ACCESSION NR: AP3000132 S/0062/63/000/005/0946/0947

AUTHOR: Sokolov, S. D.; Ashkinadze, L. D.; Chlenov, M. A.; Kochetkov, N. K.

TITLE: Structure of 3-methyl-4-nitroisoxazolone-5

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 946-947

TOPIC TAGS: 3-methyl-4-nitroisoxazolone-5, isomeric methyl derivatives, 3-methyl-4-nitro-5-methoxyisoxazole, 2,3-dimethyl-4-nitroisoxazolone-5, infrared spectra, ultraviolet spectra

ABSTRACT: 3-Methyl-4-nitroisoxazolone-5 was considered to be a DELTA compound, therefore, capable of enolization. This was, however, disproved by the inability to prepare a chloro derivative. In order to establish the structural formula of 3-methyl-4-nitroisoxazolone-5, two isomeric methyl derivatives were synthesized. 3-Methyl-4-nitro-5methoxyisoxazole was prepared by the action of diazomethane on 3-methyl-4-nitroisoxazolone-5, while 2,3-dimethyl-4-nitroisoxazolone-5 was prepared by the action of methyl iodide on the silver salt of the original compound. Infrared and ultraviolet spectra for 3-methyl-4-nitroisoxazolone-5 and its derivatives are reported. It was established that 3-methyl-4-nitro-isoxazole-5, its silver salt and its N-methyl derivative are DELTA sup 3 compounds. "The authors express their gratitude to N. B. Kuplet*skaya for procuring ultra-violet spectra!!

Card 1/2

ACCESSION NR: AP3000132

Orig. art. has: 1 figure, 4 formulas, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 27Dec62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 003

Card 2/2

SOKOLOV, S.D.; ASHKINADZE, L.D.

Infrared spectra of methylisoxazoles in the region 2800-3000 cm^{-1}.
Zhur.VKHO 8 no.1:119-120 '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Isoxazole--Absorption spectra)

SOKOLOV, S.D.; KOCHETKOV, N.K.

Isoxazole series. Part 14: Brominzation of the side chain of methylisoxazoles. Zhur.ob.khim. 33 no.4:1192-1196 Ap '63. (MIRA 16:5)

(Isoxazole) (Bromination)

KOCHETKOV, N.K.; SOKOLOV, S.D.

Isoxazole series. Part 15: Organomagnesium synthesis in the isoxazole series. Zhur.ob.khim. 33 no.4:1196-1199 Ap '63. (MIRA 16:5)

(Isoxazole) (Magnesium organic compounds)

ETKINA, V.N.; SOKOLOV, L.D.

Isotope hydrogen exchange of 3,5-dimethylisoxazole with acids.
Izv. AN SSSR, Ser.khim. no. 5:936-938 My '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KOCHETKOV, N.K.; SOKOLOV, S.B.

Isoxazole series. Part 16: Degradation of 4-haloisoxazoles under the conditions of Grignard reaction. Zhur. ob. khim. 33 no.5:1442-1446 My '63. (MIRA 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Isoxazole) (Grignard reagents)

SOKOLOV, S.D.; SAVOCHKINA, L.P.; KOCHETKOV, N.K.

Isoxazole series. Part 18: Behavior of isoxazoles in the Friedel-Crafts reaction. Zhur. ob. khim. 34 no.7:2207-2209 Jl '64 (MIRA 17:8)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

SOKOLOV, S.D.; KOCHETKOV, N.K.

New reaction of the isoxazole ring. Dokl. AN SSSR 156 no.6:1391-1394 Je '64. (MIRA 17:8)

1. Institut khimii prirodnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Kochetkov).

SOKOLOV, S.D.; SAVOCHKINA, L.P.; KOCHETKOV, N.K.

Synthesis and properties of β-thioglucosides containing functional groups in aglucon. Zhur. ob.khim. 34 no.12:4099-4103 D '64 (MIRA 18:1)

1. Institut khimii prirodnykh soyedineniy AN SSSR i Institut elementoorganicheskikh soyedineniy AN SSSR.

SEREDIN, R.M., dots., kand. biol. nauk; SOKOLOV, S.[illegible],
doktor med. nauk

[Medicinal plants; their recognition, distribution, pro-
curement, chemical composition and medical utilization]
Lekarstvennye rasteniia; raspoznavanie, rasprost[illegible],
zagotovka, khimicheskii sostav i meditsinskoe [illegible].
Stavropol', Stavropol'skoe knizhnoe izd-vo, 19[illegible]. [illegible] p.
(MIR [illegible]

SOKOLOV, S.D., kandidat tekhnicheskikh nauk.

Investigation of internal and external supertension in traction substations. Trudy TSNII MPS no.123:13-55 '56. (MLRA 9:12)

(Electric railroads--Substations)

SOKOLOV, S.D., kandidat tekhnicheskikh nauk.

Compounding mercury rectifiers for traction substations. (MIRA 9:12)
Trudy TSNII MPS no.123:56-59 '56.

(Electric current rectifiers) (Electric)

CHERNYSHEV, M.A., doktor tekhnicheskikh nauk; SOKOLOV, S.D., kandidat tekhnicheskikh nauk.

Converter units for traction substations. Elek.i tepl.tiaga no.9:4-7 S '57. (MIRA 10:10)
(Electric railroads--Substations)

RADCHENKO, V.D., kand. tekhn. nauk; REBRIK, B.N., kand. tekhn. nauk; SOKOLOV, S.D., kand. tekhn. nauk; SUKHOPRUDSKIY, N.D., kand. tekhn. nauk; KUDRYAVTSEV, M.V., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Increasing operational reliability of power-supply installations] Povyshenie nadezhnosti raboty ustroistv energosnabzheniia. Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 90 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.148). (MIRA 11:6)

(Electric railroads—Wires and wiring)
(Electric railroads—Substations)

SOKOLOV, S.D.

8(3) PHASE I BOOK EXPLOITATION SOV/1450

Radchenko, V.D., Candidate of Technical Sciences, B.N. Rebrik, Candidate of Technical Sciences, S.D. Sokolov, Candidate of Technical Sciences, N.D. Sukhoprudskiy, Candidate of Technical Sciences

Povysheniye nadezhnosti raboty ustroystv energosnabzheniya (Increasing Operating Reliability of Power-supply Installations) Moscow, Transzheldorizdat, 1958. 101 p. (Series: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta. Trudy, vyp. 148) 2,000 copies printed.

Sponsoring Agency: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta

Ed.: Kudryavtsev, M.V., Engineer; Tech. Ed.: Bobrova, Ye.N.

PURPOSE: This collection of articles is intended for scientists, engineers and technicians working in railroad electrification.

COVERAGE: The articles cover the following subjects: determination of steady-state short-circuit currents, d-c arc rupture in horn-type arresters, method of preventive testing of insulators without

Card 1/4

dismantling, increase of reliability of inverters and methods of protecting electric locomotives against disruption of power regeneration during breakdowns of the inverter.

TABLE OF CONTENTS:

SOKOLOV, S.D., kand.tekhn.nauk; MOCHENOV, I.G., inzh.

Using series connections for transformers in traction substations. Vest. TSNII MPS 17 no.6:15-19 S '58. (MIRA 11:11)
(Electric transformers) (Electric railroads--Substations)

SOKOLOV, S. D.

8(2), 32(3) PHASE I BOOK EXPLOITATION SOV/2471

Radchenko, Viktor Danilovich, Sergey Dmitriyevich Sokolov, and Nikolay Dmitriyevich Sukhoprudskiy

Perenapryazheniya i toki korotkogo zamykaniya v ustroystvakh elektrifitsirovannykh zheleznykh dorog postoyannogo toka (Overvoltages and Short-circuit Currents in Systems of Electrified DC Railroads) Moscow, Transzheldorizdat, 1959. 303 p. 3,000 copies printed.

Ed.: S. K. Krylov, Engineer; Tech. Ed.: P. A. Khitrov.

PURPOSE: This book is intended for engineering and technical personnel of electrified railroads and for personnel of plants engaged in the construction and repair of rolling stock equipment.

COVERAGE: The authors discuss excess voltages occurring in electric traction systems and their effect on the operation of rolling stock equipment and traction substations. They also describe methods of testing the insulation of equipment and methods of calculating short-circuit current parameters. The basic principle of operation of circuits used for the protection of

Card 1/9

SOV/106-59-2-18/25

8(3)

AUTHOR: Sokolov, S. D., Candidate of Technical Sciences

TITLE: On the Determination of the Arc-Back Action (K opredeleniyu obratno-zazhigayushchego vozdeystviya)

PERIODICAL: Elektrichestvo, 1959, Nr 2, pp 74-78 (USSR)

ABSTRACT: At first the formula (1) of Brown, Boveri and Co., and the formula (2) of Shmalenberg and Shilo (Refs 1, 2) for the arc-back action are given. The imperfections of these formulae are shown. They were established assuming that the backlash voltage rises instantaneously up to ΔU. In reality, the recovery of the backlash voltage takes place at a certain rate depending on the circuit parameters of the inverter aggregate and effecting the frequency of the backlashes. These two formulae can only be used when the duration of the current commutation t_γ amounts to 6 to 7 times the time constant τ of the ionization. The formulae (3) and (4) are derived for calculating the action of arc backs in any case. For this the physical interpretation of this quantity (arc back action) as being proportional to the product of the backlash jump ΔU and the concentration N_γ of the charge carriers at the instant of the current commutation end is used. From the formula (4)

Card 1/3

it is seen that the arc back action does not only depend on ΔU_i and N_γ but also on the rate of back lash voltage rise and on the time constant of deionization. To reduce the arc back action and, hence, the probability of arc backs, it is necessary to reduce τ and the rate of rise of the backlash voltage. Reducing the time constant τ of deionization can be done by reducing the working temperature and by changing the valve design. The determination of the charge carrier concentration at the end of the commutation is investigated. The formulae (6) for rectifier and (7) for inverter operation are derived. They may be used for determining N_γ at any ratio of commutation time to the time constant τ of deionization. Finally the arc-back action at the inverter is investigated. It is shown that this action attains its maximum value in the inverter at 150 - 450 A and is highly dependent on the capacity of the a.c. supply system. It is unsuitable to reduce the rated converter current at its use as inverter on the base of the quantities of arc back action. In order to improve the reliability of the inverter it is necessary to reduce the arc back action. Three-grid valves with small time constants of deionization are to be used, the time constant of backlash

voltage is to be limited (for example by insertion of capacitances between anodes and cathodes) and the value of the backlash voltage must be reduced. There are 5 figures and 4 references, 1 of which is Soviet.

SUBMITTED: October 4, 1957

FLEYSHMAN, L.S., inzh.; BOBROV, Ye.G., inzh.; SOKOLOV, S.D., kand.tekhn. nauk

Testing new rectifier units using three-phase bridge systems. Elek.i tepl.tiaga 3 no.5:20-23 My '59. (MIRA 12:9)
(Mercury-arc rectifiers)

CHERNYSHEV, M.A., doktor tekhn.nauk; SOKOLOV, S.D., kand.tekhn.nauk

Investigating inverter installations under working conditions.
Trudy TSNII MPS no.173:4-50 '59. (MIRA 13:4)
(Electric current converters)

SOKOLOV, S.D., kand.tekhn.nauk

Limiting fault currents during reverse firing and short circuits. (MIRA 13:10)
Vest. TSNII MPS 19 no.3:22-26 '60.
(Electric currents) (Electric railroads--Substations)

SOKOLOV, S.D., kand.tekhn.nauk

Use of high-speed current limiting grid protection. Trudy TSNII MPS no. 190:4-40 '60. (MIRA 13:12)
(Mercury--Arc rectifiers) (Railroads--Substations)

MOCHENOV, I.G., inzh.; RUDNEV, V.N., kand.tekhn.nauk; SOKOLOV, S.D., kand. tekhn.nauk; PETRUSHKOVA, I.K., inzh., red.; MEDVEDEVA, M.A., tekhn. red.

[Studying the power supply systems of electrified railroads] Issledovaniia ustroistv energosnabzheniia elektrifitsirovannykh zheleznykh dorog. Moskva, Vses.izdatel'sko-poligr. ob"edinenie m-va putei soob., 1961. 68 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.206). (MIRA 14:5)

(Electric railroads—Current supply)

BOBROV, Yevsey Gdal'yevich; KOVTUN, Nikolay Fedorovich; SOKOLOV, S.D., kand. tekhn. nauk, retsenzent; SIDOROV, N.I., inzh., red.; MEDVEDEVA, M.A., tekhn. red.

[Mercury rectifier unit with series-connected rectifying elements] Rtutnovypriamitel'nyi agregat s posledovatel'nym soedineniem ventilei. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 106 p. (MIRA 15:2)
(Electric current rectifiers)

S/196/61/000/012/029/029
E194/E155

AUTHOR: Sokolov, S.D.

TITLE: An invertor installation with ballast resistance

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.12, 1961, 5-6, abstract 12L 30. (Tr. Vses. n.-i. in-ta zh.-d. transp., no.206, 1961, 63-69)

TEXT: A circuit is proposed to accept the energy of regenerative braking; it consists of an invertor of the three-phase bridge circuit type connected in series with a resistance of constant value. This device has the advantage over a ballast resistance that the electric power loss can be reduced and the control circuit simplified. It is much more reliable than the normal invertor equipment because of the use of the constant resistance of several ohms which pulls the invertor into normal operation during fault conditions. To ensure that the necessary regenerative currents flow, the back e.m.f. of the invertor can be controlled by altering its angle of lead. To improve the power characteristics of the equipment is is necessary to use

Card 1/2

An invertor installation with ... S/196/61/000/012/029/029
E194/E155

small values of series resistance and initial angle of lead (but equal to or greater than 30-35° electrical) and under fault conditions to use a high-speed circuit for increasing the angle of lead. If, under fault conditions, the angle of lead is 50-55° electrical, the resistance can be reduced to 2 - 1.7 ohms. The presence of series resistance in the circuit avoids the need for using a reactor of high inductance. Because of the reliability of the device, which is intended for sections where there are mainly small excess regenerative currents, but currents of considerable magnitude at particular instants, full use can be made of the advantages of regenerative braking to obtain a power economy which greatly exceeds the additional losses of the regenerated power.
5 figures.

[Abstractor's note: Complete translation.]

Card 2/2

SOKOLOV, S.D., kand.tekhn.nauk

High speed protection with magnetic elements. Trudy TSNII MPS no.209:60-66 '61. (MIRA 14:5)
(Electric protection)

SOKOLOV, S.D., kand.tekhn.nauk

Methods for designing pickups for the protection circuit of substations. Trudy TSNII MPS no.209:67-78 '61. (MIRA 14:5)
(Electric protection)
(Electric railroads—Substations)

AFANAS'YEVA, Yekaterina Yakovlevna; GERONIMUS, Boris Yefimovich; LAPIN, Vladimir Borisovich; MILOVIDOV, Leonid Grigor'yevich; Prinimal uchastiye BORODULIN, B.M.; SOKOLOV, S.D., kand. tekhn. nauk, retsenzent; USENKO, L.A., tekhn. red.

[Systems and operation of a.c. traction substations] Ustroistvo i ekspluatatsiia tiagovykh podstantsii peremennogo toka. [By] E.IA.Afanas'eva i dr. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1962. 237 p. (MIRA 15:4)

(Electric railroads—Substations)

SOKOLOV, S.D., kand.tekhn.nauk; Prinimali uchastiye: GLUKHOV, I.G.; CHERPUNAY, A.V.

