. AN SSSR 149 no.6:1373-1376 Ap '63. (MIRA 16:7)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Predstavleno akademikom A.N.Frumkinym.
(Salts) (Polarography)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

TEDORADZE, G.A.; ERSHLER, A.B.; MAYRANOVSKIY, S.G.

Effect of the adsorption of reducing substances on the kinetics of electrode process. Report No.2: Electrochemical behavior of benzyl chloride. Izv.AN SSSR.Otd.khim.nauk no.2:235-240 F '63. (MIRA 16:4)

1. Institut elektrokhimii AN SSSR.
(Toluene) (Reduction, Electrolytic)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

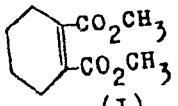
S/062/63/000/002/004/020
B144/B186

AUTHORS: Mayranovskiy, S. G., Grigor'yeva, N. Ya., Barashkova, N. V., and Kucherov, V. F.

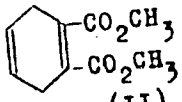
TITLE: Conjugation factors in cyclic systems. Communication 6. Polarographic and potentiometric study of electron interaction effects in cyclohexadiene-1,2 dicarboxylic acids and their methyl esters

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1963, 240 - 245

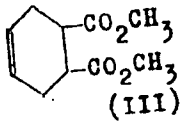
TEXT: Cyclohexene and cyclohexadiene-1,2 dicarboxylic acids and their dimethyl esters were studied polarographically and potentiometrically to clear up the problem of possible interactions between the double bonds of the ring. The polarograms of



(I)



(II)



(III)

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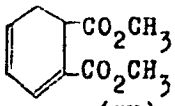
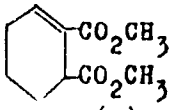
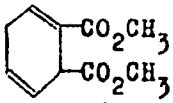

(IV)


(V)


(VI)

were taken at 25°C using 0.05 M tetramethyl ammonium iodide solution containing 9.5% by volume ethanol. The effect of pH and ionic strength was investigated in borate buffer solutions (pH 7 - 10.5), 0.1 N NaOH, and potassium chloride solutions. The anode was an Hg electrode, the reference electrode was a calomel half-cell. The ionization constants were determined at ~20°C and initial concentrations of ~0.001 M. For all compounds except III the reduction wave was pH-independent. For I, II, V, VI the ion transference number is 2, the diffusivity $6.5 \cdot 10^{-6}$ cm^2/sec. The polarographic curves showed two steps; the difference between their $E_{1/2}$ could be altered neither by increasing the depolarizer concentration nor by raising the temperature and ionic strength of the solution nor by varying the height of the Hg column. This indicates that the two reduction steps are irreversible and occur due to hydrogenation of the double bond involving formation of a relatively stable free radical intermediate. In IV, the two double bonds

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are hydrogenated successively. Electrochemical reduction was absent in III, where the double bond is conjugated with neither of the two CO_2CH_3 groups. All this was confirmed by the analogous relation between ionization constants and structures of the corresponding acids. It was found that the ester is more easily reduced and the dissociation constant of the acid increases on conversion of I and V into II and VI respectively. Since the steric interaction of the atoms does not change, these effects must be attributed to an electron interaction between the isolated double bonds in II and VI. There are 3 figures and 1 table.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: May 18, 1962

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

TEDORADZE, G.A.; MAYRANOVSKIY, S.G.

Reversibility of the polarographic catalytic waves of hydrogen in pyridine solutions. Izv.AN SSSR.Otd.khim.nauk no.3:577 Mr '63. (MIRA 16:4)

1. Institut elektrokhimii AN SSSR.
(Pyridine) (Polarography) (Hydrogen)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; MAYRANOVSKAYA, E.F.

Comparison of the heights of polarographic catalytic waves of hydrogen obtained in solutions of proteins with different dropping electrodes; effect of stirring under conditions of the maximum of the second kind. Izv.AN SSSR Otd.khim.nauk no.5:937-939 My '63. (MIRA 16:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Gosudarstvennyy onkologicheskiy institut im. P.A.Gertsena.
(Proteins) (Polarography) (Catalysis)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

"Influence of the Adsorption of the Compounds of Electrode and Pre-Electrode Reactions upon the Kinetics of Electrochemical Processes."

Report presented at the 14th meeting CITCE, Intl. Comm. of Electrochemical Thermodynamics and Kinetics, Moscow, 19-25 Aug 63.

Institute of Organic Chemistry, Academy of Sciences of USSR, Moscow.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; KOUTETSKIY, Ya. [Koutecky, J.]; GANUSH, V. [Hanus, V.]

Polarographic catalytic waves of hydrogen induced by organic catalysts. Part 4. Zhur.fiz.khim. 37 no.1:18-22 Ja '63. (MIRA 17:3)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR, Moskva i Institut fizicheskoy khimii Chekhoslovatskoy Akademii nauk.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S. G.

"The effect of the composition of acqueous-organic solvents on the polarographic behavior of organic compounds."

report submitted for 3rd Intl Polarography Cong, Southampton, 19-25 Jul 64.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

BELIKOV, V.M.; MAYRANOVSKIY, S.G.; KORCHEMNAYA, TS.B.; GUL'TYAY, V.P.

Tautomerism of nitro compounds. Report No.5: Polarographic study of recombination of nitroacetic ester anion. Izv. AN SSSR. Ser.khim. no.3:439-444 Mr '64. (MIRA 17:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; DZHAFARIDZE, D.I.; SOROKIN, O.I.

Polarographic study of some derivatives of γ-piperidone. Izv.AN.SSSR.Ser.khim. no. 5:795-799 My '64. (MIRA 17:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

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L 8448-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RPL/SSD/AFWL WW/JFW/RM/RWS
ACCESSION NR: AP4044707 S/0062/64/000/008/1518/1521

AUTHOR: Neyman, M. B.; Mayranovskiy, S. G.; Kovarskaya, B. M.; Rozantsev, E. G.; Gintsberg, E. G.

TITLE: Polarographic study of certain 1-oxide free radicals

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1964, 1518-1521

TOPIC TAGS: electrochemical reduction, polarographic analysis, 1 oxide free radical, free radical reduction, radical protonization

ABSTRACT: Electrochemical reduction of the 2,2,6,6-tetramethylpiperidonyl 1-oxide radical (I) on a dropping mercury electrode has been studied and compared with that of the 2,2,6,6-tetramethyl-

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been studied and compared with that of the 2,2,6,6-tetramethyl-piperidino 1-oxide radical (II) to get additional data on the properties and feasibility of polarographic analysis of recently discovered stable 1-oxide free radicals. The effects of pH, concentration, and nature of the buffer components and the indifferent electrolyte on the half-wave potential, $E_{1/2}$, were determined in aqueous buffer solutions at 25C. It was shown that in the 1—13 pH range both I and II

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ACCESSION NR: AP4044707

2

are reduced irreversibly to the corresponding hydroxylamine derivatives and produce a single-electron, single-step diffusion wave. The height of the wave is independent of pH, but $E_{1/2}$ shifts to negative potentials with increase in the pH of solution. $E_{1/2}$ remains nearly constant only in a narrow, neutral pH range. The pH dependence of $E_{1/2}$ is explained in terms of the kinetics of radical protonization, which takes place before the actual electrochemical process of electron transfer. The protonization in acid and alkaline solution and the irreversibility of the process are evidenced by the ionic strength dependence of $E_{1/2}$ in various buffer solutions. Addition of Cl^- or Br^-, which are adsorbed in a surface layer, caused a noticeable shift in $E_{1/2}$, which is equal to the change in the calculated wave function ψ_1. Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences SSSR); Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Acad...

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Academy of Sciences SSSR) Institute of Chemi-

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L 8448-65
ACCESSION NR: AP4044707

SUBMITTED: 03Jan64 ATD PRESS: 3097 ENCL: 00

SUB CODE: IC, OP NO REF SOV: 006 OTHER: 002

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L 31346-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP4045797 S/0062/64/000/009/1599/1605

28
26
B

AUTHOR: Belikov, V. M.; Korchemnaya, Ts. B.; Mayranovskiy, S. G.; Novikov, S. S.