Burnout of the overhead conductor by an open electric arc. Vest. TSNII MPS 21 no.3:11-15 '62. (MIRA 15:5)
(Electric lines--Overhead)

SOKOLOV, S.D., kand.tekhn.nauk

Grid protection of mercury rectifier devices with series connected valves. Trudy TSNII MPS no.232:36-45 '62. (MIRA 15:9)

(Mercury-arc rectifiers)
(Electric railroads--Current supply)

SOKOLOV, S.D., kand.tekhn.nauk

Reliability of a group-type grid protection system. Trudy TSNII MPS no.232:46-68 '62. (MIRA 15:9)
(Electric railroads--Current supply) (Electric protection)

SOKOLOV, S.D., kand.tekhn.nauk

Burn-out and overheating of the wire at its contact point with the skate of a stationary trolley. Vest.TSNII MPS 22 no.1:21-24 '63. (MIRA 16:4)

(Electric railroads—Wires and wiring)

SOKOLOV, S.D., kand. tekhn. nauk

Use of semiconductor rectifiers in traction substations. Trudy TSNII MPS no.250:4-18 '63. (MIRA 16:6)

(Electric current rectifiers)
(Electric railroads—Substations)

SOKOLOV, S.D., kand.tekhn.nauk

Methods for determining the reliability of electric apparatus during testing. Trudy T3NII MPS no.261:47-54 '63.(MIRA 16:9)

TREYVAS, M.D.; SERDINOV, S.M., inzh., retsenzent; SOKOLOV, S.D., kand. tekhn. nauk, red.; VOTONIKOVA, L.F., tekhn. red.

[Higher harmonics of a rectified voltage and their decrease in d.c. traction substations] Vysshie garmonicheskie vypriamlennogo napriazheniia i ikh snizhenie na tiagovykh podstantsiiakh postoiannogo toka. Moskva, Izd-vo "Transport," 1964. 98 p. (MIRA 17:3)

MOCHENOV, I.G., kand.tekhn.nauk; SOKOLOV, S.D., kand.tekhn.nauk;
RUDNEV, V.N., kand.tekhn.nauk

Selecting the polygon of regeneration and the receiver of excess power. Vest. TSNII MPS 23 no.1:18-22 '64. (MIRA 17:4)

SOKOLOV, S.D., kand. tekhn. nauk; KUZNETSOV, S.M., inzh.;
KACHEVSKIY, A.I., inzh.

Experience in the operation of quick-action electric network protection. Trudy TSNII MPS no.276:16-32 '64. (MIRA 17:8)

MOCHENOV, I.G., kand. tekhn. nauk; SOKOLOV, S.D., kand. tekhn. nauk;
RUDNEV, V.N., kand. tekhn. nauk

Economic efficiency of the use of regenerative braking. Zhel.
dor. transp. 46 no.5:41-43 My '64. (MIRA 18:2)

KOCHETKOV, N.K.; SOKOLOV, S.F.; ZHVIRBLIS, V.Ye.

Oxymethylation of 3, 5-dimethyloxazole. Zhur.VKHO 6 no.4:466-467 '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Oxazole)

SOKOLOV, S., kand.tekhn.nauk (Novosibirsk)

Checking the operation of electric railway motors. Zhel.dor. transp. 36 no.3:63-65 Mr '55. (MIRA 12:5)
(Electric railway motors)
(Electric measurements)

SOKOLOV, S.G. kandidat tekhnicheskikh nauk, Novosibirsk.

Efficient use power reserves of electric locomotives. Zhel.dor.transp. 37 no.10:16-18 O '55. (MLRA 9:1)

(Electric locomotives)

Sokolov, S.G.

SOKOLOV, S.G.

Reducing the voltage of contact networks in electric transportation systems. Izv. vost. fil. AN SSSR no.9:86-93 '57. (MIRA 11:1)

1. Zapadno-Sibirskiy filial AN SSSR.
(Electric railroads)

SOKOLOV, S.G., kand.tekhn.nauk (Novosibirsk)

Temperature conditions in insulation impregnation and drying for electric traction engines. Elek.i tepl.tiaga no.10:20-21 O '57. (MIRA 10:11)

(Electric railway motors)

little at -70°C compared with room temperature. The electric volume resistivity rose rapidly on cooling. An examination with a microscope showed no irreversible changes on cooling to -70°C followed by return to +20°C. Twenty thermal shock cycles (30 min at -70°C, followed immediately by 30 min at +120°C) hardly altered the electrical properties of the resin. Immersion of the cycled insulators in water showed no cracks. The resistance to arcing under Siberian conditions was also good: no deterioration was found after a year's exposure to intermittent arcing in open air. The ultimate tensile strength of the resin, measured according to ГОСТ 4649-55 (GOST 4649-55), did not vary greatly between +20°C and -70°C. The impact resistance, measured according to ГОСТ 4647-55 (GOST 4647-55), fell from 10.5 kg/cm at +20°C to 8 kg/cm at -60°C; however even the lower value is still better than that of porcelain. There are 7 figures.

ASSOCIATION: Transportno—energeticheskiy institut Sibirskogo otdeleniya AN SSSR, Novosibirsk (Transport-Power Institute, Siberian Division, AS USSR, Novosibirsk)

SOKOLOV, S.G., kand.tekhn.nauk

Concerning the design of high-voltage insulators for districts with a high degree of air pollution. Elek. sta. 33 no.7:59-64 Jl '62. (MIRA 15:8)
(Electric lines--Overhead) (Electric insulators and insulation)

SOKOLOV, S.G.; LEVITSKAYA, TS.M.

Effect of low temperatures on the electrophysical and mechanical properties of epoxide insulation. Izv. Sib. otd. AN SSSR no.7: 37-41 '62. (MIRA 17:8)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.

SOKOLOV, S.G.

Effect of snowstorms on electric strength of the air gap. Izv. SO AN SSSR no.2 Ser. tekh. nauk no.1:94-98 '63. (MIRA 16:8)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Electric lines) (Storms)

SOKOLOV, S.G.

New principle for designing high-voltage insulators. Izv. SO AN SSSR no.10 Ser. tekh. nauk no.3:34-41 '63.

(MIRA 17:11)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.

SOKOLOV, S.G. Kand. tekhn. nauk; TRUSOVA, V.N., inzh.; YASHIN, Yu.N., inzh.

Electrical and aerodynamic characteristics of screw shaped suspension insulators. Elek. sta. 36 no.2:59-62 F '65. (MIRA 18:4)

Sokolov, S. I.

2

Sokolov, S. I. O vychislenii vlazhnosti vozdukha pri radiozondirovanii atmosfery. [Calculation of atmospheric humidity by radiosonding of the atmosphere.] *Meteorologiia i Gidrologiia*, Leningrad, No. 6:48-49, Nov.-Dec. 1955. table DWB, DLC—A method is proposed for measuring the atmospheric humidity from the data of radiosonde signals even when the difference between the simultaneous recording of the radiosonde hygrometer and psychrometer is greater than 10% relative humidity and as much as 25–30% relative humidity or more. The structural factors in radiosondes responsible for the fact that they record a higher relative humidity than psychrometers are analyzed. By means of an experiment involving five radiosondes, by means of which relative humidity was measured when the latter showed maximum and minimum differences between radiosonde and psychrometer, it is shown that a correction expressed in millimeters of the ordinates of the scale retains its value for all values of humidity. *Subject Headings*: 1. Humidity measurement techniques 2. Radiosonde observations. —*I.L.D.*

AID P - 3855

Subject : USSR/Meteorology

Card 1/1 Pub. 71-a - 18/35

Author : Sokolov, S. I. Floating station "North Pole-5"

Title : On computing air humidity with radiosondes

Periodical : Met. i. gidr., 6, 48-49, N/D 1955

Abstract : Members of the floating meteorological station "North Pole-5" explain their method of computing relative humidity in the atmosphere by means of radiosondes. One table.

Institution : None

Submitted : No date

b-3

PHASE I BOOK EXPLOITATION SOV/4871

Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

Materialy nablyudeniy nauchno-issledovatel'skikh dreyfuyushchikh stantsi "Severnyy polyus-4" i "Severnyy polyus-6" 1956/57/goda. (Observation Material of the Scientific Research Drifting Stations "Severnyy Polyus-4" [North Pole-4] and "Severnyy Polyus-6" [North Pole-6] for 1956/57) v. 3. Leningrad, Izd-vo "Morskoy transport", 1959. 950 p. Errata slip inserted. 350 copies printed.

Sponsoring Agencies: Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut Glavnogo upravleniya Severnogo Morskogo Puti Ministerstva morskogo flota SSSR and Tsentral'naya aerologicheskaya observatoriya Glavnogo upravleniya gidrometsluzhby pri Sovete ministroy Soyuza SSR. Ed. by K.A. Sychev, Tech. Ed.: L.P. Drozhzhina.

PURPOSE: This book is intended for oceanographers, geophysicists, and meteorologists

COVERAGE: This is the third of a 5-volume work containing the results of observations conducted by Soviet drifting polar stations in 1956-1957. Volume I will contain astronomical and oceanographic observations; Volume II, meteorological

Card 1/3

Observation Material (Cont.) SOV/4871

and actionometric; Volume III, aerological; Volume IV, magnetic and ionospheric; and Volume V, ice observations. The aerological observations in this volume are grouped into 27 tables. The methods and procedures employed in the research work on the drift stations are explained in the Foreword. Three stations, Severnyy polus 4-5-6, were operating simultaneously during the period covered. Leading personnel at each station are mentioned. Director of the station "Severnyy polyus-4" was A.G. Dralkin, Candidate of Geographical Sciences. Participating in the research work of the station were, besides the 20 members of the Arctic Institute, staff members of Moscow University under the direction of A.G. Kolesnikov, Doctor of Physics and Mathematics and staff members of the Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory) under the direction of D.L. Laykhtman, Doctor of Physics and Mathematics, and staff members of the Institut mikrobiologii AN SSSR (Institute of Microbiology, AS USSR) under the direction of A.E. Kriss, Professor. The director of the station "Severnyy polyus-5" was A.L. Sokolov, Candidate of Geography, and the director of the station "Severnyy polyus-6" was K.A. Sychev, Candidate of Geography. Observational data were processed in the Arctic and Antarctic Institute. There are no references.

Card 2/3

3 (7), 5 (3)

AUTHORS: Dolgin, I. M., Pikazin, Ya. S., Sokolov, S. I.

SOV/50-59-3-13/24

TITLE: On the Improvement of Hydrogen Production Methods at Aerological Stations (Ob usovershenstvovanii metoda dobyvaniya vodoroda na aerologicheskikh stantsiyakh)

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 3, pp 46 - 47 (USSR)

ABSTRACT: A survey of the methods of hydrogen production is given here. Transporting of hydrogen from factories meets with great difficulties because of the restricting rules in force for all transportation types. Hydrogen is therefore produced in aerological stations. At present, the silicol method is employed, which essentially consists of the separation of hydrogen under the interaction of ferrosilicon, caustic soda and water. Generators of two types are used for the production: AVG-40 and G-3 (ANII). The former allows an internal pressure of up to 100 atmospheres, it requires relatively little water, is however apt to cause troubles as concerns prevention of accidents. The latter is more convenient in this regard, but it requires much water. The silicon method, however, is also in-

Card 1/3

On the Improvement of Hydrogen Production Methods at Aerological Stations SOV/[illegible]

convenient in itself. It requires the use of hot water, which is not always possible, cleaning is rendered very difficult because of the hardening of silicate, and a great quantity of caustic soda is needed. This all led to the necessity of working out new methods of producing hydrogen. A new method (Patent No 111165) has been recently devised under the supervision of Ya. S. Pikash. Hydrogen is produced by interaction of aluminum and water in the presence of a lye acting as catalyst. The method is economical and cheap. 1-1.2m^3 of hydrogen requires 1 kg of aluminum powder and 100 g caustic soda. Any kind of water, including sea and hard water may be used without pre-heating. Hydrogen is purer than the one produced according to the silicol method and by its properties comes close to the hydrogen obtained by hydrolysis. The new method, however, requires higher quality steel cylinders. The possibility is pointed out of employing steel cylinders in combination with corresponding valves for the production of steel cylinder gas generators. By the aid of them it would be possible to obtain as much hydrogen from one charge, as is required for filling the radioprobe casings. The generator G-3 could also be used for the production of hydrogen by the new method. The costs

Card 2/3

of chemicals and transportation charges are considerably lower with the new method. For this reason it has already been applied in a number of stations in the arctic circle, such as in "Severnyy polyus-6" (North Pole-6) and "Severnyy polyus-7" ("North Pole-7").

DOLGIN, I.M., kand. geogr. nauk; SOKOLOV, S.I., mladshiy nauchnyy sotrudnik

Distribution of meteorological elements at the Mirnyy and drifting stations. Inform. biul. Sov. antark. eksp. no.7:13-17 '59 (MIRA 13:3)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.
(Antarctic regions--Meteorology--Observations)

DOLGIN, I.M., kand.geograf.nauk; SOKOLOV, S.I., mladshiy nauchnyy sotrudnik

Comparative characteristics of the wind regimen at the Mirnyy Station and the drift station "North Pole 7". Inform. biul. Sov. antark. eksp. no.19:26-30 '60. (MIRA 13:9)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.
(Mirnyy region, Antarctica--Winds)
(Arctic regions--Winds)

DOLGIN, I., kand.geograf.nauk; SOKOLOV, S., mladshiy nauchnyy sotrudnik

Aerology in the Arctic. Mor. flot 21 no.12:38-40 D '61.
(MIRA 14:12)

1. Rukovoditel' otdela Arkticheskogo i Antarkticheskogo nauchno-issledovatel'skogo instituta (for Dolgin).
(Arctic regions--Meteorology)

DOLGIN, I.M.; SOKOLOV, S.I.

"Aerology" by A.B. Kalinovskii and N.Z. Pinus. Part 1: Methods employed in aerological measurements. Reviewed by I.M. Dolgin, S.I. Sokolov. Meteor.i gidrol. no.11:60-62 N '62.
(MIRA 15:12)

(Meteorology)
(Kalinovskii, A.B.) (Pinus, N.Z.)

SOURCE CODE: UR/3176/65/000/004/0015/0018

AUTHOR: [illegible], I. M. (Doctor of geographical sciences); Sokolov, S. I. (Junior research associate)

ORG: Arctic and Antarctic Scientific Research Institute (Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut)

TITLE: Fluctuations in air temperature over Mirnyy

SOURCE: Sovetskaya antarkticheskaya ekspeditsiya, 1955-. Informatsionnyy byulleten', no. 54, 1965, 15-18

TOPIC TAGS: Arctic climate, air temperature, troposphere, wind measurement

ABSTRACT: The findings of a five-year study (1956-60) of fluctuations in air temperature over Mirnyy are presented. Changes in air temperature are usually due to circulation of air masses. A definite relationship exists between the tropospheric temperatures and the recurrence of the wind direction in the given region. In 1957, the recurrence of the wind direction in the southern quarter of the 500 millibar surface was 19% in excess of the "average". The recurrence of wind direction in the northern quarter of that surface was 49% during the same period. In April 1958, a cold month, the recurrence diminished in the northern quarter to 43% and increased to 28% in the southern. During the warm October of 1957, the wind recurrence rose to 50.4%