TITLE: Tautomerism of nitro compounds. Communication 6: Use of the pH meter for investigating the kinetics of acid dissociation and recombination of 1-nitropropane

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 9, 1964, 1599-1605

TOPIC TAGS: nitropropane, tautomerism, acid dissociationkinetics, acid recombination kinetics, recombination rate constant, energy of activation, preexponential constant, entropy of activation, protolytic reaction

ABSTRACT: The rate of dissociation of 1-nitropropane by the action of a base (KOH) and the rate of recombination of the potassium salt of 1-nitropropane by the action of HCl was investigated. Studies of the rates of these protolytic react-

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less than 0.5% of 2-nitropropane was used; contamination by the latter caused

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significant change in the rate constant-pH relationship (e.g., slope of the pk_1-pH line was 0.64, compared to 0.94 for the purified 1-nitropropane). The recombination rate constant varied from 780 1/M. sec. at pH 7.5 to 490 1/M. sec. at pH 5.5. Using an average value of these constants, corresponding to the value of pH 6.1, the energies of activation, the preexponential constant and the entropies of activation were calculated for the dissociation and recombination of 1-nitropropane by the action of H_2O, OH^- and H_3O^+. To determine if the rate constant of the recombination of the 1-nitropropane anion was dependent on the concentration of weak acids, reactions were run at 15C in the presence of varying amounts of glycocoll. The rate constant at pH 7.7-8.2 remained constant, equaling 4×10^{-2} 1/M. sec. The results obtained in the present investigation complemented those obtained previously by the authors' polarographic studies in buffered solutions (Izv. AN SSSR. Otd. khim. n. 1962, 605). Orig. art. has: 3 figures, 2 tables, and 17 equations

ASSOCIATION: Institut elementoorganichskikh soyedineniy Akademii nauk SSSR (Institute of Organometallo Compounds, Academy of Sciences SSSR) Institut organicheskiy khimii Akademii nauk SSSR im. N. D. Zelinskogo (Institute of

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Organic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 29Dec62 ENCL: 00

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; PONOMARENKO, V.A.; BARASHKOVA, N.V.; [illegible], M.A.

Structure and polarographic behavior of some iodomethyltrialkyl (aryl)silanes. Izv. AN SSSR Ser. khim. no.11:1951-1956 N '64 (MIRA 18:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

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MAYRANOVSKIY, S.G., doktor khimich.nauk; GLA'KOVA, L.K.

Polarography of organic compounds. Zhur. VKHO 9 no. 2:196-205 '64. (MIRA 17:9)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Theory of hydrogen catalytic waves in polarography of organic compounds. Usp.khim. 33 no.1:75-107 Ja '64. (MIRA 17:4)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; PAVLOV, V.N.

Preliminary protonation in the reduction of aromatic ketones on a dropping mercury electrode. Zhur. fiz. khim. 38 no.7:1804-1810 Jl '64. (MIRA 18:3)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

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MAYRANOVSKIY, S.G.

Quasidiffusion surface waves in polarography. Dokl. AN SSSR 154 no. 3:683-686 Ja '64. (MIRA 17:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Predstavleno akademikom A.N.Frumkinym.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

GEYROVSKIY, Ya.[Heyrovsky, Jaroslav], akademik; KUTA, Jaroslav; GUL'TYAY, V.P. [translator]; KUZNETSOV, V.A.[translator]; MAYRANOVSKIY, [illegible]G., doktor khim. nauk, red.; SAKHAROV, V., red.

[Principles of polarography. Translated from the Czech] Osnovy polirografii. Moskva, Mir, 1965. 559 p. (MIRA 18:7)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

POLIYEVKTOV, M.K.; MAYRANOVSKIY, S.G.

Effect of concentration and nature of supporting electrolyte cations on polarographic catalytic hydrogen waves generated by pyridine in nonbuifer solutions. Izv. AN SSSR. Ser. khim. no.3:413-419 '65. (MIRA 18:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; BARASHKOVA, N.V.; VOL'KENSHTEYN, Yu.B.

Polarography of bromothiophene; effect of the organic solvent concentration on the half-wave potentials. Elektrokhimiia 1 no.1:72-77 Ja '65. (MIRA 18:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

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MAZNICHENKO, E.A.; MAYRANOVSKIY, S.G.; ZOLOTOVITSKIY, Ya.M.