Card 1/2

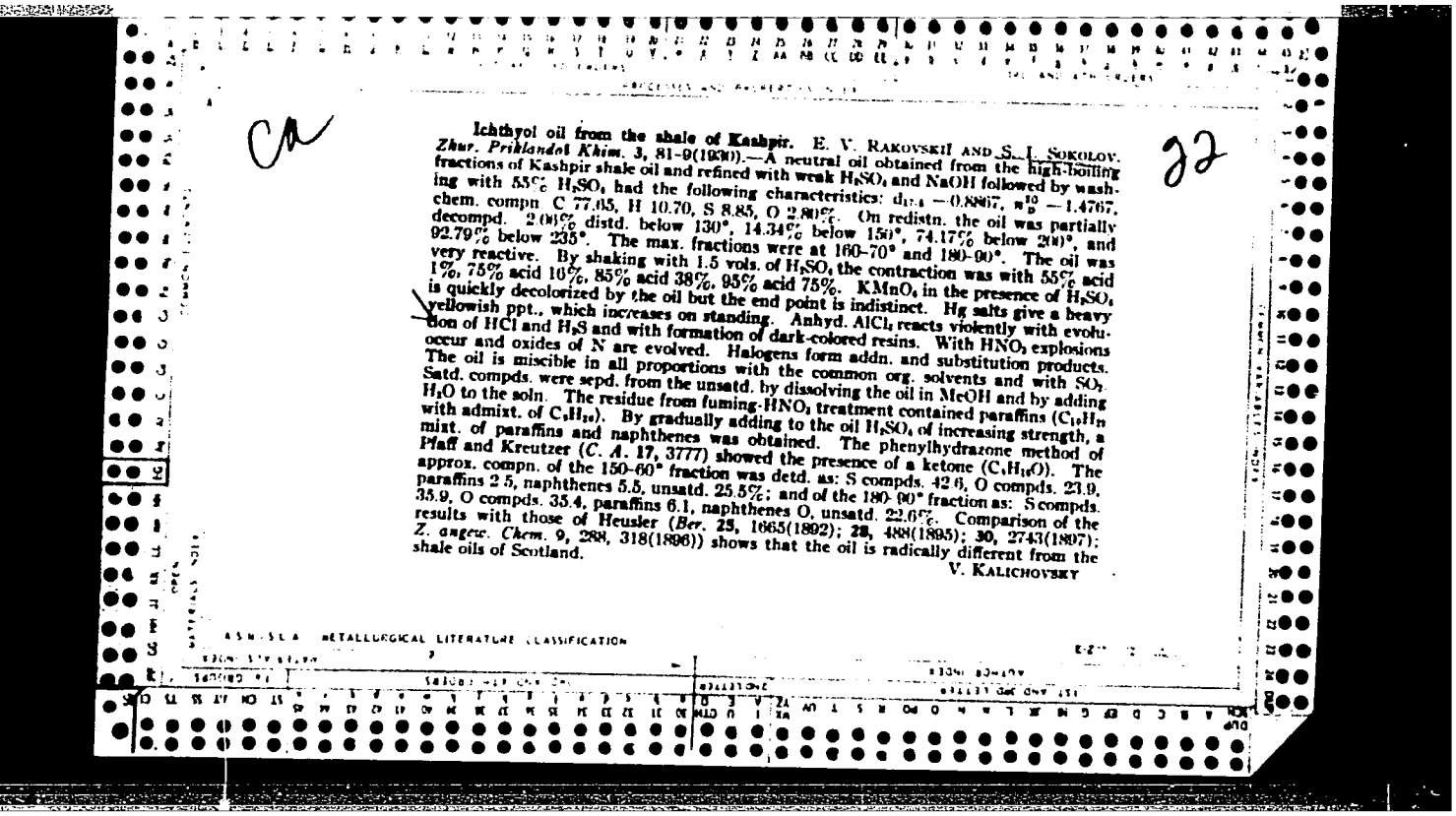
L 09455-67

ACC NR: AT6025293

in the northern quarter and to 24.3% in the southern. Presumably, similar fluctuations also occur in the continent's interior. This would account for the appearance of "warm spots" near the stations Vostok and Amundsen-Scott. In 1958, these spots were due to winds blowing from the Indian ocean. Orig. art. has: 1 figure, 1 table.

SUB CODE: 04/ SUBM DATE: 10Apr65

Card 2/2



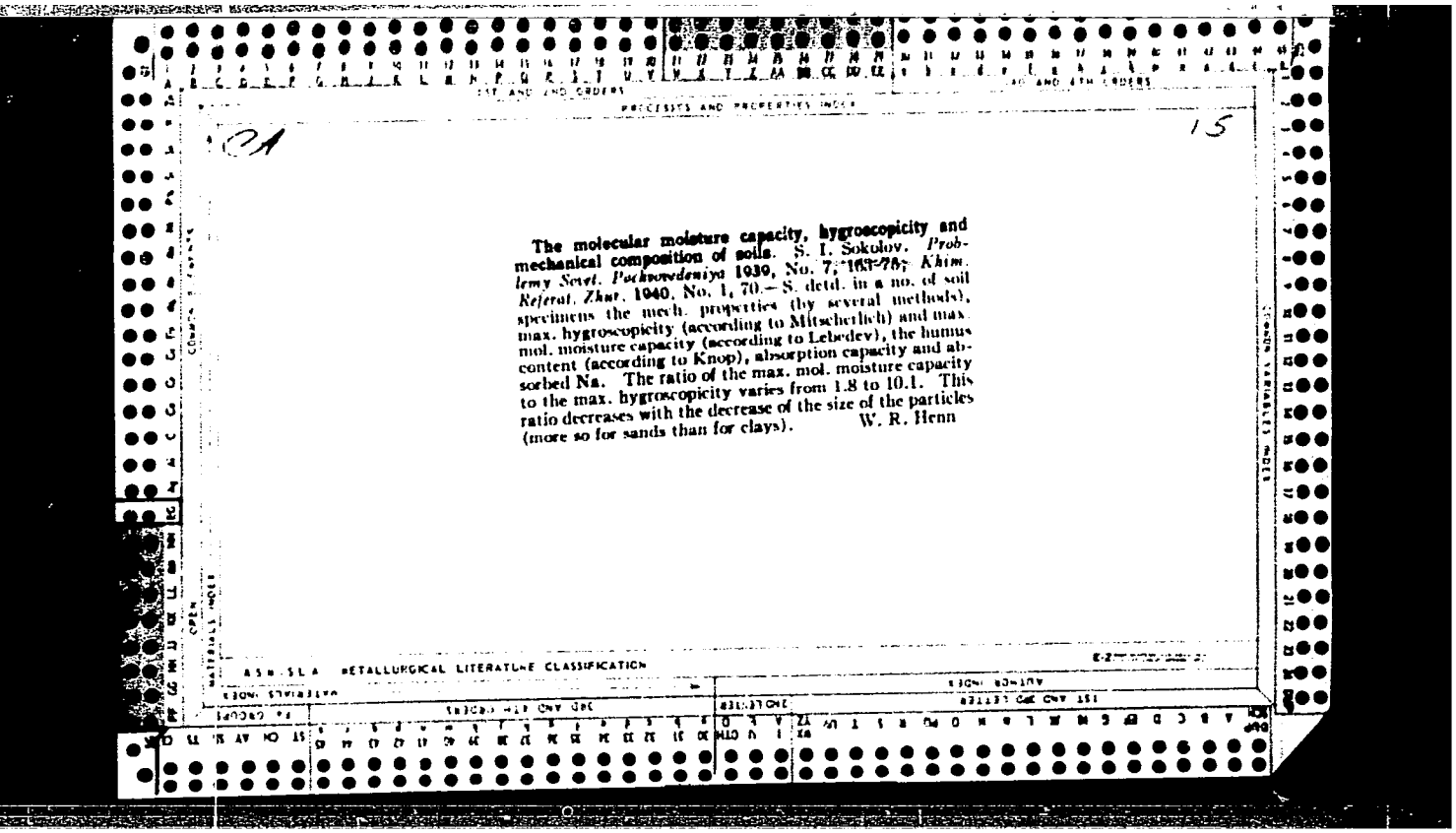
CA

22

Ichthyol oil from the shale of Kashpir. E. V. RAKOVSKII AND S. I. SOKOLOV. *Zhur. Prikladol Khim.* 3, 81-9(1930).—A neutral oil obtained from the high-boiling fractions of Kashpir shale oil and refined with weak H_2SO_4 and NaOH followed by washing with 55% H_2SO_4 had the following characteristics: $d_{17.4}$ —0.8867, n_D^{19} —1.4767, chem. compn C 77.05, H 10.70, S 8.85, O 2.80%. On redistn. the oil was partially decompd. 2.06% distd. below 130°, 14.34% below 150°, 74.17% below 200°, and 92.79% below 235°. The max. fractions were at 160–70° and 180–90°. The oil was very reactive. By shaking with 1.5 vols. of H_2SO_4 the contraction was with 55% acid 1%, 75% acid 10%, 85% acid 38%, 95% acid 75%. $KMnO_4$ in the presence of H_2SO_4 is quickly decolorized by the oil but the end point is indistinct. Hg salts give a heavy yellowish ppt., which increases on standing. Anhyd. $AlCl_3$ reacts violently with evolution of HCl and H_2S and with formation of dark-colored resins. With HNO_3 explosions occur and oxides of N are evolved. Halogens form addn. and substitution products. The oil is miscible in all proportions with the common org. solvents and with SO_2. Satd. compds. were sepd. from the unsatd. by dissolving the oil in MeOH and by adding H_2O to the soln. The residue from fuming-HNO_3 treatment contained paraffins (C_nH_n with admixt. of C_nH_{2n}). By gradually adding to the oil H_2SO_4 of increasing strength, a mixt. of paraffins and naphthenes was obtained. The phenylhydrazone method of Pfaff and Kreutzer (*C. A.* 17, 3777) showed the presence of a ketone ($C_nH_{2n}O$). The approx. compn. of the 150–60° fraction was detd. as: S compds. 42.6, O compds. 23.9, paraffins 2.5, naphthenes 5.5, unsatd. 25.5%; and of the 180–90° fraction as: S compds. 35.9, O compds. 35.4, paraffins 6.1, naphthenes 0, unsatd. 22.6%. Comparison of the results with those of Heusler (*Ber.* 25, 1665(1892); 28, 488(1895); 30, 2743(1897); *Z. angew. Chem.* 9, 288, 318(1896)) shows that the oil is radically different from the shale oils of Scotland.

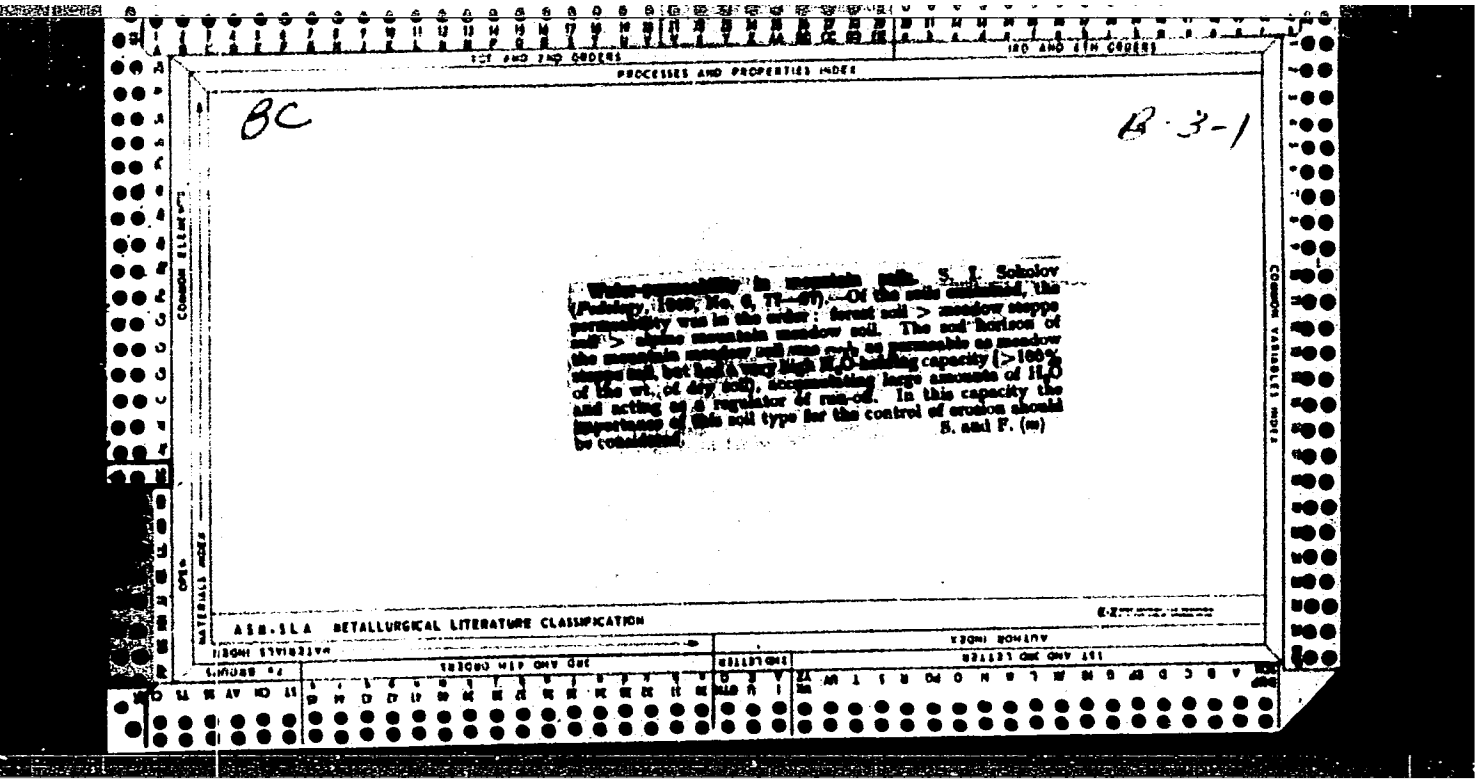
V. KALICHOVSKY

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



15

The molecular moisture capacity, hygroscopicity and mechanical composition of soils. S. I. Sokolov. *Problemy Sovet. Pochvovedeniya* 1939, No. 7, 165–78; *Khim. Referat. Zhur.* 1940, No. 1, 70.—S. detd. in a no. of soil specimens the mech. properties (by several methods), max. hygroscopicity (according to Mitscherlich) and max. mol. moisture capacity (according to Lebedev), the humus content (according to Knop), absorption capacity and absorbed Na. The ratio of the max. mol. moisture capacity to the max. hygroscopicity varies from 1.8 to 10.1. This ratio decreases with the decrease of the size of the particles (more so for sands than for clays). W. R. Henn



Water-permeability in mountain soils. S. I. Sokolov (Pochvovedenie, 1955, No. 6, 71–77).—Of the soils examined, the permeability was in the order: forest soil > meadow steppe soil > alpine mountain meadow soil. The soil horizon of the mountain meadow soil was only as permeable as meadow steppe soil, but had a very high H_2O-holding capacity (>100% of the wt. of dry soil), accumulating large amounts of H_2O and acting as a regulator of run-off. In this capacity the importance of this soil type for the control of erosion should be considered. S. and F. (m)

SOKOLOV, S. I.

"On the Permissible Errors in the Determination of Temperature by the Comb Radiosonde Method"

"Accuracy of Calibration of Pressure Recorders of Radiosonde Apparatus,"

Trudy, NIU GUGMS, Ser I, Issue 19, 1946.

SOKOLOV, S. I.

"The Soils of Little Almatink Basin and the Danger of Mud Streams," Iz Akad Nauk Kazakhsh SSR, Seriya Pochven, No 28, Issue 3, 1946 (42-104).
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

Sokolov, S. I.

USSR/ Geography - Water reservoir

Card 1/1 Pub. 123 - 7/13

Authors : Sokolov, S. I., Candidate of Geographical Sciences

Title : Soil content of the lower part of the Emba river

Periodical : Vest. AN Kaz. SSR 120/3, 74-80, Mar 1955

Abstract : Analyses of the soil content of the lower part of the Emba river (empties into the Caspian Sea)are described. The work was conducted for the purpose of controlling the Emba river waters in order to build a water reservoir for irrigation. Tables.

Institution :

Presented by: Member-Correspondent of the Acad. of Sc., Kaz. SSR, A. Bezsonov

14-57-6-12431

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6, p 101 (USSR)

AUTHOR: Sokolov, S. I.

TITLE: Contemporary and Future Work of Classifying and Systematizing the Soils of Kazakhstan (Sovremennoye sostoyaniye i dal'neyshaya razrabotka voprosov klassifikatsii i sistematiki pochv Kazakhstana)

PERIODICAL: Tr. In-ta pochvoved. AN KazSSR, 1956, Vol 6, pp 3-31

ABSTRACT: This study contains a critical review of classification systems for soils in general and for soils of Kazakhstan. As a basis for constructing a genetic soil classification, the author proposes to establish the principle of evolutionary series related to the cycles of development of earth's surface forms. Each major relief form must have its own cycle of soil and vegetation development. Regional and facial-climatic manifestations will be superimposed on these cycles and will be changing within them. The author offers

Card 1/2

SOKOLOV, S.I.

Zonality of soils and the soil zones of Kazakhstan. Pochvovedenie no.9:56-64 S '59. (MIRA 13:1)

1. Institut pochvovedeniya Akademii nauk KazSSR.
(Kazakhstan--Soils)

PACHIKINA, Lyubov' Ivanovna; RUBINSHTEYN, Mikhail Issakovich; STOROZHENKO, D.M., otv.red.vypuska; BEZSONOV, A.I., otv.red.; BOROVSKIY, V.M., red.; SOKOLOV, A.A., red.; SOKOLOV, S.I., red.; USPANOV, U.U., red.; POGOZHEV, A.S., red.; RORORKINA, Z.P., tekhn.red.

[Soils of Kazakhstan in 16 volumes] Pochvy Kazakhskoi SSR v 16 vypuskakh. Alma-Ata. Vol.2. [Soils of Kokchetav Province] Pochvy Kokchetavskoi oblasti. 1960. 135 p. (MIRA 13:8)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut pochvovedeniya.
(Kokchetav Province--Soils)

FEDORIN, Yuriy Vasil'yevich; PETELIN, A.M., kand.sel'skokhoz.nauk, otv. red.; BEZSONOV, A.I., glavnyy red.; USPANOV, U.U., zamestitel' glavnogo red.; BOROVSKIY, V.M., red.; SOKOLOV, A.A., red.; SOKOLOV, S.I., red.; STOROZHENKO, D.M., red.; BARLYBAYEVA, K., red.; SHEVCHUK, T.I., red.; PROKHOROV, V.P., tekhn.red.

[Soils of the Kazakh S.S.R. in 16 volumes] Pochvy Kazakhskoi SSR v 16 vypuskakh. Alma-Ata. Vol.1. [Soils of North Kazakhstan Province] Pochvy Severo-Kazakhstanskoi oblasti. 1960. 173 p. (MIRA 13:7)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut pochvovedeniya.
(North Kazakhstan Province--Soils)

BEZSONOV, Andrey Ivanovich, doktor, prof., zasluzhennyy deyatel' nauki Kazakhskoy SSR; USPANOV, U.U., otv. red.; BOROVSKIY, V.M., red.; SOKOLOV, S.I., red.; ASSING, I.A., red.; PROKHOROV, V.P., tekhn. red.

[Selected works] Izbrannye trudy. Alma-Ata, Izd-vo Akad.nauk Kazakhskoi SSR, 1960. 254 p. (MIRA 14:6)

1. Chlen-korrespondent AN Kazakhskoy SSR (for Bezsonov)
(Soils)

DZHANPEISOV, R.; SOKOLOV, A.A.; FAIZOV, K.Sh.; BEZSONOV, A.I., glavnyy red.; USPANOV, U.U., zam.glavnogo red.; BOROVSKIY, V.M., red.; SOKOLOV, S.I., red.; STOROZHENKO, D.M., red.; BARLYBAYEVA, K.Kh., red.; IVANOVA, E.I., red.; PROKHOROV, V.P., tekhn.red.

[Soils of the Kazakh S.S.R. in 16 volumes] Pochvy Kazakhskoi SSR v 16 vypuskakh. Alma-Ata. Vol.3. [Soils of Pavlodar Province] Pochvy Pavlodarskoi oblasti. 1960. 264 p. (MIRA 13:11)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut pochvovedeniya.

(Pavlodar Province--Soils)

SOKOLOV, S.I.; ASSING, I.A.; KURMANGALIYEV, A.B.; SERPIKOV, S.K.; BEZSONOV, A.I., glav. red.; BOROVSKIY, V.M., red.; SOKOLOV, A.A., red.; STOROZHENKO, D.M., red.; USPANOV, U.U., red.; SHEVCHUK, T.I., red.; ROROKINA, Z.P., tekhn. red.

[Soils of the Kazakh S.S.R. in 16 volumes] Pochvy Kazakhskoi SSR v 16 v puskakh. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR. Vol.4. [Alma-Ata Province] Pochvy Alma-Atinskoi oblasti. 1962. 422 p. (MIRA 15:4)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut pochvovedeniya.

(Alma-Ata Province--Soils)

BOK, I.I.; BARBOT de MARNI, A.V.; VISLOGUZOVA, A.V.; GALIYEV, M.S.; LI, A.B.; LOMONOVICH, M.I.; YAKOVENKO, Z.V.; ASSING, I.I.; NURMANGALIYEV, A.B.; SOKOLOV, S.I.; GRIGOR'YEVA, Ye.P.; SEROV, N.P.; LEONOV, G.M.; ZAKHAROV, B.S.; ZAGAYNOV, V.I.; BOROVSKIY, V.M.; LITVINOVA, A.A.; POGREBINSKIY, M.A.; NASONOVA, O.M.; KHAYDAROV, R.M.; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn. red.

[Ili Valley, its nature and resources] Iliiskaia dolina, ee priroda i resursy. Pod obshchei red. M.I.Lomonovicha. Alma-Ata, Izd-vo AN Kaz.SSR, 1963. 338 p. (MIRA 16:8)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut geologicheskikh nauk. 2. Nauchnyye sotrudniki Instituta geologicheskikh nauk AN KazSSR (for Bok, Barbot de Marni, Visloguzova, Galiyev, Li, Lomonovich, Yakovenko). 3. Institut pochvovedeniya AN KazSSR (for Assing, Nurmangaliyev, Sokolov, Borovskiy, Litvinova, Pogrebinskiy). 4. Institut botaniki AN KazSSR (for Grigor'yeva, Nasonova). 5. Institut zoologii AN KazSSR (for Serov). 6. Kazakhskiy politekhnicheskiy institut (for Leonov). 7. Ministerstvo sel'skogo khozyaystva KazSSR (for Zakharov). 8. Kazanskiy filial Instituta "Gidroproyekt" im. S.Ya.Zhuka (for Khaydarov).

(Ili Valley--Physical geography)

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

13C

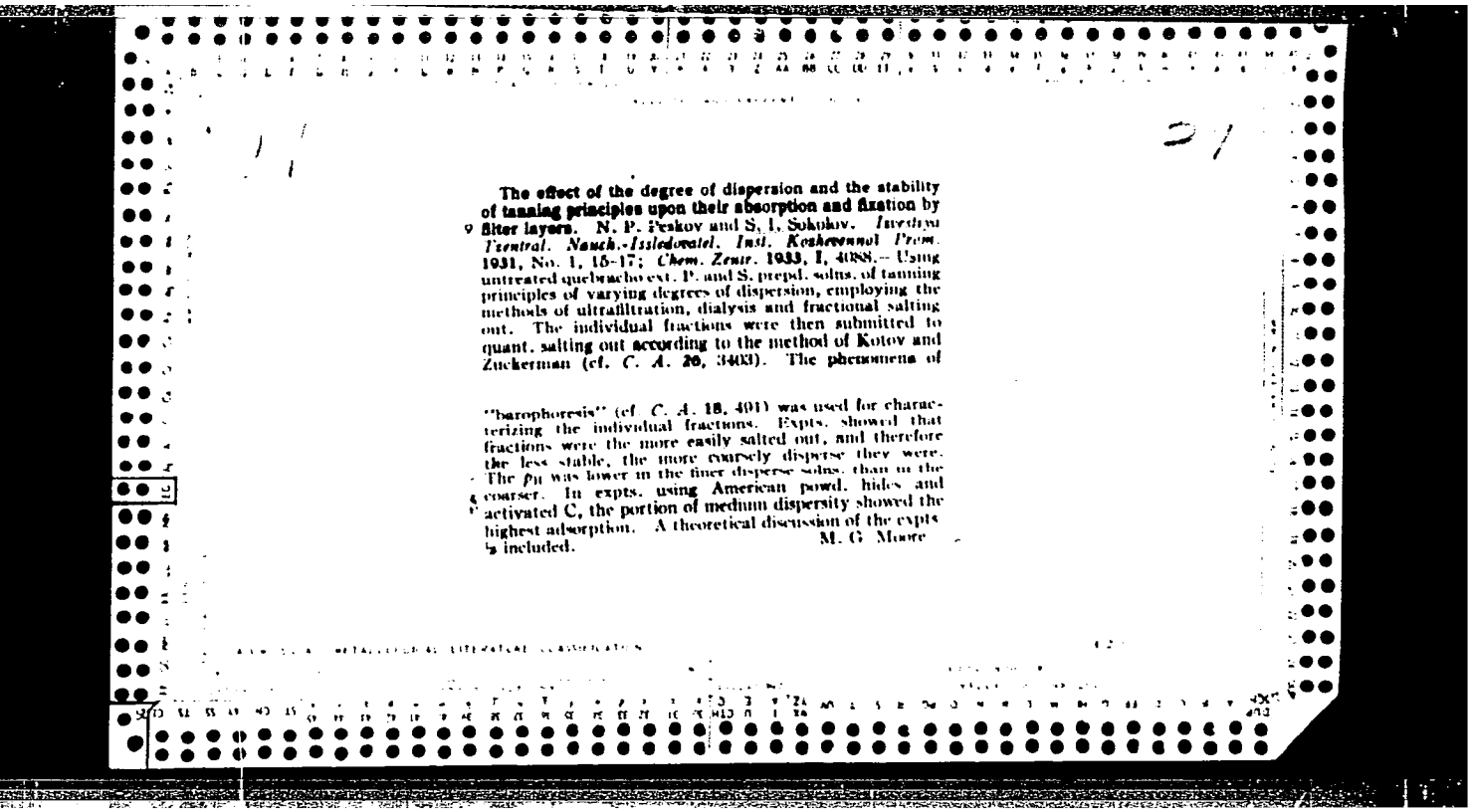
A-1

Double decomposition in the absence of a solvent. XIV. The irreversible mutual system $Ag_2SO_4 + Tl_2Cl_2 \rightarrow Tl_2SO_4 + Ag_2Cl_2$. [illegible] (J. Russ. Phys. Chem. Soc., 1930, 62, [illegible]).—The m.-p. diagram for the system Ag_2SO_4–Ag_2Cl_2 is of the simple eutectic type, but shows a break at the transition point of silver sulphate; solid solution and compound formation are similarly absent in the system Tl_2SO_4–Tl_2Cl_2. The fusion diagram for Tl_2SO_4–Ag_2SO_4 shows the formation of a compound, Tl_2SO_4,Ag_2SO_4, and of solid solutions. The system, $Ag_2SO_4 + Tl_2Cl_2 \rightarrow Ag_2Cl_2 + Tl_2SO_4$, constructed on the basis of the above, is an irreversibly mutual one, with complete solubility of the components, and without singularity on the chief diagonal section. R. TRUSZKOWSKI.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

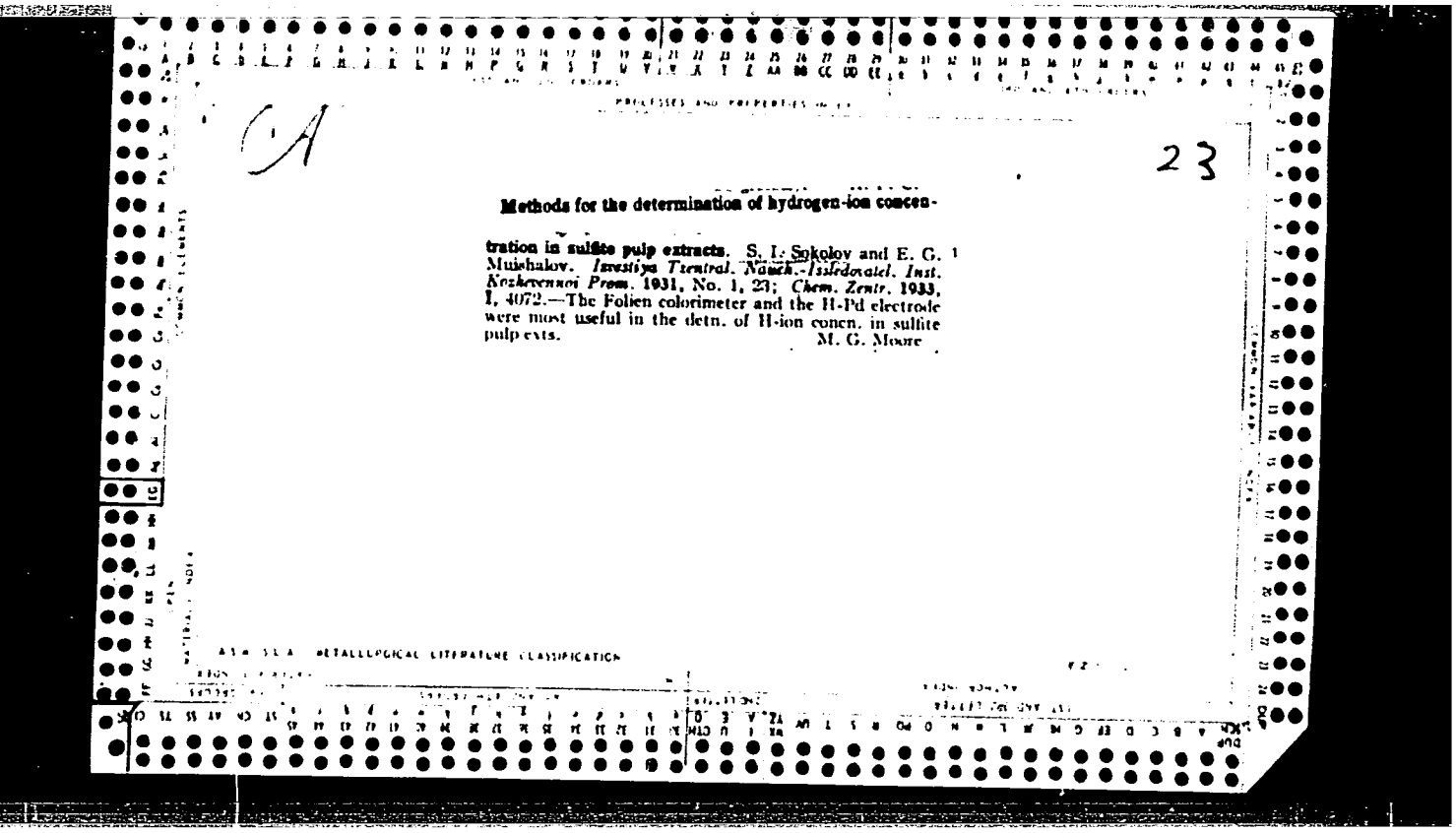
MATERIALS INDEX

AUTHOR INDEX



The effect of the degree of dispersion and the stability of tanning principles upon their absorption and fixation by filter layers. N. P. Peskov and S. I. Sokolov. *Izvestiya Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom.* 1931, No. 1, 15–17; *Chem. Zentr.* 1933, I, 4088.—Using untreated quebracho ext., P. and S. prepd. solns. of tanning principles of varying degrees of dispersion, employing the methods of ultrafiltration, dialysis and fractional salting out. The individual fractions were then submitted to quant. salting out according to the method of Kotov and Zuckerman (cf. *C. A.* **26**, 3403). The phenomena of "barophoresis" (cf. *C. A.* **18**, 401) was used for characterizing the individual fractions. Expts. showed that fractions were the more easily salted out, and therefore the less stable, the more coarsely disperse they were. The p_H was lower in the finer disperse solns. than in the coarser. In expts. using American powd. hides and activated C, the portion of medium dispersity showed the highest adsorption. A theoretical discussion of the expts is included.