Mechanism of the reduction of Mg^{2+} ions on a mercury dropping electrode. Elektrokhimiia 1 no.5:597-602 My '65. (MIRA 18:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, Institut organicheskoy khimii imeni Zelinskogo AN SSSR i Institut elektrokhimii AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; BARASHKOVA, N.V.; VOL'KENSHTEYN, Yu.B.

Polarography of 2-acetylthiophene and its bromo derivatives. On the preceding protonation in the electrochemical breaking of the C-Br bond of 5-bromo-2-acetylthiophene. Izv. AN SSSR. Ser. khim. no.9:1539-1547 '65. (MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, [illegible]

Determination of the adsorption characteristics of organic compounds on a mercury electrode from polarographic residual currents. Elektrokhimiia 1 no.2 164-169 F '65. (MIRA 18:4)

1. Institut organicheskoy khimii imeni Zelinskogo [illegible].

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; PAVLOV, V.N.

Electrochemical hydrogenation of aromatic aldehydes and ketones. Elektrokhimiia 1 no.[illegible] F '65. [illegible]

1. Institut organicheskoy khimii imeni Zelinskogo AN [illegible].

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

PAVLOV, V.N.; ZOLOTOVITSKIY, Ya.M.; MAYRANOVSKIY, S.G.; TEDORADZE, G.A.

Study of the mechanism of electrochemical reduction of aromatic aldehydes and ketones on a mercury electrode by the faradic impedance method. Elektrokhimiia 1 no.4:427-432 Ap '65. (MIRA 18:6)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo i Institut elektrokhimii AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; GUL'TYAY, V.P.

Polarographic study of the effect of ethanol concentration on the rate of pyridine and 2,6-lutidine protonization by water. Elektrokhimiia 1 no.4:460-466 Ap '65. (MIRA 18:6)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; FILONOVA, A.D.

Kinetic surface waves of 5-R-2-methylthiophene in water-methanol solutions. Elektrokhimiia 1 no.9:1044-1051 S '65. (MIRA 18:10)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR i Institut elektrokhimii AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.

Particular features and shape of the polarographic double wave in solutions of proteins (according to Brdicka . Elektrokhimiia 1 no.10:1263-1267 O '65. (MIRA 18:10)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

GUL'TYAY, V.P.; MAYRANOVSKIY, S.G.

Polarographic study of the protolytic interaction of the maleic acid dianion with water in water-ethanol solutions. Elektrokhimiia 1 no.10:1295-1297 O '65. (MIRA 18:10)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, S.G.; PETROSYAN, V.A.

Mechanism of tetranitromethane reduction on a dropping mercury electrode. Elektrokhimiia 2 no.1:115-117 Ja '66.
(MIRA 19:1)

1. Institut organicheskoy khimii AN SSSR imeni N.D. Zelinskogo, Moskva. Submitted June 8, 1965.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.

High-resistance potentiometer and pH-meter based on LP-58. Zav. lab. 29 no.8:1010-1011 '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(Potentiometer) (Hydrogen-ion concentration)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.; KHOLODOV, L.Ye.; YASHUNSKIY, V.G.

Sydnones and sydnone imines. Part 16: Polarographic investigation of sydnone imines. Zhur.ob.khim. 33 no.2:347-353 F '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.
(Sydnone imine) (Polarography)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V. G.; YANOTOVSKIY, M. TS. (Moscow)

Polarographic detection in gas-liquid chromatography. Part1. Zhur. fiz. khim. 37 no. 3:705-707 Mr '63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Polarographic reduction of vitamins A and D. Zhur. VKHO 9 no. 3: 358-359 '64. (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

VEYNBERG, A. Ya.; VAKULOVA, L.A.; MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Sphingosine and its natural compounds. Part 1: Conversion of threo-sphingosine to its erythro derivatives. Zhur. ob. khim. 34 no.12:3979-3982 D '64 (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

YANOTOVSKIY, M.TS.; MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Additional polarographic detection in gas-liquid chromatography. Part 2: Application of the method. Zhur. fiz. khim. 38 no.12: 2995-2999 D '64. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

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MAYRANOVSKIY, V.G.