M. G. Moore

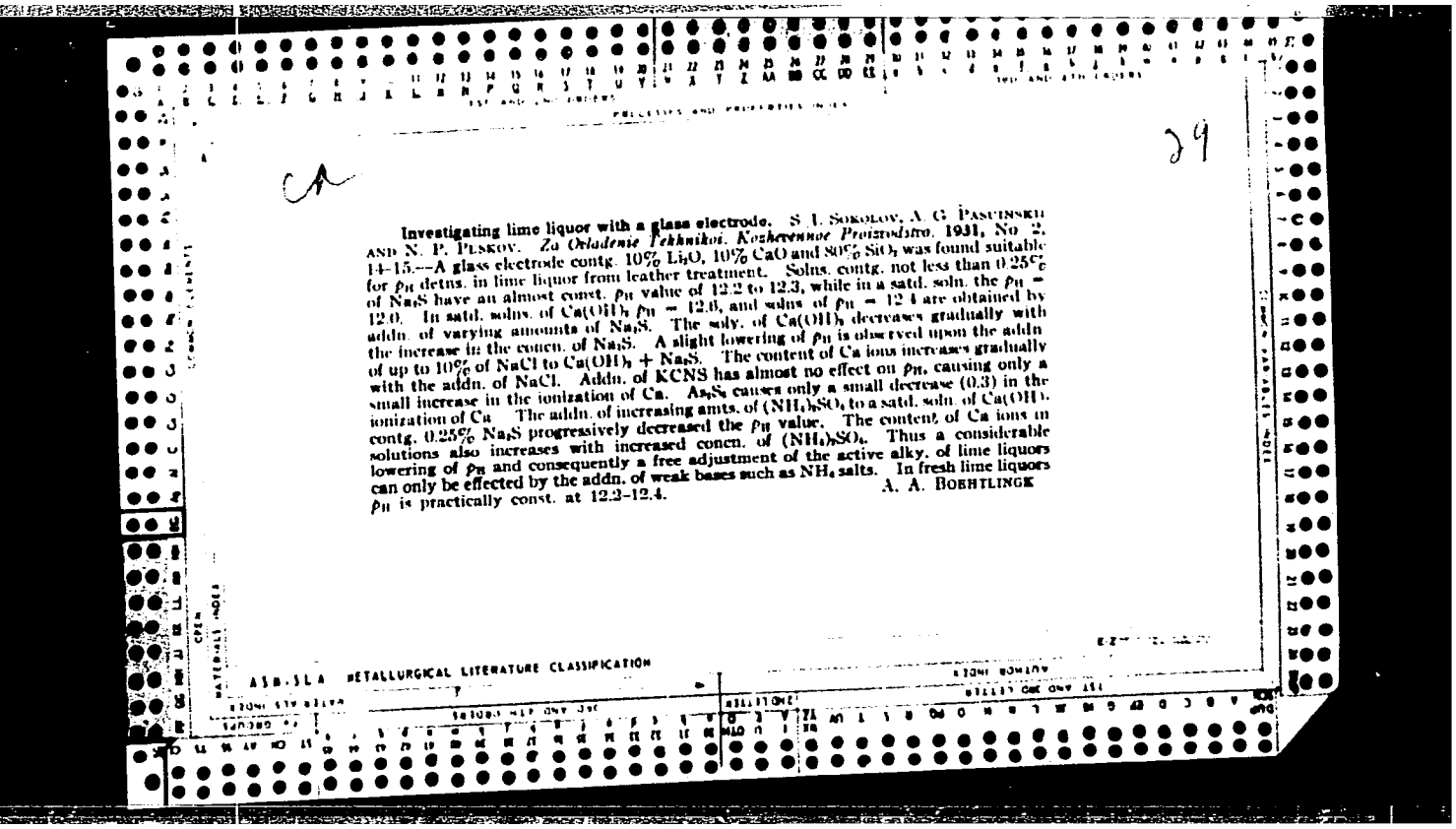


A

23

Methods for the determination of hydrogen-ion concentration in sulfite pulp extracts. S. I. Sokolov and E. G. Muishalov. *Izvestiya Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom.* 1931, No. 1, 23; *Chem. Zentr.* 1933, I, 4072.—The Folien colorimeter and the H-Pd electrode were most useful in the detn. of H-ion concn. in sulfite pulp exts.

M. G. Moore



CA

29

Investigating lime liquor with a glass electrode. S. I. Sokolov, A. G. Pasynskii and N. P. Peskov. *Za Oviadenie Tekhnikoi. Kozhevennoe Proizvodstvo.* 1931, No. 2, 14–15.—A glass electrode contg. 10% Li_2O, 10% CaO and 80% SiO_2 was found suitable for p_H detns. in lime liquor from leather treatment. Solns. contg. not less than 0.25% of Na_2S have an almost const. p_H value of 12.2 to 12.3, while in a satd. soln. the p_H = 12.0. In satd. solns. of $Ca(OH)_2$ p_H = 12.6, and solns of p_H = 12.4 are obtained by addn. of varying amounts of Na_2S. The solv. of $Ca(OH)_2$ decreases gradually with the increase in the concn. of Na_2S. A slight lowering of p_H is observed upon the addn of up to 10% of NaCl to $Ca(OH)_2$ + Na_2S. The content of Ca ions increases gradually with the addn. of NaCl. Addn. of KCNS has almost no effect on p_H, causing only a small increase in the ionization of Ca. As_2S_3 causes only a small decrease (0.3) in the ionization of Ca. The addn. of increasing amts. of $(NH_4)_2SO_4$ to a satd. soln. of $Ca(OH)_2$ contg. 0.25% Na_2S progressively decreased the p_H value. The content of Ca ions in solutions also increases with increased concn. of $(NH_4)_2SO_4$. Thus a considerable lowering of p_H and consequently a free adjustment of the active alky. of lime liquors can only be effected by the addn. of weak bases such as NH_4 salts. In fresh lime liquors p_H is practically const. at 12.2–12.4.

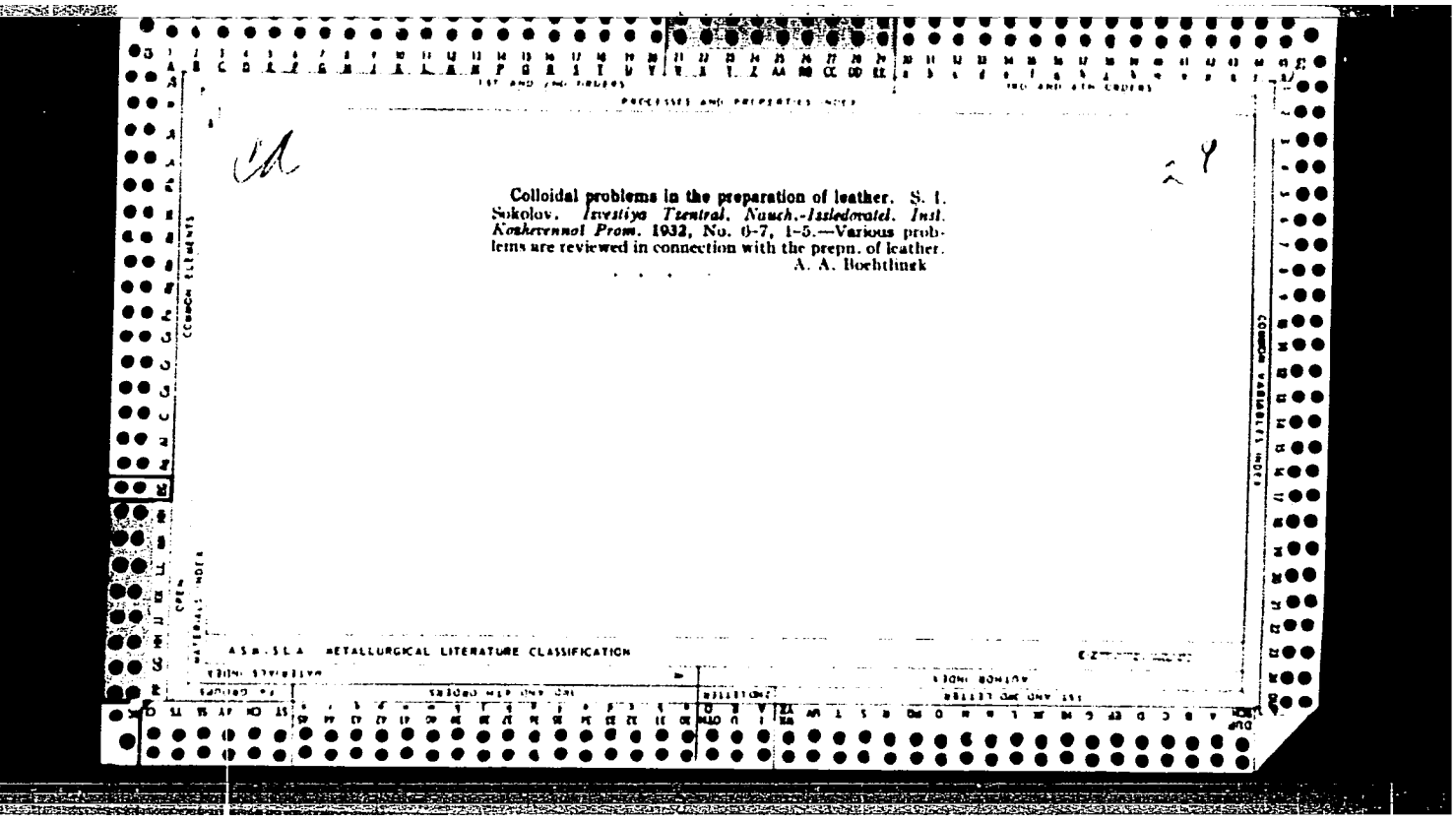
A. A. Boehtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

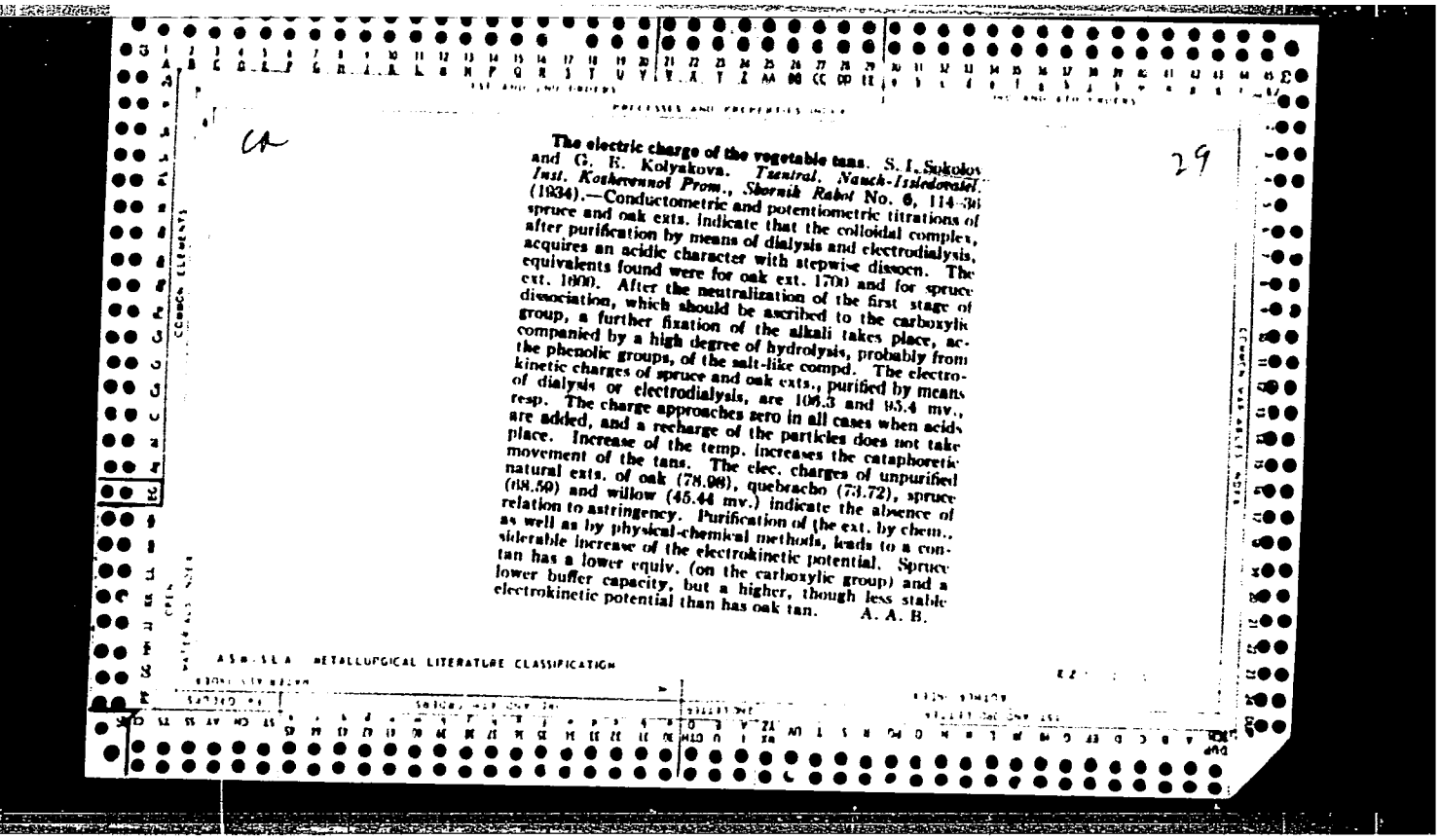
The glass electrode. S. I. Sokolov and A. H. Pasuinskii. *Ovladenie Tekhnikoi: Koshevennoe Proizvodstvo* 1931, No. 2, 22-3; cf. *C. A.* **26**, 4000.—The reliability of the glass electrode above p_H 9 is questionable; it depends on the ions of alkali metals present in the soln. Electrodes were prepd. of the following compns.: Li_2O 10, CaO 10, SiO_2 80%; Na_2O 20, CaO 8, SiO_2 72%; K_2O 25, CaO 10, SiO_2 65%. p_H measurements of these electrodes were made in solns. of LiOH, NaOH, KOH, RbOH and CsOH of various concns. Up to p_H = 10 there is a direct relationship of the potential to the p_H of the soln. For Li and Na glass the deviation sets in at about p_H = 11.5 and 11.0. The Li-glass electrode shows a drop toward the abscissa in LiOH solns. and some decline for NaOH and no deviations for solns. of KOH, RbOH and CsOH. The Na-glass electrode shows a drop in solns. of LiOH and NaOH and a minor deviation in KOH, RbOH and CsOH. The K-glass electrode has a drop in LiOH and NaOH solns. and a considerable deviation (the curve running almost parallel to the abscissa) in KOH and a much smaller deviation in solns. of RbOH and CsOH. Thus the Li-glass electrode appears to be most reliable in the absence of Li and Na ions, although measurements may be effected in the presence of Na ions provided the electrode is properly calibrated.

A. A. Boehtlingk

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



Colloidal problems in the preparation of leather. S. I. Sokolov. *Izvestiya Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom.* **1932**, No. 6-7, 1-5.—Various problems are reviewed in connection with the prepn. of leather.
A. A. Boehtlingk



CA

29

The electric charge of the vegetable tans. S. I. Sukolov and G. E. Kolyakova. *Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom., Sbornik Rabot* No. 6, 114–36 (1934).—Conductometric and potentiometric titrations of spruce and oak exts. indicate that the colloidal complex, after purification by means of dialysis and electrodialysis, acquires an acidic character with stepwise dissocn. The equivalents found were for oak ext. 1701 and for spruce ext. 1800. After the neutralization of the first stage of dissociation, which should be ascribed to the carboxylic group, a further fixation of the alkali takes place, accompanied by a high degree of hydrolysis, probably from the phenolic groups, of the salt-like compd. The electrokinetic charges of spruce and oak exts., purified by means of dialysis or electrodialysis, are 106.3 and 95.4 mv., resp. The charge approaches zero in all cases when acids are added, and a recharge of the particles does not take place. Increase of the temp. increases the cataphoretic movement of the tans. The elec. charges of unpurified natural exts. of oak (78.98), quebracho (73.72), spruce (68.59) and willow (45.44 mv.) indicate the absence of relation to astringency. Purification of the ext. by chem., as well as by physical-chemical methods, leads to a considerable increase of the electrokinetic potential. Spruce tan has a lower equiv. (on the carboxylic group) and a lower buffer capacity, but a higher, though less stable electrokinetic potential than has oak tan. A. A. B.