Polarographic latent limiting current of the 2d kind; proof of the "bulk" or "surface" nature of the chemical stage of electroreduction. Elektrokhimiia 1 no.6:700-701 Je '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut,

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Polarography of conjugated systems in dimethylformamide. Elektrokhimiia 1 no.8:996-1000 Ag '65. (MIRA 18:9)

1. Vsesoyuznyy vitaminnyy institut.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.

Rapid polarography using a vibrating dropping mercury electrode. Zav.lab. 31 no.10:1187-1189 '65. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Polarography of conjugated systems in dimethylformamide. Part [illegible]. Retinol and other compounds of vitamin A group. Elektrokhimiya [illegible] no.1:62-68 Ja '66. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut, Moskva. Submitted January 18, 1965

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L 10367-67 EWP(j)/EWT(m) RM

ACC NR: AP7003115 SOURCE CODE: UR/0079/66/036/007/1345/1346

MAYRANOVSKIY, V. G., FOKINA, L. N., VAKULOVA, L. A., SAMOKHVALOV, G. I.

ORG: none

"Polarographic Activity of Phosphoric Acid Esters"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 7, 1966, pp 1345-1346

TOPIC TAGS: phosphoric acid, ester, polarographic analysis

Abstract: It was found that certain organic phosphates give distinct polarographic reduction waves in the region of extremely negative potentials, if solutions of quaternary ammonium salts in dimethylformamide are used as the background. Trimethyl, triethyl, tripropyl, triisopropyl, tributyl, triphenyl, tri-o-cresyl, tribenzyl, diphenylbenzyl, and dibenzyl phosphates were studied with a dropping mercury electrode. With the exception of the trialkyl phosphates, which are not detected on the polarogram in an accessible potential region, the triesters of phosphorus acids generally give one reduction wave; in the case of tribenzyl phosphate, a second wave is visible before the discharging of the background. It is proposed that the polarographic activity of the phosphates is due to electrochemical cleavage of the C-O or P-O bond. The triesters of phosphoric acid are arranged in the following series with respect to ease of electrochemical reduction: trialkyl phosphates < triphenyl phosphate < tribenzyl phosphate. Orig. art. has: 2 formulas and 1 table. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 02Dec65 / ORIG REF: 001 / OTH REF: 001

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANSAYEV, A.Kh.

Treatment of oncogynecological patients with N,N',N''-triethylenethiophosphoramide (thio-tepa). Vop. onk. 6 no.4:30-38 Ap '60. (MIRA 14:3)

(GENITALIA FEMALE) (PHOSPHINE SULFIDE)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANSAYEV, A. Kh.

Use of Thio-TEPA in advanced malignant tumors of the ovaries. Vop. onk. 7 no.7:84-87 '61. (MIRA 15:2)

1. Iz ginekologicheskogo otdeleniya (zav. - prof. V. P. Tobilevich) Instituta onkologii AMN SSSR (dir. - deystv. chl. AMN SSSR prof. A. I. Serebrov).

(OVARIES—CANCER) (THIO-TEPA)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRANSAYEV, Kh. G.

Medicine

What must everyone know about eczema and ringworm. Dzaudzhikau, Severo-Osetinskoe gos. izd-vo, 1947.

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRGOFER, O.

Anesthesia in thoracic surgery on infants. Grud. khir. 2 no.4:102-107 Jl-Ag '60. (MIRA 15:6)

1. Iz vtoroy khirurgicheskoy universitetskoy kliniki v Vene (rukovoditel' - prof. Kunts).
(CHEST--SURGERY) (PEDIATRIC ANESTHESIA)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRGOYZ, Ye.M., kand.med.nauk (Ufa)

Appearance of agranulocytosis during the use of penicillin. Vrach. delo no.8:138-139 Ag '62. (MIRA 15:11)

1. Poliklinika Bashkirskogo soveta narodnogo khozyaystva.
(PENICILLIN—TOXICOLOGY) (AGRANULOCYTOSIS)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033110015-6

MAYRGOYZ, Ye.M., kand.med.nauk; PEREVOZNIKOVA, T.I.

Cells of lupus erythematosus and their significance in some diseases of the internal organs. Vrach.delo no.2:139 F '63. (MIRA 16:5)

1. Kafedra gospital'noy terapii (zav. - dotsent Z.Sh. Zagidullin) Bashkirskogo meditsinskogo instituta.
(LUPUS ERYTHEMATOSUS) (MEDICINE, INTERNAL)

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