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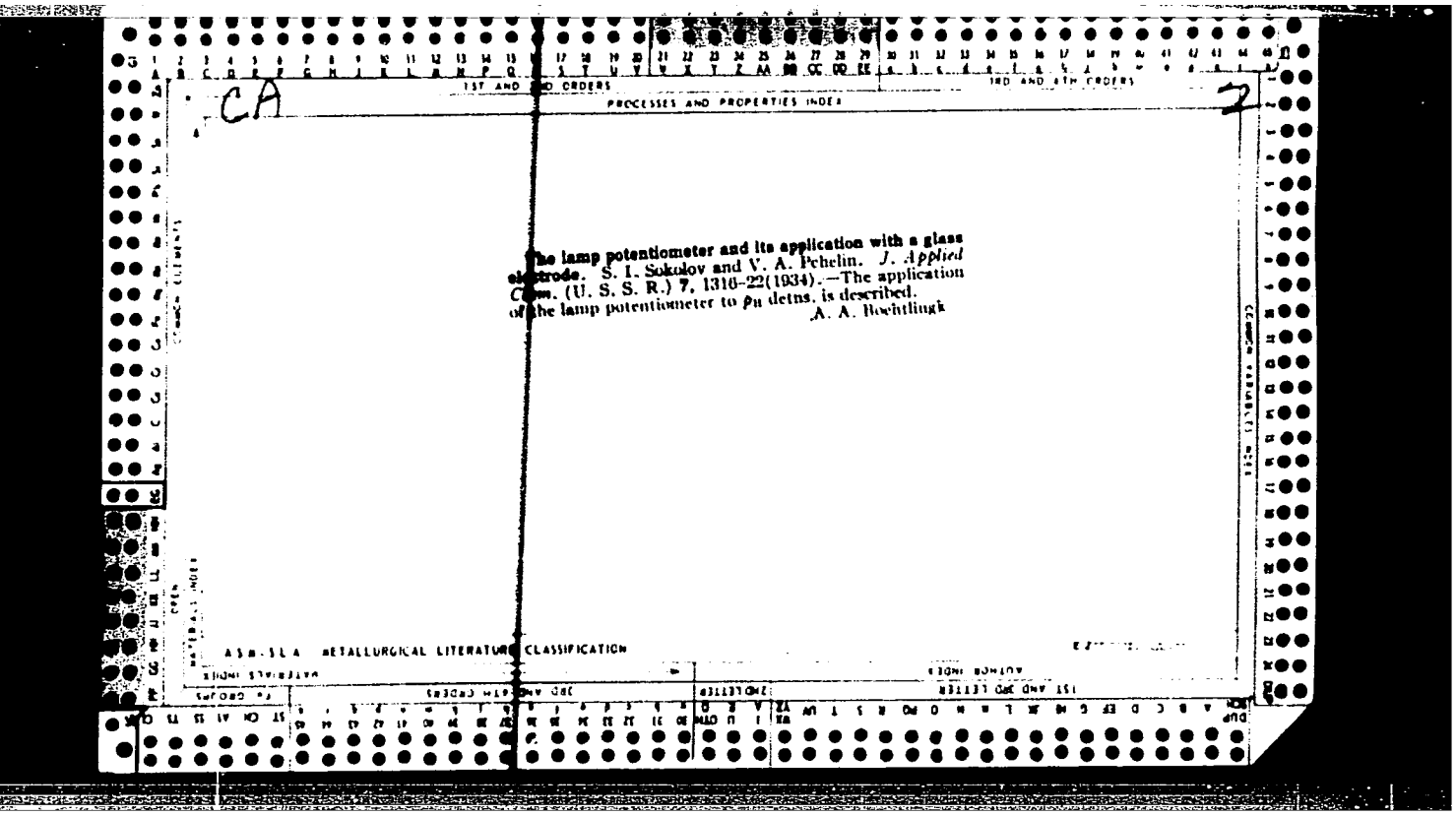
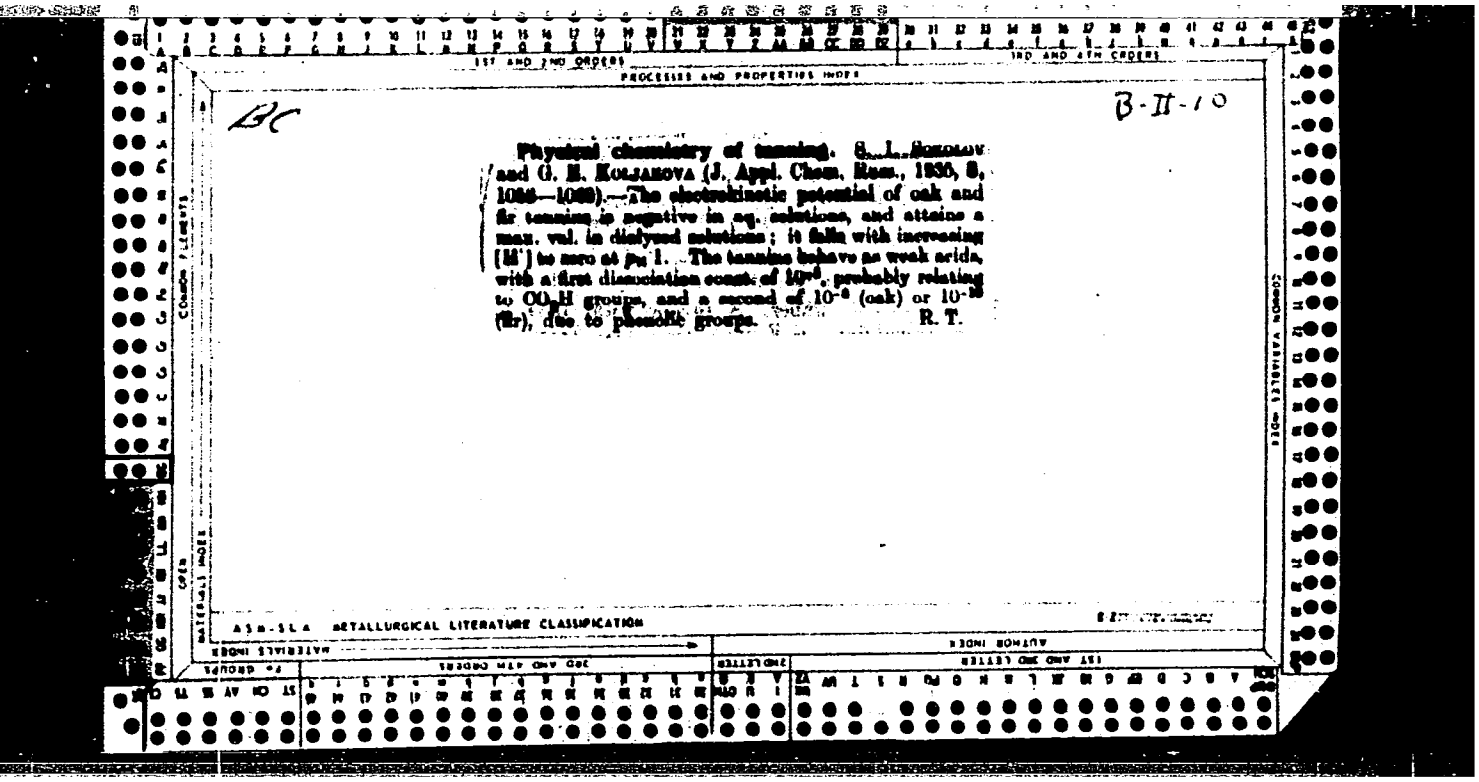

CA

PROCESSES AND PROPERTIES INDEX

The lamp potentiometer and its application with a glass electrode. S. I. Sokolov and V. A. Pchelin. *J. Applied Chem.* (U. S. S. R.) 7, 1310–22(1934).—The application of the lamp potentiometer to p_H detns. is described.
A. A. Boehtlingk

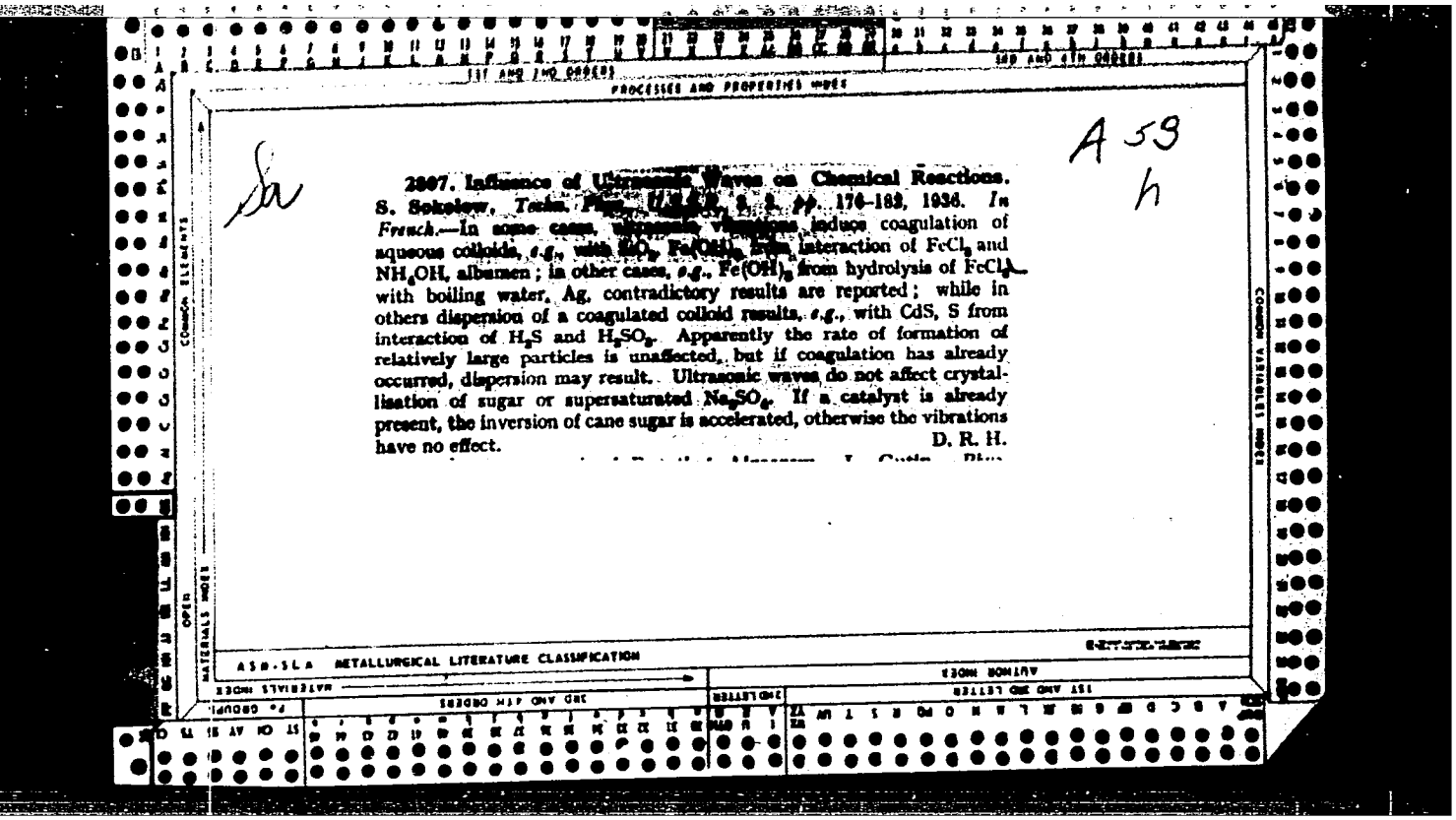
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

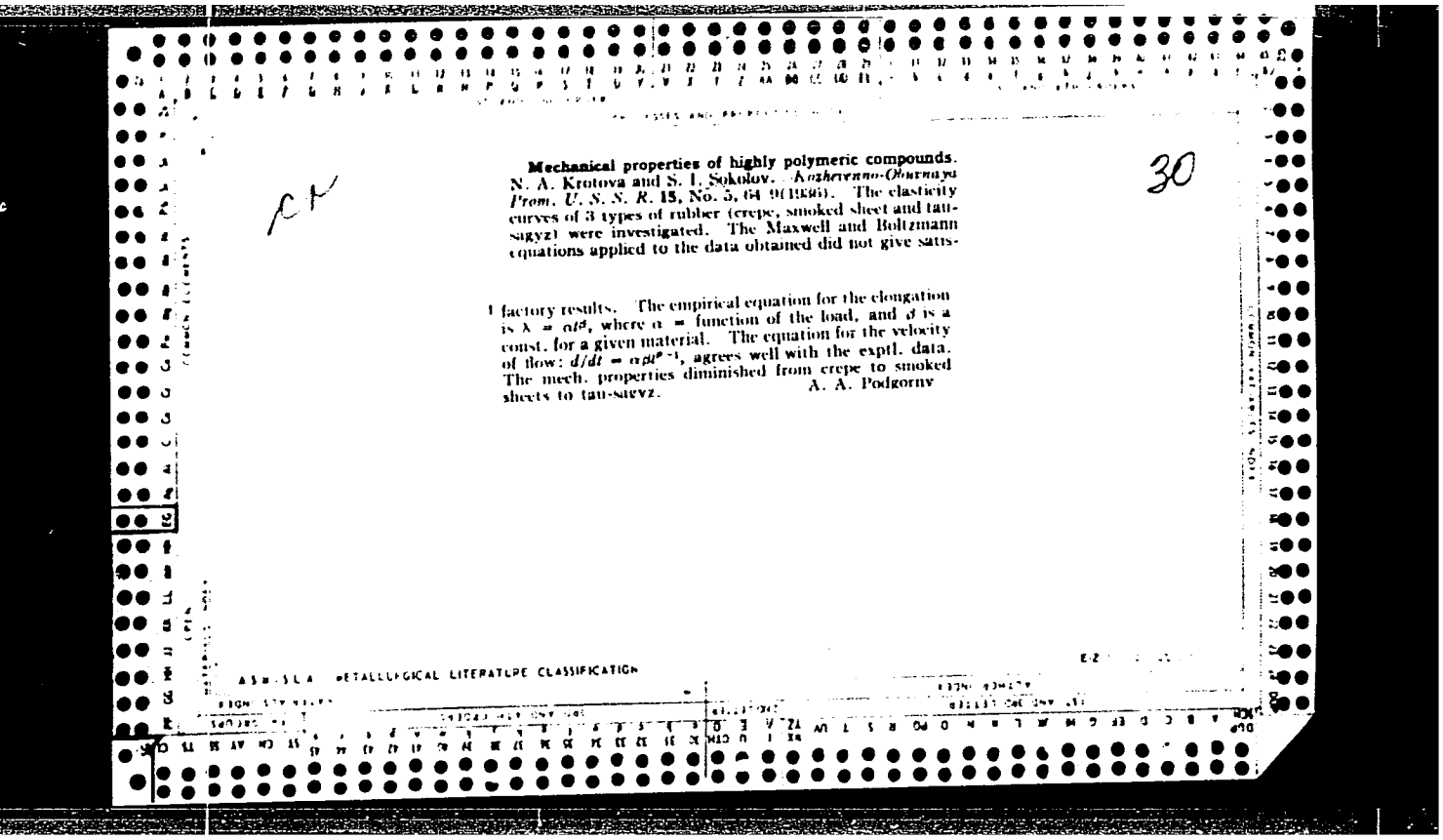
B-II-10

Physical chemistry of tanning. S. L. Bondarev and G. B. Kolesnova (J. Appl. Chem. Russ., 1936, 9, 1083—1089).—The electrokinetic potential of oak and fir tannins is negative in aq. solutions, and attains a max. val. in dialysed solutions; it falls with increasing [H^+] to zero at p_H 1. The tannins behave as weak acids, with a first dissociation const. of 10^{-3}, probably relating to CO_2H groups, and a second of 10^{-6} (oak) or 10^{-10} (fir), due to phenolic groups. R. T.



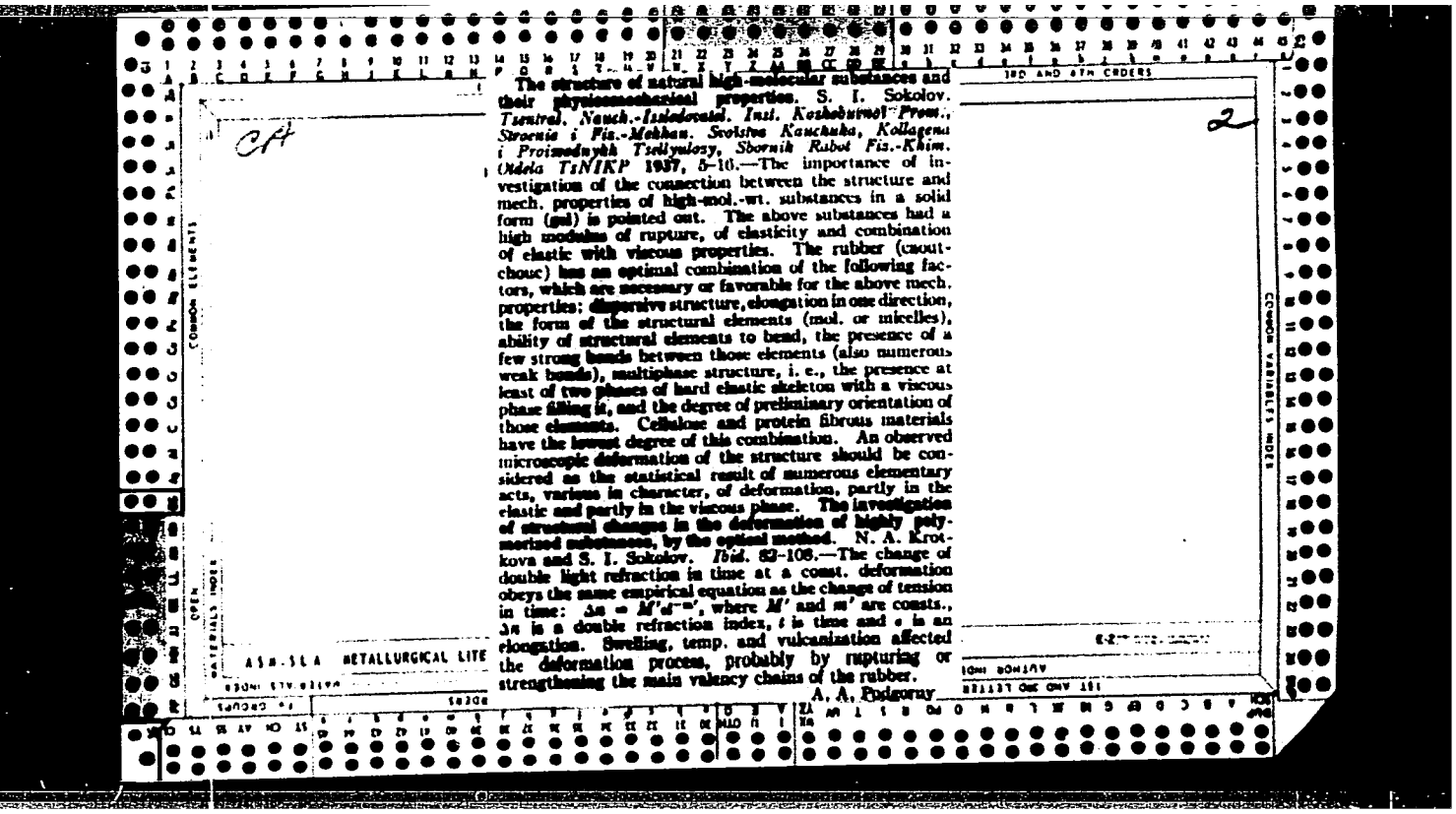
2807. **Influence of Ultrasonic Waves on Chemical Reactions.** S. Sokolow, *Techn. Phys. U.S.S.R.*, 3, 3, pp. 176–182, 1936. *In French.*—In some cases, ultrasonic vibrations induce coagulation of aqueous colloids, *e.g.*, with SiO_2, $Fe(OH)_3$ from interaction of $FeCl_3$ and NH_4OH, albumen; in other cases, *e.g.*, $Fe(OH)_3$ from hydrolysis of $FeCl_3$ with boiling water, Ag, contradictory results are reported; while in others dispersion of a coagulated colloid results, *e.g.*, with CdS, S from interaction of H_2S and H_2SO_3. Apparently the rate of formation of relatively large particles is unaffected, but if coagulation has already occurred, dispersion may result. Ultrasonic waves do not affect crystallisation of sugar or supersaturated Na_2SO_4. If a catalyst is already present, the inversion of cane sugar is accelerated, otherwise the vibrations have no effect.

D. R. H.



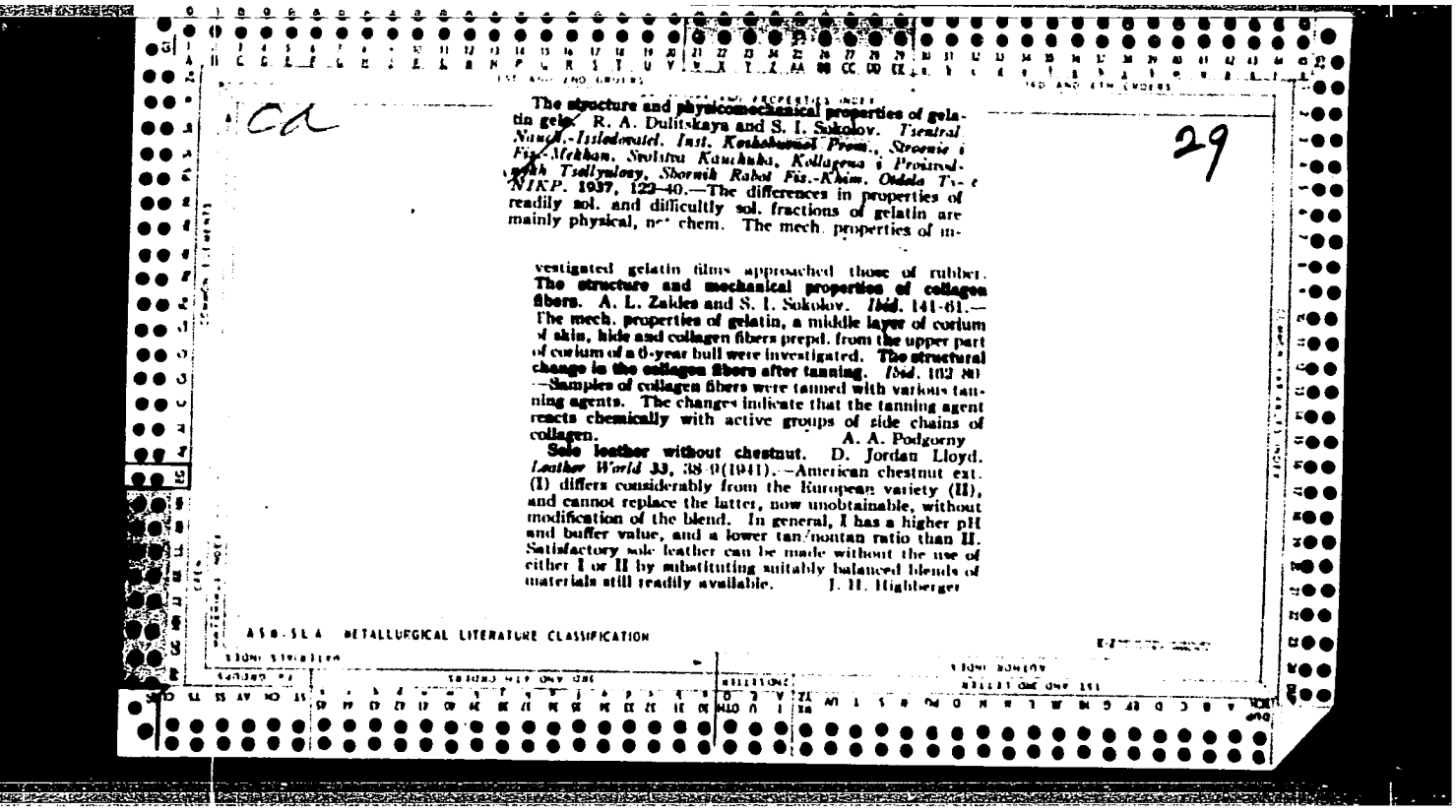
Mechanical properties of highly polymeric compounds. N. A. Krotova and S. I. Sokolov. *Kozhevenno-Obuvnaya Prom. U. S. S. R.* **15**, No. 5, 64-9(1936). The elasticity curves of 3 types of rubber (crepe, smoked sheet and tau-sagyz) were investigated. The Maxwell and Boltzmann equations applied to the data obtained did not give satisfactory results. The empirical equation for the elongation is $\lambda = \alpha t^{\beta}$, where α = function of the load, and β is a const. for a given material. The equation for the velocity of flow: $d/dt = \alpha\beta t^{\beta-1}$, agrees well with the exptl. data. The mech. properties diminished from crepe to smoked sheets to tau-sagyz.

A. A. Podgorny



The structure of natural high-molecular substances and their physicomechanical properties. S. I. Sokolov. *Tsentral. Nauch.-Issledovatel. Inst. Kozhevenno-Prom., Stroenia i Fiz.-Mekhan. Svoistva Kauchuka, Kollagena i Proizvodnykh Tsellyulozy, Sbornik Rabot Fiz.-Khim. Otdela TsNIKP* **1937**, 5–10.—The importance of investigation of the connection between the structure and mech. properties of high-mol.-wt. substances in a solid form (gel) is pointed out. The above substances had a high modulus of rupture, of elasticity and combination of elastic with viscous properties. The rubber (caoutchouc) has an optimal combination of the following factors, which are necessary or favorable for the above mech. properties: dispersive structure, elongation in one direction, the form of the structural elements (mol. or micelles), ability of structural elements to bend, the presence of a few strong bonds between those elements (also numerous weak bonds), multiphase structure, i. e., the presence at least of two phases of hard elastic skeleton with a viscous phase filling it, and the degree of preliminary orientation of those elements. Cellulose and protein fibrous materials have the lowest degree of this combination. An observed microscopic deformation of the structure should be considered as the statistical result of numerous elementary acts, various in character, of deformation, partly in the elastic and partly in the viscous phase. **The investigation of structural changes in the deformation of highly polymerized substances, by the optical method.** N. A. Krotkova and S. I. Sokolov. *Ibid.* 83–108.—The change of double light refraction in time at a const. deformation obeys the same empirical equation as the change of tension in time: $\Delta n = M'\varepsilon^{-m't}$, where M' and m' are consts., Δn is a double refraction index, t is time and ε is an elongation. Swelling, temp. and vulcanization affected the deformation process, probably by rupturing or strengthening the main valency chains of the rubber.

A. A. Epstein



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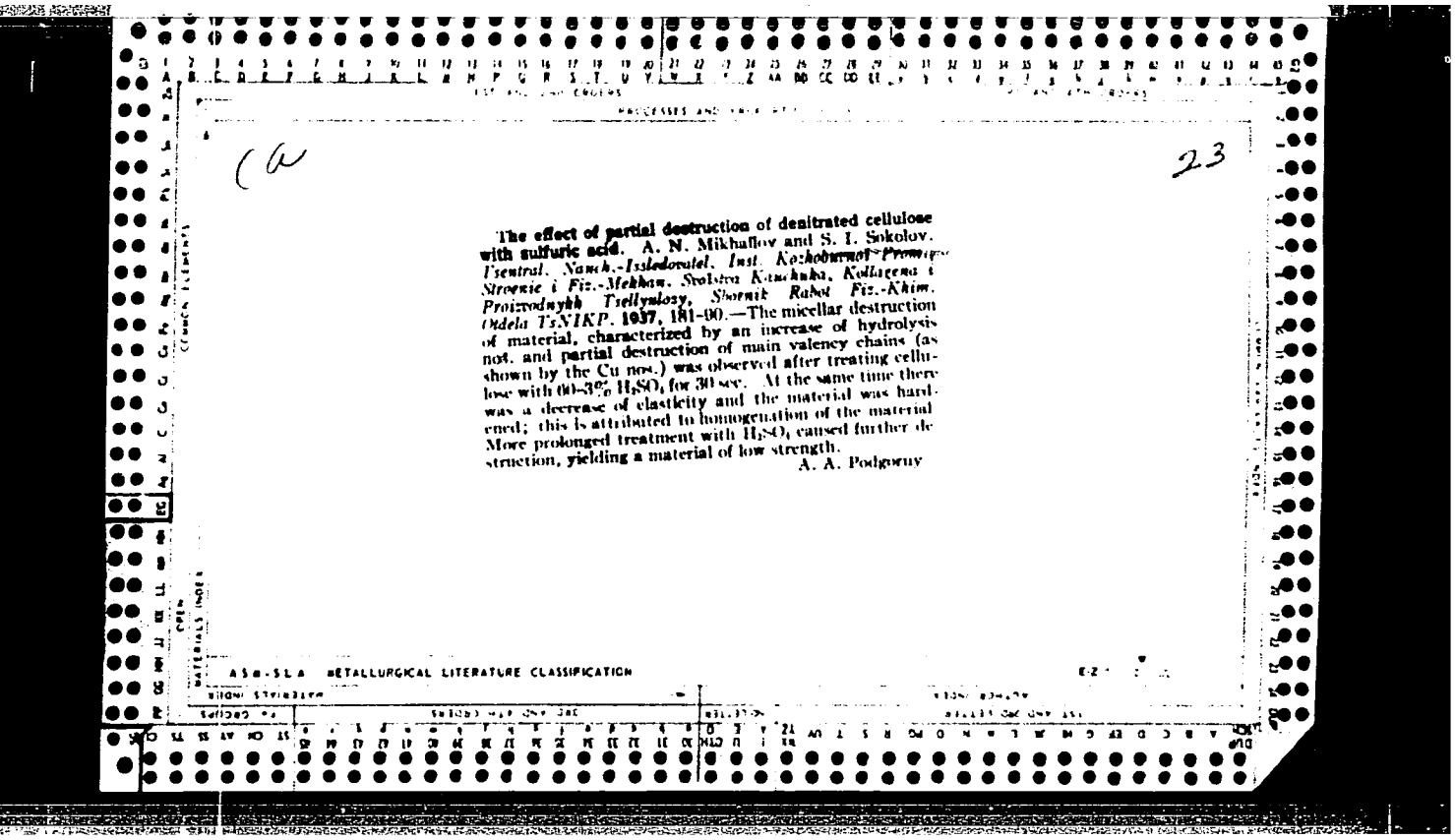
29

The structure and physicomechanical properties of gelatin gels. R. A. Dulitskaya and S. I. Sokolov. *Tsentral. Nauch.-Issledovatel. Inst. Kozhsharnoi Prom., Sbornik i Fiz.-Mekhan. Svoistva Kauchuka, Kollagena i Proizvedenii Ikh Tsellyulozy, Sbornik Rabot Fiz.-Khim. Otdela Tsentr. NIKP.* 1937, 122–40.—The differences in properties of readily sol. and difficultly sol. fractions of gelatin are mainly physical, not chem. The mech. properties of investigated gelatin films approached those of rubber.

The structure and mechanical properties of collagen fibers. A. L. Zakles and S. I. Sokolov. *Ibid.* 141–61.—The mech. properties of gelatin, a middle layer of corium of skin, hide and collagen fibers prepd. from the upper part of corium of a 6-year bull were investigated. **The structural change in the collagen fibers after tanning.** *Ibid.* 162–80.—Samples of collagen fibers were tanned with various tanning agents. The changes indicate that the tanning agent reacts chemically with active groups of side chains of collagen. A. A. Podgorny

Sole leather without chestnut. D. Jordan Lloyd. *Leather World* 33, 38–9(1941).—American chestnut ext. (I) differs considerably from the European variety (II), and cannot replace the latter, now unobtainable, without modification of the blend. In general, I has a higher pH and buffer value, and a lower tan/nontan ratio than II. Satisfactory sole leather can be made without the use of either I or II by substituting suitably balanced blends of materials still readily available. J. H. Highberger

A 50-51 A METALLURGICAL LITERATURE CLASSIFICATION



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The effect of partial destruction of denitrated cellulose with sulfuric acid. A. N. Mikhailov and S. I. Sokolov. *Tsentral. Nauch.-Issledovatel. Inst. Kozhobumazh. Promsti Stroenie i Fiz.-Mekhan. Svoistva Kauchuka, Kollagena i Proizvodnykh Tsellyulozy, Sbornik Rabot Fiz.-Khim. Otdela TsNIKP.* **1937**, 181–90.—The micellar destruction of material, characterized by an increase of hydrolysis not. and partial destruction of main valency chains (as shown by the Cu nos.) was observed after treating cellulose with 60–3% H_2SO_4 for 30 sec. At the same time there was a decrease of elasticity and the material was hardened; this is attributed to homogenization of the material More prolonged treatment with H_2SO_4 caused further destruction, yielding a material of low strength.

A. A. Podgowny

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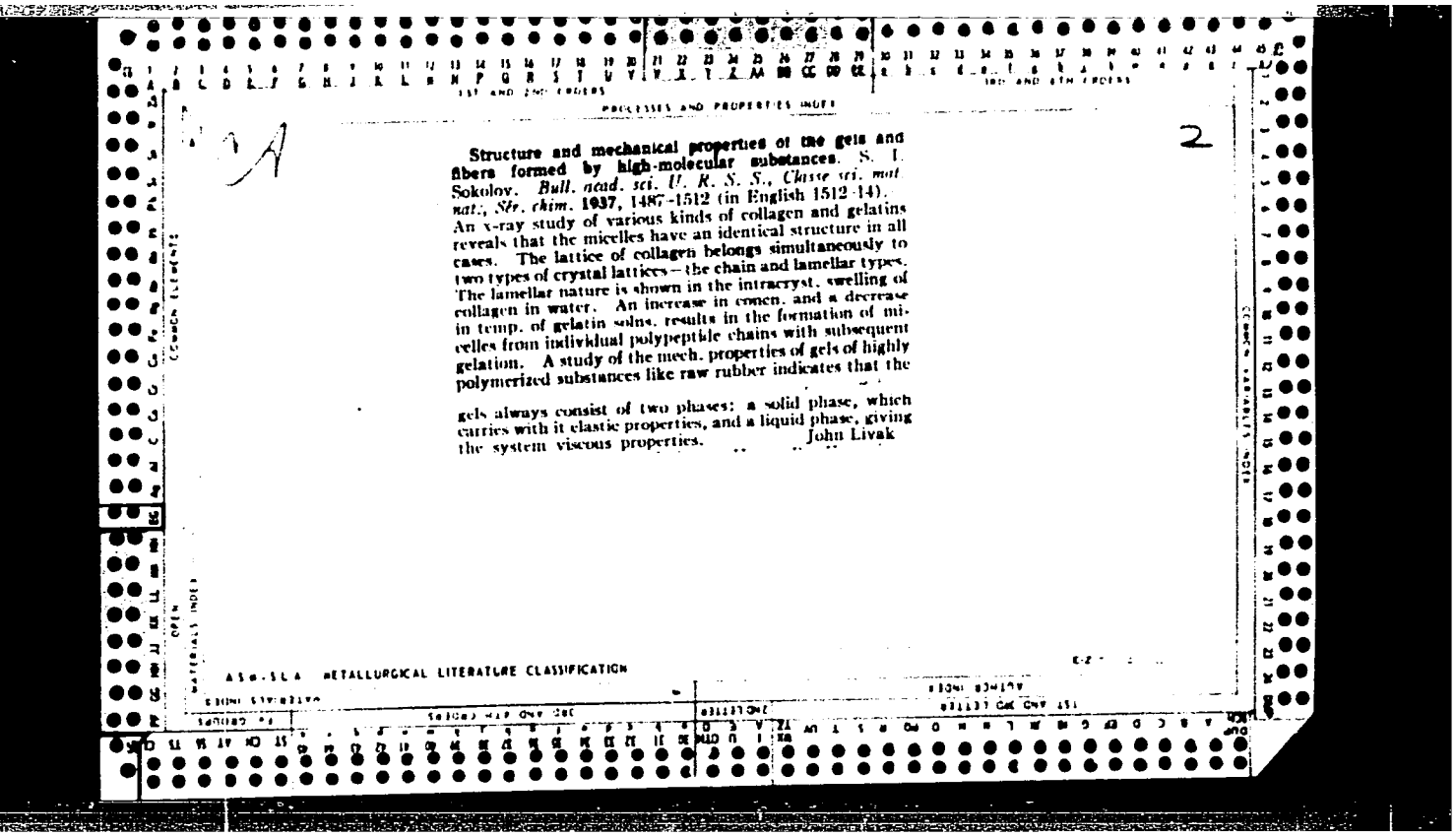
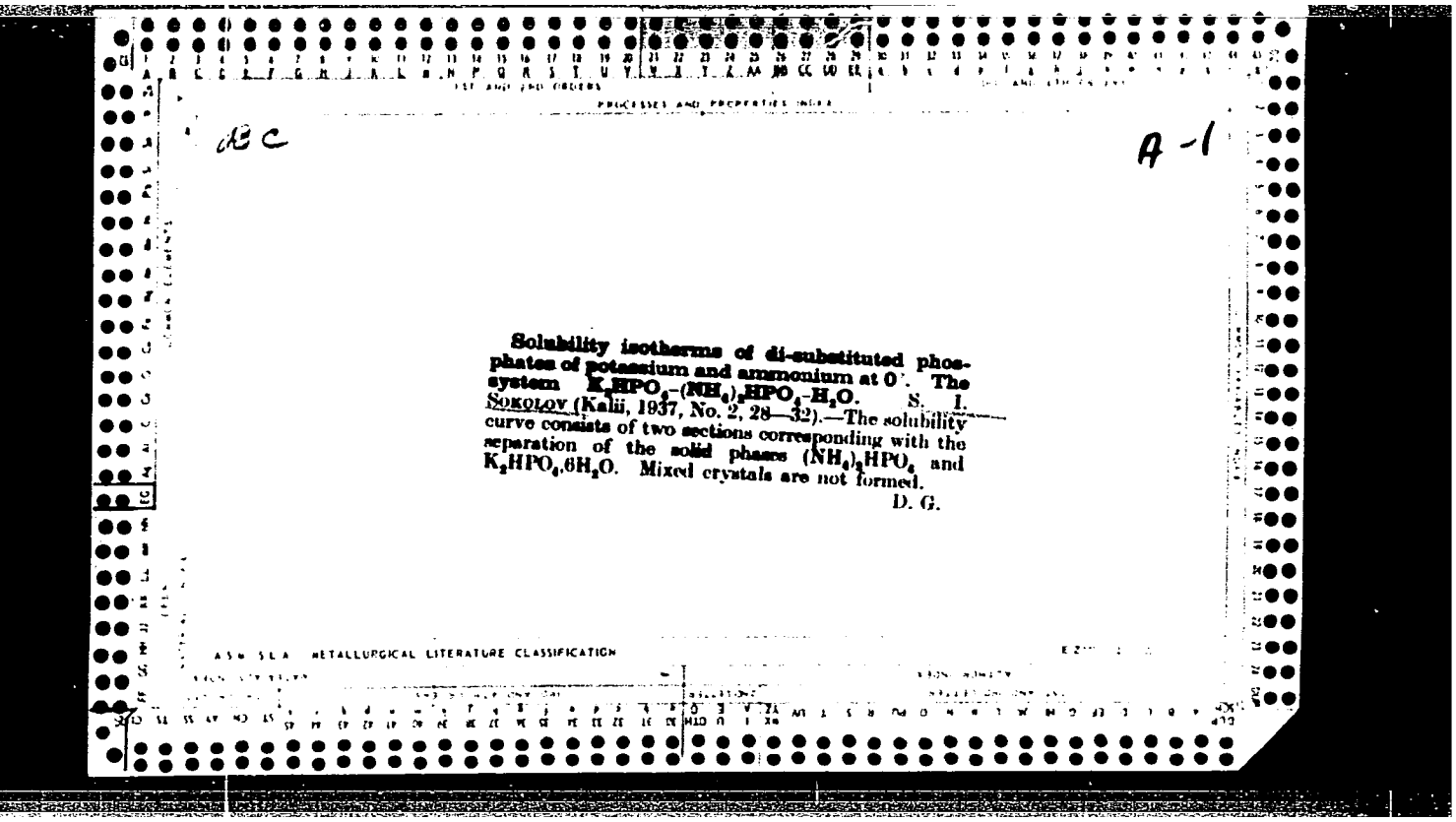


Structure and mechanical properties of the gels and fibers formed by high-molecular substances. S. I. Sokolov. *Bull. acad. sci. U. R. S. S., Classe sci. mat. nat., Sér. chim.* **1937**, 1487-1512 (in English 1512-14). An x-ray study of various kinds of collagen and gelatins reveals that the micelles have an identical structure in all cases. The lattice of collagen belongs simultaneously to two types of crystal lattices—the chain and lamellar types. The lamellar nature is shown in the intracryst. swelling of collagen in water. An increase in concn. and a decrease in temp. of gelatin solns. results in the formation of micelles from individual polypeptide chains with subsequent gelation. A study of the mech. properties of gels of highly polymerized substances like raw rubber indicates that the gels always consist of two phases: a solid phase, which carries with it elastic properties, and a liquid phase, giving the system viscous properties. John Livak



Solubility isotherms of di-substituted phosphates of potassium and ammonium at 0°. The system K_2HPO_4–$(NH_4)_2HPO_4$–H_2O. S. I. Sokolov (Kalii, 1937, No. 2, 28—32).—The solubility curve consists of two sections corresponding with the separation of the solid phases $(NH_4)_2HPO_4$ and $K_2HPO_4.6H_2O$. Mixed crystals are not formed.

D. G.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

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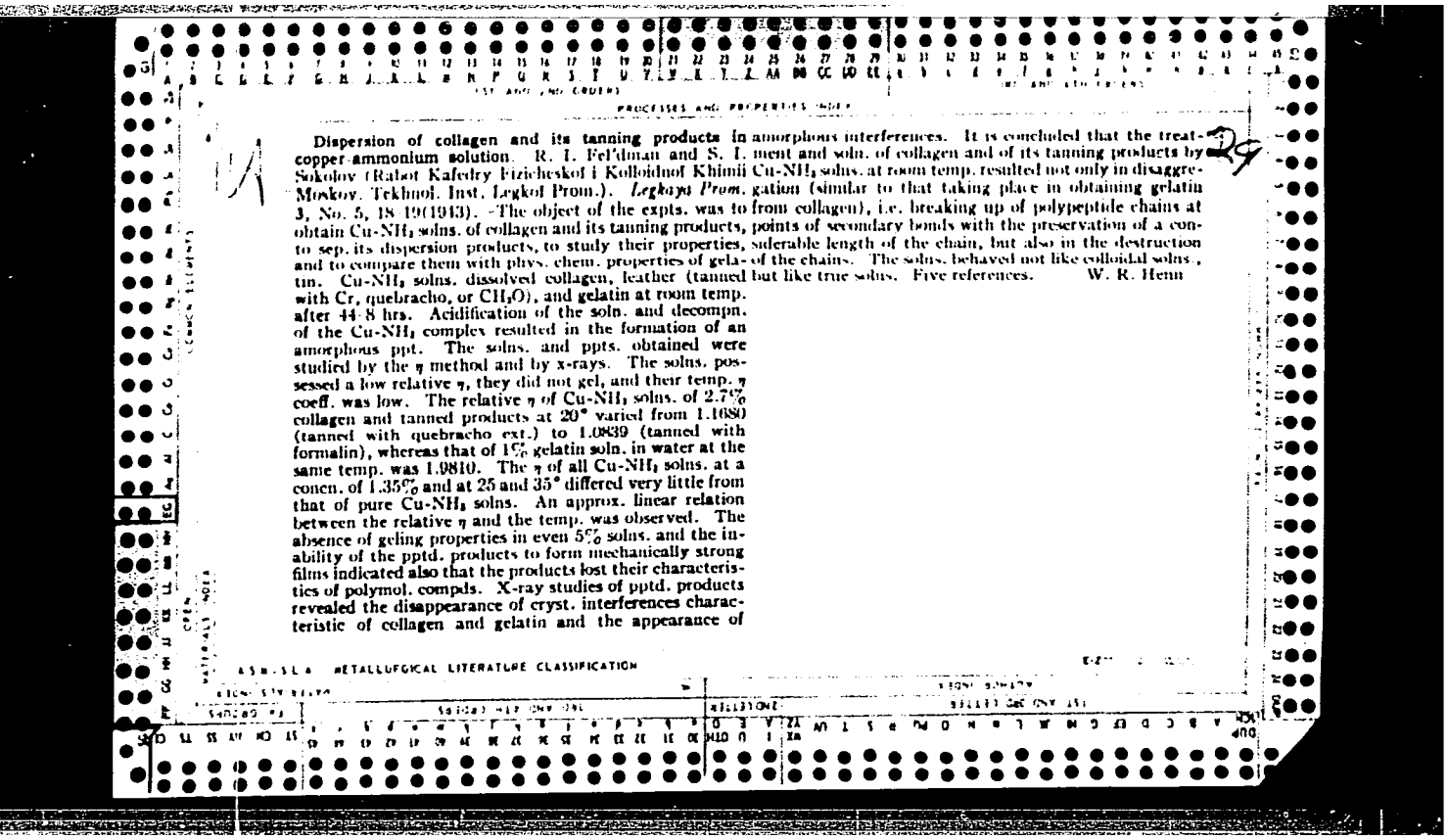
B-I-1

Physico-mechanical properties of compounds of high mol. wt. [illegible] and N. A. KROTOVA (Ann. Sect. Anal. Phys. Chim., 1938, 10, 367—372).—The sp. properties of elastic substances (rubber, leather, cellulose) are characterised by the elasticity coeff., the resilience modulus, and by limiting uniform deformation. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Dispersion of collagen and its tanning products in copper-ammonium solution. R. I. Fel'dman and S. I. Sokolov (Rabot Kafedry Fizicheskoi i Kolloidnoi Khimii Moskov. Tekhnol. Inst. Legkoi Prom.). *Legkaya Prom.* 3, No. 5, 18–19(1943). —The object of the expts. was to obtain $Cu-NH_3$ solns. of collagen and its tanning products, to sep. its dispersion products, to study their properties, and to compare them with phys. chem. properties of gelatin. $Cu-NH_3$ solns. dissolved collagen, leather (tanned with Cr, quebracho, or CH_2O), and gelatin at room temp. after 44–8 hrs. Acidification of the soln. and decompn. of the $Cu-NH_3$ complex resulted in the formation of an amorphous ppt. The solns. and ppts. obtained were studied by the η method and by x-rays. The solns. possessed a low relative η, they did not gel, and their temp. η coeff. was low. The relative η of $Cu-NH_3$ solns. of 2.7% collagen and tanned products at 20° varied from 1.1080 (tanned with quebracho ext.) to 1.0839 (tanned with formalin), whereas that of 1% gelatin soln. in water at the same temp. was 1.9810. The η of all $Cu-NH_3$ solns. at a concn. of 1.35% and at 25 and 35° differed very little from that of pure $Cu-NH_3$ solns. An approx. linear relation between the relative η and the temp. was observed. The absence of geling properties in even 5% solns. and the inability of the pptd. products to form mechanically strong films indicated also that the products lost their characteristics of polymol. compds. X-ray studies of pptd. products revealed the disappearance of cryst. interferences characteristic of collagen and gelatin and the appearance of amorphous interferences. It is concluded that the treatment and soln. of collagen and of its tanning products by $Cu-NH_3$ solns. at room temp. resulted not only in disaggregation (similar to that taking place in obtaining gelatin from collagen), i.e. breaking up of polypeptide chains at points of secondary bonds with the preservation of a considerable length of the chain, but also in the destruction of the chains. The solns. behaved not like colloidal solns., but like true solns. Five references. W. R. Henn